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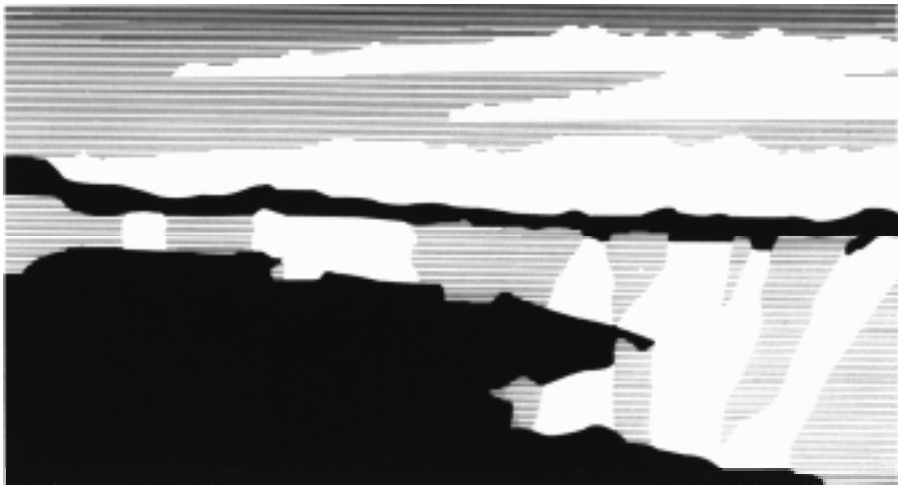

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Evaluation and Compilation of Fission Product Yields
1993

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Abstract

This document is the latest in a series of compilations of fission yield data. Fission yield measurements reported in the open literature and calculated charge distributions have been used to produce a recommended set of yields for the fission products. The original data with reference sources, and the recommended yields are presented in tabular form. These include many nuclides which fission by neutrons at several energies. These energies include thermal energies (T), fission spectrum energies (F), 14 meV High Energy (H or HE), and spontaneous fission (S), in six sets of ten each. Set A includes U235T, U235F, U235HE, U238F, U238HE, Pu239T, Pu239F, Pu241T, U233T, Th232F. Set B includes U233F, U233HE, U236F, Pu239H, Pu240F, Pu241F, Pu242F, Th232H, Np237F, Cf252S. Set C includes U234F, U237F, Pu240H, U234HE, U236HE, Pu238F, Am241F, Am243F, Np238F, Cm242F. Set D includes Th227T, Th229T, Pa231F, Am241T, Am241H, Am242MT, Cm245T, Cf249T, Cf251T, Es254T. Set E includes Cf250S, Cm244S, Cm248S, Es253S, Fm254S, Fm255T, Fm256S, Np237H, U232T, U238S. Set F includes Cm243T, Cm246S, Cm243F, Cm244F, Cm246F, Cm248F, Pu242H, Np237T, Pu240T, and Pu242T to complete fission product yield evaluations for 60 fissioning systems in all. This report also serves as the primary documentation for the second evaluation of yields in ENDF/B-VI released in 1993.

This report was originally intended to be printed full sized including all evaluated and compiled data. However, it contains more than 80,000 single spaced lines, most extending over 132 columns (about 1300 pages). The main text, tabular data in the text, evaluated chain yields, and an extensive, annotated bibliography are retained in this text. All evaluated and compiled data have been relegated to six appendices for the six groups of fissioning nuclides noted above. These are available to anyone having access to the internet. The anonymous node is t2.lanl.gov under the subnode yields. The files will also be available from BNL, IAEA and other sites. Please consult the "readme.yld" file in t2.lanl.gov yields node for additional information.

General

In recent years, there has been great interest in fission yields. They are used in the calculation of odd-even pairing effects, the number of prompt neutrons per fission (nubar), of delayed neutron

precursor yields, and of delayed neutron spectra. Yields are used in the calculation of waste disposal inventories, and in the calculation of beta and gamma ray spectra of fission-product inventories. Fission yields are also used in the calculation of decay heat, especially in the time from 1 to 1000 seconds after a loss-of-coolant accident in a nuclear power plant. Such a calculation requires a value for the independent yield of every fission product nuclide with a half-life longer than a few tenths of a second. This work includes a recommended independent (RI) yield for every fission product nuclide to satisfy the requirements of decay heat calculations. The recommended independent yield values have been transmitted to the National Nuclear Data Center's Evaluated Nuclear Data File (ENDF/B-VI) at Brookhaven National Laboratory. The Cross Section Evaluation Working Group (CSEWG) Fission Product Yield and Decay Data Subcommittee has reviewed this work.

Several tests have been applied to the data including checks of atom, neutron, and proton balances. First, except for the very small ternary fission contribution the total of chain yields in the light and heavy mass peaks should each add to 100% or 200% when combined. Second, the average mass of the heavy fission product, plus the average of the light fission product, plus the average number of neutrons emitted in fission (nubar) should equal the mass of the fissioning nuclide plus the mass of the neutron inducing the fission. Third, the Z of each fission product, times the independent yield of that fission product, summed over all fission products including ternary fission products with Z = 1 through 4, and divided by 100 (to remove percent) should equal Z of the fissioning nuclide. These tests were satisfied for thermal fission, and within experimental error for other fission energies. Test results appear in the following table in order of the amount of data available (the order of appearance in this document):

Table 1.
Atom, Neutron and Proton Balances

Nuclide	Sum of Z*Yields	Atomic Number	Compound Nucleus	Minus Av. Light Mass	Minus Av. Heavy Mass	Equals Apparent Nubar	Evaluated Nubar	Error on Eval. Nubar
U235t	92.05	92.00	236	-94.9072	-138.6923	2.40	2.42 *	0.12 *
U235f	92.00	92.00	236	-95.0549	-138.4740	2.47	2.47 *	0.12 *
U235h	92.00	92.00	236	-96.5733	-135.3098	4.12	4.38 *	0.22 *
U238f	92.00	92.00	239	-97.3361	-138.7285	2.93	2.79 *	0.14 *
U238h	92.00	92.00	239	-97.8840	-136.6967	4.42	4.42 *	0.22 *
Pu239t	94.00	94.00	240	-98.9910	-138.1044	2.90	2.88 *	0.14 *
Pu239f	94.00	94.00	240	-98.9995	-138.0987	2.90	2.94 *	0.15 *
Pu241t	94.00	94.00	242	-100.2773	-138.7588	2.96	2.87 *	0.14 *
U233t	92.01	92.00	234	-93.3624	-138.1835	2.45	2.50 *	0.12 *
Th232f	90.00	90.00	233	-91.0555	-139.7144	2.23	2.42 *	0.12 *
U233f	92.00	92.00	234	-93.6925	-137.7976	2.51	2.52 *	0.12 *
U233h	91.99	92.00	234	-95.9442	-134.5816	3.47	4.27 *	0.21 *
U236f	91.99	92.00	237	-95.7290	-138.5854	2.69	2.78 *	0.14 *
Pu239h	93.99	94.00	240	-100.1713	-135.2287	4.60	4.90 *	0.25 *
Pu240f	93.99	94.00	241	-99.6395	-138.3988	2.96	2.94 *	0.15 *
Pu241f	94.00	94.00	242	-100.3500	-138.6715	2.98	2.95 *	0.15 *
Pu242f	93.99	94.00	243	-100.8390	-138.8155	3.35	3.31 *	0.17 *
Th232h	90.00	90.00	233	-93.8282	-136.2661	2.91	3.92 *	0.20 *
Np237f	93.00	93.00	238	-97.1469	-138.1594	2.69	3.05 *	0.15 *
Cf252s	97.97	98.00	252	-106.1231	-141.9496	3.93	3.82 **	0.12 **
U234f	92.00	92.00	235	-93.9101	-138.3704	2.72	2.67 *	0.13 *
U237f	91.99	92.00	238	-96.5407	-138.7426	2.72	(2.74)	-------
Pu240h	93.98	94.00	241	-100.3305	-136.0709	4.60	(4.62)	-------

U234h	92.00	92.00	235	-96.1547	-134.6481	4.20	(4.20)	-------
U236h	92.00	92.00	237	-97.2126	-135.5432	4.24	(4.26)	-------
Pu238f	94.00	94.00	239	-98.4958	-138.5021	2.00	2.90 *	0.15 *
Am241f	95.00	95.00	242	-100.1916	-138.6766	3.13	2.91 *	0.15 *
Am243f	95.00	95.00	244	-101.0691	-138.9113	4.02	3.83 *	0.19 *
Np238f	93.00	93.00	239	-98.0812	-138.5612	2.36	(2.32)	-------
Cm242f	96.00	96.00	243	-100.6843	-138.7155	3.60	(3.64)	-------
Th227t	90.00	90.00	228	- 88.8781	-137.7444	1.38	(1.42)	-------
Th229t	90.06	90.00	230	- 87.9144	-139.8130	2.27	(2.30)	-------
Pa231f	91.01	91.00	232	- 91.1277	-138.3961	2.48	(2.53)	-------
Am241t	94.93	95.00	242	-100.5866	-138.4968	2.92	(2.79)	-------
Am241h	94.98	95.00	242	-102.0261	-135.5191	4.45	(4.70)	-------
A242Mt	95.03	95.00	243	-100.9831	-139.0693	2.95	(3.04)	-------
Cm245t	95.98	96.00	246	-103.0413	-139.6600	3.30	(3.36)	-------
Cf249t	97.92	98.00	250	-105.9351	-139.9612	4.10	(4.02)	-------
Cf251t	98.05	98.00	252	-107.4799	-140.9040	3.62	(3.84)	-------
Es254t	98.96	99.00	255	-110.8090	-140.2389	3.95	(3.92)	-------
Cf250s	97.99	98.00	250	-105.1358	-141.5797	3.28	(3.30)	-------
Cm244s	95.99	96.00	244	-103.1063	-138.7409	2.15	2.60 **	0.11 **
Cm248s	96.00	96.00	248	-104.4495	-140.0049	3.55	(3.69)	-------
Es253s	99.01	99.00	253	-106.1086	-142.5211	4.37	(4.38)	-------
Fm254s	100.00	100.00	254	-108.8178	-140.9429	4.24	4.05 **	0.19 **
Fm255t	99.99	100.00	256	-114.5118	-138.4055	3.08	(2.83)	-------
Fm256s	100.00	100.00	256	-110.8021	-140.8390	4.36	(4.36)	-------
Np237h	92.99	93.00	238	- 99.0015	-135.5333	3.47	(3.61)	-------
U232t	92.05	92.00	233	- 92.1640	-138.0498	2.79	(2.96)	-------
U238s	91.99	92.00	238	- 96.0861	-140.2738	1.64	1.97 **	0.07 **
Cm243t	95.99	96.00	244	-101.5684	-139.4839	2.95	--------	-------
Cm246s	96.00	96.00	246	-103.8193	-139.1668	3.01	--------	-------
Cm243f	95.99	96.00	244	-100.9917	-139.3143	3.69	--------	-------
Cm244f	95.99	96.00	245	-101.4387	-139.8775	3.68	--------	-------
Cm246f	95.99	96.00	247	-102.8016	-140.5408	3.66	--------	-------
Cm248f	95.99	96.00	249	-104.1974	-141.0867	3.72	--------	-------
Pu242h	93.99	94.00	243	-101.5694	-137.2259	4.20	--------	-------
Np237t	93.00	93.00	238	- 97.4744	-138.5703	1.96	--------	-------
Pu240t	94.00	94.00	241	- 99.6713	-138.4571	2.87	--------	-------
Pu242t	94.00	94.00	242	-100.8876	-139.0490	2.06	--------	-------

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* Reference ENDF/B-V; ** Reference (64HYD1); For more nubar data see (77HOW1).

Yields are also checked to see if they sum to 100% per fission under each peak. Fifty-one do sum to 100.00%. U235t, U235f Es253s, Fm256s are off by 0.01%, Pu240h, Cf249t, and Np237h by 0.04%, U232t by 0.02% and cf251t by 0.05%. For ENDF/B-VI, even these small deviations do not apply because of the final normalization.

Independent yields are taken from a calculated charge distribution model. The model independent yields are normalized so their sum equals the chain yield. Large errors are given to the model yields. These model yields are merged statistically with weighted averages of measured yields. One set of cumulative yields is calculated by adding independent yields starting with the initial nuclide and ending with the chain yield. A second set of cumulative yields is calculated by starting with the chain yields and subtracting independent yields ending with the initial nuclide. These two sets are averaged using reciprocal variance weighting. The first set dominates the initial nuclide yield averages. The second set dominates the final chain member yield averages because of the small errors caused by the constraint imposed at 0% and 100% of the chain yield, respectively. The powerful and constrained merging technique and resulting error analysis used is that recommended by Professor B. I. Spinrad of Oregon State University. He was chairman of the Subcommittee for ENDF/B-V

Fission Yield Errors (77SPI1). Other refinements treat delayed neutron emission, partition direct yields between metastable and ground state isomers, handle internal transition, and accomodate beta decay branching ratios.

Light Ternary Fission Products

A survey was made by Madland (77MAD1) of experimental information on the probability of ternary fission and the charge distribution of the light ternary fission products. A new prescription was presented for the ternary fission probability as a function of incident particle energy and certain compound nucleous properties. Based upon systematics, a method for obtaining charge distributions of the light ternary products was presented. Although Madland's study is yet incomplete, his current yield recommendations are listed together with the charge balances for all sixty fissionable nuclides. We have adjusted Wahl-recommended Zp values (88WAH1, 89WAH1) by a small adder to get a satisfactory charge balance. We have included the charge carried with the light ternary fission products because accurate calculation of decay heat requires a good charge balance.

Table 2.
Light Ternary Fission Products

Nuclide	Zp Adder	Ternary Yield,%*	Standard Dev.*	H (Z=1) Yield,%*	He(Z=2) Yield,%*	Li(Z=3) Yield,%*	Be(Z=4) Yield,%*	Ternary Charge	Binary Charge	Total Charge
U235t	0.00000	0.2137	0.0196	0.01541	0.19755	0.00012	0.00062	0.0041	91.9959	92
U235f	-0.13397	0.1873	0.0123	0.01253	0.17395	0.00018	0.00065	0.0036	91.9964	92
U235h	-0.06979	0.1456	0.0070	0.00974	0.13522	0.00014	0.00050	0.0028	91.9972	92
U238f	-0.01255	0.1667	0.0233	0.01115	0.15481	0.00016	0.00058	0.0032	91.9968	92
U238h	-0.01379	0.1258	0.0055	0.00841	0.11683	0.00012	0.00044	0.0024	91.9976	92
Pu239t	+0.01551	0.2326	0.0108	0.01556	0.21602	0.00022	0.00081	0.0045	93.9955	94
Pu239f	-0.01490	0.2092	0.0249	0.01399	0.19428	0.00020	0.00073	0.0041	93.9959	94
Pu241t	+0.01660	0.2273	0.0145	0.01520	0.21109	0.00022	0.00079	0.0044	93.9956	94
U233t	-0.15331	0.2427	0.0094	0.01134	0.23010	0.00021	0.00104	0.0048	91.9952	92
Th232f	-0.09410	0.0840	0.0031	0.00562	0.07801	0.00008	0.00029	0.0016	89.9984	90
U233f	-0.00839	0.2257	0.0260	0.01509	0.20961	0.00022	0.00078	0.0044	91.9956	92
U233h	-0.16821	0.2180	0.0550	0.01458	0.20246	0.00021	0.00076	0.0042	91.9958	92
U236f	-0.02958	0.1600	0.0400	0.01070	0.14859	0.00015	0.00055	0.0031	91.9969	92
Pu239h	-0.06819	0.2560	0.0640	0.01712	0.23775	0.00025	0.00089	0.0050	93.9950	94
Pu240f	-0.00630	0.2400	0.0600	0.01605	0.22289	0.00023	0.00083	0.0047	93.9953	94
Pu241f	+0.00078	0.2200	0.0550	0.01471	0.20431	0.00021	0.00076	0.0043	93.9957	94
Pu242f	-0.01025	0.2000	0.0560	0.01338	0.18574	0.00019	0.00069	0.0039	93.9961	94
Th232h	-0.23784	0.0958	0.0088	0.00641	0.08897	0.00009	0.00033	0.0019	89.9981	90
Np237f	-0.07769	0.2200	0.0550	0.01471	0.20431	0.00021	0.00076	0.0042	92.9958	93
Cf252s	+0.05678	0.3459	0.0857	0.02830	0.31601	0.00051	0.00108	0.0067	97.9933	98
U234f	+0.00820	0.2009	0.0502	0.01308	0.20479	0.00018	0.00070	0.0041	91.9959	92
U237f	-0.01426	0.1405	0.0351	0.00915	0.13074	0.00013	0.00050	0.0027	91.9973	92
Pu240h	-0.01140	0.2369	0.0592	0.01542	0.22043	0.00021	0.00083	0.0046	93.9954	94
U234h	-0.00096	0.1997	0.0499	0.01300	0.18582	0.00018	0.00070	0.0039	91.9961	92
U236h	-0.00662	0.1625	0.0406	0.01058	0.15121	0.00015	0.00056	0.0032	91.9968	92
Pu238f	-0.17529	0.2815	0.0704	0.01833	0.26194	0.00025	0.00098	0.0055	93.9945	94
Am241f	+0.04430	0.3016	0.0754	0.01963	0.28064	0.00027	0.00106	0.0059	94.9941	95
Am243f	+0.03270	0.2613	0.0653	0.01701	0.24314	0.00024	0.00091	0.0051	94.9949	95
Np238f	+0.00516	0.2211	0.0553	0.01439	0.20573	0.00020	0.00077	0.0043	92.9957	93
Cm242f	-0.00877	0.3620	0.0905	0.02357	0.33684	0.00033	0.00127	0.0070	95.9930	96
Th227t	-0.00159	0.1808	0.0452	0.01209	0.16791	0.00017	0.00061	0.0035	89.9965	90
Th229t	-0.01446	0.1405	0.0351	0.00940	0.13050	0.00013	0.00048	0.0027	89.9973	90
Pa231f	-0.00939	0.1808	0.0452	0.01209	0.16791	0.00017	0.00061	0.0035	90.9965	91

Am241t	-0.01644	0.3016	0.0754	0.02018	0.28014	0.00029	0.00103	0.0059	94.9941	95
Am241h	-0.08272	0.2927	0.0732	0.01958	0.27186	0.00029	0.00100	0.0057	94.9943	95
A242mt	-0.01968	0.2815	0.0704	0.01883	0.26144	0.00027	0.00096	0.0054	94.9946	95
Cm245t	-0.06246	0.3016	0.0754	0.02018	0.28014	0.00029	0.00103	0.0059	95.9941	96
Cf249t	-0.03369	0.3822	0.0955	0.02557	0.35497	0.00037	0.00130	0.0074	97.9926	98
Cf251t	-0.03388	0.3419	0.0855	0.02287	0.31756	0.00033	0.00116	0.0066	97.9934	98
Es254t	-0.02367	0.3620	0.0905	0.02422	0.33626	0.00035	0.00123	0.0070	98.9930	99
Cf250s	-0.02719	0.3822	0.0956	0.02165	0.35330	0.00021	0.00111	0.0073	97.9927	98
Cm244s	-0.08967	0.3419	0.0855	0.02465	0.31606	0.00019	0.00099	0.0066	95.9934	96
Cm248s	-0.03380	0.2613	0.0653	0.01885	0.24159	0.00015	0.00076	0.0051	95.9949	96
Es253s	-0.00325	0.4023	0.1006	0.02901	0.37191	0.00023	0.00117	0.0078	98.9922	99
Fm254s	+0.02698	0.4627	0.1157	0.03337	0.42777	0.00026	0.00134	0.0090	99.9910	100
Fm255t	+0.02939	0.4225	0.1056	0.03046	0.39053	0.00024	0.00123	0.0082	99.9918	100
Fm256s	-0.00696	0.4225	0.1056	0.03046	0.39053	0.00024	0.00123	0.0082	99.9918	100
Np237h	-0.04309	0.2183	0.0546	0.01574	0.20180	0.00012	0.00063	0.0042	92.9958	93
U232t	-0.00930	0.2412	0.0603	0.01739	0.22297	0.00014	0.00070	0.0047	91.9953	92
U238s	-0.10342	0.1405	0.0351	0.01013	0.12988	0.00008	0.00041	0.0027	91.9973	92
Cm243t	-0.13983	0.3000	0.0750	0.02163	0.27733	0.00017	0.00087	0.0058	95.9942	96
Cm246s	+0.00183	0.2899	0.0725	0.02090	0.26799	0.00016	0.00084	0.0056	95.9944	96
Cm243f	+0.03686	0.3200	0.0800	0.02307	0.29582	0.00093	0.00093	0.0062	95.9938	96
Cm244f	-0.02517	0.3120	0.0780	0.02249	0.28842	0.00017	0.00090	0.0062	95.9938	96
Cm246f	-0.00881	0.2960	0.0740	0.02134	0.27363	0.00017	0.00086	0.0057	95.9943	96
Cm248f	-0.00855	0.2800	0.0700	0.02019	0.25884	0.00016	0.00081	0.0054	95.9946	96
Pu242h	-0.05084	0.4600	0.1150	0.03317	0.42524	0.00026	0.00133	0.0089	93.9911	94
Np237t	-0.11936	0.1800	0.0450	0.01298	0.16639	0.00010	0.00052	0.0035	92.9965	93
Pu240t	-0.00995	0.2000	0.0500	0.01442	0.18489	0.00012	0.00058	0.0039	93.9961	94
Pu242t	-0.01672	0.1600	0.0400	0.01153	0.14790	0.00009	0.00046	0.0031	93.9969	94

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*From Reference (77MAD1)

Treatment of Data

The original values reported in the literature have been tabulated with the reference value (if any) against which they were determined. An updated value was then calculated by using the current recommended value for the fission yield of the reference nuclide from the file. All the updated values were adjusted by a small adder to ensure that the chain yields would total 100% except for the small difference between iterations. To find this adder, the variance of the sum is obtained by summing the variances of each chain yield. Any difference from 100% is apportioned to each chain yield in the proportion its variance bears to the total variance. That is, to a chain yield whose variance contributes 10% to the total variance, is added 10% of the total difference from 100%. This method results in a negligible adjustment to any accurately determined absolute yield. It ensures that the adjustment is made mainly in the lesser known yields where most of the error lies. Yet these lesser known values are adjusted by only a fraction of their standard deviation or well within their experimental error.

The relative standard deviation reported in the literature is not allowed to be smaller than 0.5% for mass spectrometric measurements or 5% for Ge(Li)-era radiochemical measurements made since 1965. A lower limit of 10% is set for sodium-iodide-era measurements between 1955 and 1965, and 20% for Geiger-counter-era measurements before 1955. Estimates are generally no better than ±10% and are defaulted at ±30%. If the relative standard deviation is not reported in the literature, and is not supplied by the evaluator, it defaults to three times these lower limits. If separate plus and minus errors are reported, the smaller value plus two-thirds the difference is used as the relative standard deviation. For relative values, the resultant error is combined statistically with the error in the recommended yield of the reference nuclide from the previous iteration to give an error of the

updated value. For absolute values, a 2% upper limit of conceivable systematic error is combined with the reported random error. Average experimental independent yields and experimental cumulative yields are determined for each nuclide. The individual values in the average are weighted by the inverse square of the relative standard deviation. If more than the above standardized treatment is required, a special treatment number is assigned so that these various cases can be individually treated. Detailed meanings of the special treatment numbers are given in a later section.

Various compilers/evaluators (74MEE1, 73WAL1, 73CRO1, 73NET2) have agreed within experimental error on all but a few yields, principally: Pu239T, Ru-103; Th232F, Cs-137; U235T, I-129, and Te-130. These discrepancies have been resolved by later measurements. Spinrad and Wu (78SPI1) have developed a general correlation for independent fission product yield uncertainties. Measurements of independent fission product yields from thermal-neutron fission of U235 (79 values), Pu239 (48 values), U233 (41 values), Pu241 (21 values) were compared to expected yields from the semiempirical model used in our evaluation. A general correlation between experimental to theoretical ratio and the distance of the nuclide from Zp (most probable charge in a fission product mass chain), was prepared. This correlation serves as a basis for assigning uncertainties to theoretical yield estimates. The FORTRAN code correlation is ABS(LN (YT(I)/YE(I))) = 0.143 + 0.108 * (Z(I) - Zp) **2, where YT and YE are theoretical and experimental fractional independent yields of nuclide(I). The Z(I) and Zp are charge of nuclide(I) and the most probable charge for that mass chain, respectively. Further details on the independent yield model have been published (74WOL1, 76MAD1, 76MAD2).

For this edition, all published values previously not used (NU) have been reevaluated. Several previously unused values were found consistent with new measurements and are now used. All values that remain unused are given an explanation of why in the note column (by symbols described under note definitions). Many are merely superseded by later work of the same author or are upper limits. Others are outliers that are inconsistent with the model or other measurements.

When our independent yields were used, calculations of decay heat for U-235 thermal neutron fission have shown excellent agreement with experimental measurement from 20 to 100,000 seconds after reactor shutdown (77BJE1, 92ENG3).

Half-Lives

The half-lives were taken from the 14th edition of the General Electric Chart of the Nuclides (89WAL1) unless otherwise noted. Half-lives in ENDF/B-VI decay files may differ in some cases. Half-lives are not important to the yield evaluation but we have tried to provide accurate values.

Decay Chains and Branching Fractions

The three rows of numbers tabulated immediately below the half-lives are the percent of the precursor nuclides that decay to the labeled nuclide. The precursors covered by these three rows are, respectively, the ground state nuclide with an atomic number one unit smaller than the listed nuclide (Z-1G); the first isomeric nuclide with an atomic number one unit smaller than the listed nuclide (Z-1M); and the first isomer of the nuclide listed, i.e., same atomic number (Z-0M). The branching fractions permit beta-decay and isomeric transitions to be considered. If the value listed is negative, the nuclide decays by positron emission or electron capture to the Z-1 nuclide. The value listed is then the percentage of the atoms of the listed nuclide that decay to the respective Z-1 isomers. Charged particle emission was not considered.

Calculated Yields

A Gaussian charge distribution was calculated by using the most probable charge and Gaussian width parameter listed at the extreme left-hand side of the tabular section. These Zp values were obtained using preliminary ENDF/B-VI data as described in 89WAH1 and by subsequent private communications from A. C. Wahl to the authors. A small adder was applied to every Zp to adjust the proton balance to equal the atomic number. Sigma values vary by mass as listed by A. C. Wahl (89WAH1). Where isomerism occurs, the independent yield of each isomer depends on a non-linear function of the angular momentum of each isomer. Madland (76MAD2) finds such a model to predict the isomer split (metastable/ground state) within plus or minus 50%. The Madland Model is used to divide isomeric yields between metastable and ground states except where the isomeric yields have been measured. Where angular momentum for each isomer is not known, it is divided equally between the ground state and a single metastable state. The decay chains listed at the top of the tables were then used to obtain fractional cumulative yields. These yields were modified by the neutron and proton odd-even effect (76MAD1) and renormalized to unity. Pairing effects applied to the Gaussian model are given in Table 3.

Table 3.
Neutron and Proton Odd-Even Effect

Nuclide	Proton Effect,X	Neutron Effect,Y	Odd Z-Odd N	Odd Z-Even N	Even Z-Odd N	Even Z-Even N
U235t	0.273 +- 0.034	0.071 +- 0.034	-0.344	-0.202	+0.202	+0.344
U235f	0.260 +- 0.179	0.070 +- 0.039	-0.330	-0.190	+0.190	+0.330
U235h	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
U238f	0.080 +- 0.479	0.020 +- 0.100	-0.100	-0.060	+0.060	+0.100
U238h	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
Pu239t	0.144 +- 0.206	0.046 +- 0.044	-0.190	-0.098	+0.098	+0.190
Pu239f	0.160 +- 0.143	0.040 +- 0.031	-0.200	-0.120	+0.120	+0.200
Pu241t	0.100 +- 0.256	0.000 +- 0.000	-0.100	-0.100	+0.100	+0.100
U233t	0.269 +- 0.264	0.072 +- 0.056	-0.341	-0.197	+0.197	+0.341
Th232f	0.140 +- 0.469	0.040 +- 0.098	-0.180	-0.100	+0.100	+0.180
U233f	0.250 +- 0.168	0.060 +- 0.037	-0.310	-0.190	+0.190	+0.310
U233h	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
U236f	0.220 +- 0.200	0.050 +- 0.043	-0.270	-0.170	+0.170	+0.270
Pu239h	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
Pu240f	0.160 +- 0.321	0.040 +- 0.021	-0.200	-0.120	+0.120	+0.200
Pu241f	0.160 +- 0.166	0.040 +- 0.036	-0.200	-0.120	+0.120	+0.200
Pu242f	0.110 +- 0.554	0.030 +- 0.114	-0.140	-0.080	+0.080	+0.140
Th232h	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
Np237f	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
Cf252s	0.050 +- 0.040	0.000 +- 0.000	-0.050	-0.050	+0.050	+0.050
U234f	0.230 +- 0.089	0.060 +- 0.020	-0.290	-0.170	+0.170	+0.290
U237f	0.220 +- 0.116	0.050 +- 0.024	-0.270	-0.170	+0.170	+0.270
Pu240h	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
U234h	0.000 +- 0.000	0.000 +- 0.005	-0.000	-0.000	+0.000	+0.000
U236h	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
Pu238f	0.170 +- 0.019	0.040 +- 0.004	-0.210	-0.130	+0.130	+0.210
Am241f	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
Am243f	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
Np238f	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
Cm242f	0.030 +- 0.074	0.010 +- 0.016	-0.040	-0.020	+0.020	+0.040
Th227t	0.440 +- 0.044	0.110 +- 0.011	-0.550	-0.330	+0.330	+0.550
Th229t	0.570 +- 0.301	0.080 +- 0.058	-0.650	-0.490	+0.490	+0.650
Pa231f	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
Am241t	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000

Am241h	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
A242mt	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
Cm245t	0.070 +- 0.007	0.020 +- 0.002	-0.090	-0.050	+0.050	+0.090
Cf249t	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
Cf251t	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
Es254t	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
Cf250s	0.050 +- 0.005	0.000 +- 0.000	-0.050	-0.050	+0.050	+0.050
Cm244s	0.180 +- 0.018	0.050 +- 0.005	-0.230	-0.130	+0.130	+0.230
Cm248s	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
Es253s	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
Fm254s	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
Fm255t	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
Fm256s	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
Np237h	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
U232t	0.190 +- 0.019	0.050 +- 0.005	-0.240	-0.140	+0.140	+0.240
U238s	0.080 +- 0.008	0.000 +- 0.000	-0.080	-0.080	+0.080	+0.080
Cm243t	0.060 +- 0.006	0.015 +- 0.002	-0.075	-0.045	+0.045	+0.075
Cm246s	0.120 +- 0.012	0.030 +- 0.003	-0.150	-0.090	+0.090	+0.150
Cm243f	0.050 +- 0.005	0.010 +- 0.001	-0.060	-0.040	+0.040	+0.060
Cm244f	0.050 +- 0.005	0.010 +- 0.001	-0.060	-0.040	+0.040	+0.060
Cm246f	0.020 +- 0.002	0.000 +- 0.000	-0.020	-0.020	+0.020	+0.020
Cm248f	0.020 +- 0.002	0.000 +- 0.000	-0.020	-0.020	+0.020	+0.020
Pu242h	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
Np237t	0.000 +- 0.000	0.000 +- 0.000	-0.000	-0.000	+0.000	+0.000
Pu240t	0.170 +- 0.017	0.040 +- 0.004	-0.210	-0.130	+0.130	+0.210
Pu242t	0.140 +- 0.014	0.035 +- 0.004	-0.175	-0.105	+0.105	+0.175

The calculated independent yield division between metastable and ground states of isomers for known spin isomers were as follows:

Table 4.
Independent Yield Division between Metastable and Ground States
of Isomers Having Known Spin States

Isotope	Meta-State Spin	Ground State Spin	JM-JG	Integer Odd/Even	JM>JG=+ JM<JG=-	Odd or Even A	Formula Number*	Frac. of Yield Thermal	Metastable (M/M+G) Fast	High E.
68Cu	6	1	5	O	+	E	7	0.70	0.73	0.82
69Zn	9/2	1/2	4	E	+	O	1	0.81	0.83	0.89
70Cu	5	1	4	E	+	E	5	0.75	0.78	0.85
71Zn	9/2	1/2	4	E	+	O	1	0.81	0.83	0.89
73Se	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
73Ge	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
74As	5	2	3	O	+	E	7	0.70	0.73	0.82
75Ge	7/2	1/2	3	O	+	O	3	0.87	0.88	0.92
77Br	9/2	3/2	3	O	+	O	3	0.77	0.79	0.86
77Ge	1/2	7/2	3	O	-	O	4	0.13	0.12	0.07
77Se	7/2	1/2	3	O	+	O	3	0.87	0.88	0.92
79Se	1/2	7/2	3	O	-	O	4	0.13	0.12	0.07
79Kr	7/2	1/2	3	O	+	O	3	0.87	0.88	0.92
79Br	9/2	3/2	3	O	+	O	3	0.77	0.79	0.86
80Br	5	1	4	E	+	E	5	0.75	0.78	0.85
81Rb	9/2	3/2	3	O	+	O	3	0.77	0.79	0.86
81Se	7/2	1/2	3	O	+	O	3	0.87	0.88	0.92
81Kr	1/2	7/2	3	O	-	O	4	0.13	0.12	0.07
82Rb	5	1	4	E	+	E	5	0.30	0.27	0.18
82Br	2	5	3	O	-	E	8	0.30	0.27	0.18
83Se	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
83Kr	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11

84Br	6	2	4	E	+	E	5	0.64	0.68	0.78
84Y	1	4	3	O	-	E	8	0.19	0.17	0.11
84Rb	6	2	4	E	+	E	5	0.64	0.68	0.78
85Kr	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
85Sr	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
85Y	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
85Zr	1/2	7/2	3	O	-	O	4	0.13	0.12	0.07
86Rb	6	2	4	E	+	E	5	0.64	0.68	0.78
86Y	8	4	4	E	+	E	5	0.42	0.47	0.61
87Sr	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
87Y	9/2	1/2	4	E	+	O	1	0.81	0.83	0.89
89Y	9/2	1/2	4	E	+	O	1	0.81	0.83	0.89
89Zr	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
89Nb	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
90Rb	4	1	3	O	+	E	7	0.81	0.83	0.89
90Y	7	2	5	O	+	E	7	0.59	0.63	0.74
90Zr	5	0	5	O	+	E	7	0.81	0.83	0.89
90Nb	4	8	4	E	-	E	6	0.58	0.53	0.39
91Y	9/2	1/2	4	E	+	O	1	0.81	0.83	0.89
91Nb	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
91Mo	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
92Nb	2	7	5	O	-	E	8	0.41	0.37	0.26
93Nb	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
93Mo	21/2	5/2	8	E	+	O	1	0.38	0.43	0.58
93Tc	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
94Nb	3	6	3	O	-	E	8	0.41	0.37	0.26
94Tc	2	7	5	O	-	E	8	0.41	0.37	0.26
95Nb	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
95Tc	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
96Y	3	0	3	O	+	E	7	0.90	0.91	0.94
96Tc	4	7	3	O	-	E	8	0.53	0.48	0.34
97Nb	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
97Tc	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
98Nb	1	5	4	E	-	E	6	0.25	0.22	0.15
99Tc	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
99Rh	9/2	1/2	4	E	+	O	1	0.81	0.83	0.89
99Nb	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
101Rh	9/2	1/2	4	E	+	O	1	0.81	0.83	0.89
103Rh	7/2	1/2	3	O	+	O	3	0.87	0.88	0.92
103Ag	1/2	7/2	3	O	-	O	4	0.13	0.12	0.07
104Rh	5	1	4	E	+	E	5	0.75	0.78	0.85
104Ag	2	5	3	O	-	E	8	0.30	0.27	0.18
105Rh	1/2	7/2	3	O	-	O	4	0.13	0.12	0.07
105Ag	7/2	1/2	3	O	+	O	3	0.87	0.88	0.92
106Ag	6	1	5	O	+	E	7	0.70	0.73	0.82
107Ag	7/2	1/2	3	O	+	O	3	0.87	0.88	0.92
107Pd	11/2	5/2	3	O	+	O	3	0.65	0.69	0.79
108Ag	6	1	5	O	+	E	7	0.70	0.73	0.82
109Pd	11/2	5/2	3	O	+	O	3	0.65	0.69	0.79
109Ag	7/2	1/2	3	O	+	O	3	0.87	0.88	0.92
109In	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
110Ag	6	1	5	O	+	E	7	0.70	0.73	0.82
111Pd	11/2	5/2	3	O	+	O	3	0.65	0.69	0.79
111Ag	7/2	1/2	3	O	+	O	3	0.87	0.88	0.92
111Cd	11/2	1/2	5	O	+	O	3	0.77	0.79	0.86
111In	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
112In	4	1	3	O	+	E	7	0.81	0.83	0.89
113Ag	7/2	1/2	3	O	+	O	3	0.87	0.88	0.92
113In	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
113Cd	11/2	1/2	5	O	+	O	3	0.77	0.79	0.86
113Sn	7/2	1/2	3	O	+	O	3	0.87	0.88	0.92
114In	5	1	4	E	+	E	5	0.75	0.78	0.85
115Cd	11/2	1/2	5	O	+	O	3	0.77	0.79	0.86
115In	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
117Cd	11/2	1/2	5	O	+	O	3	0.77	0.79	0.86
117In	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11

117Sn	11/2	1/2	5	O	+	O	3	0.77	0.79	0.86
118In	1	5	4	E	-	E	6	0.25	0.22	0.15
118Sb	8	1	7	O	+	E	7	0.59	0.63	0.74
119In	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
119Sn	11/2	1/2	5	O	+	O	3	0.77	0.79	0.86
119Te	11/2	1/2	5	O	+	O	3	0.77	0.79	0.86
120Sb	8	1	7	O	+	E	7	0.59	0.63	0.74
121In	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
121Sn	11/2	3/2	4	E	-	O	1	0.71	0.74	0.82
121Te	11/2	1/2	5	O	+	O	3	0.77	0.79	0.86
122Sb	8	2	6	E	+	E	5	0.53	0.57	0.70
123In	1/2	9/2	4	E	-	O	2	0.19	0.17	0.11
123Te	11/2	1/2	5	O	+	O	3	0.77	0.79	0.86
123Sn	3/2	11/2	4	E	-	O	2	0.29	0.26	0.18
125Sn	3/2	11/2	4	E	-	O	2	0.29	0.26	0.18
125Te	11/2	1/2	5	O	+	O	3	0.77	0.79	0.86
125Xe	9/2	1/2	4	E	+	O	1	0.81	0.83	0.89
126Sb	5	8	3	O	-	E	8	0.63	0.58	0.43
127Sn	3/2	11/2	4	E	-	O	2	0.29	0.26	0.18
127Te	11/2	3/2	4	E	+	O	1	0.71	0.74	0.82
127Xe	9/2	1/2	4	E	+	O	1	0.81	0.83	0.89
128Sb	5	8	3	O	-	E	8	0.63	0.58	0.43
129Sn	11/2	3/2	4	E	+	O	1	0.71	0.74	0.82
129Te	11/2	3/2	4	E	+	O	1	0.71	0.74	0.82
129Xe	11/2	1/2	5	O	+	O	3	0.77	0.79	0.86
129Ba	11/2	1/2	5	O	+	O	3	0.77	0.79	0.86
130Sn	7	0	7	O	+	E	7	0.70	0.73	0.82
130Sb	5	8	3	O	-	E	8	0.63	0.58	0.43
130I	2	5	3	O	-	E	8	0.30	0.27	0.18
131Te	11/2	3/2	4	E	+	O	1	0.71	0.74	0.82
131Xe	11/2	3/2	4	E	+	O	1	0.71	0.74	0.82
132Sb	8	4	4	E	+	E	5	0.42	0.47	0.61
133Te	11/2	3/2	4	E	+	O	1	0.71	0.74	0.82
133I	19/2	7/2	6	E	+	O	1	0.38	0.43	0.58
133Xe	11/2	3/2	4	E	+	O	1	0.71	0.74	0.82
133Ba	11/2	1/2	5	O	+	O	3	0.77	0.79	0.86
134I	8	4	4	E	+	E	5	0.42	0.47	0.61
134Xe	7	0	7	O	+	E	7	0.70	0.73	0.82
134Cs	8	4	4	E	+	E	5	0.42	0.47	0.61
135Ba	11/2	3/2	4	E	+	O	1	0.71	0.74	0.82
135Xe	11/2	3/2	4	E	+	O	1	0.71	0.74	0.82
135Cs	19/2	7/2	6	O	+	O	1	0.38	0.43	0.58
136Ba	7	0	7	O	+	E	7	0.70	0.73	0.82
137Ba	11/2	3/2	4	E	+	O	1	0.71	0.74	0.82
137Ce	11/2	3/2	4	E	+	O	1	0.71	0.74	0.82
139Ce	11/2	3/2	4	E	+	O	1	0.71	0.74	0.82
141Nd	11/2	3/2	4	E	+	O	1	0.71	0.74	0.82
141Sm	11/2	1/2	5	O	+	O	3	0.77	0.79	0.86
142Pr	5	2	3	O	+	E	7	0.70	0.73	0.82
143Sm	11/2	3/2	4	E	+	O	1	0.71	0.74	0.82
144Pr	3	0	3	O	+	E	7	0.90	0.91	0.94
148Pm	6	1	5	O	+	E	7	0.70	0.73	0.82
154Eu	8	3	5	O	+	E	7	0.47	0.52	0.66
156Tb	0	3	3	O	-	E	8	0.10	0.09	0.06
158Ho	2	5	3	O	-	E	8	0.30	0.27	0.18
158Tb	0	3	3	O	-	E	8	0.10	0.09	0.06
159Ho	1/2	7/2	3	O	-	O	4	0.13	0.12	0.07
160Ho	2	5	3	O	-	E	8	0.30	0.27	0.18
161Ho	1/2	7/2	3	O	-	O	4	0.13	0.12	0.07
162Ho	6	1	5	O	+	E	7	0.70	0.73	0.82
163Ho	1/2	7/2	3	O	-	O	4	0.13	0.12	0.07
164Ho	6	1	5	O	+	E	7	0.70	0.73	0.82
165Dy	1/2	7/2	3	O	-	O	4	0.13	0.12	0.07
166Ho	7	0	7	O	+	E	7	0.70	0.73	0.82
167Er	1/2	7/2	3	O	-	O	4	0.13	0.12	0.07
169Yb	1/2	7/2	3	O	-	O	4	0.13	0.12	0.07

169Lu	1/2	7/2	3	0	-	0	4	0.13	0.12	0.07
170Lu	4	0	4	E	+	E	5	0.85	0.86	0.91

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* Reference (76MAD2, 77MAD2).

Delayed Neutron Emission

Delayed neutron emission is included for the first time in this compilation. Delayed neutron precursors, which from the early days have been divided into six half-life groups, are by now well-defined. A total of 271 delayed neutron precursors identified to date are listed together with the approximate half-life group, percent probability of neutron emission of daughter nuclides, and precursor half-lives ranging from 0.074 to 58.2 seconds as proposed for ENDF/B-VI as follows:

Table 5
271 Delayed Neutron Precursors, Their Half-lives and Delayed Neutron Emission Probabilities (Pn), and Uncertainties (dPn) As Found in Table I of Reference 86ENG1 (updated on January 7, 1987).

Nuclide	T 1/2	Pn	dPn	GP	Pn Source	QB	S(n)	Mass Tables M1	M2	M3
Co-72g	0.1235	11.5322	0.0000	6	sys.	15.030	7.391	MN	MN	MN
Cu-72g	6.4891	0.0001	0.0000	3	sys.	8.964	8.880	MN	W81	W81
Co-73g	0.1290	25.1220	0.0000	6	sys.	12.800	3.771	MN	MN	MN
Ni-73g	0.4906	0.0047	0.0000	5	sys.	8.170	7.731	MN	MN	MN
Cu-73g	5.1136	0.5588	0.0000	3	sys.	6.174	4.942	MN	W81	W81
Co-74g	0.0920	17.4326	0.0000	6	sys.	16.440	6.781	MN	MN	MN
Ni-74g	0.9002	0.3560	0.0000	4	sys.	5.980	4.591	MN	MN	MN
Cu-74g	0.6482	0.2949	0.0000	5	sys.	10.221	8.638	MN	W81	W81
Co-75g	0.0817	31.3124	0.0000	6	sys.	14.810	3.451	MN	MN	MN
Ni-75g	0.2312	1.0022	0.0000	6	sys.	9.560	7.031	MN	MN	MN
Cu-75g	0.9274	3.4700	0.6300	4	meas.	8.055	4.866	MN	W81	W81
Ni-76g	0.3046	3.5113	0.0000	5	sys.	7.700	4.221	MN	MN	MN
Cu-76g	0.2602	2.8418	0.0000	6	sys.	12.004	8.171	MN	W81	W81
Ni-77g	0.1033	4.7115	0.0000	6	sys.	11.050	6.341	MN	MN	MN
Cu-77g	0.3052	12.3119	0.0000	5	sys.	10.185	4.522	MN	W81	W81
Ni-78g	0.1318	9.2984	0.0000	6	sys.	9.070	3.631	MN	MN	MN
Cu-78g	0.1179	9.9093	0.0000	6	sys.	13.673	7.119	MN	W81	W81
Zn-78g	1.9855	0.0041	0.0000	4	sys.	6.010	5.629	W81	W81	W81
Cu-79g	0.1351	24.2057	0.0000	6	sys.	10.770	3.399	MN	MN	W81
Zn-79g	0.3130	1.1459	0.0000	5	sys.	9.465	6.854	MN	W81	W81
Ga-79g	3.0000	0.0890	0.0200	4	meas.	6.770	5.740	W83	W83	W83
Cu-80g	0.0899	15.0430	0.0000	6	sys.	16.680	7.181	MN	MN	MN
Zn-80g	0.4873	1.0983	0.0000	6	sys.	7.087	4.803	MN	W81	W81
Ga-80g	1.6600	0.8300	0.0700	4	meas.	10.000	7.920	W83	W83	W83
Cu-81g	0.0742	52.9504	0.0000	6	sys.	14.900	1.521	MN	MN	MN
Zn-81g	0.1227	5.7372	0.0000	6	sys.	12.125	6.559	MN	W81	W81
Ga-81g	1.2300	11.9000	0.9400	4	meas.	8.320	4.990	W83	W83	W83
Zn-82g	0.1268	21.2264	0.0000	6	sys.	10.420	2.477	MN	MN	W81
Ga-82g	0.6000	21.1000	1.8300	5	meas.	12.993	7.149	MN	W81	W81
Zn-83g	0.0836	22.8749	0.0000	6	sys.	13.710	4.141	MN	MN	MN
Ga-83g	0.3100	56.2000	9.9000	5	meas.	11.970	3.119	MN	MN	W81
Ge-83g	1.9000	0.0235	0.0000	4	sys.	8.640	7.880	W83	W83	W83
Ga-84g	0.0984	28.0232	0.0000	6	sys.	15.130	4.971	MN	MN	MN
Ge-84g	1.2000	5.2055	0.0000	4	sys.	8.855	4.369	MN	W81	W81

As-84g	5.3000	0.0860	0.0430	3	meas.	9.872	8.681	W83	W83	W83
Ga-85g	0.0870	44.9654	0.0000	6	sys.	13.390	2.031	MN	MN	MN
Ge-85g	0.2500	16.4540	0.0000	6	BETA	11.050	4.226	MN	MN	W81
As-85g	2.0300	50.0000	50.0000	4	meas.	8.910	4.540	W83	W83	W83
Ge-86g	0.2470	15.2148	0.0000	6	sys.	9.450	2.911	MN	MN	MN
As-86g	0.9000	8.5030	1.6104	4	meas.	13.372	6.196	MN	W81	W81
Ge-87g	0.1339	15.1329	0.0000	6	sys.	12.610	4.861	MN	MN	MN
As-87g	0.3000	44.3600	20.2170	6	meas.	10.730	2.220	MN	MN	W81
Se-87g	5.6000	0.1880	0.0210	3	meas.	7.170	6.310	W83	W83	W83
Br-87g	55.7000	2.5400	0.1600	1	meas.	6.826	5.515	W83	W83	W83
Ge-88g	0.1290	21.6551	0.0000	6	sys.	10.850	2.531	MN	MN	MN
As-88g	0.1348	19.9068	0.0000	6	sys.	13.730	5.531	MN	MN	MN
Se-88g	1.5000	0.9660	0.0210	4	meas.	8.567	4.912	MN	W81	W81
Br-88g	16.0000	6.2600	0.3800	2	meas.	8.967	7.053	W83	W83	W83
As-89g	0.1212	33.2722	0.0000	6	sys.	11.910	2.761	MN	MN	MN
Se-89g	0.4270	7.7000	2.4000	5	meas.	11.378	5.573	MN	W81	W81
Br-89g	4.3800	14.0000	0.8400	3	meas.	8.300	5.110	W83	W83	W83
As-90g	0.0911	24.3493	0.0000	6	sys.	15.080	5.291	MN	MN	MN
Se-90g	0.5550	9.1321	0.0000	5	sys.	10.204	4.117	MN	W81	W81
Br-90g	1.8000	24.6000	1.8500	4	meas.	10.700	6.310	W83	W83	W83
Se-91g	0.2700	24.4382	0.0000	6	sys.	11.250	3.398	MN	MN	W81
Br-91g	0.6000	18.1000	1.4800	5	meas.	11.795	4.493	MN	W81	W81
Rb-91g	58.2000	0.0001	0.0000	1	sys.	5.859	5.796	W81	W81	W81
Se-92g	0.1682	13.2333	0.0000	6	sys.	9.480	3.181	MN	MN	MN
Br-92g	0.3600	42.7344	9.7464	5	meas.	13.963	5.350	MN	W81	W81
Kr-92g	0.3600	0.0332	0.0031	5	meas.	6.156	5.113	W83	W83	W83
Rb-92g	4.5300	0.0099	0.0005	3	meas.	8.120	7.366	W83	W83	W83
Se-93g	0.0968	12.0321	0.0000	6	sys.	12.440	5.271	MN	MN	MN
Br-93g	0.1760	25.0885	0.0000	6	sys.	12.211	3.518	MN	W81	W81
Kr-93g	1.2900	2.0100	0.1600	4	meas.	8.529	5.914	W83	W83	W83
Rb-93g	5.8600	1.3500	0.0700	3	meas.	7.442	5.237	W83	W83	W83
Br-94g	0.1108	29.8035	0.0000	6	sys.	13.580	4.411	MN	MN	W81
Kr-94g	0.2100	6.1300	2.4100	6	meas.	8.199	4.080	MN	W81	W81
Rb-94g	2.7600	10.0000	0.5000	4	meas.	10.307	6.786	W83	W83	W83
Br-95g	0.1069	27.0797	0.0000	6	sys.	11.990	3.271	MN	MN	MN
Kr-95g	0.7800	7.5051	0.0000	5	BETA	10.078	5.151	MN	W81	W81
Rb-95g	0.3800	8.6200	0.4200	5	meas.	9.282	4.330	W83	W83	W83
Br-96g	0.0888	21.9195	0.0000	6	sys.	14.960	5.491	MN	MN	MN
Kr-96g	0.2931	7.7473	0.0000	6	sys.	8.066	8.066	MN	W81	W81
Rb-96g	0.2040	14.0000	0.7100	6	meas.	11.750	5.860	W83	W83	W83
Sr-96g	1.1000	0.0011	0.0000	4	sys.	5.413	5.176	W81	W81	W81
Kr-97g	0.1000	8.3925	0.0000	6	sys.	10.331	5.086	MN	W81	W81
Rb-97g	0.1700	26.6000	1.4800	6	meas.	10.520	3.980	W83	W83	W83
Sr-97g	0.4000	0.0054	0.0021	5	meas.	7.470	6.040	W83	W83	W83
Y -97g	3.7000	0.0540	0.0028	3	meas.	6.680	5.579	W83	W83	W83
Y -97m	1.1100	0.1090	0.0300	4	meas.	0.000	0.000	Y97		
Kr-98g	0.1602	8.2989	0.0000	6	sys.	9.480	3.980	MN	W81	W81
Rb-98g	0.1100	13.3000	1.2000	6	meas.	12.430	5.760	W83	W83	W83
Sr-98g	0.6500	0.3260	0.0340	5	meas.	5.880	4.180	W83	W83	W83
Y -98g	2.0000	0.2280	0.0120	4	meas.	8.918	6.409	W83	W83	W83
Y -98m	0.6500	0.2280	0.9600	5	meas.	0.000	0.000	Y98		
Rb-99g	0.1450	17.1000	4.2000	6	meas.	11.320	3.760	W83	W83	W83
Sr-99g	0.6000	0.1290	0.1110	5	meas.	7.950	5.820	W83	W83	W83
Y -99g	1.4000	2.0200	1.4500	4	meas.	7.570	4.552	W81	W81	W81
Rb-100g	0.0984	4.9500	1.0200	6	meas.	13.733	6.053	MN	W81	W81
Sr-100g	0.6180	0.7430	0.0860	5	meas.	6.700	4.660	W83	W83	W83
Y -100g	0.8000	0.8420	0.0990	5	meas.	9.900	6.950	W83	W83	W83
Rb-101g	0.0939	28.3215	0.0000	6	sys.	12.310	3.178	MN	MN	W81
Sr-101g	0.1941	2.4700	0.2800	6	meas.	9.026	5.605	MN	W81	W81
Y -101g	0.6071	2.0500	0.2300	5	meas.	8.720	4.525	W81	W81	W81
Sr-102g	0.2871	4.7600	2.2900	6	meas.	8.830	5.005	MN	MN	W81
Y -102g	0.9000	5.9400	1.7100	4	meas.	10.442	6.727	MN	W81	W81
Sr-103g	0.1196	8.8758	0.0000	6	sys.	11.590	5.491	MN	MN	MN
Y -103g	0.2604	12.3656	0.0000	6	sys.	8.879	3.929	MN	W81	W81
Zr-103g	1.3377	0.0242	0.0000	4	sys.	7.500	6.839	W81	W81	W81
Nb-103g	1.5000	0.0137	0.0000	4	sys.	5.500	5.120	W83	W83	W83

Sr-104g	0.1629	13.4698	0.0000	6	sys.	10.150	3.371	MN	MN	MN
Y -104g	0.1283	8.7769	0.0000	6	sys.	11.890	6.382	MN	MN	W81
Zr-104g	2.5730	0.1824	0.0000	4	sys.	5.846	4.728	MN	W81	W81
Nb-104g	4.8000	0.0406	0.0000	3	sys.	8.700	7.940	W83	W83	W83
Y -105g	0.1469	19.7529	0.0000	6	sys.	10.430	3.591	MN	MN	MN
Zr-105g	0.4930	1.0879	0.0000	5	BETA	8.285	6.030	MN	W81	W81
Nb-105g	2.8000	2.2322	0.0000	4	sys.	7.000	4.730	W83	W83	W83
Y -106g	0.0894	15.6613	0.0000	6	sys.	13.100	5.721	MN	MN	MN
Zr-106g	0.9071	1.5242	0.0000	4	sys.	7.230	4.667	MN	MN	W81
Nb-106g	1.0000	0.9402	0.0000	4	sys.	10.099	7.766	MN	W81	W81
Y -107g	0.0923	25.9442	0.0000	6	sys.	11.700	3.261	MN	MN	MN
Zr-107g	0.2430	3.7127	0.0000	6	sys.	9.900	5.931	MN	MN	MN
Nb-107g	0.7660	8.7806	0.0000	5	sys.	8.324	4.156	MN	W81	W81
Zr-108g	0.3781	7.0302	0.0000	5	sys.	8.590	3.841	MN	MN	MN
Nb-108g	0.2423	6.4669	0.0000	6	sys.	10.810	6.327	MN	MN	W81
Mo-108g	1.5000	0.0001	0.0000	4	sys.	5.251	5.228	MN	W81	W81
Zr-109g	0.1300	7.3940	0.0000	6	sys.	10.940	5.501	MN	MN	MN
Nb-109g	0.3154	12.6533	0.0000	5.	sys.	9.340	4.031	MN	MN	MN
Mo-109g	1.4090	0.1359	0.0000	4	sys.	8.189	6.970	MN	W81	W81
Tc-109g	1.4000	0.0879	0.0000	4	sys.	5.900	5.180	W83	W83	W83
Nb-110g	0.1298	10.0525	0.0000	6	sys.	11.900	6.121	MN	MN	MN
Mo-110g	2.7720	1.3758	0.0000	4	sys.	6.010	3.942	MN	MN	W81
Tc-110g	0.8300	0.6210	0.0000	4	sys.	9.646	7.689	MN	W81	W81
Nb-111g	0.1718	18.3948	0.0000	6	sys.	10.710	3.781	MN	MN	MN
Mo-111g	0.4664	1.0303	0.0000	5	sys.	8.280	6.051	MN	MN	MN
Tc-111g	1.9824	5.6954	0.0000	4	sys.	8.147	4.552	MN	W81	W81
Mo-112g	0.9754	2.0788	0.0000	4	sys.	7.060	4.321	MN	MN	MN
Tc-112g	0.4314	5.2031	0.0000	5	sys.	10.010	6.184	MN	MN	W81
Mo-113g	0.2287	3.7966	0.0000	6	sys.	9.940	5.911	MN	MN	MN
Tc-113g	0.6524	7.1864	0.0000	5	sys.	8.590	4.491	MN	MN	MN
Ru-113g	3.0000	0.0005	0.0000	4	sys.	7.391	7.185	MN	W81	W81
Tc-114g	0.2023	6.5358	0.0000	6	sys.	11.320	6.511	MN	MN	MN
Ru-114g	8.1365	0.1039	0.0000	3	sys.	5.420	4.540	MN	MN	W81
Rh-114g	1.7000	0.0020	0.0000	4	sys.	8.263	7.963	MN	W81	W81
Tc-115g	0.2704	14.3371	0.0000	6	sys.	9.930	4.001	MN	MN	MN
Ru-115g	0.8784	0.2276	0.0000	4	sys.	8.170	6.751	MN	MN	MN
Rh-115g	8.3154	0.7746	0.0000	3	sys.	6.405	4.893	MN	W81	W81
Tc-116g	0.1155	12.2226	0.0000	6	sys.	12.670	6.011	MN	MN	MN
Ru-116g	1.7004	1.0811	0.0000	4	sys.	6.730	4.571	MN	MN	MN
Rh-116g	0.9492	0.5379	0.0000	4	sys.	9.417	7.583	MN	W81	W81
Tc-117g	0.1518	21.2499	0.0000	6	sys.	11.010	3.531	MN	MN	MN
Ru-117g	0.3428	2.0509	0.0000	5	sys.	9.480	6.281	MN	MN	MN
Rh-117g	1.2174	4.8201	0.0000	4	sys.	7.530	4.395	MN	MN	W81
Ru-118g	0.6623	4.1092	0.0000	5	sys.	7.800	4.111	MN	MN	MN
Rh-118g	0.3156	2.9167	0.0000	5	sys.	10.380	6.961	MN	MN	MN
Ru-119g	0.1950	4.3580	0.0000	6	sys.	10.460	6.001	MN	MN	MN
Rh-119g	0.4654	8.2971	0.0000	5	sys.	8.740	4.361	MN	MN	MN
Pd-119g	1.7587	0.0001	0.0000	4	sys.	7.160	7.060	MN	W81	W81
Ag-119g	2.1000	0.0001	0.0000	4	sys.	5.370	5.300	W81	W81	W81
Ru-120g	0.3503	7.5652	0.0000	5	sys.	8.940	3.891	MN	MN	MN
Rh-120g	0.1725	5.9282	0.0000	6	sys.	11.590	6.741	MN	MN	MN
Pd-120g	3.9065	0.0068	0.0000	3	sys.	5.687	5.269	MN	W81	W81
Ag-120g	1.1700	0.0015	0.0000	4	m<.003	8.210	8.109	W81	W81	W81
Rh-121g	0.2496	13.5677	0.0000	6	sys.	10.160	4.151	MN	MN	MN
Pd-121g	0.6437	0.2722	0.0000	5	sys.	8.331	6.795	MN	W81	W81
Ag-121g	0.8000	0.0753	0.0048	5	meas.	6.400	5.050	W83	W83	W83
Rh-122g	0.1071	8.3012	0.0000	6	sys.	12.900	6.781	MN	MN	MN
Pd-122g	1.4112	0.4377	0.0000	4	sys.	6.280	4.731	MN	MN	W81
Ag-122g	1.5000	0.1840	0.0110	4	meas.	9.427	7.768	MN	W81	W81
Rh-123g	0.1343	17.1070	0.0000	6	sys.	10.990	3.961	MN	MN	MN
Pd-123g	0.3004	0.6897	0.0000	5	sys.	9.410	7.091	MN	MN	MN
Ag-123g	0.3900	0.5450	0.0340	5	meas.	7.730	5.394	MN	MN	W81
Pd-124g	0.5140	2.6986	0.0000	5	sys.	7.500	4.361	MN	MN	MN
Ag-124g	0.2495	2.2881	0.0000	6	sys.	10.780	7.411	MN	MN	MN
Pd-125g	0.1660	2.2664	0.0000	6	sys.	10.310	6.671	MN	MN	MN
Ag-125g	0.3335	6.3167	0.0000	5	sys.	8.830	4.721	MN	MN	MN

Pd-126g	0.2520	5.0310	0.0000	6	sys.	8.690	4.331	MN	MN	MN
Ag-126g	0.1398	4.6380	0.0000	6	sys.	11.500	7.001	MN	MN	MN
Ag-127g	0.1753	9.8629	0.0000	6	sys.	9.840	4.541	MN	MN	MN
Cd-127g	0.5719	0.0101	0.0000	5	sys.	7.720	7.178	MN	W81	W81
In-127g	3.7600	0.6600	0.0630	3	meas.	6.494	5.555	W83	W83	W83
In-127m	1.3000	0.0001	0.0000	4	In-127	0.000	0.000	In-127		
Ag-128g	0.0943	6.8861	0.0000	6	sys.	12.050	6.691	MN	MN	MN
Cd-128g	1.0530	0.1215	0.0000	4	sys.	6.049	5.021	MN	W81	W81
In-128g	0.8400	0.0610	0.0370	4	meas.	9.310	7.880	W83	W83	W83
Cd-129g	0.2987	0.1519	0.0000	6	sys.	8.468	7.140	MN	W81	W81
In-129g	0.9900	2.9200	0.3700	4	meas.	7.600	5.390	W83	W83	W83
In-129m	2.5000	0.7600	2.5000	4	meas.	0.000	0.000	In-129		
Cd-130g	0.4767	0.9676	0.0000	5	sys.	7.295	5.029	MN	W81	W81
In-130g	0.5800	1.0400	0.9500	5	meas.	10.200	7.630	W83	W83	W83
In-130m	0.5100	1.4800	0.1050	5	meas.	0.000	0.000	In-130		
Cd-131g	0.1062	4.8728	0.0000	6	sys.	12.068	6.635	MN	W81	W81
In-131g	0.2800	1.8400	1.0700	6	meas.	8.820	5.250	W83	W83	W83
In-131m	0.1110	1.7300	0.2400	6	meas.	0.000	0.000	In-131		
Cd-132g	0.1357	20.5597	0.0000	6	sys.	11.820	2.893	MN	MN	W81
In-132g	0.1200	5.3600	0.8300	6	meas.	13.235	7.308	MN	W81	W81
In-133g	0.1116	31.6560	0.0000	6	sys.	12.600	2.777	MN	MN	W81
Sn-133g	1.4700	0.2549	0.0000	4	sys.	9.050	7.380	W83	W83	W83
In-134g	0.0806	33.7565	0.0000	6	sys.	14.740	3.841	MN	MN	MN
Sn-134g	1.0400	18.3000	13.9000	4	meas.	6.925	3.091	MN	W81	W81
Sb-134g	10.2000	0.1040	0.0350	2	meas.	8.410	7.500	W83	W83	W83
Sn-135g	0.4180	9.2929	0.0000	5	sys.	9.580	4.507	MN	MN	W81
Sb-135g	1.8200	17.8700	2.1600	4	meas.	7.540	3.510	W83	W83	W83
Sn-136g	0.7172	16.3918	0.0000	5	sys.	8.300	2.431	MN	MN	MN
Sb-136g	0.8200	28.9788	3.1138	4	meas.	9.611	4.642	MN	W81	W81
Te-136g	19.0000	1.1400	0.4300	2	meas.	5.100	3.760	W83	W83	W83
Sb-137g	0.4780	18.0322	0.0000	5	sys.	9.020	3.270	MN	MN	W81
Te-137g	3.5000	2.6900	0.6300	3	meas.	7.020	5.070	W83	W83	W83
I -137g	24.5000	6.9700	0.4200	2	meas.	5.885	4.025	W83	W83	W83
Sb-138g	0.1734	22.0114	0.0000	6	sys.	11.610	4.371	MN	MN	MN
Te-138g	1.6000	6.7800	2.2600	4	meas.	6.432	3.913	MN	W81	W81
I -138g	6.5000	5.3800	0.4300	3	meas.	7.820	5.820	W83	W83	W83
Sb-139g	0.2178	41.6934	0.0000	6	sys.	9.640	1.721	MN	MN	MN
Te-139g	0.5800	7.9624	0.0000	5	sys.	9.321	4.610	MN	W81	W81
Te-140g	0.8038	15.4961	0.0000	4	sys.	7.360	2.240	MN	MN	W81
I -140g	0.8600	9.2700	0.7900	4	meas.	9.967	5.392	MN	W81	W81
Te-141g	0.2726	10.4723	0.0000	6	sys.	10.050	4.491	MN	MN	MN
I -141g	0.4600	21.3000	3.2000	5	meas.	8.892	3.417	MN	W81	W81
Xe-141g	1.7200	0.0353	0.0061	4	meas.	6.155	5.510	W83	W83	W83
Cs-141g	24.9000	0.0474	0.0550	2	meas.	5.256	4.548	W83	W83	W83
Te-142g	0.5901	15.0790	0.0000	5	sys.	8.330	2.581	MN	MN	MN
I -142g	0.2000	13.8601	0.0000	6	sys.	11.553	5.242	MN	W81	W81
Xe-142g	1.2200	0.4040	0.0380	4	meas.	5.040	4.146	W83	W83	W83
Cs-142g	1.6900	0.0949	0.0940	4	meas.	7.320	6.210	W83	W83	W83
I -143g	0.4010	38.4989	0.0000	5	sys.	8.900	1.819	MN	MN	W81
Xe-143g	0.9600	3.0557	0.0000	4	sys.	8.510	5.289	MN	W81	W81
Cs-143g	1.7800	1.6000	0.0800	4	meas.	6.280	4.240	W83	W83	W83
I -144g	0.1460	15.2394	0.0000	6	sys.	11.280	4.971	MN	MN	MN
Xe-144g	1.1000	4.6118	0.0000	4	sys.	7.236	3.697	MN	W81	W81
Cs-144g	1.0010	3.1300	0.1700	4	meas.	8.460	5.870	W83	W83	W83
I -145g	0.1934	24.0859	0.0000	6	sys.	9.930	2.930	MN	MN	MN
Xe-145g	0.9000	6.1090	0.0000	4	sys.	9.191	4.886	MN	W81	W81
Cs-145g	0.5900	13.5900	0.9000	5	meas.	7.800	4.240	W83	W83	W83
Xe-146g	0.5627	6.5048	0.0000	5	sys.	8.122	3.732	MN	W81	W81
Cs-146g	0.3400	13.3000	1.7200	5	meas.	9.410	5.130	W83	W83	W83
Ba-146g	2.0000	0.0100	0.0000	4	m<0.02	4.270	3.770	**		
La-146g	11.0000	0.0035	0.0000	2	m<.007	6.650	6.591	MN	MN	MN
Xe-147g	0.1991	8.7056	0.0000	6	sys.	10.151	4.810	MN	W81	W81
Cs-147g	0.5460	26.1000	2.5000	5	meas.	8.880	4.240	W83	W83	W83
Ba-147g	1.7550	0.0210	0.0020	4	meas.	5.710	5.670	W83	W83	W83*
La-147g	5.0000	0.0330	0.0060	3	meas.	5.190	4.480	W83	W83	W83
Cs-148g	0.2056	25.1000	2.8000	6	meas.	11.777	5.766	MN	W81	W81

Ba-148g	3.3250	0.0060	0.0020	3	meas.	5.400	5.010	W83	W83	W83
La-148g	1.3000	0.1330	0.0100	4	meas.	6.500	6.320	W83	W83	W83
Cs-149g	0.2442	32.7567	0.0000	6	sys.	9.420	2.195	MN	MN	W81
Ba-149g	0.6950	0.5750	0.0840	5	meas.	7.800	5.800	W83	W83	W83
La-149g	2.4080	1.0600	0.1400	4	meas.	6.100	4.950	W83	W83	W83
Cs-150g	0.1238	15.0881	0.0000	6	sys.	11.480	5.021	MN	MN	MN
Ba-150g	0.9620	10.9278	0.0000	4	sys.	6.740	2.504	MN	MN	W81
La-150g	0.6080	0.3991	0.0000	5	sys.	7.620	6.300	W83	W83	W83
Ba-151g	0.3327	3.7569	0.0000	5	sys.	8.760	5.211	MN	MN	MN
La-151g	0.7194	6.5495	0.0000	5	sys.	7.670	4.089	MN	MN	W81
Ba-152g	0.4205	5.7209	0.0000	5	sys.	7.680	3.681	MN	MN	MN
La-152g	0.2850	6.0393	0.0000	6	sys.	9.650	5.661	MN	MN	MN
La-153g	0.3258	10.6885	0.0000	5	sys.	8.640	3.901	MN	MN	MN
Ce-153g	1.4688	0.6219	0.0000	4	sys.	7.040	5.404	MN	MN	W81
La-154g	0.1493	10.2702	0.0000	6	sys.	10.680	5.381	MN	MN	MN
Ce-154g	2.0161	0.6373	0.0000	4	sys.	6.030	4.371	MN	MN	MN
Pr-154g	1.0614	0.1110	0.0000	4	sys.	7.575	6.668	MN	W81	W81
La-155g	0.1540	16.7592	0.0000	6	sys.	9.600	3.511	MN	MN	MN
Ce-155g	0.5278	1.6004	0.0000	5	sys.	8.050	5.531	MN	MN	MN
Pr-155g	1.1224	1.5427	0.0000	4	sys.	6.790	4.746	MN	MN	W81
Ce-156g	0.5963	2.9922	0.0000	5	sys.	7.000	3.981	MN	MN	MN
Pr-156g	0.3793	2.7170	0.0000	5	sys.	8.780	5.971	MN	MN	MN
Ce-157g	0.2144	4.4528	0.0000	6	sys.	9.050	5.171	MN	MN	MN
Pr-157g	0.3800	6.3874	0.0000	5	sys.	7.750	4.141	MN	MN	MN
Pr-158g	0.1685	6.4230	0.0000	6	sys.	9.810	5.641	MN	MN	MN
Nd-158g	2.6949	0.0053	0.0000	4	sys.	4.960	4.621	MN	MN	MN
Pr-159g	0.1806	12.3634	0.0000	6	sys.	8.720	3.711	MN	MN	MN
Nd-159g	0.6146	0.2361	0.0000	5	sys.	7.090	5.841	MN	MN	MN
Pm-159g	3.0005	0.0185	0.0000	3	sys.	5.290	4.871	MN	MN	W81
Nd-160g	0.7886	0.9469	0.0000	5	sys.	5.990	4.141	MN	MN	MN
Pm-160g	0.7289	0.2676	0.0000	5	sys.	7.430	6.281	MN	MN	MN
Nd-161g	0.3113	1.6982	0.0000	5	sys.	8.020	5.461	MN	MN	MN
Pm-161g	0.7899	1.7504	0.0000	5	sys.	6.360	4.391	MN	MN	MN
Pm-162g	0.3243	2.1452	0.0000	5	sys.	8.400	5.911	MN	MN	MN
Sm-164g	1.3850	0.0124	0.0000	4	sys.	5.010	4.571	MN	MN	MN
Eu-164g	1.5327	0.0001	0.0000	4	sys.	6.590	6.571	MN	MN	MN
Sm-165g	0.4536	0.2491	0.0000	5	sys.	6.930	5.691	MN	MN	MN
Eu-165g	1.3546	0.1911	0.0000	4	sys.	5.650	4.751	MN	MN	MN

This table contains the latest evaluated Pn values (1/7/87). Values indicated as derived from systematics are based on a least squares fit of the evaluated Pn values to the parameters in the Herrmann-Kratz equation as given in Kratz, K.-L., and Herrmann, G., "Systematics of Neutron Emission Probabilities from Delayed Neutron Precursors," Z. Physik 263, 435 (1973). This equation can be expressed: Pn = a[(QB - S(n))/(QB - K)]**b, where (b = 3.44) and (a = 54.0) from a new fit to the evaluated Pn's resulting from the Birmingham meeting Sept 1986 and K=0 for even-even precursor, 13/A**1/2 for even-odd precursor, and 26/A**1/2 for odd-odd precursor.

T 1/2 - half life in seconds, for nuclides with evap spec taken from ENDF/B-V
Pn - probability of delayed neutron emission in percent
dPn - uncertainty in Pn value (0.0000 for calculated values)
GP - lists which of six temporal groups the nuclide probably belongs in.
QB - Maximum beta decay energy of precursor (meV)
S(n) - neutron binding energy in daughter (meV)

M1 source of mass of Z,A
M2 source of mass of Z+1,A

MN - Moeller-Nix
W81 - Wapstra81

W83 - Wapstra83

* BETA Code would not execute with these mass values so Ba146 spectrum was used for Ba147.

** A fictitious S(n) was given this nuclide to obtain a positive energy window. Moeller-Nix masses give a negative energy window, however, this precursor has a measured Pn value.

Some thought was given to the method of including delayed neutron emission for more than seventy of the most important nuclides in the existing format. One problem faced is that Pn data is given for the precursors but we need to know it when processing the daughter. For instance, As-85 decays to Se-85 by beta decay and Se-84 by neutron emission. Se-84 is processed first since masses are processed one at a time in increasing order. A special box was created similar to a metastable state but labeled SE84D (for delayed neutron emission product). Pn for its formation from As-85 is listed in the third row of its decay scheme (Z-0 is the only empty space), and the RC row contains the absolute yield calculated from Pn multiplied by the As-85 cumulative yield from the previous iteration. Se-84 g contains the information in the third row of its decay scheme that 100.0% of Dn emission (Z-0 box) adds to Se-84 g cumulative yield. When processing mass 85, Se-85 has listed in the first row of its decay scheme that 68.8% (1-Pn) of Z-1 g (As-85) is to be added to its cumulative yield, instead of 100% (the other 31.2% having left this mass chain for mass chain 84). The facts are now correctly represented. The independent yields are all before delayed neutron emission. The cumulative yields are after delayed neutron emission. Also, the chain yield is redefined as the sum of the independent yields plus delayed neutron decay gains from the A+1 chain, minus the delayed neutron decay losses to the A-1 chain. Now the chain yields retain their traditional after-delayed-neutron-emission value as measured by traditional radiochemistry and mass spectrometry. A special problem arises for on-line mass spectrometers that measure instantaneous mass yields such as Hiawatha (76DII1). These pre-delayed-neutron chain yields must be corrected to post-delayed-neutron chain yields by hand.

One can predict the delayed neutron yield from delayed neutron precursor yields multiplied by probability of neutron emission, (Pn) summed over all 271 precursors. If the yields are correct, good agreement should be found between predicted and measured delayed neutron emission. Agreements for most types of fission evaluated are as follows:

Table 6.
Delayed Neutron Yields per 100 Fissions
Calculated Values Using Yields and Pn Values Listed in this Report

Fissionable Nuclide	Using Pn and yc	From Yield Evaluation	Waldo Fit	Fissionable Nuclide	Using Pn and yc	From Yield Evaluation	Waldo Fit
U235t	1.80 +- 0.17	1.67 +- 0.08	1.50	Th227t	0.59 +- 0.10	0.59 +- 0.07	0.72
U235f	1.70 +- 0.16	1.66 +- 0.09	1.50	Th229t	1.09 +- 0.19	1.06 +- 0.10	1.53
U235h	1.24 +- 0.19	1.18 +- 0.11	----	Pa231f	1.34 +- 0.20	1.32 +- 0.12	1.04
U238f	4.06 +- 0.34	3.85 +- 0.23	4.60	Am241t	0.55 +- 0.07	0.53 +- 0.06	0.46
U238h	2.72 +- 0.27	2.53 +- 0.16	----	Am241h	0.37 +- 0.07	0.34 +- 0.04	----
Pu239t	0.70 +- 0.04	0.68 +- 0.03	0.68	Am242t	0.74 +- 0.09	0.72 +- 0.07	0.67
Pu239f	0.61 +- 0.07	0.60 +- 0.05	0.68	Cm245t	0.70 +- 0.08	0.67 +- 0.06	0.66
Pu241t	1.29 +- 0.08	1.24 +- 0.06	1.45	Cf249t	0.28 +- 0.04	0.25 +- 0.03	0.30
U233t	0.71 +- 0.08	0.70 +- 0.06	0.70	Cf251t	0.82 +- 0.09	0.76 +- 0.08	0.65
Th232f	5.92 +- 0.97	5.78 +- 0.43	4.70	Es254t	0.77 +- 0.09	0.71 +- 0.07	0.64
U233f	0.67 +- 0.09	0.66 +- 0.07	0.70	Cf250s	0.42 +- 0.05	0.41 +- 0.05	0.30
U233h	0.70 +- 0.12	0.67 +- 0.08	----	Cm244s	0.43 +- 0.06	0.42 +- 0.05	0.31

U236f	2.06 +- 0.20	1.99 +- 0.15	2.17	Cm248s	1.49 +- 0.14	1.39 +- 0.12	1.41
Pu239h	0.53 +- 0.11	0.51 +- 0.07	----	Es253s	0.32 +- 0.04	0.31 +- 0.03	0.30
Pu240f	0.85 +- 0.99	0.83 +- 0.07	0.99	Fm254s	0.14 +- 0.03	0.13 +- 0.03	0.14
Pu241f	1.32 +- 0.13	1.27 +- 0.10	1.45	Fm255t	0.63 +- 0.08	0.60 +- 0.08	0.30
Pu242f	1.71 +- 0.17	1.61 +- 0.13	2.11	Fm256s	0.36 +- 0.05	0.34 +- 0.04	0.30
Th232h	5.48 +- 1.25	5.12 +- 0.32	----	Np237h	1.00 +- 0.12	0.96 +- 0.09	----
Np237f	1.18 +- 0.13	1.15 +- 0.10	1.01	U232t	0.43 +- 0.07	0.43 +- 0.05	0.49
Cf252s	0.66 +- 0.07	0.60 +- 0.05	0.65	U238s	4.64 +- 0.32	4.47 +- 0.28	3.17
U234f	0.94 +- 0.13	0.92 +- 0.11	1.02	Cm243t	0.46 +- 0.06	---- +- ----	----
U237f	2.87 +- 0.26	2.76 +- 0.21	3.17	Cm246s	0.68 +- 0.08	---- +- ----	----
Pu240h	0.67 +- 0.11	0.63 +- 0.07	----	Cm243f	0.28 +- 0.04	---- +- ----	----
U234h	0.72 +- 0.13	0.68 +- 0.08	----	Cm244f	0.46 +- 0.06	---- +- ----	----
U236h	1.58 +- 0.21	1.49 +- 0.14	----	Cm246f	1.07 +- 0.12	---- +- ----	----
Pu238f	0.60 +- 0.08	0.58 +- 0.06	0.47	Cm248f	2.08 +- 0.19	---- +- ----	----
Am241f	0.43 +- 0.05	0.42 +- 0.05	0.46	Pu242h	1.59 +- 0.21	---- +- ----	----
Am243f	0.83 +- 0.10	0.79 +- 0.09	0.98	Np237t	1.60 +- 0.16	---- +- ----	----
Np238f	1.77 +- 0.18	1.71 +- 0.16	1.47	Pu240t	0.89 +- 0.11	---- +- ----	----
Cm242f	0.17 +- 0.03	0.17 +- 0.03	0.21	Pu242t	1.90 +- 0.18	---- +- ----	----

** Reference 92ENG1.

The calculation of delayed neutrons is very sensitive to the amount of odd-even effect (proton and neutron pairing effect) applied. U235 and Pu239 delayed neutron calculations are in good agreement. U238F and TH232F are low. These have large pairing effects that result from the use of fission neutron energies that are very close to large fission threshold energies. The model for energy dependence of pairing tends to blow-up near the fission threshold and is very sensitive to assumed fission neutron energy. Inadequate pairing treatment may therefore account for these poorer agreements.

The moving force behind the 1993 revision was decay heat calculation by summation codes such as CINDER-10 that use fission yields, decay constants, and heat of disintegration (Q values). A test of goodness for independent yields is whether such summation agrees with experiment. The original 1974 fit was good except at 10 and 15 seconds where calculations were low. An important thrust of the 1978 revision was to improve the fit below 15 seconds. Four sources of error in ENDF/B-IV yields were suspected to be responsible for the 4% underestimate at 10 seconds:

1. Ternary Fission was not treated. Ternary fission carries a small amount of charge away. This means Zp's must be lowered a bit.

2. Charge balance tests showed some Zp values were slightly high. If Zp is reduced to a proper value, the yields on the left shoulder of the Gaussian charge distribution rise abruptly where very short-lived energetic nuclides are found far from stability. The right shoulder yields fall where long-lived low energy nuclides are found near stability.

3. Independent yields were arbitrarily split 50-50 between short lived metastable states and long-lived ground states. In several measured cases like Xe-133, Xe-135 and Te-133, the short half-life (high energy) metastable state is favored.

4. Delayed neutrons were not treated, and 264 out of 271 of the delayed neutron precursors have half-lives under 10 seconds.

By correcting these shortcomings, ENDF/B-VI (ENDF-349) yields have greatly improved agreement down to 6 seconds. The refinement effort appears to have been worth while. It has contributed toward development of a new ANS Decay Heat Standard with errors reduced from 20% in the 1973 Standard to under 2% in the 1993 Standard.

Recommended Yields

The weighted average experimental independent yields, the weighted average experimental cumulative yields, and the calculated cumulative yields (where no data were available) were combined statistically to form a single, self-consistent recommended value. The following is a summary of the procedure used to obtain the recommended values. The calculated charge distribution was used only when no data were available. Even then it was normalized to the nearest experimentally determined yields to ensure the experimental and recommended values will closely agree. A large error was assumed for the calculated yields to ensure any respectable data would dominate. The contributions of all precursors were added. The total precursor contribution was then subtracted from the experimental cumulative yield when available or the normalized calculated yield to obtain an independent yield. (Note: independent yields so obtained which are less than 0.1% are given no weight and negative values are discarded). This independent yield was then averaged with the experimental independent yield (if available) or the calculated independent yield and stored for later use. A cumulative yield was then obtained by adding the precursor contribution to the independent yield just obtained. This cumulative yield was averaged with the experimental cumulative yields (if available) or the calculated cumulative yield to obtain a cumulative yield. This cumulative yield was stored as input for the next member of the chain. After this procedure had been done for all members of the chain, the chain yield was obtained by adding the stored cumulative yields of all stable nuclides. The stored independent yields were then normalized so that their total equals the chain yield (after adjustment for delayed neutron emission). The recommended cumulative yields were obtained by adding the independent yield of all precursors to the independent yield of the nuclide. The total of the chain yields of each peak was then obtained. The difference between 100% and this total was distributed among the chain yields in proportion to their variances. This method ensures the reported chain yields will total 100%. This procedure preserves the independent yield significance of the differences between the recommended yields. It also allows unstable nuclides to affect the chain yields if independent yields have been determined, or if the calculated charge distribution shows the yield of the nuclide to be very near the chain yield.

ENDF/B-VI and Mass Chain Yields

As noted, the evaluated and compiled yields and distribution parameters (sigma, Zp, branchings, etc) are available for 60 yield sets in groups of 10 fissioning systems in the six appendices. All measured data are also listed in the appendices. Any user consulting these files should also check the reference indicated there in the annotated bibliography to possibly explain the reason for any change (update) to measured data.

We are making the compiled data freely available to users. These data have been collected over several decades and updated or corrected as noted in the bibliography and appendices. We request that users of these computer files acknowledge this printed document and also inform the authors of any errors or new data.

The recommended and cumulative yields (RI and RC lines in the appendices) are the basis for the second evaluation and release of ENDF/B-VI (1993). Values in ENDF/B-VI have been extended to cover all nuclides in the ENDF/B-VI decay files and also four charge units from Zp, but the extension does not alter the values in this document for the specific nuclides listed in the appendices.

ENDF/B-VI does not contain mass chain yields and these are difficult to determine from the RI and RC values using decay branchings from decay files. Tables 7 through 12 below list the chain yields. The letters a-p following the yield values indicate the accuracy of weighted yields; these are defined in a later section of this document.

Table 7
Set A Mass Chain Yields

mass	u235t	u235f	u235he	u238f	u238he	pu239t	pu239f	pu241t	u233t	th232f
66	7.22e-08n	7.23e-07m	0.000288j	3.71e-06n	7.82e-05k	2.21e-07o	8.68e-07l	1.67e-07l	2.50e-07o	1.13e-06n
67	3.61e-07m	2.32e-06m	0.000604j	2.15e-05n	0.000139l	4.48e-07n	2.87e-06l	5.05e-07l	1.12e-06o	3.90e-06n
68	7.16e-07n	4.03e-06m	0.000887k	2.80e-05n	0.000299l	1.62e-06n	8.42e-06l	1.41e-06l	3.43e-06o	1.43e-05n
69	1.57e-06n	8.70e-06m	0.001320n	3.58e-05n	0.000501l	5.89e-06n	3.12e-05l	3.64e-06l	9.41e-06o	3.30e-05n
70	3.62e-06m	1.89e-05m	0.002361k	4.41e-05m	0.000901l	1.99e-05m	8.69e-05l	1.40e-05l	3.67e-05o	6.54e-05m
71	8.38e-06n	4.65e-05m	0.003946k	4.95e-05n	0.001592l	3.67e-05n	0.000203n	5.24e-05l	0.000162o	0.000166m
72	2.65e-05k	0.000166m	0.006014j	6.05e-05n	0.002706k	0.000122o	0.000520n	2.43e-05m	0.000416n	0.000414l
73	0.000102m	0.000524l	0.011346k	0.000206m	0.005230k	0.000262m	0.000706m	5.78e-05l	0.001155l	0.000621l
74	0.000339m	0.001190m	0.017011k	0.000277n	0.008006l	0.000636n	0.001736l	9.48e-05m	0.002708m	0.001154l
75	0.001067k	0.003530m	0.026986k	0.000462n	0.013869l	0.001372l	0.002548m	0.000284m	0.007981m	0.002835l
76	0.003097j	0.017577k	0.040021k	0.000800m	0.021990l	0.002936l	0.005810l	0.000948m	0.013847m	0.006739l
77	0.007961j	0.031808k	0.066594k	0.003301k	0.031293j	0.007235k	0.012692j	0.001896m	0.025959l	0.011765j
78	0.020966j	0.057118k	0.099752k	0.011222m	0.057133l	0.018776m	0.022929m	0.011521l	0.053838l	0.035280k
79	0.044732i	0.090857k	0.167953k	0.032673m	0.133283l	0.043651f	0.060771j	0.014959l	0.143515l	0.076873k
80	0.128832h	0.175956k	0.253418k	0.042741l	0.212880l	0.093888m	0.092512l	0.029235l	0.234071l	0.194213l
81	0.203680g	0.228000k	0.341500k	0.086208m	0.333000k	0.183643l	0.141870k	0.062121l	0.367786h	0.469835k
82	0.324569g	0.340196k	0.593200k	0.213784l	0.453127l	0.229687m	0.218850j	0.136745j	0.586339g	1.075426l
83	0.536435b	0.576795d	1.100956h	0.396237e	0.667981g	0.296793b	0.315587c	0.201544e	1.014543d	2.169280f
84	1.002093c	1.030822e	1.509030k	0.825770e	1.123985g	0.480359d	0.498717d	0.351325f	1.689426d	4.026097e
85	1.318713a	1.363796c	1.666312g	0.743050d	1.005966e	0.574068a	0.604191b	0.406488e	2.237148d	4.167428e
86	1.965113b	1.946855d	1.828273m	1.296448d	1.571025g	0.766201b	0.789466d	0.594552f	2.844415e	6.587601f
87	2.560298b	2.543847d	2.450685h	1.625506d	1.686410f	1.003923b	1.043375d	0.752828f	4.018205e	7.073593g
88	3.575006c	3.494430c	3.430017i	2.028030e	2.175602f	1.329789d	1.329720c	0.990303e	5.465197e	7.260472f
89	4.733074d	4.373684e	4.123095g	2.761051e	2.921217f	1.722836f	1.725338f	1.233109g	6.340165e	7.467815g
90	5.782353d	5.465049c	4.594181g	3.246924e	3.189564g	2.104298f	2.048497c	1.535820e	6.789072e	7.924058h
91	5.828245c	5.733461c	4.823241h	4.039440f	3.867595f	2.486500d	2.516537d	1.864133e	6.485957d	7.363992f
92	6.021674c	5.846002c	5.103359j	4.312441g	3.879351f	3.009177c	3.037739c	2.308494e	6.552445d	6.920399g
93	6.346743c	6.254059c	5.193751i	4.913253f	4.529122g	3.797575c	3.825724c	2.978050e	6.978996d	6.697280h
94	6.472653c	6.300219c	5.097699k	4.610062g	4.694998i	4.321833d	4.233177c	3.391152e	6.831345e	5.562996h
95	6.503326c	6.432034b	5.175438g	5.140443d	4.891811f	4.818517d	4.671429d	3.925621e	6.349605d	5.652666f
96	6.340230d	6.202490c	5.207079j	6.017329h	5.575470k	4.893751d	4.856321c	4.401147e	5.678962d	4.776764l
97	5.997223c	6.002914b	5.520253i	5.562461c	5.280014e	5.414114d	5.297278b	4.801799e	5.515746d	4.425500f
98	5.790300c	5.923745b	5.436396k	5.944993d	5.464244k	5.830892d	5.633049c	5.035685f	5.189312d	3.680042i
99	6.109164d	5.943191d	5.136274g	6.168192e	5.705377d	6.211806e	5.982639f	5.961885f	4.910973e	2.944060f
100	6.292781c	6.298379d	3.950416k	6.697326d	4.998117k	6.774621e	6.544341c	6.254494f	4.459033e	1.370638i
101	5.172919d	5.124290e	3.452705k	6.209007e	5.697793g	6.019171e	6.669887d	6.231942f	3.171242e	0.713542k
102	4.298778d	4.359081d	3.254026k	6.447346d	4.621668j	6.126339e	6.731884d	6.655272f	2.402804d	0.367805k
103	3.031149d	3.243933e	3.205137g	6.275279e	4.615807f	6.994895f	6.829040e	6.776879g	1.573207f	0.155461h
104	1.880825d	2.072379d	2.479191l	5.035980d	4.026081h	6.094829d	6.584723c	7.179518f	0.980193f	0.090313k
105	0.964228e	1.196323g	1.872265h	4.051243e	3.215881e	5.643815f	5.361104g	6.074350g	0.495809g	0.051481g
106	0.401576d	0.532399d	1.609732h	2.489722e	2.454599g	4.350214f	4.365499e	6.103987f	0.246245f	0.048561j
107	0.146202g	0.302329k	1.285484k	1.445866j	1.694368i	3.330057h	3.221088i	4.886322j	0.114532h	0.051075k
108	0.054129h	0.130816l	1.178097k	0.601420l	1.222461l	2.163956h	2.002769j	3.769599j	0.075767h	0.061347l
109	0.031223i	0.081546h	1.173138i	0.252140i	1.122826i	1.477898h	1.036285k	2.587597h	0.039405l	0.066215h
110	0.025445h	0.064915l	1.083704k	0.140760l	1.027439k	0.645132i	0.647332j	1.325114j	0.038664h	0.070997l
111	0.017432g	0.042577f	1.079385g	0.071214f	0.992245g	0.295993f	0.357018e	0.585511g	0.021600j	0.071619i
112	0.013043h	0.037712f	1.075936j	0.055901h	1.032693g	0.128508f	0.188927f	0.218486g	0.013304j	0.078263i
113	0.014205h	0.032614g	1.091408j	0.046111k	0.914336i	0.081664g	0.127662f	0.151924h	0.013562k	0.078066h
114	0.011833h	0.032294g	1.057132k	0.039257l	0.718885k	0.060254g	0.094265f	0.071086m	0.012860k	0.073423l
115	0.012584g	0.033878g	1.091665g	0.037548f	0.857044g	0.042600i	0.081409h	0.038087j	0.014982i	0.077003g
116	0.013249h	0.034004f	1.056328k	0.039314k	0.675634k	0.050678j	0.060358g	0.027787n	0.013202l	0.073801l
117	0.012762h	0.036819j	1.065332j	0.037732k	0.604700h	0.044459j	0.069871j	0.023626k	0.014124k	0.073822g
118	0.011346j	0.033632j	1.081950k	0.043176k	0.831012k	0.032488k	0.059864k	0.023157n	0.015417k	0.063281k

119	0.012874j	0.035020j	1.084139k	0.039720k	0.725951k	0.032249j	0.055017k	0.023156n	0.018558l	0.057210l
120	0.012609j	0.035292j	1.090448k	0.038713k	0.777414k	0.030585k	0.055690k	0.025623m	0.021829j	0.054327l
121	0.013047i	0.036811j	1.054143h	0.036927j	0.833461h	0.037808j	0.063088k	0.025882n	0.023082j	0.048821i
122	0.015485j	0.040409k	1.146120k	0.041073k	0.850253k	0.044695j	0.069905k	0.025882n	0.040969j	0.036527l
123	0.015658g	0.044063k	1.192724k	0.044534l	0.921818k	0.044120l	0.076809k	0.026704n	0.060415m	0.029354l
124	0.026788j	0.063333k	1.290173k	0.046461k	1.034995k	0.078717k	0.120774k	0.032352n	0.074624l	0.026475l
125	0.034022f	0.068030i	1.460497j	0.048524i	1.196325h	0.111659j	0.177846j	0.046901j	0.116962j	0.032954k
126	0.058518j	0.097545j	1.863928h	0.054089i	1.325201l	0.202324i	0.266786i	0.082238m	0.226118j	0.048129l
127	0.156991g	0.306279f	2.179644g	0.136294h	1.493819i	0.506298i	0.500864j	0.232387h	0.555457k	0.101355h
128	0.348840g	0.504501j	2.456115j	0.286086i	1.947001j	0.734121k	0.879000i	0.379232m	0.836918j	0.182599l
129	0.543386d	0.835170h	3.375012j	1.011337i	2.077459i	1.371454h	1.451065i	0.819952m	1.591337l	0.252076h
130	1.810633f	1.794634h	3.599778j	1.913653i	3.149253l	2.361688j	2.454095i	1.818825k	2.091632k	0.945582k
131	2.890898b	3.219551c	4.103087g	3.290794d	3.992440e	3.856439b	3.878424b	3.100837e	3.604300c	1.620949f
132	4.313407a	4.671072b	4.886339g	5.147494e	4.838119d	5.406858b	5.329531c	4.564343e	4.953559c	2.968856e
133	6.699915a	6.724035b	5.529694i	6.762707b	6.017644e	7.016466b	6.971140b	6.729190c	5.950570d	4.046220f
134	7.872644b	7.666747b	5.715190g	7.609406g	6.453250f	7.676881b	7.382961b	7.917365e	6.306880c	5.351795f
135	6.539455a	6.601362c	5.729764i	6.967573c	5.841928f	7.621001c	7.554585b	7.170771d	6.265223e	5.528784f
136	6.318709a	6.227129b	5.302789h	6.979834f	5.645631f	7.143924d	7.063767d	7.105131e	6.905353d	5.621469f
137	6.188944b	6.221562a	4.948814g	6.052506c	5.146585f	6.613842b	6.590226b	6.650911c	6.757385c	5.839457h
138	6.768035b	6.680526c	4.593901i	5.762451e	4.883588g	6.124533d	6.126624c	6.605149d	5.907377f	6.449821i
139	6.413852c	6.343309b	4.810269h	5.670141d	5.049720f	5.637200g	5.611585e	6.217390f	6.305604g	7.096623f
140	6.220169b	5.977979c	4.528971g	5.815266c	4.611131e	5.364788d	5.333198c	5.766685e	6.424816e	7.877878f
141	5.847414d	5.949134e	4.486032h	5.336511f	4.381533f	5.246968f	5.147149g	4.905772e	6.480480g	7.463862g
142	5.849283b	5.542190d	4.205015i	4.585776d	4.061520g	4.928967b	4.754411c	4.746982d	6.670707e	6.540381g
143	5.956198a	5.731209b	3.815571g	4.622060c	3.908647f	4.413261b	4.342002a	4.577993c	5.965845c	6.647205f
144	5.499964a	5.268694c	3.172470g	4.547939c	3.722810g	3.739785a	3.672940c	4.227384c	4.726134c	7.916097g
145	3.933647a	3.775731b	2.709269i	3.808983c	3.003810h	2.986310a	3.004180b	3.262911d	3.444062d	5.338663f
146	2.997113a	2.921372b	2.198985k	3.445628c	2.436894i	2.458146a	2.460051b	2.766456c	2.585897c	4.554332g
147	2.246885c	2.138887c	1.623358g	2.592719c	2.091141f	2.002981d	1.990639c	2.284949e	1.738401g	2.978662g
148	1.673660a	1.683442b	1.197989k	2.112485c	1.730509l	1.642120b	1.661454a	1.932103c	1.301585d	2.005246g
149	1.081705d	1.036973c	0.813282l	1.625277d	1.458148i	1.216561c	1.241118b	1.474076e	0.778134g	1.083641h
150	0.653325b	0.685836b	0.511870k	1.273456d	1.080910l	0.967459b	0.996874b	1.209439d	0.505712e	0.561977m
151	0.418797d	0.411991b	0.357774j	0.799397d	0.801471h	0.738426c	0.784939c	0.913021e	0.315725f	0.363657i
152	0.266932d	0.270856e	0.257674k	0.530227d	0.578793l	0.576317d	0.626702e	0.717632e	0.213639g	0.075545l
153	0.158290g	0.167056g	0.203611k	0.414787f	0.391921i	0.361259i	0.425848h	0.540584h	0.103685i	0.031009k
154	0.074439d	0.072319d	0.126975m	0.216281d	0.252123l	0.259788e	0.267251e	0.379114f	0.046690g	0.006876m
155	0.032138h	0.039472k	0.078729k	0.141515k	0.155257l	0.165724k	0.208821k	0.241414j	0.021430l	0.003617m
156	0.014854g	0.020259f	0.057898g	0.076033f	0.114368g	0.124018h	0.154754h	0.172125g	0.012794i	0.002690j
157	0.006151j	0.010583m	0.037707k	0.041375l	0.080349k	0.074152i	0.106137j	0.135369h	0.006302j	0.000932m
158	0.003286k	0.006494l	0.023471k	0.018487l	0.042592l	0.041439l	0.065658l	0.092244m	0.002055m	0.000464n
159	0.001009i	0.003007k	0.012126j	0.008619l	0.026018k	0.020653i	0.038547k	0.048030h	0.000886i	9.77e-05n
160	0.000319n	0.001132l	0.007209k	0.003544m	0.015666l	0.009681l	0.016051n	0.020499m	0.000316n	6.92e-05n
161	8.53e-05h	0.000333h	0.005261j	0.001215g	0.008469h	0.004841i	0.008649h	0.008468h	0.000122i	1.45e-05m
162	1.59e-05n	5.77e-05m	0.002783k	0.000340n	0.005937l	0.002231l	0.006141l	1.27e-05n	1.27e-05o	7.98e-06n
163	6.11e-06n	9.62e-06m	0.001584k	0.000204n	0.003393l	0.000916m	0.003147m	5.90e-06n	5.93e-06o	4.64e-06n
164	1.88e-06n	5.77e-06m	0.000976k	0.000125n	0.001992l	0.000330m	0.001793m	1.97e-06n	1.95e-06o	2.04e-06n
165	9.52e-07n	2.31e-06m	0.000538k	7.66e-05m	0.001097l	0.000134m	0.000897n	6.15e-07m	6.32e-07n	3.53e-07m
166	3.63e-07n	9.62e-07m	0.000279j	5.67e-05n	0.000630j	6.66e-05l	0.000635n	4.14e-07n	3.68e-07o	1.38e-07n
167	2.47e-07n	3.85e-07m	0.000185k	4.35e-05l	0.000369l	1.52e-05n	0.000267n	1.04e-07n	5.09e-08o	9.77e-08n
168	5.71e-08n	9.62e-08m	0.000107k	2.84e-05n	0.000200l	4.29e-06n	7.66e-05n	9.50e-06n	1.29e-08o	5.30e-08n
169	2.38e-08n	5.77e-08m	7.80e-05j	1.70e-05n	0.000129j	1.47e-06n	2.58e-05n	4.02e-06n	4.40e-09o	2.69e-08n
170	5.01e-09n	1.92e-08m	3.25e-05k	1.02e-05n	5.95e-05l	3.18e-07n	7.66e-06n	1.64e-06m	1.62e-09n	1.07e-08n
171	2.35e-09n	6.73e-09m	1.76e-05k	5.72e-06n	3.30e-05l	1.57e-07n	2.58e-06n	2.19e-07n	4.47e-10o	4.64e-09n
172	7.69e-10n	1.92e-09m	1.66e-05j	1.07e-05n	2.13e-05l	4.94e-08n	7.66e-07n	7.31e-08n	1.51e-10o	2.39e-09n

Table 8
Set B Mass Chain Yields

mass	u233f	u233he	u236f	pu239h	pu240f	pu241f	pu242f	th232h	np237f	cf252s
66	3.99e-07n	0.000670k	8.30e-07n	6.23e-05l	8.88e-07n	1.88e-07n	2.90e-06n	0.000129i	1.87e-07l	5.26e-08n
67	1.60e-06n	0.001515l	2.08e-06n	9.82e-05l	1.33e-06n	1.31e-06n	5.79e-06n	0.000224j	3.73e-07l	1.44e-07n
68	4.88e-06n	0.001803n	4.15e-06n	0.000217l	3.11e-06n	2.82e-06n	8.69e-06n	0.000760j	1.88e-06l	3.84e-07n
69	1.33e-05n	0.002900n	9.34e-06n	0.000371l	4.88e-06n	1.03e-05n	1.16e-05n	0.001515j	6.89e-08l	9.91e-07n
70	5.32e-05n	0.004704n	2.08e-05n	0.000670l	1.19e-05n	3.28e-05n	2.90e-05n	0.002783j	2.44e-05l	2.39e-06m

71	0.000231n	0.007445n	5.19e-05n	0.001196l	3.41e-05n	8.45e-05n	5.79e-05n	0.005304j	6.19e-05l	6.02e-06n
72	0.000683n	0.013031j	0.000187n	0.002184l	0.000109j	0.000150n	0.000125n	0.007873j	0.000150l	1.41e-05n
73	0.001564m	0.018747l	0.000719m	0.003759k	0.000309m	0.000478m	0.000241n	0.016263j	0.000369k	3.21e-05n
74	0.003725n	0.028083l	0.003113n	0.005881l	0.000784n	0.001126n	0.000772n	0.030213j	0.000663l	7.06e-05n
75	0.011085n	0.043497l	0.008302n	0.010230l	0.001705n	0.002816n	0.001158n	0.053042j	0.001318l	0.000152n
76	0.019703n	0.066968l	0.022832n	0.016418l	0.004092n	0.005632n	0.002413n	0.090643j	0.006012l	0.000317n
77	0.037259m	0.101957l	0.045174m	0.023704k	0.010786m	0.009693l	0.006828m	0.130970j	0.010440k	0.000625m
78	0.062079n	0.154923l	0.058119n	0.041512l	0.022211m	0.018416l	0.013517n	0.249312j	0.024370k	0.002061k
79	0.097555n	0.230843l	0.114166n	0.086286k	0.041693m	0.035864l	0.033796n	0.413505j	0.056444k	0.003436n
80	0.211819l	0.337640l	0.186862n	0.157412l	0.071108m	0.064944l	0.055138m	0.691637j	0.111391k	0.004784n
81	0.369983i	0.541361m	0.269840n	0.272005l	0.117767m	0.092375k	0.091706m	1.055407j	0.235745j	0.008336l
82	0.592212j	0.837895m	0.384297n	0.349828l	0.173119m	0.142856j	0.125578n	1.371988j	0.357483k	0.015277l
83	0.992729d	1.305686i	0.564755m	0.473539k	0.225812f	0.203536e	0.178704f	1.730971h	0.482728f	0.041355i
84	1.646913d	2.055871i	1.041023m	0.797597l	0.387259f	0.356864e	0.344098f	2.405313h	0.764156f	0.065824l
85	2.120474d	2.128544j	1.404166h	0.965547h	0.433496g	0.446553f	0.323157f	4.504953h	0.943529f	0.109031i
86	2.791283d	2.682477l	1.769318m	1.135089k	0.626292f	0.599326e	0.541052f	5.387893j	1.312144g	0.127391l
87	3.839970d	3.384983i	2.300375h	1.311613h	0.855547g	0.801993f	0.633340h	4.972307g	1.748054g	0.214949l
88	5.074510d	3.972427j	2.903340h	1.905361j	0.974526h	0.988938e	0.834913f	5.344973h	2.160309g	0.316107j
89	5.752346g	4.624521i	3.866771i	2.068536h	1.409931i	1.282172i	1.098864j	5.935102g	2.540089h	0.363233g
90	6.386977d	4.758131j	4.726828l	2.102754k	1.798823f	1.550924f	1.360012f	6.084759g	3.341144f	0.522465l
91	6.449272d	5.178402i	5.500850g	2.237309j	2.190363f	1.928825f	1.801399g	5.991665g	3.926816f	0.597083g
92	6.541788d	5.475885i	5.611012h	2.914485k	2.680322f	2.394422f	2.151179g	5.515768g	4.385161f	0.683939g
93	6.938879d	5.377588i	5.530128h	3.228897k	3.510794f	2.980999f	2.805855g	5.583862g	5.116882f	0.922775h
94	6.754053d	5.028212l	5.022972i	3.488761k	3.931243f	3.305810f	3.126856g	5.355038j	5.135931f	1.082168i
95	6.282346d	5.053958h	6.357054i	3.928726i	4.438210f	3.791982f	3.624745f	4.938007i	5.669297e	1.242835f
96	5.724824d	4.815132l	6.048170l	4.374147k	4.733370f	4.293444f	4.281194g	3.774838j	5.488387f	1.595509k
97	5.428447d	4.833920h	5.450093g	4.564323h	5.165564f	4.458663f	4.455980f	3.359161h	6.137973e	1.667163f
98	5.138015d	3.947898l	6.034184k	4.864154k	5.501400f	4.799103f	4.833419f	2.709561j	6.106580f	2.297083k
99	4.698149g	3.781740h	5.815444g	4.749738h	5.930922g	5.528992h	5.437807i	2.048452f	6.118047g	2.632067f
100	4.357599d	3.086651l	5.776085k	5.121307k	6.811451f	5.960374f	6.084161f	1.638174i	6.436427g	3.448161j
101	3.893542f	2.743740l	5.229041i	4.997584k	6.479862h	6.490907e	5.990136i	1.357787i	6.124369f	3.933948g
102	2.935481f	2.507262l	5.196586l	5.476686k	6.667164h	6.865604e	6.420304i	1.023859i	5.769296g	4.038054h
103	1.664343i	2.532174i	4.156286i	5.207893h	6.613308i	6.508026h	6.544403j	0.886648h	5.558304f	5.447208f
104	1.279155e	1.978568l	3.540101l	5.443429k	6.839620h	7.306442e	6.485519i	0.962435i	4.131492h	5.656980h
105	0.855466i	1.804765i	2.465547h	4.274868h	5.584536i	6.583418i	6.966055h	1.081533h	3.103525g	6.211626f
106	0.325219h	1.387055k	1.012315j	3.577379j	5.093262h	6.244297e	5.758838i	1.194485h	2.334109i	6.311680f
107	0.145756j	1.422649m	0.616013m	2.862284k	3.927550k	4.906669k	5.027247l	1.177844i	1.712617j	6.618205g
108	0.097559n	1.431957m	0.384001n	2.398210k	2.795166k	3.541954k	4.397309l	1.279823i	1.296866l	6.109400g
109	0.085292m	1.503545k	0.154096m	2.476479i	1.746191i	2.352977k	3.194055k	1.413551h	0.637752j	5.940418g
110	0.079815n	1.321089m	0.114152n	1.744318k	0.941013l	1.399562j	2.077608l	1.382254i	0.300653k	5.903153k
111	0.073687j	1.412376i	0.067305j	1.547298i	0.487211i	0.644584l	1.222247l	1.303290g	0.095279h	5.187627f
112	0.064857l	1.690540i	0.052925n	1.392305i	0.227972i	0.317786l	0.653576m	1.471980h	0.073460j	4.135488g
113	0.062631l	1.702444i	0.041067m	1.295266k	0.149580k	0.213241l	0.318057m	1.418936h	0.051558j	4.782829h
114	0.055870n	1.228653m	0.036321n	1.256600k	0.091121m	0.117393k	0.133050m	1.331016i	0.052834l	3.328425k
115	0.054779k	1.447280j	0.038445m	1.271726i	0.061250i	0.109020k	0.109153l	1.312195g	0.048947i	2.897211f
116	0.065484m	1.381761l	0.037359n	1.157196k	0.064827m	0.096928l	0.097549m	1.272370i	0.047787k	2.127287k
117	0.065723j	1.320991l	0.037698l	1.151458k	0.063752l	0.088045k	0.098267l	1.429681h	0.043023k	1.500654i
118	0.070680j	1.285070m	0.036295m	1.265306j	0.058995m	0.083358l	0.087794m	1.113324i	0.052941k	0.993867k
119	0.074920j	1.220152l	0.035340m	1.251859k	0.058555m	0.082389l	0.087794m	1.060308i	0.053266k	0.384147k
120	0.070917j	1.159649l	0.038205m	1.248022k	0.067071m	0.086505l	0.082916m	0.975484i	0.053022k	0.238962k
121	0.080336l	1.710001j	0.037463n	1.444680j	0.068034m	0.091594l	0.082044n	0.949023i	0.052609i	0.117532f
122	0.072647j	1.235136m	0.050575n	1.460716k	0.075996m	0.094651l	0.083866n	0.848247i	0.060728k	0.088464l
123	0.075808n	1.351245l	0.071178n	1.729587k	0.086940m	0.101771l	0.088422n	0.805834i	0.075697k	0.040869j
124	0.103384k	1.514461m	0.094016n	1.882184k	0.109879m	0.113101l	0.100519n	0.796609j	0.072747k	0.025432l
125	0.146139g	1.516257i	0.164285m	1.954902j	0.089289i	0.151116k	0.128898k	0.720982i	0.131045h	0.017685j
126	0.284589i	2.312017l	0.243428m	2.547933l	0.271673k	0.223951k	0.168351l	0.878031i	0.165173k	0.027712k
127	0.739534k	2.226838h	0.353390m	2.204234i	0.417491i	0.332128l	0.277268l	1.078026h	0.355856j	0.105591i
128	1.183967i	2.542472l	0.544425m	2.719282k	0.693441k	0.658785k	0.517936l	1.166342i	1.499571j	0.193489k
129	1.737216i	2.833625l	0.930972j	3.387362k	1.149483l	1.167150j	1.230159j	1.252821h	1.759487i	0.588805h
130	2.792976l	3.200091l	1.742986l	4.472198k	2.031069k	1.863027j	2.005994k	2.445798j	2.726681j	0.847124l
131	3.742352d	4.066951h	2.949756f	4.365749g	3.520040g	3.362428f	3.106466f	2.815254h	3.600055d	1.599812h
132	5.037372e	3.983494h	4.376397f	5.231195g	5.041959j	4.709868f	4.483763e	3.428572g	4.853792d	2.152595g
133	6.038073d	4.560393i	6.893372h	4.865743j	6.919886e	6.459724e	6.649572d	4.663337i	6.468864f	3.152104g
134	6.314475d	4.985265i	7.740875f	6.009275h	7.486179g	7.544606e	7.430162d	6.642892h	7.072826e	3.899700h
135	6.423164d	5.133530i	6.079545f	6.376440k	7.442543e	7.069647e	6.997196f	5.246944g	7.259395f	4.190145g
136	7.039554e	5.708629l	6.592126g	6.243613g	6.681315f	6.687501f	6.877002f	6.579760k	6.712400e	4.191617j

137	6.749106d	5.076073h	6.004417h	4.545788i	6.559005g	6.386823f	6.315746f	5.598808g	6.252811e	5.022656g
138	6.575755e	6.396232k	6.638414k	4.131454k	6.449165f	6.147261i	6.195603f	5.760764g	6.135233f	5.561545g
139	5.887556f	5.866070h	6.062405i	4.128723j	5.982345i	6.307392g	6.015723f	5.796842g	5.634704f	5.853515f
140	6.005914e	5.030049j	5.635502f	3.843636i	5.505426f	5.306048f	5.449694g	5.989903g	5.493600e	5.959867e
141	6.247733g	4.464269h	5.379958h	3.560214i	5.015438h	5.075319h	5.016567i	6.114955g	5.341258g	5.966351f
142	6.122289e	4.397528l	5.423144h	3.108543j	4.889920f	4.634242f	4.600878f	5.408502i	4.795652f	6.025751g
143	5.524121d	3.218155h	5.762824h	2.807836i	4.436753f	4.671235d	4.545299e	5.119583g	4.649954f	6.253822f
144	4.379333d	2.478323i	5.111680h	2.704471h	3.962051g	4.171096f	4.262299f	4.217892i	4.139619f	5.899073f
145	3.199751d	2.025202j	4.152905i	2.158065j	3.075099f	3.326693d	3.369644e	2.630949h	3.450362f	5.051517h
146	2.381593d	1.629104m	3.462719j	1.743971k	2.553082e	2.805788d	2.908089e	2.453127j	2.799534f	4.433891h
147	1.685954d	1.241185i	2.295173f	1.709635i	2.202893f	2.224196f	2.370548f	1.864808h	2.227831f	4.280649f
148	1.197536d	0.884282m	1.729152m	1.295678k	1.774039f	1.956179d	2.001289e	1.068817j	1.719460f	3.945769j
149	0.710615d	0.616857k	1.338310j	1.055207k	1.335202e	1.458571e	1.573372e	0.813042i	1.302589f	2.719409g
150	0.469859e	0.446070m	0.739914n	0.993759l	1.085382f	1.230379d	1.319905e	0.410517j	0.993970f	2.444907k
151	0.308286d	0.342014j	0.414867k	0.737611k	0.850480e	0.911266f	0.987960f	0.232520h	0.727214f	1.948906g
152	0.192187e	0.216819l	0.315192m	0.539999l	0.651102f	0.731908e	0.790400f	0.129381j	0.459940f	1.721700k
153	0.103453i	0.142869j	0.252867n	0.457717k	0.514598i	0.550597h	0.623322g	0.089584i	0.365157h	1.292928g
154	0.043626g	0.097651l	0.131116n	0.326903l	0.309577h	0.381333f	0.435689f	0.055172j	0.187242f	1.067268k
155	0.022742o	0.065374l	0.093655n	0.233150k	0.235513i	0.335845l	0.328165n	0.031656j	0.141933k	0.792890h
156	0.017567k	0.043623i	0.033729i	0.213972i	0.173939i	0.244251l	0.237008n	0.018313j	0.100496i	0.676700g
157	0.010122l	0.027761k	0.023414n	0.113299k	0.130276j	0.162834l	0.164082n	0.010612j	0.032215l	0.537819h
158	0.003317n	0.017080l	0.011239n	0.073087l	0.077783m	0.111948l	0.109388n	0.006249j	0.012772l	0.469618k
159	0.001734l	0.010649k	0.004402n	0.052510k	0.035905i	0.065134l	0.065633n	0.004550j	0.006491l	0.340237i
160	0.000419n	0.007162l	0.001967n	0.035386l	0.019401n	0.039692l	0.041021n	0.001724j	0.002508l	0.285805k
161	9.48e-05n	0.004672i	0.000493i	0.018506i	0.011869j	0.023407l	0.023701n	0.001058i	0.000779l	0.193696h
162	2.27e-05n	0.002749n	0.000206n	0.009047l	0.006864m	0.011788m	0.012762n	0.000510j	0.000303l	0.119572l
163	1.04e-05n	0.001706n	0.000112n	0.003195l	0.002167m	0.005228m	0.005469n	0.000255j	0.000130l	0.075839l
164	3.51e-06n	0.001047n	4.50e-05n	0.001841l	0.001164n	0.003313n	0.001367n	0.000132j	5.62e-05l	0.047208l
165	1.16e-06m	0.000626n	1.72e-05m	0.000737l	0.000570m	0.001538m	0.000937m	7.28e-05j	1.92e-05k	0.028645l
166	6.73e-07n	0.000264k	1.03e-05n	0.000505l	0.000303n	0.000621n	0.000456n	2.97e-05i	1.12e-05l	0.018396k
167	9.38e-08n	0.000218n	4.87e-06n	0.000274l	0.000182n	0.000311n	0.000182n	1.59e-05j	1.55e-06l	0.009568l
168	2.46e-08n	0.000133n	1.22e-06n	0.000138l	9.10e-05n	0.000124n	7.29e-05n	8.01e-06j	3.98e-07l	0.005251l
169	8.24e-09n	8.29e-05k	3.00e-07n	6.42e-05l	9.27e-05l	5.90e-05n	4.38e-05n	3.88e-06j	1.30e-07l	0.001669m
170	2.46e-09n	4.37e-05n	9.08e-08n	4.80e-05l	2.02e-05n	1.66e-05n	2.10e-05n	1.74e-06j	4.08e-07l	0.001398o
171	7.58e-10n	2.37e-05n	3.00e-08n	3.67e-05l	1.11e-05n	5.80e-06n	1.19e-05n	8.19e-07j	1.21e-07l	0.000708o
172	2.84e-10n	2.28e-05m	8.05e-09n	1.84e-05l	6.06e-06n	1.66e-06n	6.38e-06n	3.81e-07j	4.68e-07l	0.000346o

Table 9
Set C Mass Chain Yields

mass	u234f	u237f	pu240h	u234he	u236he	pu238f	am241f	am243f	np238f	cm242f
66	3.92e-06n	4.46e-07n	6.18e-05m	0.000446k	0.000185k	1.22e-06n	9.34e-07n	4.99e-07n	1.29e-07n	9.98e-07n
67	9.29e-06n	1.39e-06n	0.000132m	0.001052k	0.000406k	2.04e-06n	1.87e-06n	8.98e-07n	5.47e-07n	2.99e-06n
68	2.68e-05n	1.98e-06n	0.000245n	0.001472n	0.000787n	6.12e-06n	5.71e-06n	2.20e-06n	2.29e-06n	3.99e-06n
69	6.19e-05n	5.95e-06n	0.000501n	0.002060n	0.001096n	2.04e-05n	9.34e-06n	4.99e-06n	6.97e-06n	5.99e-06n
70	0.000207n	1.19e-05n	0.001002n	0.003436n	0.001994m	7.14e-05n	2.08e-05n	1.60e-05n	1.59e-05n	1.50e-05n
71	0.000516n	2.78e-05n	0.002146n	0.005298n	0.003088n	0.000183n	3.32e-05n	2.50e-05n	4.38e-05n	2.59e-05n
72	0.000634m	4.96e-05n	0.004575k	0.010425j	0.004685j	0.000428n	0.000135n	4.99e-05n	0.000159n	6.39e-05n
73	0.001074m	0.000298m	0.008405i	0.014800m	0.008177m	0.000461m	0.000349m	0.000120m	0.000299l	0.000200m
74	0.004143m	0.000991n	0.016348n	0.022567n	0.013944n	0.001267m	0.000685n	0.000280n	0.000648m	0.000399n
75	0.011764m	0.003172n	0.032695n	0.034342n	0.019920n	0.002433m	0.001350n	0.000699n	0.002890m	0.000898n
76	0.026097m	0.007334n	0.052206n	0.055061n	0.028895n	0.007862m	0.003644n	0.001299n	0.005233m	0.001364m
77	0.056774m	0.017887m	0.076151m	0.083869m	0.059830m	0.021288m	0.008729m	0.002896m	0.014451m	0.004942m
78	0.088793n	0.046589n	0.110352n	0.135411n	0.109573n	0.036494m	0.018485m	0.004992n	0.030398m	0.012980m
79	0.144550n	0.075342n	0.159412n	0.206237m	0.169365n	0.067414m	0.034404m	0.018970n	0.057810m	0.027956m
80	0.216850n	0.128942n	0.221860n	0.260171n	0.239304n	0.111522m	0.061629m	0.038955n	0.098687m	0.047489m
81	0.361367n	0.208182n	0.299399n	0.472964n	0.348707n	0.182472m	0.095508m	0.064894n	0.169432m	0.085865m
82	0.653781n	0.307337n	0.402437n	0.828336n	0.540249m	0.275110m	0.157605n	0.100272n	0.239364m	0.124796m
83	1.207121m	0.477178m	0.507700m	1.174167m	0.638303m	0.378619l	0.236196m	0.169797m	0.388699m	0.191277l
84	1.963561l	0.926643n	0.660155n	1.493364m	1.072087m	0.613372n	0.354250n	0.252693n	0.682940n	0.289891n
85	2.173022j	0.964954m	0.832866m	2.318464l	1.347133m	0.709709m	0.509810m	0.359741m	0.708002m	0.409372m
86	3.494133m	1.552907l	1.046460m	2.269865m	1.744527m	1.043544m	0.654537m	0.503297m	1.151290m	0.566987n
87	2.989971j	1.791696m	1.246311j	3.184755l	2.579003m	1.185290l	0.854085l	0.674492m	1.440597m	0.790016m
88	3.966095j	2.744195l	1.490658j	3.767984l	2.655251m	1.601367m	1.265693m	0.875808n	1.801165m	0.960182m

89	5.389946l	3.389245l	1.747368i	4.300028l	3.659138j	2.074393m	1.357625m	1.124441m	2.300614l	1.219797m
90	6.038863l	3.915434l	1.952523i	4.707081l	3.820010l	2.434680l	1.715407m	1.369531m	2.667405l	1.517704m
91	6.425058j	4.386102l	2.450160h	5.002994l	4.254236k	2.948812l	2.126664i	1.748210m	3.223750l	1.887072m
92	6.110431j	4.810684l	2.872168h	5.183537l	4.818080l	3.477655l	2.939793j	2.106981m	3.677868l	2.269659l
93	6.155856i	5.299536k	2.896950i	5.042664k	5.069331j	4.112736l	2.818777l	2.578962l	4.380033l	2.661108l
94	6.418682l	5.464065l	3.493818l	5.165801l	5.361608l	4.740867l	3.688954m	3.143605m	4.846381l	3.358067l
95	6.334472j	5.610686l	3.697669i	5.032528j	5.261609j	4.424131l	3.751411i	3.739426l	5.044699l	4.015632l
96	6.224629l	5.804128l	4.135222l	5.292175l	5.307519l	5.337094l	4.740649l	4.453158l	5.421906l	4.633765l
97	6.038748i	5.879938l	4.276969i	5.042643j	5.445944j	5.656110l	4.636896i	4.677929l	5.650345l	4.844937l
98	5.766617l	5.938378k	4.759399l	4.857642l	5.225298l	5.622103l	5.445534l	5.087262l	5.697342k	5.205408l
99	5.075879i	6.197933k	4.868966i	4.254718j	5.126146j	6.112515k	5.398710i	5.398364k	6.164795k	5.427610k
100	4.136138l	5.941237k	5.207708l	3.508873l	4.790620l	6.108882l	5.909581k	5.445501l	6.095436l	5.649250l
101	3.394207l	5.804044l	5.397972l	3.167298m	4.201578l	6.048102l	6.104194l	5.924719l	6.055529l	5.953334l
102	2.669984m	5.685019l	5.438604l	2.970021m	3.553056l	6.139202l	6.063632l	5.994938l	6.145743l	5.973385l
103	2.417112i	4.948943l	5.291055i	2.298263l	3.213834l	5.896871l	6.451358i	5.905154l	5.816819l	5.943383l
104	1.321509l	4.639230l	5.218491l	2.084273m	2.820132l	5.706725l	6.024053l	5.990533l	5.707294l	5.945120l
105	1.237440i	2.688536l	4.754474g	2.132680k	2.504589j	4.762554k	5.335824i	5.866728k	4.240514l	5.785440k
106	0.429079k	2.060784l	4.021683i	1.529381m	1.814851m	4.240739l	4.813459i	5.624986l	3.840821l	5.483860l
107	0.268439n	1.122885m	3.147594m	1.233372m	1.585501m	3.010741m	5.125893l	5.245324l	2.444159l	5.134254l
108	0.185862n	0.495590n	2.638614l	1.420996m	1.376317m	2.140623l	4.117154l	4.936190l	1.656408l	4.485087l
109	0.122809m	0.178977m	2.297550i	1.258807l	1.197770m	1.216499m	2.335166i	3.778282k	0.897512m	3.406221l
110	0.103246n	0.128837n	1.949985m	1.420860m	1.296324m	0.608231m	2.054700m	2.816597m	0.477711n	2.412818m
111	0.058195m	0.069377n	1.671646i	1.318350j	1.106070j	0.305820n	1.001643i	1.747796m	0.229225m	1.427738m
112	0.072272n	0.059466n	1.568710i	1.471315j	1.160652j	0.163104n	0.743581i	0.928829m	0.129380n	0.738830m
113	0.059741m	0.043712m	1.717772i	1.304214m	1.085207m	0.082404m	0.285529m	0.421411m	0.069905m	0.351414m
114	0.058850n	0.036671n	1.248885m	1.324603n	1.047029m	0.081552n	0.134957n	0.219608n	0.073647n	0.179597n
115	0.068516k	0.041579l	1.193070g	1.328335k	1.044624k	0.083435m	0.159600i	0.101991m	0.071175m	0.110575m
116	0.056786n	0.034688n	1.066283m	1.180295m	1.266416m	0.075051m	0.102696m	0.099822n	0.060794m	0.099776n
117	0.054787m	0.034780m	0.861726g	1.193030l	1.143987l	0.075015m	0.092426m	0.099911l	0.060855l	0.099842m
118	0.054787m	0.035773m	0.984892m	1.190142m	1.101793m	0.074416n	0.092426m	0.094880m	0.059798m	0.089858m
119	0.059768m	0.034744m	1.004251m	1.170307m	1.022384m	0.072887m	0.087292m	0.089887m	0.058343m	0.089858m
120	0.064644n	0.034744m	1.065212m	1.150471m	1.052162m	0.074884m	0.087292m	0.084893m	0.059315m	0.084866m
121	0.069617n	0.036618n	1.166651m	1.338944m	1.161425m	0.077829n	0.093612n	0.084850n	0.061501n	0.082838n
122	0.081585n	0.044535n	1.248066m	1.220235m	1.101895m	0.082448n	0.099163n	0.094724n	0.064385n	0.092673n
123	0.099453n	0.056410n	1.369443m	1.299239m	1.171275m	0.092797n	0.114414n	0.099669n	0.072071n	0.107203n
124	0.119440n	0.071312n	1.536602m	1.430212n	1.293255m	0.109895n	0.125526n	0.119679n	0.083231n	0.118397n
125	0.156502l	0.119122m	1.613847m	1.610590l	1.469057m	0.149768m	0.193194k	0.129836j	0.126410m	0.155931n
126	0.259256l	0.177882m	2.066375l	2.136081l	1.596479m	0.230362l	0.261674l	0.230988l	0.184736m	0.268908l
127	0.388771j	0.248163m	2.002128i	2.197159l	1.955418m	0.369425m	0.380497m	0.349178m	0.272261m	0.373166m
128	0.647501m	0.574035n	2.919041l	2.510235m	2.234180m	0.659086m	0.613680n	0.568125n	0.586200n	0.604254n
129	1.616498j	1.012595m	2.859785l	3.191397l	2.809725k	1.118321m	1.018105m	0.947889m	1.011311m	1.011492m
130	2.540781m	2.029719l	4.309479l	3.478193m	3.350675l	2.227635m	1.867115m	1.736782m	2.090704m	1.906686m
131	3.735867j	3.213456l	4.460339i	3.708335l	3.809984l	3.915719l	4.168328i	3.194724l	3.476196j	3.455496l
132	4.364303j	4.755271l	4.590675k	5.261590k	4.873230k	5.304196l	4.321860j	4.722176l	5.147919k	4.887063l
133	6.464197i	5.472325k	5.553934i	5.010730l	5.390076k	5.873619l	5.817838h	5.620808l	5.769666k	5.647269l
134	5.749837j	6.819004l	5.473597k	5.542541k	5.844895l	6.604941l	7.828396k	6.237599k	8.045237j	6.296452l
135	5.581853k	6.624940k	5.341134h	5.459793l	5.573625l	6.745252l	6.506050h	6.772182l	6.429053j	6.764861l
136	6.492108l	6.718522k	5.776373l	6.500150l	6.109720l	7.420700l	7.796377l	7.457241l	7.278368k	8.302974l
137	5.862588i	6.466979k	4.541609i	5.031960i	5.139651i	6.510333l	5.838064i	7.152656l	6.555696l	6.981347l
138	6.587177l	6.287656l	5.445086k	5.261842l	5.071495l	6.296191l	6.655478k	6.605988l	6.192929l	6.441033l
139	6.004106l	6.068429l	4.583750i	5.279236l	5.203529l	5.724017l	6.751272i	5.950888l	5.730036l	5.775629l
140	5.787173h	6.640428l	3.853162i	3.930933j	4.118092j	5.614320l	4.941442g	5.481615l	5.786680l	5.370960l
141	6.505636j	5.575092l	3.587640i	3.680841j	4.054839j	4.785162l	4.719010i	4.952430l	4.933550l	4.768646l
142	5.990981j	5.456845l	3.899261j	4.325688l	4.262499l	5.875272l	5.448542l	5.246326l	5.771746l	5.381958l
143	6.142069j	4.816876l	3.102701i	3.285722j	3.939119j	4.535451l	3.888470i	5.202590l	4.379986l	4.966082l
144	5.443792j	4.852575l	2.671651i	2.695224j	3.486658j	3.925876l	3.414493i	4.153681l	4.140539l	3.949147l
145	3.989072l	3.632061l	2.687350k	2.340618m	2.551063m	3.236464l	3.447823l	3.414374l	3.265225l	3.297530l
146	3.071571l	3.123756l	2.130256m	1.914146m	1.995138m	2.766972l	2.917383l	2.895203l	2.853172l	2.794016l
147	2.017734j	2.616392l	1.785936i	1.282374h	1.732623h	2.236537m	2.149320i	2.336129l	2.392061m	2.180079m
148	1.434487m	1.856962m	1.511467m	1.047696n	1.270610m	1.757320m	1.902551m	1.865712m	1.770249m	1.806850m
149	1.035806k	1.442550l	1.367703h	0.622681n	0.880697n	1.597527m	1.570523i	1.556353m	1.750311m	1.492667m
150	0.637331n	1.042320m	1.069353n	0.483257n	0.684734n	0.982394n	1.239334m	1.233071m	0.903318n	1.241071n
151	0.318111l	0.771929n	0.811540j	0.336050n	0.484876n	0.908011n	0.946359i	0.966791n	0.894592m	0.932917m
152	0.248632n	0.524515n	0.653045n	0.237211n	0.356236n	0.678513n	0.811300n	0.797353n	0.643832n	0.750385n
153	0.148761l	0.346378n	0.580414i	0.181944k	0.279672k	0.468972n	0.629203i	0.588048n	0.432424n	0.545759n
154	0.080563n	0.188033n	0.400489n	0.089192n	0.141543n	0.319398n	0.426601n	0.418833n	0.288283n	0.407957n

155	0.050721n	0.118758n	0.279493i	0.064245n	0.092028n	0.239475n	0.398477i	0.308974n	0.201798n	0.292371n
156	0.020885n	0.057400n	0.226092i	0.047118j	0.070480j	0.159650n	0.262464i	0.219272n	0.124923n	0.204660n
157	0.010940n	0.042555n	0.160359i	0.032617n	0.049477n	0.099781n	0.145618n	0.149504n	0.077836n	0.136444n
158	0.006365n	0.014845n	0.110223n	0.019769n	0.027707n	0.079721p	0.096732n	0.095683n	0.043242n	0.088735n
159	0.002089n	0.006829n	0.070300l	0.011638k	0.016302k	0.035921n	0.079375i	0.057808n	0.025945n	0.053602n
160	0.001095n	0.002730m	0.052202n	0.007020n	0.009921n	0.019994n	0.063022n	0.034972n	0.013453n	0.034201n
161	0.000438m	0.001042m	0.034781i	0.004551k	0.006469j	0.010234m	0.037668i	0.019934n	0.007001m	0.018517n
162	0.000159n	0.000297n	0.023470n	0.002767n	0.003859n	0.003744m	0.008741m	0.008480m	0.002917m	0.007365m
163	4.97e-05n	5.15e-05n	0.016327n	0.001680n	0.002276n	0.001796n	0.002571m	0.003242m	0.000942n	0.002455m
164	2.88e-05n	2.77e-05n	0.010220n	0.000990n	0.001386n	0.000699n	0.001040n	0.001395n	0.000279n	0.001078n
165	9.46e-06m	9.93e-06m	0.006939n	0.000583n	0.000754m	0.000300m	0.000617m	0.000599m	8.17e-05m	0.000526n
166	2.49e-06n	5.94e-06n	0.004490n	0.000257n	0.000420j	0.000130n	0.000239n	0.000299n	2.69e-05n	0.000214n
167	5.97e-07n	2.38e-06n	0.002857n	0.000208n	0.000257n	4.49e-05n	0.000104n	9.97e-05n	1.15e-05n	7.80e-05n
168	2.69e-07n	1.09e-06n	0.001837n	0.000119n	0.000148n	6.98e-06n	4.16e-05n	5.58e-05n	4.13e-06n	2.44e-05n
169	9.45e-08n	4.16e-07n	0.001154i	7.91e-05n	0.000119m	3.99e-06n	1.46e-05n	2.39e-05n	1.25e-06n	1.46e-05n
170	2.49e-08n	8.41e-08n	0.000741n	3.91e-05n	4.46e-05n	1.70e-06n	8.33e-06n	1.30e-05n	3.08e-07n	1.01e-05n
171	7.96e-09n	2.28e-08n	0.000531n	2.08e-05n	2.47e-05n	6.98e-07n	4.89e-06n	3.49e-06n	6.73e-08n	4.48e-06n
172	1.19e-09n	6.93e-09n	0.000367n	1.68e-05n	1.38e-05n	3.79e-07n	1.98e-06n	1.79e-06n	5.77e-09n	2.73e-06n

Table 10
Set D Mass Chain Yields

mass	th227t	th229t	pa231f	am241t	am241h	a242mt	cm245t	cf249t	cf251t	es254t
66	8.53e-08n	3.02e-08l	9.85e-05n	1.36e-07n	0.000339n	9.57e-06n	1.04e-06n	3.00e-07n	9.35e-05n	9.39e-09n
67	2.16e-07n	7.18e-08l	0.000177n	2.52e-07n	0.000726n	1.91e-05n	2.09e-06n	5.01e-07n	0.000140n	1.88e-08n
68	8.23e-07n	2.71e-07l	0.000345n	5.81e-07n	0.001162n	2.87e-05n	4.18e-06n	3.00e-06n	0.000187n	3.75e-08n
69	2.35e-06n	1.15e-06l	0.000689n	1.26e-06n	0.001937n	5.74e-05n	1.04e-05n	5.71e-06n	0.000281n	7.51e-08n
70	5.19e-06n	3.64e-06l	0.001280n	4.55e-06n	0.003200n	9.57e-05n	2.61e-05n	3.06e-05n	0.000374n	1.41e-07n
71	1.27e-05n	1.56e-05l	0.002462n	6.78e-06n	0.004842n	0.000191n	5.75e-05n	5.36e-05n	0.000468n	2.35e-07n
72	5.68e-05n	7.18e-05l	0.004432n	9.93e-06n	0.008716n	0.000478n	0.000104n	0.000109n	0.000655n	1.45e-07l
73	9.37e-05m	0.000260l	0.008903m	3.98e-05m	0.013559n	0.000957n	0.000209n	0.000214m	0.000954m	9.69e-07l
74	0.000265n	0.001041l	0.016742n	8.94e-05n	0.021308n	0.001722n	0.000460n	0.000533m	0.001216n	1.88e-06n
75	0.000784n	0.003383l	0.031514n	0.000248n	0.027118n	0.002871n	0.000773n	0.000956m	0.001777n	3.29e-06n
76	0.002256n	0.011973l	0.059124n	0.000517n	0.038940n	0.005746n	0.002091n	0.001913m	0.002340n	6.58e-06n
77	0.010891l	0.042056j	0.098926m	0.003383m	0.058663m	0.009695m	0.005158m	0.004620m	0.003340m	1.36e-05l
78	0.037246n	0.255851k	0.196972n	0.007148n	0.077482n	0.019138n	0.010448n	0.008172l	0.004676n	2.42e-05l
79	0.643541l	0.422800j	0.396969l	0.011939m	0.106546n	0.029353l	0.020448l	0.018454l	0.005806l	4.85e-05l
80	1.883283m	1.636491i	0.689483n	0.021847n	0.181000m	0.047855n	0.036582n	0.030261l	0.008420n	9.39e-05n
81	3.485008l	2.298120i	0.989297m	0.043684n	0.249329m	0.066983n	0.062692n	0.048030l	0.011223n	0.000235n
82	4.883868m	3.456487j	1.691246m	0.064077n	0.354041m	0.115419n	0.104844n	0.075751l	0.015551l	0.000424n
83	5.653256l	5.199428g	2.301276j	0.177265j	0.464420m	0.247989j	0.190982k	0.129884i	0.021947m	0.000872l
84	6.149415l	9.351723f	4.230482j	0.277786j	0.593532m	0.390846j	0.269753m	0.189642l	0.028484n	0.001726n
85	6.722658k	9.209156f	4.484248i	0.318023j	0.782329m	0.450324k	0.294181i	0.250688l	0.042969m	0.003352m
86	7.084953k	8.306021f	5.149603l	0.443596l	0.948662m	0.571047m	0.474388n	0.336594l	0.056565n	0.007124n
87	7.038131l	7.237108g	5.963832l	0.697907m	1.076704i	0.674619n	0.508205j	0.422156l	0.075285n	0.014230n
88	7.083168l	8.189612g	6.633533l	0.768877l	1.214488k	0.920838m	0.614886i	0.521144l	0.104051n	0.028593n
89	7.588615h	9.054496f	6.985217i	0.988304i	1.537910m	1.192149j	0.857202i	0.455434i	0.151198n	0.051894k
90	7.682956i	8.373094h	6.849946l	1.366567j	1.741136m	1.379422j	1.080187k	0.588868i	0.296187m	0.113012n
91	6.167085k	6.593329f	6.448984j	1.847946h	2.044897h	1.749651k	0.880204h	0.828127g	0.519946i	0.275741j
92	4.740288l	5.965047g	6.773657l	2.010441h	2.217020j	2.101637i	1.290145j	0.891135h	0.581024n	0.357619n
93	4.373777l	4.844053g	6.715180l	2.687143i	2.424342l	2.579150j	1.816635i	1.078319h	0.701689k	0.470869m
94	3.664474l	4.111336j	6.359588l	3.192690l	2.598156i	2.721451m	1.639377i	1.197019h	0.749811n	0.565227n
95	3.382430j	2.675366f	6.356235i	3.977545g	3.124817i	3.294279j	2.351206h	1.506069f	0.978960j	0.708960j
96	2.613811m	1.380278j	4.966944l	4.260961l	3.284327l	3.624064l	2.824579l	1.680999i	1.432866m	0.751744n
97	2.382440l	0.731037g	4.353357h	5.267398g	3.545127j	4.280808j	2.896429h	2.085608f	1.649746i	0.975554j
98	1.366808l	0.271352j	3.178944l	5.875970l	3.939538l	4.611194l	3.679975l	2.318423i	2.203117m	1.343856m
99	1.432854j	0.152071h	2.534050h	6.624390g	4.336901i	5.349424i	4.169585f	2.800711g	3.288263h	2.297705i
100	0.936641m	0.036026l	1.978594m	6.254700k	4.566865l	5.479308l	4.938151l	3.236425i	3.386625l	2.423282l
101	0.749312m	0.013081l	1.384969m	5.998302l	4.783424l	5.870560l	5.761641j	3.686038i	3.870362l	2.487148m
102	0.581725m	0.006552l	0.643032m	6.177847l	4.891798l	6.653634l	5.956845k	4.214248i	4.257632l	2.714242l
103	0.570188l	0.005997j	0.370689i	6.229465h	5.040525i	7.072962j	6.328250h	4.927273f	4.354513l	3.128265j
104	0.314197n	0.010114l	0.197173n	6.219106l	4.727494i	6.951483l	6.754414j	5.092728h	4.553161l	3.398538l
105	0.276770k	0.008090h	0.146306k	6.644416g	4.729528i	6.953949j	6.402817g	5.434584f	4.843500i	4.248856i
106	0.173128m	0.012004j	0.103468k	5.958447l	4.123556i	6.164088l	5.742900i	5.618008g	4.934712l	4.023853j
107	0.094091n	0.010813l	0.095527n	5.270934l	3.784033i	5.381347l	5.579344j	5.698314i	5.224989l	3.877234l

108	0.053909n	0.011742l	0.078791n	4.254739l	3.513967l	4.109745l	5.743715l	5.725655i	5.322621l	3.684061l
109	0.033753m	0.012898k	0.079651j	2.494585i	3.222369i	3.749192j	4.658722j	5.579277h	5.225069i	3.721595j
110	0.035284n	0.016895k	0.068937n	1.492485m	2.876922l	2.423846m	4.723505l	5.414621i	5.225127l	3.877295l
111	0.040989l	0.021650i	0.095282j	0.951136h	2.332104i	1.534712j	4.010336i	5.500346h	5.017987h	4.192541h
112	0.028713l	0.020836i	0.058512j	0.559857i	2.423159i	0.642989j	3.006297k	4.925475h	5.334010i	4.342348j
113	0.036696l	0.017003j	0.080964j	0.196580k	2.467821i	0.251871m	2.039334k	4.165386i	4.456789j	3.890811j
114	0.030304n	0.021486l	0.061059n	0.148919n	1.838109m	0.105254n	1.093787m	3.624160i	4.508978l	4.943476l
115	0.030215m	0.019833i	0.083305j	0.051124h	1.720210i	0.073742j	0.559542h	2.986375g	4.559190g	5.572666h
116	0.032324n	0.019618l	0.064668m	0.039796m	1.544809m	0.038780m	0.216646m	2.199953i	3.627723m	5.480334k
117	0.038272m	0.022747i	0.065692m	0.031885l	1.496050l	0.029353l	0.143133l	1.830886j	2.902772l	5.087148k
118	0.047476n	0.016930i	0.066719m	0.036024l	1.447021m	0.027146m	0.084595m	1.021380i	1.908332m	4.458818l
119	0.063451m	0.015712k	0.068772m	0.027857m	1.447021m	0.023268m	0.052614m	0.609513i	1.240416m	3.913191k
120	0.083840n	0.014678l	0.072878m	0.025867m	1.540443m	0.023268m	0.037139m	0.385308l	0.763333m	3.392579l
121	0.113596m	0.013309k	0.079029k	0.026180n	1.601252m	0.019529j	0.031133k	0.206423i	0.497224i	2.695797i
122	0.109142n	0.013673k	0.087210n	0.029351n	1.788519m	0.032850n	0.053311n	0.180266l	0.280555n	2.295830m
123	0.221216n	0.012893l	0.098553n	0.039794n	1.905286m	0.043771n	0.063304m	0.168209i	0.196388n	1.938617l
124	0.313720n	0.011105l	0.116361n	0.050377n	2.296014m	0.054787n	0.071014n	0.137428l	0.187420n	1.339261m
125	0.500067k	0.005644m	0.145755m	0.081637m	2.352158l	0.103657l	0.093503k	0.207119k	0.380967k	0.903326k
126	0.569149l	0.019045j	0.193271l	0.170100l	3.578009k	0.169126l	0.161991l	0.446129l	0.506719m	0.845123l
127	0.673108l	0.038914k	0.291509m	0.585649h	2.321208i	0.266662m	0.486344j	0.588926j	0.608631j	0.944831j
128	0.926608m	0.051942m	0.529081n	0.930118m	2.908697l	0.413702l	0.651684i	0.783704i	0.709418m	1.286096l
129	1.428327k	0.118843i	1.034453h	1.361734h	3.604077l	1.471999m	1.270584j	1.630072j	0.929550i	1.960259j
130	1.864049m	0.417244k	2.084777m	2.233984m	4.595209l	2.004841m	1.850324j	1.974170i	1.216432m	2.461702m
131	2.626336l	0.604336g	2.667257i	3.563315f	4.472304i	3.483687h	2.915607g	3.168128g	1.841308i	3.794180i
132	3.388646i	1.204007f	3.584308i	4.775108f	3.772098k	4.813691h	4.184611f	4.159552h	3.217466j	4.798906j
133	4.839077k	2.966538f	5.092815i	5.507630e	4.630996h	5.982260i	5.467867g	5.249503g	3.911973j	5.058292k
134	5.729390l	5.968143f	6.375640k	7.239502g	5.281205k	7.003336i	7.100712h	5.390574g	4.854212l	5.354648l
135	6.776684l	5.806931f	6.672920i	7.012588g	4.741971j	6.654152k	6.800380g	5.420276h	4.432428j	5.476295j
136	7.666171l	5.974547f	7.476111l	7.930157g	6.216885l	6.553652k	5.041344j	5.662877k	5.665815l	5.135196l
137	6.966919k	7.169380g	7.018564i	6.415981h	4.390373i	6.137532j	6.219815i	5.700280h	5.707720l	4.699539l
138	7.248573l	7.888810g	7.452637l	6.934448i	4.404919l	5.975975l	6.173800h	5.399914h	5.777183l	4.474047l
139	7.548144l	8.487908g	7.345277l	6.668077g	4.079915i	5.766955j	5.843295i	6.109041g	5.655673l	4.157150l
140	7.749613k	7.940885f	6.715763h	5.936439g	3.532391j	5.409275j	5.516822f	5.324028f	4.509273h	3.995753h
141	7.640609j	7.461594f	6.838927i	4.791970g	3.243333i	5.244436j	5.159751h	5.431640h	4.918617j	4.583781i
142	7.448923l	7.300350g	6.208105l	4.720582k	3.038531i	4.490711j	4.731230h	4.393599g	5.464604l	4.592552l
143	6.989135j	8.307434g	5.325788h	3.671068g	2.704216i	4.637793j	4.417257g	4.704304g	5.080525i	4.827392i
144	5.966224j	9.758022h	4.694476i	3.488406h	2.525339i	4.425765j	4.298894j	4.317734h	5.050883l	3.889585j
145	3.105632l	5.016667j	3.208685j	3.313133i	2.249859m	3.350866l	3.036074j	3.537418k	4.947034l	3.561060l
146	1.037369m	3.379384h	2.607171m	2.645464m	2.026899m	2.879976m	2.754335j	3.351229h	4.239998l	3.264100l
147	0.183393m	2.114336h	2.027286h	2.032382h	1.815791i	2.466797j	2.438092h	2.856442h	3.513508k	2.967364l
148	0.031314n	1.021486h	1.560233m	1.829189m	1.590821m	2.133477m	2.316050l	2.255527l	3.345269m	2.659000m
149	0.010101n	0.588230h	0.921756i	1.432518i	1.305875i	1.719593j	1.950343j	2.053920h	3.020187k	2.264642m
150	0.002021n	0.178456i	0.550639n	1.148799m	1.235721m	1.602343m	1.818158m	1.755003l	2.424743l	1.979998l
151	0.000505n	0.037998k	0.316407n	0.839475j	0.897233i	1.218078j	1.142816h	1.604719h	2.019051l	1.700240k
152	0.000202n	0.009755l	0.179470n	0.722576n	0.815177n	1.023991m	1.222758m	1.255875l	1.520199m	1.624615m
153	0.000101n	0.002058l	0.076967j	0.602388i	0.671613i	0.829094j	1.295211m	1.210257g	1.216134m	1.591976l
154	4.04e-05n	0.000483l	0.041501n	0.377025n	0.530077n	0.547193n	0.892515m	0.892833l	0.912163m	1.280085m
155	1.01e-05n	9.84e-05l	0.020748n	0.307721k	0.341757i	0.361109n	0.696315n	0.616094i	0.713341n	0.984615m
156	5.05e-06n	2.60e-05l	0.010374n	0.191143i	0.273777i	0.327549j	0.432886k	0.676861h	0.566411k	0.796263l
157	1.52e-06n	7.16e-06l	0.005187n	0.164262j	0.179285j	0.155052k	0.447993n	0.421298i	0.407619n	0.754309k
158	5.76e-07n	1.79e-06l	0.003216n	0.085871n	0.153996n	0.087542n	0.328393n	0.381032l	0.305713n	0.684770n
159	2.02e-07n	5.28e-07l	0.001556n	0.073005j	0.133100i	0.054713n	0.229064n	0.364075i	0.203810n	0.489121n
160	1.01e-08n	1.34e-07l	0.000737n	0.034595n	0.087645n	0.038331n	0.179528n	0.232957l	0.152907n	0.391501n
161	6.06e-09n	3.58e-08l	0.000373n	0.022102j	0.060727i	0.020150k	0.119600n	0.193116j	0.101904n	0.293473n
162	3.03e-09n	8.86e-09l	0.000197n	0.010472n	0.034647n	0.013131n	0.079666n	0.110678n	0.081523n	0.195649n
163	1.01e-09n	2.68e-09l	0.000104n	0.002827n	0.024462n	0.006566n	0.054732n	0.066861n	0.061142n	0.097824n
164	6.06e-10n	8.95e-10l	4.15e-05n	0.000325n	0.017450n	0.002189n	0.024934n	0.043472n	0.040762n	0.047934n
165	3.02e-10m	2.68e-10l	2.05e-05m	0.000100m	0.010190n	0.001067m	0.010904m	0.028031m	0.030403m	0.019692m
166	1.01e-10n	7.16e-11l	9.34e-06n	6.81e-05n	0.007133n	0.000547n	0.004460n	0.016692n	0.020381n	0.008804n
167	6.06e-11n	1.79e-11l	3.63e-06n	3.04e-05n	0.004076n	0.000219n	0.002230n	0.007394n	0.015285n	0.003913n
168	3.03e-11n	6.27e-12l	1.56e-06n	1.36e-05n	0.002956n	0.000109n	0.001318n	0.004182n	0.010190n	0.001956n
169	1.01e-11n	1.79e-12l	6.22e-07n	5.86e-06n	0.001936n	8.75e-05n	0.000598n	0.001687n	0.008152n	0.000978n
170	6.06e-12n	1.61e-12l	3.11e-07n	1.68e-06n	0.001165n	4.38e-05n	0.000294n	0.000863n	0.006115n	0.000489n
171	3.02e-12l	1.34e-12l	1.56e-07n	3.25e-07n	0.000774n	2.19e-05n	0.000172n	0.000481n	0.004076n	0.000196n
172	1.11e-12l	1.16e-12l	1.04e-07n	1.05e-07n	0.000510n	1.09e-05n	8.01e-05n	0.000363n	0.003057n	9.78e-05n

Table 11
Set E Mass Chain Yields

mass	cf250s	cm244s	cm248s	es253s	fm254s	fm255t	fm256s	np237h	u232t	u238s
66	0.001965n	3.98e-05n	0.000439n	0.000267n	2.83e-05n	0.000158n	0.000101n	0.005000n	0.006995n	8.13e-11n
67	0.002457n	6.57e-05n	0.000549n	0.000359n	3.84e-05n	0.000205n	0.000162n	0.006999n	0.008994n	2.45e-10n
68	0.002948n	9.96e-05n	0.000769n	0.000513n	5.26e-05n	0.000252n	0.000222n	0.008999n	0.012991n	8.13e-10n
69	0.003734n	0.000149n	0.000988n	0.000677n	7.48e-05n	0.000326n	0.000303n	0.011999n	0.017988n	2.45e-09n
70	0.004917n	0.000249n	0.001390m	0.000946n	0.000102n	0.000438n	0.000405n	0.015001n	0.025001n	8.13e-09n
71	0.005896n	0.000398n	0.001867n	0.001334n	0.000152n	0.000578n	0.000525n	0.019998n	0.034977n	2.45e-08n
72	0.007861n	0.000657n	0.002416n	0.001847n	0.000202n	0.000746n	0.000707n	0.024998n	0.046967n	8.13e-08n
73	0.009877m	0.000997m	0.003208m	0.002342m	0.000282m	0.000952m	0.001007m	0.032997m	0.067962m	2.55e-07m
74	0.012775n	0.001494n	0.004392n	0.003386n	0.000384n	0.001305n	0.001313n	0.042996n	0.089940n	8.13e-07n
75	0.016705n	0.002569n	0.005930n	0.004617n	0.000505n	0.001585n	0.001818n	0.052995n	0.129911n	2.45e-06n
76	0.019719n	0.003989n	0.007689n	0.006199n	0.000722n	0.002149n	0.002540n	0.070053n	0.170962n	8.13e-06n
77	0.025549n	0.004749m	0.010694m	0.008147m	0.001011n	0.002796n	0.003424m	0.094992m	0.249875m	2.55e-05m
78	0.032428n	0.009958n	0.014276n	0.011286n	0.001516n	0.003729n	0.004645n	0.119994n	0.349760n	8.14e-05n
79	0.042256n	0.016928n	0.018670n	0.015390n	0.002325n	0.004661n	0.007069n	0.160003n	0.479754m	0.000337m
80	0.050130n	0.026890n	0.025268n	0.022588n	0.003546n	0.006340n	0.009095n	0.200064n	0.640217n	0.000818n
81	0.068788n	0.044810n	0.035143n	0.030780n	0.005054n	0.008017n	0.012118n	0.259996n	0.799466n	0.004026n
82	0.089646n	0.070740n	0.046282n	0.041960n	0.008566n	0.010364n	0.016540n	0.351876n	1.144032n	0.012247n
83	0.096572j	0.115805k	0.045639j	0.061642k	0.012090m	0.013328m	0.022152m	0.449979m	1.499281m	0.029141j
84	0.159726l	0.115547m	0.076734k	0.082559n	0.017225n	0.016826n	0.030423n	0.585247n	1.802569m	0.107053j
85	0.223454k	0.220776k	0.100485k	0.112051m	0.026280n	0.023803m	0.040284m	0.730191m	2.672660k	0.081399m
86	0.287095k	0.202581m	0.165606k	0.155366n	0.041024n	0.030049n	0.055094n	0.918798m	3.356207l	0.985261i
87	0.287376m	0.369410m	0.214938m	0.204494m	0.056549m	0.040079m	0.074709m	1.210520m	4.383922k	1.545151m
88	0.345654n	0.448949n	0.278483n	0.288819n	0.095617o	0.051433n	0.111469n	1.528665m	6.208151j	2.586694i
89	0.477084k	0.715469i	0.434625k	0.369393k	0.131508n	0.065332n	0.151701n	2.020057l	6.916297h	3.955079i
90	0.513752m	0.806883k	0.481615m	0.458447m	0.201544m	0.085695m	0.201430m	2.503496l	6.598398l	5.431288h
91	0.566510i	0.824986k	0.596273i	0.532615j	0.394977j	0.111863n	0.242146l	2.669318k	7.157881h	5.820960h
92	0.772840n	1.096325n	0.859116m	0.616334n	0.444972n	0.139962n	0.303310n	4.024789l	6.849382i	5.860970i
93	0.952141m	1.298633m	1.195295m	0.680820k	0.482813j	0.190588m	0.404111m	4.915119k	7.292711h	6.215516h
94	1.137351m	1.496442m	1.502795m	0.968637m	0.495389n	0.233152n	0.525419n	5.038630l	6.227445i	6.500918i
95	1.481512i	1.627707k	1.627802i	1.145034l	0.521892i	0.307643n	0.666565n	5.544108l	6.199644h	6.606563i
96	1.532493m	2.495774m	2.101514l	1.531561m	1.015462m	0.410507n	0.747381m	5.507429l	5.834200l	6.679377i
97	1.583535i	3.064710j	2.617648i	1.874113i	1.261351h	0.687185k	0.767752m	5.379936k	5.431860h	6.540650i
98	2.483212l	3.495306l	3.221834m	2.231597l	1.511893m	0.699482n	1.010356n	5.310420l	4.699501l	6.497335i
99	3.278954h	3.896997h	4.120521h	3.104331i	1.754805j	0.856908m	1.208492m	4.861882j	4.207946g	6.071174g
100	3.568951l	4.989660l	4.510950l	3.445266l	2.218967m	0.952051m	1.510748m	5.200182l	3.000601m	6.130801i
101	4.008989l	5.787726l	5.245274l	3.849302l	2.714429l	1.142432m	1.812454m	4.999801l	1.999071m	6.537861h
102	4.956870l	6.885586l	5.455486l	4.558574l	3.016096l	1.237658m	2.009848l	4.599987l	1.499276m	6.160764h
103	5.303707i	6.929656k	5.514035i	5.856763i	3.168797i	1.332866m	2.210852l	4.329988l	1.060987h	4.557441h
104	6.473899k	7.685087l	6.313833l	6.282349l	4.022437l	1.523693m	2.719992m	4.001153l	0.349759n	3.744879h
105	6.593749h	9.293313i	6.397579h	6.241100k	4.931077j	2.388842j	3.108347j	3.444595k	0.243278k	0.786172k
106	6.825548i	7.397748k	6.169435i	6.531296j	5.564657j	2.415192l	3.617618l	2.999881l	0.099931n	0.269772m
107	7.270417k	6.985186l	6.294329l	6.280450l	5.428867l	2.608408l	4.522027l	2.499859m	0.025982n	0.139032n
108	6.939567l	5.987469l	6.086124l	5.875518l	5.630144l	2.705282l	5.225943l	1.900148m	0.008194n	0.081323n
109	6.331166k	5.012555k	6.056896j	5.520885k	5.701464j	2.898647l	5.419375k	1.456841l	0.008996m	0.011855m
110	5.950842l	3.991859l	5.769829l	5.274117l	6.456305l	3.284716l	5.621100k	1.299910m	0.008295n	0.009792n
111	4.931662k	2.876289i	5.417081j	4.728588i	5.529359i	3.188053l	5.433589j	1.213998l	0.009140j	0.008565m
112	4.095200i	2.045340k	4.683308i	3.977335k	6.228977i	3.625350l	5.627411l	1.211692l	0.010992n	0.005859n
113	3.510651j	0.881390k	2.662815j	3.646713l	5.730471l	4.253715k	6.029369l	1.229910m	0.013991n	0.005103m
114	2.469580m	0.398307n	2.098110l	3.242006l	5.032474l	4.830385l	6.029607l	1.229892n	0.015989n	0.004110n
115	2.049625h	0.257776h	1.387753h	2.828023h	5.078004i	5.591322j	6.131334j	1.229247h	0.018780j	0.003827m
116	1.191441n	0.069704n	0.076868n	2.571044m	4.244323l	5.662013k	5.657000k	1.229966m	0.015477m	0.003554m
117	0.493871m	0.029910m	0.021387m	2.228547l	3.518710l	5.856075k	4.716267k	1.229951l	0.014499m	0.003280m
118	0.196533n	0.009970m	0.007486m	1.222017m	2.619656m	5.893067l	4.019579l	1.229323m	0.011433n	0.003189m
119	0.117920n	0.004985m	0.003208m	0.661928m	1.813613m	5.953676k	3.222151m	1.229358m	0.008699m	0.003793m
120	0.058960n	0.001992n	0.002139m	0.315689m	1.111835n	5.796459l	2.618003m	1.229289m	0.008119m	0.003793m
121	0.027037j	0.001318k	0.001818m	0.152455j	0.796747j	5.699855l	2.719902j	1.259340m	0.008636k	0.003890n
122	0.019653n	0.002440n	0.001647n	0.065661n	0.409269n	5.329909l	1.569186m	1.299445m	0.014436n	0.004189n
123	0.018671n	0.004866n	0.001867n	0.031804n	0.252673n	4.926991l	0.908811n	1.349286m	0.019055n	0.004489n
124	0.018796n	0.008776n	0.002061n	0.020023n	0.160207n	3.879258m	0.467613n	1.408380m	0.031557n	0.004988n
125	0.021288k	0.015498l	0.006506k	0.018983k	0.126788l	3.016298k	0.443043m	1.499181m	0.158293i	0.005989m
126	0.043971n	0.068132n	0.013257n	0.029947n	0.163834n	2.404707l	0.418656n	1.899685l	0.228646n	0.006985n

127	0.113078k	0.198664j	0.031151j	0.063365j	0.238890k	2.321930j	0.429335l	2.501147k	0.382894j	0.013975m
128	0.214964n	0.486668n	0.101962n	0.154564n	0.455129n	2.168970l	0.570901n	2.899035m	1.063250m	0.019952n
129	0.396905k	0.660480j	0.322215k	0.310467j	0.871424j	2.264065j	0.858857l	3.298829l	1.765107j	0.026590k
130	0.880002n	1.991361i	2.027769m	0.580676n	1.507504m	2.482584m	1.546477m	3.615708m	3.012895m	0.139653n
131	1.704686h	3.004012g	2.620447h	1.136256k	2.440037i	3.214969k	2.537032l	4.090617h	3.748439h	0.448890h
132	2.459597h	4.194229h	4.335317h	2.528404k	3.520872l	4.808938j	4.024000k	4.397509h	5.170557i	3.326248f
133	3.904174h	5.660986g	5.264997i	2.669811k	4.341222i	5.422682j	3.827673l	4.498360l	5.803819h	5.601202f
134	4.159653h	6.812967h	4.993017k	2.952382l	5.188870l	5.855151l	4.102546l	5.447073h	5.235405k	4.837292e
135	4.642911k	7.483203g	5.741358i	4.702590k	4.478733i	6.163349j	6.211316k	4.999421l	5.319465h	5.213117f
136	4.982011h	7.629288h	4.851178j	4.363838l	5.806152l	6.369712l	4.911367l	5.008906h	7.198364m	5.714467f
137	5.453609l	7.923238i	6.076900i	4.530537l	5.542704l	6.285112l	5.089951l	5.113161l	7.804503i	5.809433h
138	5.736640l	7.663838i	6.534107l	4.820372l	5.732576l	6.057570l	5.275900l	5.003579l	5.639774j	6.440974i
139	6.191587i	6.997414i	6.221661i	5.870703k	4.987087k	5.659810l	6.098468k	4.764126k	7.120304h	6.840348i
140	5.249179i	6.101880h	5.820549i	5.660598i	5.543736h	4.828491k	5.960553j	4.826781k	7.304308h	6.798937f
141	5.849432i	5.619863h	5.607301i	5.740320k	5.478458i	4.621492l	5.757499l	4.798816l	6.913198h	6.890223i
142	6.544320k	4.876956i	6.303152i	5.802861l	5.032920k	4.343200l	5.273306l	4.502399l	6.350994i	6.300047i
143	5.565486i	3.995777h	5.484139k	6.442620i	5.454272i	3.138478k	4.880066l	3.542717l	5.085506g	7.160881h
144	4.743435i	3.675941i	5.828263i	5.107928k	4.846000j	3.206951l	4.489211l	2.999562l	4.329340i	6.212791i
145	4.942833l	3.085355i	4.443857l	5.799818l	4.106912l	2.829023l	3.903043l	2.498738m	3.115456i	5.997633i
146	4.448470l	2.587718i	3.736030l	5.406569l	3.724867l	2.482331m	3.415123l	1.998957m	2.504767k	5.243420l
147	3.814493i	1.981320i	3.130742i	4.816761l	3.447090k	2.022638m	3.122393l	1.701924l	1.205412h	4.399052j
148	3.460255l	1.691969i	2.626143l	3.833932l	2.865348l	1.747026m	2.704178m	1.199355m	0.952662n	3.043279l
149	3.257319i	1.451882i	2.027575m	3.131921k	2.856980l	1.468327k	2.653692k	0.899318n	0.666917n	2.201026i
150	2.367200m	0.997406i	1.521120m	2.465120m	2.201135m	1.287714m	2.238920m	0.702004n	0.511157n	0.998215m
151	2.071794i	0.696698i	1.184067i	1.907814k	1.685685m	1.285991k	2.050003l	0.529598n	0.342982n	0.199498n
152	1.574084m	0.597165i	0.968502n	1.561535m	1.498378m	1.103257m	1.641670m	0.399692n	0.266765n	0.049874n
153	1.215109i	0.500561i	0.792720i	1.482217k	1.385176i	0.998079k	1.352259m	0.314825l	0.190543n	0.019950n
154	0.836687m	0.389370n	0.407796n	1.075242m	1.034244m	0.708804n	1.064752m	0.249927n	0.134020n	0.007980n
155	0.683967n	0.291983n	0.254869n	0.927166m	0.800964n	0.531592n	0.837312n	0.179863n	0.104799n	0.002992n
156	0.508090n	0.203949j	0.203895n	0.772813n	0.664436n	0.442994n	0.721898m	0.139891n	0.076217n	0.000997n
157	0.410380n	0.155725n	0.132532n	0.744247k	0.618913j	0.364707k	0.520306l	0.092571n	0.052400n	0.000399n
158	0.341985n	0.097328n	0.101948n	0.579632n	0.473402n	0.265796n	0.399648n	0.079938n	0.033348n	9.97e-05n
159	0.254045n	0.068130n	0.071363n	0.564124k	0.433259j	0.194917n	0.304477n	0.067885n	0.020960n	1.99e-05n
160	0.215609n	0.043847n	0.050979n	0.439806n	0.218077n	0.150646n	0.231067n	0.050143n	0.014547n	4.99e-06n
161	0.166106n	0.029198n	0.035682n	0.289805n	0.118324n	0.115178n	0.161753n	0.034973n	0.008574n	1.50e-06n
162	0.127022n	0.019466n	0.030584n	0.212523n	0.072815n	0.088599n	0.114179n	0.026979n	0.005716n	5.98e-07n
163	0.107481n	0.011679n	0.023448n	0.144905n	0.054617n	0.070879n	0.079926n	0.019984n	0.003525n	9.97e-08n
164	0.078176n	0.007786n	0.018351n	0.106390n	0.038394n	0.053159n	0.057130n	0.015990n	0.002384n	2.99e-08n
165	0.062963m	0.004906m	0.013179m	0.077282n	0.024575n	0.045969m	0.043456m	0.011993m	0.001715n	9.98e-09m
166	0.050809n	0.003406n	0.010195n	0.057961n	0.018204n	0.035439n	0.033302n	0.009493n	0.001143n	3.99e-09n
167	0.040061n	0.002433n	0.008156n	0.040573n	0.011833n	0.026580n	0.024739n	0.006995n	0.000762n	9.97e-10n
168	0.032244n	0.001460n	0.006117n	0.028981n	0.005462n	0.017720n	0.019030n	0.005496n	0.000476n	3.99e-10n
169	0.024427n	0.000973n	0.004588n	0.022218n	0.003641n	0.015062n	0.013321n	0.004197n	0.000305n	1.99e-10n
170	0.020541n	0.000584n	0.003568n	0.016584n	0.002809n	0.012404n	0.009563n	0.003202n	0.000212n	9.98e-11n
171	0.015634n	0.000389n	0.002549n	0.010626n	0.001820n	0.008860n	0.007041n	0.002388n	0.000143n	2.99e-11n
172	0.012702n	0.000292n	0.002039n	0.007728n	0.000910n	0.007088n	0.004757n	0.001899n	9.53e-05n	9.98e-12n

Table 12
Set F Mass Chain Yields

mass	cm243t	cm246s	cm243f	cm244f	cm246f	cm248f	pu242h	np237t	pu240t	pu242t
66	3.42e-06n	2.16e-05o	9.50e-06n	7.30e-06n	4.11e-06n	2.08e-06n	2.08e-07n	4.88e-08n	1.60e-07n	4.97e-08n
67	8.56e-06n	0.000441o	1.80e-05n	1.30e-05n	7.53e-06n	3.66e-06n	4.17e-07n	8.78e-08n	3.10e-07n	9.95e-08n
68	2.12e-05n	0.000421o	3.40e-05n	2.50e-05n	1.40e-05n	6.83e-06n	7.33e-07n	4.88e-07n	9.39e-07n	2.29e-07n
69	4.70e-05n	0.000815o	6.70e-05n	4.80e-05n	2.91e-05n	1.29e-05n	1.56e-06n	1.95e-06n	2.98e-06n	4.97e-07n
70	8.56e-05n	0.000801o	0.000140n	9.61e-05n	5.72e-05n	2.58e-05m	3.12e-06m	5.85e-06n	9.99e-06n	1.79e-06n
71	0.000170n	0.001107o	0.000270n	0.000190n	0.000110n	5.25e-05n	5.22e-06n	1.46e-05n	1.80e-05n	2.69e-06n
72	0.000376n	0.001499o	0.000530n	0.000380n	0.000231n	0.000109n	1.14e-05n	2.93e-05n	5.99e-05n	9.95e-06n
73	0.000670m	0.002097o	0.001000m	0.000730m	0.000451m	0.000208m	1.86e-05m	8.85e-05m	0.000150m	2.99e-05m
74	0.001712n	0.002871o	0.002000n	0.001401n	0.000863n	0.000396n	5.22e-05n	0.000263n	0.000300n	7.96e-05n
75	0.004238n	0.004155o	0.003700n	0.002601n	0.001605n	0.000762n	5.22e-05n	0.000439n	0.000899n	0.000199n
76	0.008582n	0.005707o	0.006647n	0.004818n	0.003012n	0.001386n	0.000209n	0.001854n	0.001798n	0.000418n
77	0.017785m	0.007492n	0.012000n	0.008503m	0.005313m	0.002581m	0.005183m	0.004325m	0.005894m	0.002690m
78	0.029914n	0.011857o	0.020001n	0.015008n	0.009432n	0.004652n	0.014569n	0.012687n	0.016977n	0.006467n

79	0.051272n	0.017150o	0.034002n	0.025013n	0.016057n	0.008020n	0.029249n	0.026350n	0.015980n	0.007464n
80	0.085619n	0.025595o	0.055038n	0.041035n	0.027108n	0.013878n	0.055415n	0.035167n	0.038968n	0.019920n
81	0.158714n	0.039200o	0.087004n	0.066034n	0.043153n	0.022777n	0.091987n	0.117108n	0.109853n	0.040801n
82	0.246251n	0.057134o	0.133216n	0.101318n	0.068418n	0.036653n	0.134639n	0.175875n	0.120049n	0.060722n
83	0.355703m	0.083109n	0.199998m	0.160054m	0.100249m	0.057603m	0.218992m	0.341803l	0.249766m	0.139571m
84	0.421916n	0.099802o	0.300797n	0.231209n	0.163345n	0.092479n	0.353737n	0.504681n	0.421773n	0.286289n
85	0.406853m	0.159790n	0.420051m	0.330181m	0.230783m	0.129404m	0.674781h	1.004938j	0.469720m	0.329257m
86	0.550524m	0.184031n	0.585856m	0.464337m	0.324214n	0.190041n	0.830466n	1.141117m	0.684139n	0.501334n
87	0.717813n	0.292597n	0.782941n	0.634178n	0.456513n	0.281081n	0.999695j	1.857655j	0.837637n	0.684730n
88	0.776808n	0.364701n	1.003472m	0.844165n	0.620735n	0.385740n	1.180816j	2.253053j	1.201259m	0.868460n
89	1.058497m	0.569279n	1.301320m	1.103167m	0.808538n	0.526878n	1.345949k	2.819611l	1.324100m	0.924308n
90	1.136520m	0.635261n	1.600331m	1.401007m	1.004433m	0.677513m	1.533371m	3.442702l	1.840562l	1.238810m
91	1.155202i	0.701050n	1.900159m	1.700750m	1.303979m	0.876133m	2.124179j	3.661816j	2.208392m	1.685824m
92	1.377563l	0.969182n	2.303857m	2.006985m	1.610599m	1.096403m	2.397422j	4.175698i	2.683834l	2.047368m
93	1.794693k	1.243862n	2.608430l	2.417954l	1.947100l	1.441356m	2.647926k	4.824462j	3.460291l	2.683496l
94	2.207092k	1.463276n	3.001639m	2.804011m	2.213912l	1.717995m	2.826936k	5.019365k	3.896098l	3.156832l
95	2.893548h	1.976309l	3.228403k	3.016501j	2.327108k	2.052410j	3.393017j	5.681872j	4.689112l	3.780645l
96	3.346583l	2.278779m	3.622052l	3.609472l	2.909138l	2.296173l	3.857548l	5.675136l	4.730495l	4.255794l
97	3.960518h	2.363460k	4.000712l	4.102079l	3.307764l	2.689426l	4.250292i	5.853327i	5.168953l	4.513259l
98	4.739465l	3.334578l	4.402346l	4.605646l	3.819868k	3.094768m	4.563730k	5.910276l	5.948129l	5.621140k
99	5.021762h	4.225438j	4.900341k	5.101816l	4.308126k	3.594600k	5.127936i	6.612058i	5.968915k	5.995629k
100	5.429661l	4.716195l	5.503917k	5.702185k	4.908335l	4.085070k	5.064528l	5.344593l	6.695368l	6.148659k
101	5.946531j	5.470746l	6.100085l	6.201489l	5.409126l	4.675793l	5.085941k	6.640116j	5.925860l	6.094089l
102	8.702216k	6.139192k	6.600228l	6.501772l	6.010530l	5.372696l	5.368715l	5.088098l	6.156005l	6.134488l
103	6.421727h	6.835643j	6.900187l	6.701817l	6.411477l	5.970477l	5.676476j	5.778366j	5.966247l	6.234774l
104	6.714521j	6.954057l	6.901156l	6.703418l	6.723471l	6.499667l	5.509407k	3.881990j	6.111221l	6.254705l
105	6.383824h	6.795922j	6.600092k	6.401184k	6.808940k	6.879708k	5.550813i	2.647381k	5.656419l	6.006371l
106	5.910693k	6.731699l	6.000084l	5.901417l	6.611154l	6.963948l	5.064454l	3.299610l	5.266321l	5.934506l
107	5.666908k	6.606551k	5.200072l	5.201249l	6.210478l	6.764978l	3.834644k	2.410494l	4.197068l	5.485678l
108	4.306337l	6.007434l	4.200135l	4.301147l	5.510196l	6.369620l	3.039441l	1.778680l	3.267952l	4.449664l
109	4.105321k	5.512780k	3.200066l	3.401232m	4.706985k	5.786775k	2.546623j	1.101409m	2.148744l	3.505540k
110	2.625986m	4.845288l	2.203500m	2.602558m	3.806493l	4.974249l	2.329649l	0.536698n	1.458981l	2.603203l
111	1.849240l	4.309427l	1.500030m	1.900456l	2.904901l	4.078884l	2.234185j	0.136614n	0.399442n	1.105912m
112	2.355469k	4.029611k	0.960019m	1.300442m	2.105019m	3.183519l	1.932375j	0.058549n	0.199721n	0.397917n
113	0.466983n	1.752167m	0.590016n	0.850289m	1.503585m	2.387639l	1.780168i	0.039033n	0.109891m	0.259042m
114	0.177819n	1.242047n	0.350010n	0.540259n	1.002390m	1.687618m	1.425522m	0.034154n	0.099860n	0.149219n
115	0.162740m	0.813718m	0.210004m	0.340115m	0.651098l	1.094334l	1.237393k	0.016257k	0.069931m	0.119558m
116	0.069466n	0.070974n	0.130004n	0.210071m	0.400956m	0.734610m	0.916407m	0.019658m	0.049930n	0.079705m
117	0.045783m	0.025342m	0.088002m	0.140048m	0.250423l	0.457631l	0.810312l	0.017782l	0.042970l	0.049870l
118	0.032313m	0.008606n	0.068001m	0.095032m	0.150359m	0.277961m	0.712761m	0.016709m	0.041959m	0.049816m
119	0.027294m	0.004022n	0.060001m	0.074025m	0.098234m	0.168762m	0.610938m	0.016200m	0.041959m	0.049816m
120	0.035218m	0.002031n	0.057001m	0.065022m	0.070167m	0.109199m	0.610938m	0.014294m	0.030865m	0.035867m
121	0.037392n	0.001548o	0.059002n	0.064031n	0.057194n	0.072473m	0.647598m	0.015868n	0.030810n	0.024745n
122	0.054121n	0.001951o	0.065438n	0.070339n	0.056194n	0.057405n	0.775774n	0.017737n	0.033796n	0.024744n
123	0.061131n	0.002919o	0.079378n	0.086214n	0.064226n	0.055423n	0.880621m	0.019602n	0.041742n	0.031672n
124	0.072503n	0.004366p	0.110015n	0.119452n	0.086003n	0.066334n	1.076351m	0.026143n	0.060663n	0.040639n
125	0.102306m	0.010165n	0.211210k	0.179425k	0.117374k	0.087341k	1.329445l	0.029540m	0.060735m	0.055594m
126	0.166261n	0.034641o	0.297670n	0.287386n	0.207515n	0.148175n	1.565842m	0.070951n	0.139148n	0.118791n
127	0.655311h	0.105346n	0.497249m	0.466997m	0.347046m	0.237888m	1.986371j	0.183390l	0.358431m	0.208474m
128	0.745795k	0.250849o	0.825492m	0.745302m	0.553344n	0.395077n	2.462089l	0.522738n	0.696985m	0.415731n
129	1.206708k	0.566578n	1.292862m	1.092992m	0.872706m	0.634411m	2.659214l	0.971301k	1.354207m	0.843891m
130	2.133605l	1.792972n	2.000642m	1.692700m	1.289321m	0.991321m	2.937754m	1.839257m	2.160803m	1.631795l
131	3.193492g	3.325675j	2.888722l	2.389162l	1.888696l	1.486900m	3.781217i	3.156840h	3.339711l	2.616641l
132	4.773685h	4.654923j	3.884835l	3.185548l	2.677256m	2.081571m	5.269045g	4.567736i	4.815151l	3.969568l
133	5.742512h	5.705270j	4.880948l	3.981943l	3.479293l	2.882821l	5.559636i	6.476310i	6.715520k	5.860116k
134	7.528245k	5.833108l	5.795511k	4.881466l	4.378895l	3.798307l	5.931830j	7.351504h	7.631007l	7.469011l
135	5.908389k	6.626351k	6.475204l	5.675232l	5.273826l	4.696607k	6.177574i	7.676000i	7.234269l	7.494485k
136	4.868946l	7.000599k	7.469068l	6.598412l	6.215476k	5.756134l	5.556258k	7.179158i	7.026604k	7.390275k
137	6.317239l	6.759442k	6.813590j	6.687470j	6.515968j	6.363644j	5.160803l	6.175714l	6.556774l	6.721415l
138	5.813323l	6.655420l	6.683342k	6.772442l	6.779051l	6.746141l	5.230965j	6.224770i	6.408550l	6.616675l
139	6.800054k	6.292854l	6.175956l	6.570461l	6.761938l	6.973103l	4.893587j	6.131347l	5.962652l	6.354039l
140	5.540412h	6.368095k	5.678098l	6.272075l	6.562240l	6.864362l	4.879387i	6.015882j	5.703479l	6.022604l
141	5.149223k	5.323566k	4.850189k	5.925597k	5.929272k	6.617429j	4.823173j	6.018260j	5.493817l	5.295156l
142	3.773883l	5.531054l	4.582862l	5.278035l	5.578393l	6.094366l	4.310172j	4.972978j	4.791217l	4.677512l
143	4.285902i	5.314201k	4.084231l	4.778842l	4.974197l	5.587022l	3.632369j	5.036064j	4.487740l	4.547277l
144	3.721052l	5.051618k	3.699217k	4.023911k	4.673161k	5.054390j	3.166505j	4.845564l	3.928864l	4.195433l

145	3.273451k	3.511538l	3.386780l	3.782849l	3.976388l	4.275163l	2.560566l	3.605956l	3.070610l	3.435676m
146	2.457357l	2.905219m	3.087944l	3.285096l	3.479152l	3.776420l	2.156618k	2.809937k	2.568782m	2.805559l
147	2.092211i	2.570281j	2.689500l	2.881477m	3.081535l	3.279523l	1.956934m	2.500001j	2.123452l	2.387710l
148	2.353141m	1.977976m	2.390693l	2.484103m	2.677745m	2.785428l	1.761575m	1.658467m	1.772483m	1.990738l
149	1.984747m	1.543240n	1.989001m	2.090518l	2.280648m	2.379099m	1.592938k	1.547169l	1.393918m	1.598404m
150	1.852588m	1.119150n	1.729205m	1.803632m	1.989916l	2.081676m	1.274227m	0.737521n	1.063766n	1.260829m
151	1.244853i	0.857558n	1.392300m	1.490419m	1.685679m	1.685082m	0.905197k	0.741838l	0.854712n	1.022541m
152	1.237907m	0.571297o	1.093945m	1.192334m	1.388207m	1.387714m	0.872593n	0.364031n	0.655942n	0.801704n
153	1.309522m	0.589571n	0.843389n	0.904188m	1.090734m	1.189469m	0.659293n	0.196017n	0.457172n	0.623548n
154	0.904141m	0.335650o	0.637940n	0.686427m	0.849812n	0.941665m	0.455775n	0.104821m	0.327975n	0.435494n
155	0.708376n	0.228519o	0.456422n	0.526842l	0.693182l	0.737896l	0.368428n	0.078616m	0.258401n	0.316723n
156	0.445058n	0.181208o	0.327433n	0.366658n	0.484163n	0.562926n	0.271473n	0.061457m	0.139139n	0.237542n
157	0.455385n	0.120508o	0.228212n	0.257652n	0.355711n	0.414788n	0.178397n	0.024299m	0.099385n	0.168259n
158	0.344903n	0.083017o	0.148850n	0.178378n	0.247022n	0.306153n	0.119255n	0.012864m	0.072551n	0.118771n
159	0.233372n	0.058022o	0.099222n	0.118916n	0.177856n	0.217270n	0.073589n	0.001027n	0.044723n	0.079181n
160	0.184298n	0.039288o	0.063879n	0.074870n	0.118643n	0.148142n	0.045812n	0.000373n	0.021868n	0.051468n
161	0.121849n	0.026780o	0.038697n	0.046575n	0.076083n	0.098759n	0.026856n	0.000233n	0.008945n	0.024744n
162	0.081061n	0.020531o	0.023813n	0.028738n	0.048416n	0.065181n	0.013961n	0.000140n	0.001193n	0.008908n
163	0.055762n	0.014282o	0.013891n	0.016847n	0.030631n	0.041479n	0.006118n	5.60e-05n	0.000914n	0.003959n
164	0.025414n	0.010712o	0.007849n	0.009913n	0.018774n	0.025677n	0.003054n	2.33e-05n	0.000318n	0.001485n
165	0.011049m	0.007393n	0.004366n	0.005664m	0.010907m	0.015860m	0.002035m	1.05e-05m	0.000110m	0.000298m
166	0.004544n	0.005356o	0.002381n	0.003072n	0.006225n	0.009481n	0.001028n	2.52e-06n	6.46e-05n	0.000139n
167	0.002272n	0.004463o	0.001290n	0.001685n	0.003557n	0.005432n	0.000398n	9.33e-07n	2.39e-05n	3.96e-05n
168	0.001342n	0.002678o	0.000645n	0.000882n	0.001877n	0.003062n	0.000173n	1.87e-07n	9.24e-06n	1.29e-05n
169	0.000609n	0.001785o	0.000327n	0.000456n	0.000988n	0.001679n	9.68e-05n	7.00e-08n	3.68e-06n	3.46e-06n
170	0.000301n	0.001696o	0.000170n	0.000229n	0.000544n	0.000918n	4.59e-05n	9.33e-09n	9.94e-07n	1.98e-06n
171	0.000176n	0.001160o	8.24e-05n	0.000119n	0.000277n	0.000484n	1.97e-05n	4.67e-09n	2.39e-07n	9.90e-07n
172	9.57e-05n	0.000982o	4.17e-05n	5.85e-05n	0.000138n	0.000247n	1.53e-05n	9.33e-10n	7.65e-08n	4.95e-07n

Future Work

Because of continuing work on fission yield data, no compilation can be regarded as a final work. By applying computer techniques, it is possible to produce future revisions faster. It is not possible to examine the data well enough or gain enough knowledge of the work by each contributor to eliminate all possible mistakes or omissions. However, it is now easier to correct errors and to ensure random new typographical errors will not occur. If all errors found are reported to the authors, it will be possible to minimize errors in later issues of this document.

Energy Definitions

A fission neutron spectrum is one giving a Cd-115 ground state R-value of 2.8 for 235U fission using Mo-99 as reference nuclide. As an expedient, yields measured in the core of a fast reactor have been pooled with fission neutron spectrum yields. Selected yields measured in monoenergetic neutron energies between 0.5 and 2.0 meV have also been pooled with fission neutron spectrum yields. The definitions of thermal and high energy neutrons are consistent with general usage. Thermal neutrons are obtained from a reactor and are assumed to have been moderated to thermal equilibrium. The high energy neutrons are obtained from the H3(d, n)He4 reaction. The actual energies quoted vary from 14 to 15 meV with 14.7 meV being the most often listed mean value. Detailed descriptions of the neutron sources are given in the reference section.

Special Treatment Numbers

- 1. The data were multiplied by the ratio of the Mo-99 yield in U-235 thermal fission to the Mo-99 yield in U-233 thermal fission (6.06:4.80) to remove the original normalization; then they were treated as R-values.
- 2. Reported data (66ARA1) for Sb-126 are the sum of the independent yields of both isomers. The ratio 1.0 to 1.72 corrects for the estimated isomer yield ratio. No renormalization was made.
- 3. The preceding comment applies except the ratio equals 0.5555.
- 4. The measurements were relative to Mo-99, Ba-139, and Ba-140 equal to 6.25, 6.42, and 6.25, respectively. We assumed they were averaged and corrected for the ratio (Mo-99 + Ba-139 + Ba-140) to (6.25 + 6.42 + 6.25). No other renormalization was made.
- 5. The value is measured relative to the total number of fissions determined from the B-10-to-B-11 ratio, and is multiplied by 100 to obtain percent.
- 6. The data were renormalized by using the formula: Yield(mz,ma,mf) = (Yield(mz,ma,norf) * 6.14) / (Yield(norz,nora,norf)) where mz, ma, and mf are the atomic number (Z), mass atomic weight (A), and fissionable material (F), respectively, of the measured nuclide and norz, nora, and norf are the atomic number (Z), atomic weight (A), and fissionable material (F), listed for the normalizing nuclide.
- 7. Values listed are R-values.
- 8. The data were multiplied by 6.14:6.32 to remove the original Mo-99 normalizing values; then they were treated as R-values.
- 9. Values were relative to both Mo-99 and Ba-140 renormalized by the (Mo-99+Ba-140) to (6.1+5.4) ratio.
- 10. Average of 10 values relative to Mo-99 and 4 values relative to Ba-140. Renormalized by (4*Mo-99 + 10*Ba-140)/(4*6.1 + 10*5.4).
- 11. The data were multiplied by the yield of Mo-99 in U-235 thermal fission to the Mo-99 yield in U-235 fission with fission spectrum neutrons (6.14:6.1) to remove the original normalizing values; then they were treated as R-values.
- 12. The data were multiplied by the yield ratio of Mo-99 in U-235 thermal fission to the Mo-99 yield in fission with 8 meV neutrons (6.14:5.4) to remove the original normalizing values; then they were treated as R-values.
- 13. The data were multiplied by the ratio of the Mo-99 yield in U-235 thermal fission to the Mo-99 yield in U-238 fission spectrum fission (6.14:6.2) to remove the original normalizing values; then they were treated as R-values.
- 14. The data were measured relative to the independent yield and were multiplied by the independent yield in the file.

- 15. The data were measured relative to the sum of the yields of both isomers and were renormalized to the sum of isomer yields in the file.
- 16. The data were corrected to a Sr-90 half-life of 28.9 years.
- 17. The data were measured relative to Sn-121 and Sn-125 yields and were renormalized through the ratio (Sn-121 + Sn-125):(0.0122 + 0.0116).
- 18. The listed absolute independent yield values (IN) were calculated from the author's total isotopic yield and the isomer yield ratio (M/M+G) predicted by 76MAD2 (77DEN1 if measured). For relative or fractional independent yields, see special treatment 40 that normalizes to the reference nuclide or multiplies by chain yield, as appropriate.
- 19. The values were measured relative to 6 Sr-89 determinations and 2 Mo-99 values. The Sr-90 half-life was corrected from 19.9 to 28.9 years. The correction ratio was: (6 * Sr-89 + 2 * Mo-99) / (6 * 4.08 + 2 * 5.98) * (28.9 / 19.9).
- 20. The value was multiplied by 100 to give percent.
- 21. The Sr-90 half-life was corrected from 19.9 to 28.9 years. The values were also renormalized to the latest value of the reference nuclide.
- 22. The data were multiplied by the ratio of the Sr-89 yield in U-235 thermal fission to the Sr-89 yield in Th-232 pile neutron fission (4.6:6.7) to remove the original normalization; then they were treated as R-values.
- 23. The Sr-90 half-life was corrected from 25 to 28.9 years. The value was also renormalized to the latest value of the reference nuclide in the file.
- 24. The data were multiplied by the ratio of the Mo-99 yield in U-235 thermal fission to the Mo-99 yield in U-233 thermal fission (6.06:4.8) to remove the original normalization. Then they were treated as R-values.
- 25. The data were multiplied by the ratio of the Cs-137 yield in the Pu-239 thermal fission to the Cs-137 yield in the Pu-241 thermal fission (6.60:6.62) to remove the original normalization; then they were treated as R-values.
- 26. The data were multiplied by the ratio of the Mo-99 yield in U-235 thermal fission to the Mo-99 yield in U-233 thermal fission (6.06:4.75) to remove the original normalization; then they were treated as R-values.
- 27. The reported value was measured relative to the sum of the Sm-151 and Sm-152 yields; then we renormalized it to the sum of the yields of Sm-151 and Sm-152 in the file.
- 28. The data were multiplied by the ratio of the Mo-99 yield in U-235 thermal fission to the Mo-99 yield in Th-229 thermal fission (6.06:0.16) to remove the original normalization; then they were treated as R-values.
- 29. The listed normalizing values were obtained by adjusting the heavy mass peak yields to 100%.
- 30. The data were multiplied by 6.4, the assumed mass 136 yield.

- 31. The data were multiplied by the ratio of the Mo-99 yield in U-235 thermal fission to the Mo-99 yield in Pu-239 thermal fission (6.16:6.79) to remove the original normalization; then they were treated as R-values.
- 32. The data were multiplied by the ratio of the Mo-99 yield in U-235 thermal fission to the Mo-99 yield in U-232 thermal fission (6.25:4.15) to remove the original normalization; then they were treated as R-values.
- 33. The standard error is stated. The standard deviation is obtained by multiplying the standard error by 1.47.
- 34. The Kr-85 half-life was corrected from 9.2 to 10.76 years.
- 35. The Cs-137 half-life was corrected from 33 to 30 years.
- 36. The error was reassigned for this work.
- 37. The value reported is the sum of the metastable and ground states. One-half of the total yield is arbitrarily assigned to each state.
- 38. Measured relative to the sum of the independent yields of both isomers. This treatment is not yet functioning because the sum of independent yields is not stored or available to the computer.
- 39. The listed total relative or fractional isomer yield is the sum of the metastable and ground states. The fraction of this total assigned by computer to the metastable state is 0.71 for Xe-133, Xe-135, Te-133, Te-131 thermal fission as predicted by 76MAD2. For general cases (other than M/M+G = 0.71) see special treatment number 40. For total yields expressed as absolute independent yields (IN), rather than relative or fractional independent (FI) see special treatment number 18 that bypasses normalization to reference nuclide or multiplication by chain yield as appropriate.
- 40. The listed relative or fractional independent yields (IN or FI) were calculated from the author's total isotopic yield and the isomer yield ratio (M/M+G) predicted by 76MAD2 (77DEN1 if measured). For absolute independent yields, see special treatment 18 that bypasses normalization to reference nuclide or multiplication by the chain yield.

R-Values

For yields that were originally measured by the R-method, the original R-values were mathematically reconstructed. An updated yield value was then obtained from the usual R-value method equation. A discussion of the R-method is found in (56FOR1). This is a ratio method used to cancel counter geometry. Radioactivities of specific fission products in, say Pu239, to the corresponding radioactivity produced in U235 in the same irradiation are ratioed. The relative fissions in each foil are normalized by the relative fissions as determined from a nuclide, like Mo-99. If the yields of U235 are assumed to be well-known, the corresponding yield in Pu239 can be calculated from the ratios (designated R-values).

Symbols

Fissile material and inducing species in the order of appearance in this compilation

1	U235T	Uranium	235	Thermal neutrons
2	U235F	Uranium	235	Fission spectrum neutrons
3	U235HE	Uranium	235	High energy neutrons (14.7 MeV)
4	U238F	Uranium	238	Fission spectrum neutrons
5	U238HE	Uranium	238	High energy neutron (14.7 MeV)
6	PU239T	Plutonium	239	Thermal neutrons
7	PU239F	Plutonium	239	Fission spectrum neutrons
8	PU241T	Plutonium	241	Thermal neutrons
9	U233T	Uranium	233	Thermal neutrons
10	TH232F	Thorium	232	Fission spectrum neutrons
11	U233F	Uranium	233	Fission spectrum neutrons
12	U233HE	Uranium	233	High energy neutrons (14.7 MeV)
13	U236F	Uranium	236	Fission spectrum neutrons
14	PU239H	Plutonium	239	High energy neutrons (14.7 MeV)
15	PU240F	Plutonium	240	Fission spectrum neutrons
16	PU241F	Plutonium	241	Fission spectrum neutrons
17	PU242F	Plutonium	242	Fission spectrum neutrons
18	TH232H	Thorium	232	High energy neutrons (14.7 MeV)
19	NP237F	Neptunium	237	Fission spectrum neutrons
20	CF252S	Californium	252	Spontaneous fission
21	U234F	Uranium	234	Fission spectrum neutrons
22	U237F	Uranium	237	Fission spectrum neutrons
23	PU240H	Plutonium	240	High energy neutrons (14.7 MeV)
24	U234HE	Uranium	234	High energy neutrons (14.7 MeV)
25	U236HE	Uranium	236	High energy neutrons (14.7 MeV)
26	PU238F	Plutonium	238	Fission spectrum neutrons
27	AM241F	Americium	241	Fission spectrum neutrons
28	AM243F	Americium	243	Fission spectrum neutrons
29	NP238F	Neptunium	238	Fission spectrum neutrons
30	CM242F	Curium	242	Fission spectrum neutrons
31	TH227T	Thorium	227	Thermal neutrons
32	TH229T	Thorium	229	Thermal neutrons
33	PA231F	Protactinium	231	Fission spectrum neutrons
34	AM241F	Americium	241	Thermal neutrons
35	Am241H	Americium	241	High energy neutrons (14.7 MeV)
36	A242MT	Americium	242M	Thermal neutrons
37	CM245T	Curium	245	Thermal neutrons
38	CF249T	Californium	249	Thermal neutrons
39	CF251T	Californium	251	Thermal neutrons
40	ES254T	Einsteinium	254	Thermal neutrons
41	CF250S	Californium	250	Spontaneous fission

42	CM244S	Curium	244	Spontaneous fission
43	CM248S	Curium	248	Spontaneous fission
44	ES253S	Einsteinium	253	Spontaneous fission
45	FM254S	Fermium	254	Spontaneous fission
46	FM255T	Fermium	255	Thermal neutron fission
47	FM256S	Fermium	256	Spontaneous fission
48	NP237H	Neptunium	237	High energy neutrons (14.7 MeV)
49	U232T	Uranium	232	Thermal neutron fission
50	U238S	Uranium	238	Spontaneous fission
51	CM243T	Curium	243	Thermal neutron fission
52	CM246S	Curium	246	Spontaneous fission
53	CM243F	Curium	243	Fission spectrum neutrons
54	CM244F	Curium	244	Fission spectrum neutrons
55	CM246F	Curium	246	Fission spectrum neutrons
56	CM248F	Curium	248	Fission spectrum neutrons
57	PU242H	Plutonium	242	High energy neutrons (14.7 MeV)
58	NP237T	Neptunium	237	Thermal neutrons
59	PU240T	Plutonium	240	Thermal neutrons
60	PU242T	Plutonium	242	Thermal neutrons

Symbols Used in Tabular Section Pages

Z	Atomic Number
G	Ground State
M	Isomeric State
D	Metastable state resulting from delayed neutron emission
Zp	Most probable atomic number for Gaussian calculation
SIG	Gaussian width parameter (sigma)
XI	Experimental independent yields
RI	Recommended independent yields
XC	Experimental cumulative yields
CC	Calculated cumulative yields
RC	Recommended cumulative yields

Symbols To Indicate Accuracy of Weighted Average Numbers

Letter	Range,%	Error Stored in File,%
A	<0.35	0.35
B	0.35-0.50	0.50
C	0.50-0.70	0.70
D	0.70-1.00	1.00
E	1.00-1.40	1.40

F	1.40-2.00	2.00
G	2.00-2.80	2.80
H	2.80-4.00	4.00
I	4-6	6
J	6-8	8
K	8-11	11
L	11-16	16
M	16-23	23
N	23-32	32
O	32-45	45
P	45 and up	>64

The reader should note that the letter P stands for all errors greater than 45%. The letter P should suggest "*poorly*" known. The modeled independent yields greater than 1%, are assumed to have 32% error. Those between 0.5 and 1.0 are assumed to have 64% error and those <0.5% are assumed to have 100% error. The latter two cases, (although weighted as indicated) both translate as P in every output table. *It is recognized that even smaller independent yields have even larger than 100% error. Indeed, independent yields in the range of 1.0e-9 to 1.0e-12 may be difficult to predict to better than a factor of 100. For this reason, all yields less than 1.0e-12 are blanked out.*

Half-Lives

S	Seconds
M	Minutes
H	Hours
D	Days
Y	Years
L	Common log of years

The half-life also may be listed as short, long, or stable where appropriate.

Symbols To Indicate Measurement Techniques

BM	ENDF/B-V bench mark value
MS	Mass spectrometric
RC	Radiochemical
GC	Gas counter
SP	Special
ES	Estimate
CM	Compiler (not included in average)

Measurement Type

CU	Cumulative
IN	Independent
FC	Fractional Cumulative
FI	Fractional Independent
RE	Relative (arbitrary units)

Note Symbols

SM	Sum of both isomers
AE	Adjusted by T. R. England.
AW	Adjusted by W.H.Walker (73WAL1, 78WAL1, 78WAL2) for changed T 1/2, I-135 gamma abundance and Xe-135 direct yield effects.
AJ	adjusted by others for flux depression or other errors as described in the bibliography section.
SU	Superseded by later publication
LT	Less Than
GT	Greater Than
CM	Data were taken from a compilation of many original sources already cited in this work.
NR	Not Reciprocally treated
GE	Greater than or Equal to
LE	Less than or Equal to
CA	Circa (approximately)
RP	Reciprocal (standard to which yields are relative is also reciprocally relative to that yield).
ES	Estimate
UL	Upper Limit that cannot be averaged with actual measured values
X1	Explanation 1. Not used because it is inconsistent with charge distribution model.
X2	Explanation 2. Not used because of questionable method.
X3	Explanation 3. Not used because it is a compiler value so the primary data is already included herein.
X4	Explanation 4. Outlier by traditional Dixon test (57DIX1)
X5	Explanation 5. This R-value is reduced to an absolute value in the next entry because U235T yields are not stored for use.
X6	Nuclide not treated in this work
X7	See next entry for absolute value hand-reduced for this work

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Lammer, Secretary) formed in 1991. The fission yields recommended in this work appear in the Evaluated Nuclear Data File (ENDF/B-VI) at the Brookhaven National Laboratory. To improve the evaluation for use in calculation of decay heat, revisions were recommended by the ENDF/B-VI Fission Yield Subcommittee. These revisions included modeled direct yield metastable vs. ground state splits (76MAD2), odd-even proton and neutron pairing effects (76MAD1), and the delayed neutron yields treated so that all independent yields are before delayed neutron emission and all cumulative yields are after delayed neutron emission (77ENG3). The authors are grateful for the cooperation of Mike James, David Weaver and Robert Mills of the UK with whom they have exchanged computer data banks and for the encouragement received from the IAEA Fission Product Nuclear Data Panels at Bologna, Italy, 26-30 November 1973, and Petten, Netherlands, 5-9 September 1977.

We especially appreciate the generosity of the General Electric Company in making early versions of codes and data compiled through 1981 available to Los Alamos for continued use in evaluations. Since 1981, the effort has been supported at Los Alamos by the U. S. DoE. Some brief review articles on fission yields appear in the literature. However, the authors believe that the user should have access to both the evaluated yields and the data on which they are based. This belief arose because no abstracting journal has a category "fission yield" so data remain widely scattered in letters, papers, reports, articles, books, and proceedings. Thus, the data have been collected only with difficulty and are not readily available to the user. Large bulk and consequent publication cost rule out journal publication. However, since 1977, it has been available from the authors on microfiche of the highest quality that are easily read, inexpensive, and conveniently stored. As noted in the text the data are now being made available on the internet.

The authors are grateful for the guidance and recommendations of the Fission Yield Subcommittee of CSEWG that is the functional body responsible for the preparation of the Evaluated Nuclear Data File for the USA National Nuclear Data Center at Brookhaven National Laboratory. Members of that Yield Subcommittee have included: T. R. England, chairman; D. G. Madland, J. R. Liaw, B. I. Spinrad, R. E. Schenter, D. M. Gilliam, J. P. Unik, V. Mc Lane, Y. Harker, P. L. Reeder, B. W. Wehring, W. J. Maeck, B. F. Rider, W. B. Wilson, A. C. Wahl, W. H. Walker, and K. Wolfsberg. This Fission Yield and Decay Data Subcommittee is a Sub-group of the Cross Section Evaluation Group (CSEWG) of the Evaluated Nuclear Data File (ENDF) maintained at Brookhaven National Laboratory.

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gas loss, 70LIS1 gas loss appears to be 16% (29/25=1.16) well above our 3% error. Kr, Xe yields taken as 1.16x 70LIS1 values which are still relative to Nd-148 = 1.75%. NSA 27: 14251 (1973). CA 79:12549e (1973). 70LIS1 Xe loss is real (75MAE1).

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& 2 [one finds that fractional direct fission yields for 135I and 133I of 0.481 + 0.023 = 0.504] then (.056/(1.36+.056))*.504= 0.020±0.014 FI for I-133 U235T and (1.36/(1.36+.056))*0.504= 0.484±0.024 FI for I-135 U235T. CA 81:56776 (1974). NSA 30: 15012 (1974). For thesis see NSA 30: 15009 (1974). CSISRS-90561.

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74MEE3 Meek, M. E., Rider, B. F., Estimated independent yield from Wahl model where conflicts in data infer large independent yields in obvious disagreement with charge distribution. (e. g., where a chain yield is measured to be 6.5% yield and its precursor is measured to have a cumulative yield of 6.1%, an independent yield of 6.5 minus 6.1 = 0.4% is inferred but the Wahl model may predict 1.0e-9% for this stable Z. In this case we believe the model prediction that the two final chain members cumulative yields should differ by only 1.0e-9%).

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74MEE5 Meek, M. E., Rider, B. F., Estimated fractional fission yield from charge distribution model (normally computed in previous iteration).

74MEE6 Meek, M. E., Rider, B. F., More valley yields are unmeasured than in any other region. We have estimated valley yields assuming no fine structure in the valley. This should result in a smooth shaped valley. To keep from influencing the absolute peak-to-valley ratio, these smooth estimates are usually made relative to the most accurately measured valley nuclide.

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of Kr85g -to- cumulative yield of Rb85 of 0.2164, 0.2237, and 0.2312 for U235T, PU239T, and U233T, respectively. This computed U235T ratio of 0.2164 is in reasonable agreement with the value of 0.2160 ± 0.0019 measured by (80JAF1). The Kr85 independent yields used in these computations are an average of the mass 85 independent yields computed from the Zp model and the A'p model for charge distribution in fission by (86WAH1) split between Kr85m and Kr85 isomers according to the angular momentum model described by (76MAD2).

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1 Appendix A

Set A Yields Evaluated and Compiled
for
Los Alamos report LA-UR-94-3106 (ENDF-349)

T. R. England and B. F. Rider
October, 1994

Set A Contains yields for:
u235t, u235f, u235he, u238f, u238he, pu239t, pu239f, pu241t, u233t, th232f

Note: print landscape with page control parameter set
1

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    mass number     66              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g
half life                                0.23s    54.6 h    5.10 m    stable     9.49h     2.27h
lambda            0.0       0.0       0.0 3.014e+00 3.526e-06 2.265e-03       0.0 2.029e-05 8.482e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u235t   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0  7.08e-08o      0.0  8.28e-08p      0.0       0.0
zp 26.66 ri 2.41e-12p 7.20e-10p 3.76e-08p 2.81e-08p 5.78e-09p 1.43e-11p      0.0       0.0       0.0
sig0.531 cc 2.41e-12p 7.22e-10p 3.83e-08p 6.64e-08p 7.21e-08p 7.22e-08p 7.22e-08p      0.0       0.0
         rc 2.41e-12p 7.22e-10p 3.83e-08p 6.64e-08o 7.21e-08n 7.22e-08n 7.22e-08n      0.0       0.0
 u235f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  7.23e-07m      0.0       0.0
zp 26.62 ri 4.03e-11p 9.44e-09p 3.95e-07p 2.69e-07p 4.95e-08p 1.13e-10p      0.0       0.0       0.0
sig0.537 cc 4.03e-11p 9.48e-09p 4.04e-07p 6.74e-07p 7.23e-07p 7.23e-07p 7.23e-07p      0.0       0.0
         rc 4.03e-11p 9.48e-09p 4.04e-07p 6.74e-07p 7.23e-07o 7.23e-07n 7.23e-07m      0.0       0.0
 u235he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0  0.000276k      0.0  0.000297k      0.0       0.0
zp 26.69 ri 7.91e-08p 8.63e-06p 0.000101p 0.000149p 2.84e-05p 6.41e-07p 1.39e-09p      0.0       0.0
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sig0.634 cc 7.91e-08p 8.71e-06p 0.000110p 0.000259p 0.000288p 0.000288p 0.000288p       0.0        0.0
         rc 7.91e-08p 8.71e-06p 0.000110p 0.000259n 0.000288k 0.000288k 0.000288j       0.0        0.0
 u238f   xi      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
         xc      0.0        0.0        0.0        0.0  3.71e-06o      0.0        0.0        0.0        0.0
zp 26.36 ri 1.71e-09p 2.02e-07p 2.17e-06p 1.25e-06p 8.07e-08p 1.96e-10p       0.0        0.0        0.0
sig0.557 cc 1.71e-09p 2.04e-07p 2.38e-06p 3.63e-06p 3.71e-06p 3.71e-06p 3.71e-06p       0.0        0.0
         rc 1.71e-09p 2.04e-07p 2.38e-06p 3.63e-06o 3.71e-06n 3.71e-06n 3.71e-06n       0.0        0.0
 u238he  xi      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
         xc      0.0        0.0        0.0        0.0  8.41e-05k      0.0  6.83e-05l      0.0        0.0
zp 26.69 ri 1.18e-08p 1.94e-06p 2.77e-05p 4.16e-05p 6.87e-06p 9.57e-08p 1.16e-10p       0.0        0.0
sig0.605 cc 1.18e-08p 1.95e-06p 2.96e-05p 7.12e-05p 7.81e-05p 7.82e-05p 7.82e-05p       0.0        0.0
         rc 1.18e-08p 1.95e-06p 2.96e-05p 7.12e-05n 7.81e-05k 7.82e-05k 7.82e-05k       0.0        0.0
 pu239t  xi      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
         xc      0.0        0.0        0.0        0.0        0.0        0.0  2.21e-07p      0.0        0.0
zp 27.13 ri      0.0  3.69e-10p 3.63e-08p 1.15e-07p 6.78e-08p 1.38e-09p 3.50e-12p       0.0        0.0
sig0.564 cc      0.0  3.70e-10p 3.67e-08p 1.52e-07p 2.19e-07p 2.21e-07p 2.21e-07p       0.0        0.0
         rc      0.0  3.70e-10p 3.67e-08p 1.52e-07p 2.19e-07o 2.21e-07o 2.21e-07o       0.0        0.0
 pu239f  xi      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
         xc      0.0        0.0        0.0        0.0        0.0        0.0  8.68e-07m      0.0        0.0
zp 26.94 ri 8.92e-12p 4.04e-09p 2.36e-07p 4.55e-07p 1.71e-07p 2.05e-09p 3.07e-12p       0.0        0.0
sig0.565 cc 8.92e-12p 4.05e-09p 2.40e-07p 6.95e-07p 8.66e-07p 8.68e-07p 8.68e-07p       0.0        0.0
         rc 8.92e-12p 4.05e-09p 2.40e-07p 6.95e-07p 8.66e-07o 8.68e-07n 8.68e-07l       0.0        0.0
 pu241t  xi      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
         xc      0.0        0.0        0.0        0.0        0.0        0.0  1.67e-07m      0.0        0.0
zp 27.06 ri      0.0  3.26e-10p 2.86e-08p 9.91e-08p 3.85e-08p 6.15e-10p       0.0        0.0        0.0
sig0.544 cc      0.0  3.26e-10p 2.89e-08p 1.28e-07p 1.67e-07p 1.67e-07p 1.67e-07p       0.0        0.0
         rc      0.0  3.26e-10p 2.89e-08p 1.28e-07p 1.67e-07o 1.67e-07n 1.67e-07l       0.0        0.0
 u233t   xi      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
         xc      0.0        0.0        0.0        0.0        0.0        0.0  2.50e-07p      0.0        0.0
zp 26.92 ri 2.45e-12p 9.67e-10p 8.16e-08p 1.14e-07p 5.33e-08p 3.92e-10p       0.0        0.0        0.0
sig0.555 cc 2.45e-12p 9.69e-10p 8.26e-08p 1.96e-07p 2.50e-07p 2.50e-07p 2.50e-07p       0.0        0.0
         rc 2.45e-12p 9.69e-10p 8.26e-08p 1.96e-07p 2.50e-07o 2.50e-07o 2.50e-07o       0.0        0.0
 th232f  xi      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
         xc      0.0        0.0        0.0        0.0  1.13e-06n      0.0        0.0        0.0        0.0
zp 26.33 ri 3.18e-10p 5.15e-08p 7.43e-07p 3.22e-07p 1.62e-08p 1.49e-11p       0.0        0.0        0.0
sig0.524 cc 3.18e-10p 5.19e-08p 7.95e-07p 1.12e-06p 1.13e-06p 1.13e-06p 1.13e-06p       0.0        0.0
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        rc 3.18e-10p 5.19e-08p 7.95e-07p 1.12e-06o 1.13e-06n 1.13e-06n 1.13e-06n      0.0       0.0

  co, ni, cu half lives from 89wal1; ga half life 90bur1.
1

    mass number     67              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide      24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g
half life                                        21. s    2.580d    stable    3.261d    19.0 m
lambda           0.0       0.0       0.0       0.0 3.301e-02 3.110e-06       0.0 2.460e-06 6.080e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u235t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  3.63e-07p 3.60e-07n      0.0       0.0
zp 27.05 ri      0.0  5.38e-10p 6.87e-08p 2.00e-07p 9.04e-08p 9.68e-10p      0.0       0.0       0.0
sig0.531 cc      0.0  5.38e-10p 6.92e-08p 2.70e-07p 3.60e-07p 3.61e-07p 3.61e-07p      0.0       0.0
        rc      0.0  5.38e-10p 6.92e-08p 2.70e-07p 3.60e-07o 3.61e-07n 3.61e-07m      0.0       0.0
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.32e-06m      0.0       0.0
zp 27.00 ri 4.88e-12p 5.31e-09p 5.14e-07p 1.30e-06p 5.03e-07p 5.08e-09p 4.54e-12p      0.0       0.0
sig0.537 cc 4.88e-12p 5.32e-09p 5.19e-07p 1.82e-06p 2.32e-06p 2.32e-06p 2.32e-06p      0.0       0.0
        rc 4.88e-12p 5.32e-09p 5.19e-07p 1.82e-06p 2.32e-06o 2.32e-06n 2.32e-06m      0.0       0.0
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.000641l 0.000591k      0.0       0.0
zp 27.07 ri 1.51e-08p 3.98e-06p 0.000107p 0.000342p 0.000143p 7.23e-06p 3.62e-08p 1.79e-11p      0.0
sig0.634 cc 1.51e-08p 4.00e-06p 0.000111p 0.000453p 0.000596p 0.000604p 0.000604p 1.89e-11p      0.0
        rc 1.51e-08p 4.00e-06p 0.000111p 0.000453p 0.000596m 0.000604k 0.000604j 1.79e-11p      0.0
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  2.15e-05o      0.0       0.0       0.0
zp 26.74 ri 6.74e-10p 2.67e-07p 7.40e-06p 1.18e-05p 1.95e-06p 1.58e-08p 8.05e-12p      0.0       0.0
sig0.557 cc 6.74e-10p 2.68e-07p 7.67e-06p 1.95e-05p 2.14e-05p 2.15e-05p 2.15e-05p      0.0       0.0
        rc 6.74e-10p 2.68e-07p 7.67e-06p 1.95e-05p 2.14e-05o 2.15e-05n 2.15e-05n      0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.000138n 0.000139l      0.0       0.0
zp 27.06 ri 1.65e-09p 6.98e-07p 2.41e-05p 8.18e-05p 3.09e-05p 1.17e-06p 3.72e-09p      0.0       0.0
sig0.605 cc 1.65e-09p 6.99e-07p 2.48e-05p 0.000107p 0.000138p 0.000139p 0.000139p      0.0       0.0
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        rc 1.65e-09p 6.99e-07p 2.48e-05p 0.000107p 0.000138n 0.000139m 0.000139l      0.0       0.0
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  4.48e-07n      0.0       0.0
zp 27.51 ri      0.0  7.58e-11p 1.82e-08p 1.86e-07p 2.29e-07p 1.56e-08p 9.94e-11p      0.0       0.0
sig0.564 cc      0.0  7.58e-11p 1.83e-08p 2.04e-07p 4.33e-07p 4.48e-07p 4.48e-07p      0.0       0.0
        rc      0.0  7.58e-11p 1.83e-08p 2.04e-07p 4.33e-07p 4.48e-07o 4.48e-07n      0.0       0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.87e-06m      0.0       0.0
zp 27.33 ri      0.0  1.58e-09p 2.33e-07p 1.41e-06p 1.17e-06p 4.79e-08p 1.92e-10p      0.0       0.0
sig0.565 cc      0.0  1.58e-09p 2.35e-07p 1.64e-06p 2.82e-06p 2.87e-06p 2.87e-06p      0.0       0.0
        rc      0.0  1.58e-09p 2.35e-07p 1.64e-06p 2.82e-06o 2.87e-06n 2.87e-06l      0.0       0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.05e-07m      0.0       0.0
zp 27.43 ri      0.0  9.06e-11p 2.46e-08p 2.33e-07p 2.36e-07p 1.10e-08p 3.84e-11p      0.0       0.0
sig0.544 cc      0.0  9.06e-11p 2.47e-08p 2.58e-07p 4.94e-07p 5.05e-07p 5.05e-07p      0.0       0.0
        rc      0.0  9.06e-11p 2.47e-08p 2.58e-07p 4.94e-07o 5.05e-07n 5.05e-07l      0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.12e-06p      0.0       0.0
zp 27.30 ri      0.0  5.58e-10p 1.04e-07p 5.27e-07p 4.74e-07p 1.40e-08p 4.95e-11p      0.0       0.0
sig0.555 cc      0.0  5.59e-10p 1.04e-07p 6.32e-07p 1.11e-06p 1.12e-06p 1.12e-06p      0.0       0.0
        rc      0.0  5.59e-10p 1.04e-07p 6.32e-07p 1.11e-06p 1.12e-06o 1.12e-06o      0.0       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  3.90e-06n      0.0       0.0       0.0
zp 26.71 ri 5.56e-11p 3.82e-08p 1.47e-06p 2.11e-06p 2.82e-07p 1.10e-09p      0.0       0.0       0.0
sig0.524 cc 5.56e-11p 3.82e-08p 1.51e-06p 3.62e-06p 3.90e-06p 3.90e-06p 3.90e-06p      0.0       0.0
        rc 5.56e-11p 3.82e-08p 1.51e-06p 3.62e-06p 3.90e-06o 3.90e-06n 3.90e-06n      0.0       0.0

  ni, cu half lives from 89wal1; ga half life from 90bur1.
1

    mass number     68              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide      24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu m   29 cu g   30 zn g   31 ga g   32 ge g
half life                                   19. s     3.79m     31. s    stable    68.06m    287. d
lambda          0.0       0.0       0.0       0.0 3.648e-02 3.048e-03 2.236e-02       0.0 1.697e-04 2.795e-08
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0   50.0000       0.0       0.0
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 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0   50.0000       0.0       0.0       0.0
 u235t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  7.16e-07n      0.0       0.0
zp 27.43 ri      0.0  6.66e-11p 3.92e-08p 2.47e-07p 4.19e-07p 7.36e-09p 3.15e-09p 4.74e-11p      0.0       0.0
sig0.531 cc      0.0  6.66e-11p 3.92e-08p 2.86e-07p 7.05e-07p 7.36e-09p 7.12e-07p 7.16e-07p      0.0       0.0
         rc      0.0  6.66e-11p 3.92e-08p 2.86e-07p 7.05e-07p 7.36e-09p 7.12e-07o 7.16e-07n      0.0       0.0
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.03e-06m      0.0       0.0
zp 27.38 ri      0.0  6.66e-10p 2.85e-07p 1.52e-06p 2.18e-06p 3.71e-08p 1.37e-08p 2.12e-10p      0.0       0.0
sig0.537 cc      0.0  6.66e-10p 2.86e-07p 1.80e-06p 3.98e-06p 3.71e-08p 4.01e-06p 4.03e-06p      0.0       0.0
         rc      0.0  6.66e-10p 2.86e-07p 1.80e-06p 3.98e-06p 3.71e-08p 4.01e-06o 4.03e-06m      0.0       0.0
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000887k      0.0       0.0
zp 27.45 ri 1.44e-09p 9.27e-07p 5.84e-05p 0.000412p 0.000372p 3.51e-05p 7.70e-06p 5.41e-07p 6.64e-10p      0.0
sig0.634 cc 1.44e-09p 9.28e-07p 5.94e-05p 0.000471p 0.000844p 3.51e-05p 0.000869p 0.000887p 6.64e-10p      0.0
         rc 1.44e-09p 9.28e-07p 5.94e-05p 0.000471p 0.000844o 3.51e-05p 0.000869m 0.000887k 6.64e-10p      0.0
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.80e-05n      0.0       0.0
zp 27.11 ri 4.48e-11p 5.04e-08p 4.30e-06p 1.61e-05p 7.42e-06p 1.17e-07p 4.33e-08p 2.74e-10p      0.0       0.0
sig0.557 cc 4.48e-11p 5.04e-08p 4.35e-06p 2.05e-05p 2.79e-05p 1.17e-07p 2.80e-05p 2.80e-05p      0.0       0.0
         rc 4.48e-11p 5.04e-08p 4.35e-06p 2.05e-05p 2.79e-05o 1.17e-07p 2.80e-05o 2.80e-05n      0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000299l      0.0       0.0
zp 27.42 ri 2.13e-10p 2.29e-07p 1.92e-05p 0.000146p 0.000122p 8.89e-06p 1.95e-06p 8.51e-08p 5.11e-11p      0.0
sig0.605 cc 2.13e-10p 2.29e-07p 1.94e-05p 0.000166p 0.000288p 8.89e-06p 0.000294p 0.000299p 5.11e-11p      0.0
         rc 2.13e-10p 2.29e-07p 1.94e-05p 0.000166p 0.000288o 8.89e-06p 0.000294n 0.000299l 5.11e-11p      0.0
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.62e-06n      0.0       0.0
zp 27.88 ri      0.0  1.58e-11p 1.35e-08p 3.08e-07p 1.13e-06p 1.16e-07p 4.97e-08p 3.65e-09p 2.03e-12p      0.0
sig0.564 cc      0.0  1.58e-11p 1.35e-08p 3.22e-07p 1.45e-06p 1.16e-07p 1.56e-06p 1.62e-06p 2.03e-12p      0.0
         rc      0.0  1.58e-11p 1.35e-08p 3.22e-07p 1.45e-06p 1.16e-07p 1.56e-06o 1.62e-06n 2.04e-12p      0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  8.42e-06m      0.0       0.0
zp 27.71 ri      0.0  3.09e-10p 1.61e-07p 2.23e-06p 5.51e-06p 3.76e-07p 1.39e-07p 7.26e-09p 2.44e-12p      0.0
sig0.565 cc      0.0  3.09e-10p 1.61e-07p 2.39e-06p 7.90e-06p 3.76e-07p 8.23e-06p 8.42e-06p 2.44e-12p      0.0
         rc      0.0  3.09e-10p 1.61e-07p 2.39e-06p 7.90e-06p 3.76e-07p 8.23e-06n 8.42e-06l 2.45e-12p      0.0
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 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.41e-06m      0.0       0.0
zp 27.79 ri      0.0  1.62e-11p 1.36e-08p 3.60e-07p 9.19e-07p 8.16e-08p 3.50e-08p 1.23e-09p      0.0       0.0
sig0.544 cc      0.0  1.62e-11p 1.36e-08p 3.74e-07p 1.29e-06p 8.16e-08p 1.37e-06p 1.41e-06p      0.0       0.0
         rc      0.0  1.62e-11p 1.36e-08p 3.74e-07p 1.29e-06p 8.16e-08p 1.37e-06n 1.41e-06l      0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.43e-06p      0.0       0.0
zp 27.68 ri      0.0  9.39e-11p 7.41e-08p 7.70e-07p 2.43e-06p 1.03e-07p 4.41e-08p 2.22e-09p      0.0       0.0
sig0.555 cc      0.0  9.39e-11p 7.42e-08p 8.44e-07p 3.28e-06p 1.03e-07p 3.37e-06p 3.43e-06p      0.0       0.0
         rc      0.0  9.39e-11p 7.42e-08p 8.44e-07p 3.28e-06p 1.03e-07p 3.37e-06p 3.43e-06o      0.0       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.43e-05n      0.0       0.0
zp 27.08 ri 7.83e-12p 1.63e-08p 2.41e-06p 8.14e-06p 3.68e-06p 2.97e-08p 1.10e-08p 3.30e-11p      0.0       0.0
sig0.524 cc 7.83e-12p 1.63e-08p 2.42e-06p 1.06e-05p 1.42e-05p 2.97e-08p 1.43e-05p 1.43e-05p      0.0       0.0
         rc 7.83e-12p 1.63e-08p 2.42e-06p 1.06e-05p 1.42e-05o 2.97e-08p 1.43e-05o 1.43e-05n      0.0       0.0

  ni, cu half lives from 89wal1; ga, ge half lives from 90bur1.
1

    mass number     69              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide      25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn m   30 zn g   31 ga g   32 ge g   33 as g
half life                          10. s     2.8 m    13.76h     56. m    stable    39.2 h     15. m
lambda          0.0       0.0       0.0 6.931e-02 4.126e-03 1.399e-05 2.063e-04       0.0 4.912e-06 7.702e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 u235t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.57e-06n      0.0       0.0
zp 27.81 ri 8.03e-12p 1.22e-08p 3.25e-07p 1.12e-06p 1.14e-07p 1.06e-09p 2.48e-10p      0.0       0.0       0.0
sig0.531 cc 8.03e-12p 1.22e-08p 3.37e-07p 1.46e-06p 1.57e-06p 1.06e-09p 1.57e-06p 1.57e-06p      0.0       0.0
         rc 8.03e-12p 1.22e-08p 3.37e-07p 1.46e-06p 1.57e-06p 1.06e-09p 1.57e-06o 1.57e-06n      0.0       0.0
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  8.70e-06m      0.0       0.0
zp 27.76 ri 8.92e-11p 9.57e-08p 2.08e-06p 5.97e-06p 5.57e-07p 4.78e-09p 9.79e-10p 1.08e-12p      0.0       0.0
sig0.537 cc 8.92e-11p 9.58e-08p 2.17e-06p 8.14e-06p 8.70e-06p 4.78e-09p 8.70e-06p 8.70e-06p      0.0       0.0
         rc 8.92e-11p 9.58e-08p 2.17e-06p 8.14e-06p 8.70e-06o 4.78e-09p 8.70e-06n 8.70e-06m      0.0       0.0
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 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001320n      0.0       0.0
zp 27.83 ri 1.56e-07p 2.35e-05p 0.000374p 0.000731p 0.000186p 4.94e-06p 6.10e-07p 1.67e-08p 4.65e-12p       0.0
sig0.634 cc 1.56e-07p 2.37e-05p 0.000398p 0.001128p 0.001315p 4.94e-06p 0.001320p 0.001320p 4.65e-12p       0.0
         rc 1.56e-07p 2.37e-05p 0.000398p 0.001128p 0.001315o 4.94e-06p 0.001320o 0.001320n 4.65e-12p       0.0
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.58e-05n      0.0       0.0
zp 27.49 ri 6.03e-09p 1.44e-06p 1.59e-05p 1.74e-05p 1.16e-06p 4.75e-09p 9.72e-10p 1.06e-12p       0.0       0.0
sig0.557 cc 6.03e-09p 1.45e-06p 1.73e-05p 3.47e-05p 3.58e-05p 4.75e-09p 3.58e-05p 3.58e-05p       0.0       0.0
         rc 6.03e-09p 1.45e-06p 1.73e-05p 3.47e-05p 3.58e-05o 4.75e-09p 3.58e-05o 3.58e-05n       0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000501l      0.0       0.0
zp 27.79 ri 3.93e-08p 8.34e-06p 0.000151p 0.000282p 5.85e-05p 1.03e-06p 1.27e-07p 1.81e-09p       0.0       0.0
sig0.605 cc 3.93e-08p 8.38e-06p 0.000159p 0.000442p 0.000500p 1.03e-06p 0.000501p 0.000501p       0.0       0.0
         rc 3.93e-08p 8.38e-06p 0.000159p 0.000442p 0.000500o 1.03e-06p 0.000501n 0.000501l       0.0       0.0
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.89e-06n      0.0       0.0
zp 28.26 ri 2.67e-12p 5.87e-09p 4.66e-07p 3.67e-06p 1.66e-06p 7.01e-08p 1.64e-08p 1.79e-10p       0.0       0.0
sig0.564 cc 2.67e-12p 5.87e-09p 4.72e-07p 4.14e-06p 5.81e-06p 7.01e-08p 5.89e-06p 5.89e-06p       0.0       0.0
         rc 2.67e-12p 5.87e-09p 4.72e-07p 4.14e-06p 5.81e-06p 7.01e-08p 5.89e-06o 5.89e-06n       0.0       0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.12e-05m      0.0       0.0
zp 28.09 ri 6.30e-11p 8.50e-08p 3.94e-06p 2.10e-05p 6.01e-06p 1.72e-07p 3.53e-08p 2.54e-10p       0.0       0.0
sig0.565 cc 6.30e-11p 8.50e-08p 4.02e-06p 2.50e-05p 3.10e-05p 1.72e-07p 3.12e-05p 3.12e-05p       0.0       0.0
         rc 6.30e-11p 8.50e-08p 4.02e-06p 2.50e-05p 3.10e-05o 1.72e-07p 3.12e-05n 3.12e-05l       0.0       0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.64e-06m      0.0       0.0
zp 28.16 ri 1.65e-12p 4.52e-09p 3.59e-07p 2.43e-06p 8.22e-07p 2.13e-08p 5.00e-09p 2.62e-11p       0.0       0.0
sig0.544 cc 1.65e-12p 4.52e-09p 3.64e-07p 2.80e-06p 3.62e-06p 2.13e-08p 3.64e-06p 3.64e-06p       0.0       0.0
         rc 1.65e-12p 4.52e-09p 3.64e-07p 2.80e-06p 3.62e-06o 2.13e-08p 3.64e-06n 3.64e-06l       0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.41e-06p      0.0       0.0
zp 28.05 ri 1.59e-11p 2.83e-08p 1.14e-06p 6.74e-06p 1.45e-06p 3.81e-08p 8.93e-09p 3.51e-11p       0.0       0.0
sig0.555 cc 1.59e-11p 2.83e-08p 1.17e-06p 7.91e-06p 9.36e-06p 3.81e-08p 9.41e-06p 9.41e-06p       0.0       0.0
         rc 1.59e-11p 2.83e-08p 1.17e-06p 7.91e-06p 9.36e-06p 3.81e-08p 9.41e-06o 9.41e-06o       0.0       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.30e-05n      0.0       0.0
zp 27.46 ri 2.81e-09p 1.24e-06p 1.49e-05p 1.62e-05p 6.88e-07p 1.44e-09p 2.95e-10p      0.0       0.0       0.0
sig0.524 cc 2.81e-09p 1.24e-06p 1.61e-05p 3.23e-05p 3.30e-05p 1.44e-09p 3.30e-05p 3.30e-05p      0.0       0.0
        rc 2.81e-09p 1.24e-06p 1.61e-05p 3.23e-05p 3.30e-05o 1.44e-09p 3.30e-05o 3.30e-05n      0.0       0.0

  ni, cu, zn half lives from 89wal1.
1

    mass number     70              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide      24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu m   29 cu g   30 zn g   31 ga g   32 ge g
half life                                                  47. s      5. s    stable    21.1 m    stable
lambda           0.0       0.0       0.0       0.0       0.0 1.475e-02 1.386e-01       0.0 5.475e-04       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000   50.0000   50.0000  100.0000       0.0  100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u235t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.62e-06n      0.0       0.0
zp 28.19 ri      0.0       0.0  3.24e-09p 2.09e-07p 2.78e-06p 4.46e-07p 1.49e-07p 3.03e-08p 1.47e-11p       0.0
sig0.531 cc      0.0       0.0  3.24e-09p 2.13e-07p 3.00e-06p 1.94e-06p 1.65e-06p 3.62e-06p 1.47e-11p 1.47e-11p
        rc      0.0       0.0  3.24e-09p 2.13e-07p 3.00e-06p 1.94e-06p 1.65e-06p 3.62e-06m 1.47e-11p 1.47e-11p
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.89e-05m      0.0       0.0
zp 28.13 ri      0.0  5.78e-12p 2.82e-08p 1.39e-06p 1.46e-05p 2.15e-06p 6.05e-07p 1.20e-07p 5.65e-11p       0.0
sig0.537 cc      0.0  5.78e-12p 2.82e-08p 1.42e-06p 1.60e-05p 1.02e-05p 8.61e-06p 1.89e-05p 5.65e-11p 5.65e-11p
        rc      0.0  5.78e-12p 2.82e-08p 1.42e-06p 1.60e-05p 1.02e-05p 8.61e-06p 1.89e-05m 5.65e-11p 5.65e-11p
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.002361k      0.0       0.0
zp 28.21 ri 5.68e-12p 2.25e-08p 8.21e-06p 0.000302p 0.001287p 0.000608p 0.000107p 4.91e-05p 3.58e-07p 2.48e-10p
sig0.634 cc 5.68e-12p 2.25e-08p 8.23e-06p 0.000310p 0.001597p 0.001406p 0.000905p 0.002361p 3.58e-07p 3.58e-07p
        rc 5.68e-12p 2.25e-08p 8.23e-06p 0.000310p 0.001597p 0.001406p 0.000905p 0.002361k 3.58e-07p 3.58e-07p
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.41e-05n      0.0       0.0
zp 27.86 ri      0.0  4.45e-10p 3.49e-07p 9.81e-06p 2.92e-05p 3.71e-06p 1.05e-06p 7.53e-08p 4.02e-11p       0.0
sig0.557 cc      0.0  4.45e-10p 3.50e-07p 1.02e-05p 3.93e-05p 2.34e-05p 2.07e-05p 4.41e-05p 4.02e-11p 4.02e-11p
        rc      0.0  4.45e-10p 3.50e-07p 1.02e-05p 3.93e-05p 2.34e-05p 2.07e-05p 4.41e-05m 4.02e-11p 4.02e-11p
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

```
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000901l      0.0       0.0
zp 28.15 ri      0.0  5.46e-09p 2.92e-06p 0.000126p 0.000521p 0.000204p 3.60e-05p 1.13e-05p 4.48e-08p 1.32e-11p
sig0.605 cc      0.0  5.47e-09p 2.92e-06p 0.000129p 0.000649p 0.000529p 0.000361p 0.000901p 4.48e-08p 4.48e-08p
        rc      0.0  5.47e-09p 2.92e-06p 0.000129p 0.000649p 0.000529p 0.000361p 0.000901l 4.48e-08p 4.48e-08p
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.99e-05n      0.0       0.0
zp 28.64 ri      0.0       0.0  1.84e-09p 3.61e-07p 9.27e-06p 6.58e-06p 2.19e-06p 1.50e-06p 7.77e-09p 4.55e-12p
sig0.564 cc      0.0       0.0  1.84e-09p 3.63e-07p 9.63e-06p 1.14e-05p 7.01e-06p 1.99e-05p 7.77e-09p 7.77e-09p
        rc      0.0       0.0  1.84e-09p 3.63e-07p 9.63e-06p 1.14e-05p 7.01e-06p 1.99e-05m 7.77e-09p 7.77e-09p
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  8.69e-05m      0.0       0.0
zp 28.47 ri      0.0  5.26e-12p 2.61e-08p 3.01e-06p 4.98e-05p 2.38e-05p 6.72e-06p 3.45e-06p 1.09e-08p 4.01e-12p
sig0.565 cc      0.0  5.26e-12p 2.61e-08p 3.03e-06p 5.29e-05p 5.03e-05p 3.32e-05p 8.69e-05p 1.09e-08p 1.09e-08p
        rc      0.0  5.27e-12p 2.61e-08p 3.03e-06p 5.29e-05p 5.03e-05p 3.32e-05p 8.69e-05l 1.09e-08p 1.09e-08p
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.40e-05m      0.0       0.0
zp 28.53 ri      0.0       0.0  1.50e-09p 3.71e-07p 6.95e-06p 4.57e-06p 1.52e-06p 5.64e-07p 1.80e-09p      0.0
sig0.544 cc      0.0       0.0  1.50e-09p 3.73e-07p 7.33e-06p 8.23e-06p 5.19e-06p 1.40e-05p 1.80e-09p 1.80e-09p
        rc      0.0       0.0  1.50e-09p 3.73e-07p 7.33e-06p 8.23e-06p 5.19e-06p 1.40e-05l 1.80e-09p 1.80e-09p
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.67e-05p      0.0       0.0
zp 28.43 ri      0.0  1.57e-12p 1.24e-08p 1.12e-06p 2.43e-05p 7.48e-06p 2.49e-06p 1.27e-06p 2.20e-09p      0.0
sig0.555 cc      0.0  1.57e-12p 1.24e-08p 1.13e-06p 2.55e-05p 2.02e-05p 1.52e-05p 3.67e-05p 2.20e-09p 2.21e-09p
        rc      0.0  1.57e-12p 1.24e-08p 1.13e-06p 2.55e-05p 2.02e-05p 1.52e-05p 3.67e-05o 2.20e-09p 2.21e-09p
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.54e-05m      0.0       0.0
zp 27.83 ri      0.0  2.29e-10p 4.17e-07p 1.33e-05p 4.66e-05p 3.92e-06p 1.10e-06p 5.12e-08p 8.44e-12p      0.0
sig0.524 cc      0.0  2.29e-10p 4.17e-07p 1.38e-05p 6.03e-05p 3.41e-05p 3.13e-05p 6.54e-05p 8.44e-12p 8.44e-12p
        rc      0.0  2.29e-10p 4.17e-07p 1.38e-05p 6.03e-05p 3.41e-05p 3.13e-05p 6.54e-05m 8.44e-12p 8.44e-12p

  cu half life from 89wal1.
1

    mass number     71              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide      25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn m   30 zn g   31 ga g   32 ge m   32 ge g   33 as g
half life                                   20. s    3.97 h     2.4 m    stable    11.8 d    0.020s     64. h
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lambda          0.0       0.0       0.0       0.0 3.466e-02 4.850e-05 4.814e-03       0.0 6.799e-07 3.466e+01 3.008e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000       0.0 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0   99.9500       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0    0.0500       0.0       0.0  100.0000       0.0
 u235t   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  8.38e-06n      0.0       0.0       0.0
zp 28.57 ri      0.0  4.92e-10p 1.48e-07p 4.35e-06p 3.48e-06p 3.29e-07p 7.71e-08p 9.39e-10p      0.0       0.0       0.0
sig0.531 cc      0.0  4.92e-10p 1.49e-07p 4.50e-06p 7.97e-06p 3.29e-07p 8.05e-06p 8.38e-06p      0.0       0.0       0.0
        rc      0.0  4.92e-10p 1.49e-07p 4.50e-06p 7.97e-06p 3.29e-07p 8.05e-06o 8.38e-06n      0.0       0.0       0.0
 u235f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.65e-05m      0.0       0.0       0.0
zp 28.51 ri      0.0  5.15e-09p 1.14e-06p 2.57e-05p 1.78e-05p 1.47e-06p 3.01e-07p 3.84e-09p      0.0       0.0       0.0
sig0.537 cc      0.0  5.16e-09p 1.15e-06p 2.69e-05p 4.47e-05p 1.47e-06p 4.50e-05p 4.65e-05p      0.0       0.0       0.0
        rc      0.0  5.16e-09p 1.15e-06p 2.69e-05p 4.47e-05p 1.47e-06p 4.50e-05o 4.65e-05m      0.0       0.0       0.0
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.003946k      0.0       0.0       0.0
zp 28.59 ri 2.14e-09p 1.92e-06p 0.000167p 0.001581p 0.001898p 0.000261p 3.22e-05p 5.09e-06p 4.36e-09p 4.36e-09p 1.36e-12p
sig0.634 cc 2.14e-09p 1.92e-06p 0.000169p 0.001750p 0.003648p 0.000261p 0.003680p 0.003946p 4.36e-09p 8.71e-09p 1.36e-12p
        rc 2.14e-09p 1.92e-06p 0.000169p 0.001750p 0.003648o 0.000261p 0.003680m 0.003946k 4.36e-09p 8.71e-09p 1.36e-12p
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.95e-05n      0.0       0.0       0.0
zp 28.23 ri 2.22e-11p 4.97e-08p 4.36e-06p 3.07e-05p 1.38e-05p 4.79e-07p 9.80e-08p 1.03e-09p      0.0       0.0       0.0
sig0.557 cc 2.22e-11p 4.98e-08p 4.41e-06p 3.51e-05p 4.89e-05p 4.79e-07p 4.90e-05p 4.95e-05p      0.0       0.0       0.0
        rc 2.22e-11p 4.98e-08p 4.41e-06p 3.51e-05p 4.89e-05p 4.79e-07p 4.90e-05o 4.95e-05n      0.0       0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001592l      0.0       0.0       0.0
zp 28.52 ri 4.88e-10p 6.82e-07p 7.33e-05p 0.000705p 0.000730p 7.28e-05p 9.00e-06p 8.26e-07p 3.22e-10p 3.22e-10p      0.0
sig0.605 cc 4.88e-10p 6.83e-07p 7.40e-05p 0.000779p 0.001509p 7.28e-05p 0.001518p 0.001592p 3.22e-10p 6.44e-10p      0.0
        rc 4.88e-10p 6.83e-07p 7.40e-05p 0.000779p 0.001509o 7.28e-05p 0.001518n 0.001592l 3.22e-10p 6.44e-10p      0.0
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.67e-05n      0.0       0.0       0.0
zp 29.01 ri      0.0  1.83e-10p 1.29e-07p 7.49e-06p 2.12e-05p 6.24e-06p 1.46e-06p 1.36e-07p 1.00e-10p 1.00e-10p      0.0
sig0.564 cc      0.0  1.83e-10p 1.29e-07p 7.62e-06p 2.88e-05p 6.24e-06p 3.03e-05p 3.67e-05p 1.00e-10p 2.00e-10p      0.0
        rc      0.0  1.83e-10p 1.29e-07p 7.62e-06p 2.88e-05p 6.24e-06p 3.03e-05p 3.67e-05n 1.00e-10p 2.00e-10p      0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000203n      0.0       0.0       0.0
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zp 28.85 ri       0.0  3.85e-09p 1.58e-06p 6.12e-05p 0.000111p 2.35e-05p 4.82e-06p 3.11e-07p 1.51e-10p 1.51e-10p       0.0
sig0.565 cc       0.0  3.85e-09p 1.58e-06p 6.27e-05p 0.000174p 2.35e-05p 0.000179p 0.000203p 1.51e-10p 3.03e-10p       0.0
        rc       0.0  3.85e-09p 1.58e-06p 6.27e-05p 0.000174p 2.35e-05p 0.000179o 0.000203n 1.51e-10p 3.03e-10p       0.0
 pu241t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.24e-05m       0.0       0.0       0.0
zp 28.90 ri       0.0  3.11e-10p 2.48e-07p 1.35e-05p 3.07e-05p 6.34e-06p 1.49e-06p 7.74e-08p 2.50e-11p 2.50e-11p       0.0
sig0.544 cc       0.0  3.11e-10p 2.48e-07p 1.38e-05p 4.45e-05p 6.34e-06p 4.60e-05p 5.24e-05p 2.50e-11p 5.01e-11p       0.0
        rc       0.0  3.11e-10p 2.48e-07p 1.38e-05p 4.45e-05o 6.34e-06p 4.60e-05n 5.24e-05l 2.50e-11p 5.01e-11p       0.0
 u233t   xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000162p       0.0       0.0       0.0
zp 28.81 ri       0.0  3.26e-09p 1.26e-06p 5.70e-05p 8.22e-05p 1.72e-05p 4.03e-06p 1.55e-07p 6.12e-11p 6.12e-11p       0.0
sig0.555 cc       0.0  3.26e-09p 1.26e-06p 5.82e-05p 0.000140p 1.72e-05p 0.000144p 0.000162p 6.12e-11p 1.22e-10p       0.0
        rc       0.0  3.26e-09p 1.26e-06p 5.82e-05p 0.000140p 1.72e-05p 0.000144p 0.000162o 6.12e-11p 1.22e-10p       0.0
 th232f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000166m       0.0       0.0       0.0
zp 28.21 ri 1.74e-11p 1.00e-07p 1.29e-05p 0.000111p 4.09e-05p 9.97e-07p 2.04e-07p 8.66e-10p       0.0       0.0       0.0
sig0.524 cc 1.74e-11p 1.00e-07p 1.30e-05p 0.000124p 0.000165p 9.97e-07p 0.000165p 0.000166p       0.0       0.0       0.0
        rc 1.74e-11p 1.00e-07p 1.30e-05p 0.000124p 0.000165o 9.97e-07p 0.000165n 0.000166m       0.0       0.0       0.0

  cu, zn half lives from 89wal1.
1

    mass number     72              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g   33 as g   34 se g
half life              0.124s    3.83 s     6.6 s    46.5 h    14.10h    stable    26.0 h    8.40 d
lambda            0.0 5.590e+00 1.810e-01 1.050e-01 4.141e-06 1.366e-05       0.0 7.405e-06 9.551e-07
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u235t   xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc       0.0       0.0       0.0       0.0  2.64e-05l       0.0  3.00e-05p       0.0       0.0
zp 28.96 ri 7.15e-11p 5.80e-08p 7.60e-06p 1.27e-05p 6.10e-06p 3.86e-08p 3.64e-11p       0.0       0.0
sig0.531 cc 7.15e-11p 5.81e-08p 7.66e-06p 2.04e-05p 2.65e-05p 2.65e-05p 2.65e-05p       0.0       0.0
        rc 7.15e-11p 5.81e-08p 7.66e-06p 2.04e-05o 2.65e-05k 2.65e-05k 2.65e-05k       0.0       0.0
 u235f   xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc       0.0       0.0       0.0       0.0       0.0       0.0  0.000166m       0.0       0.0
```

zp 28.89 ri 1.07e-09p 6.02e-07p 5.63e-05p 7.83e-05p 3.05e-05p 1.62e-07p 1.36e-10p 0.0 0.0
sig0.537 cc 1.07e-09p 6.04e-07p 5.69e-05p 0.000135p 0.000166p 0.000166p 0.000166p 0.0 0.0
rc 1.07e-09p 6.04e-07p 5.69e-05p 0.000135p 0.000166o 0.000166n 0.000166m 0.0 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.005971j 0.0 0.006003k 0.0 0.0
zp 28.97 ri 2.92e-07p 6.09e-05p 0.001316p 0.003423p 0.001165p 4.72e-05p 1.97e-07p 7.70e-11p 0.0
sig0.634 cc 2.92e-07p 6.12e-05p 0.001378p 0.004801p 0.005966p 0.006013p 0.006014p 7.71e-11p 0.0
rc 2.92e-07p 6.12e-05p 0.001378p 0.004801o 0.005966j 0.006013j 0.006014j 7.70e-11p 0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 6.05e-05o 0.0 0.0 0.0 0.0
zp 28.61 ri 5.16e-09p 1.28e-06p 2.69e-05p 2.87e-05p 3.64e-06p 1.86e-08p 6.88e-12p 0.0 0.0
sig0.557 cc 5.16e-09p 1.28e-06p 2.82e-05p 5.68e-05p 6.05e-05p 6.05e-05p 6.05e-05p 0.0 0.0
rc 5.16e-09p 1.28e-06p 2.82e-05p 5.68e-05o 6.05e-05n 6.05e-05n 6.05e-05n 0.0 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.002968l 0.0 0.002444l 0.0 0.0
zp 28.88 ri 1.16e-07p 3.09e-05p 0.000692p 0.001575p 0.000399p 8.91e-06p 1.77e-08p 2.56e-12p 0.0
sig0.605 cc 1.16e-07p 3.10e-05p 0.000722p 0.002297p 0.002696p 0.002706p 0.002706p 2.81e-12p 0.0
rc 1.16e-07p 3.10e-05p 0.000723p 0.002298o 0.002697l 0.002706l 0.002706k 2.56e-12p 0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.000119p 0.0 0.000120p 0.0 0.0
zp 29.39 ri 2.28e-11p 4.13e-08p 8.50e-06p 5.23e-05p 5.82e-05p 2.39e-06p 1.29e-08p 1.65e-12p 0.0
sig0.564 cc 2.27e-11p 4.13e-08p 8.54e-06p 6.09e-05p 0.000119p 0.000121p 0.000122p 1.66e-12p 0.0
rc 2.28e-11p 4.14e-08p 8.54e-06p 6.09e-05p 0.000119o 0.000121o 0.000122o 1.65e-12p 0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000520n 0.0 0.0
zp 29.23 ri 4.55e-10p 4.88e-07p 6.40e-05p 0.000254p 0.000196p 5.18e-06p 1.83e-08p 1.45e-12p 0.0
sig0.565 cc 4.55e-10p 4.89e-07p 6.45e-05p 0.000319p 0.000514p 0.000520p 0.000520p 1.45e-12p 0.0
rc 4.55e-10p 4.89e-07p 6.45e-05p 0.000319p 0.000514p 0.000520o 0.000520n 1.45e-12p 0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.43e-05m 0.0 0.0
zp 29.27 ri 4.95e-12p 1.29e-08p 2.15e-06p 1.31e-05p 8.79e-06p 2.60e-07p 5.47e-10p 0.0 0.0
sig0.544 cc 4.95e-12p 1.29e-08p 2.16e-06p 1.53e-05p 2.40e-05p 2.43e-05p 2.43e-05p 0.0 0.0
rc 4.95e-12p 1.29e-08p 2.16e-06p 1.53e-05p 2.40e-05o 2.43e-05n 2.43e-05m 0.0 0.0
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000416n 0.0 0.0
zp 29.19 ri 3.89e-10p 3.52e-07p 6.47e-05p 0.000181p 0.000168p 2.67e-06p 9.25e-09p 0.0 0.0

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sig0.555 cc 3.89e-10p 3.53e-07p 6.51e-05p 0.000246p 0.000414p 0.000416p 0.000416p       0.0        0.0
         rc 3.89e-10p 3.53e-07p 6.51e-05p 0.000246p 0.000414p 0.000416o 0.000416n       0.0        0.0
 th232f  xi      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
         xc      0.0        0.0        0.0        0.0  0.000365n       0.0  0.000443m       0.0        0.0
zp 28.58 ri 1.83e-08p 6.87e-06p 0.000209p 0.000179p 1.92e-05p 4.59e-08p 6.54e-12p       0.0        0.0
sig0.524 cc 1.83e-08p 6.88e-06p 0.000216p 0.000395p 0.000414p 0.000414p 0.000414p       0.0        0.0
         rc 1.83e-08p 6.88e-06p 0.000216p 0.000395o 0.000414m 0.000414m 0.000414l       0.0        0.0

  co, ni half lives from 80eng2; cu, zn, ga half lives from 89wal1; as, se half lives 90bur1.

1

    mass number     73              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge m   32 ge g   33 as g   34 se m   34 se g
half life              0.129s    0.491s     3.9 s     24. s    4.87 h    0.53 s    stable    80.30d    39.8 m    7.15 h
lambda            0.0 5.373e+00 1.412e+00 1.777e-01 2.888e-02 3.954e-05 1.308e+00       0.0 9.991e-08 2.903e-04 2.693e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 u235t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.000103p       0.0  0.000101n       0.0       0.0       0.0
zp 29.34 ri 5.54e-12p 2.21e-08p 7.13e-06p 4.71e-05p 4.63e-05p 1.21e-06p 5.59e-10p 2.38e-09p       0.0       0.0       0.0
sig0.531 cc 5.54e-12p 2.21e-08p 7.16e-06p 5.42e-05p 0.000101p 0.000102p 0.000102p 0.000102p       0.0       0.0       0.0
         rc 5.54e-12p 2.21e-08p 7.16e-06p 5.42e-05p 0.000101p 0.000102o 0.000102n 0.000102m       0.0       0.0       0.0
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000524m       0.0       0.0       0.0
zp 29.27 ri 8.33e-11p 2.21e-07p 4.95e-05p 0.000261p 0.000208p 4.75e-06p 1.74e-09p 8.51e-09p       0.0       0.0       0.0
sig0.537 cc 8.33e-11p 2.21e-07p 4.97e-05p 0.000311p 0.000519p 0.000524p 0.000524p 0.000524p       0.0       0.0       0.0
         rc 8.33e-11p 2.21e-07p 4.97e-05p 0.000311p 0.000519p 0.000524o 0.000524n 0.000524l       0.0       0.0       0.0
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.011196n       0.0  0.011366k       0.0       0.0       0.0
zp 29.35 ri 3.91e-08p 1.99e-05p 0.001000p 0.005713p 0.004218p 0.000391p 4.36e-07p 3.53e-06p 3.84e-09p       0.0       0.0
sig0.634 cc 3.91e-08p 1.99e-05p 0.001020p 0.006733p 0.010950p 0.011342p 0.011342p 0.011346p 3.81e-09p       0.0       0.0
         rc 3.91e-08p 1.99e-05p 0.001020p 0.006733p 0.010950o 0.011342n 0.011342m 0.011346k 3.84e-09p       0.0       0.0
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.000207m       0.0  0.000203o       0.0       0.0       0.0
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zp 28.98 ri 9.58e-10p 7.85e-07p 4.26e-05p 0.000124p 3.80e-05p 6.16e-07p 1.10e-10p 5.38e-10p      0.0       0.0       0.0
sig0.557 cc 9.58e-10p 7.86e-07p 4.34e-05p 0.000168p 0.000206p 0.000206p 0.000206p 0.000206p      0.0       0.0       0.0
         rc 9.58e-10p 7.86e-07p 4.34e-05p 0.000168p 0.000206n 0.000206m 0.000206m 0.000206m      0.0       0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.005343m      0.0  0.005169l      0.0       0.0       0.0
zp 29.25 ri 1.47e-08p 1.02e-05p 0.000558p 0.002897p 0.001665p 9.93e-05p 5.49e-08p 4.44e-07p 1.92e-10p      0.0       0.0
sig0.605 cc 1.47e-08p 1.02e-05p 0.000568p 0.003466p 0.005130p 0.005230p 0.005230p 0.005230p 1.95e-10p      0.0       0.0
         rc 1.47e-08p 1.02e-05p 0.000568p 0.003466p 0.005130o 0.005230m 0.005230l 0.005230k 1.92e-10p      0.0       0.0
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000262n      0.0       0.0       0.0
zp 29.77 ri      0.0  6.80e-09p 3.49e-06p 7.11e-05p 0.000165p 2.21e-05p 5.62e-08p 2.40e-07p 1.43e-10p      0.0       0.0
sig0.564 cc      0.0  6.81e-09p 3.50e-06p 7.46e-05p 0.000240p 0.000262p 0.000262p 0.000262p 1.43e-10p      0.0       0.0
         rc      0.0  6.81e-09p 3.50e-06p 7.46e-05p 0.000240p 0.000262p 0.000262n 0.000262m 1.43e-10p      0.0       0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000706n      0.0       0.0       0.0
zp 29.61 ri 1.51e-11p 5.96e-08p 1.97e-05p 0.000247p 0.000405p 3.46e-05p 5.28e-08p 2.58e-07p 9.14e-11p      0.0       0.0
sig0.565 cc 1.51e-11p 5.96e-08p 1.97e-05p 0.000266p 0.000672p 0.000706p 0.000706p 0.000706p 9.14e-11p      0.0       0.0
         rc 1.51e-11p 5.96e-08p 1.97e-05p 0.000266p 0.000672p 0.000706p 0.000706n 0.000706m 9.14e-11p      0.0       0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.78e-05m      0.0       0.0       0.0
zp 29.64 ri      0.0  2.19e-09p 1.15e-06p 1.97e-05p 3.41e-05p 2.87e-06p 3.65e-09p 1.55e-08p 3.59e-12p      0.0       0.0
sig0.544 cc      0.0  2.19e-09p 1.15e-06p 2.08e-05p 5.49e-05p 5.78e-05p 5.78e-05p 5.78e-05p 3.59e-12p      0.0       0.0
         rc      0.0  2.19e-09p 1.15e-06p 2.08e-05p 5.49e-05p 5.78e-05p 5.78e-05n 5.78e-05l 3.59e-12p      0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001155m      0.0       0.0       0.0
zp 29.57 ri 2.22e-11p 8.95e-08p 3.71e-05p 0.000390p 0.000686p 4.22e-05p 6.40e-08p 2.73e-07p 5.70e-11p      0.0       0.0
sig0.555 cc 2.22e-11p 8.96e-08p 3.72e-05p 0.000427p 0.001113p 0.001155p 0.001155p 0.001155p 5.70e-11p      0.0       0.0
         rc 2.22e-11p 8.96e-08p 3.72e-05p 0.000427p 0.001113p 0.001155p 0.001155n 0.001155l 5.70e-11p      0.0       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.000498p      0.0  0.000658m      0.0       0.0       0.0
zp 28.96 ri 9.70e-10p 1.57e-06p 0.000134p 0.000380p 0.000104p 9.23e-07p 8.43e-11p 4.12e-10p      0.0       0.0       0.0
sig0.524 cc 9.70e-10p 1.57e-06p 0.000135p 0.000515p 0.000620p 0.000621p 0.000621p 0.000621p      0.0       0.0       0.0
         rc 9.70e-10p 1.57e-06p 0.000135p 0.000515p 0.000620o 0.000621n 0.000621m 0.000621l      0.0       0.0       0.0

  co, ni half lives from 80eng2; cu, zn, ga half lives from 89wal1; as half life 73bro1; se half life 90bur1.
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    mass number     74              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g   33 as m   33 as g   34 se g
half life              0.092s    0.900s    0.648s    1.60 m     8.1 m    stable    8.0  s    17.76d    stable
lambda            0.0 7.534e+00 7.702e-01 1.070e+00 7.220e-03 1.426e-03       0.0 8.664e-02 4.517e-07       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  -67.3000   32.7000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 u235t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.000339m 0.000327p      0.0       0.0       0.0
zp 29.72 ri       0.0  3.00e-09p 4.58e-06p 6.82e-05p 0.000251p 1.46e-05p 1.67e-07p 1.16e-11p 4.99e-12p       0.0
sig0.531 cc       0.0  3.00e-09p 4.58e-06p 7.28e-05p 0.000324p 0.000338p 0.000339p 1.18e-11p 1.69e-11p 5.53e-12p
         rc      0.0  3.00e-09p 4.58e-06p 7.28e-05p 0.000324o 0.000338m 0.000339m 1.16e-11p 1.66e-11p 5.44e-12o
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001190m      0.0       0.0       0.0
zp 29.65 ri 3.49e-12p 2.44e-08p 2.48e-05p 0.000287p 0.000836p 4.24e-05p 4.19e-07p 2.95e-11p 1.09e-11p       0.0
sig0.537 cc 3.49e-12p 2.44e-08p 2.48e-05p 0.000312p 0.001148p 0.001190p 0.001190p 2.95e-11p 4.04e-11p 1.32e-11p
         rc 3.49e-12p 2.44e-08p 2.48e-05p 0.000312p 0.001148p 0.001190o 0.001190m 2.95e-11p 4.04e-11p 1.32e-11o
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.017011k      0.0       0.0       0.0
zp 29.73 ri 2.95e-09p 3.69e-06p 0.000441p 0.005649p 0.009007p 0.001865p 4.44e-05p 8.67e-08p 1.90e-08p 2.31e-11p
sig0.634 cc 2.95e-09p 3.69e-06p 0.000445p 0.006094p 0.015101p 0.016966p 0.017011p 8.67e-08p 1.06e-07p 3.46e-08p
         rc 2.95e-09p 3.69e-06p 0.000445p 0.006094p 0.015101o 0.016966m 0.017011k 8.67e-08p 1.06e-07p 3.46e-08p
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000277n      0.0       0.0       0.0
zp 29.36 ri 4.43e-11p 1.07e-07p 1.90e-05p 0.000136p 0.000117p 5.06e-06p 1.84e-08p 1.53e-12p       0.0       0.0
sig0.557 cc 4.43e-11p 1.07e-07p 1.91e-05p 0.000155p 0.000272p 0.000277p 0.000277p 1.53e-12p 2.10e-12p       0.0
         rc 4.43e-11p 1.07e-07p 1.91e-05p 0.000155p 0.000272p 0.000277o 0.000277n 1.53e-12p 2.10e-12p       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.008006l      0.0       0.0       0.0
zp 29.62 ri 1.03e-09p 1.87e-06p 0.000258p 0.003133p 0.004037p 0.000569p 7.37e-06p 6.11e-09p 1.34e-09p       0.0
sig0.605 cc 1.03e-09p 1.87e-06p 0.000260p 0.003393p 0.007430p 0.007999p 0.008006p 6.11e-09p 7.45e-09p 2.44e-09p
         rc 1.03e-09p 1.87e-06p 0.000260p 0.003393p 0.007430o 0.007999n 0.008006l 6.11e-09p 7.45e-09p 2.44e-09p
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000636n      0.0       0.0       0.0
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zp 30.14 ri       0.0  7.26e-10p 1.35e-06p 6.30e-05p 0.000442p 0.000124p 5.60e-06p 4.73e-09p 2.03e-09p       0.0
sig0.564 cc       0.0  7.26e-10p 1.35e-06p 6.44e-05p 0.000507p 0.000630p 0.000636p 4.73e-09p 6.76e-09p 2.21e-09p
        rc       0.0  7.26e-10p 1.35e-06p 6.44e-05p 0.000507p 0.000630o 0.000636n 4.73e-09p 6.76e-09p 2.21e-09o
 pu239f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc       0.0       0.0       0.0       0.0       0.0       0.0  0.001736m      0.0       0.0       0.0
zp 29.99 ri       0.0  7.15e-09p 8.45e-06p 0.000252p 0.001235p 0.000234p 7.23e-06p 4.09e-09p 1.51e-09p       0.0
sig0.565 cc       0.0  7.15e-09p 8.46e-06p 0.000260p 0.001495p 0.001729p 0.001736p 4.09e-09p 5.60e-09p 1.83e-09p
        rc       0.0  7.15e-09p 8.46e-06p 0.000260p 0.001495p 0.001729n 0.001736l 4.09e-09p 5.60e-09p 1.83e-09o
 pu241t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc       0.0       0.0       0.0       0.0       0.0       0.0  9.48e-05m      0.0       0.0       0.0
zp 30.01 ri       0.0  1.67e-10p 2.83e-07p 1.43e-05p 6.50e-05p 1.48e-05p 3.05e-07p 1.32e-10p 5.64e-11p       0.0
sig0.544 cc       0.0  1.67e-10p 2.83e-07p 1.46e-05p 7.96e-05p 9.45e-05p 9.48e-05p 1.32e-10p 1.88e-10p 6.15e-11p
        rc       0.0  1.67e-10p 2.83e-07p 1.46e-05p 7.96e-05p 9.45e-05o 9.48e-05m 1.32e-10p 1.88e-10p 6.15e-11o
 u233t   xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc       0.0       0.0       0.0       0.0       0.0       0.0  0.002708m      0.0       0.0       0.0
zp 29.95 ri       0.0  8.44e-09p 1.51e-05p 0.000336p 0.002093p 0.000256p 8.49e-06p 2.39e-09p 1.02e-09p       0.0
sig0.555 cc       0.0  8.44e-09p 1.51e-05p 0.000351p 0.002444p 0.002700p 0.002708p 2.39e-09p 3.41e-09p 1.12e-09p
        rc       0.0  8.44e-09p 1.51e-05p 0.000351p 0.002444p 0.002700o 0.002708m 2.39e-09p 3.41e-09p 1.12e-09o
 th232f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc       0.0       0.0       0.0       0.0       0.0       0.0  0.001154m      0.0       0.0       0.0
zp 29.33 ri 4.81e-11p 2.39e-07p 8.03e-05p 0.000559p 0.000502p 1.22e-05p 2.33e-08p       0.0       0.0       0.0
sig0.524 cc 4.81e-11p 2.39e-07p 8.06e-05p 0.000640p 0.001142p 0.001154p 0.001154p       0.0       0.0       0.0
        rc 4.81e-11p 2.39e-07p 8.06e-05p 0.000640p 0.001142o 0.001154n 0.001154l       0.0       0.0       0.0

  co, ni, cu half lives 80eng2; zn, ga half lives 89wal1.
1

    mass number     75              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge m   32 ge g   33 as g   34 se g   35 br g
half life     0.082s    0.231s     1.3 s    10.2 s    2.10 m    48.9 s    1.380h    stable    119.8d     97. m
lambda      8.453e+00 3.001e+00 5.332e-01 6.796e-02 5.501e-03 1.417e-02 1.395e-04       0.0 6.697e-08 1.191e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000    4.0000   96.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 u235t   xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc       0.0       0.0       0.0  0.000837k 0.001109m      0.0       0.0  0.001066l      0.0       0.0
```

```
zp 30.10 ri 3.81e-10p 1.53e-06p 0.000101p 0.000767p 0.000193p 4.56e-06p 6.81e-07p 2.56e-09p       0.0        0.0
sig0.531 cc 3.88e-10p 1.56e-06p 0.000104p 0.000884p 0.001062p 4.69e-05p 0.001067p 0.001067p       0.0        0.0
         rc 3.81e-10p 1.53e-06p 0.000102p 0.000869k 0.001062l 4.70e-05l 0.001067l 0.001067k       0.0        0.0
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.003530m      0.0       0.0
zp 30.03 ri 3.42e-09p 8.87e-06p 0.000436p 0.002572p 0.000502p 1.05e-05p 1.44e-06p 5.48e-09p       0.0        0.0
sig0.537 cc 3.42e-09p 8.88e-06p 0.000445p 0.003017p 0.003518p 0.000151p 0.003530p 0.003530p       0.0        0.0
         rc 3.42e-09p 8.88e-06p 0.000445p 0.003017p 0.003518o 0.000151o 0.003530n 0.003530m       0.0        0.0
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.026986k      0.0       0.0
zp 30.11 ri 5.15e-07p 0.000149p 0.004380p 0.015190p 0.006885p 0.000350p 3.04e-05p 2.20e-06p 1.20e-09p       0.0
sig0.634 cc 5.15e-07p 0.000149p 0.004529p 0.019719p 0.026604p 0.001414p 0.026984p 0.026986p 1.20e-09p       0.0
         rc 5.15e-07p 0.000149p 0.004529p 0.019719p 0.026604o 0.001414o 0.026984m 0.026986k 1.20e-09p       0.0
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000462n      0.0       0.0
zp 29.73 ri 1.36e-08p 6.65e-06p 0.000141p 0.000279p 3.52e-05p 3.10e-07p 4.23e-08p 1.37e-10p       0.0        0.0
sig0.557 cc 1.36e-08p 6.66e-06p 0.000148p 0.000427p 0.000462p 1.88e-05p 0.000462p 0.000462p       0.0        0.0
         rc 1.36e-08p 6.66e-06p 0.000148p 0.000427p 0.000462p 1.88e-05o 0.000462o 0.000462n       0.0        0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.013869l      0.0       0.0
zp 29.98 ri 2.94e-07p 0.000101p 0.002888p 0.008200p 0.002599p 7.48e-05p 6.51e-06p 2.09e-07p 3.93e-11p       0.0
sig0.605 cc 2.94e-07p 0.000102p 0.002989p 0.011189p 0.013788p 0.000626p 0.013869p 0.013869p 3.93e-11p       0.0
         rc 2.94e-07p 0.000102p 0.002989p 0.011189p 0.013788o 0.000626o 0.013869n 0.013869l 3.93e-11p       0.0
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001372m      0.0       0.0
zp 30.52 ri 5.50e-11p 2.64e-07p 4.42e-05p 0.000684p 0.000583p 5.27e-05p 7.88e-06p 2.68e-07p 9.06e-11p       0.0
sig0.564 cc 5.50e-11p 2.64e-07p 4.45e-05p 0.000728p 0.001311p 0.000105p 0.001372p 0.001372p 9.06e-11p       0.0
         rc 5.50e-11p 2.64e-07p 4.45e-05p 0.000728p 0.001311o 0.000105p 0.001372n 0.001372l 9.06e-11p       0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.002548m      0.0       0.0
zp 30.38 ri 3.96e-10p 1.27e-06p 0.000133p 0.001485p 0.000862p 5.74e-05p 7.82e-06p 1.87e-07p 4.45e-11p       0.0
sig0.565 cc 3.96e-10p 1.27e-06p 0.000135p 0.001620p 0.002482p 0.000157p 0.002548p 0.002548p 4.45e-11p       0.0
         rc 3.96e-10p 1.27e-06p 0.000135p 0.001620p 0.002482o 0.000157o 0.002548n 0.002548m 4.45e-11p       0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000284m      0.0       0.0
zp 30.38 ri 1.55e-11p 8.64e-08p 1.35e-05p 0.000166p 9.89e-05p 5.21e-06p 7.79e-07p 1.19e-08p 1.43e-12p       0.0
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sig0.544 cc 1.55e-11p 8.64e-08p 1.36e-05p 0.000179p 0.000278p 1.63e-05p 0.000284p 0.000284p 1.43e-12p       0.0
         rc 1.55e-11p 8.64e-08p 1.36e-05p 0.000179p 0.000278o 1.63e-05o 0.000284n 0.000284m 1.43e-12p       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.007982m      0.0       0.0
zp 30.33 ri 1.09e-09p 4.61e-06p 0.000421p 0.005151p 0.002244p 0.000139p 2.07e-05p 2.79e-07p 4.96e-11p       0.0
sig0.555 cc 1.09e-09p 4.61e-06p 0.000426p 0.005577p 0.007822p 0.000452p 0.007981p 0.007981p 4.96e-11p       0.0
         rc 1.09e-09p 4.61e-06p 0.000426p 0.005577p 0.007822o 0.000452o 0.007981n 0.007981m 4.96e-11p       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.002835m      0.0       0.0
zp 29.71 ri 3.18e-08p 3.26e-05p 0.000842p 0.001799p 0.000161p 8.27e-07p 1.13e-07p 1.20e-10p       0.0       0.0
sig0.524 cc 3.18e-08p 3.26e-05p 0.000874p 0.002673p 0.002834p 0.000114p 0.002835p 0.002835p       0.0       0.0
         rc 3.18e-08p 3.26e-05p 0.000874p 0.002673p 0.002834o 0.000114o 0.002835n 0.002835l       0.0       0.0

  co, ni half lives 80eng2; cu, zn, ga, ge half lives 89wal1; se, br half lives 90bur1.

1

    mass number     76              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g   33 as g   34 se g
half life                     0.305s     0.6 s     5.7 s     29. s    stable    26.3 h    stable
lambda            0.0       0.0 2.273e+00 1.155e+00 1.216e-01 2.390e-02       0.0 7.321e-06       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u235t   xi      0.0       0.0       0.0  7.17e-05k 0.001591k      0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.003097j      0.0       0.0
zp 30.48 ri       0.0  2.53e-11p 5.02e-07p 8.28e-05p 0.001838p 0.001046p 0.000130p 1.65e-07p 3.04e-11p
sig0.531 cc       0.0  1.99e-11p 3.95e-07p 6.56e-05p 0.002061p 0.002984p 0.003097p 1.43e-07p 1.43e-07p
         rc       0.0  2.53e-11p 5.02e-07p 8.33e-05p 0.001921p 0.002967l 0.003097j 1.65e-07p 1.65e-07p
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.017576k      0.0       0.0
zp 30.41 ri       0.0  3.53e-10p 4.36e-06p 0.000521p 0.011893p 0.004687p 0.000471p 5.48e-07p 9.35e-11p
sig0.537 cc       0.0  3.53e-10p 4.36e-06p 0.000525p 0.012418p 0.017105p 0.017576p 5.48e-07p 5.48e-07p
         rc       0.0  3.53e-10p 4.36e-06p 0.000525p 0.012418p 0.017105m 0.017576k 5.48e-07p 5.48e-07p
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.039988k      0.0       0.0
```

zp 30.50 ri 5.54e-12p 4.42e-08p 3.20e-05p 0.002260p 0.017713p 0.017720p 0.002263p 3.21e-05p 4.43e-08p
sig0.634 cc 5.54e-12p 4.42e-08p 3.20e-05p 0.002292p 0.020005p 0.037725p 0.039989p 3.21e-05p 3.21e-05p
rc 5.54e-12p 4.42e-08p 3.20e-05p 0.002292p 0.020005p 0.037725m 0.039989k 3.21e-05p 3.21e-05p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000800m 0.0 0.0
zp 30.10 ri 0.0 1.08e-09p 1.76e-06p 9.79e-05p 0.000535p 0.000161p 5.04e-06p 5.60e-09p 0.0
sig0.557 cc 0.0 1.08e-09p 1.77e-06p 9.97e-05p 0.000634p 0.000795p 0.000800p 5.60e-09p 5.60e-09p
rc 0.0 1.08e-09p 1.77e-06p 9.97e-05p 0.000634p 0.000795o 0.000800m 5.60e-09p 5.60e-09p
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.021986l 0.0 0.0
zp 30.35 ri 2.23e-12p 2.78e-08p 2.49e-05p 0.001754p 0.011423p 0.008168p 0.000616p 4.06e-06p 2.03e-09p
sig0.605 cc 2.23e-12p 2.78e-08p 2.50e-05p 0.001779p 0.013202p 0.021369p 0.021986p 4.06e-06p 4.06e-06p
rc 2.23e-12p 2.78e-08p 2.50e-05p 0.001779p 0.013202p 0.021369n 0.021986l 4.06e-06p 4.06e-06p
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.002931m 0.0 0.0
zp 30.90 ri 0.0 2.15e-12p 3.94e-08p 1.66e-05p 0.000862p 0.001540p 0.000512p 5.53e-06p 7.06e-09p
sig0.564 cc 0.0 2.15e-12p 3.94e-08p 1.66e-05p 0.000878p 0.002418p 0.002931p 5.53e-06p 5.53e-06p
rc 0.0 2.15e-12p 3.94e-08p 1.66e-05p 0.000878p 0.002418o 0.002931l 5.53e-06p 5.53e-06p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.005806l 0.0 0.0
zp 30.76 ri 0.0 1.99e-11p 2.37e-07p 6.33e-05p 0.002266p 0.002805p 0.000671p 4.84e-06p 4.26e-09p
sig0.565 cc 0.0 1.99e-11p 2.37e-07p 6.35e-05p 0.002329p 0.005134p 0.005806p 4.84e-06p 4.85e-06p
rc 0.0 1.99e-11p 2.37e-07p 6.35e-05p 0.002329p 0.005134o 0.005806l 4.84e-06p 4.85e-06p
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000948m 0.0 0.0
zp 30.75 ri 0.0 1.03e-12p 1.92e-08p 9.52e-06p 0.000335p 0.000516p 8.77e-05p 5.50e-07p 2.20e-10p
sig0.544 cc 0.0 1.03e-12p 1.92e-08p 9.54e-06p 0.000344p 0.000860p 0.000948p 5.50e-07p 5.50e-07p
rc 0.0 1.03e-12p 1.92e-08p 9.54e-06p 0.000344p 0.000860o 0.000948m 5.50e-07p 5.50e-07p
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.013842m 0.0 0.0
zp 30.70 ri 0.0 4.02e-11p 7.38e-07p 0.000149p 0.006799p 0.005453p 0.001439p 5.56e-06p 4.28e-09p
sig0.555 cc 0.0 4.02e-11p 7.38e-07p 0.000150p 0.006949p 0.012402p 0.013842p 5.56e-06p 5.57e-06p
rc 0.0 4.02e-11p 7.38e-07p 0.000150p 0.006949p 0.012402o 0.013842m 5.56e-06p 5.57e-06p
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.006739m 0.0 0.0
zp 30.09 ri 0.0 2.08e-09p 9.27e-06p 0.000682p 0.004918p 0.001104p 2.61e-05p 1.06e-08p 0.0

sig0.524 cc 0.0 2.08e-09p 9.27e-06p 0.000691p 0.005609p 0.006713p 0.006739p 1.06e-08p 1.06e-08p
rc 0.0 2.08e-09p 9.27e-06p 0.000691p 0.005609p 0.006713n 0.006739l 1.06e-08p 1.06e-08p

ni half lives 80eng2; cu, zn, ga half lives 89wal1.
1

mass number 77 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 28 ni g 29 cu g 30 zn g 31 ga g 32 ge m 32 ge g 33 as g 34 se m 34 se g 35 br m 35 br g 36 kr g
half life 0.103s 0.305s 2.1 s 13.0 s 53. s 11.30h 38.8 h 17.45s stable 4.3 m 57.04h 74.4 m
lambda 6.730e+00 2.273e+00 3.301e-01 5.332e-02 1.308e-02 1.704e-05 4.962e-06 3.972e-02 0.0 2.687e-03 3.376e-06 1.553e-04
z - 1 g 100.0000 100.0000 100.0000 100.0000 88.0000 12.0000 100.0000 0.3000 99.7000 0.0 -99.0000 -80.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 79.0000 0.0 0.0 0.0 -1.0000 -20.0000
z - 0 m 0.0 0.0 0.0 0.0 0.0 21.0000 0.0 0.0 100.0000 0.0 100.0000 0.0
u235t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.005029o 0.006761l 0.004839p 0.003052o 0.008033o 0.0 0.007949k 0.0 0.0 0.0
zp 30.86 ri 5.64e-08p 4.45e-05p 0.003144p 0.004082p 8.91e-05p 0.000596p 4.31e-06p 1.84e-09p 2.75e-10p 0.0 0.0 0.0
sig0.531 cc 4.44e-08p 3.51e-05p 0.002510p 0.006806p 0.006139p 0.003104p 0.007961p 2.39e-05p 0.007961p 0.0 0.0 0.0
rc 5.64e-08p 4.46e-05p 0.003188p 0.007271k 0.006487k 0.002831n 0.007961k 2.39e-05l 0.007961j 0.0 0.0 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.031807k 0.0 0.0 0.0
zp 30.79 ri 4.08e-07p 0.000224p 0.011454p 0.016500p 0.000433p 0.003178p 1.90e-05p 7.48e-09p 1.02e-09p 0.0 0.0 0.0
sig0.537 cc 4.08e-07p 0.000224p 0.011678p 0.028178p 0.025230p 0.011857p 0.031808p 9.54e-05p 0.031808p 0.0 0.0 0.0
rc 4.08e-07p 0.000224p 0.011678p 0.028178p 0.025230p 0.011857o 0.031808m 9.54e-05n 0.031808k 0.0 0.0 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.066203n 0.0 0.066631k 0.0 0.0 0.0
zp 30.89 ri 5.41e-06p 0.000936p 0.016977p 0.037487p 0.000757p 0.010062p 0.000368p 1.18e-06p 1.02e-07p 3.55e-10p 5.77e-11p 0.0
sig0.634 cc 5.41e-06p 0.000942p 0.017918p 0.055406p 0.049514p 0.027108p 0.066593p 0.000201p 0.066594p 3.53e-10p 4.10e-10p 0.0
rc 5.41e-06p 0.000942p 0.017918p 0.055406p 0.049514p 0.027108o 0.066593l 0.000201m 0.066594k 3.55e-10p 4.12e-10p 0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.003418l 0.0 0.002969m 0.0 0.0 0.0

zp 30.48 ri 6.70e-07p 0.000122p 0.001666p 0.001397p 1.38e-05p 0.000102p 4.35e-07p 8.16e-11p 1.11e-11p 0.0 0.0 0.0
sig0.557 cc 6.70e-07p 0.000123p 0.001788p 0.003185p 0.002817p 0.001075p 0.003301p 9.90e-06p 0.003301p 0.0 0.0
0.0
rc 6.70e-07p 0.000123p 0.001788p 0.003185p 0.002817o 0.001075n 0.003301l 9.90e-06l 0.003301k 0.0 0.0 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.031078k 0.0 0.031959l 0.0 0.0 0.0
zp 30.73 ri 3.64e-06p 0.000663p 0.010417p 0.017068p 0.000216p 0.002873p 5.25e-05p 6.59e-08p 5.73e-09p 5.99e-12p 0.0
0.0
sig0.605 cc 3.64e-06p 0.000667p 0.011084p 0.028152p 0.024990p 0.011499p 0.031293p 9.39e-05p 0.031293p 5.91e-12p 6.87e-
12p 0.0
rc 3.64e-06p 0.000667p 0.011084p 0.028152p 0.024990o 0.011499o 0.031293k 9.39e-05k 0.031293j 5.99e-12p 6.97e-12p
0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.007439k 0.0 0.006356m 0.0 0.0 0.0
zp 31.28 ri 3.45e-09p 5.43e-06p 0.000676p 0.003785p 0.000347p 0.002322p 9.89e-05p 2.60e-07p 3.88e-08p 2.54e-11p 7.58e-12p
0.0
sig0.564 cc 3.45e-09p 5.44e-06p 0.000682p 0.004467p 0.004278p 0.003757p 0.007235p 2.20e-05p 0.007235p 2.74e-11p 3.56e-11p
0.0
rc 3.45e-09p 5.44e-06p 0.000682p 0.004467p 0.004278p 0.003757p 0.007235k 2.20e-05k 0.007235k 2.54e-11p 3.30e-11p
0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.012556j 0.0 0.015633n 0.0 0.0 0.0
zp 31.15 ri 2.07e-08p 2.06e-05p 0.001828p 0.006994p 0.000451p 0.003305p 9.44e-05p 2.21e-07p 3.01e-08p 1.45e-11p 3.87e-12p
0.0
sig0.565 cc 2.07e-08p 2.06e-05p 0.001848p 0.008842p 0.008232p 0.006094p 0.012692p 3.83e-05p 0.012692p 1.30e-11p 1.64e-11p
0.0
rc 2.07e-08p 2.06e-05p 0.001848p 0.008842p 0.008232p 0.006094p 0.012692j 3.83e-05j 0.012692j 1.45e-11p 1.84e-11p
0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.001896m 0.0 0.0 0.0
zp 31.12 ri 1.61e-09p 2.59e-06p 0.000272p 0.001107p 6.55e-05p 0.000438p 9.61e-06p 1.09e-08p 1.63e-09p 0.0 0.0 0.0
sig0.544 cc 1.61e-09p 2.59e-06p 0.000275p 0.001382p 0.001282p 0.000873p 0.001896p 5.70e-06p 0.001896p 0.0 0.0
0.0
rc 1.61e-09p 2.59e-06p 0.000275p 0.001382p 0.001282p 0.000873p 0.001896n 5.70e-06n 0.001896m 0.0 0.0 0.0
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.009091p 0.027232m 0.0 0.024728m 0.0 0.0 0.0

zp 31.09 ri 5.13e-08p 4.66e-05p 0.004693p 0.013793p 0.000950p 0.006357p 0.000119p 1.84e-07p 2.75e-08p 6.13e-12p 1.83e-12p 0.0
sig0.555 cc 5.13e-08p 4.67e-05p 0.004739p 0.018532p 0.017258p 0.012205p 0.025959p 7.81e-05p 0.025959p 6.48e-12p 8.41e-12p 0.0
rc 5.13e-08p 4.67e-05p 0.004739p 0.018532p 0.017258p 0.012205o 0.025959m 7.81e-05m 0.025959l 6.13e-12p 7.96e-12p 0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.005275n 0.011451j 0.0 0.012854m 0.0 0.0 0.0
zp 30.47 ri 1.13e-06p 0.000343p 0.006363p 0.004747p 3.73e-05p 0.000274p 5.44e-07p 4.19e-11p 5.71e-12p 0.0 0.0 0.0
sig0.524 cc 1.13e-06p 0.000344p 0.006707p 0.011454p 0.010116p 0.003773p 0.011765p 3.53e-05p 0.011765p 0.0 0.0 0.0
rc 1.13e-06p 0.000344p 0.006707p 0.011454p 0.010116n 0.003773m 0.011765j 3.53e-05j 0.011765j 0.0 0.0 0.0

ni, cu half lives from 80eng2; zn, ga, ge, as half lives from 89wal1; kr, br, se half lives 90bur1.

1

mass number 78 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	28 ni g	29 cu g	30 zn g	31 ga d	31 ga g	32 ge d	32 ge g	33 as g	34 se g	35 br g	36 kr g
half life	0.132s	0.118s	1.5 s	0.313s	5.09 s	3.0 s	1.45 h	1.512h	stable	6.4 m	stable
lambda	5.251e+00	5.874e+00	4.621e-01	2.215e+00	1.362e-01	2.310e-01	1.328e-04	1.273e-04	0.0	1.805e-03	0.0
z - 1 g	100.0000	100.0000	100.0000	0.0	100.0000	0.0	100.0000	100.0000	100.0000	-100.0000	0.0
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	1.1460	100.0000	0.0890	100.0000	0.0	0.0	0.0	0.0
u235t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000175m	0.0	0.0	0.0
xc	0.0	0.0	0.004828o	0.0	0.012295m	0.0	0.018184o	0.017219m	0.021423k	0.0	0.0
zp 31.25 ri	5.03e-09p	1.09e-05p	0.003565p	0.0	0.010282p	0.0	0.006942p	0.000130m	2.47e-07p	4.94e-12p	0.0
sig0.531 cc	3.37e-09p	7.27e-06p	0.002395p	0.0	0.011357p	0.0	0.020792p	0.020930p	0.020930p	6.84e-12p	0.0
rc	5.03e-09p	1.09e-05p	0.003576o	1.88e-05o	0.013877l	1.67e-05n	0.020836m	0.020966k	0.020966j	4.94e-12p	0.0
u235f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.057117k	0.0	0.0
zp 31.18 ri	2.57e-08p	3.75e-05p	0.008559p	0.0	0.026063p	0.0	0.022113p	0.000285p	6.21e-07p	1.24e-11p	0.0
sig0.537 cc	2.57e-08p	3.76e-05p	0.008596p	0.0	0.034659p	0.0	0.056772p	0.057057p	0.057058p	1.24e-11p	0.0
rc	2.57e-08p	3.76e-05p	0.008596p	3.01e-05o	0.034689p	3.04e-05o	0.056832o	0.057117m	0.057118k	1.24e-11p	0.0
u235he xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.099751k	0.0	0.0

zp 31.29 ri 5.34e-07p 0.000235p 0.010351p 0.0 0.052152p 0.0 0.034093p 0.002781p 2.44e-05p 2.04e-08p 1.54e-12p
sig0.634 cc 5.34e-07p 0.000236p 0.010587p 0.0 0.062738p 0.0 0.096832p 0.099612p 0.099637p 2.04e-08p 1.54e-12p
rc 5.34e-07p 0.000236p 0.010587p 5.81e-05o 0.062796p 5.70e-05o 0.096947o 0.099727m 0.099752k 2.04e-08p 1.54e-12p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.011220m 0.0 0.0
zp 30.85 ri 1.57e-07p 7.98e-05p 0.003255p 0.0 0.006315p 0.0 0.001499p 1.54e-05p 1.20e-08p 0.0 0.0
sig0.557 cc 1.57e-07p 8.00e-05p 0.003335p 0.0 0.009649p 0.0 0.011149p 0.011164p 0.011164p 0.0 0.0
rc 1.57e-07p 8.00e-05p 0.003335p 3.83e-05o 0.009688p 1.93e-05o 0.011206o 0.011222n 0.011222m 0.0 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.057131l 0.0 0.0
zp 31.11 ri 4.67e-07p 0.000225p 0.008785p 0.0 0.033307p 0.0 0.014072p 0.000602p 2.16e-06p 5.73e-10p 0.0
sig0.605 cc 4.67e-07p 0.000226p 0.009011p 0.0 0.042318p 0.0 0.056390p 0.056992p 0.056994p 5.73e-10p 0.0
rc 4.67e-07p 0.000226p 0.009011p 7.85e-05o 0.042397p 6.02e-05o 0.056528o 0.057130n 0.057133l 5.73e-10p 0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.018776m 0.0 0.0
zp 31.66 ri 2.38e-10p 9.79e-07p 0.000440p 0.0 0.005512p 0.0 0.011817p 0.000988p 1.17e-05p 3.37e-09p 0.0
sig0.564 cc 2.38e-10p 9.79e-07p 0.000440p 0.0 0.005953p 0.0 0.017769p 0.018758p 0.018770p 3.37e-09p 0.0
rc 2.38e-10p 9.79e-07p 0.000440p 1.47e-06o 0.005954p 5.00e-06n 0.017776p 0.018764o 0.018776m 3.37e-09p 0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.022929m 0.0 0.0
zp 31.53 ri 1.17e-09p 3.07e-06p 0.000947p 0.0 0.008169p 0.0 0.013022p 0.000765p 6.45e-06p 1.27e-09p 0.0
sig0.565 cc 1.17e-09p 3.07e-06p 0.000950p 0.0 0.009120p 0.0 0.022142p 0.022907p 0.022913p 1.27e-09p 0.0
rc 1.17e-09p 3.07e-06p 0.000950p 4.62e-06o 0.009124p 1.07e-05o 0.022157p 0.022922o 0.022929m 1.27e-09p 0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.004816n 0.013334m 0.0 0.0
zp 31.49 ri 2.52e-10p 1.34e-06p 0.000440p 0.0 0.004929p 0.0 0.005821p 0.000323p 3.01e-06p 3.47e-10p 0.0
sig0.544 cc 2.52e-10p 1.34e-06p 0.000441p 0.0 0.005371p 0.0 0.011193p 0.011515p 0.011517p 1.56e-10p 0.0
rc 2.52e-10n 1.34e-06n 0.000441n 1.16e-06o 0.005371n 3.00e-06o 0.011195n 0.011518l 0.011521l 3.47e-10n 0.0
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.053838l 0.0 0.0
zp 31.48 ri 2.94e-09p 6.55e-06p 0.002833p 0.0 0.017055p 0.0 0.032750p 0.001158p 9.64e-06p 9.03e-10p 0.0
sig0.555 cc 2.94e-09p 6.55e-06p 0.002840p 0.0 0.019894p 0.0 0.052644p 0.053802p 0.053812p 9.03e-10p 0.0
rc 2.94e-09p 6.55e-06p 0.002840p 8.70e-06o 0.019903p 1.74e-05o 0.052670o 0.053828n 0.053838l 9.03e-10p 0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.035813k 0.033326m 0.0 0.0
zp 30.85 ri 1.64e-07p 0.000155p 0.010919p 0.0 0.019458p 0.0 0.004600p 2.42e-05p 8.54e-09p 0.0 0.0

sig0.524 cc 1.64e-07p 0.000155p 0.011074p 0.0 0.030532p 0.0 0.035133p 0.035157p 0.035157p 0.0 0.0
rc 1.64e-07p 0.000155p 0.011074p 7.90e-05o 0.030611o 4.45e-05o 0.035256m 0.035280k 0.035280k 0.0 0.0

ni, cu half lives from 80eng2; zn, ga, ge, as half lives from 89wal1.

1

mass number 79 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 29 cu g 30 zn g 31 ga g 32 ge d 32 ge g 33 as g 34 se m 34 se g 35 br m 35 br g 36 kr g 37 rb g
half life 0.135s 1.0 s 2.85 s 1.66s 19.1s 9.0 m 3.89 m 6.5e4y 4.86 s stable 35.04h 22.9 m
lambda 5.134e+00 6.931e-01 2.432e-01 4.176e-01 3.629e-02 1.284e-03 2.970e-03 3.381e-13 1.426e-01 0.0 5.495e-06
5.045e-04
z - 1 g 100.0000 100.0000 98.8540 0.0 99.9110 100.0000 100.0000 0.0 0.0 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.8300 100.0000 0.0 0.0 100.0000 0.0 100.0000 0.0 0.0
u235t xi 0.0 0.001662o 0.017353k 0.0 0.023583k 0.002695o 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.001607o 0.020001m 0.0 0.027035m 0.054060m 0.0 0.0 0.0 0.044922j 0.0 0.0
zp 31.65 ri 0.0 0.001639o 0.017109k 0.0 0.023251k 0.002657o 1.65e-06p 1.10e-05p 1.04e-09p 3.11e-10p 0.0 0.0
sig0.531 cc 8.85e-07p 0.000789p 0.013721p 0.0 0.042750p 0.044634p 0.044636p 0.044647p 1.05e-09p 0.044647p 0.0
0.0
rc 0.0 0.001639o 0.018729k 9.92e-05m 0.042062j 0.044719j 0.044721j 0.044732j 1.04e-09p 0.044732i 0.0 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.090856k 0.0 0.0
zp 31.56 ri 4.66e-06p 0.002620p 0.031565p 0.0 0.053682p 0.002851p 1.88e-06p 1.38e-05p 1.19e-09p 3.17e-10p 0.0 0.0
sig0.537 cc 4.66e-06p 0.002625p 0.034160p 0.0 0.087812p 0.090663p 0.090665p 0.090679p 1.19e-09p 0.090679p 0.0
0.0
rc 4.66e-06p 0.002625p 0.034160p 0.000178o 0.087991p 0.090842o 0.090843n 0.090857m 1.19e-09p 0.090857k 0.0
0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.167949k 0.0 0.0
zp 31.69 ri 4.60e-05p 0.005019p 0.059005p 0.0 0.086743p 0.016526p 2.52e-05p 0.000335p 6.70e-07p 1.09e-07p 1.55e-10p
0.0
sig0.634 cc 4.60e-05p 0.005065p 0.064012p 0.0 0.150698p 0.167224p 0.167249p 0.167584p 6.70e-07p 0.167585p 1.55e-10p
0.0
rc 4.60e-05p 0.005065p 0.064012p 0.000368o 0.151066p 0.167592o 0.167618n 0.167952m 6.70e-07p 0.167953k 1.55e-10p
0.0

u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.032665m 0.0 0.0
zp 31.23 ri 2.98e-05p 0.003315p 0.018373p 0.0 0.010537p 0.000345p 9.40e-08p 6.89e-07p 5.11e-11p 1.36e-11p 0.0 0.0
sig0.557 cc 2.98e-05p 0.003345p 0.021680p 0.0 0.032197p 0.032542p 0.032542p 0.032543p 5.11e-11p 0.032543p 0.0
0.0
rc 2.98e-05p 0.003345p 0.021680p 0.000130o 0.032327p 0.032673o 0.032673o 0.032673n 5.11e-11p 0.032673m 0.0
0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.133274l 0.0 0.0
zp 31.49 ri 6.80e-05p 0.006778p 0.060841p 0.0 0.059039p 0.006172p 4.05e-06p 5.37e-05p 3.58e-08p 5.83e-09p 2.14e-12p
0.0
sig0.605 cc 6.80e-05p 0.006846p 0.067608p 0.0 0.126587p 0.132759p 0.132763p 0.132817p 3.58e-08p 0.132817p 2.14e-12p
0.0
rc 6.80e-05p 0.006846p 0.067608p 0.000466o 0.127054p 0.133225o 0.133229o 0.133283n 3.58e-08p 0.133283l 2.14e-12p
0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.005389n 0.0 0.0 0.0 0.0 0.0 0.0 0.043651f 0.0 0.0
zp 32.04 ri 1.13e-07p 0.000129p 0.005493p 0.0 0.029761p 0.008015p 2.97e-05p 0.000199p 1.91e-07p 5.69e-08p 1.95e-11p
0.0
sig0.564 cc 1.32e-07p 0.000151p 0.006589p 0.0 0.035716p 0.043400p 0.043429p 0.043619p 1.83e-07p 0.043619p 1.87e-11p
0.0
rc 1.13e-07p 0.000129p 0.005620n 3.04e-05o 0.035407p 0.043422l 0.043452j 0.043651h 1.91e-07p 0.043651f 1.95e-11p
0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.060772k 0.0 0.0
zp 31.92 ri 4.94e-07p 0.000403p 0.011674p 0.0 0.040836p 0.007661p 1.98e-05p 0.000146p 9.68e-08p 2.57e-08p 7.25e-12p
0.0
sig0.565 cc 4.94e-07p 0.000404p 0.012073p 0.0 0.052898p 0.060558p 0.060578p 0.060724p 9.68e-08p 0.060724p 7.25e-12p
0.0
rc 4.94e-07p 0.000404p 0.012073p 4.75e-05o 0.052945p 0.060606o 0.060626n 0.060771l 9.68e-08p 0.060771j 7.25e-12p
0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.014960l 0.0 0.0
zp 31.86 ri 9.61e-08p 0.000101p 0.003271p 0.0 0.010017p 0.001534p 2.61e-06p 1.75e-05p 5.89e-09p 1.76e-09p 0.0 0.0
sig0.544 cc 9.61e-08p 0.000101p 0.003371p 0.0 0.013385p 0.014920p 0.014922p 0.014940p 5.89e-09p 0.014940p 0.0
0.0

rc 9.61e-08p 0.000101p 0.003371p 1.93e-05o 0.013405p 0.014939o 0.014942n 0.014959m 5.89e-09p 0.014959l 0.0
0.0
u233t xi 0.0 0.0 0.016448l 0.0 0.099563k 0.008314m 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.143747l 0.0 0.0
zp 31.88 ri 7.15e-07p 0.000758p 0.018842p 0.0 0.114051p 0.009524p 3.92e-05p 0.000262p 1.03e-07p 3.07e-08p 5.75e-12p
0.0
sig0.555 cc 1.01e-06p 0.001069p 0.027594p 0.0 0.129028p 0.143160p 0.143197p 0.143441p 9.56e-08p 0.143441p 5.35e-12p
0.0
rc 7.15e-07p 0.000759p 0.019592p 6.35e-05p 0.133690p 0.143214p 0.143253o 0.143515n 1.03e-07p 0.143515l 5.75e-12p
0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.074610k 0.0 0.0 0.0 0.081070l 0.0 0.0
zp 31.24 ri 3.24e-05p 0.006861p 0.043241p 0.0 0.025796p 0.000557p 8.33e-08p 6.11e-07p 1.34e-11p 3.57e-12p 0.0 0.0
sig0.524 cc 3.24e-05p 0.006893p 0.050055p 0.0 0.075806p 0.076364p 0.076364p 0.076364p 1.29e-11p 0.076364p 0.0
0.0
rc 3.24e-05p 0.006893p 0.050055p 0.000509o 0.076315m 0.076872k 0.076872k 0.076873k 1.34e-11p 0.076873k 0.0
0.0

cu half life 80eng2; zn, ga, ge, as, se half lives 89wal1; kr, rb half lives 90bur1.

1

mass number 80 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 28 ni g 29 cu g 30 zn g 31 ga g 32 ge d 32 ge g 33 as g 34 se g 35 br m 35 br g 36 kr g
half life 0.090s 0.55 s 1.68 s 1.23s 29.5 s 16.0 s stable 4.42 h 17.68m stable
lambda 0.0 7.702e+00 1.260e+00 4.126e-01 5.635e-01 2.350e-02 4.332e-02 0.0 4.356e-05 6.534e-04 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 99.1700 100.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 11.9000 100.0000 0.0 0.0 0.0 100.0000 0.0
u235t xi 0.0 0.0 0.0 0.011863l 0.0 0.103220h 0.013879m 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.012108m 0.0 0.115331l 0.0 0.128600i 0.0 0.0 0.0
zp 32.05 ri 1.56e-12p 5.25e-08p 0.000242p 0.011707l 0.0 0.101825h 0.013696p 0.000489p 1.11e-07p 3.71e-08p 6.25e-12p
sig0.531 cc 1.76e-12p 5.89e-08p 0.000272p 0.011511p 0.0 0.112587p 0.127374p 0.127862p 1.11e-07p 1.48e-07p 1.48e-07p
rc 1.56e-12p 5.25e-08p 0.000242p 0.011949m 0.000973m 0.114648h 0.128343k 0.128832h 1.11e-07p 1.48e-07p 1.48e-07p
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.175954k 0.0 0.0 0.0

zp 31.96 ri 1.28e-11p 2.54e-07p 0.000708p 0.020788p 0.0 0.136614p 0.016403p 0.000427p 8.95e-08p 2.52e-08p 4.31e-12p
sig0.537 cc 1.28e-11p 2.53e-07p 0.000706p 0.021419p 0.0 0.157994p 0.174337p 0.174763p 8.92e-08p 1.14e-07p 1.14e-07p
rc 1.28e-11p 2.54e-07p 0.000709p 0.021497p 0.001194o 0.159126n 0.175529m 0.175956k 8.95e-08p 1.15e-07p 1.15e-07p
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.253394k 0.0 0.0 0.0
zp 32.09 ri 1.86e-09p 5.52e-06p 0.001523p 0.042854p 0.0 0.141916p 0.062051p 0.003279p 1.54e-05p 2.72e-06p 9.42e-09p
sig0.634 cc 1.86e-09p 5.51e-06p 0.001524p 0.044260p 0.0 0.186110p 0.247990p 0.251260p 1.53e-05p 1.81e-05p 1.81e-05p
rc 1.86e-09p 5.52e-06p 0.001528p 0.044382p 0.002141o 0.188070p 0.250121m 0.253400k 1.54e-05p 1.81e-05p 1.81e-05p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.042723m 0.0 0.0 0.0
zp 31.61 ri 5.36e-10p 2.82e-06p 0.001042p 0.014657p 0.0 0.023371p 0.001983p 1.51e-05p 2.93e-09p 8.26e-10p 0.0
sig0.557 cc 5.36e-10p 2.82e-06p 0.001045p 0.015702p 0.0 0.038943p 0.040925p 0.040941p 2.93e-09p 3.75e-09p 3.75e-09p
rc 5.36e-10p 2.82e-06p 0.001045p 0.015702p 0.001801o 0.040743o 0.042726n 0.042741l 2.93e-09p 3.75e-09p 3.75e-09p
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.212844l 0.0 0.0 0.0
zp 31.88 ri 2.50e-09p 8.98e-06p 0.002399p 0.053785p 0.0 0.121235p 0.031059p 0.000762p 1.29e-06p 2.27e-07p 2.19e-10p
sig0.605 cc 2.49e-09p 8.93e-06p 0.002394p 0.055863p 0.0 0.177151p 0.208028p 0.208786p 1.28e-06p 1.50e-06p 1.50e-06p
rc 2.50e-09p 8.99e-06p 0.002408p 0.056193p 0.004096o 0.181057o 0.212116n 0.212879l 1.29e-06p 1.51e-06p 1.51e-06p
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.10e-06p 3.67e-07p 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.093880m 0.0 0.0 0.0
zp 32.44 ri 0.0 7.23e-09p 3.30e-05p 0.003626p 0.0 0.054888p 0.031945p 0.003245p 1.10e-06p 3.67e-07p 3.02e-09p
sig0.564 cc 0.0 7.23e-09p 3.30e-05p 0.003659p 0.0 0.058511p 0.090453p 0.093699p 7.06e-06p 9.42e-06p 9.42e-06p
rc 0.0 7.23e-09p 3.30e-05p 0.003659p 0.000180o 0.058696p 0.090641o 0.093887m 1.10e-06p 1.47e-06p 1.47e-06p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.092508l 0.0 0.0 0.0
zp 32.30 ri 0.0 2.67e-08p 7.95e-05p 0.005644p 0.0 0.060329p 0.024470p 0.001761p 2.64e-06p 7.45e-07p 7.48e-10p
sig0.565 cc 0.0 2.67e-08p 7.95e-05p 0.005724p 0.0 0.066005p 0.090475p 0.092236p 2.64e-06p 3.39e-06p 3.39e-06p
rc 0.0 2.67e-08p 7.95e-05p 0.005724p 0.000272o 0.066277p 0.090747n 0.092508l 2.64e-06p 3.39e-06p 3.39e-06p
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.029234l 0.0 0.0 0.0
zp 32.23 ri 0.0 6.83e-09p 2.35e-05p 0.002306p 0.0 0.018842p 0.007635p 0.000300p 2.79e-07p 9.31e-08p 2.74e-11p
sig0.544 cc 0.0 6.83e-09p 2.35e-05p 0.002330p 0.0 0.021153p 0.028787p 0.029088p 2.79e-07p 3.73e-07p 3.73e-07p
rc 0.0 6.83e-09p 2.35e-05p 0.002330p 0.000147o 0.021300p 0.028934n 0.029235l 2.79e-07p 3.73e-07p 3.73e-07p
u233t xi 0.0 0.0 0.0 0.008501o 0.0 0.204343k 0.047216k 0.003778n 8.29e-06p 2.76e-06p 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.233463l 0.0 0.0 0.0
zp 32.28 ri 0.0 2.63e-08p 0.000130p 0.007524p 0.0 0.180874p 0.041793p 0.003344n 7.34e-06p 2.45e-06p 8.73e-10p

sig0.555 cc 1.47e-12p 4.06e-08p 0.000201p 0.011821p 0.0 0.181659p 0.229529p 0.233573p 3.34e-06p 4.45e-06p 4.46e-06p
rc 0.0 2.63e-08p 0.000130p 0.007655p 0.000459p 0.188924p 0.230717p 0.234061l 7.34e-06p 9.78e-06p 9.78e-06p
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.194150l 0.0 0.0 0.0
zp 31.64 ri 2.34e-10p 3.45e-06p 0.003282p 0.058028p 0.0 0.117954p 0.007480p 4.07e-05p 2.69e-09p 7.60e-10p 0.0
sig0.524 cc 2.30e-10p 3.40e-06p 0.003238p 0.060436p 0.0 0.178873p 0.186246p 0.186287p 2.66e-09p 3.40e-09p 3.40e-09p
rc 2.34e-10p 3.45e-06p 0.003285p 0.061313p 0.007933o 0.186692o 0.194172n 0.194212l 2.69e-09p 3.45e-09p 3.45e-09p

ga, cu half lives 80eng2; zn, ga, ge, as half lives 89wal1; br half life 90bur1.

1

mass number 81 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 29 cu g 30 zn g 31 ga g 32 ge d 32 ge g 33 as g 34 se m 34 se g 35 br g 36 kr m 36 kr g 37 rb g
half life 0.074s 0.123s 1.22 s 0.60s 7.6 s 33. s 57.3 m 18.5 m stable 13. s 2.3e5y 4.576h
lambda 9.367e+00 5.635e+00 5.682e-01 1.155e+00 9.120e-02 2.100e-02 2.016e-04 6.245e-04 0.0 5.332e-02 9.556e-14
4.208e-05
z - 1 g 100.0000 100.0000 100.0000 0.0 88.1000 100.0000 0.0 100.0000 100.0000 0.0 -100.0000 -25.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -75.0000
z - 0 m 0.0 0.0 0.0 21.1000 100.0000 0.0 0.0 100.0000 0.0 0.0 100.0000 0.0
u235t xi 0.0 0.0 0.008291n 0.0 0.127588h 0.061754j 0.007024m 0.001053m 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.006012m 0.0 0.140285l 0.259527k 0.007453l 0.204368k 0.191725h 0.0 0.0 0.0
zp 32.45 ri 0.0 0.0 0.008178n 0.0 0.126268h 0.060909j 0.006927m 0.001038m 8.86e-06p 1.41e-10p 9.43e-10p 0.0
sig0.531 cc 2.20e-09p 2.89e-05p 0.005913p 0.0 0.126386p 0.196833p 0.005032p 0.202617p 0.202626p 1.44e-10p 1.11e-09p
0.0
rc 0.0 0.0 0.008178l 0.001324o 0.134796h 0.195705h 0.006927k 0.203671h 0.203680g 1.41e-10p 1.08e-09p 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.227999k 0.0 0.0 0.0
zp 32.36 ri 9.36e-09p 7.24e-05p 0.009964p 0.0 0.145986p 0.068281p 0.003858p 0.000526p 5.87e-06p 7.52e-11p 5.51e-10p
0.0
sig0.537 cc 9.35e-09p 7.23e-05p 0.010029p 0.0 0.154881p 0.223112p 0.003855p 0.227494p 0.227499p 7.51e-11p 6.26e-10p
0.0
rc 9.36e-09p 7.24e-05p 0.010036p 0.000502o 0.155329p 0.223610n 0.003858p 0.227994m 0.228000k 7.52e-11p 6.27e-10p
0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.292074n 0.343934k 0.0 0.0 0.0

zp 32.50 ri 3.47e-07p 0.000251p 0.017736p 0.0 0.138445p 0.167529p 0.016339p 0.001421p 0.000288p 2.78e-08p 3.70e-07p 4.99e-11p
sig0.634 cc 3.77e-07p 0.000274p 0.019590p 0.0 0.168628p 0.320062p 0.017794p 0.339403p 0.339678p 2.65e-08p 3.79e-07p 4.76e-11p
rc 3.47e-07p 0.000251p 0.017988p 0.001633o 0.155924p 0.323453n 0.016339p 0.341213l 0.341501k 2.79e-08p 3.98e-07p 4.99e-11p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.086161m 0.0 0.0 0.0
zp 31.99 ri 3.14e-07p 0.000337p 0.014794p 0.0 0.056295p 0.013880p 0.000259p 3.53e-05p 2.54e-07p 1.51e-12p 1.11e-11p 0.0
sig0.557 cc 3.14e-07p 0.000337p 0.015131p 0.0 0.069625p 0.083506p 0.000259p 0.083800p 0.083800p 1.51e-12p 1.26e-11p 0.0
rc 3.14e-07p 0.000337p 0.015131p 0.002408o 0.072033p 0.085914o 0.000259p 0.086208n 0.086208m 1.51e-12p 1.26e-11p 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.332663l 0.333233l 0.0 0.0 0.0
zp 32.27 ri 8.04e-07p 0.000586p 0.033831p 0.0 0.183001p 0.110157p 0.006347p 0.000552p 3.71e-05p 1.05e-09p 1.40e-08p 0.0
sig0.605 cc 8.02e-07p 0.000585p 0.034324p 0.0 0.213499p 0.323509p 0.006330p 0.330390p 0.330427p 1.05e-09p 1.50e-08p 0.0
rc 8.04e-07p 0.000587p 0.034418p 0.002583o 0.215906p 0.326063n 0.006347p 0.332962l 0.332999k 1.05e-09p 1.50e-08p 0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.183373l 0.0 0.0 0.0 0.0
zp 32.84 ri 2.80e-10p 3.55e-06p 0.001511p 0.0 0.055117p 0.102580p 0.021142p 0.003159p 0.000267p 3.08e-08p 2.06e-07p 6.84e-12p
sig0.564 cc 2.80e-10p 3.55e-06p 0.001514p 0.0 0.056453p 0.159031p 0.021143p 0.183333p 0.183601p 3.08e-08p 2.37e-07p 6.84e-12p
rc 2.80e-10p 3.55e-06p 0.001514p 4.27e-05o 0.056494p 0.159074n 0.021142p 0.183376l 0.183643l 3.08e-08p 2.37e-07p 6.84e-12p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.141870k 0.0 0.0 0.0
zp 32.69 ri 1.09e-09p 8.86e-06p 0.002276p 0.0 0.057252p 0.070461p 0.010527p 0.001435p 8.34e-05p 6.06e-09p 4.44e-08p 0.0
sig0.565 cc 1.09e-09p 8.86e-06p 0.002284p 0.0 0.059265p 0.129726p 0.010527p 0.141689p 0.141772p 6.06e-09p 5.05e-08p 0.0

rc 1.09e-09p 8.86e-06p 0.002284p 9.76e-05o 0.059363p 0.129824o 0.010527p 0.141786m 0.141870k 6.06e-09p 5.05e-08p
0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.062123l 0.0 0.0 0.0
zp 32.60 ri 3.50e-10p 3.99e-06p 0.001232p 0.0 0.028130p 0.029482p 0.002888p 0.000432p 1.31e-05p 4.19e-10p 2.81e-09p
0.0
sig0.544 cc 3.50e-10p 3.99e-06p 0.001236p 0.0 0.029218p 0.058700p 0.002888p 0.062020p 0.062033p 4.19e-10p 3.22e-09p
0.0
rc 3.50e-10p 3.99e-06p 0.001236p 8.86e-05o 0.029307p 0.058789o 0.002888p 0.062108n 0.062121l 4.19e-10p 3.22e-09p
0.0
u233t xi 0.0 0.0 0.003785m 0.0 0.132563i 0.202055i 0.021098k 0.003155k 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.013121l 0.301791l 0.368814h 0.0 0.0 0.0
zp 32.68 ri 1.17e-09p 1.48e-05p 0.003839p 0.0 0.134457p 0.204942p 0.021400k 0.003200k 0.000153p 1.05e-08p 7.05e-08p
0.0
sig0.555 cc 1.57e-09p 1.98e-05p 0.005170p 0.0 0.166999p 0.336205p 0.026996p 0.367235p 0.367390p 1.06e-08p 8.17e-08p
0.0
rc 1.17e-09p 1.48e-05p 0.003854p 0.000239p 0.138091p 0.343033p 0.021400j 0.367632j 0.367786h 1.05e-08p 8.11e-08p
0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.497400k 0.410853l 0.0 0.0 0.0
zp 32.03 ri 2.99e-07p 0.000922p 0.065746p 0.0 0.326993p 0.076018p 0.001108p 0.000151p 4.46e-07p 0.0 6.82e-12p
0.0
sig0.524 cc 2.91e-07p 0.000897p 0.064878p 0.0 0.388016p 0.461993p 0.001079p 0.463218p 0.463219p 0.0 8.28e-12p
0.0
rc 2.99e-07p 0.000922p 0.066668p 0.006829o 0.392556o 0.468575m 0.001108p 0.469834k 0.469835k 0.0 7.76e-12p
0.0

cu, zn half lives 80eng2; ga, ge, as, se half lives 89wal1; kr, rb half lives 90bur1.

1

mass number 82 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	28 ni g	29 cu g	30 zn g	31 ga g	32 ge d	32 ge g	33 as m	33 as g	34 se g	35 br m	35 br g	36 kr g
half life		0.127s	0.607s	0.31 s	4.6 s	13.7 s	19. s	stable	6.1 m	35.3 h	stable	
lambda	0.0	0.0	5.458e+00	1.142e+00	2.236e+00	1.507e-01	5.059e-02	3.648e-02	0.0	1.894e-03	5.454e-06	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	0.0	78.9000	0.0	100.0000	100.0000	0.0	0.0	100.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 2.4000
z - 0 m 0.0 0.0 0.0 0.0 56.2000 100.0000 0.0240 0.0 0.0 0.0 97.6000 0.0
u235t xi 0.0 0.0 0.0 0.006482o 0.0 0.129605h 0.028057j 0.133271j 0.038401j 1.69e-05k 3.96e-05k 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.163332l 0.0 0.0 0.324469g 0.0 0.0 4.66e-05k
zp 32.86 ri 0.0 1.48e-10p 1.08e-05p 0.006262p 0.0 0.126478h 0.027107p 0.128759p 0.037101j 1.63e-05p 3.83e-05p 3.35e-08p
sig0.531 cc 0.0 2.91e-11p 2.12e-06p 0.001234p 0.0 0.119315p 0.075543p 0.194859p 0.325275p 7.12e-05p 0.000236p 0.000238p
rc 0.0 1.48e-10p 1.08e-05p 0.006273p 0.000108o 0.131535i 0.027119p 0.260294p 0.324514g 1.63e-05p 5.42e-05p 5.47e-05k
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.340051k 0.0 0.0 0.0
zp 32.76 ri 0.0 1.62e-10p 6.44e-06p 0.002371p 0.0 0.149918p 0.073884p 0.073884p 0.040210p 3.85e-05p 0.000104p 7.80e-08p
sig0.537 cc 0.0 1.62e-10p 6.44e-06p 0.002377p 0.0 0.151844p 0.073864p 0.225708p 0.339772p 3.85e-05p 0.000142p 0.000143p
rc 0.0 1.62e-10p 6.44e-06p 0.002377p 0.000264o 0.152058p 0.073902p 0.225941o 0.340054k 3.85e-05p 0.000142p 0.000143p
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000837i 0.003815i 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.588901k 0.000107k 0.001506l 0.0
zp 32.91 ri 1.02e-12p 2.21e-08p 4.24e-05p 0.007693p 0.0 0.145315p 0.167573p 0.167521p 0.100806p 0.000836i 0.003808i 9.24e-06p
sig0.634 cc 1.02e-12p 2.21e-08p 4.25e-05p 0.007743p 0.0 0.151964p 0.167749p 0.319714p 0.588368p 0.000646p 0.003573p 0.003602p
rc 1.02e-12p 2.21e-08p 4.25e-05p 0.007736p 0.001204o 0.152622p 0.167598p 0.320143p 0.588547k 0.000836h 0.004623h 0.004652h
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.213729l 0.0 0.0 0.0
zp 32.37 ri 0.0 2.49e-08p 9.30e-05p 0.011316p 0.0 0.124096p 0.036772p 0.036772p 0.004883p 3.31e-06p 8.94e-06p 2.16e-09p
sig0.557 cc 0.0 2.48e-08p 9.27e-05p 0.011372p 0.0 0.133363p 0.036652p 0.170015p 0.211534p 3.29e-06p 1.21e-05p 1.22e-05p
rc 0.0 2.49e-08p 9.31e-05p 0.011409p 0.002218o 0.135316p 0.036800p 0.172089o 0.213772l 3.31e-06p 1.22e-05p 1.22e-05p
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.39e-05n 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.452756l 0.0 0.0 0.0

zp 32.67 ri 1.28e-12p 3.75e-08p 7.77e-05p 0.012166p 0.0 0.165320p 0.119217p 0.119147p 0.037663p 9.94e-05p 7.37e-05p 6.36e-07p
sig0.605 cc 1.28e-12p 3.75e-08p 7.75e-05p 0.012214p 0.0 0.175178p 0.118944p 0.294121p 0.450637p 9.91e-05p 0.000548p 0.000551p
rc 1.28e-12p 3.75e-08p 7.77e-05p 0.012244p 0.001917o 0.176897p 0.119246p 0.296044o 0.452953l 9.94e-05p 0.000171p 0.000174p
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.229485m 0.0 0.0 0.000157l
zp 33.24 ri 0.0 3.36e-12p 1.75e-07p 0.000202p 0.0 0.027102p 0.056757p 0.056757p 0.087607p 0.000385p 0.000899p 4.49e-06p
sig0.564 cc 0.0 3.35e-12p 1.74e-07p 0.000201p 0.0 0.027128p 0.056478p 0.083607p 0.227262p 0.000721p 0.002384p 0.002410p
rc 0.0 3.36e-12p 1.75e-07p 0.000202p 1.29e-05o 0.027275p 0.056759p 0.084032p 0.228398m 0.000385p 0.001275h 0.001289f
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.217720j 0.0 0.0 0.0
zp 33.09 ri 0.0 2.02e-11p 6.53e-07p 0.000462p 0.0 0.040856p 0.057069p 0.057069p 0.062323p 0.000304p 0.000823p 2.64e-06p
sig0.565 cc 0.0 2.02e-11p 6.53e-07p 0.000462p 0.0 0.041221p 0.057069p 0.098290p 0.217682p 0.000304p 0.001120p 0.001130p
rc 0.0 2.02e-11p 6.53e-07p 0.000462p 3.44e-05o 0.041256p 0.057072p 0.098324p 0.217720j 0.000304p 0.001120p 0.001130p
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.136422j 0.0 0.0 0.0
zp 32.98 ri 0.0 1.03e-11p 4.08e-07p 0.000420p 0.0 0.029009p 0.040703p 0.040703p 0.025640p 9.68e-05p 0.000226p 2.70e-07p
sig0.544 cc 0.0 1.03e-11p 4.08e-07p 0.000420p 0.0 0.029341p 0.040703p 0.070044p 0.136386p 9.68e-05p 0.000320p 0.000323p
rc 0.0 1.03e-11p 4.08e-07p 0.000420p 3.30e-05o 0.029374p 0.040706p 0.070077p 0.136423j 9.68e-05p 0.000320p 0.000323p
u233t xi 0.0 0.0 0.0 0.0 0.0 0.080198i 0.155379h 0.155379h 0.181218i 0.000243j 0.000567j 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.585328g 0.0 0.000907k 0.001086l
zp 33.08 ri 0.0 2.89e-11p 1.76e-06p 0.001133p 0.0 0.081935p 0.158744p 0.158744p 0.185142i 0.000248p 0.000579j 2.40e-06p
sig0.555 cc 0.0 2.43e-11p 1.48e-06p 0.000956p 0.0 0.128184p 0.133702p 0.261886p 0.584130p 0.000657p 0.002176p 0.002197p

rc 0.0 2.89e-11p 1.76e-06p 0.001135p 4.39e-05p 0.082874p 0.158750p 0.241618p 0.585509g 0.000248p 0.000822n 0.000830l
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.50e-05o 8.42e-05m 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.075113m 0.0 0.0 0.0
zp 32.44 ri 0.0 9.10e-09p 0.000138p 0.032227p 0.0 0.641479p 0.187887p 0.187791p 0.026484p 1.49e-05p 8.39e-05p 3.10e-09p
sig0.524 cc 0.0 9.08e-09p 0.000137p 0.032300p 0.0 0.667654p 0.187584p 0.855238p 1.069254p 9.57e-06p 3.52e-05p 3.54e-05p
rc 0.0 9.10e-09p 0.000138p 0.032365p 0.006001o 0.673015o 0.188037p 0.860806n 1.075327l 1.49e-05p 9.84e-05p 9.88e-05p

zn half life estimated by 80eng2; ga, ge, as half lives from 89wal1; br half life 90bur1.

1

mass number 83 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 30 zn g 31 ga g 32 ge g 33 as d 33 as g 34 se m 34 se g 35 br g 36 kr m 36 kr g 37 rb g 38 sr g
half life 0.084s 0.31s 1.9 s 1.2 s 13.4 s 1.17m 22.3m 2.40h 1.83 h stable 86.2 d 32.4 h
lambda 8.252e+00 2.236e+00 3.648e-01 5.776e-01 5.173e-02 9.874e-03 5.180e-04 8.023e-05 1.052e-04 0.0 9.307e-08 5.943e-06
z - 1 g 100.0000 100.0000 43.8000 0.0 99.9760 64.0000 36.0000 100.0000 100.0000 0.0 -23.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 -77.0000 0.0
z - 0 m 0.0 0.0 0.0 5.2060 100.0000 0.0860 0.0 0.0 0.0 100.0000 0.0 0.0
u235t xi 0.0 0.0 0.048446i 0.0 0.293421h 0.033917i 0.144592i 0.019766l 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.365271k 0.333761k 0.196585j 0.538314m 0.0 0.536399b 0.0 0.0
zp 33.26 ri 6.32e-08p 0.000192p 0.047889p 0.0 0.290710h 0.033527i 0.142930i 0.019539l 1.55e-06p 6.63e-06p 2.30e-10p 0.0
sig0.531 cc 6.71e-08p 0.000204p 0.050945p 0.0 0.317980p 0.243851p 0.286465p 0.534660p 0.534661p 0.534668p 2.31e-10p 0.0
rc 6.32e-08p 0.000192p 0.047973p 0.001565n 0.340237j 0.251278j 0.265415h 0.536232f 0.536234d 0.536241b 2.30e-10p 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.571966n 0.0 0.576865d 0.0 0.0
zp 33.17 ri 2.46e-07p 0.000469p 0.076774p 0.0 0.306925p 0.031948p 0.155949p 0.003178p 8.47e-07p 4.13e-06p 1.30e-10p 0.0

sig0.537 cc 2.46e-07p 0.000469p 0.076921p 0.0 0.383997p 0.277682p 0.294104p 0.574962p 0.574963p 0.574967p 1.29e-10p 0.0
rc 2.46e-07p 0.000470p 0.076980p 0.001566o 0.385452p 0.278638o 0.294712p 0.576528m 0.576529f 0.576533d 1.30e-10p 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.114997i 0.0 1.061223j 0.0 0.0
zp 33.33 ri 4.41e-06p 0.002138p 0.102853p 0.0 0.562922p 0.043940p 0.352217p 0.035504p 3.66e-05p 0.000296p 3.07e-07p 2.56e-11p
sig0.634 cc 4.40e-06p 0.002135p 0.103433p 0.0 0.664886p 0.469316p 0.593650p 1.098348p 1.098385p 1.098688p 3.14e-07p 2.61e-11p
rc 4.41e-06p 0.002143p 0.103791p 0.001846o 0.668535o 0.471803n 0.592890o 1.100197i 1.100234i 1.100530h 3.07e-07p 2.56e-11p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.293947j 0.0 0.399571e 0.0 0.0
zp 32.76 ri 9.35e-06p 0.003938p 0.115293p 0.0 0.240525p 0.005710p 0.027878p 0.000289p 3.15e-08p 1.54e-07p 3.52e-12p 0.0
sig0.557 cc 1.06e-05p 0.004482p 0.132858p 0.0 0.352631p 0.232166p 0.158598p 0.391092p 0.391092p 0.391092p 3.37e-12p 0.0
rc 9.35e-06p 0.003947p 0.117022p 0.004457o 0.361976n 0.237375n 0.158190n 0.395853i 0.395853g 0.395853e 3.52e-12p 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.259312m 0.705073j 0.0 0.661634h 0.0 0.0
zp 33.06 ri 8.03e-06p 0.003403p 0.117611p 0.0 0.388718p 0.016600p 0.134307p 0.005726p 1.92e-06p 1.55e-05p 4.06e-09p 0.0
sig0.605 cc 7.91e-06p 0.003360p 0.117320p 0.0 0.510170p 0.342860p 0.315956p 0.664456p 0.664458p 0.664473p 4.14e-09p 0.0
rc 8.03e-06p 0.003411p 0.119105p 0.003067o 0.510861o 0.343551n 0.318217l 0.667494j 0.667496i 0.667512g 4.06e-09p 0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.151477m 0.154447l 0.270394h 0.0 0.297264c 0.0 0.0
zp 33.64 ri 4.91e-09p 2.29e-05p 0.008039p 0.0 0.115312p 0.037079p 0.118987n 0.017061p 2.90e-05p 0.000124p 5.01e-08p 1.16e-12p
sig0.564 cc 4.32e-09p 2.01e-05p 0.007076p 0.0 0.108476p 0.102022p 0.178018p 0.296488p 0.296517p 0.296640p 4.98e-08p 1.16e-12p
rc 4.91e-09p 2.29e-05p 0.008049p 9.66e-05o 0.123456p 0.116090m 0.163431k 0.296582h 0.296611d 0.296735b 5.01e-08p 1.16e-12p

pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.315605c 0.0 0.0
zp 33.49 ri 2.22e-08p 6.12e-05p 0.014275p 0.0 0.130570p 0.027262p 0.133098p 0.010006p 1.08e-05p 5.29e-05p 1.31e-08p
0.0
sig0.565 cc 2.22e-08p 6.12e-05p 0.014299p 0.0 0.144899p 0.119992p 0.185239p 0.315235p 0.315246p 0.315299p 1.31e-08p
0.0
rc 2.22e-08p 6.12e-05p 0.014302p 0.000207o 0.145076p 0.120111o 0.185325p 0.315442o 0.315453e 0.315506c 1.31e-08p
0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.207655i 0.0 0.200882f 0.0 0.0
zp 33.36 ri 1.68e-08p 5.87e-05p 0.012853p 0.0 0.100243p 0.016125p 0.068744p 0.003251p 1.70e-06p 7.24e-06p 6.73e-10p
0.0
sig0.544 cc 1.68e-08p 5.87e-05p 0.012875p 0.0 0.113145p 0.088533p 0.109455p 0.201239p 0.201240p 0.201248p 6.84e-10p
0.0
rc 1.68e-08p 5.87e-05p 0.012879p 0.000211o 0.113330p 0.088656p 0.109542p 0.201450i 0.201451g 0.201459e 6.73e-10p
0.0
u233t xi 0.0 0.0 0.030633p 0.0 0.346821h 0.116268h 0.496656i 0.045323m 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.924030o 0.441001l 0.0 0.0 1.013680e 0.0 0.0
zp 33.48 ri 2.57e-08p 7.81e-05p 0.024751p 0.0 0.456867p 0.093941h 0.401281i 0.036619p 2.97e-05p 0.000127p 2.00e-08p
0.0
sig0.555 cc 4.92e-08p 0.000150p 0.047556p 0.0 0.437809p 0.384504p 0.602285p 1.013288p 1.013319p 1.013450p 2.07e-08p
0.0
rc 2.57e-08p 7.81e-05p 0.024785p 0.000899o 0.482545p 0.402770p 0.574997k 1.014386n 1.014416f 1.014543d 2.00e-08p
0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.899173m 2.106508h 0.0 2.187172f 0.0 0.0
zp 32.84 ri 9.96e-06p 0.010667p 0.619149p 0.0 1.266653n 0.041923p 0.216855p 0.001476p 7.69e-08p 3.75e-07p 2.68e-12p
0.0
sig0.524 cc 1.00e-05p 0.010752p 0.628201p 0.0 1.900718p 1.258677p 0.890376p 2.150540p 2.150540p 2.150540p 2.65e-12p
0.0
rc 9.96e-06p 0.010677p 0.623826o 0.016931o 1.907261l 1.262570l 0.903468l 2.167514h 2.167514g 2.167515f 2.68e-12p
0.0

as-to-se branching to fit data; zn half life from 80eng2; ga, ge, as, se half lives 89wal1; kr, rb, sr 90bur1.

mass number 84 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 30 zn g 31 ga g 32 ge g 33 as d 33 as g 34 se d 34 se g 35 br m 35 br g 36 kr g 37 rb g 38 sr g

half life 0.098s 1.2 s 0.250s 5.5 s 2.03 s 3.3 m 6.0 m 31.8 m stable 32.87d stable

lambda 0.0 7.073e+00 5.776e-01 2.773e+00 1.260e-01 3.415e-01 3.501e-03 1.925e-03 3.633e-04 0.0 2.441e-07 0.0

z - 1 g 100.0000 100.0000 100.0000 0.0 94.7940 0.0 99.8700 0.0 100.0000 100.0000 -97.0000 3.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0

z - 0 m 0.0 0.0 0.0 16.4540 100.0000 50.0000 100.0000 0.0 0.0 0.0 0.0 0.0

u235t xi 0.0 0.0 0.021096m 0.0 0.219579h 0.0 0.705371f 0.018576j 0.020635k 0.0 2.40e-09l 0.0

xc 0.0 0.0 0.033389m 0.0 0.249827i 0.0 0.968920i 0.019164l 0.970709h 1.002029c 0.0 0.0

zp 33.67 ri 1.22e-06p 0.011068p 0.018996m 0.0 0.197407g 0.0 0.630990f 0.016726j 0.018581k 0.000325p 2.16e-09p 0.0

sig0.531 cc 1.33e-09p 1.21e-05p 0.015647p 0.0 0.215225p 0.0 0.860079p 0.020863p 0.871814p 0.893000p 2.71e-08p 8.12e-10p

rc 1.22e-06p 0.011069p 0.030065m 0.000351o 0.226257h 0.109408o 0.966361g 0.016726j 0.984941e 1.001993c 2.16e-09p 6.52e-11p

u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.030822e 0.0 0.0

zp 33.57 ri 7.17e-09p 3.83e-05p 0.030051p 0.0 0.275595p 0.0 0.594022n 0.017892p 0.008420p 0.000202p 1.49e-08p 0.0

sig0.537 cc 6.75e-09p 3.61e-05p 0.028350p 0.0 0.286759p 0.0 0.899389p 0.016858p 0.907323p 0.924371p 1.40e-08p 4.21e-10p

rc 7.17e-09p 3.83e-05p 0.030089p 0.000809o 0.304926p 0.105623o 1.004174j 0.017892p 1.012594h 1.030688e 1.49e-08p 4.47e-10p

u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.507234k 0.0 0.0

zp 33.74 ri 2.24e-07p 0.000287p 0.035172p 0.0 0.460111p 0.0 0.719051p 0.123589p 0.034858p 0.003859p 9.40e-06p 2.11e-09p

sig0.634 cc 2.19e-07p 0.000281p 0.034689p 0.0 0.483360p 0.0 1.215716p 0.120902p 1.249816p 1.374502p 9.20e-06p 2.78e-07p

rc 2.24e-07p 0.000288p 0.035460p 0.001302o 0.495027p 0.133063o 1.346498n 0.123589p 1.381356m 1.508813k 9.40e-06p 2.84e-07p

u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.825771e 0.0 0.0

zp 33.16 ri 6.56e-07p 0.000860p 0.084755p 0.0 0.360516p 0.0 0.174062p 0.003189p 0.001501p 9.34e-06p 5.72e-10p 0.0

sig0.557 cc 6.41e-07p 0.000840p 0.083543p 0.0 0.431907p 0.0 0.615397p 0.003111p 0.616861p 0.619982p 5.58e-10p 1.67e-11p
rc 6.56e-07p 0.000861p 0.085616p 0.004685o 0.446361p 0.201033o 0.820875i 0.003189p 0.822376g 0.825574e 5.72e-10p 1.72e-11p
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.102827i 1.120959h 0.0 0.0
zp 33.46 ri 5.28e-07p 0.000630p 0.058289p 0.0 0.487619p 0.0 0.370583p 0.033761p 0.009522p 0.000376p 2.50e-07p 1.19e-11p
sig0.605 cc 4.90e-07p 0.000586p 0.054710p 0.0 0.505269p 0.0 0.916736p 0.031349p 0.925578p 0.957276p 2.33e-07p 6.99e-09p
rc 5.28e-07p 0.000631p 0.058920p 0.002498o 0.545969o 0.164242o 1.080085k 0.033761p 1.089607i 1.123744g 2.50e-07p 7.53e-09p
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.91e-08k 0.0
xc 0.0 0.0 0.0 0.0 0.068336n 0.0 0.0 0.0 0.410018k 0.480440d 0.0 0.0
zp 34.04 ri 1.03e-10p 1.35e-06p 0.001855p 0.0 0.065682p 0.0 0.327309o 0.048534p 0.027301p 0.002608p 3.86e-08p 2.23e-10p
sig0.564 cc 9.64e-11p 1.26e-06p 0.001732p 0.0 0.062931p 0.0 0.397467p 0.046806p 0.423795p 0.473118p 2.26e-06p 6.79e-08p
rc 1.03e-10p 1.35e-06p 0.001856p 1.78e-05o 0.067459n 0.007205o 0.401886m 0.048534p 0.429186k 0.480329d 3.86e-08p 1.38e-09p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.498717d 0.0 0.0
zp 33.89 ri 5.77e-10p 4.51e-06p 0.003973p 0.0 0.089947p 0.0 0.331813o 0.034582p 0.016274p 0.001190p 6.85e-07p 4.35e-11p
sig0.565 cc 5.62e-10p 4.39e-06p 0.003876p 0.0 0.091306p 0.0 0.426758p 0.033692p 0.442613p 0.477465p 6.67e-07p 2.01e-08p
rc 5.77e-10p 4.51e-06p 0.003978p 8.23e-05o 0.093800p 0.021137o 0.446629m 0.034582p 0.462903k 0.498676d 6.85e-07p 2.06e-08p
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.311038i 0.352910f 0.0 0.0
zp 33.75 ri 4.39e-10p 5.47e-06p 0.004047p 0.0 0.095219p 0.0 0.205073o 0.015970p 0.008983p 0.000234p 6.25e-08p 0.0
sig0.544 cc 4.21e-10p 5.24e-06p 0.003885p 0.0 0.094967p 0.0 0.305060p 0.015310p 0.313672p 0.329206p 5.99e-08p 1.80e-09p
rc 4.39e-10p 5.47e-06p 0.004052p 9.29e-05o 0.099153p 0.021996o 0.326094k 0.015970p 0.335077i 0.351281f 6.25e-08p 1.88e-09p

u233t xi 0.0 0.0 0.017664m 0.0 0.159310k 0.0 1.267473f 0.145522i 0.081841i 0.0 6.58e-08k 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.689421d 0.0 0.0
zp 33.88 ri 1.53e-09p 1.19e-05p 0.017260p 0.0 0.155667p 0.0 1.238485o 0.142194p 0.079969p 0.003534p 6.43e-08p 6.74e-11p
sig0.555 cc 1.17e-09p 9.11e-06p 0.013195p 0.0 0.252514p 0.0 1.504822p 0.081805p 1.550837p 1.636106p 1.12e-06p 3.37e-08p
rc 1.53e-09p 1.19e-05p 0.017272p 0.000217p 0.172257p 0.053136p 1.463653n 0.142194p 1.543622n 1.689350d 6.43e-08p 2.00e-09p
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.017106f 4.017585f 0.0 0.0
zp 33.24 ri 3.58e-07p 0.001301p 0.323935p 0.0 1.731366n 0.0 1.089978n 0.015192p 0.007149p 3.14e-05p 6.53e-10p 0.0
sig0.524 cc 3.44e-07p 0.001249p 0.312344p 0.0 1.961482p 0.0 3.128657p 0.014590p 3.135523p 3.150143p 6.27e-10p 1.88e-11p
rc 3.58e-07p 0.001301p 0.325236p 0.012734o 2.052405m 0.863106n 4.002821h 0.015192p 4.009970f 4.025194e 6.53e-10p 1.96e-11p

ga half life from 80eng2; ge, as, se, br half lives from 89wal1; rb half life 90bur1.

1

mass number 85 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 31 ga g 32 ge g 33 as d 33 as g 34 se m 34 se g 35 br g 36 kr m 36 kr g 37 rb g 38 sr g 39 y g
half life 0.087s 0.250s 0.247s 2.03 s 19. s 39. s 2.87m 4.48 h 10.73y stable 64.84d 5.0 h
lambda 7.967e+00 2.773e+00 2.806e+00 3.415e-01 3.648e-02 1.777e-02 4.025e-03 4.298e-05 2.048e-09 0.0 1.237e-07 3.851e-05
z - 1 g 100.0000 100.0000 0.0 83.5460 0.0 50.0000 100.0000 100.0000 0.0 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 80.0210 0.0 0.0
z - 0 m 0.0 0.0 15.2150 100.0000 8.5030 0.0 0.0 0.0 19.9790 0.0 0.0 0.0
u235t xi 0.0 0.0 0.0 0.125980j 0.463685g 0.463685g 0.243971i 0.006115l 0.026505l 0.002466p 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.273035i 1.290962a 0.284813a 1.317690a 0.0 0.0
zp 34.07 ri 5.88e-07p 0.002130p 0.0 0.121371p 0.446720p 0.446720p 0.235036i 0.005891l 0.025535l 0.002375p 7.85e-11p 0.0
sig0.531 cc 6.22e-07p 0.002253p 0.0 0.136982p 0.472463p 0.540954p 1.211785p 1.212760p 0.246453p 1.216918p 7.52e-11p 0.0

rc 5.88e-07p 0.002131p 0.095667o 0.218818p 0.493744p 0.556130p 1.284910c 1.290801a 0.283424a 1.318711a 7.85e-11p
0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.348431g 0.275167i 1.364459d 0.0 0.0
zp 33.98 ri 2.23e-06p 0.004912p 0.0 0.207055p 0.531325p 0.533892p 0.184185p 0.000634p 0.003094p 1.45e-06p 4.32e-11p
0.0
sig0.537 cc 2.23e-06p 0.004914p 0.0 0.211146p 0.533731p 0.639304p 1.354991p 1.355624p 0.273933p 1.358719p 4.30e-11p
0.0
rc 2.23e-06p 0.004915p 8.25e-05o 0.211244p 0.536369o 0.639514o 1.360068g 1.360701e 0.274948f 1.363796c 4.32e-11p
0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.648869h 0.342692i 0.0 0.0 0.0
zp 34.16 ri 2.43e-05p 0.007891p 0.0 0.259375p 0.495481p 0.498795p 0.501238p 0.003390p 0.027432p 0.000200p 1.23e-07p
6.78e-12p
sig0.634 cc 2.43e-05p 0.007903p 0.0 0.265614p 0.498015p 0.630822p 1.628746p 1.632131p 0.353472p 1.659720p 1.23e-07p
6.77e-12p
rc 2.43e-05p 0.007915p 0.000140o 0.266128p 0.502191p 0.631860p 1.635289j 1.638679h 0.354824i 1.666311g 1.23e-07p
6.78e-12p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.10e-07n 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.728385g 0.148703i 0.745413d 0.0 0.0
zp 33.56 ri 9.65e-05p 0.028379p 0.0 0.377347p 0.236216p 0.246315p 0.039515p 4.08e-05p 0.000199p 1.10e-07n 0.0
0.0
sig0.557 cc 9.56e-05p 0.028213p 0.0 0.397720p 0.243179p 0.442039p 0.724369p 0.724409p 0.144927p 0.724607p 0.0
0.0
rc 9.65e-05p 0.028476p 0.000928o 0.402066p 0.255948p 0.447348o 0.742810h 0.742851f 0.148614f 0.743051d 0.0
0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.009829f 0.199735f 0.998084g 0.0 0.0
zp 33.85 ri 6.11e-05p 0.015118p 0.0 0.315346p 0.329448p 0.336237p 0.158213p 0.000400p 0.003238p 6.65e-06p 8.89e-10p
0.0
sig0.605 cc 6.07e-05p 0.015072p 0.0 0.325858p 0.333882p 0.496811p 0.989041p 0.989438p 0.200895p 0.992660p 8.87e-10p
0.0
rc 6.11e-05p 0.015179p 0.000455o 0.328483p 0.343629p 0.500479p 1.002322h 1.002722f 0.203572f 1.005967e 8.89e-10p
0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.230855k 0.003672p 0.015631p 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.022461n 0.0 0.0 0.569148e 0.557716d 0.127896c 0.572612a 0.0 0.0

zp 34.44 ri 2.86e-08p 0.000108p 0.0 0.014317p 0.200713p 0.205135p 0.148079k 0.002356p 0.010026p 4.24e-05p 1.13e-08p
0.0
sig0.564 cc 5.01e-08p 0.000189p 0.0 0.025295p 0.157642p 0.170289p 0.549390p 0.552932p 0.125571p 0.568098p 1.74e-08p
0.0
rc 2.86e-08p 0.000108p 2.67e-06o 0.014410o 0.201225p 0.212340p 0.561644e 0.563999c 0.122707c 0.574068a 1.13e-08p
0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000113n 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.575018l 0.598514e 0.124807h 0.604138b 0.0 0.0
zp 34.30 ri 1.98e-07p 0.000500p 0.0 0.041850p 0.189327p 0.189777p 0.191531p 0.001940p 0.009472p 0.000114n 4.85e-09p
0.0
sig0.565 cc 2.01e-07p 0.000509p 0.0 0.042960p 0.192884p 0.214363p 0.591661p 0.593575p 0.127936p 0.602947p 4.78e-09p
0.0
rc 1.98e-07p 0.000500p 6.89e-06o 0.042275p 0.190220p 0.210914p 0.592665g 0.594605e 0.128268g 0.604190b 4.85e-09p
0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.426963h 0.088830g 0.401090f 0.0 0.0
zp 34.15 ri 2.13e-07p 0.000564p 0.0 0.043513p 0.142674p 0.143266p 0.094346p 0.000558p 0.002378p 2.70e-06p 1.53e-10p
0.0
sig0.544 cc 2.12e-07p 0.000564p 0.0 0.043924p 0.143068p 0.165030p 0.402314p 0.402871p 0.082864p 0.405248p 1.60e-10p
0.0
rc 2.13e-07p 0.000565p 8.81e-06o 0.043993p 0.143940p 0.165263p 0.403549i 0.404107g 0.083114g 0.406487e 1.53e-10p
0.0
u233t xi 0.0 0.0 0.0 0.100399k 0.561626g 0.561626g 0.846708i 0.020793l 0.091270m 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.204514h 0.493811a 2.238832e 0.0 0.0
zp 34.29 ri 3.52e-07p 0.001317p 0.0 0.105138p 0.588136p 0.588136p 0.886674p 0.021775l 0.095578m 6.20e-05p 9.72e-09p
0.0
sig0.555 cc 4.52e-07p 0.001694p 0.0 0.138972p 0.756499p 0.825985p 2.179028p 2.186241p 0.467541p 2.217051p 9.22e-09p
0.0
rc 3.52e-07p 0.001317p 3.31e-05p 0.106272p 0.591787p 0.641272p 2.119732o 2.141507f 0.523430a 2.237147d 9.72e-09p
0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.195730k 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.283224f 0.829461f 3.969271g 0.0 0.0
zp 33.65 ri 9.25e-05p 0.077305p 0.0 1.659815n 1.506077n 1.506077n 0.226440p 0.000204p 0.000995p 1.30e-07p 0.0
0.0
sig0.524 cc 9.25e-05p 0.077399p 0.0 1.724519p 1.506113p 2.368372p 4.100931p 4.101115p 0.820259p 4.102012p 0.0
0.0

rc 9.25e-05p 0.077398p 0.001819p 1.726297n 1.570520n 2.369225m 4.166186l 4.166390f 0.833398e 4.167385e 0.0 0.0

kr branching to fit data; ga half life from 80eng2; as, se, br, kr half lives from 89wal1.

1

mass number 86 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 30 zn g 31 ga g 32 ge g 33 as g 34 se d 34 se g 35 br m 35 br g 36 kr d 36 kr g 37 rb g 38 sr g

half life 0.247s 0.9 s 0.30 s 15.0 s 4.5 s 55.5 s 55.7 s stable 18.66d stable

lambda 0.0 0.0 2.806e+00 7.702e-01 2.310e+00 4.621e-02 1.540e-01 1.249e-02 1.244e-02 0.0 4.299e-07 0.0

z - 1 g 100.0000 100.0000 100.0000 84.7850 0.0 91.4970 0.0 100.0000 0.0 100.0000 0.0 100.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0

z - 0 m 0.0 0.0 0.0 0.0 44.3600 100.0000 0.1880 0.0 2.5400 100.0000 0.0 0.0

u235t xi 0.0 0.0 0.0 0.027579m 0.0 1.171309g 0.318025g 0.318025g 0.0 0.120744j 8.93e-06i 0.0

xc 0.0 0.0 0.870313l 0.0 0.0 1.260453i 0.0 1.566099i 0.0 1.964615b 0.0 0.0

zp 34.47 ri 2.28e-10p 3.28e-05p 0.628710l 0.019924p 0.0 0.835894g 0.229752p 0.229752g 0.0 0.087229j 6.45e-06p 1.19e-08p

sig0.531 cc 0.0 1.45e-08p 0.000279p 0.044707p 0.0 1.361582p 0.297633p 1.659215p 0.0 2.027370p 8.65e-05p 8.65e-05p

rc 2.28e-10p 3.28e-05p 0.628743l 0.553004l 0.023392o 1.365268h 0.231181p 1.595020h 0.051682j 1.965112b 6.45e-06p 6.47e-06p

u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.168655n 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.946640d 0.0 0.0

zp 34.38 ri 0.0 4.85e-08p 0.000542p 0.058859p 0.0 1.226763n 0.224292p 0.224878p 0.0 0.154201n 4.38e-05p 6.74e-09p

sig0.537 cc 0.0 5.14e-08p 0.000574p 0.062795p 0.0 1.364193p 0.238055p 1.602248p 0.0 1.884107p 4.63e-05p 4.63e-05p

rc 0.0 4.85e-08p 0.000542p 0.059319p 0.007448o 1.288486m 0.225579p 1.513364l 0.053667k 1.946811d 4.38e-05p 4.38e-05p

u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000161o 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.813903m 0.0 0.0

zp 34.58 ri 1.09e-10p 1.05e-06p 0.000921p 0.078101p 0.0 0.723015p 0.426256p 0.426486p 0.0 0.129073p 0.000158p 3.66e-06p

sig0.634 cc 1.08e-10p 1.05e-06p 0.000920p 0.078656p 0.0 0.795354p 0.425471p 1.220825p 0.0 1.774998p 0.002186p 0.002190p

rc 1.09e-10p 1.05e-06p 0.000922p 0.078883p 0.009075o 0.804266o 0.427161p 1.230752o 0.041128m 1.828114m 0.000158p 0.000162p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.296441d 0.0 0.0
zp 33.96 ri 3.67e-10p 5.74e-06p 0.006096p 0.226879p 0.0 0.834562n 0.091396p 0.091396p 0.0 0.003855p 2.80e-06p 1.37e-10p
sig0.557 cc 3.57e-10p 5.59e-06p 0.005947p 0.226151p 0.0 1.052155p 0.089072p 1.141226p 0.0 1.234055p 2.73e-06p 2.73e-06p
rc 3.67e-10p 5.74e-06p 0.006102p 0.232052p 0.022225o 1.069108m 0.093043p 1.160504k 0.039045k 1.296446d 2.80e-06p 2.80e-06p
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.33e-05o 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.570848g 0.0 0.0
zp 34.25 ri 4.52e-10p 4.32e-06p 0.002988p 0.164245p 0.0 0.845409p 0.244399p 0.237551p 0.0 0.029231p 1.29e-05p 5.74e-08p
sig0.605 cc 4.47e-10p 4.28e-06p 0.002962p 0.165110p 0.0 0.995228p 0.242518p 1.237746p 0.0 1.509203p 0.000148p 0.000148p
rc 4.52e-10p 4.32e-06p 0.002992p 0.166782p 0.021311o 1.019320o 0.245590p 1.256871m 0.039319k 1.571012g 1.29e-05p 1.30e-05p
pu239t xi 0.0 0.0 0.0 0.006134p 0.0 0.299797i 0.193220i 0.193220i 0.0 0.072074m 0.000187j 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.765611b 0.0 0.0
zp 34.83 ri 0.0 1.18e-09p 1.75e-05p 0.006003p 0.0 0.293405p 0.189100p 0.189100p 0.0 0.070537m 0.000183p 1.01e-06p
sig0.564 cc 0.0 1.16e-09p 1.73e-05p 0.005933p 0.0 0.259000p 0.190766p 0.449767p 0.0 0.746897p 0.000943p 0.000944p
rc 0.0 1.18e-09p 1.75e-05p 0.006018p 0.000563p 0.299474p 0.189359p 0.488574p 0.017547k 0.766017b 0.000183p 0.000184p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.788976d 0.0 0.0
zp 34.71 ri 0.0 4.44e-09p 4.53e-05p 0.010464p 0.0 0.327060p 0.179267p 0.175678p 0.0 0.075579p 0.000473p 3.58e-07p
sig0.565 cc 0.0 4.41e-09p 4.50e-05p 0.010445p 0.0 0.335125p 0.178455p 0.513580p 0.0 0.767201p 0.000471p 0.000471p
rc 0.0 4.44e-09p 4.53e-05p 0.010503p 0.001008o 0.337678p 0.179609p 0.513355o 0.020449k 0.788992d 0.000473p 0.000474p
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.594456f 0.0 0.0

zp 34.54 ri 0.0 6.18e-09p 5.79e-05p 0.014834p 0.0 0.285404p 0.128228p 0.125270p 0.0 0.024461p 8.03e-05p 1.62e-08p
sig0.544 cc 0.0 6.14e-09p 5.76e-05p 0.014789p 0.0 0.297499p 0.127591p 0.425090p 0.0 0.576988p 7.98e-05p 7.98e-05p
rc 0.0 6.18e-09p 5.79e-05p 0.014883p 0.001273o 0.300293p 0.128581p 0.425563n 0.015867k 0.594472f 8.03e-05p 8.03e-05p
u233t xi 0.0 0.0 0.0 0.043511m 0.0 0.815071g 0.702109g 0.702109g 0.0 0.579429h 0.000915k 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.843361e 0.0 0.0
zp 34.69 ri 0.0 1.22e-08p 0.000218p 0.042752p 0.0 0.800860p 0.689868p 0.689868p 0.0 0.569327h 0.000900p 7.85e-07p
sig0.555 cc 0.0 9.00e-09p 0.000160p 0.031582p 0.0 1.420996p 0.544539p 1.965535p 0.0 2.790031p 0.001051p 0.001052p
rc 0.0 1.22e-08p 0.000218p 0.042937p 0.001449p 0.841595p 0.690488p 1.531462o 0.052237k 2.843515e 0.000900p 0.000900p
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.605512m 0.605512m 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.586994f 0.0 0.0
zp 34.04 ri 5.24e-11p 3.18e-06p 0.011951p 0.747737p 0.0 4.682558n 0.457211p 0.457211p 0.0 0.016592p 5.67e-06p 1.20e-10p
sig0.524 cc 5.23e-11p 3.18e-06p 0.011951p 0.757655p 0.0 5.374448p 0.457080p 5.831528p 0.0 6.307023p 6.29e-06p 6.29e-06p
rc 5.24e-11p 3.18e-06p 0.011954p 0.757873p 0.102614p 5.478603o 0.464801p 5.935814o 0.170389k 6.587597f 5.67e-06p 5.67e-06p

ge half life from 80eng2; as, se, br half lives from 89wal1; rb half life 90bur1.

1

mass number 87 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	32 ge g	33 as g	34 se g	35 br d	35 br g	36 kr d	36 kr g	37 rb g	38 sr m	38 sr g	39 y g	40 zr g
half life	0.134s	0.8 s	5.6 s	1.50s	55.9 s	16.0 s	1.27 h	10.67l	2.81 h	stable	80.3 h	1.6 h
lambda	5.173e+00	8.664e-01	1.238e-01	4.621e-01	1.240e-02	4.332e-02	1.516e-04	4.699e-19	6.852e-05	0.0	2.398e-06	1.203e-04
z - 1 g	100.0000	100.0000	55.6400	0.0	99.8120	0.0	97.4600	100.0000	-0.3000	100.0000	0.0	0.0
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-100.0000	-100.0000
z - 0 m	0.0	0.0	0.0	0.9660	100.0000	6.2600	100.0000	0.0	0.0	99.7000	0.0	0.0
u235t xi	0.0	0.051226p	0.654041i	0.0	1.302430g	0.0	0.485698i	0.0	0.0	0.0	0.0	0.0

xc 0.0 0.053451o 1.009878j 0.0 2.129375h 0.0 2.523900h 2.558650b 0.0 2.570488g 0.0 0.0
zp 34.88 ri 0.002196p 0.050536p 0.731100h 0.0 1.271858g 0.0 0.463408i 0.002502p 2.51e-07p 1.07e-06p 1.00e-11p 0.0
sig0.531 cc 1.18e-05p 0.009982p 0.754429p 0.0 2.125747p 0.0 2.459328p 2.461759p 2.44e-07p 2.461761p 9.75e-12p
0.0
rc 0.002196p 0.052732o 0.760440h 0.003789l 2.034658f 0.111412j 2.557797d 2.560299b 2.51e-07p 2.560300b 1.00e-11p
0.0
u235f xi 0.0 0.0 0.0 0.0 1.557581i 0.0 0.416678m 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.183011i 0.0 2.357762g 2.558345d 0.0 0.0 0.0 0.0
zp 34.78 ri 3.16e-05p 0.016758p 0.675041o 0.0 1.425412i 0.0 0.350434m 0.001331p 9.79e-08p 4.78e-07p 4.03e-12p 0.0
sig0.537 cc 3.44e-05p 0.018273p 0.916748p 0.0 2.187010p 0.0 2.402248p 2.403629p 1.02e-07p 2.403629p 4.18e-12p
0.0
rc 3.16e-05p 0.016790p 0.684383n 0.004335o 2.112844i 0.132905k 2.542516e 2.543847d 9.79e-08p 2.543847d 4.03e-12p
0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.834021m 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.419928h 0.0 0.0 0.0 0.0 0.0
zp 35.00 ri 9.11e-05p 0.020367p 0.469928p 0.0 1.136327n 0.0 0.733674m 0.020403p 1.01e-05p 8.13e-05p 3.83e-08p
1.43e-12p
sig0.634 cc 9.51e-05p 0.021355p 0.502425p 0.0 1.858105p 0.0 2.301874p 2.323172p 1.05e-05p 2.323268p 4.00e-08p
1.49e-12p
rc 9.11e-05p 0.020458p 0.481311o 0.002499o 1.619232l 0.118412m 2.430190g 2.450593h 1.01e-05p 2.450684h 3.83e-08p
1.43e-12p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000147n 0.0 0.0 0.0 0.0
xc 0.0 0.051000p 0.896189o 0.0 1.806676l 0.0 1.485426g 1.628527e 0.0 1.795770i 0.0 0.0
zp 34.37 ri 0.000377p 0.049722p 0.848074n 0.0 0.657471n 0.0 0.034663p 0.000144n 2.73e-09p 1.33e-08p 0.0 0.0
sig0.557 cc 0.000667p 0.088632p 0.944342p 0.0 1.514242p 0.0 1.510802p 1.510897p 2.63e-09p 1.510897p 0.0 0.0
rc 0.000377p 0.050100p 0.875949n 0.005396o 1.537169i 0.092576m 1.625364f 1.625508d 2.73e-09p 1.625508d 0.0
0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.078852n 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.380263k 0.0 1.687912g 0.0 0.0 0.0 0.0 0.0
zp 34.64 ri 0.000328p 0.047712p 0.606658p 0.0 0.911804n 0.0 0.082762n 0.001895p 2.22e-07p 1.80e-06p 1.55e-10p
0.0
sig0.605 cc 0.000340p 0.049785p 0.656394p 0.0 1.501325p 0.0 1.588008p 1.589706p 1.99e-07p 1.589708p 1.39e-10p
0.0
rc 0.000328p 0.048040p 0.633388o 0.004016o 1.548016i 0.093055l 1.684513f 1.686408f 2.22e-07p 1.686410f 1.55e-10p
0.0
pu239t xi 0.0 0.0 0.140683l 0.0 0.569228i 0.0 0.293695i 0.015073p 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.706240i 0.0 0.982806e 1.004196b 0.0 0.0 0.0 0.0
zp 35.23 ri 9.34e-07p 0.001267p 0.136849p 0.0 0.553114i 0.0 0.284178i 0.014662p 5.77e-06p 2.46e-05p 2.88e-09p 0.0
sig0.564 cc 7.42e-07p 0.001007p 0.109221p 0.0 0.644471p 0.0 0.962237p 0.973050p 5.78e-06p 0.973080p 2.88e-09p
0.0
rc 9.34e-07p 0.001268p 0.137554p 0.000407o 0.690817i 0.031782k 0.989230e 1.003893b 5.77e-06p 1.003923b 2.88e-09p
0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.796440j 0.0 1.009567f 1.048882d 0.0 1.044431k 0.0 0.0
zp 35.11 ri 2.57e-06p 0.002270p 0.180204p 0.0 0.623409m 0.0 0.218085n 0.006540p 2.34e-06p 1.14e-05p 8.95e-10p
0.0
sig0.565 cc 2.37e-06p 0.002097p 0.167466p 0.0 0.742800p 0.0 1.004088p 1.010399p 2.26e-06p 1.010412p 8.64e-10p
0.0
rc 2.57e-06p 0.002273p 0.181468p 0.000561o 0.805097j 0.034088o 1.036821f 1.043361d 2.34e-06p 1.043375d 8.95e-10p
0.0
pu241t xi 0.0 0.0 0.0 0.0 0.428019l 0.0 0.104516k 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.607189j 0.0 0.732295i 0.755607f 0.0 0.0 0.0 0.0
zp 34.94 ri 3.16e-06p 0.002866p 0.185954p 0.0 0.436826l 0.0 0.107532k 0.001468p 2.05e-07p 8.75e-07p 2.05e-11p 0.0
sig0.544 cc 3.10e-06p 0.002809p 0.173760p 0.0 0.608466p 0.0 0.716246p 0.717621p 1.92e-07p 0.717622p 1.92e-11p
0.0
rc 3.16e-06p 0.002869p 0.187551o 0.000672o 0.624696i 0.034998l 0.751359g 0.752827f 2.05e-07p 0.752828f 2.05e-11p
0.0
u233t xi 0.0 0.0 0.324602j 0.0 1.704346f 0.0 1.844119g 0.074111l 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.197346i 0.0 4.050046i 3.994362e 0.0 0.0 0.0 0.0
zp 35.09 ri 3.59e-06p 0.003262p 0.328450p 0.0 1.725910f 0.0 1.858550g 0.074990l 6.77e-06p 2.89e-05p 1.34e-09p 0.0
sig0.555 cc 7.89e-06p 0.007173p 0.725483p 0.0 2.844810p 0.0 3.896021p 3.914362p 6.53e-06p 3.914397p 1.29e-09p
0.0
rc 3.59e-06p 0.003266p 0.330267p 0.001057o 2.056613i 0.080254k 3.943180f 4.018169e 6.77e-06p 4.018205e 1.34e-09p
0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 7.393273i 0.0 6.808843h 0.0 0.0 7.083856i 0.0 0.0
zp 34.44 ri 0.000837p 0.230483p 3.908635n 0.0 2.656806m 0.0 0.154164p 0.000243p 3.06e-09p 1.50e-08p 0.0 0.0
sig0.524 cc 0.000832p 0.230046p 4.015113p 0.0 6.681327p 0.0 6.671613p 6.671865p 3.18e-09p 6.671865p 0.0 0.0
rc 0.000837p 0.231319p 4.037342m 0.021651m 6.708208i 0.381367m 7.073350g 7.073593g 3.06e-09p 7.073593g 0.0
0.0

ge half life from 80eng2; as, se, br, kr half lives from 89wal1; sr half life 90bur1.

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    mass number     88              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide       32 ge g   33 as g   34 se g   35 br d   35 br g   36 kr d   36 kr g   37 rb g   38 sr g   39 y  g   40 zr g
half life     0.129s    0.135s    1.50 s    0.41 s    16.4 s    4.38 s    2.84 h    17.7 m    stable    106.6d    85. d
lambda       5.373e+00 5.134e+00 4.621e-01 1.691e+00 4.227e-02 1.583e-01 6.780e-05 6.527e-04       0.0 7.526e-08 9.438e-08
 z - 1 g    100.0000  100.0000  100.0000       0.0   99.0340       0.0   93.7400  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0    7.7000  100.0000   14.0000  100.0000       0.0       0.0       0.0       0.0
 u235t   xi      0.0       0.0  0.268719i      0.0  1.385897g      0.0  1.752865h 0.022372j      0.0       0.0       0.0
         xc      0.0       0.0  0.393461l      0.0  1.833468h      0.0  3.533492h 3.461760j 3.574553c      0.0       0.0
zp 35.28 ri 5.20e-05p 0.124307p 0.267893i      0.0  1.387523f      0.0  1.732335h 0.022303j 7.68e-05p 1.70e-09p      0.0
sig0.531 cc 4.16e-07p 0.000995p 0.360677p      0.0  1.827080p      0.0  3.389757p 3.416557p 3.416630p 1.63e-09p      0.0
         rc 5.20e-05p 0.124359o 0.392253l 0.003750n 1.779737g 0.151967j 3.552626f 3.574929e 3.575006c 1.70e-09p      0.0
 u235f   xi      0.0       0.0       0.0       0.0  1.839652i      0.0  1.382225j 0.059664p      0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  2.018646i      0.0  3.442605f 3.590483i 3.493573c      0.0       0.0
zp 35.18 ri 1.38e-06p 0.002012p 0.446700p      0.0  1.669291i      0.0  1.247328i 0.054786p 3.64e-05p 7.28e-10p      0.0
sig0.537 cc 1.54e-06p 0.002251p 0.515268p      0.0  2.072564p      0.0  3.268303p 3.285398p 3.285436p 7.44e-10p      0.0
         rc 1.38e-06p 0.002014p 0.448714p 0.009389o 2.123060i 0.202125m 3.439610f 3.494395e 3.494432c 7.28e-10p      0.0
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0  1.326512m      0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  3.269017g      0.0  3.442200k      0.0       0.0
zp 35.42 ri 7.20e-06p 0.004317p 0.254373p      0.0  1.629558m      0.0  1.322590l 0.154700p 0.001826p 2.09e-06p 2.16e-10p
sig0.634 cc 6.87e-06p 0.004124p 0.246751p      0.0  1.849969p      0.0  3.100243p 3.247441p 3.249181p 1.99e-06p 2.06e-10p
         rc 7.20e-06p 0.004324p 0.258697p 0.005839o 1.891594l 0.177716m 3.273486g 3.428186i 3.430015i 2.09e-06p 2.16e-10p
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  1.374569o      0.0  2.048512g 2.278543i 2.004536e      0.0       0.0
zp 34.77 ri 4.15e-05p 0.016610p 0.541896p      0.0  0.899694o      0.0  0.367637p 0.002021p 1.16e-06p 2.09e-11p      0.0
sig0.557 cc 4.78e-05p 0.019182p 0.643418p      0.0  1.628752p      0.0  1.718162p 1.719724p 1.719725p 1.71e-11p      0.0
         rc 4.15e-05p 0.016652p 0.558547o 0.025975o 1.478820m 0.272126m 2.026009g 2.028031f 2.028032e 2.09e-11p      0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0  0.598877l      0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.203302f      0.0  1.952144i      0.0       0.0
zp 35.03 ri 3.20e-05p 0.012541p 0.403129p      0.0  1.060336m      0.0  0.557197k 0.015017p 4.38e-05p 9.43e-09p      0.0
sig0.605 cc 3.03e-05p 0.011904p 0.393571p      0.0  1.600605p      0.0  1.929117p 1.944252p 1.944296p 9.50e-09p      0.0
         rc 3.20e-05p 0.012573p 0.415702p 0.014472o 1.486495k 0.209905m 2.160542f 2.175559f 2.175603f 9.43e-09p      0.0
 pu239t  xi      0.0       0.0  0.043967p      0.0  0.486500i      0.0  0.747124i 0.059955o      0.0       0.0       0.0
```

xc 0.0 0.0 0.0 0.0 0.534691i 0.0 1.362057f 1.252382k 1.319867e 0.0 0.0
zp 35.63 ri 2.72e-08p 0.000102p 0.042028p 0.0 0.465597h 0.0 0.747093h 0.057311o 0.000679p 1.79e-07p 4.86e-12p
sig0.564 cc 2.27e-08p 8.52e-05p 0.035139p 0.0 0.440561p 0.0 1.221617p 1.284213p 1.284891p 1.79e-07p 4.85e-12p
rc 2.72e-08p 0.000102p 0.042130p 0.000388o 0.507708i 0.048781j 1.271799f 1.329110f 1.329789d 1.79e-07p 4.86e-12p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.412662g 0.0 1.329340c 0.0 0.0
zp 35.52 ri 7.56e-08p 0.000193p 0.057907p 0.0 0.486159p 0.0 0.731105n 0.041381p 0.000339p 6.45e-08p 1.32e-12p
sig0.565 cc 7.40e-08p 0.000189p 0.056898p 0.0 0.532664p 0.0 1.240401p 1.282842p 1.283190p 6.62e-08p 1.36e-12p
rc 7.56e-08p 0.000193p 0.058100p 0.000833o 0.544531o 0.046451o 1.288000g 1.329381e 1.329720c 6.45e-08p 1.32e-12p
pu241t xi 0.0 0.0 0.0 0.0 0.498371m 0.0 0.413648k 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.588078k 0.0 1.010421i 0.0 0.989167e 0.0 0.0
zp 35.33 ri 1.09e-07p 0.000347p 0.069247p 0.0 0.488706k 0.0 0.393616k 0.014198p 3.61e-05p 2.47e-09p 0.0
sig0.544 cc 1.09e-07p 0.000346p 0.069272p 0.0 0.563860p 0.0 0.916512p 0.930148p 0.930183p 2.37e-09p 0.0
rc 1.09e-07p 0.000347p 0.069594p 0.001472o 0.559100k 0.058351k 0.976067h 0.990265g 0.990301e 2.47e-09p 0.0
u233t xi 0.0 0.0 0.107860k 0.0 1.155581g 0.0 3.780355f 0.336860j 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.331057j 0.0 5.254114i 0.0 5.465199e 0.0 0.0
zp 35.49 ri 1.06e-07p 0.000245p 0.109172p 0.0 1.172349g 0.0 3.835198f 0.340957p 0.001084p 1.05e-07p 1.79e-12p
sig0.555 cc 2.69e-07p 0.000619p 0.276205p 0.0 1.977971p 0.0 5.209561p 5.331470p 5.332516p 1.01e-07p 1.73e-12p
rc 1.06e-07p 0.000245p 0.109417p 0.001321o 1.282030i 0.086182k 5.123155f 5.464112j 5.465196e 1.05e-07p 1.79e-12p
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 7.220153f 0.0 7.413180i 0.0 0.0
zp 34.84 ri 3.55e-05p 0.032329p 2.209260n 0.0 3.819949n 0.0 0.846941p 0.004535p 1.60e-06p 8.07e-12p 0.0
sig0.524 cc 3.53e-05p 0.032164p 2.227730p 0.0 6.012597p 0.0 6.510695p 6.515141p 6.515143p 7.92e-12p 0.0
rc 3.55e-05p 0.032365p 2.241625m 0.053186o 6.093106m 0.697252m 7.255869f 7.260405f 7.260406f 8.08e-12p 0.0

ge, as half lives from 80eng2; se, br, kr, rb half lives from 89wal1.

1

mass number 89 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 33 as g 34 se g 35 br d 35 br g 36 kr d 36 kr g 37 rb g 38 sr g 39 y m 39 y g 40 zr g 41 nb g
half life 0.121s 0.41 s 0.427s 4.37 s 1.80 s 3.15 m 15.4 m 50.52d 15.7 s stable 78.5 h 2.0 h
lambda 5.728e+00 1.691e+00 1.623e+00 1.586e-01 3.851e-01 3.667e-03 7.502e-04 1.588e-07 4.415e-02 0.0 2.453e-06
9.627e-05
z - 1 g 100.0000 100.0000 0.0 92.3000 0.0 86.0000 100.0000 100.0000 0.0100 99.9900 -0.2000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -99.8000 0.0

z - 0 m 0.0 0.0 9.1320 100.0000 24.6000 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0
u235t xi 0.0 0.047959k 0.0 1.036988h 0.0 3.377895f 0.201965h 0.017307p 0.0 0.0 0.0 0.0
xc 0.000152n 0.108276n 0.0 1.046458i 0.0 4.654419i 4.697238i 4.743351f 0.0 4.817748f 0.0 0.0
zp 35.69 ri 0.000154p 0.048552k 0.0 1.039341h 0.0 3.438690e 0.204556h 0.017521p 1.88e-07p 4.40e-08p 2.07e-12p 0.0
sig0.531 cc 6.76e-05p 0.068752p 0.0 1.335332p 0.0 4.323672p 4.554783p 4.556573p 0.000456p 4.556573p 1.95e-12p
0.0
rc 0.000154n 0.048706k 0.001160o 1.085456g 0.138818k 4.511000e 4.715556e 4.733077d 0.000473d 4.733077d 2.07e-12p
0.0
u235f xi 0.0 0.0 0.0 1.344786i 0.0 2.679684k 0.415302p 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.292523f 0.0 4.350650e 0.0 4.522173h 0.0 0.0
zp 35.57 ri 0.000210p 0.121719p 0.0 1.328862n 0.0 2.557548j 0.389929p 0.000832p 6.74e-08p 1.38e-08p 0.0 0.0
sig0.537 cc 0.000209p 0.121584p 0.0 1.617527p 0.0 4.018871p 4.162469p 4.163284p 0.000416p 4.163284p 0.0 0.0
rc 0.000210p 0.121929p 0.002178o 1.443581m 0.183921k 3.982948f 4.372877k 4.373709e 0.000437e 4.373709e 0.0
0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 2.537166m 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.563985g 0.0 4.134889h 0.0 4.033827j 0.0 0.0
zp 35.83 ri 0.000500p 0.075335p 0.0 1.198140n 0.0 2.279147k 0.591959p 0.017643p 4.63e-05p 5.72e-06p 1.45e-08p
0.0
sig0.634 cc 0.000492p 0.074610p 0.0 1.248056p 0.0 3.377375p 3.964761p 3.982251p 0.000445p 3.982303p 1.47e-08p
0.0
rc 0.000500p 0.075835p 0.001316o 1.269451m 0.142559o 3.513433g 4.105393k 4.123036g 0.000459k 4.123088g 1.45e-08p
0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.096474o 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.710571f 2.733944i 2.753202f 0.0 2.697888h 0.0 0.0
zp 35.18 ri 0.003466p 0.333872p 0.0 1.622687n 0.0 0.646127o 0.088553o 4.63e-05p 2.68e-09p 5.49e-10p 0.0 0.0
sig0.557 cc 0.003325p 0.323665p 0.0 1.858032p 0.0 2.387170p 2.409661p 2.409704p 0.000241p 2.409704p 0.0 0.0
rc 0.003466p 0.337338p 0.009716o 1.943766m 0.354686m 2.672451f 2.761004f 2.761050e 0.000276e 2.761050e 0.0
0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 1.397379l 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.791881f 2.833928h 3.041421g 0.0 2.729429i 0.0 0.0
zp 35.43 ri 0.002165p 0.185784p 0.0 1.321189m 0.0 1.262896k 0.111077p 0.000920p 4.85e-07p 6.00e-08p 2.39e-11p
0.0
sig0.605 cc 0.002087p 0.181231p 0.0 1.568083p 0.0 2.541185p 2.649670p 2.650544p 0.000266p 2.650544p 2.36e-11p
0.0
rc 0.002165p 0.187948p 0.004682o 1.499347m 0.256882m 2.809216f 2.920293g 2.921213g 0.000293g 2.921214f 2.39e-11p
0.0

pu239t xi 0.0 0.005187p 0.0 0.346709i 0.0 1.153061h 0.262610l 0.015560p 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.368063i 0.0 1.489200f 0.0 1.719242g 0.0 1.733276i 0.0 0.0
zp 36.03 ri 4.55e-06p 0.005035p 0.0 0.343794h 0.0 1.100264f 0.254910p 0.015104p 6.95e-06p 1.63e-06p 6.57e-10p 0.0
sig0.564 cc 5.66e-06p 0.006269p 0.0 0.266131p 0.0 1.377597p 1.673176p 1.681369p 0.000175p 1.681378p 6.59e-10p
0.0
rc 4.55e-06p 0.005039p 0.000111n 0.348556h 0.052775k 1.452797e 1.707707l 1.722811g 0.000179i 1.722819f 6.57e-10p
0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.473174h 1.873415k 1.743821f 0.0 1.654575h 0.0 0.0
zp 35.93 ri 1.28e-05p 0.010804p 0.0 0.321592p 0.0 1.136832l 0.269492n 0.005053p 3.11e-06p 6.37e-07p 2.28e-10p 0.0
sig0.565 cc 1.31e-05p 0.011016p 0.0 0.337713p 0.0 1.464769p 1.690644p 1.695658p 0.000173p 1.695662p 2.33e-10p
0.0
rc 1.28e-05p 0.010817p 0.000136o 0.331712p 0.028697o 1.450802h 1.720294h 1.725346f 0.000176g 1.725350f 2.28e-10p
0.0
pu241t xi 0.0 0.0 0.0 0.387459l 0.0 0.701400k 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.407328l 0.0 1.124417i 0.0 1.235518h 0.0 1.240674i 0.0 0.0
zp 35.71 ri 2.93e-05p 0.019102p 0.0 0.398528k 0.0 0.725840j 0.084251p 0.000699p 1.33e-07p 3.12e-08p 2.18e-12p 0.0
sig0.544 cc 2.69e-05p 0.017584p 0.0 0.384179p 0.0 1.094676p 1.172663p 1.173310p 0.000117p 1.173310p 2.02e-12p
0.0
rc 2.93e-05p 0.019132p 0.000870n 0.417056j 0.063614l 1.148122h 1.232373j 1.233071h 0.000123h 1.233072g 2.19e-12p
0.0
u233t xi 0.0 0.017475o 0.0 0.602504i 0.0 4.708923f 1.019105h 0.111268l 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.809622m 0.0 5.534258h 0.0 6.280558g 0.0 6.363463f 0.0 0.0
zp 35.89 ri 1.57e-05p 0.017143p 0.0 0.599302i 0.0 4.646153f 0.999776n 0.109158l 4.89e-06p 1.15e-06p 2.69e-10p 0.0
sig0.555 cc 4.12e-05p 0.045099p 0.0 1.193333p 0.0 5.542282p 6.187820p 6.201010p 0.000625p 6.201016p 2.68e-10p
0.0
rc 1.57e-05p 0.017159p 0.000526o 0.615666i 0.055587m 5.231213f 6.230989i 6.340147f 0.000639g 6.340153e 2.69e-10p
0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 7.243293k 7.489016h 0.0 0.000000 0.0 0.0
zp 35.24 ri 0.003250p 0.687414p 0.0 4.328851n 0.0 2.450930n 0.055819p 6.86e-05p 1.39e-09p 2.84e-10p 0.0 0.0
sig0.524 cc 0.003191p 0.678259p 0.0 4.880951p 0.0 6.735892p 6.790708p 6.790774p 0.000679p 6.790774p 0.0 0.0
rc 0.003250p 0.690664o 0.013534o 4.979868m 0.678387m 7.412003k 7.467822i 7.467891h 0.000747h 7.467891g 0.0
0.0

as half life from 80eng2; se, br, kr, rb, sr half lives 89wal1.

mass number 90 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 34 se g 35 br d 35 br g 36 kr d 36 kr g 37 rb m 37 rb g 38 sr g 39 y g 40 zr g 41 nb g 42 mo g
half life 0.427s 0.27s 1.9 s 0.60 s 32.3 s 4.3 m 2.6 m 29.1 y 2.67 d stable 14.59h 5.7 h
lambda 1.623e+00 2.567e+00 3.648e-01 1.155e+00 2.146e-02 2.687e-03 4.443e-03 7.553e-10 3.005e-06 0.0 1.320e-05
3.378e-05
z - 1 g 100.0000 0.0 90.8680 0.0 75.4000 11.0000 89.0000 100.0000 100.0000 100.0000 -3.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 97.4000 0.0 0.0 -97.0000 0.0
z - 0 m 0.0 24.4380 100.0000 18.1000 100.0000 0.0 2.6000 0.0 0.0 0.0 0.0 0.0
u235t xi 0.0 0.0 0.547360i 0.0 4.421017e 0.712587g 0.139794i 0.074335i 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.594538j 0.0 5.006424h 0.0 4.584957i 5.761129d 0.0 5.869375f 0.0 0.0
zp 36.08 ri 0.012703p 0.0 0.552592i 0.0 4.397258e 0.706670p 0.138633i 0.073718i 8.97e-06p 4.19e-10p 0.0 0.0
sig0.531 cc 0.010415p 0.0 0.483400p 0.0 4.999867p 1.145463p 4.619344p 5.761706p 5.761715p 5.761715p 0.0 0.0
rc 0.012703p 0.000163o 0.564298h 0.040585l 4.863323e 1.241636o 4.499273e 5.782344d 5.782353d 5.782353d 0.0
0.0
u235f xi 0.0 0.0 0.631448j 0.0 3.440647i 0.0 0.0 0.029832o 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.646364l 0.0 4.077067i 0.0 0.0 5.481219c 0.0 5.331014f 0.0 0.0
zp 35.97 ri 0.023855p 0.0 0.725722j 0.0 4.024352h 0.689367p 0.128502p 0.034316o 4.59e-06p 1.78e-10p 0.0 0.0
sig0.537 cc 0.021445p 0.0 0.668403p 0.0 4.904849p 0.988048p 4.482869p 5.459728p 5.459732p 5.459732p 0.0 0.0
rc 0.023855p 0.000234o 0.747632i 0.024796m 4.612863g 1.196782n 4.265066h 5.465048c 5.465052c 5.465052c 0.0
0.0
u235he xi 0.0 0.0 0.0 0.0 2.437670m 0.0 0.0 0.0 0.001006l 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.597820h 0.0 4.587894i 0.0 0.0
zp 36.24 ri 0.014406p 0.0 0.566044p 0.0 2.495957n 1.352726n 0.168175p 0.112385p 0.001014p 6.46e-07p 4.32e-11p
0.0
sig0.634 cc 0.014194p 0.0 0.570733p 0.0 2.962879p 1.657143p 2.844582p 4.568154p 4.569010p 4.569011p 4.26e-11p
0.0
rc 0.014406p 0.000355o 0.579489o 0.026992o 2.959884m 1.678313m 2.846108l 4.593170h 4.594184h 4.594185g 4.32e-11p
0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.770761k 0.0 0.0 3.250218e 0.0 3.189365n 0.0 0.0
zp 35.57 ri 0.106389p 0.0 1.340523n 0.0 1.850056m 0.140579p 0.028079p 0.001122p 2.43e-07p 3.50e-12p 0.0 0.0
sig0.557 cc 0.104320p 0.0 1.410748p 0.0 2.964228p 0.446386p 2.674413p 3.110177p 3.110177p 3.110177p 0.0 0.0
rc 0.106389p 0.004599o 1.441796m 0.139978o 3.077148j 0.479065n 2.779197j 3.246928e 3.246928e 3.246928e 0.0
0.0

u238he xi 0.0 0.0 0.0 0.0 1.875023l 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.872376i 0.0 0.0 3.264940h 0.0 3.044219i 0.0 0.0
zp 35.82 ri 0.051266p 0.0 0.995527n 0.0 1.877112j 0.386192p 0.047804p 0.009214p 1.50e-05p 1.85e-09p 0.0 0.0
sig0.605 cc 0.049523p 0.0 1.007328p 0.0 2.680007p 0.673722p 2.449556p 3.114788p 3.114804p 3.114804p 0.0 0.0
rc 0.051266p 0.002134o 1.044245m 0.081864o 2.746337i 0.688289p 2.509939i 3.189547h 3.189562h 3.189562g 0.0
0.0
pu239t xi 0.0 0.0 0.228341k 0.0 1.136311i 0.631586i 0.147863i 0.101392o 0.0 0.0 0.0 0.0
xc 0.001273n 0.0 0.185327n 0.0 1.323355g 0.0 0.0 2.103425f 0.0 0.0 0.0 0.0
zp 36.43 ri 0.001216p 0.0 0.213429k 0.0 1.096928g 0.603612p 0.141314p 0.096901o 0.000193p 6.01e-08p 0.0 0.0
sig0.564 cc 0.000807p 0.0 0.086993p 0.0 1.337775p 0.732498p 1.346967p 2.131918p 2.132119p 2.132119p 0.0 0.0
rc 0.001216n 0.0 0.214534j 0.003591n 1.262278f 0.742462p 1.284045l 2.104104f 2.104297f 2.104298f 0.0 0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.048071c 0.0 2.149405k 0.0 0.0
zp 36.33 ri 0.001491p 0.0 0.115272p 0.0 1.328740n 0.481811p 0.098697p 0.045272p 9.74e-05p 2.35e-08p 0.0 0.0
sig0.565 cc 0.001490p 0.0 0.116523p 0.0 1.417250p 0.637303p 1.376523p 2.042485p 2.042580p 2.042580p 0.0 0.0
rc 0.001491p 2.68e-05o 0.116654p 0.005922o 1.422619m 0.638299p 1.381423m 2.048399c 2.048497c 2.048497c 0.0
0.0
pu241t xi 0.0 0.0 0.249186m 0.0 0.930957j 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.009344n 0.0 0.249186m 0.0 1.208685h 0.0 0.0 1.536029e 0.0 1.530743k 0.0 0.0
zp 36.10 ri 0.009528p 0.0 0.249861l 0.0 1.004857i 0.257129p 0.060144p 0.008504p 6.97e-06p 3.35e-10p 0.0 0.0
sig0.544 cc 0.002827p 0.0 0.189953p 0.0 1.222671p 0.387204p 1.157522p 1.543037p 1.543044p 1.543044p 0.0 0.0
rc 0.009528n 6.27e-05o 0.258582k 0.010210o 1.210038g 0.390233p 1.147224j 1.535815e 1.535822e 1.535822e 0.0
0.0
u233t xi 0.0 0.0 0.195954l 0.0 3.908328f 1.887062f 0.442973f 0.336254j 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.348284n 0.0 4.409891h 0.0 0.0 6.852885f 0.0 6.680088g 0.0 0.0
zp 36.29 ri 0.005757p 0.0 0.220730l 0.0 3.948002f 1.883990n 0.442252p 0.335707j 0.000141p 3.02e-08p 0.0 0.0
sig0.555 cc 0.005540p 0.0 0.334578p 0.0 5.200332p 1.729636p 4.944801p 6.753626p 6.753767p 6.753767p 0.0 0.0
rc 0.005757p 0.0 0.225961l 0.008606o 4.126983f 2.337958n 4.176054k 6.788931f 6.789072f 6.789072e 0.0 0.0
th232f xi 0.0 0.0 0.0 0.0 5.744778k 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 8.067767j 0.0 0.0 7.731394h 0.0 7.499521m 0.0 0.0
zp 35.64 ri 0.148200p 0.0 2.619686n 0.0 5.338736k 0.267289p 0.055100p 0.001761p 1.43e-07p 0.0 0.0 0.0
sig0.524 cc 0.145997p 0.0 2.714356p 0.0 7.415097p 1.091887p 6.684402p 7.749709p 7.749709p 7.749709p 0.0 0.0
rc 0.148200p 0.003300o 2.757653m 0.181905o 7.599911j 1.103279n 6.847706j 7.924061h 7.924062h 7.924062h 0.0
0.0

kr-rb branching from 70bal1; se half lives from 80eng2; br, kr, rb, sr, y half lives from 89wal1.

1

mass number 91 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 34 se g 35 br g 36 kr d 36 kr g 37 rb d 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb g 42 mo g
half life 0.27s 0.54 s 0.360s 8.6 s 1.84 s 58.0 s 4.53 s 9.5 h 58.5 d stable long 15.5 m
lambda 2.567e+00 1.284e+00 1.925e+00 8.060e-02 3.767e-01 1.195e-02 1.530e-01 2.027e-05 1.371e-07 0.0 0.0 7.453e-04
z - 1 g 100.0000 75.5620 0.0 81.9000 0.0 100.0000 0.0 100.0000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 42.7300 100.0000 0.0330 100.0000 0.0100 100.0000 0.0 0.0 0.0 0.0
u235t xi 0.000673p 0.214332k 0.0 3.192596e 0.0 2.253952e 0.0 0.252792i 0.0 0.0 0.0 0.0
xc 0.000673p 0.340173n 0.0 3.359020i 0.0 5.289877h 0.0 5.889142f 5.917498f 5.770960d 0.0 0.0
zp 36.48 ri 0.000666p 0.223720k 0.0 3.156204d 0.0 2.225079e 0.0 0.250501i 0.000330p 4.42e-08p 0.0 0.0
sig0.531 cc 0.000671p 0.151004p 0.0 3.507340p 0.0 5.637572p 0.0 5.828675p 5.829004p 5.829004p 0.0 0.0
rc 0.000666p 0.224223k 0.011458o 3.351301d 0.000553k 5.576933d 0.000482i 5.827915d 5.828245c 5.828245c 0.0 0.0
u235f xi 0.0 0.119329o 0.0 2.456184i 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 2.768190h 0.0 0.0 0.0 5.399129g 5.257235h 5.742115c 0.0 0.0
zp 36.37 ri 0.000959p 0.136233p 0.0 2.916229h 0.0 2.009859n 0.0 0.685196p 0.000172p 2.01e-08p 0.0 0.0
sig0.537 cc 0.001699p 0.242714p 0.0 3.841583p 0.0 5.588623p 0.0 5.704142p 5.704302p 5.704302p 0.0 0.0
rc 0.000959p 0.136958p 0.008969m 3.037367g 0.000456l 5.047681k 0.000418m 5.733295f 5.733468e 5.733468c 0.0 0.0
u235he xi 0.0 0.0 0.0 1.747473m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 1.720998j 0.0 0.0 0.0 4.810396i 4.768378k 4.876276j 0.0 0.0
zp 36.66 ri 0.001454p 0.148042p 0.0 1.649055j 0.0 2.522734n 0.0 0.506604p 0.009072p 1.85e-05p 3.42e-09p 0.0
sig0.634 cc 0.001580p 0.162090p 0.0 1.906159p 0.0 4.359368p 0.0 4.798307p 4.807238p 4.807256p 3.33e-09p 0.0
rc 0.001454p 0.149141p 0.012957o 1.784159i 0.000277l 4.307171l 0.000374m 4.814149h 4.823220h 4.823239h 3.42e-09p 0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.852138n 0.0 0.0 0.0 1.29e-09n 0.0 0.0
xc 0.0 0.0 0.0 3.377613i 0.0 0.0 0.0 3.858629g 3.733490i 4.304820g 0.0 0.0
zp 35.96 ri 0.018817p 0.759040p 0.0 2.616964k 0.0 0.675427n 0.0 0.011672p 8.88e-06p 1.27e-09n 0.0 0.0
sig0.557 cc 0.018833p 0.773929p 0.0 3.313253p 0.0 3.925326p 0.0 3.937236p 3.937245p 3.937245p 0.0 0.0
rc 0.018817p 0.773258o 0.100799o 3.351061i 0.000875k 4.027363h 0.000416k 4.039451f 4.039460f 4.039460f 0.0 0.0
u238he xi 0.0 0.0 0.0 2.036181k 0.0 0.0 0.0 0.0 0.0 1.12e-09n 0.0 0.0

xc 0.0 0.0 0.0 2.502040h 0.0 0.0 0.0 3.988886g 3.547060h 3.996413i 0.0 0.0
zp 36.22 ri 0.008733p 0.445677p 0.0 2.092670j 0.0 1.276354n 0.0 0.069467p 0.000310p 1.13e-09n 2.87e-12p 0.0
sig0.605 cc 0.008837p 0.457912p 0.0 2.564438p 0.0 3.742394p 0.0 3.807860p 3.808170p 3.808170p 2.75e-12p 0.0
rc 0.008733p 0.452276p 0.057478o 2.520562h 0.000547k 3.797463k 0.000357m 3.867287g 3.867597f 3.867597f 2.88e-12p
0.0
pu239t xi 0.0 0.019929p 0.0 0.690139g 0.0 1.382885i 0.0 0.388625l 0.002491p 3.71e-06n 0.0 0.0
xc 0.0 0.016766n 0.0 0.723186g 0.0 0.0 0.0 2.458918f 2.459625g 2.495661d 0.0 0.0
zp 36.83 ri 0.0 0.019837p 0.0 0.696913f 0.0 1.383417n 0.0 0.386091l 0.002480p 3.69e-06n 8.18e-11p 0.0
sig0.564 cc 5.19e-05p 0.021491p 0.0 0.779123p 0.0 2.161990p 0.0 2.481420p 2.484837p 2.484840p 8.22e-11p 0.0
rc 0.0 0.019837n 0.001054o 0.714214f 0.000103k 2.097734l 0.000192j 2.484017f 2.486497e 2.486501d 8.18e-11p 0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.563246h 2.445254h 2.518019e 0.0 0.0
zp 36.74 ri 0.000110p 0.032647p 0.0 0.938617p 0.0 1.294835n 0.0 0.251894p 0.001969p 1.39e-06p 2.94e-11p 0.0
sig0.565 cc 0.000109p 0.032583p 0.0 0.961760p 0.0 2.261406p 0.0 2.512133p 2.514148p 2.514149p 2.98e-11p 0.0
rc 0.000110p 0.032730p 0.002047o 0.967471o 0.000162o 2.262467l 0.000203m 2.514565g 2.516533f 2.516535d 2.94e-11p
0.0
pu241t xi 0.0 0.0 0.0 0.861185j 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.933039h 0.0 0.0 0.0 1.844267g 1.719869h 1.878552e 0.0 0.0
zp 36.49 ri 0.000256p 0.056202p 0.0 0.924665h 0.0 0.820350p 0.0 0.067004p 0.000182p 3.24e-08p 0.0 0.0
sig0.544 cc 0.000266p 0.058471p 0.0 1.023067p 0.0 1.794010p 0.0 1.857832p 1.858011p 1.858011p 0.0 0.0
rc 0.000256p 0.056396p 0.005346o 0.976199h 0.000205k 1.796754n 0.000196m 1.863954g 1.864136f 1.864136e 0.0
0.0
u233t xi 0.0 0.048474m 0.0 1.931352f 0.0 3.425084f 0.0 1.133540h 0.0 0.0 0.0 0.0
xc 0.0 0.047435p 0.0 2.100180h 0.0 0.0 0.0 6.458549g 6.398740f 6.504190e 0.0 0.0
zp 36.69 ri 0.0 0.047542m 0.0 1.911651f 0.0 3.418015n 0.0 1.111440h 0.002834p 1.56e-06p 1.66e-11p 0.0
sig0.555 cc 0.000325p 0.087236p 0.0 2.892552p 0.0 5.905371p 0.0 6.472706p 6.475613p 6.475614p 1.69e-11p 0.0
rc 0.0 0.047542p 0.002461o 1.953050g 0.000250k 5.371314l 0.000368m 6.483122f 6.485956e 6.485958d 1.66e-11p
0.0
th232f xi 0.0 0.0 0.0 5.227903j 0.0 1.152872n 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 6.102867h 0.0 0.0 0.0 7.328225g 7.487337h 7.363482i 0.0 0.0
zp 36.04 ri 0.013506p 0.994906p 0.0 5.236389i 0.0 1.197172m 0.0 0.020803p 8.45e-06p 1.51e-10p 0.0 0.0
sig0.524 cc 0.013372p 0.995127p 0.0 6.054178p 0.0 7.258782p 0.0 7.279391p 7.279399p 7.279399p 0.0 0.0
rc 0.013506p 1.005111o 0.084413o 6.143988h 0.001334k 7.342495h 0.000664j 7.363962f 7.363971f 7.363971f 0.0
0.0

y half life from 80eng2; se,br,kr,rb,sr,y half lives from 89wal1.

mass number 92 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 34 se g 35 br g 36 kr d 36 kr g 37 rb d 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb g 42 mo g
half life 0.168s 0.34 s 0.176s 1.84 s 1.29 s 4.48 s 5.86s 2.71 h 3.54 h stable 2.e7y stable
lambda 4.126e+00 2.039e+00 3.938e+00 3.767e-01 5.373e-01 1.547e-01 1.183e-01 7.105e-05 5.439e-05 0.0 1.099e-15
0.0
z - 1 g 100.0000 100.0000 0.0 57.2700 0.0 99.9670 0.0 99.9900 100.0000 100.0000 -100.0000 0.0
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 25.0890 100.0000 2.0100 100.0000 1.3500 100.0000 0.0 0.0 0.0 0.0
u235t xi 0.0 0.027111p 0.0 1.648134g 0.0 3.163875f 0.0 1.096350i 0.072390o 0.012049p 0.0 0.0
xc 0.0 0.0 0.0 1.785060i 0.0 4.977937h 0.0 5.878650h 5.897353i 6.007147d 0.0 0.0
zp 36.89 ri 4.17e-05p 0.026773p 0.0 1.658218g 0.0 3.131955f 0.0 1.075254i 0.071488o 0.011899p 2.27e-11p 0.0
sig0.531 cc 3.00e-05p 0.019295p 0.0 2.041126p 0.0 4.851449p 0.0 5.960938p 5.966222p 5.966226p 2.27e-11p 0.0
rc 4.17e-05p 0.026815p 0.000774o 1.674350g 0.009822k 4.815574e 0.047940i 5.938287e 6.009775d 6.021674c 2.27e-11p
0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 1.220788l 0.0 0.0 0.0 5.558783g 5.772971i 5.849115c 0.0 0.0
zp 36.77 ri 5.51e-05p 0.020929p 0.0 1.353695l 0.0 2.790057n 0.0 1.614247n 0.002899p 1.67e-06p 8.36e-12p 0.0
sig0.537 cc 0.000101p 0.038485p 0.0 2.524216p 0.0 5.053997p 0.0 5.761509p 5.764099p 5.764101p 7.34e-12p 0.0
rc 5.51e-05p 0.020984p 0.016120o 1.381832j 0.007104o 4.178537l 0.050738j 5.843104f 5.846003e 5.846005c 8.36e-12p
0.0
u235he xi 0.0 0.0 0.0 0.801847m 0.0 0.0 0.0 0.0 0.036926n 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.778433k 0.0 0.0 0.0 4.801213k 0.0 5.222779j 0.0 0.0
zp 37.07 ri 0.000115p 0.030301p 0.0 0.825131k 0.0 2.932768n 0.0 1.251804n 0.039529p 0.000340p 1.69e-07p 7.47e-
12p
sig0.634 cc 0.000127p 0.033623p 0.0 0.921172p 0.0 3.801106p 0.0 5.003762p 5.064616p 5.064937p 1.59e-07p 7.04e-
12p
rc 0.000115p 0.030416p 0.000291o 0.842841i 0.004153k 3.779484l 0.032535m 5.063445k 5.102974k 5.103315j 1.69e-07p
7.47e-12p
u238f xi 0.0 0.0 0.0 0.0 0.0 1.026634m 0.0 0.0 0.0 1.34e-07n 0.0 0.0
xc 0.0 0.0 0.0 2.442252j 0.0 0.0 0.0 4.261679g 3.675406n 4.488499i 0.0 0.0
zp 36.36 ri 0.001980p 0.233880p 0.0 2.503275j 0.0 1.474858m 0.0 0.103018p 0.000233p 1.45e-07n 0.0 0.0
sig0.557 cc 0.001995p 0.237613p 0.0 2.666700p 0.0 4.120613p 0.0 4.214190p 4.214419p 4.214419p 0.0 0.0
rc 0.001980p 0.235859p 0.012567o 2.650919i 0.029425k 4.154326j 0.055295m 4.312224g 4.312457g 4.312457g 0.0
0.0

u238he xi 0.0 0.0 0.0 1.656892l 0.0 0.0 0.0 0.0 0.0 6.89e-08n 0.0 0.0
xc 0.0 0.0 0.0 1.765354h 0.0 0.0 0.0 3.833571g 3.838188i 4.141331i 0.0 0.0
zp 36.61 ri 0.000991p 0.133517p 0.0 1.578141i 0.0 1.894640n 0.0 0.263426p 0.003188p 6.48e-08n 2.31e-10p 0.0
sig0.605 cc 0.000962p 0.130559p 0.0 1.611163p 0.0 3.547433p 0.0 3.813856p 3.817225p 3.817229p 2.35e-10p 0.0
rc 0.000991p 0.134509p 0.003297o 1.658471g 0.014683k 3.567247l 0.045850m 3.876166g 3.879353f 3.879353f 2.31e-10p
0.0
pu239t xi 0.0 0.0 0.0 0.303878i 0.0 1.608964i 0.0 1.036554j 0.045199p 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.314418h 0.0 1.985723m 0.0 2.926794h 0.0 3.009177c 0.0 0.0
zp 37.22 ri 2.26e-06p 0.002464p 0.0 0.308680g 0.0 1.607565i 0.0 1.024381i 0.045079p 9.44e-05p 7.20e-09p 0.0
sig0.564 cc 2.71e-06p 0.002955p 0.0 0.375681p 0.0 1.864207p 0.0 2.958049p 2.986599p 2.986693p 7.17e-09p 0.0
rc 2.26e-06p 0.002466p 0.001654o 0.311746g 0.001379k 1.920588h 0.019227j 2.964004g 3.009083h 3.009177c 7.20e-09p
0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.958768h 0.0 3.037796c 0.0 0.0
zp 37.14 ri 5.84e-06p 0.004788p 0.0 0.487127p 0.0 1.542068n 0.0 0.961675o 0.020073p 5.44e-05p 3.29e-09p 0.0
sig0.565 cc 5.85e-06p 0.004808p 0.0 0.491339p 0.0 2.038377p 0.0 2.993498p 3.013319p 3.013372p 3.25e-09p 0.0
rc 5.84e-06p 0.004794p 0.000123o 0.489996p 0.002742o 2.034645m 0.021493m 3.017610g 3.037683e 3.037737c 3.29e-09p
0.0
pu241t xi 0.0 0.0 0.0 0.554189k 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.586388j 0.0 0.0 0.0 2.128540h 2.033354l 2.315180e 0.0 0.0
zp 36.87 ri 1.72e-05p 0.012492p 0.0 0.613303j 0.0 1.333604n 0.0 0.323562p 0.002788p 1.78e-06p 2.69e-11p 0.0
sig0.544 cc 1.74e-05p 0.012658p 0.0 0.638121p 0.0 1.965348p 0.0 2.277132p 2.279950p 2.279952p 2.50e-11p 0.0
rc 1.72e-05p 0.012509p 0.001363o 0.621830i 0.004076k 1.959305l 0.023034m 2.305705h 2.308493g 2.308495e 2.69e-11p
0.0
u233t xi 0.0 0.0 0.0 0.719862h 0.0 2.949769f 0.0 2.697671f 0.161155k 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.798898h 0.0 0.0 0.0 6.427481h 6.776426i 6.549297d 0.0 0.0
zp 37.09 ri 8.64e-06p 0.005752p 0.0 0.750759g 0.0 2.925979n 0.0 2.680638f 0.160150k 6.57e-05p 1.81e-09p 0.0
sig0.555 cc 1.51e-05p 0.010035p 0.0 1.383061p 0.0 4.348213p 0.0 6.492458p 6.518107p 6.518173p 1.81e-09p 0.0
rc 8.64e-06p 0.005760p 0.002085o 0.756143g 0.003116k 3.684987m 0.026972n 6.392229g 6.552379f 6.552445d 1.81e-09p
0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.199740n 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 4.007929j 0.0 0.0 0.0 6.844305h 7.097767h 6.841352i 0.0 0.0
zp 36.44 ri 0.000841p 0.196723p 0.0 3.922598j 0.0 2.563042m 0.0 0.200983n 0.000235p 2.02e-08p 0.0 0.0
sig0.524 cc 0.000880p 0.206638p 0.0 4.226645p 0.0 6.625409p 0.0 6.793842p 6.794068p 6.794068p 0.0 0.0
rc 0.000841p 0.197564p 0.008200o 4.043943i 0.037436k 6.643087i 0.076753m 6.920158g 6.920392g 6.920392g 0.0
0.0

se half life from 80eng2; br, kr, rb, sr, y half lives from 89wal1.

1

mass number 93 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 35 br g 36 kr g 37 rb d 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb m 41 nb g 42 mo g 43 tc g
half life 0.176s 1.29 s 0.210s 5.85 s 2.76 s 7.4 m 10.2 h 1.5e6y 12. y stable 3.e3 y 2.73 h
lambda 3.938e+00 5.373e-01 3.301e+00 1.185e-01 2.511e-01 1.561e-03 1.888e-05 1.465e-14 1.832e-09 0.0 7.327e-39
7.053e-05
z - 1 g 100.0000 74.9110 0.0 97.9900 0.0 98.6500 100.0000 100.0000 95.0000 5.0000 -15.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -85.0000 0.0
z - 0 m 0.0 0.0 6.1300 100.0000 10.0000 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0
u235t xi 0.0 0.476604i 0.0 3.020009e 0.0 2.542376f 0.107590i 0.0 0.0 0.0 0.0 0.0
xc 0.003058n 0.489653i 0.0 3.777038h 0.0 6.373241i 6.377243i 6.357162d 0.0 6.450717g 0.0 0.0
zp 37.30 ri 0.003087p 0.486346h 0.0 3.066936e 0.0 2.569888f 0.108676i 0.000137p 8.49e-10p 3.62e-09p 0.0 0.0
sig0.531 cc 0.001799p 0.511739p 0.0 3.505062p 0.0 6.115504p 6.176880p 6.177013p 5.868162p 6.177013p 0.0 0.0
rc 0.003087n 0.488658h 0.005332o 3.551104d 0.164878j 6.237930d 6.346606d 6.346743c 6.029406c 6.346743c 0.0
0.0
u235f xi 0.0 0.308266j 0.0 3.261654i 0.0 2.316968k 0.208825p 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.373142o 0.0 4.078284i 0.0 5.886888i 5.839896g 6.263122c 0.0 0.0 0.0 0.0
zp 37.16 ri 0.064248p 0.305281j 0.0 3.408274h 0.0 2.144503k 0.206804p 4.93e-05p 2.12e-10p 1.03e-09p 0.0 0.0
sig0.537 cc 0.005326p 0.848440p 0.0 4.120124p 0.0 6.022962p 6.055099p 6.055147p 5.752390p 6.055147p 0.0 0.0
rc 0.064248p 0.353410o 0.003799o 3.758380h 0.195062j 6.047206h 6.254010e 6.254059c 5.941356c 6.254059c 0.0
0.0
u235he xi 0.0 0.207886m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.001138n 0.200430l 0.0 0.0 0.0 0.0 5.196961i 0.0 0.0 0.0 0.0 0.0
zp 37.48 ri 0.001160p 0.205753k 0.0 2.202142n 0.0 2.377790n 0.295726p 0.003843p 5.57e-07p 4.51e-06p 6.06e-10p
0.0
sig0.634 cc 0.004528p 0.309105p 0.0 2.599204p 0.0 4.770245p 5.040321p 5.043977p 4.791779p 5.043982p 5.77e-10p
0.0
rc 0.001160n 0.206623j 0.004517o 2.409128m 0.139794m 4.894189k 5.189915i 5.193758i 4.934071i 5.193763i 6.06e-10p
0.0
u238f xi 0.0 0.0 0.0 2.585075m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 1.418288k 0.0 0.0 0.0 4.200165l 4.742737g 5.251797i 0.0 5.384572i 0.0 0.0
zp 36.75 ri 0.050086p 1.426259k 0.0 2.615419n 0.0 0.545023p 0.003962p 2.17e-06p 6.95e-12p 3.39e-11p 0.0 0.0

sig0.557 cc 0.055203p 1.613320p 0.0 4.155645p 0.0 4.534737p 4.538370p 4.538372p 4.311453p 4.538372p 0.0 0.0
rc 0.050086p 1.463779j 0.045503o 4.095278l 0.324287m 4.909302h 4.913263f 4.913266f 4.667602f 4.913266f 0.0
0.0
u238he xi 0.0 0.728067l 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.741411j 0.0 0.0 0.0 0.0 4.517146g 0.0 0.0 4.832617k 0.0 0.0
zp 37.01 ri 0.013207p 0.720583l 0.0 2.659271n 0.0 0.872810p 0.030636p 8.79e-05p 1.97e-09p 1.60e-08p 0.0 0.0
sig0.605 cc 0.027346p 0.858031p 0.0 3.382511p 0.0 4.197778p 4.226743p 4.226823p 4.015482p 4.226823p 0.0 0.0
rc 0.013207p 0.730476j 0.020708o 3.395772m 0.275650m 4.498389i 4.529025g 4.529113g 4.302658g 4.529113g 0.0
0.0
pu239t xi 0.0 0.065219j 0.0 1.387642i 0.0 2.228367i 0.190134o 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.071967j 0.0 1.467832n 0.0 3.634891j 3.795106k 3.797271c 0.0 0.0 0.0 0.0
zp 37.62 ri 0.006590p 0.063696j 0.0 1.355483i 0.0 2.144142i 0.174056o 0.001686p 9.89e-08p 4.22e-07p 1.14e-11p 0.0
sig0.564 cc 0.000293p 0.097405p 0.0 1.417450p 0.0 3.528840p 3.722794p 3.724486p 3.538262p 3.724487p 1.14e-11p
0.0
rc 0.006590p 0.068632j 0.001486o 1.424222i 0.072696l 3.621833g 3.795889e 3.797575c 3.607696c 3.797575c 1.14e-11p
0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.812917i 3.825738c 0.0 0.0 0.0 0.0
zp 37.55 ri 0.000491p 0.136056p 0.0 1.456910n 0.0 2.036205m 0.150666p 0.001147p 4.79e-08p 2.34e-07p 5.38e-12p
0.0
sig0.565 cc 0.000486p 0.135228p 0.0 1.577084p 0.0 3.606521p 3.756210p 3.757344p 3.569477p 3.757344p 5.32e-12p
0.0
rc 0.000491p 0.136423p 0.001490o 1.592081m 0.067116o 3.673910j 3.824576e 3.825723c 3.634437c 3.825723c 5.38e-12p
0.0
pu241t xi 0.0 0.192371k 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.197604j 0.0 0.0 0.0 0.0 2.760975k 2.978390e 0.0 0.0 0.0 0.0
zp 37.27 ri 0.005405p 0.198710k 0.0 1.503891n 0.0 1.145514m 0.030806p 6.98e-05p 7.44e-10p 3.17e-09p 0.0 0.0
sig0.544 cc 0.001535p 0.256014p 0.0 1.804934p 0.0 2.823600p 2.854434p 2.854498p 2.711774p 2.854498p 0.0 0.0
rc 0.005405p 0.202759i 0.003705o 1.706280m 0.118422m 2.947181i 2.977987g 2.978057e 2.829154e 2.978057e 0.0
0.0
u233t xi 0.008190n 0.148581i 0.0 1.818214h 0.0 4.382728f 0.492233j 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.147777i 0.0 0.0 0.0 0.0 0.0 7.007244e 0.0 6.862128f 0.0 0.0
zp 37.49 ri 0.008308p 0.148777h 0.0 1.844475o 0.0 4.446029n 0.499343p 0.001211p 3.03e-08p 1.29e-07p 2.00e-12p
0.0
sig0.555 cc 0.000957p 0.313287p 0.0 2.945961p 0.0 6.711898p 6.900648p 6.901835p 6.556743p 6.901835p 1.96e-12p
0.0

rc 0.008308p 0.155000h 0.001597p 1.997957n 0.061429p 6.478442n 6.977785n 6.978995e 6.630046e 6.978996d 2.00e-12p 0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 1.805040j 0.0 0.0 0.0 6.184055l 6.746042i 0.0 0.0 6.725508i 0.0 0.0
zp 36.83 ri 0.032690p 1.838375j 0.0 3.822845n 0.0 0.717229p 0.004477p 1.32e-06p 1.28e-12p 6.26e-12p 0.0 0.0
sig0.524 cc 0.033729p 1.922080p 0.0 5.650171p 0.0 6.288106p 6.292244p 6.292245p 5.977633p 6.292245p 0.0 0.0
rc 0.032690p 1.862864i 0.036749o 5.685015l 0.367300m 6.692797j 6.697274i 6.697275i 6.362411i 6.697275h 0.0 0.0

kr, rb half lives from 80eng2; br, kr, rb, sr, y, zr half lives from 89wal1.

1

mass number 94 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 34 se g 35 br g 36 kr g 37 rb d 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb m 41 nb g 42 mo g
half life 0.111s 0.21 s 0.78 s 2.73 s 0.38 s 1.25 m 18.7 m stable 6.26 m 2.0e4y stable
lambda 0.0 6.245e+00 3.301e+00 8.887e-01 2.539e-01 1.824e+00 9.242e-03 6.178e-04 0.0 1.845e-03 1.099e-12 0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 93.8700 0.0 90.0000 100.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.2000
z - 0 m 0.0 0.0 0.0 7.5050 100.0000 8.6200 100.0000 0.0 0.0 0.0 99.8000 0.0
u235t xi 0.0 0.0 0.085922k 0.0 1.552304g 0.0 4.453352f 0.384104j 0.019294p 0.0 0.0 0.0
xc 0.0 0.000164n 0.105958m 0.0 1.623551j 0.0 5.877903l 6.353231i 6.490530d 0.0 0.0 0.0
zp 37.69 ri 1.71e-08p 0.000166p 0.086821k 0.0 1.566581g 0.0 4.512989e 0.389861j 0.019496p 1.01e-07p 1.46e-07p 3.00e-12p
sig0.531 cc 7.74e-09p 7.51e-05p 0.103887p 0.0 1.510826p 0.0 6.158948p 6.415759p 6.418465p 9.98e-08p 2.43e-07p 2.43e-07p
rc 1.71e-08p 0.000166n 0.086988k 0.000540o 1.648776g 0.066408j 6.063296e 6.453157d 6.472653c 1.01e-07p 2.47e-07p 2.47e-07p
u235f xi 0.0 0.0 0.059664m 0.0 1.799876k 0.0 3.470479j 0.487259n 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.899317j 0.0 5.668118i 6.111406h 6.302483c 0.0 0.0 0.0
zp 37.56 ri 1.58e-08p 8.14e-05p 0.061891p 0.0 1.890570i 0.0 3.786907i 0.677421m 0.001291p 3.41e-08p 5.81e-08p 0.0
sig0.537 cc 5.24e-08p 0.000271p 0.205871p 0.0 2.026376p 0.0 6.036110p 6.201675p 6.202904p 3.25e-08p 8.77e-08p 8.77e-08p
rc 1.58e-08p 8.15e-05p 0.061972p 0.001700o 1.950443i 0.079220o 5.621525g 6.298946e 6.300237c 3.41e-08p 9.21e-08p 9.22e-08p
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.094239k 0.0 0.0 0.0

zp 37.89 ri 2.31e-07p 0.000423p 0.073242p 0.0 1.327652n 0.0 2.920083n 0.844439p 0.028792p 2.59e-05p 7.38e-05p 3.21e-08p
sig0.634 cc 2.30e-07p 0.000422p 0.073463p 0.0 1.393235p 0.0 4.178143p 5.022092p 5.050805p 2.59e-05p 9.94e-05p 9.95e-05p
rc 2.31e-07p 0.000423p 0.073666p 0.000880o 1.397682m 0.046398o 4.224395m 5.068834l 5.097625k 2.59e-05p 9.97e-05p 9.98e-05p
u238f xi 0.0 0.0 0.0 0.0 2.224483m 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.624058m 4.494246h 4.723086i 0.0 0.0 0.0
zp 37.14 ri 6.41e-06p 0.007895p 0.734374p 0.0 2.536513n 0.0 1.509951n 0.033897p 6.46e-05p 1.37e-09p 2.34e-09p 0.0
sig0.557 cc 5.91e-06p 0.007289p 0.684748p 0.0 3.386803p 0.0 4.409973p 4.441984p 4.442044p 1.28e-09p 3.45e-09p 3.45e-09p
rc 6.41e-06p 0.007902p 0.742275o 0.009501o 3.242787m 0.147651n 4.576110j 4.610007h 4.610071g 1.37e-09p 3.71e-09p 3.72e-09p
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.613021j 4.891878k 0.0 0.0 0.0
zp 37.40 ri 4.10e-06p 0.004189p 0.333616p 0.0 2.433933n 0.0 1.917874n 0.164754p 0.001270p 1.88e-07p 5.35e-07p 2.92e-11p
sig0.605 cc 4.08e-06p 0.004171p 0.336020p 0.0 2.738012p 0.0 4.396133p 4.560015p 4.561239p 1.81e-07p 6.97e-07p 6.97e-07p
rc 4.10e-06p 0.004193p 0.337808p 0.005465o 2.756498m 0.130251m 4.528973k 4.693728i 4.694997i 1.88e-07p 7.23e-07p 7.23e-07p
pu239t xi 0.0 0.0 0.021650p 0.0 0.711581l 0.0 3.082970i 0.645172l 0.030310p 0.0 0.0 0.0
xc 0.0 0.0 0.024376n 0.0 0.710122n 0.0 3.186059j 4.348269j 4.322908d 0.0 0.0 0.0
zp 38.01 ri 2.28e-07p 0.002711p 0.021530p 0.0 0.704132l 0.0 2.924963i 0.675091l 0.030142p 6.65e-06p 9.57e-06p 1.41e-09p
sig0.564 cc 1.25e-09p 1.49e-05p 0.018708p 0.0 0.626523p 0.0 3.649074p 4.274962p 4.294771p 6.67e-06p 1.62e-05p 1.63e-05p
rc 2.28e-07p 0.002711p 0.024242n 8.37e-05o 0.726972k 0.037345m 3.616582h 4.291673f 4.321816d 6.65e-06p 1.62e-05p 1.62e-05p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.443612k 0.0 4.233176c 0.0 0.0 0.0
zp 37.95 ri 2.46e-09p 2.31e-05p 0.024290p 0.0 0.648120p 0.0 2.861835l 0.727464n 0.014650p 3.73e-06p 6.34e-06p 7.69e-10p
sig0.565 cc 2.60e-09p 2.44e-05p 0.025626p 0.0 0.707256p 0.0 3.669399p 4.189694p 4.204085p 3.66e-06p 9.89e-06p 9.89e-06p

rc 2.46e-09p 2.31e-05p 0.024313p 0.000231o 0.671174o 0.025160o 3.491052j 4.218516e 4.233166c 3.73e-06p 1.01e-05p 1.01e-05p
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.391152e 0.0 0.0 0.0
zp 37.67 ri 1.09e-08p 0.000105p 0.060347p 0.0 1.126854n 0.0 2.084377m 0.192102p 0.001416p 1.20e-07p 1.72e-07p 3.41e-12p
sig0.544 cc 1.09e-08p 0.000104p 0.059951p 0.0 1.174008p 0.0 3.151190p 3.342721p 3.344125p 1.19e-07p 2.89e-07p 2.90e-07p
rc 1.09e-08p 0.000105p 0.060452p 0.000711o 1.184312m 0.047366o 3.197624k 3.389726g 3.391142e 1.20e-07p 2.92e-07p 2.92e-07p
u233t xi 0.0 0.0 0.025851m 0.0 0.585749i 0.0 4.807374f 1.301051g 0.108402l 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.831345e 0.0 0.0 0.0
zp 37.89 ri 2.16e-09p 1.74e-05p 0.026030p 0.0 0.589816p 0.0 4.840752n 1.310084n 0.109154l 2.12e-06p 3.05e-06p 3.14e-10p
sig0.555 cc 4.37e-09p 3.52e-05p 0.052627p 0.0 1.034149p 0.0 6.201862p 6.753819p 6.769214p 2.11e-06p 5.14e-06p 5.15e-06p
rc 2.16e-09p 1.74e-05p 0.026048p 2.40e-05p 0.614291p 0.018486p 5.412100n 6.722185n 6.831339e 2.12e-06p 5.17e-06p 5.18e-06p
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.414747j 5.479907k 5.670098i 0.0 0.0 0.0
zp 37.23 ri 7.06e-07p 0.002477p 0.596963p 0.0 3.102519n 0.0 2.039201n 0.037858p 5.24e-05p 3.89e-10p 6.63e-10p 0.0
sig0.524 cc 6.96e-07p 0.002442p 0.590814p 0.0 3.614471p 0.0 5.344184p 5.381357p 5.381408p 3.75e-10p 1.01e-09p 1.01e-09p
rc 7.06e-07p 0.002478p 0.599441o 0.007444o 3.672659m 0.180530m 5.525124i 5.562982i 5.563034h 3.89e-10p 1.05e-09p 1.05e-09p

br, kr, rb, sr, y half lives from 89wal1.
1

mass number 95 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 36 kr g 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb m 41 nb g 42 mo g 43 tc m 43 tc g 44 ru g
half life 0.78 s 0.377s 0.204s 25.1s 10.3 m 64.02d 3.61 d 34.97d stable 61. d 20.0 h 1.64 h
lambda 8.887e-01 1.839e+00 3.398e+00 2.762e-02 1.122e-03 1.253e-07 2.222e-06 2.294e-07 0.0 1.315e-07 9.627e-06 1.174e-04
z - 1 g 100.0000 92.4950 0.0 91.3800 100.0000 100.0000 1.0000 99.0000 100.0000 -96.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

z - 0 m 0.0 0.0 14.0000 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0 4.0000 0.0
u235t xi 0.0 0.745436i 0.0 4.603048g 1.100454i 0.126607l 2.47e-05p 0.000105p 0.0 0.0 0.0 0.0
xc 0.007157n 0.794458j 0.0 5.068523g 0.0 6.461020e 0.0 0.0 6.518033d 0.0 0.0 0.0
zp 38.09 ri 0.007190p 0.763741h 0.0 4.537602f 1.105481n 0.127253l 2.48e-05p 0.000106p 4.94e-10p 0.0 0.0 0.0
sig0.531 cc 0.010145p 0.657537p 0.0 5.392572p 6.454709p 6.483944p 0.064842p 6.483957p 6.483957p 0.0 0.0 0.0
rc 0.007190n 0.770392h 0.028875m 5.270461e 6.375942i 6.503196e 0.065057e 6.503326e 6.503326c 0.0 0.0 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 5.179434j 6.374688i 6.343538d 0.0 6.296195h 6.445635b 0.0 0.0 0.0
zp 37.96 ri 0.022646p 0.898073p 0.0 4.367262k 1.177958m 0.014775p 9.05e-07p 4.42e-06p 1.50e-10p 0.0 0.0 0.0
sig0.537 cc 0.024333p 0.987499p 0.0 5.617671p 6.379101p 6.393765p 0.063939p 6.393770p 6.393770p 0.0 0.0 0.0
rc 0.022646p 0.919019o 0.032235o 5.239296i 6.417254f 6.432029d 0.064321d 6.432034c 6.432034b 0.0 0.0 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.186090h 0.0 0.0 5.023589k 0.0 0.0 0.0
zp 38.30 ri 0.011728p 0.527309p 0.0 2.706791n 1.802962n 0.151257p 0.000146p 0.001185p 1.14e-06p 9.74e-12p 7.88e-11p
0.0
sig0.634 cc 0.011700p 0.536852p 0.0 3.196926p 5.002420p 5.152874p 0.051677p 5.154223p 5.154225p 9.87e-12p 8.02e-11p
0.0
rc 0.011728p 0.538157o 0.021337o 3.219896m 5.022858j 5.174114g 0.051888g 5.175445g 5.175447g 9.74e-12p 7.92e-11p
0.0
u238f xi 0.0 1.550081m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.188855e 0.0 5.433238i 5.041033e 0.0 0.0 0.0
zp 37.54 ri 0.126577p 1.595647n 0.0 3.182336m 0.223362p 0.001249p 4.70e-08p 2.30e-07p 3.22e-12p 0.0 0.0 0.0
sig0.557 cc 0.168732p 2.283119p 0.0 4.717763p 4.918554p 4.919704p 0.049197p 4.919704p 4.919704p 0.0 0.0 0.0
rc 0.126577p 1.712725n 0.168423m 4.915847j 5.139209g 5.140459e 0.051405e 5.140459d 5.140459d 0.0 0.0 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.073245p 0.0 0.0 0.0 0.0 4.881084f 0.0 5.060509j 5.136966l 0.0 0.0 0.0
zp 37.80 ri 0.072817p 1.443581n 0.0 2.800017n 0.597766p 0.012082p 2.18e-06p 1.77e-05p 2.34e-09p 0.0 0.0 0.0
sig0.605 cc 0.078722p 1.531622p 0.0 4.185875p 4.776408p 4.788330p 0.047885p 4.788350p 4.788350p 0.0 0.0 0.0
rc 0.072817p 1.510933m 0.101244o 4.281952l 4.879718h 4.891800f 0.048920f 4.891820f 4.891820f 0.0 0.0 0.0
pu239t xi 0.0 0.616476m 0.0 2.713010i 1.742698j 0.130340p 0.000138p 0.000587p 0.0 0.0 0.0 0.0
xc 0.001158n 0.228337n 0.0 0.0 0.0 4.893122e 0.0 0.0 4.785944e 0.0 0.0 0.0
zp 38.40 ri 0.001115p 0.432244m 0.0 2.611985o 1.677805o 0.125487p 0.000132p 0.000565p 9.34e-08p 0.0 0.0 0.0
sig0.564 cc 0.002043p 0.243597p 0.0 2.954660p 4.695952p 4.827770p 0.048356p 4.828181p 4.828181p 0.0 0.0 0.0
rc 0.001115n 0.433275l 0.006613o 3.014524n 4.692329m 4.817816e 0.048311f 4.818513e 4.818513d 0.0 0.0 0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 5.175021l 4.684051e 0.0 4.557218i 4.666559e 0.0 0.0 0.0

zp 38.34 ri 0.003083p 0.289029p 0.0 2.901923n 1.401043n 0.093020p 3.94e-05p 0.000192p 4.94e-08p 0.0 0.0 0.0
sig0.565 cc 0.002992p 0.283266p 0.0 3.077514p 4.562517p 4.663431p 0.046678p 4.663688p 4.663688p 0.0 0.0 0.0
rc 0.003083p 0.291880p 0.008490o 3.177134m 4.578177i 4.671198e 0.046751e 4.671429e 4.671429d 0.0 0.0 0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.014581g 0.0 0.0 3.891014f 0.0 0.0 0.0
zp 38.05 ri 0.009483p 0.540899p 0.0 2.718713n 0.664173p 0.016016p 2.10e-06p 8.94e-06p 4.50e-10p 0.0 0.0 0.0
sig0.544 cc 0.009395p 0.544602p 0.0 3.200467p 3.885765p 3.901634p 0.039018p 3.901645p 3.901645p 0.0 0.0 0.0
rc 0.009483p 0.549670o 0.024403o 3.245405m 3.909578i 3.925594g 0.039258g 3.925605f 3.925605e 0.0 0.0 0.0
u233t xi 0.0 0.212150j 0.0 3.236412f 2.513946h 0.340628j 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.000316p 0.0 0.0 0.0 0.0 6.369745f 0.0 6.313665l 6.341127e 0.0 0.0 0.0
zp 38.29 ri 0.000319p 0.214172p 0.0 3.267261n 2.537908n 0.343877j 3.15e-05p 0.000134p 2.60e-08p 0.0 0.0 0.0
sig0.555 cc 0.004714p 0.387150p 0.0 4.564120p 6.224167p 6.329815p 0.063329p 6.329978p 6.329979p 0.0 0.0 0.0
rc 0.000319p 0.214468p 0.004411p 3.467653n 6.005561m 6.349439f 0.063526f 6.349604e 6.349605d 0.0 0.0 0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.630076g 0.0 5.704751i 5.667557h 0.0 0.0 0.0
zp 37.63 ri 0.099183p 2.002453n 0.0 3.406547m 0.243449p 0.001089p 1.80e-08p 8.79e-08p 0.0 0.0 0.0 0.0
sig0.524 cc 0.098568p 2.081214p 0.0 5.322448p 5.564840p 5.565923p 0.055659p 5.565923p 5.565923p 0.0 0.0 0.0
rc 0.099183p 2.094192m 0.087919o 5.408139k 5.651588i 5.652677g 0.056527g 5.652677g 5.652677f 0.0 0.0 0.0

rb half life from 80eng2; kr, rb, sr, y, zr, nb half lives 89wal; tc half life 90bur1.

1

mass number 96 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 34 se g 35 br g 36 kr g 37 rb g 38 sr d 38 sr g 39 y m 39 y g 40 zr d 40 zr g 41 nb g 42 mo g
half life 0.089s 0.293s 0.199s 0.170s 1.06 s 9.6 s 6.2 s 3.7 s stable 23.4 h stable
lambda 0.0 7.788e+00 2.366e+00 3.483e+00 4.077e+00 6.539e-01 7.220e-02 1.118e-01 1.873e-01 0.0 8.228e-06 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 86.0000 0.0 100.0000 0.0 100.0000 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 26.6000 100.0000 0.0050 100.0000 0.0540 100.0000 0.0 0.0
u235t xi 0.0 0.0 0.0 0.169985j 0.0 3.605332f 2.038244g 0.226472g 0.0 0.340179k 0.000549i 0.0
xc 0.0 0.0 0.0 0.208150l 0.0 3.514726l 0.0 0.0 0.0 6.339806d 0.0 0.0
zp 38.48 ri 1.28e-11p 1.91e-06p 0.037814p 0.168434j 0.0 3.568366f 2.019639n 0.224404p 0.0 0.337074k 0.000544p 5.33e-08p
sig0.531 cc 0.0 4.09e-08p 0.000812p 0.134709p 0.0 4.210589p 1.705744p 6.105861p 0.0 6.337124p 0.000293p 0.000293p

rc 1.28e-11p 1.91e-06p 0.037816p 0.206250l 0.010100k 3.755841f 2.019726o 5.999971l 0.002641m 6.339686d 0.000544p 0.000544p
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.202369c 0.0 0.0
zp 38.35 ri 3.08e-12p 2.28e-07p 0.002309p 0.227939p 0.0 4.383199l 1.346135n 0.133017p 0.0 0.124631p 0.000120p 1.67e-08p
sig0.537 cc 3.08e-12p 2.28e-07p 0.002306p 0.229916p 0.0 4.583389p 1.344254p 6.060591p 0.0 6.185042p 0.000119p 0.000119p
rc 3.08e-12p 2.28e-07p 0.002309p 0.230248p 0.014318o 4.595531k 1.346256m 6.074804h 0.002936m 6.202370c 0.000120p 0.000120p
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.003520j 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.202276k 0.002704m 0.0
zp 38.70 ri 8.98e-11p 1.16e-06p 0.001353p 0.151031p 0.0 1.811434n 2.558183n 0.163287p 0.0 0.529438p 0.003516j 1.61e-05p
sig0.634 cc 8.96e-11p 1.16e-06p 0.001352p 0.152067p 0.0 1.941039p 2.552862p 4.656850p 0.0 5.185181p 0.011762p 0.011788p
rc 8.98e-11p 1.16e-06p 0.001354p 0.152385p 0.008042o 1.950527m 2.558228m 4.672042l 0.002071m 5.203550j 0.003516i 0.003532i
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.017173i 0.0 0.0
zp 37.93 ri 2.47e-09p 3.52e-05p 0.034185p 1.168752n 0.0 4.131753m 0.735714p 0.072770p 0.0 0.015649p 1.04e-05p 4.62e-10p
sig0.557 cc 2.47e-09p 3.52e-05p 0.034164p 1.201005p 0.0 5.167860p 0.734584p 5.975095p 0.0 5.990718p 1.04e-05p 1.04e-05p
rc 2.47e-09p 3.52e-05p 0.034220p 1.202973m 0.023790o 5.190100l 0.735861o 5.998731j 0.002946j 6.017326h 1.04e-05p 1.04e-05p
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000108j 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.567017l 0.0 0.0
zp 38.19 ri 3.09e-09p 2.52e-05p 0.014927p 0.708208p 0.0 3.197507n 1.520912n 0.097083p 0.0 0.083748p 0.000108p 1.21e-07p
sig0.605 cc 3.08e-09p 2.51e-05p 0.014913p 0.721263p 0.0 3.823839p 1.516979p 5.437647p 0.0 5.521175p 0.000367p 0.000367p
rc 3.09e-09p 2.52e-05p 0.014952p 0.723160o 0.051418o 3.870844m 1.521028m 5.488955l 0.002661l 5.575364k 0.000108p 0.000108p
pu239t xi 0.0 0.0 0.0 0.039195p 0.0 1.827477i 2.244416i 0.249380i 0.0 0.538934m 0.003615i 0.0
xc 0.0 0.0 0.0 0.047377n 0.0 0.0 0.0 0.0 0.0 4.889477d 0.0 0.0

zp 38.79 ri 4.76e-12p 6.20e-07p 0.008157p 0.039077p 0.0 1.821987o 2.237673o 0.248630p 0.0 0.537315m 0.003604p 4.51e-06p
sig0.564 cc 0.0 1.16e-08p 0.000153p 0.046717p 0.0 1.829469p 2.196707p 4.270255p 0.0 4.885037p 0.004867p 0.004871p
rc 4.76e-12p 6.20e-07p 0.008157p 0.047235n 0.001852o 1.864460n 2.237713o 4.350803m 0.002024m 4.890142d 0.003604p 0.003609p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.852939c 0.0 0.0
zp 38.73 ri 0.0 2.27e-08p 0.000247p 0.060398p 0.0 1.992692n 2.088053n 0.206488p 0.0 0.508580p 0.003371p 2.71e-06p
sig0.565 cc 0.0 2.27e-08p 0.000247p 0.060632p 0.0 2.045398p 2.087631p 4.339498p 0.0 4.847971p 0.003371p 0.003373p
rc 0.0 2.27e-08p 0.000247p 0.060645p 0.002870o 2.047717m 2.088096m 4.342301l 0.002065m 4.852946c 0.003371p 0.003374p
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.012360k 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.394880e 0.0 0.0
zp 38.43 ri 1.25e-12p 1.45e-07p 0.000953p 0.173368p 0.0 2.448717m 1.496821n 0.165663p 0.0 0.116203p 0.012326p 3.83e-08p
sig0.544 cc 1.25e-12p 1.46e-07p 0.000955p 0.174581p 0.0 2.607304p 1.499092p 4.272962p 0.0 4.389338p 0.000271p 0.000271p
rc 1.25e-12p 1.45e-07p 0.000953p 0.174321p 0.009138o 2.607771l 1.496896m 4.270330i 0.002286m 4.388819e 0.012326p 0.012326o
u233t xi 0.0 0.0 0.0 0.031269l 0.0 1.794205f 2.486377f 0.275927f 0.0 1.071687g 0.005571k 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.675107d 0.0 0.0
zp 38.69 ri 0.0 8.97e-09p 0.000160p 0.031347p 0.0 1.798714n 2.492626n 0.276620p 0.0 1.074381g 0.005585p 1.60e-06p
sig0.555 cc 0.0 1.83e-08p 0.000326p 0.064251p 0.0 2.885222p 1.992566p 5.099184p 0.0 5.668302p 0.002136p 0.002138p
rc 0.0 8.97e-09p 0.000160p 0.031507p 0.002170p 1.827980n 2.492658n 4.597259m 0.001736n 5.673375d 0.005585p 0.005586p
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000179p 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.764703n 0.0 0.0
zp 38.01 ri 5.88e-11p 3.21e-06p 0.010867p 0.617136p 0.0 3.537663n 0.580408p 0.057410p 0.0 0.011668p 0.000178p 6.85e-11p
sig0.524 cc 5.86e-11p 3.20e-06p 0.010838p 0.626126p 0.0 4.080062p 0.578740p 4.716040p 0.0 4.727673p 3.58e-06p 3.58e-06p

rc 5.88e-11p 3.21e-06p 0.010870p 0.628007o 0.046869o 4.124618m 0.580547o 4.762575l 0.002341j 4.776584l 0.000178p 0.000178o

br, kr half lives from 80eng2; rb, sr, y half lives from 89wal1.
1

mass number 97 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 36 kr g 37 rb g 38 sr d 38 sr g 39 y g 40 zr d 40 zr g 41 nb m 41 nb g 42 mo g 43 tc g 44 ru g
half life 0.1 s 0.169s 0.110s 0.42 s 3.76 s 2.0 s 16.8 h 58.1 s 1.23 h stable 2.6e6y 2.9 d
lambda 6.931e+00 4.101e+00 6.301e+00 1.650e+00 1.843e-01 3.466e-01 1.146e-05 1.193e-02 1.565e-04 0.0 8.454e-15 2.766e-06
z - 1 g 100.0000 100.0000 0.0 73.4000 99.9950 0.0 99.9460 94.0000 6.0000 100.0000 -100.0000 -99.9600
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -0.0400
z - 0 m 0.0 0.0 13.3000 100.0000 0.0 0.2280 100.0000 0.0 100.0000 0.0 0.0 0.0
u235t xi 0.0 0.038364j 0.0 1.739459h 3.175782g 0.0 1.104720i 0.002474m 0.010876l 0.0 0.0 0.0
xc 3.00e-05p 0.058241l 0.0 1.803198m 0.0 0.0 5.986817f 5.522808i 6.079769h 5.996109c 0.0 0.0
zp 38.86 ri 2.97e-05p 0.037940j 0.0 1.720804g 3.140716n 0.0 1.092452i 0.002447m 0.010756l 2.49e-06p 1.76e-11p 0.0
sig0.531 cc 3.35e-05p 0.026469p 0.0 1.886047p 5.127391p 0.0 5.990145p 5.631705p 5.995240p 5.995243p 1.78e-11p 0.0
rc 2.97e-05p 0.037970j 0.000531m 1.749205g 4.889834m 0.004373m 5.984018f 5.627423f 5.997220d 5.997223c 1.76e-11p 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.843645e 5.498168i 6.064941h 6.018303b 0.0 0.0
zp 38.74 ri 0.000115p 0.053713p 0.0 2.369651n 3.027275n 0.0 0.560660p 0.000444p 0.002169p 9.94e-07p 6.08e-12p 0.0
sig0.537 cc 0.000116p 0.054054p 0.0 2.419524p 5.424510p 0.0 5.994023p 5.634820p 5.996599p 5.996600p 5.97e-12p 0.0
rc 0.000115p 0.053828p 0.000712o 2.409873m 5.437027l 0.005548m 6.000300e 5.640726d 6.002913c 6.002914b 6.08e-12p 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.041482m 0.335624m 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.128972g 0.0 0.0 5.552542k 0.0 0.0
zp 39.10 ri 0.000107p 0.030122p 0.0 0.866566p 2.944495n 0.0 1.306752n 0.041563p 0.336283p 0.000424p 2.26e-07p 1.08e-11p
sig0.634 cc 0.000113p 0.032002p 0.0 0.941087p 4.058238p 0.0 5.440367p 5.122170p 5.515139p 5.515562p 2.25e-07p 1.07e-11p

rc 0.000107p 0.030229p 0.000609o 0.889363o 3.833814m 0.003489m 5.141983g 4.875027g 5.519830j 5.520254i 2.26e-07p 1.08e-11p
u238f xi 0.0 0.083698m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.583716e 5.178334i 5.739514i 5.544502d 0.0 0.0
zp 38.31 ri 0.000802p 0.088629p 0.0 2.859336n 2.518631m 0.0 0.101667p 3.98e-05p 0.000194p 3.10e-08p 0.0 0.0
sig0.557 cc 0.003420p 0.381642p 0.0 3.565456p 5.373429p 0.0 5.464489p 5.136656p 5.464702p 5.464702p 0.0 0.0
rc 0.000802p 0.089431p 0.011256o 2.936234m 5.454718h 0.008789m 5.562229e 5.228535d 5.562463d 5.562463c 0.0 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.283603e 0.0 4.789576k 0.0 0.0 0.0
zp 38.59 ri 0.001498p 0.191796p 0.0 2.168503n 2.611018m 0.0 0.345578p 0.000434p 0.003513p 3.69e-06p 2.47e-10p 0.0
sig0.605 cc 0.001495p 0.192962p 0.0 2.308216p 4.922732p 0.0 5.264103p 4.948712p 5.268238p 5.268242p 2.59e-10p 0.0
rc 0.001498p 0.193294p 0.005518o 2.315899m 4.926801k 0.006348m 5.276066e 4.959936e 5.280013e 5.280017e 2.47e-10p 0.0
pu239t xi 0.0 0.005424p 0.0 0.732254l 2.994103i 0.0 1.610958j 0.015459n 0.065903n 0.0 0.0 0.0
xc 0.0 0.007051n 0.0 0.0 3.867384l 0.0 5.266264f 5.036552i 5.378207h 5.436233e 0.0 0.0
zp 39.17 ri 0.001607p 0.005355p 0.0 0.786718p 2.956057i 0.0 1.584315j 0.015262n 0.065065n 0.000104p 8.22e-09p 0.0
sig0.564 cc 6.91e-06p 0.007838p 0.0 0.719562p 3.740307p 0.0 5.365510p 5.052078p 5.410238p 5.410344p 8.33e-09p 0.0
rc 0.001607p 0.006962n 9.02e-05n 0.791919o 3.747936l 0.003455o 5.333682f 5.028923f 5.414010e 5.414114d 8.22e-09p 0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.259877e 4.420144i 4.895904i 5.301596c 0.0 0.0
zp 39.11 ri 1.22e-05p 0.010777p 0.0 0.855445p 2.961284n 0.0 1.440312n 0.005313p 0.025938p 6.83e-05p 4.44e-09p 0.0
sig0.565 cc 1.22e-05p 0.010785p 0.0 0.863057p 3.823104p 0.0 5.261651p 4.951469p 5.294104p 5.294173p 4.44e-09p 0.0
rc 1.22e-05p 0.010789p 0.000123o 0.863488o 3.824729m 0.002984m 5.265959e 4.955314e 5.297210d 5.297278b 4.44e-09p 0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.805930g 0.0 0.0 4.798919f 0.0 0.0
zp 38.82 ri 5.55e-05p 0.034307p 0.0 1.478392n 2.730116n 0.0 0.561015p 0.000827p 0.003526p 2.18e-06p 2.79e-11p 0.0

sig0.544 cc 5.54e-05p 0.034345p 0.0 1.503051p 4.233595p 0.0 4.792385p 4.505670p 4.796742p 4.796744p 2.79e-11p
0.0
rc 5.55e-05p 0.034362p 0.000555o 1.504170m 4.234210l 0.004501m 4.797440g 4.510421g 4.801794f 4.801796e 2.79e-11p
0.0
u233t xi 0.0 0.008075k 0.0 0.598170h 2.540713f 0.0 2.185368f 0.018395l 0.075644l 0.0 0.0 0.0
xc 0.0 0.0 0.0 1.099264k 0.0 0.0 5.707618h 0.0 5.704360l 5.506292d 0.0 0.0
zp 39.09 ri 8.97e-06p 0.008148p 0.0 0.642252h 2.563741n 0.0 2.205993f 0.018562p 0.076330l 4.82e-05p 1.81e-09p 0.0
sig0.555 cc 1.09e-05p 0.009912p 0.0 1.004241p 3.934584p 0.0 5.484881p 5.160604p 5.510225p 5.510273p 1.79e-09p
0.0
rc 8.97e-06p 0.008157p 0.002582o 0.650821h 3.214530n 0.002019o 5.420806h 5.114120h 5.515698f 5.515746d 1.81e-09p
0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.592264g 0.0 4.267254f 4.615753m 0.0 0.0
zp 38.40 ri 0.000729p 0.175509p 0.0 2.641096n 1.562697n 0.0 0.086357p 1.95e-05p 9.53e-05p 7.54e-09p 0.0 0.0
sig0.524 cc 0.000717p 0.173555p 0.0 2.729277p 4.335041p 0.0 4.417743p 4.152698p 4.417860p 4.417860p 0.0 0.0
rc 0.000729p 0.176238p 0.003096o 2.773551m 4.336109i 0.005249n 4.425375g 4.159872g 4.425490f 4.425490f 0.0
0.0

kr, rb, sr, y, zr, nb half lives from 89wal1; ru half life 90bur1.
1

mass number 98 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 36 kr g 37 rb g 38 sr g 39 y m 39 y g 40 zr d 40 zr g 41 nb m 41 nb g 42 mo g 43 tc g 44 ru g
half life 0.160s 0.107s 0.65 s 2.1 s 0.59 s 1.4 s 30.7 s 51. m 2.9 s stable 1.5e6y stable
lambda 4.332e+00 6.478e+00 1.066e+00 3.301e-01 1.175e+00 4.951e-01 2.258e-02 2.265e-04 2.390e-01 0.0 1.465e-14
0.0
z - 1 g 100.0000 100.0000 86.7000 0.0 100.0000 0.0 99.7720 0.0 100.0000 100.0000 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.1290 0.0 2.0200 100.0000 0.0 0.0 0.0 0.0 0.0
u235t xi 0.0 0.002306o 0.798679i 1.081604h 1.081604h 0.0 2.516059h 0.037688l 0.113049l 0.0 8.69e-07l 0.0
xc 0.0 0.003902l 0.490249n 0.0 0.0 0.0 0.0 0.0 0.0 5.790305c 0.0 0.0
zp 39.25 ri 0.001633p 0.002359o 0.808148i 1.106399n 1.106399n 0.0 2.573738o 0.038552p 0.115641p 9.58e-05p 8.89e-07p
0.0
sig0.531 cc 9.25e-07p 0.001999p 0.658119p 1.231564p 1.889683p 0.0 5.710462p 0.009459p 5.738838p 5.748390p 1.88e-09p
1.88e-09p

rc 0.001633p 0.003991l 0.811609i 1.106570n 1.918007m 0.042067p 5.636010m 0.038552p 5.751651m 5.790299c 8.89e-07p 8.89e-07o
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.923745b 0.0 0.0
zp 39.13 ri 4.32e-06p 0.005347p 1.043591n 1.385116n 1.385254n 0.0 2.037715m 0.005024p 0.017812p 4.23e-05p 7.14e-10p 0.0
sig0.537 cc 4.31e-06p 0.005332p 1.044505p 1.380332p 2.424837p 0.0 5.850870p 0.005006p 5.868619p 5.873667p 7.11e-10p 7.11e-10p
rc 4.32e-06p 0.005351p 1.048230m 1.385394m 2.433484l 0.049822o 5.900867f 0.005024p 5.918679d 5.923745b 7.14e-10p 7.14e-10p
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.428472m 0.0 0.0
zp 39.49 ri 6.46e-06p 0.004569p 0.315529p 1.210329n 1.210378n 0.0 2.370180n 0.044515p 0.252176p 0.004110p 5.55e-06p 6.80e-10p
sig0.634 cc 6.46e-06p 0.004572p 0.319308p 1.209664p 1.528972p 0.0 5.107002p 0.044488p 5.359103p 5.407698p 5.54e-06p 5.54e-06p
rc 6.46e-06p 0.004575p 0.319496p 1.210427m 1.529874m 0.028598o 5.135590l 0.044515p 5.387766l 5.436391k 5.55e-06p 5.55e-06p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.526980k 0.0 5.884152d 0.0 0.0
zp 38.70 ri 0.000260p 0.084369p 2.268093n 1.512693n 1.513330n 0.0 0.486121p 0.000712p 0.002526p 1.58e-06p 2.29e-11p 0.0
sig0.557 cc 0.000260p 0.084616p 2.341078p 1.513079p 3.854156p 0.0 5.844827p 0.000712p 5.847352p 5.848066p 2.29e-11p 2.29e-11p
rc 0.000260p 0.084630p 2.341467m 1.513976m 3.854798l 0.095648o 5.941754l 0.000712p 5.944279l 5.944993d 2.29e-11p 2.29e-11p
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.447694l 0.0 0.0
zp 38.97 ri 0.000123p 0.041365p 1.150491n 1.597391n 1.597676n 0.0 0.989067p 0.004538p 0.025714p 7.57e-05p 1.39e-08p 0.0
sig0.605 cc 0.000123p 0.041476p 1.186109p 1.597201p 2.783310p 0.0 5.364259p 0.004536p 5.389965p 5.394577p 1.39e-08p 1.39e-08p
rc 0.000123p 0.041488p 1.186461m 1.597967m 2.784137l 0.069095o 5.433917l 0.004538p 5.459631l 5.464244k 1.39e-08p 1.39e-08p
pu239t xi 0.0 0.0 0.321306o 1.165464i 1.165464i 0.0 2.868384i 0.043669l 0.131007l 0.0 0.0 0.0
xc 0.0 0.000666n 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.830898d 0.0 0.0

zp 39.56 ri 2.24e-07p 0.000678p 0.327317p 1.187267n 1.187267n 0.0 2.922044n 0.044486p 0.133458p 0.001955p 4.17e-07p 9.14e-12p
sig0.564 cc 2.05e-07p 0.000621p 0.209140p 1.002526p 1.211666p 0.0 5.582184p 0.054379p 5.745320p 5.801626p 4.12e-07p 4.12e-07p
rc 2.24e-07p 0.000678n 0.327905p 1.187315n 1.515171o 0.029916p 5.650992m 0.044486p 5.784450m 5.830891d 4.17e-07p 4.17e-07p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.633049c 0.0 0.0
zp 39.50 ri 3.85e-07p 0.000927p 0.262355p 1.045510n 1.045541n 0.0 3.085573l 0.037061p 0.131346p 0.001302p 2.33e-07p 4.51e-12p
sig0.565 cc 3.84e-07p 0.000925p 0.262497p 1.042913p 1.305410p 0.0 5.437182p 0.036968p 5.568250p 5.606517p 2.33e-07p 2.33e-07p
rc 3.85e-07p 0.000928p 0.263159p 1.045573m 1.308700m 0.026476o 5.463339i 0.037061p 5.594685f 5.633048c 2.33e-07p 2.33e-07p
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.035686f 0.0 0.0
zp 39.20 ri 2.00e-06p 0.004175p 0.559697p 1.411228n 1.411328n 0.0 1.567260n 0.009531p 0.028592p 6.43e-05p 2.87e-09p 0.0
sig0.544 cc 2.00e-06p 0.004165p 0.561779p 1.407471p 1.969250p 0.0 4.948752p 0.009505p 4.977265p 4.986834p 2.86e-09p 2.86e-09p
rc 2.00e-06p 0.004177p 0.563319o 1.411430m 1.974647m 0.048663o 4.997498j 0.009531p 5.026089h 5.035684f 2.87e-09p 2.87e-09p
u233t xi 0.0 0.018934o 0.214759i 0.632842g 0.632842g 0.0 3.356486f 0.049362l 0.148005l 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.189323d 0.0 0.0
zp 39.48 ri 8.70e-06p 0.019402p 0.220066p 0.648479p 0.648479p 0.0 3.439422o 0.050582p 0.151662p 0.000942p 8.82e-08p 1.46e-12p
sig0.555 cc 2.83e-07p 0.000631p 0.273210p 0.820706p 1.093916p 0.0 5.064086p 0.027863p 5.147674p 5.176465p 8.69e-08p 8.69e-08p
rc 8.70e-06p 0.019411p 0.236895p 0.648511p 0.885374p 0.014836p 4.986125n 0.050582p 5.137787n 5.189311d 8.82e-08p 8.82e-08p
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.679882i 0.0 0.0
zp 38.78 ri 3.14e-05p 0.023248p 1.315228n 0.966776p 0.967001p 0.0 0.371197p 0.000343p 0.001217p 4.48e-07p 1.82e-12p 0.0
sig0.524 cc 3.14e-05p 0.023262p 1.334368p 0.966245p 2.300613p 0.0 3.635144p 0.000343p 3.636361p 3.636704p 1.82e-12p 1.82e-12p

rc 3.14e-05p 0.023280p 1.335412m 0.967232o 2.302413n 0.042888o 3.678481l 0.000343p 3.679698k 3.680042i 1.82e-12p 1.82e-12p

kr half life from 80eng2; rb, sr, y, zr, nb half lives from 89wal1.

1

mass number 99 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 38 sr g 39 y g 40 zr d 40 zr g 41 nb m 41 nb g 42 mo g 43 tc m 43 tc g 44 ru g 45 rh g 46 pd g
half life 0.269s 1.47 s 0.80 s 2.2 s 2.6 m 15.0 s 2.748d 6.01 h 2.1e5y stable 15.0 d 21.4m
lambda 2.577e+00 4.715e-01 8.664e-01 3.151e-01 4.443e-03 4.621e-02 2.919e-06 3.204e-05 1.047e-13 0.0 5.348e-07 5.398e-04
z - 1 g 100.0000 99.8710 0.0 97.9800 30.0000 70.0000 100.0000 88.0000 12.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.8420 100.0000 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0
u235t xi 0.136004l 1.986786i 0.0 3.672556h 0.409180j 0.030157k 0.043088l 0.0 0.0 0.0 0.0 0.0
xc 0.130662m 1.919675l 0.0 0.0 2.117787h 3.870893i 6.158609e 0.0 6.065065e 0.0 0.0 0.0
zp 39.63 ri 0.133214k 1.949465i 0.0 3.584193m 0.406608j 0.029967k 0.042817l 2.89e-08p 1.23e-07p 1.10e-12p 0.0 0.0
sig0.531 cc 0.119624p 1.968788p 0.0 5.863774p 1.980879p 4.123924p 6.106340p 5.373579p 6.106340p 6.106340p 0.0 0.0
rc 0.133214k 2.082507i 0.005139o 5.629772k 2.095540h 3.970808i 6.109165e 5.376065e 6.109165d 6.109165d 0.0 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.921597e 0.0 5.798060h 6.163715g 0.0 0.0
zp 39.51 ri 0.215929p 2.251057n 0.0 3.363389n 0.142201p 0.012367p 0.000724p 9.94e-09p 4.85e-08p 0.0 0.0 0.0
sig0.537 cc 0.216065p 2.468262p 0.0 5.780120p 1.876346p 4.058459p 5.935529p 5.223266p 5.935529p 5.935529p 0.0 0.0
rc 0.215929p 2.466707m 0.007625o 5.787894l 1.878569l 4.063893k 5.943186e 5.230003e 5.943186d 5.943186d 0.0 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.140179g 0.0 5.059408k 0.0 0.0 0.0
zp 39.88 ri 0.075544p 1.340097n 0.0 2.898590n 0.754061p 0.065575p 0.027275p 1.01e-05p 8.15e-05p 2.88e-08p 0.0 0.0
sig0.634 cc 0.075532p 1.415311p 0.0 4.285636p 2.039675p 3.065509p 5.132455p 4.516571p 5.132547p 5.132547p 0.0 0.0

rc 0.075544p 1.415544m 0.003735o 4.289274m 2.040844n 3.068067l 5.136186g 4.519853g 5.136277g 5.136277g 0.0
0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.844585k 0.0 6.157961e 0.0 6.307178i 6.204311h 0.0 0.0
zp 39.08 ri 0.994110p 3.741324n 0.0 1.470736n 0.029164p 0.002536p 4.57e-05p 4.07e-10p 1.99e-09p 0.0 0.0 0.0
sig0.557 cc 0.993721p 4.732296p 0.0 6.109308p 1.861945p 4.279050p 6.141041p 5.404116p 6.141041p 6.141041p 0.0
0.0
rc 0.994110o 4.734152m 0.027208n 6.136465k 1.870103k 4.298061j 6.168210e 5.428025e 6.168210e 6.168210e 0.0
0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.705924e 0.0 5.576775l 0.0 0.0 0.0
zp 39.36 ri 0.446413p 2.974498n 0.0 2.170107n 0.154507p 0.013437p 0.001134p 6.33e-08p 5.12e-07p 2.09e-11p 0.0
0.0
sig0.605 cc 0.446130p 3.418162p 0.0 5.521490p 1.810869p 3.878471p 5.690473p 5.007616p 5.690474p 5.690474p 0.0
0.0
rc 0.446413p 3.420335m 0.014951n 5.536302l 1.815398l 3.888848k 5.705380e 5.020734e 5.705381d 5.705381d 0.0
0.0
pu239t xi 0.037356p 1.456876k 0.0 3.748032i 0.877861l 0.074712l 0.037356p 0.0 0.0 0.0 0.0 0.0
xc 0.0 1.276323n 0.0 0.0 0.0 3.718881m 6.212052e 0.0 0.0 0.0 0.0 0.0
zp 39.94 ri 0.037507p 1.444150k 0.0 3.763204n 0.881415p 0.075014l 0.037507p 2.81e-06p 1.20e-05p 8.61e-10p 0.0 0.0
sig0.564 cc 0.036336p 1.213304p 0.0 5.341897p 2.388169p 3.807641p 6.214240p 5.468534p 6.214255p 6.214255p 0.0
0.0
rc 0.037507p 1.481608k 0.002960p 5.217843n 2.446768n 3.727504n 6.211779e 5.466368e 6.211793e 6.211793e 0.0
0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.941901f 0.0 6.103412h 0.0 0.0 0.0
zp 39.88 ri 0.048636p 1.262592n 0.0 4.001806n 0.624919p 0.054343p 0.013115p 1.49e-06p 7.26e-06p 4.58e-10p 0.0
0.0
sig0.565 cc 0.048628p 1.310951p 0.0 5.286577p 2.210816p 3.754938p 5.978867p 5.261404p 5.978876p 5.978876p 0.0
0.0
rc 0.048636p 1.311165m 0.003758o 5.290243m 2.211992m 3.757513l 5.982620f 5.264707f 5.982629f 5.982629f 0.0
0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.988290f 0.0 5.620468j 0.0 0.0 0.0
zp 39.58 ri 0.156149p 2.255298n 0.0 3.349543n 0.220013p 0.019132p 0.001328p 3.77e-08p 1.61e-07p 1.72e-12p 0.0
0.0

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 sig0.544 cc 0.156022p 2.409292p       0.0  5.712313p 1.933531p 4.017735p 5.952593p 5.238282p 5.952594p 5.952594p       0.0
0.0
          rc 0.156149p 2.411245m 0.009286n 5.721367l 1.936423m 4.024089l 5.961840f 5.246419f 5.961840f 5.961840f       0.0
0.0
  u233t   xi 0.025860m 0.654799h       0.0  3.389431h 0.743152b 0.064670a 0.102023m       0.0       0.0       0.0       0.0       0.0
          xc       0.0  1.143046j       0.0       0.0  1.704762j       0.0  4.899237g       0.0  4.922980f       0.0       0.0       0.0
 zp 39.88 ri 0.025202p 0.709553h       0.0  3.303240n 0.724254b 0.063025p 0.099428m 7.90e-07p 3.37e-06p 1.79e-10p       0.0
0.0
 sig0.555 cc 0.036659p 0.947466p       0.0  4.410796p 1.769525p 3.126365p 4.905517p 4.316856p 4.905522p 4.905522p       0.0
0.0
          rc 0.025202p 0.734723i 0.001135p 4.024256n 1.931531m 2.880005n 4.910964g 4.321649f 4.910968e 4.910968e       0.0
0.0
  th232f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc       0.0       0.0       0.0       0.0       0.0       0.0  2.952917f       0.0  2.875249i       0.0       0.0       0.0
 zp 39.16 ri 0.353584p 1.769975n       0.0  0.845419p 0.013094p 0.001139p 1.29e-05p 4.00e-11p 1.95e-10p       0.0       0.0       0.0
 sig0.524 cc 0.353305p 2.121429p       0.0  2.925681p 0.890788p 2.049114p 2.939915p 2.587125p 2.939915p 2.939915p       0.0
0.0
          rc 0.353584p 2.123103m 0.004180o 2.929816m 0.892039m 2.052010l 2.944061f 2.590774f 2.944061f 2.944061f       0.0
0.0

    nb decay from 71har1;  sr, y, zr, nb, mo, tc half lives 89wal1.
1

     mass number    100              LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       36 kr g   37 rb g   38 sr g   39 y  g   40 zr g   41 nb m   41 nb g   42 mo g   43 tc g   44 ru g
 half life              0.053s    0.201s    0.73 s     7.1 s     3.0 s     1.5 s    stable     16. s    stable
 lambda            0.0 1.308e+01 3.448e+00 9.495e-01 9.763e-02 2.310e-01 4.621e-01       0.0 4.332e-02       0.0
  z - 1 g    100.0000  100.0000  100.0000  100.0000   99.1580   50.0000   50.0000  100.0000       0.0  100.0000
  z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
  z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
  u235t   xi       0.0       0.0  0.007982p 0.555584l 4.872855h 0.312267l 0.312267l 0.071432n       0.0       0.0
          xc       0.0       0.0  0.042021m       0.0       0.0       0.0       0.0  6.292910c       0.0       0.0
 zp 40.02 ri 1.15e-06p 0.034764p 0.008153p 0.567431p 4.976760n 0.318925p 0.318925p 0.072955n 5.59e-06p 2.12e-10p
 sig0.531 cc 1.27e-10p 3.84e-06p 0.015984p 0.617855p 5.600818p 3.136247p 3.136247p 6.292712p 5.55e-06p 5.55e-06p
          rc 1.15e-06p 0.034765p 0.042917m 0.610348p 5.581969n 3.109910n 3.109910n 6.292775c 5.59e-06p 5.59e-06p
  u235f   xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

```
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.298376d      0.0       0.0
zp 39.90 ri 9.60e-10p 1.55e-05p 0.035574p 0.869985p 4.892916n 0.248385p 0.248385p 0.010740p 2.37e-06p 7.26e-11p
sig0.537 cc 9.60e-10p 1.55e-05p 0.035589p 0.905575p 5.790866p 3.143818p 3.143818p 6.298376p 2.37e-06p 2.37e-06p
        rc 9.60e-10p 1.55e-05p 0.035589p 0.905574o 5.790866m 3.143818m 3.143818m 6.298376d 2.37e-06p 2.37e-06p
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.949556k      0.0       0.0
zp 40.27 ri 5.36e-09p 2.45e-05p 0.010305p 0.433141p 2.093218n 0.656980p 0.656980p 0.102642p 0.000859p 6.87e-07p
sig0.634 cc 5.36e-09p 2.45e-05p 0.010329p 0.443470p 2.532954p 1.923457p 1.923457p 3.949557p 0.000859p 0.000860p
        rc 5.36e-09p 2.45e-05p 0.010329p 0.443470p 2.532954m 1.923457m 1.923457m 3.949557k 0.000859p 0.000860p
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.697326d      0.0       0.0
zp 39.47 ri 3.66e-07p 0.001245p 0.303734p 2.926281n 3.299846n 0.096228p 0.096228p 0.000971p 1.56e-07p 1.64e-12p
sig0.557 cc 3.66e-07p 0.001245p 0.304979p 3.231265p 6.503898p 3.348177p 3.348177p 6.697326p 1.56e-07p 1.56e-07p
        rc 3.66e-07p 0.001245p 0.304979p 3.231260m 6.503899l 3.348177l 3.348177l 6.697326d 1.56e-07p 1.56e-07p
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.998106l      0.0       0.0
zp 39.73 ri 2.41e-07p 0.000583p 0.106257p 1.668786n 2.734201n 0.247410p 0.247410p 0.008411p 1.13e-05p 1.10e-09p
sig0.605 cc 2.41e-07p 0.000583p 0.106840p 1.775626p 4.494876p 2.494848p 2.494848p 4.998106p 1.13e-05p 1.13e-05p
        rc 2.41e-07p 0.000583p 0.106840p 1.775626m 4.494876l 2.494848m 2.494848m 4.998106k 1.13e-05p 1.13e-05p
 pu239t  xi      0.0       0.0  0.006792p 0.346409o 4.795381i 0.753948k 0.753948k 0.142639p      0.0       0.0
        xc      0.0       0.0       0.0       0.0  5.528066n      0.0       0.0  6.773302e      0.0       0.0
zp 40.33 ri 6.52e-11p 2.06e-06p 0.006760p 0.344739p 4.783195i 0.750313p 0.750313p 0.141951p 0.000307p 7.07e-08p
sig0.564 cc 4.56e-11p 1.45e-06p 0.004733p 0.384399p 4.703146p 3.314075p 3.314075p 6.774036p 0.000307p 0.000307p
        rc 6.52e-11p 2.06e-06p 0.006762p 0.351500p 5.131735j 3.316181l 3.316181l 6.774313e 0.000307p 0.000307p
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.544149c      0.0       0.0
zp 40.27 ri 9.97e-11p 2.48e-06p 0.006740p 0.439538p 4.351811n 0.820438p 0.820438p 0.108939p 0.000192p 3.87e-08p
sig0.565 cc 9.97e-11p 2.48e-06p 0.006743p 0.446281p 4.794334p 3.217605p 3.217605p 6.544149p 0.000192p 0.000192p
        rc 9.97e-11p 2.48e-06p 0.006743p 0.446281p 4.794334m 3.217605m 3.217605m 6.544149c 0.000192p 0.000192p
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.254486f      0.0       0.0
zp 39.96 ri 6.92e-10p 1.71e-05p 0.024730p 1.078170n 4.288175n 0.428751p 0.428751p 0.015178p 7.97e-06p 2.42e-10p
sig0.544 cc 6.92e-10p 1.71e-05p 0.024747p 1.102917p 5.381806p 3.119653p 3.119653p 6.254485p 7.97e-06p 7.97e-06p
        rc 6.92e-10p 1.71e-05p 0.024747p 1.102917m 5.381806m 3.119653m 3.119653m 6.254485f 7.97e-06p 7.97e-06p
 u233t   xi      0.0       0.0  0.003297p 0.127807l 3.018138f 0.448495i 0.448495i 0.262165l      0.0       0.0
        xc      0.0       0.0       0.0       0.0  4.268967k      0.0       0.0  4.458327e      0.0       0.0
```

zp 40.26 ri 2.81e-11p 7.27e-07p 0.003389p 0.131376p 3.133807f 0.461017p 0.461017p 0.269486l 7.47e-05p 1.45e-08p
sig0.555 cc 3.59e-11p 9.30e-07p 0.004332p 0.240216p 3.511053p 2.193995p 2.193995p 4.458072p 7.26e-05p 7.27e-05p
rc 2.81e-11p 7.27e-07p 0.003390p 0.134766p 3.267437i 2.094736m 2.094736m 4.458958e 7.47e-05p 7.47e-05p
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.370638i 0.0 0.0
zp 39.55 ri 0.0 2.72e-09p 0.002217p 0.494274p 0.874803p 0.001762p 0.001762p 1.83e-08p 0.0 0.0
sig0.350 cc 0.0 2.72e-09p 0.002217p 0.496489p 1.367113p 0.685319p 0.685319p 1.370638p 0.0 0.0
rc 0.0 2.72e-09p 0.002217p 0.496491p 1.367113n 0.685319n 0.685319n 1.370638i 0.0 0.0

rb, sr, y, zr, nb half lives from 89wal1.
1

mass number 101 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 38 sr g 39 y g 40 zr g 41 nb g 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g
half life 0.115s 0.43 s 2.1 s 7.1 s 14.6 m 14.2 m stable 4.47 d 3. y 8.3 h
lambda 6.027e+00 1.612e+00 3.301e-01 9.763e-02 7.913e-04 8.136e-04 0.0 1.795e-06 7.327e-09 2.320e-05
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 -90.0000 -100.0000 0.0
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -100.0000
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 10.0000 0.0
u235t xi 0.0 0.259483k 2.849474h 1.856225h 0.179409l 0.0 0.0 0.0 3.20e-11n 0.0
xc 0.004403o 0.310600l 2.764339i 5.104192i 5.401036m 5.503957i 5.177174d 0.0 0.0 0.0
zp 40.40 ri 0.004488p 0.278022k 2.788015h 1.916379h 0.185854l 0.000161p 1.62e-08p 0.0 3.26e-11p 0.0
sig0.531 cc 0.001049p 0.182452p 3.412317p 5.056434p 5.172764p 5.172918p 5.172919p 0.0 0.0 0.0
rc 0.004488o 0.282510j 3.070525g 4.986903f 5.172758f 5.172918e 5.172919d 0.0 3.26e-11o 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 4.993507i 5.223504i 5.124000e 0.0 0.0 0.0
zp 40.29 ri 0.002565p 0.283098p 3.411350n 1.357924n 0.069277p 7.61e-05p 6.41e-09p 0.0 0.0 0.0
sig0.537 cc 0.002581p 0.287430p 3.719883p 5.054510p 5.124216p 5.124290p 5.124290p 0.0 0.0 0.0
rc 0.002565p 0.285663p 3.697013m 5.054937j 5.124214h 5.124290g 5.124290e 0.0 0.0 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.452665k 0.0 0.0 0.0
zp 40.65 ri 0.001195p 0.118911p 1.282844n 1.738986n 0.304695p 0.006062p 1.19e-05p 1.92e-09p 2.37e-10p 0.0
sig0.634 cc 0.001195p 0.120106p 1.402950p 3.141936p 3.446631p 3.452693p 3.452705p 1.92e-09p 4.29e-10p 0.0
rc 0.001195p 0.120106p 1.402950m 3.141936l 3.446631m 3.452693l 3.452705k 1.92e-09p 4.29e-10p 0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 6.648728h 6.189499e 0.0 0.0 0.0

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zp 39.86 ri 0.047966p 1.459549n 4.001748n 0.689408p 0.010330p 5.99e-06p 1.87e-10p      0.0       0.0       0.0
sig0.557 cc 0.047827p 1.503142p 5.493281p 6.198701p 6.209001p 6.209007p 6.209007p      0.0       0.0       0.0
        rc 0.047966p 1.507515m 5.509263m 6.198671k 6.209001i 6.209007g 6.209007e      0.0       0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  5.730660h 5.636090i 5.412633l      0.0       0.0       0.0
zp 40.11 ri 0.022530p 0.879291p 3.333592n 1.401922n 0.060244p 0.000214p 5.56e-08p      0.0       0.0       0.0
sig0.605 cc 0.022504p 0.900798p 4.230610p 5.637402p 5.697577p 5.697793p 5.697793p      0.0       0.0       0.0
        rc 0.022530p 0.901821o 4.235413m 5.637335j 5.697579h 5.697793g 5.697793g      0.0       0.0       0.0
 pu239t  xi      0.0  0.084498p 2.341790j 3.464401j 0.138817p 0.012509p      0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0  6.332149m 6.016168n      0.0  6.019150e      0.0       0.0       0.0
zp 40.71 ri 0.000289p 0.084022p 2.328617n 3.455765j 0.138037p 0.012439p 2.43e-06p 3.82e-11p 8.95e-12p      0.0
sig0.564 cc 0.000308p 0.089700p 2.382481p 5.486961p 6.015148p 6.019169p 6.019171p 3.79e-11p 1.27e-11p      0.0
        rc 0.000289p 0.084311p 2.412928n 5.868694k 6.006730k 6.019169k 6.019171e 3.82e-11p 1.28e-11p      0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  6.284491k 7.212110l 6.669846d      0.0       0.0       0.0
zp 40.67 ri 0.000467p 0.113306p 2.702280n 3.280286n 0.569843p 0.003702p 2.04e-06p 2.88e-11p 5.89e-12p      0.0
sig0.565 cc 0.000480p 0.116776p 2.890379p 6.142006p 6.666429p 6.669885p 6.669887p 2.78e-11p 8.48e-12p      0.0
        rc 0.000467p 0.113773p 2.816053m 6.096339k 6.666183h 6.669885f 6.669887d 2.88e-11p 8.77e-12p      0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  6.231947f      0.0       0.0       0.0
zp 40.34 ri 0.002473p 0.340599p 3.757697n 2.021731n 0.109250p 0.000192p 2.02e-08p      0.0       0.0       0.0
sig0.544 cc 0.002473p 0.343069p 4.100731p 6.122499p 6.231750p 6.231942p 6.231942p      0.0       0.0       0.0
        rc 0.002473p 0.343072p 4.100769m 6.122500k 6.231750j 6.231942h 6.231942f      0.0       0.0       0.0
 u233t   xi      0.0  0.050682m 1.270700h 1.447102h 0.245625j      0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0  1.263774k      0.0       0.0  3.171243e      0.0       0.0       0.0
zp 40.65 ri 0.000224p 0.053306p 1.336489n 1.522024h 0.258342p 0.000856p 4.13e-07p 3.13e-12p      0.0       0.0
sig0.555 cc 0.000212p 0.050647p 1.515067p 2.930449p 3.170150p 3.171242p 3.171242p 3.99e-12p 1.34e-12p      0.0
        rc 0.000224p 0.053531p 1.390020n 2.912044h 3.170386k 3.171242g 3.171242e 3.13e-12p 1.05e-12p      0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.713543k      0.0       0.0       0.0
zp 39.76 ri 0.000123p 0.141852p 0.561371p 0.010197p 2.29e-07p      0.0       0.0       0.0       0.0       0.0
sig0.350 cc 0.000123p 0.141975p 0.703346p 0.713542p 0.713542p 0.713542p 0.713542p      0.0       0.0       0.0
        rc 0.000123p 0.141975p 0.703345n 0.713542n 0.713542n 0.713542m 0.713542k      0.0       0.0       0.0

  sr, y, zr, nb, mo, tc half lives from 89wal1.
1
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mass number 102 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 38 sr g 39 y g 40 zr g 41 nb g 42 mo d 42 mo g 43 tc m 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g

half life 0.068s 0.36 s 2.9 s 1.3 s 1.5 s 11.3 m 4.4 m 5.3 s stable 3. y 207. d stable

lambda 1.019e+01 1.925e+00 2.390e-01 5.332e-01 4.621e-01 1.022e-03 2.626e-03 1.308e-01 0.0 7.327e-09 3.876e-08 0.0

z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 100.0000 100.0000 0.0 100.0000 -100.0000 -84.0000 16.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 95.0000 0.0 0.0 0.0

z - 0 m 0.0 0.0 0.0 0.0 0.0140 100.0000 0.0 5.0000 0.0 0.0 0.0 0.0

u235t xi 0.0 0.0 1.959057h 1.736405h 0.0 0.715735j 0.010508p 0.010508p 0.0 5.20e-10p 6.50e-10n 0.0

xc 0.000190o 0.0 2.254189k 0.0 0.0 4.100787m 0.0 0.0 4.298763d 0.0 0.0 0.0

zp 40.79 ri 0.000173p 0.267998p 1.781460h 1.578992n 0.0 0.650777j 0.009555p 0.009555p 9.76e-07p 4.73e-10p 5.91e-10p 0.0

sig0.531 cc 5.06e-05p 0.023303p 1.824248p 3.728346p 0.0 4.296542p 4.297526p 0.215860p 4.298510p 2.13e-12p 2.13e-12p 0.0

rc 0.000173o 0.268171p 2.049631k 3.628622m 0.000268n 4.279667k 4.289222k 0.224016l 4.298778d 4.73e-10p 5.91e-10p 9.46e-11o

u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 4.365195i 0.0 4.359052d 0.0 0.0 0.0

zp 40.67 ri 0.000167p 0.045812p 2.220174n 1.726386n 0.0 0.365226p 0.000488p 0.000488p 3.96e-07p 0.0 0.0 0.0

sig0.537 cc 0.000167p 0.045977p 2.266095p 3.992502p 0.0 4.357764p 4.358252p 0.218400p 4.358740p 0.0 0.0 0.0

rc 0.000167p 0.045978p 2.266152m 3.992538l 0.000341n 4.358105h 4.358593f 0.218417f 4.359081d 0.0 0.0 0.0

u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.253948k 0.0 0.0 0.0

zp 41.03 ri 0.000107p 0.025549p 0.629765p 1.852294n 0.0 0.712869p 0.016516p 0.016516p 0.000159p 3.57e-08p 3.57e-08p 2.87e-12p

sig0.634 cc 0.000107p 0.025655p 0.655420p 2.507715p 0.0 3.220583p 3.237099p 0.178371p 3.253774p 3.57e-08p 3.57e-08p 5.72e-09p

rc 0.000107p 0.025655p 0.655420o 2.507714m 0.000252n 3.220835m 3.237351l 0.178384m 3.254026k 3.57e-08p 3.57e-08p 5.72e-09p

u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.447346d 0.0 0.0 0.0

zp 40.24 ri 0.006275p 0.521942p 4.091730n 1.745412n 0.0 0.081023p 6.88e-05p 6.88e-05p 1.62e-08p 0.0 0.0 0.0

sig0.557 cc 0.006275p 0.528201p 4.619807p 6.365361p 0.0 6.446382p 6.446451p 0.322391p 6.446520p 0.0 0.0 0.0

rc 0.006275p 0.528217o 4.619947m 6.365359j 0.000826n 6.447208h 6.447277f 0.322433f 6.447346d 0.0 0.0 0.0

u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 4.661581k 0.0 0.0 4.528634l 0.0 0.0 0.0
zp 40.48 ri 0.002508p 0.243808p 2.138621n 2.026414n 0.0 0.207893p 0.000933p 0.000933p 1.31e-06p 3.28e-11p 3.28e-11p
0.0
sig0.605 cc 0.002506p 0.246121p 2.383050p 4.411976p 0.0 4.619218p 4.620164p 0.231955p 4.621112p 3.32e-11p 3.32e-11p
5.32e-12p
rc 0.002508p 0.246316p 2.384937m 4.411352l 0.000556n 4.619800k 4.620733k 0.231970k 4.621668j 3.28e-11p 3.28e-11p
5.25e-12p
pu239t xi 0.0 0.006143p 1.222450k 3.089911j 0.0 1.763031j 0.033786p 0.033786p 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.126337e 0.0 0.0 0.0
zp 41.10 ri 8.03e-06p 0.006120p 1.217825n 3.078222n 0.0 1.756361n 0.033658p 0.033658p 7.65e-05p 2.03e-09p 2.03e-09p
0.0
sig0.564 cc 1.59e-05p 0.012144p 1.108133p 4.329780p 0.0 6.092707p 6.109280p 0.322037p 6.125930p 2.03e-09p 2.03e-09p
3.25e-10p
rc 8.03e-06p 0.006128p 1.223953n 4.302175n 0.000410o 6.058946m 6.092604m 0.338289m 6.126339e 2.03e-09p 2.03e-09p
3.24e-10p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.731884d 0.0 0.0 0.0
zp 41.07 ri 2.38e-05p 0.015852p 1.326564n 3.525328n 0.0 1.832215n 0.015693p 0.015693p 6.92e-05p 1.69e-09p 1.69e-09p
0.0
sig0.565 cc 2.38e-05p 0.015875p 1.342412p 4.867668p 0.0 6.699984p 6.715676p 0.351476p 6.731437p 1.69e-09p 1.69e-09p
2.71e-10p
rc 2.38e-05p 0.015875p 1.342440m 4.867768m 0.000446n 6.700429h 6.716122f 0.351499i 6.731884d 1.69e-09p 1.69e-09p
2.71e-10p
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.655277f 0.0 0.0 0.0
zp 40.71 ri 0.000185p 0.080655p 2.524944n 3.510721n 0.0 0.535093p 0.001485p 0.001485p 1.04e-06p 4.64e-12p 4.64e-12p
0.0
sig0.544 cc 0.000185p 0.080836p 2.605684p 6.116453p 0.0 6.651598p 6.653083p 0.334139p 6.654569p 4.64e-12p 4.64e-12p
0.0
rc 0.000185p 0.080839p 2.605784m 6.116505l 0.000703n 6.652301j 6.653786h 0.334174h 6.655272f 4.64e-12p 4.64e-12p
0.0
u233t xi 0.0 0.0 0.612182i 0.991632g 0.0 0.790762i 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.402804d 0.0 0.0 0.0
zp 41.03 ri 9.55e-06p 0.005287p 0.611227p 0.990086p 0.0 0.789163p 0.003454p 0.003454p 1.47e-05p 1.68e-10p 1.68e-10p
0.0

sig0.555 cc 9.36e-06p 0.005189p 0.604073p 1.709410p 0.0 2.395762p 2.399221p 0.123420p 2.402695p 1.68e-10p 1.68e-10p 2.69e-11p
rc 9.55e-06p 0.005296p 0.616523p 1.606610p 0.000109o 2.395882h 2.399335f 0.123421h 2.402804d 1.68e-10p 1.68e-10p 2.68e-11p
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.367805k 0.0 0.0 0.0
zp 39.96 ri 6.06e-06p 0.025804p 0.325907p 0.016064p 0.0 1.95e-06p 0.0 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 6.06e-06p 0.025809p 0.351717p 0.367781p 0.0 0.367783p 0.367783p 0.018389p 0.367783p 0.0 0.0 0.0
rc 6.06e-06p 0.025810p 0.351717p 0.367781o 2.18e-05n 0.367805n 0.367805m 0.018390m 0.367805k 0.0 0.0 0.0

rb, sr, y, zr, nb, mo, tc half lives from 89wal1.
1

mass number 103 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 39 y g 40 zr g 41 nb d 41 nb g 42 mo d 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g 47 ag g
half life 0.260s 1.3 s 2.573s 1.5 s 4.8 s 1.13 m 54. s 39.27d 56.12m stable 16.99d 1.10 h
lambda 2.666e+00 5.332e-01 2.694e-01 4.621e-01 1.444e-01 1.022e-02 1.284e-02 2.043e-07 2.059e-04 0.0 4.722e-07 1.750e-04
z - 1 g 100.0000 100.0000 0.0 100.0000 0.0 99.9860 100.0000 100.0000 99.0000 1.0000 -0.1000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -99.9000 0.0
z - 0 m 0.0 0.0 0.1820 100.0000 0.0410 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0
u235t xi 0.0 0.516192j 0.0 1.466479h 0.0 1.072714i 0.085022m 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.054764i 0.0 3.069393e 0.0 2.969887f 0.0 0.0
zp 41.18 ri 0.002585p 0.498903p 0.0 1.410388m 0.0 1.036922i 0.082174p 2.36e-05p 4.27e-10p 6.38e-11p 0.0 0.0
sig0.531 cc 0.001982p 0.384467p 0.0 1.986713p 0.0 3.014231p 3.030695p 3.030719p 3.000412p 3.030719p 0.0 0.0
rc 0.002585p 0.501489p 0.000152n 1.912029l 0.000269o 2.948952i 3.031126i 3.031149e 3.000838e 3.031149d 0.0 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.252805e 0.0 3.140473h 0.0 0.0
zp 41.05 ri 0.005549p 0.625862p 0.0 1.805696n 0.0 0.797175o 0.009429p 9.94e-06p 1.50e-10p 2.04e-11p 0.0 0.0
sig0.537 cc 0.005541p 0.630457p 0.0 2.433473p 0.0 3.233956p 3.243371p 3.243381p 3.210947p 3.243381p 0.0 0.0
rc 0.005549p 0.631411o 0.000212o 2.437319m 0.000340o 3.234494i 3.243923g 3.243933e 3.211493e 3.243933e 0.0 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.58e-07n 1.37e-08n 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.205087g 0.0 3.205645k 0.0 0.0

zp 41.40 ri 0.004348p 0.244875p 0.0 1.553628n 0.0 1.269448n 0.131078p 0.001478p 1.58e-07p 1.37e-08n 1.59e-10p
0.0
sig0.634 cc 0.004348p 0.249223p 0.0 1.802889p 0.0 3.072055p 3.203123p 3.204602p 3.172557p 3.204603p 1.59e-10p
0.0
rc 0.004348p 0.249223p 0.000141o 1.802991m 0.000393o 3.072581k 3.203659i 3.205137g 3.173086g 3.205137g 1.59e-10p
0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.323919e 0.0 5.896660h 0.0 0.0
zp 40.62 ri 0.132785p 2.644936n 0.0 3.119568n 0.0 0.373196p 0.002149p 7.57e-07p 7.86e-12p 1.07e-12p 0.0 0.0
sig0.557 cc 0.132348p 2.768565p 0.0 5.895071p 0.0 6.269667p 6.271809p 6.271810p 6.209092p 6.271810p 0.0 0.0
rc 0.132785p 2.777721m 0.001873o 5.899162k 0.001598n 6.273130i 6.275279g 6.275279e 6.212527e 6.275279e 0.0
0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.616776f 0.0 4.515531l 0.0 0.0
zp 40.85 ri 0.059824p 1.248455n 0.0 2.661059n 0.0 0.630616p 0.014399p 2.64e-05p 3.22e-09p 2.80e-10p 0.0 0.0
sig0.605 cc 0.059816p 1.308104p 0.0 3.968982p 0.0 4.599400p 4.613796p 4.613823p 4.567685p 4.613823p 0.0 0.0
rc 0.059824p 1.308278m 0.000864o 3.970201m 0.001120n 4.601382j 4.615780h 4.615807f 4.569649f 4.615807f 0.0
0.0
pu239t xi 0.0 0.224674p 0.0 2.717146i 0.0 3.833493i 0.254685n 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.994878f 0.0 0.0 0.0 0.0
zp 41.48 ri 0.001012p 0.223472p 0.0 2.702619n 0.0 3.812998n 0.253324p 0.001265p 2.23e-07p 3.33e-08p 3.64e-12p
0.0
sig0.564 cc 0.001449p 0.321341p 0.0 3.327538p 0.0 6.775242p 6.992957p 6.994226p 6.924284p 6.994226p 3.65e-12p
0.0
rc 0.001012p 0.224485p 0.000111p 2.927216n 0.000502o 6.740306m 6.993630m 6.994895f 6.924946f 6.994895f 3.64e-12p
0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.839075e 0.0 6.696625i 0.0 0.0
zp 41.48 ri 0.001419p 0.321619p 0.0 2.867259n 0.0 3.428557m 0.208711p 0.001293p 2.24e-07p 3.05e-08p 3.92e-12p
0.0
sig0.565 cc 0.001417p 0.322692p 0.0 3.186910p 0.0 6.618522p 6.827120p 6.828412p 6.760128p 6.828412p 3.96e-12p
0.0
rc 0.001419p 0.323038p 0.000102o 3.190398m 0.000526n 6.619035j 6.827746g 6.829039e 6.760749e 6.829040e 3.93e-12p
0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.711930i 0.0 6.846752i 0.0 0.0

zp 41.10 ri 0.010423p 1.032236n 0.0 3.980453n 0.0 1.721667n 0.030894p 3.79e-05p 1.07e-09p 1.60e-10p 0.0 0.0
sig0.544 cc 0.010428p 1.043106p 0.0 5.025395p 0.0 6.744062p 6.774970p 6.775008p 6.707258p 6.775008p 0.0 0.0
rc 0.010423p 1.042659m 0.000500o 5.023612m 0.001370n 6.745946l 6.776840k 6.776878i 6.709109h 6.776878g 0.0
0.0
u233t xi 0.0 0.134728k 0.0 0.561744h 0.0 0.747243g 0.045684m 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.559114l 1.689444g 0.0 1.502892f 0.0 0.0
zp 41.42 ri 0.000510p 0.135202p 0.0 0.640645p 0.0 0.750837p 0.045845m 0.000172p 1.55e-08p 2.32e-09p 0.0 0.0
sig0.555 cc 0.000353p 0.093892p 0.0 0.748018p 0.0 1.540457p 1.572941p 1.573107p 1.557376p 1.573107p 0.0 0.0
rc 0.000510p 0.135712p 3.23e-05o 0.776390o 7.21e-05o 1.527191m 1.573036l 1.573207g 1.557475g 1.573207f 0.0
0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.150362i 0.0 0.159616i 0.0 0.154133k 0.0 0.0
zp 40.17 ri 0.003672p 0.129746o 0.0 0.021901p 0.0 1.07e-05p 1.65e-12p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.003750p 0.132957p 0.0 0.155319p 0.0 0.155309p 0.155309p 0.155309p 0.153756p 0.155309p 0.0 0.0
rc 0.003672p 0.133418n 0.000116o 0.155436k 3.65e-05o 0.155461i 0.155461i 0.155461h 0.153907h 0.155461h 0.0
0.0

y half life from 80eng2; zr, nb, mo, tc, ru, rh half lives 89wal1; pd half life 90bur1.

1

mass number 104 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 38 sr g 39 y g 40 zr g 41 nb d 41 nb g 42 mo d 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g
half life 0.163s 0.128s 1.2 s 0.493s 4.8 s 2.8 s 60. s 18.2 m stable 4.35 m 42. s stable
lambda 4.252e+00 5.415e+00 5.776e-01 1.406e+00 1.444e-01 2.476e-01 1.155e-02 6.348e-04 0.0 2.656e-03 1.650e-02
0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 99.8180 0.0 99.9590 100.0000 100.0000 0.0 -0.5000 99.5000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1800
z - 0 m 0.0 0.0 0.0 1.0880 100.0000 2.2320 100.0000 0.0 0.0 0.0 99.8200 0.0
u235t xi 0.0 0.0 0.086321l 0.0 0.529762i 0.0 1.178519i 0.096587l 0.0 0.0 0.0 0.0
xc 1.37e-07p 0.000303p 0.094109l 0.0 0.0 0.0 2.001439l 1.801295i 1.881097d 0.0 0.0 0.0
zp 41.57 ri 1.31e-07p 0.000568p 0.082793l 0.0 0.570473p 0.0 1.127533i 0.092639l 0.000327p 1.47e-08p 4.89e-09p 0.0
sig0.531 cc 8.99e-09p 5.78e-05p 0.053850p 0.0 0.564932p 0.0 1.825931p 1.873663p 1.874003p 1.53e-08p 2.03e-08p
2.03e-08p
rc 1.31e-07p 0.000568p 0.083361k 0.001260o 0.654943o 0.005652o 1.787859h 1.880498f 1.880825d 1.47e-08p 1.95e-08p
1.95e-08p

u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.008508h 2.073259d 0.0 0.0 0.0
zp 41.43 ri 6.93e-08p 0.000232p 0.116426p 0.0 0.714198p 0.0 1.204136m 0.031573p 0.000159p 5.74e-09p 1.62e-09p 0.0
sig0.537 cc 7.06e-08p 0.000236p 0.118697p 0.0 0.845164p 0.0 2.033880p 2.066005p 2.066162p 5.67e-09p 7.26e-09p 7.24e-09p
rc 6.93e-08p 0.000232p 0.116658p 5.98e-06o 0.830650o 0.006201o 2.040647i 2.072220f 2.072379d 5.74e-09p 7.34e-09p 7.32e-09o
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.477401m 0.0 0.0 0.0
zp 41.68 ri 6.47e-07p 0.000719p 0.076622p 0.0 0.881504p 0.0 1.268590n 0.236891p 0.005043p 9.07e-06p 1.60e-06p 2.07e-09p
sig0.634 cc 6.47e-07p 0.000719p 0.077293p 0.0 0.958186p 0.0 2.226996p 2.463796p 2.468836p 9.06e-06p 1.06e-05p 1.06e-05p
rc 6.47e-07p 0.000719p 0.077341p 0.000252o 0.958957o 0.010093o 2.237246m 2.474137m 2.479181l 9.07e-06p 1.07e-05p 1.06e-05p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.834496h 5.040296d 0.0 0.0 0.0
zp 41.00 ri 2.02e-05p 0.016257p 1.012586p 0.0 2.867041n 0.0 1.080546o 0.015817p 2.01e-05p 5.82e-10p 1.64e-10p 0.0
sig0.557 cc 2.06e-05p 0.016544p 1.045719p 0.0 3.958354p 0.0 4.972665p 4.988741p 4.988761p 5.71e-10p 7.31e-10p 7.28e-10p
rc 2.02e-05p 0.016278p 1.028863o 0.002319o 3.896351m 0.044844n 5.020143h 5.035960f 5.035980d 5.82e-10p 7.45e-10p 7.43e-10o
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.070292i 3.672406k 0.0 0.0 0.0
zp 41.22 ri 1.42e-05p 0.009114p 0.465379p 0.0 2.257741n 0.0 1.195737n 0.067517p 0.000304p 9.18e-08p 1.62e-08p 2.70e-12p
sig0.605 cc 1.42e-05p 0.009084p 0.472208p 0.0 2.718445p 0.0 3.926324p 3.993514p 3.993832p 9.61e-08p 1.13e-07p 1.12e-07p
rc 1.42e-05p 0.009128p 0.474507p 0.001179o 2.732564m 0.031079n 3.958259j 4.025777h 4.026081h 9.18e-08p 1.08e-07p 1.07e-07p
pu239t xi 0.0 0.0 0.061066p 0.0 1.074755k 0.0 4.158569i 0.542551k 0.024426p 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.103689i 6.093586e 0.0 0.0 0.0
zp 41.87 ri 9.44e-09p 7.34e-05p 0.061018p 0.0 1.163371n 0.0 4.293197l 0.542127k 0.024407p 5.27e-06p 1.76e-06p 3.98e-10p

sig0.564 cc 8.25e-09p 6.41e-05p 0.053405p 0.0 1.234434p 0.0 5.465911p 6.070643p 6.083590p 5.25e-06p 7.00e-06p 6.97e-06p
rc 9.44e-09p 7.34e-05p 0.061091p 6.97e-05o 1.224421m 0.011173o 5.528289j 6.070415i 6.094822d 5.27e-06p 7.02e-06p 6.99e-06o
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.490986k 6.584732c 0.0 0.0 0.0
zp 41.88 ri 8.59e-09p 6.52e-05p 0.055747p 0.0 1.227920n 0.0 4.607509m 0.670020p 0.015212p 6.63e-06p 1.87e-06p 5.24e-10p
sig0.565 cc 8.63e-09p 6.55e-05p 0.056060p 0.0 1.289332p 0.0 5.897175p 6.560745p 6.575844p 6.58e-06p 8.42e-06p 8.39e-06p
rc 8.59e-09p 6.52e-05p 0.055812p 5.37e-05o 1.283685m 0.008814o 5.899482l 6.569502e 6.584714c 6.63e-06p 8.48e-06p 8.45e-06o
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.179522f 0.0 0.0 0.0
zp 41.49 ri 1.57e-07p 0.000837p 0.273888p 0.0 3.068267n 0.0 3.606737m 0.200673p 0.000843p 7.27e-08p 2.42e-08p 0.0
sig0.544 cc 1.56e-07p 0.000835p 0.274065p 0.0 3.334593p 0.0 6.948204p 7.148537p 7.149378p 7.26e-08p 9.66e-08p 9.63e-08p
rc 1.57e-07p 0.000837p 0.274725p 0.000421o 3.342912m 0.029724n 6.978002j 7.178675h 7.179518f 7.27e-08p 9.68e-08p 9.65e-08o
u233t xi 0.0 0.0 0.016680m 0.0 0.148883k 0.0 0.701132h 0.054161l 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.980207f 0.0 0.0 0.0
zp 41.66 ri 0.0 1.46e-08p 0.017730p 0.0 0.158251p 0.0 0.745248p 0.057569p 1.97e-07p 0.0 0.0 0.0
sig0.361 cc 0.0 6.53e-10p 0.000795p 0.0 0.193606p 0.0 0.973074p 0.978716p 0.978716p 0.0 0.0 0.0
rc 0.0 1.46e-08p 0.017730p 2.00e-05p 0.175968p 0.001481p 0.922625p 0.980193p 0.980193f 0.0 0.0 0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.090311k 0.0 0.0 0.0
zp 40.38 ri 4.08e-09p 0.000427p 0.063422p 0.0 0.025132p 0.0 6.55e-05p 4.35e-11p 0.0 0.0 0.0 0.0
sig0.350 cc 4.08e-09p 0.000427p 0.063849p 0.0 0.088865p 0.0 0.088894p 0.088894p 0.088894p 0.0 0.0 0.0
rc 4.08e-09p 0.000427p 0.063849p 0.000258o 0.089123o 0.001161o 0.090313n 0.090313m 0.090313k 0.0 0.0 0.0

sr, y half lives from 80eng2; zr, nb, mo, tc half lives 89wal1.
1

mass number 105 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 40 zr g 41 nb g 42 mo d 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g

half life 0.493s 3.0 s 1.0 s 36. s 7.6 m 4.44 h 40. s 35.4 h stable 7.2 m 41.0d 55.5m
lambda 1.406e+00 2.310e-01 6.931e-01 1.925e-02 1.520e-03 4.337e-05 1.733e-02 5.439e-06 0.0 1.605e-03 1.957e-07
2.082e-04
z - 1 g 100.0000 98.9120 0.0 97.7680 100.0000 100.0000 27.0000 73.0000 100.0000 -50.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.9400 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0 50.0000 0.0
u235t xi 0.0 0.152484j 0.0 0.736933h 0.053308m 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.279912m 0.0 0.948804k 0.0 0.905236l 0.0 0.962979h 0.963065e 0.0 0.0 0.0
zp 41.79 ri 0.115845p 0.138623j 0.0 0.668062h 0.048462p 1.11e-07p 0.0 0.0 0.0 0.0 0.0 0.0
sig0.331 cc 5.00e-05p 0.131787p 0.0 0.957041p 0.968050p 0.968050p 0.261373p 0.968050p 0.968050p 0.0 0.0 0.0
rc 0.115845p 0.253208n 0.000148o 0.915766i 0.964228j 0.964228i 0.260342j 0.964228f 0.964228e 0.0 0.0 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 8.27e-09n 6.06e-08n 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.127818i 0.0 1.176224i 1.254434h 0.0 0.0 0.0
zp 41.67 ri 0.000549p 0.277350p 0.0 0.916747n 0.007474p 1.01e-07p 8.40e-09p 6.16e-08n 0.0 0.0 0.0 0.0
sig0.350 cc 0.000574p 0.290092p 0.0 1.187837p 1.195640p 1.195640p 0.322823p 1.195640p 1.195640p 0.0 0.0 0.0
rc 0.000549p 0.277894p 0.000409o 1.188847l 1.196321k 1.196321i 0.323007i 1.196321g 1.196321g 0.0 0.0 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 2.97e-07n 3.42e-06n 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.427896n 0.0 1.886803i 1.862321k 0.0 0.0 0.0
zp 41.90 ri 0.023156p 0.429096p 0.0 1.012352p 0.406248p 0.009911p 3.55e-07p 4.08e-06n 1.52e-08p 0.0 0.0 0.0
sig0.634 cc 0.025406p 0.495927p 0.0 1.545902p 1.858509p 1.869383p 0.504736p 1.869421p 1.869421p 0.0 0.0 0.0
rc 0.023156p 0.452000p 0.001844o 1.456107n 1.862354m 1.872265l 0.505512m 1.872270i 1.872270h 0.0 0.0 0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.33e-07n 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 3.179398k 4.129816g 0.0 4.160027i 3.791344h 0.0 0.0 0.0
zp 41.39 ri 0.213070p 1.797654n 0.0 2.003666m 0.078062p 0.000360p 6.08e-09p 4.46e-08p 3.75e-07n 0.0 0.0 0.0
sig0.557 cc 0.240677p 2.268635p 0.0 3.951058p 4.039234p 4.039558p 1.090681p 4.039558p 4.039558p 0.0 0.0 0.0
rc 0.213070p 2.008405m 0.005594o 3.972838j 4.050900i 4.051260g 1.093840g 4.051260f 4.051260e 0.0 0.0 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 1.11e-07n 7.40e-07n 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.203878g 0.0 3.267955f 3.013984i 0.0 0.0 0.0
zp 41.61 ri 0.108401p 1.285113n 0.0 1.621407n 0.224220p 0.002819p 1.11e-07p 7.41e-07n 1.92e-10p 0.0 0.0 0.0
sig0.605 cc 0.108483p 1.393385p 0.0 2.983542p 3.206857p 3.209677p 0.866613p 3.209680p 3.209680p 0.0 0.0 0.0
rc 0.108401p 1.392335m 0.006179o 2.988843l 3.213064i 3.215882g 0.868288g 3.215883f 3.215883e 0.0 0.0 0.0
pu239t xi 0.0 0.492886n 0.0 3.268910i 1.589912i 0.045323p 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 5.751836k 5.581274h 0.0 5.621340h 5.845306i 0.0 0.0 0.0
zp 42.25 ri 0.006408p 0.494223p 0.0 3.514266m 1.594226i 0.045446p 2.07e-05p 0.000138p 2.42e-08p 0.0 0.0 0.0
sig0.564 cc 0.005977p 0.466878p 0.0 3.998422p 5.564791p 5.644083p 1.523923p 5.644242p 5.644242p 0.0 0.0 0.0
rc 0.006408p 0.500561p 0.000329o 4.003984m 5.598210k 5.643656g 1.523808h 5.643815f 5.643815f 0.0 0.0 0.0

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 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  5.408818h      0.0  5.154301i 5.400980i      0.0       0.0       0.0
zp 42.28 ri 0.004940p 0.390534p      0.0  3.365336n 1.519664n 0.088679p 2.22e-05p 0.000163p 3.32e-08p      0.0       0.0       0.0
sig0.565 cc 0.004928p 0.394466p      0.0  3.743067p 5.271825p 5.360290p 1.447301p 5.360479p 5.360479p      0.0       0.0       0.0
         rc 0.004940p 0.395420p 0.000634o 3.752564m 5.272228j 5.360907h 1.447467h 5.361092g 5.361092g      0.0       0.0       0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  5.605923j 5.960904n      0.0  5.975807h 6.616053i      0.0       0.0       0.0
zp 41.87 ri 0.038716p 1.293507n      0.0  4.131967n 0.627231p 0.008908p 4.62e-07p 3.09e-06p 8.53e-11p      0.0       0.0       0.0
sig0.544 cc 0.039062p 1.343706p      0.0  5.415815p 6.061201p 6.069912p 1.638877p 6.069916p 6.069916p      0.0       0.0       0.0
         rc 0.038716p 1.331802m 0.004163o 5.438205l 6.065436i 6.074344i 1.640073i 6.074348g 6.074348g      0.0       0.0       0.0
 u233t   xi 0.001858j 0.065270k      0.0  0.363671h 0.060290k 0.011882m      0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.495809g      0.0       0.0       0.0
zp 41.87 ri 0.001837p 0.064530p      0.0  0.359552p 0.059607p 0.011748p      0.0       0.0       0.0       0.0       0.0       0.0
sig0.361 cc 4.02e-05p 0.055135p      0.0  0.481942p 0.496041p 0.496043p 0.133932p 0.496043p 0.496043p      0.0       0.0       0.0
         rc 0.001837p 0.066347p 3.60e-05p 0.424454p 0.484061p 0.495809p 0.133868p 0.495809i 0.495809g      0.0       0.0       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.053604h 0.021866n 0.033413k 0.046040k      0.0       0.0       0.0
zp 40.59 ri 0.023700p 0.028579p      0.0  0.000264p 1.06e-09p      0.0       0.0       0.0       0.0       0.0       0.0       0.0
sig0.350 cc 0.023700p 0.052021p      0.0  0.051124p 0.051124p 0.051124p 0.013803p 0.051124p 0.051124p      0.0       0.0       0.0
         rc 0.023700p 0.052021n 0.000358o 0.051481l 0.051481j 0.051481h 0.013900h 0.051481g 0.051481g      0.0       0.0       0.0

  zr half life from 80eng2; nb, mo, tc, ru, rh half lives 89wal1.
1

    mass number    106              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide      40 zr g   41 nb g   42 mo g   43 tc g   44 ru g   45 rh m   45 rh g   46 pd g   47 ag m   47 ag g   48 cd g
half life     0.907s     1.0 s     8.4 s     36. s    1.020y    2.18 h    29.9 s    stable     8.4 d    24.1 m    stable
lambda      7.642e-01 6.931e-01 8.252e-02 1.925e-02 2.155e-08 8.832e-05 2.318e-02       0.0 9.551e-07 4.794e-04       0.0
 z - 1 g    100.0000  100.0000   99.0600  100.0000  100.0000       0.0  100.0000  100.0000 -100.0000 -100.0000       0.0
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u235t   xi      0.0  0.016381n 0.367394i 0.027862n      0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0  0.427985k      0.0  0.390503e      0.0  0.356256m 0.436562g      0.0       0.0       0.0
zp 41.98 ri 1.68e-06p 0.015738p 0.359215h 0.026769p 9.07e-07p      0.0       0.0       0.0       0.0       0.0       0.0
sig0.331 cc 1.64e-06p 0.015412p 0.389404p 0.401578p 0.401579p      0.0  0.401579p 0.401579p      0.0       0.0       0.0
         rc 1.68e-06p 0.015740p 0.374807i 0.401575k 0.401576e      0.0  0.401576e 0.401576d      0.0       0.0       0.0
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 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  0.531413d      0.0       0.0  0.558522i      0.0       0.0       0.0
zp 41.87 ri 2.74e-05p 0.043476p 0.479016k 0.010289p 8.70e-07p      0.0       0.0       0.0       0.0       0.0       0.0
sig0.350 cc 2.75e-05p 0.043582p 0.522091p 0.532398p 0.532399p      0.0  0.532399p 0.532399p      0.0       0.0       0.0
         rc 2.74e-05p 0.043503p 0.522110i 0.532398f 0.532399d      0.0  0.532399d 0.532399d      0.0       0.0       0.0
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  1.618421i      0.0  1.568754n 1.574243k      0.0       0.0       0.0
zp 42.24 ri 0.004865p 0.191220p 0.868130p 0.509530p 0.037541p 0.000145p 0.000145p 2.15e-07p 1.18e-11p 2.59e-12p      0.0
sig0.634 cc 0.004856p 0.195696p 1.060264p 1.571976p 1.609443p 0.000146p 1.609589p 1.609736p 1.20e-11p 2.62e-12p      0.0
         rc 0.004865p 0.196085p 1.062372o 1.571902k 1.609443i 0.000145p 1.609587i 1.609732h 1.18e-11p 2.59e-12p      0.0
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  2.485539e      0.0       0.0  2.531166i      0.0       0.0       0.0
zp 41.71 ri 0.000729p 0.594294p 1.875089l 0.025203p 3.89e-07p      0.0       0.0       0.0       0.0       0.0       0.0
sig0.350 cc 0.000730p 0.595866p 2.464476p 2.489714p 2.489715p      0.0  2.489715p 2.489715p      0.0       0.0       0.0
         rc 0.000729p 0.595024o 2.464520i 2.489722g 2.489723e      0.0  2.489723e 2.489723e      0.0       0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  2.457894g      0.0       0.0  2.352755l      0.0       0.0       0.0
zp 41.88 ri 0.028070p 0.629225p 1.432497n 0.362048p 0.008920p 8.66e-06p 8.66e-06p 2.51e-09p      0.0       0.0       0.0
sig0.605 cc 0.028052p 0.656869p 2.082547p 2.445671p 2.454585p 8.84e-06p 2.454594p 2.454603p      0.0       0.0       0.0
         rc 0.028070p 0.657295o 2.083613m 2.445661i 2.454581g 8.66e-06p 2.454590g 2.454599g      0.0       0.0       0.0
 pu239t  xi      0.0  0.034933p 2.170187i 1.829563i 0.314393n 0.000222n 0.000222n      0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0  3.492902k 4.354352f      0.0       0.0  4.466958n      0.0       0.0       0.0
zp 42.63 ri 0.000183p 0.034857p 2.165518o 1.825459i 0.324082n 0.000222p 0.000222p 9.15e-07p 8.06e-12p 3.45e-12p      0.0
sig0.564 cc 0.000431p 0.082623p 2.135336p 4.031385p 4.348176p 0.000795p 4.348971p 4.349767p 7.97e-12p 3.41e-12p      0.0
         rc 0.000183p 0.035040p 2.200229n 4.025688i 4.349769f 0.000222p 4.349991f 4.350214f 8.06e-12p 3.45e-12p      0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  4.364066e      0.0       0.0  4.326349k      0.0       0.0       0.0
zp 42.68 ri 0.000317p 0.067103p 1.937203n 1.974150n 0.385154p 0.001102p 0.001102p 1.53e-06p 1.66e-11p 6.13e-12p      0.0
sig0.565 cc 0.000317p 0.067418p 2.003943p 3.978246p 4.363283p 0.001107p 4.364390p 4.365499p 1.67e-11p 6.16e-12p      0.0
         rc 0.000317p 0.067420p 2.003989m 3.978139l 4.363293e 0.001102p 4.364395e 4.365499e 1.66e-11p 6.13e-12p      0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  6.104090f      0.0       0.0  6.051987n      0.0       0.0       0.0
zp 42.26 ri 0.004071p 0.438774p 3.889355n 1.702797n 0.073052p 4.96e-05p 4.96e-05p 8.06e-09p      0.0       0.0       0.0
sig0.544 cc 0.004071p 0.442836p 4.327938p 6.030836p 6.103887p 4.98e-05p 6.103937p 6.103987p      0.0       0.0       0.0
         rc 0.004071p 0.442846p 4.328038m 6.030835h 6.103887f 4.96e-05p 6.103937f 6.103987f      0.0       0.0       0.0
 u233t   xi      0.0  0.003887o 0.208165j 0.031951m 0.005644m 1.27e-05n 1.27e-05n      0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0  0.245783f      0.0       0.0  0.253170j      0.0       0.0       0.0
zp 42.11 ri 7.10e-07p 0.003834p 0.205337p 0.031517p 0.005567m 1.25e-05p 1.25e-05p      0.0       0.0       0.0       0.0
sig0.361 cc 1.14e-06p 0.006182p 0.227819p 0.246208p 0.246223p 1.08e-12p 0.246223p 0.246223p      0.0       0.0       0.0
        rc 7.10e-07p 0.003834p 0.209136p 0.240653p 0.246220f 1.25e-05p 0.246233f 0.246245f      0.0       0.0       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.046568j      0.0       0.0  0.051932k      0.0       0.0       0.0
zp 41.02 ri 0.009859p 0.028184p 0.010778p 9.83e-05p 6.49e-08p      0.0       0.0       0.0       0.0       0.0       0.0
sig0.524 cc 0.009859p 0.038042p 0.048462p 0.048561p 0.048561p      0.0  0.048561p 0.048561p      0.0       0.0       0.0
        rc 0.009859p 0.038042p 0.048462n 0.048561l 0.048561j      0.0  0.048561j 0.048561j      0.0       0.0       0.0

  zr half life from 80eng2; nb, mo, tc, ru, rh half lives 89wal1.
1

    mass number    107              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide      41 nb g   42 mo g   43 tc g   44 ru g   45 rh g   46 pd m   46 pd g   47 ag m   47 ag g   48 cd g   49 in g
half life     0.766s     3.5 s    21.2 s     3.8 m    21.7 m    21.3 s    6.5e6y     44. s    stable     6.5 h     33. m
lambda      9.049e-01 1.980e-01 3.270e-02 3.040e-03 5.324e-04 3.254e-02 3.381e-15 1.575e-02       0.0 2.962e-05 3.501e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000       0.0  100.0000   -0.3400 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  -99.6600       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0  100.0000       0.0       0.0
 u235t   xi 0.002208o 0.115893j 0.021406n      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0  0.129778k 0.190387n      0.0  0.146484g      0.0  0.142489m      0.0       0.0
zp 42.18 ri 0.002314p 0.121451p 0.022433p 4.94e-06p      0.0       0.0       0.0       0.0       0.0       0.0       0.0
sig0.331 cc 0.002058p 0.128949p 0.146197p 0.146202p 0.146202p      0.0  0.146202p      0.0  0.146202p      0.0       0.0
        rc 0.002314p 0.123764p 0.146197p 0.146202j 0.146202i      0.0  0.146202g      0.0  0.146202g      0.0       0.0
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.302329k      0.0       0.0       0.0       0.0
zp 42.09 ri 0.010186p 0.266452p 0.025683p 8.41e-06p      0.0       0.0       0.0       0.0       0.0       0.0       0.0
sig0.350 cc 0.010186p 0.276638p 0.302321p 0.302329p 0.302329p      0.0  0.302329p      0.0  0.302329p      0.0       0.0
        rc 0.010186p 0.276638p 0.302321o 0.302329n 0.302329m      0.0  0.302329k      0.0  0.302329k      0.0       0.0
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.285472k      0.0       0.0       0.0       0.0
zp 42.60 ri 0.052522p 0.509143p 0.623681p 0.098386p 0.001749p 2.42e-06p 6.43e-07p 4.51e-10p 3.92e-11p      0.0       0.0
sig0.634 cc 0.052522p 0.561666p 1.185346p 1.283732p 1.285481p 2.42e-06p 1.285484p 4.51e-10p 1.285484p      0.0       0.0
        rc 0.052522p 0.561666o 1.185346n 1.283732n 1.285481m 2.42e-06p 1.285484k 4.51e-10p 1.285484k      0.0       0.0
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0  1.507141k      0.0  1.259525m      0.0       0.0       0.0       0.0
zp 41.93 ri 0.145021p 1.234351n 0.066489p 5.09e-06p      0.0       0.0       0.0       0.0       0.0       0.0       0.0
sig0.350 cc 0.144677p 1.379530p 1.445861p 1.445866p 1.445866p      0.0  1.445866p      0.0  1.445866p      0.0       0.0
        rc 0.145021p 1.379372m 1.445861m 1.445866l 1.445866k      0.0  1.445866j      0.0  1.445866j      0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  1.693699i      0.0  1.700946l      0.0       0.0       0.0       0.0
zp 42.22 ri 0.196808p 0.954923p 0.513949p 0.028553p 0.000135p 3.80e-08p 1.01e-08p 1.11e-12p      0.0       0.0       0.0
sig0.605 cc 0.196829p 1.151851p 1.665677p 1.694233p 1.694368p 3.80e-08p 1.694368p 1.10e-12p 1.694368p      0.0       0.0
        rc 0.196808p 1.151731o 1.665680m 1.694233k 1.694368i 3.80e-08p 1.694368i 1.11e-12p 1.694368i      0.0       0.0
 pu239t  xi      0.0  0.593889l 1.845060j 0.848893l 0.077172p      0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0  3.091383k 3.566980l      0.0  3.327900i      0.0  3.304999m      0.0       0.0
zp 43.02 ri 0.009783p 0.586023p 1.820620n 0.837461l 0.076150p 1.27e-05p 6.81e-06p 8.44e-10p 1.26e-10p      0.0       0.0
sig0.564 cc 0.011072p 0.674302p 2.600562p 3.317001p 3.330037p 1.28e-05p 3.330057p 8.59e-10p 3.330057p      0.0       0.0
        rc 0.009783p 0.595806p 2.416427n 3.253888j 3.330038i 1.27e-05p 3.330057h 8.44e-10p 3.330057h      0.0       0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.105829j      0.0  3.492946k      0.0       0.0
zp 43.08 ri 0.007720p 0.563659p 1.810039n 0.822661p 0.016977p 2.26e-05p 1.01e-05p 1.82e-09p 2.48e-10p      0.0       0.0
sig0.565 cc 0.007731p 0.572175p 2.384732p 3.204055p 3.221056p 2.26e-05p 3.221088p 1.71e-09p 3.221088p      0.0       0.0
        rc 0.007720p 0.571379o 2.381418m 3.204079m 3.221056l 2.26e-05p 3.221088j 1.82e-09p 3.221088i      0.0       0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0  4.790062k      0.0       0.0  5.103693l      0.0       0.0       0.0       0.0
zp 42.64 ri 0.081039p 2.074601n 2.430132n 0.299148p 0.001401p 2.55e-07p 1.37e-07p 2.41e-12p      0.0       0.0       0.0
sig0.544 cc 0.081320p 2.163115p 4.580891p 4.884961p 4.886321p 2.47e-07p 4.886322p 2.34e-12p 4.886322p      0.0       0.0
        rc 0.081039p 2.155640m 4.585772l 4.884920j 4.886321j 2.55e-07p 4.886322j 2.42e-12p 4.886322j      0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0  0.108883j      0.0       0.0  0.115884i      0.0       0.0       0.0       0.0
zp 42.34 ri 0.000879p 0.085530p 0.028042p 8.11e-05p 8.97e-11p      0.0       0.0       0.0       0.0       0.0       0.0
sig0.361 cc 0.000879p 0.086409p 0.114451p 0.114532p 0.114532p      0.0  0.114532p      0.0  0.114532p      0.0       0.0
        rc 0.000879p 0.086409p 0.114451l 0.114532j 0.114532i      0.0  0.114532h      0.0  0.114532h      0.0       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.051075k      0.0       0.0       0.0       0.0
zp 41.50 ri 0.022530p 0.027233p 0.001308p 3.78e-06p 2.31e-10p      0.0       0.0       0.0       0.0       0.0       0.0
sig0.524 cc 0.022530p 0.049762p 0.051071p 0.051075p 0.051075p      0.0  0.051075p      0.0  0.051075p      0.0       0.0
        rc 0.022530p 0.049762p 0.051071o 0.051075n 0.051075m      0.0  0.051075k      0.0  0.051075k      0.0       0.0

  nb half life from 80eng2; mo, tc, ru, rh, pd half lives 89wal1.
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     mass number    108              LA-UR-94-3106 (ENDF-349)                              percent yields
 nuclide       40 zr g   41 nb g   42 mo g   43 tc d   43 tc g   44 ru d   44 ru g   45 rh m   45 rh g   46 pd g   47 ag g   48 cd g
 half life     0.378s    0.242s     1.5 s    1.41 s     5.1 s     1.4 s     4.5 m     5.9 m     17. s    stable    2.41 m    stable
 lambda       1.834e+00 2.864e+00 4.621e-01 4.916e-01 1.359e-01 4.951e-01 2.567e-03 1.958e-03 4.077e-02       0.0 4.794e-03
0.0
  z - 1 g    100.0000  100.0000  100.0000       0.0  100.0000       0.0  100.0000       0.0  100.0000  100.0000   -2.3000   97.7000
  z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
  z - 0 m        0.0       0.0       0.0    0.1360  100.0000    0.0880  100.0000       0.0       0.0       0.0       0.0       0.0
  u235t   xi     0.0       0.0       0.0       0.0  0.026579o      0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc     0.0       0.0       0.0       0.0       0.0       0.0  0.043153j      0.0       0.0  0.056262i      0.0       0.0
 zp 42.38 ri 3.10e-10p 9.00e-05p 0.030206p      0.0  0.023768p      0.0  1.67e-05p      0.0       0.0       0.0       0.0       0.0
 sig0.331 cc 4.34e-10p 0.000126p 0.042459p      0.0  0.054058p      0.0  0.054081p 1.17e-12p 0.054081p 0.054081p      0.0       0.0
          rc 3.10e-10p 9.00e-05p 0.030296p 2.18e-05o 0.054086k 2.59e-05n 0.054129i      0.0  0.054129i 0.054129h      0.0       0.0
  u235f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.130814l      0.0       0.0
 zp 42.31 ri 1.85e-08p 0.000819p 0.107450p      0.0  0.022371p      0.0  4.91e-05p 6.81e-12p 6.81e-12p      0.0       0.0       0.0
 sig0.350 cc 1.85e-08p 0.000819p 0.108269p      0.0  0.130639p      0.0  0.130688p 6.81e-12p 0.130688p 0.130688p      0.0       0.0
          rc 1.85e-08p 0.000819p 0.108269p 5.92e-05o 0.130699o 6.81e-05o 0.130816o 6.81e-12p 0.130816n 0.130816l      0.0       0.0
  u235he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.178077k      0.0       0.0
 zp 42.96 ri 6.11e-05p 0.012440p 0.262888p      0.0  0.669777p      0.0  0.223249p 0.004435p 0.004435p 3.62e-05p 1.38e-08p
0.0
 sig0.634 cc 6.11e-05p 0.012501p 0.275372p      0.0  0.945140p      0.0  1.168417p 0.004434p 1.172851p 1.177321p 1.38e-08p
1.35e-08p
          rc 6.11e-05p 0.012501p 0.275390p 0.000152o 0.945318o 0.000624o 1.169192n 0.004435p 1.173626m 1.178097k 1.38e-08p
1.35e-08p
  u238f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.601392l      0.0       0.0
 zp 42.14 ri 8.82e-07p 0.017381p 0.507304o      0.0  0.076253p      0.0  3.04e-05p 1.81e-12p 1.81e-12p      0.0       0.0       0.0
 sig0.350 cc 8.81e-07p 0.017380p 0.524690p      0.0  0.600938p      0.0  0.600968p 1.81e-12p 0.600968p 0.600968p      0.0       0.0
          rc 8.82e-07p 0.017381p 0.524685o 0.000231o 0.601169n 0.000221o 0.601420n 1.81e-12p 0.601420m 0.601420l      0.0
0.0
  u238he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.222415l      0.0       0.0
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zp 42.59 ri 0.000343p 0.043939p 0.497200p 0.0 0.599921p 0.0 0.078950p 0.000474p 0.000474p 8.87e-07p 5.95e-11p 0.0
sig0.605 cc 0.000343p 0.044278p 0.541438p 0.0 1.141410p 0.0 1.220353p 0.000474p 1.220828p 1.221303p 5.95e-11p 5.81e-11p
rc 0.000343p 0.044282p 0.541482p 0.000351o 1.141754o 0.000808o 1.221512n 0.000474p 1.221986m 1.222461l 5.95e-11p 5.81e-11p
pu239t xi 0.0 0.0 0.224572m 0.0 0.580752k 0.0 1.349612j 0.020713p 0.020713p 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.011093j 0.0 0.0 2.171850i 0.0 0.0
zp 43.43 ri 4.55e-07p 0.000932p 0.214958p 0.0 0.626050o 0.0 1.281706j 0.019826p 0.019826p 0.000288p 4.16e-08p 0.0
sig0.564 cc 2.76e-07p 0.000565p 0.130891p 0.0 1.021421p 0.0 2.113234p 0.025024p 2.138258p 2.163587p 4.39e-08p 4.29e-08p
rc 4.55e-07p 0.000932p 0.215890p 8.05e-06o 0.841949n 0.000361o 2.124015j 0.019826p 2.143841j 2.163956h 4.16e-08p 4.06e-08p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.002784j 0.0 0.0
zp 43.49 ri 1.51e-07p 0.000354p 0.097208p 0.0 0.754785p 0.0 1.092004n 0.028908p 0.028908p 0.000434p 7.55e-08p 1.41e-12p
sig0.565 cc 1.51e-07p 0.000354p 0.097559p 0.0 0.852325p 0.0 1.944352p 0.028907p 1.973260p 2.002601p 7.55e-08p 7.38e-08p
rc 1.51e-07p 0.000354p 0.097562p 2.19e-07o 0.852347o 0.000168o 1.944519m 0.028908p 1.973427l 2.002769j 7.55e-08p 7.38e-08p
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.818308j 0.0 0.0 3.566924l 0.0 0.0
zp 43.04 ri 6.61e-06p 0.008241p 0.681438p 0.0 2.240429n 0.0 0.826149p 0.006005p 0.006005p 1.22e-05p 3.21e-10p 0.0
sig0.544 cc 6.61e-06p 0.008245p 0.689517p 0.0 2.929439p 0.0 3.755837p 0.006217p 3.762055p 3.768285p 3.33e-10p 3.25e-10p
rc 6.61e-06p 0.008247p 0.689685o 0.000166o 2.930280m 0.001148n 3.757577j 0.006005p 3.763582j 3.769599j 3.21e-10p 3.14e-10p
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.076561j 0.0 0.0 0.075483i 0.0 0.0
zp 42.57 ri 5.37e-10p 8.14e-05p 0.045340p 0.0 0.029797p 0.0 0.000516p 1.08e-09p 1.08e-09p 0.0 0.0 0.0
sig0.361 cc 5.37e-10p 8.14e-05p 0.045421p 0.0 0.075218p 0.0 0.075734p 1.09e-09p 0.075734p 0.075734p 0.0 0.0
rc 5.37e-10p 8.14e-05p 0.045421p 8.96e-06o 0.075227l 2.40e-05o 0.075767j 1.08e-09p 0.075767i 0.075767h 0.0 0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.061346m 0.0 0.0
zp 41.98 ri 0.000165p 0.008505p 0.045013p 0.0 0.007431p 0.0 0.000123p 1.71e-08p 1.71e-08p 0.0 0.0 0.0
sig0.524 cc 0.000165p 0.008670p 0.053684p 0.0 0.061115p 0.0 0.061238p 1.71e-08p 0.061238p 0.061238p 0.0 0.0
rc 0.000165p 0.008670p 0.053684p 5.25e-05o 0.061167p 5.66e-05o 0.061347o 1.71e-08p 0.061347n 0.061347l 0.0 0.0

zr, nb half lives from 80eng2; mo, tc, ru, rh half lives 89wal1.
1

mass number 109 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 41 nb g 42 mo g 43 tc g 44 ru d 44 ru g 45 rh m 45 rh g 46 pd m 46 pd g 47 ag g 48 cd g 49 in g
half life 0.315s 1.41 s 1.4 s 0.83 s 34.5 s 50. s 1.34 m 4.69 m 13.5 h stable 462.9d 4.2 h
lambda 2.200e+00 4.916e-01 4.951e-01 8.351e-01 2.009e-02 1.386e-02 8.621e-03 2.463e-03 1.426e-05 0.0 1.733e-08
4.584e-05
z - 1 g 100.0000 100.0000 99.8640 0.0 99.9120 50.0000 50.0000 0.0 100.0000 100.0000 0.0 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -100.0000 0.0
z - 0 m 0.0 0.0 0.0 0.6210 100.0000 0.0 100.0000 0.0 100.0000 0.0 0.0 0.0
u235t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.030496k 0.0 0.0 0.0 0.026918o 0.033523k 0.0 0.0
zp 42.60 ri 0.000484p 0.015528p 0.013445p 0.0 0.001713p 2.06e-06p 2.06e-06p 5.46e-10p 2.94e-10p 0.0 0.0 0.0
sig0.531 cc 0.000484p 0.016012p 0.029434p 0.0 0.031122p 0.015563p 0.031126p 5.80e-10p 0.031126p 0.031126p 0.0
0.0
rc 0.000484p 0.016012p 0.029435m 9.65e-05o 0.031218k 0.015611k 0.031223j 5.46e-10p 0.031223j 0.031223i 0.0 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.083380i 0.077496j 0.0 0.0
zp 42.57 ri 0.001566p 0.041927p 0.033911p 0.0 0.004000p 5.25e-06p 5.25e-06p 1.56e-09p 7.01e-10p 0.0 0.0 0.0
sig0.537 cc 0.001566p 0.043493p 0.077345p 0.0 0.081277p 0.040644p 0.081287p 1.56e-09p 0.081287p 0.081287p 0.0
0.0
rc 0.001566p 0.043493p 0.077345p 0.000259o 0.081535o 0.040773o 0.081546k 1.56e-09p 0.081546i 0.081546h 0.0
0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.181322i 1.150506k 0.0 0.0
zp 43.33 ri 0.002270p 0.109172p 0.598042p 0.0 0.423804p 0.018843p 0.018843p 0.000286p 7.60e-05p 3.30e-07p 2.74e-11p
0.0
sig0.634 cc 0.002269p 0.111423p 0.709211p 0.0 1.132519p 0.585099p 1.170198p 0.000286p 1.170560p 1.170561p 2.78e-11p
0.0

rc 0.002270p 0.111442p 0.709332o 0.002578o 1.135090o 0.586388o 1.172776k 0.000286p 1.173138i 1.173138i 2.74e-11p
0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.251609i 0.257859m 0.0 0.0
zp 42.37 ri 0.001526p 0.168201p 0.081833p 0.0 0.000158p 6.24e-11p 6.24e-11p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.001526p 0.169727p 0.251329p 0.0 0.251265p 0.125632p 0.251265p 0.0 0.251265p 0.251265p 0.0 0.0
rc 0.001526p 0.169727p 0.251329o 0.000875o 0.252140o 0.126070o 0.252140k 0.0 0.252140i 0.252140i 0.0 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.111458i 1.219277l 0.0 0.0
zp 42.95 ri 0.009375p 0.248507p 0.660338p 0.0 0.196087p 0.002848p 0.002848p 1.07e-05p 2.84e-06p 2.47e-09p 0.0
0.0
sig0.605 cc 0.009378p 0.257955p 0.918132p 0.0 1.113146p 0.559422p 1.118845p 1.07e-05p 1.118858p 1.118858p 0.0
0.0
rc 0.009375p 0.257882p 0.917869o 0.003967o 1.117115n 0.561406n 1.122812k 1.07e-05p 1.122826i 1.122826i 0.0
0.0
pu239t xi 0.0 0.005957p 0.406533k 0.0 1.003674k 0.036484o 0.036484o 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.096292p 0.0 1.269603p 0.0 1.472603h 1.632347m 0.0 0.0
zp 43.75 ri 1.78e-09p 0.005916p 0.403771p 0.0 0.995858k 0.036236p 0.036236o 2.61e-07p 1.41e-07p 0.0 0.0 0.0
sig0.350 cc 8.60e-11p 0.000285p 0.307127p 0.0 1.458045p 0.738873p 1.477746p 2.64e-07p 1.477746p 1.477746p 0.0
0.0
rc 1.78e-09p 0.005916p 0.409679p 0.000249o 1.405426n 0.738949n 1.477897j 2.61e-07p 1.477898h 1.477898h 0.0
0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.984046m 1.056164k 0.0 0.0
zp 43.77 ri 3.98e-11p 0.000161p 0.190689p 0.0 0.830196p 0.007574p 0.007574p 2.62e-07p 1.18e-07p 0.0 0.0 0.0
sig0.350 cc 4.01e-11p 0.000162p 0.192547p 0.0 1.020741p 0.518012p 1.036024p 2.64e-07p 1.036024p 1.036024p 0.0
0.0
rc 3.98e-11p 0.000161p 0.190849p 0.000259o 1.021137n 0.518142n 1.036285m 2.62e-07p 1.036285l 1.036285k 0.0
0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.704843i 0.0 0.0 0.0 2.239174i 2.320365l 0.0 0.0
zp 43.44 ri 0.000433p 0.121460p 1.183164n 0.0 1.228532m 0.026748p 0.026748p 0.000125p 6.72e-05p 1.85e-08p 0.0
0.0
sig0.544 cc 0.000432p 0.121594p 1.301689p 0.0 2.526753p 1.292877p 2.585754p 0.000138p 2.585966p 2.585966p 0.0
0.0

```
        rc 0.000433p 0.121893p 1.304891m 0.001635o 2.533910i 1.293703i 2.587405h 0.000125p 2.587597h 2.587597h       0.0
0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.036381p 0.040265m      0.0       0.0
zp 43.12 ri 5.94e-05p 0.006527p 0.020730p       0.0  0.011848p 0.000105p 0.000105p 2.81e-07p 1.51e-07p 1.92e-11p       0.0       0.0
sig0.555 cc 5.94e-05p 0.006587p 0.027308p       0.0  0.039132p 0.019671p 0.039342p 2.81e-07p 0.039343p 0.039343p       0.0
0.0
        rc 5.94e-05p 0.006587p 0.027308p 6.19e-05o 0.039194o 0.019702o 0.039404n 2.81e-07p 0.039405m 0.039405l       0.0
0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.065124i 0.067675i      0.0       0.0
zp 42.45 ri 0.002088p 0.036487p 0.025786p       0.0  0.001591p 1.30e-06p 1.30e-06p 1.37e-10p 6.18e-11p       0.0       0.0       0.0
sig0.524 cc 0.002088p 0.038575p 0.064309p       0.0  0.065843p 0.032923p 0.065845p 1.37e-10p 0.065845p 0.065845p       0.0
0.0
        rc 0.002088p 0.038575p 0.064309p 0.000370o 0.066213o 0.033108o 0.066215k 1.37e-10p 0.066215i 0.066215h       0.0
0.0

   nb, mo half lives from 80eng2; tc, ru, rh, pd half lives 89wal1.
1

     mass number    110              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       40 zr g   41 nb g   42 mo g   43 tc g   44 ru g   45 rh m   45 rh g   46 pd g   47 ag m   47 ag g   48 cd g
half life              0.130s    2.77 s    0.83 s     15. s     29. s     3.1 s    stable    252. d    24.6 s    stable
lambda            0.0 5.332e+00 2.502e-01 8.351e-01 4.621e-02 2.390e-02 2.236e-01       0.0 3.184e-08 2.818e-02       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000   99.3790       0.0  100.0000  100.0000       0.0   -0.3000   99.7000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0   98.6000
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0    1.4000       0.0
 u235t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.025445h      0.0       0.0       0.0
zp 43.17 ri 9.29e-09p 1.53e-05p 0.003887p 0.011640p 0.009886p 5.65e-05p 5.65e-05p 2.15e-07p 2.28e-12p       0.0       0.0
sig0.531 cc 9.29e-09p 1.53e-05p 0.003902p 0.015542p 0.025332p 5.65e-05p 0.025388p 0.025445p 2.28e-12p 1.01e-12p 3.26e-12p
        rc 9.29e-09p 1.53e-05p 0.003902p 0.015542p 0.025332l 5.65e-05p 0.025388j 0.025445h 2.28e-12p 1.01e-12p 3.26e-12p
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.064915l      0.0       0.0       0.0
zp 43.14 ri 4.34e-08p 5.54e-05p 0.011161p 0.030454p 0.023237p 0.000133p 0.000133p 5.08e-07p 6.48e-12p 2.40e-12p       0.0
sig0.537 cc 4.34e-08p 5.55e-05p 0.011217p 0.041671p 0.064649p 0.000133p 0.064782p 0.064915p 6.48e-12p 2.49e-12p 8.87e-12p
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rc 4.34e-08p 5.55e-05p 0.011217p 0.041671p 0.064649o 0.000133p 0.064782n 0.064915l 6.48e-12p 2.49e-12p 8.87e-12p
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.083689k 0.0 0.0 0.0
zp 43.69 ri 2.62e-07p 0.000298p 0.032512p 0.382194p 0.561898p 0.053522p 0.053522p 0.002330p 4.14e-06p 9.08e-07p 1.00e-09p
sig0.634 cc 2.62e-07p 0.000298p 0.032811p 0.415017p 0.974322p 0.053524p 1.027846p 1.083700p 4.14e-06p 9.66e-07p 5.04e-06p
rc 2.62e-07p 0.000298p 0.032810p 0.415004p 0.974325n 0.053522p 1.027847m 1.083700k 4.14e-06p 9.66e-07p 5.04e-06p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.140760l 0.0 0.0 0.0
zp 42.60 ri 1.59e-10p 0.000111p 0.061978p 0.078762p 0.000784p 1.73e-09p 1.73e-09p 0.0 0.0 0.0 0.0
sig0.350 cc 1.59e-10p 0.000111p 0.062088p 0.140850p 0.140760p 1.73e-09p 0.140760p 0.140760p 0.0 0.0 0.0
rc 1.59e-10p 0.000111p 0.062088p 0.140850p 0.140760o 1.73e-09p 0.140760n 0.140760l 0.0 0.0 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.027437l 0.0 0.0 0.0
zp 43.32 ri 1.66e-06p 0.001378p 0.089992p 0.547466p 0.366619p 0.012896p 0.012896p 0.000157p 5.96e-08p 1.31e-08p 2.37e-12p
sig0.605 cc 1.66e-06p 0.001379p 0.091372p 0.638840p 1.001489p 0.012896p 1.014385p 1.027439p 5.96e-08p 1.39e-08p 7.27e-08p
rc 1.66e-06p 0.001379p 0.091371p 0.638837o 1.001489n 0.012896p 1.014385m 1.027439k 5.96e-08p 1.39e-08p 7.27e-08p
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.645135i 0.0 0.0 0.0
zp 43.98 ri 0.0 0.0 8.32e-06p 0.040167p 0.574329m 0.015436p 0.015436p 4.43e-06p 0.0 0.0 0.0
sig0.350 cc 0.0 0.0 8.32e-06p 0.040173p 0.614256p 0.015436p 0.629692p 0.645132p 0.0 0.0 0.0
rc 0.0 0.0 8.32e-06p 0.040175p 0.614254l 0.015436p 0.629691k 0.645132i 0.0 0.0 0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.647337j 0.0 0.0 0.0
zp 43.97 ri 0.0 0.0 9.54e-06p 0.041767p 0.577105n 0.014352p 0.014352p 3.89e-06p 0.0 0.0 0.0
sig0.350 cc 0.0 0.0 9.54e-06p 0.041774p 0.618624p 0.014352p 0.632976p 0.647331p 0.0 0.0 0.0
rc 0.0 0.0 9.54e-06p 0.041777p 0.618623m 0.014352p 0.632975l 0.647331j 0.0 0.0 0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.325137j 0.0 0.0 0.0
zp 43.76 ri 0.0 6.24e-11p 0.000227p 0.263049p 1.044420n 0.009526p 0.009526p 4.30e-07p 0.0 0.0 0.0
sig0.350 cc 0.0 6.24e-11p 0.000227p 0.263264p 1.306062p 0.009526p 1.315588p 1.325114p 0.0 0.0 0.0
rc 0.0 6.24e-11p 0.000227p 0.263275p 1.306061l 0.009526p 1.315587l 1.325114j 0.0 0.0 0.0
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.038664h 0.0 0.0 0.0
zp 43.66 ri 3.16e-10p 1.24e-06p 0.000919p 0.009043p 0.027182p 0.000779p 0.000779p 2.22e-05p 2.55e-09p 1.09e-09p 0.0

sig0.555 cc 3.16e-10p 1.24e-06p 0.000920p 0.009963p 0.037084p 0.000779p 0.037863p 0.038664p 2.55e-09p 1.13e-09p 3.63e-09p
rc 3.16e-10p 1.24e-06p 0.000920p 0.009963p 0.037084l 0.000779p 0.037863j 0.038664h 2.55e-09p 1.13e-09p 3.63e-09p
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.070997m 0.0 0.0 0.0
zp 42.92 ri 1.78e-07p 0.000213p 0.018771p 0.040592p 0.011714p 3.87e-05p 3.87e-05p 3.61e-08p 0.0 0.0 0.0
sig0.524 cc 1.78e-07p 0.000213p 0.018984p 0.059576p 0.070920p 3.87e-05p 0.070958p 0.070997p 0.0 0.0 0.0
rc 1.78e-07p 0.000213p 0.018984p 0.059576p 0.070920o 3.87e-05p 0.070958n 0.070997l 0.0 0.0 0.0

nb, mo half lives from 80eng2; tc, ru, rh half lives from 89wal1.
1

mass number 111 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 42 mo g 43 tc g 44 ru g 45 rh g 46 pd m 46 pd g 47 ag m 47 ag g 48 cd m 48 cd g 49 in g 50 sn g
half life 0.466s 1.98 s 1.5 s 11. s 5.5 h 23.4 m 1.08 m 7.47 d 48.7 m stable 2.83 d 35.3 m
lambda 1.487e+00 3.501e-01 4.621e-01 6.301e-02 3.501e-05 4.937e-04 1.070e-02 1.074e-06 2.372e-04 0.0 2.835e-06
3.273e-04
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.4300 99.5700 99.3000 0.7000 0.0 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 21.7000 7.0000 0.0 0.3000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 71.3000 0.0 99.7000 0.0 100.0000 0.0 0.0
u235t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.016591o 0.0 0.000167n 0.0 0.0 0.020108i 0.0 0.016301h 0.0 0.0
zp 43.71 ri 0.000228p 0.004491p 0.011826p 0.000880p 4.72e-06p 2.54e-06p 8.28e-10p 1.24e-10p 0.0 0.0 0.0 0.0
sig0.531 cc 0.000228p 0.004710p 0.016515p 0.017425p 7.98e-05p 0.017409p 0.017305p 0.017380p 0.0 0.017432p 0.0
0.0
rc 0.000228p 0.004719p 0.016545o 0.017425n 7.97e-05n 0.017409m 0.017305k 0.017380h 0.0 0.017432g 0.0 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.037776h 0.0 0.043443g 0.0 0.0
zp 43.68 ri 0.000698p 0.011954p 0.027830p 0.002077p 1.15e-05p 5.17e-06p 2.11e-09p 2.88e-10p 0.0 0.0 0.0 0.0
sig0.537 cc 0.000698p 0.012653p 0.040483p 0.042560p 0.000195p 0.042521p 0.042265p 0.042450p 0.0 0.042577p 0.0
0.0
rc 0.000698p 0.012653p 0.040483p 0.042560o 0.000195o 0.042521m 0.042265j 0.042450g 0.0 0.042577f 0.0 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.065043g 0.0 1.106550i 0.0 0.0
zp 44.06 ri 0.007438p 0.195907p 0.612876p 0.250687p 0.009806p 0.002607p 5.88e-05p 5.11e-06p 2.66e-08p 4.33e-09p 1.34e-12p
0.0

sig0.634 cc 0.007438p 0.203323p 0.816130p 1.066910p 0.014392p 1.075190p 1.070846p 1.076172p 2.66e-08p 1.079385p 1.34e-12p 0.0
rc 0.007438p 0.203346p 0.816222o 1.066909o 0.014393p 1.075190n 1.070846k 1.076172g 2.66e-08p 1.079385g 1.34e-12p 0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.000340n 0.0 0.0 0.070840f 0.0 0.074302k 0.0 0.0
zp 42.91 ri 0.017463p 0.042693p 0.010914p 0.000145p 8.58e-08p 3.85e-08p 3.32e-12p 0.0 0.0 0.0 0.0 0.0
sig0.557 cc 0.017463p 0.060156p 0.071069p 0.071214p 0.000306p 0.071126p 0.070695p 0.071002p 0.0 0.071214p 0.0 0.0
rc 0.017463p 0.060156p 0.071069o 0.071214n 0.000306n 0.071126m 0.070695j 0.071002f 0.0 0.071214f 0.0 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.985637m 0.0 0.967454g 0.0 1.042701i 0.0 0.0
zp 43.68 ri 0.025770p 0.359844p 0.519951p 0.085396p 0.001014p 0.000269p 1.40e-06p 1.21e-07p 1.11e-10p 1.81e-11p 0.0 0.0
sig0.605 cc 0.025550p 0.382310p 0.906308p 0.990972p 0.005266p 0.990732p 0.984941p 0.989290p 1.10e-10p 0.992245p 0.0 0.0
rc 0.025770p 0.385614p 0.905565n 0.990961m 0.005275n 0.990730l 0.984941j 0.989291g 1.11e-10p 0.992245g 0.0 0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.297044g 0.0 0.289893h 0.0 0.0
zp 44.18 ri 2.53e-07p 0.006700p 0.244937p 0.044333p 1.51e-05p 8.14e-06p 3.27e-12p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 2.55e-07p 0.006737p 0.251397p 0.295970p 0.001288p 0.295623p 0.293833p 0.295112p 0.0 0.295993p 0.0 0.0
rc 2.53e-07p 0.006701p 0.251637o 0.295970n 0.001288o 0.295623m 0.293834j 0.295112g 0.0 0.295993f 0.0 0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.356435g 0.0 0.356789f 0.0 0.0
zp 44.18 ri 3.11e-07p 0.007850p 0.297428p 0.051711p 1.95e-05p 8.76e-06p 3.83e-12p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 3.11e-07p 0.007852p 0.305270p 0.356989p 0.001555p 0.356572p 0.354413p 0.355954p 0.0 0.357018p 0.0 0.0
rc 3.11e-07p 0.007851p 0.305278o 0.356989n 0.001555o 0.356572l 0.354413i 0.355954f 0.0 0.357018e 0.0 0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.586825h 0.0 0.532897l 0.0 0.0
zp 43.99 ri 6.32e-06p 0.039857p 0.511132p 0.034512p 2.91e-06p 1.57e-06p 0.0 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 6.41e-06p 0.040429p 0.550505p 0.585506p 0.002521p 0.584788p 0.581241p 0.583767p 0.0 0.585511p 0.0 0.0
rc 6.32e-06p 0.039863p 0.550995p 0.585506o 0.002521o 0.584788n 0.581241k 0.583767g 0.0 0.585511g 0.0 0.0

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 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  0.000437p      0.0       0.0  0.022105j      0.0  0.018623l      0.0       0.0
zp 44.17 ri 3.29e-05p 0.001878p 0.015087p 0.004402p 0.000130p 7.01e-05p 1.88e-07p 2.80e-08p 1.78e-11p 5.33e-12p       0.0
0.0
sig0.555 cc 3.29e-05p 0.001911p 0.016998p 0.021400p 0.000222p 0.021536p 0.021434p 0.021536p 1.78e-11p 0.021600p       0.0
0.0
         rc 3.29e-05p 0.001911p 0.016998p 0.021400o 0.000222p 0.021536o 0.021434m 0.021536j 1.78e-11p 0.021600j       0.0
0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  0.000307p      0.0       0.0  0.071561j      0.0  0.070716m      0.0       0.0
zp 43.38 ri 0.003756p 0.035671p 0.031152p 0.001039p 1.38e-06p 6.20e-07p 7.06e-11p 9.62e-12p       0.0       0.0       0.0       0.0
sig0.524 cc 0.003756p 0.039426p 0.070579p 0.071617p 0.000309p 0.071530p 0.071097p 0.071406p       0.0  0.071619p       0.0
0.0
         rc 0.003756p 0.039426p 0.070579p 0.071617o 0.000309n 0.071530o 0.071097m 0.071406j       0.0  0.071619i       0.0       0.0

  mo, tc half lives from 80eng2; ru, rh, pd, ag half lives 89wal1.
1

    mass number    112              LA-UR-94-3106 (ENDF-349)                                percent yields
nuclide       42 mo g   43 tc g   44 ru g   45 rh g   46 pd g   47 ag g   48 cd g   49 in m   49 in g   50 sn g
half life     0.975s    0.431s     4.5 s      4. s    20.04h    3.13 h    stable    20.8 m    14.4 m    stable
lambda      7.109e-01 1.608e+00 1.540e-01 1.733e-01 9.608e-06 6.151e-05       0.0 5.554e-04 8.023e-04       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  -56.0000   44.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 u235t   xi      0.0       0.0       0.0       0.0       0.0  7.58e-07o 9.73e-10n      0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  0.011938i      0.0  0.014442j      0.0       0.0       0.0
zp 44.22 ri 9.65e-06p 0.000686p 0.009922p 0.002296p 0.000128p 8.29e-07p 1.06e-09n      0.0       0.0       0.0
sig0.531 cc 9.65e-06p 0.000695p 0.010618p 0.012914p 0.013043p 0.013043p 0.013043p      0.0       0.0       0.0
         rc 9.65e-06p 0.000695p 0.010617o 0.012913k 0.013042i 0.013043i 0.013043h      0.0       0.0       0.0
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  0.040853h      0.0  0.037136g      0.0       0.0       0.0
zp 44.17 ri 4.41e-05p 0.002471p 0.028849p 0.006049p 0.000298p 1.51e-07p 1.15e-11p      0.0       0.0       0.0
sig0.537 cc 4.41e-05p 0.002515p 0.031364p 0.037413p 0.037711p 0.037712p 0.037712p      0.0       0.0       0.0
         rc 4.41e-05p 0.002515p 0.031364o 0.037413j 0.037712h 0.037712g 0.037712f      0.0       0.0       0.0
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0  1.09e-07n      0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0  0.990234h      0.0  1.075936j      0.0       0.0       0.0
zp 44.44 ri 0.001121p 0.069145p 0.477280p 0.480228p 0.047548p 0.000614p 1.12e-07n 7.11e-11p 8.79e-12p       0.0
sig0.634 cc 0.001185p 0.074226p 0.578397p 1.025088p 1.075315p 1.075935p 1.075936p 7.19e-11p 8.08e-11p 3.56e-11p
        rc 0.001121p 0.070267p 0.547546p 1.027774k 1.075322g 1.075936g 1.075936j 7.11e-11p 7.99e-11p 3.52e-11p
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.055212h      0.0  0.060470k      0.0       0.0       0.0
zp 43.50 ri 0.002242p 0.023414p 0.028437p 0.001798p 9.92e-06p 1.83e-09p      0.0       0.0       0.0       0.0
sig0.557 cc 0.002242p 0.025656p 0.054093p 0.055891p 0.055901p 0.055901p 0.055901p      0.0       0.0       0.0
        rc 0.002242p 0.025656p 0.054093l 0.055891j 0.055901h 0.055901h 0.055901h      0.0       0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  1.047234i 1.031453i 0.922855l      0.0       0.0       0.0
zp 44.04 ri 0.005745p 0.189201p 0.611591p 0.218098p 0.008034p 2.39e-05p 4.98e-09p      0.0       0.0       0.0
sig0.605 cc 0.005711p 0.193784p 0.803849p 1.024683p 1.032669p 1.032693p 1.032693p      0.0       0.0       0.0
        rc 0.005745p 0.194946p 0.806537n 1.024635k 1.032669i 1.032693h 1.032693g      0.0       0.0       0.0
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.122891h 0.111240i 0.139129h      0.0       0.0       0.0
zp 44.38 ri 5.95e-09p 0.000609p 0.092115p 0.035690p 9.47e-05p 5.86e-11p      0.0       0.0       0.0       0.0
sig0.350 cc 5.95e-09p 0.000609p 0.092723p 0.128413p 0.128508p 0.128508p 0.128508p      0.0       0.0       0.0
        rc 5.95e-09p 0.000609p 0.092723p 0.128413j 0.128508h 0.128508g 0.128508f      0.0       0.0       0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.178670g      0.0  0.194612g      0.0       0.0       0.0
zp 44.37 ri 1.02e-08p 0.000939p 0.138813p 0.049052p 0.000124p 7.55e-11p      0.0       0.0       0.0       0.0
sig0.350 cc 1.03e-08p 0.000955p 0.138891p 0.188802p 0.188927p 0.188927p 0.188927p      0.0       0.0       0.0
        rc 1.02e-08p 0.000939p 0.139751o 0.188804i 0.188927g 0.188927g 0.188927f      0.0       0.0       0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.226367h 0.195779i 0.285467l      0.0       0.0       0.0
zp 44.21 ri 1.23e-07p 0.004124p 0.176142o 0.038195p 2.52e-05p 4.82e-12p      0.0       0.0       0.0       0.0
sig0.350 cc 1.21e-07p 0.004035p 0.181086p 0.218461p 0.218486p 0.218486p 0.218486p      0.0       0.0       0.0
        rc 1.23e-07p 0.004124p 0.180266n 0.218460j 0.218486h 0.218486g 0.218486g      0.0       0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0  3.88e-06o      0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.014924k 0.011913k 0.013032l      0.0       0.0       0.0
zp 44.66 ri 9.47e-07p 0.000170p 0.006917p 0.005021p 0.001192p 3.46e-06o 2.46e-09p      0.0       0.0       0.0
sig0.555 cc 9.47e-07p 0.000171p 0.007087p 0.012108p 0.013300p 0.013304p 0.013304p      0.0       0.0       0.0
        rc 9.47e-07p 0.000171p 0.007088p 0.012108n 0.013300k 0.013304j 0.013304j      0.0       0.0       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.076888i 0.096938l 0.072717k      0.0       0.0       0.0
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zp 43.84 ri 0.000472p 0.015581p 0.055938p 0.006206p 6.53e-05p 1.26e-08p 0.0 0.0 0.0 0.0
sig0.524 cc 0.000472p 0.016054p 0.071992p 0.078198p 0.078263p 0.078263p 0.078263p 0.0 0.0 0.0
rc 0.000472p 0.016054p 0.071992n 0.078198k 0.078263i 0.078263i 0.078263i 0.0 0.0 0.0

mo, tc half lives from 80eng2; ru, rh, pd, ag half lives 89wal1.
1

mass number 113 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 43 tc g 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd m 48 cd g 49 in m 49 in g 50 sn g 51 sb g
half life 0.652s 2.7 s 0.9 s 1.64 m 1.14 m 5.3 h 14.6 y 9.e15y 1.658h stable 115.1d 6.7 m
lambda 1.063e+00 2.567e-01 7.702e-01 7.044e-03 1.013e-02 3.633e-05 1.505e-09 2.442e-24 1.161e-04 0.0 6.970e-08
1.724e-03
z - 1 g 100.0000 100.0000 100.0000 100.0000 10.0000 90.0000 1.3000 98.7000 0.0 100.0000 0.0 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 99.9000 -100.0000 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1000 0.0 100.0000 0.0 0.0
u235t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.014843j 0.005014n 0.010486k 0.000272o 0.014234i 0.0 0.014823m 0.0 0.0
zp 44.70 ri 0.000140p 0.006055p 0.006843p 0.001163p 3.62e-06p 5.42e-07p 8.68e-10p 2.59e-10p 0.0 0.0 0.0 0.0
sig0.531 cc 0.000140p 0.006195p 0.013038p 0.014201p 0.001424p 0.012781p 0.000166p 0.014039p 0.0 0.014205p 0.0
0.0
rc 0.000140p 0.006195p 0.013038m 0.014201j 0.001424k 0.012781i 0.000166j 0.014039h 0.0 0.014205h 0.0 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000381n 0.032233g 0.0 0.0 0.0 0.0
zp 44.63 ri 0.000485p 0.015455p 0.014623p 0.002045p 5.72e-06p 7.80e-07p 1.35e-09p 3.59e-10p 0.0 0.0 0.0 0.0
sig0.537 cc 0.000485p 0.015939p 0.030562p 0.032608p 0.003267p 0.029348p 0.000382p 0.032233p 0.0 0.032614p 0.0
0.0
rc 0.000485p 0.015939p 0.030562o 0.032608m 0.003267o 0.029348k 0.000382n 0.032233g 0.0 0.032614g 0.0 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.991760k 0.012618n 1.062950k 0.0 1.085426n 0.0 0.0
zp 44.81 ri 0.020913p 0.318584p 0.599809p 0.147926p 0.003830p 0.000333p 1.03e-05p 1.67e-06p 3.53e-10p 2.86e-09p 0.0
0.0
sig0.634 cc 0.020988p 0.340717p 0.940516p 1.087218p 0.112565p 0.978830p 0.012735p 1.078685p 3.50e-10p 1.091408p 0.0
0.0
rc 0.020913p 0.339497p 0.939307n 1.087233m 0.112553n 0.978843k 0.012735j 1.078685j 3.53e-10p 1.091408j 0.0
0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.046698m 0.000591n 0.043711k 0.0 0.0 0.0 0.0
zp 44.00 ri 0.007800p 0.030444p 0.007700p 0.000168p 1.31e-07p 1.79e-08p 6.04e-12p 1.61e-12p 0.0 0.0 0.0 0.0
sig0.557 cc 0.007800p 0.038243p 0.045943p 0.046111p 0.004611p 0.041500p 0.000539p 0.045572p 0.0 0.046111p 0.0
0.0
rc 0.007800p 0.038243p 0.045943o 0.046111n 0.004611o 0.041500m 0.000539l 0.045572k 0.0 0.046111k 0.0 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.824990i 0.010842n 0.893190l 0.0 0.0 0.0 0.0
zp 44.41 ri 0.060302p 0.450409p 0.371506p 0.031875p 0.000225p 1.95e-05p 1.23e-07p 2.00e-08p 0.0 5.27e-12p 0.0 0.0
sig0.605 cc 0.060593p 0.513181p 0.882062p 0.914091p 0.091635p 0.822701p 0.010695p 0.903652p 0.0 0.914336p 0.0
0.0
rc 0.060302p 0.510710p 0.882217n 0.914092l 0.091634o 0.822702i 0.010695i 0.903652i 0.0 0.914336i 0.0 0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.074246h 0.000834n 0.080638g 0.0 0.073786m 0.0 0.0
zp 44.58 ri 7.87e-05p 0.037683p 0.043528p 0.000374p 1.21e-09p 1.81e-10p 0.0 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 7.87e-05p 0.037762p 0.081290p 0.081664p 0.008166p 0.073497p 0.000955p 0.080709p 0.0 0.081664p 0.0
0.0
rc 7.87e-05p 0.037762p 0.081290m 0.081664k 0.008166o 0.073497h 0.000955h 0.080709g 0.0 0.081664g 0.0 0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.083604l 0.001437n 0.126498f 0.0 0.0 0.0 0.0
zp 44.57 ri 0.000133p 0.061824p 0.065159p 0.000546p 1.58e-09p 2.16e-10p 0.0 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.000133p 0.061957p 0.127116p 0.127662p 0.012766p 0.114896p 0.001494p 0.126170p 0.0 0.127662p 0.0
0.0
rc 0.000133p 0.061957p 0.127116n 0.127662l 0.012766o 0.114896j 0.001494k 0.126170f 0.0 0.127662f 0.0 0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.137407i 0.001793n 0.0 0.0 0.151590i 0.0 0.0
zp 44.43 ri 0.000542p 0.095250p 0.055956p 0.000176p 1.78e-10p 2.67e-11p 0.0 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.000542p 0.095792p 0.151748p 0.151924p 0.015192p 0.136732p 0.001778p 0.150149p 0.0 0.151924p 0.0
0.0
rc 0.000542p 0.095792p 0.151748n 0.151924l 0.015192o 0.136732i 0.001778i 0.150149i 0.0 0.151924h 0.0 0.0
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000157n 0.013496l 0.0 0.013374m 0.0 0.0
zp 45.12 ri 2.05e-05p 0.002248p 0.007140p 0.004081p 6.31e-05p 9.43e-06p 1.15e-07p 3.43e-08p 1.16e-12p 4.94e-12p 0.0
0.0
sig0.555 cc 2.05e-05p 0.002269p 0.009408p 0.013489p 0.001412p 0.012150p 0.000158p 0.013404p 1.17e-12p 0.013562p 0.0
0.0

rc 2.05e-05p 0.002269p 0.009408p 0.013489o 0.001412o 0.012150n 0.000158n 0.013404l 1.16e-12p 0.013562k 0.0
0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.065769i 0.000955n 0.086141m 0.0 0.079827i 0.0 0.0
zp 44.28 ri 0.004743p 0.050162p 0.022344p 0.000817p 6.59e-07p 8.98e-08p 2.49e-11p 6.62e-12p 0.0 0.0 0.0 0.0
sig0.524 cc 0.004743p 0.054905p 0.077248p 0.078065p 0.007807p 0.070259p 0.000913p 0.077154p 0.0 0.078066p 0.0
0.0
rc 0.004743p 0.054905p 0.077248n 0.078065l 0.007807o 0.070259i 0.000913i 0.077154i 0.0 0.078066h 0.0 0.0

tc half life from 80eng2; ru, rh, pd, ag half lives 89wal1; sn, in half lives 90bur1.

1

mass number 114 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 42 mo g 43 tc g 44 ru g 45 rh g 46 pd g 47 ag g 48 cd g 49 in m 49 in g 50 sn g
half life 0.377s 0.202s 8.14 s 1.8 s 2.48 m 4.6 s stable 49.51d 71.9 s stable
lambda 1.839e+00 3.431e+00 8.515e-02 3.851e-01 4.658e-03 1.507e-01 0.0 1.620e-07 9.640e-03 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 -3.5000 -2.0000 98.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 96.5000 0.0
u235t xi 0.0 0.0 0.0 0.0 0.0 0.001103p 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.013138o 0.013439n 0.011827h 0.0 0.0 0.0
zp 45.16 ri 4.40e-09p 7.01e-06p 0.001726p 0.005027p 0.004156p 0.000917p 7.65e-08p 0.0 0.0 0.0
sig0.531 cc 4.75e-09p 7.57e-06p 0.001871p 0.007297p 0.011783p 0.011832p 0.011833p 1.01e-12p 1.31e-12p 1.28e-12p
rc 4.40e-09p 7.01e-06p 0.001733p 0.006760p 0.010916m 0.011832j 0.011833h 0.0 1.09e-12p 1.07e-12p
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.032294g 0.0 0.0 0.0
zp 45.06 ri 4.58e-08p 4.50e-05p 0.007074p 0.015521p 0.009568p 8.58e-05p 1.26e-07p 1.31e-12p 0.0 0.0
sig0.537 cc 4.58e-08p 4.51e-05p 0.007119p 0.022641p 0.032208p 0.032294p 0.032294p 1.31e-12p 1.64e-12p 1.61e-12p
rc 4.58e-08p 4.51e-05p 0.007119p 0.022641p 0.032208k 0.032294i 0.032294g 1.31e-12p 1.64e-12p 1.61e-12p
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.057120k 0.0 0.0 0.0
zp 45.18 ri 1.24e-05p 0.004231p 0.145440p 0.582944p 0.304778p 0.019593p 0.000133p 7.31e-08p 1.29e-08p 4.97e-12p
sig0.634 cc 1.24e-05p 0.004244p 0.149688p 0.732651p 1.037405p 1.056998p 1.057131p 7.31e-08p 8.34e-08p 8.18e-08p
rc 1.24e-05p 0.004244p 0.149683p 0.732627o 1.037405n 1.056998m 1.057131k 7.31e-08p 8.34e-08p 8.17e-08p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

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        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.039257l      0.0       0.0       0.0
zp 44.48 ri 8.26e-06p 0.001389p 0.020539p 0.015893p 0.001423p 4.95e-06p 1.23e-09p      0.0       0.0       0.0
sig0.557 cc 8.26e-06p 0.001398p 0.021937p 0.037830p 0.039252p 0.039257p 0.039257p      0.0       0.0       0.0
        rc 8.26e-06p 0.001398p 0.021937p 0.037830p 0.039252o 0.039257n 0.039257l      0.0       0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.718884l      0.0       0.0       0.0
zp 44.78 ri 6.02e-05p 0.012468p 0.220355p 0.402816p 0.081614p 0.001569p 2.40e-06p 2.27e-10p 4.00e-11p      0.0
sig0.605 cc 6.02e-05p 0.012528p 0.232884p 0.635700p 0.717314p 0.718883p 0.718885p 2.27e-10p 2.59e-10p 2.54e-10p
        rc 6.02e-05p 0.012528p 0.232884p 0.635700o 0.717314n 0.718883m 0.718885k 2.27e-10p 2.59e-10p 2.54e-10p
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.060254g      0.0       0.0       0.0
zp 44.95 ri 5.44e-07p 0.000265p 0.015809p 0.031974p 0.012055p 0.000150p 2.22e-07p 5.57e-12p 1.86e-12p      0.0
sig0.564 cc 5.44e-07p 0.000266p 0.016075p 0.048049p 0.060104p 0.060254p 0.060254p 5.57e-12p 7.24e-12p 7.09e-12p
        rc 5.44e-07p 0.000266p 0.016075p 0.048049o 0.060104k 0.060254i 0.060254g 5.57e-12p 7.24e-12p 7.09e-12o
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.094265f      0.0       0.0       0.0
zp 45.02 ri 5.06e-07p 0.000291p 0.021164p 0.049659p 0.022810p 0.000340p 6.48e-07p 2.12e-11p 5.98e-12p      0.0
sig0.565 cc 5.06e-07p 0.000291p 0.021455p 0.071113p 0.093923p 0.094264p 0.094265p 2.12e-11p 2.64e-11p 2.59e-11p
        rc 5.06e-07p 0.000291p 0.021455p 0.071113p 0.093923j 0.094264h 0.094265f 2.12e-11p 2.64e-11p 2.59e-11p
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.071090m      0.0       0.0       0.0
zp 44.65 ri 3.37e-11p 3.44e-05p 0.027199p 0.043261p 0.000592p 3.83e-09p      0.0       0.0       0.0       0.0
sig0.350 cc 3.37e-11p 3.44e-05p 0.027233p 0.070494p 0.071086p 0.071086p 0.071086p      0.0       0.0       0.0
        rc 3.37e-11p 3.44e-05p 0.027233p 0.070494p 0.071086o 0.071086n 0.071086m      0.0       0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.012860l      0.0       0.0       0.0
zp 45.52 ri 4.64e-10p 1.17e-06p 0.000571p 0.003833p 0.008131p 0.000320p 3.01e-06p 2.39e-10p 7.98e-11p      0.0
sig0.555 cc 4.64e-10p 1.17e-06p 0.000573p 0.004406p 0.012537p 0.012857p 0.012860p 2.39e-10p 3.11e-10p 3.04e-10p
        rc 4.64e-10p 1.17e-06p 0.000573p 0.004406p 0.012537o 0.012857m 0.012860k 2.39e-10p 3.11e-10p 3.04e-10o
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.073423l      0.0       0.0       0.0
zp 44.72 ri 1.05e-06p 0.000633p 0.029691p 0.037060p 0.006017p 2.06e-05p 4.79e-09p      0.0       0.0       0.0
sig0.524 cc 1.05e-06p 0.000634p 0.030325p 0.067385p 0.073402p 0.073423p 0.073423p      0.0       0.0       0.0
        rc 1.05e-06p 0.000634p 0.030325p 0.067385p 0.073402o 0.073423n 0.073423l      0.0       0.0       0.0

  mo, tc, ru half lives from 80eng2; rh, pd, ag half lives 89wal1.
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mass number 115 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd m 48 cd g 49 in m 49 in g 50 sn g 51 sb g 52 te g
half life 0.878s 0.99 s 47. s 18.7 s 20. m 44.6 d 2.228d 4.486h 5.e14y stable 32. m 6. m
lambda 7.895e-01 7.001e-01 1.475e-02 3.707e-02 5.776e-04 1.799e-07 3.601e-06 4.292e-05 4.396e-23 0.0 3.610e-04 1.925e-03
z - 1 g 100.0000 100.0000 100.0000 27.0000 73.0000 9.5000 90.5000 100.0000 0.0 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 5.0000 95.0000 0.0100 99.9900 3.7000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 96.3000 0.0 0.0 0.0
u235t xi 0.0 0.0 0.0 0.001403p 0.0 5.66e-06n 9.22e-07n 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.011283i 0.003307m 0.007552m 0.000653k 0.009835j 0.013026o 0.010421m 0.012973h 0.0 0.0
zp 45.60 ri 0.000257p 0.003629p 0.007129p 0.001370p 0.000193p 5.53e-06n 9.00e-07n 3.82e-11p 1.63e-10p 0.0 0.0 0.0
sig0.531 cc 0.000283p 0.004283p 0.012140p 0.003499p 0.009083p 0.001040p 0.011545p 0.011545p 0.012157p 0.012584p 0.0 0.0
rc 0.000257p 0.003886p 0.011015i 0.004344l 0.008234i 0.001005i 0.011579i 0.011579i 0.012156h 0.012584g 0.0 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.002726n 0.030855g 0.0 0.034952k 0.0 0.0 0.0
zp 45.47 ri 0.001454p 0.013511p 0.018165p 0.000372p 0.000372p 2.42e-06p 6.44e-07p 3.73e-11p 1.82e-10p 0.0 0.0 0.0
sig0.537 cc 0.001454p 0.014965p 0.033130p 0.009317p 0.024557p 0.002801p 0.031077p 0.031077p 0.032728p 0.033878p 0.0 0.0
rc 0.001454p 0.014965p 0.033130o 0.009317p 0.024557n 0.002801m 0.031077g 0.031077g 0.032728h 0.033878g 0.0 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.609218n 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.060085j 0.997485g 0.0 1.076577k 0.0 0.0 0.0
zp 45.55 ri 0.033398p 0.291025p 0.322165p 0.022869p 0.022869p 0.399236n 0.000102p 1.24e-07p 1.01e-06p 1.60e-10p 0.0 0.0
sig0.634 cc 0.052606p 0.511016p 1.018475p 0.311011p 0.779509p 0.090587p 1.001076p 1.001086p 1.054625p 1.091665p 0.0 0.0
rc 0.033398p 0.324423p 0.646588p 0.197448p 0.494878p 0.456122e 0.635542h 0.635588h 1.068149g 1.091665g 0.0 0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.003189i 0.034253g 0.0 0.043640l 0.0 0.0 0.0
zp 44.88 ri 0.009854p 0.022341p 0.005288p 3.22e-05p 3.22e-05p 3.98e-08p 1.06e-08p 0.0 1.16e-12p 0.0 0.0 0.0
sig0.557 cc 0.009854p 0.032195p 0.037483p 0.010153p 0.027395p 0.003110p 0.034437p 0.034438p 0.036273p 0.037548p 0.0 0.0

rc 0.009854p 0.032195p 0.037483o 0.010153o 0.027395n 0.003110i 0.034437f 0.034438f 0.036273f 0.037548f 0.0
0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.655193k 0.075465j 0.768449h 0.0 0.894083j 0.827779k 0.0 0.0
zp 45.13 ri 0.125713p 0.498397p 0.223023p 0.004937p 0.004937p 3.20e-05p 5.21e-06p 1.14e-09p 9.20e-09p 0.0 0.0 0.0
sig0.605 cc 0.126151p 0.626285p 0.847099p 0.233671p 0.623336p 0.070933p 0.786112p 0.786119p 0.827958p 0.857044p 0.0
0.0
rc 0.125713p 0.624111p 0.847134n 0.233663o 0.623344k 0.070933i 0.786111h 0.786118h 0.827958h 0.857044g 0.0
0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.002414k 0.040483i 0.0 0.0 0.035408m 0.0 0.0
zp 45.50 ri 0.001803p 0.017857p 0.021501p 0.000715p 0.000715p 6.80e-06p 2.03e-06p 3.30e-10p 1.41e-09p 0.0 0.0 0.0
sig0.564 cc 0.001803p 0.019660p 0.041161p 0.011829p 0.030763p 0.003521p 0.039080p 0.039080p 0.041154p 0.042600p 0.0
0.0
rc 0.001803p 0.019660p 0.041161o 0.011829o 0.030763n 0.003521i 0.039080i 0.039080i 0.041154i 0.042600i 0.0 0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.005485h 0.076227h 0.0 0.076289k 0.0 0.0 0.0
zp 45.55 ri 0.002904p 0.031103p 0.044154p 0.001611p 0.001611p 1.93e-05p 5.13e-06p 1.02e-09p 4.97e-09p 0.0 0.0 0.0
sig0.565 cc 0.002904p 0.034007p 0.078161p 0.022715p 0.058669p 0.006729p 0.074680p 0.074681p 0.078645p 0.081409p 0.0
0.0
rc 0.002904p 0.034007p 0.078161o 0.022715o 0.058669n 0.006729g 0.074680h 0.074681h 0.078645h 0.081409h 0.0
0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.032405k 0.0 0.043189m 0.044171n 0.0 0.0
zp 44.93 ri 0.009184p 0.022601p 0.006235p 3.38e-05p 3.38e-05p 3.70e-08p 1.11e-08p 0.0 0.0 0.0 0.0 0.0
sig0.544 cc 0.009184p 0.031785p 0.038020p 0.010299p 0.027788p 0.003155p 0.034932p 0.034933p 0.036795p 0.038087p 0.0
0.0
rc 0.009184p 0.031785p 0.038020p 0.010299p 0.027788o 0.003155o 0.034932k 0.034933k 0.036795k 0.038087j 0.0
0.0
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.009833j 0.0 0.0 0.000944p 0.016548j 0.0 0.011833j 0.012294m 0.0 0.0
zp 45.93 ri 8.09e-05p 0.002316p 0.010047p 0.001240p 0.001240p 4.42e-05p 1.32e-05p 4.62e-09p 1.97e-08p 1.23e-12p 0.0
0.0
sig0.555 cc 8.61e-05p 0.002551p 0.013248p 0.004425p 0.010519p 0.001250p 0.013732p 0.013732p 0.014474p 0.014982p 0.0
0.0
rc 8.09e-05p 0.002396p 0.012444j 0.004600m 0.010324k 0.001255k 0.013727j 0.013727j 0.014474i 0.014982i 0.0 0.0

th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.006096k 0.071590h 0.0 0.070639m 0.074903i 0.0 0.0
zp 45.13 ri 0.010064p 0.046239p 0.020389p 0.000156p 0.000156p 2.01e-07p 5.35e-08p 0.0 3.45e-12p 0.0 0.0 0.0
sig0.524 cc 0.010064p 0.056303p 0.076691p 0.020862p 0.056140p 0.006377p 0.070626p 0.070627p 0.074390p 0.077003p 0.0
0.0
rc 0.010064p 0.056303p 0.076691o 0.020862o 0.056140n 0.006377k 0.070626h 0.070627h 0.074390g 0.077003g 0.0
0.0

ru half life 80eng2; ag-115g branching 80tob1; ag-115m branching to fit data; rh, pd, ag, cd, in half lives 89wal1.

1

mass number 116 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 42 mo g 43 tc g 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g 49 in m 49 in g 50 sn g
half life 0.115s 1.70 s 0.7 s 12.7 s 10.5 s 2.68 m stable 54.2 m 14.2 s stable
lambda 0.0 6.027e+00 4.077e-01 9.902e-01 5.458e-02 6.601e-02 4.311e-03 0.0 2.131e-04 4.881e-02 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 50.0000 50.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 100.0000
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
u235t xi 0.0 0.0 0.0 0.0 0.0 0.001294m 0.008023p 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.013037k 0.0 0.008625m 0.013141h 0.0 0.0 0.0
zp 46.00 ri 0.0 6.31e-09p 2.46e-05p 0.000869p 0.006816p 0.000765p 0.004744p 3.00e-05p 3.85e-09p 3.85e-09p 0.0
sig0.531 cc 0.0 9.71e-09p 3.78e-05p 0.001376p 0.011873p 0.006606p 0.006606p 0.013249p 4.86e-09p 4.86e-09p 9.71e-09p
rc 0.0 6.31e-09p 2.46e-05p 0.000893p 0.007710l 0.004620n 0.008599p 0.013249h 3.85e-09p 3.85e-09p 7.71e-09p
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.034004f 0.0 0.0 0.0
zp 45.89 ri 5.85e-12p 9.15e-08p 0.000203p 0.004809p 0.026336p 0.001301p 0.001301p 5.45e-05p 5.82e-09p 5.82e-09p 0.0
sig0.537 cc 5.85e-12p 9.15e-08p 0.000203p 0.005012p 0.031348p 0.016975p 0.016975p 0.034004p 5.82e-09p 5.82e-09p 1.16e-08p
rc 5.85e-12p 9.15e-08p 0.000203p 0.005012p 0.031348p 0.016975p 0.016975p 0.034004f 5.82e-09p 5.82e-09p 1.16e-08o
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.056299k 0.0 0.0 0.0
zp 45.91 ri 3.93e-08p 7.56e-05p 0.013703p 0.259544p 0.597039p 0.089778p 0.089778p 0.006386p 1.16e-05p 1.16e-05p 7.83e-09p
sig0.634 cc 3.93e-08p 7.56e-05p 0.013779p 0.273331p 0.870357p 0.524959p 0.524959p 1.056305p 1.16e-05p 1.16e-05p 2.32e-05p
rc 3.93e-08p 7.56e-05p 0.013779p 0.273323p 0.870363n 0.524959n 0.524959n 1.056305k 1.16e-05p 1.16e-05p 2.32e-05o
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.039314k 0.0 0.0 0.0

zp 45.29 ri 1.22e-08p 2.39e-05p 0.003431p 0.020519p 0.014810p 0.000264p 0.000264p 1.56e-06p 7.15e-11p 7.15e-11p 0.0
sig0.557 cc 1.22e-08p 2.39e-05p 0.003455p 0.023974p 0.038784p 0.019656p 0.019656p 0.039314p 7.15e-11p 7.15e-11p 1.43e-10p
rc 1.22e-08p 2.39e-05p 0.003455p 0.023974p 0.038784o 0.019656o 0.019656o 0.039314k 7.15e-11p 7.15e-11p 1.43e-10o
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.675633l 0.0 0.0 0.0
zp 45.49 ri 2.68e-07p 0.000346p 0.034443p 0.309172p 0.300018p 0.015681p 0.015681p 0.000294p 1.06e-07p 1.06e-07p 1.09e-11p
sig0.605 cc 2.68e-07p 0.000346p 0.034789p 0.343962p 0.643979p 0.337670p 0.337670p 0.675634p 1.06e-07p 1.06e-07p 2.12e-07p
rc 2.68e-07p 0.000346p 0.034789p 0.343961p 0.643979o 0.337670o 0.337670o 0.675634k 1.06e-07p 1.06e-07p 2.12e-07o
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.050678j 0.0 0.0 0.0
zp 46.03 ri 1.16e-11p 1.46e-07p 0.000195p 0.006732p 0.035851p 0.003822p 0.003822p 0.000256p 1.11e-07p 1.11e-07p 2.06e-11p
sig0.564 cc 1.16e-11p 1.46e-07p 0.000196p 0.006928p 0.042778p 0.025211p 0.025211p 0.050678p 1.11e-07p 1.11e-07p 2.23e-07p
rc 1.16e-11p 1.46e-07p 0.000196p 0.006928p 0.042778p 0.025211p 0.025211p 0.050678j 1.11e-07p 1.11e-07p 2.23e-07o
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.060357g 0.0 0.0 0.0
zp 46.05 ri 1.19e-11p 1.52e-07p 0.000214p 0.007532p 0.042846p 0.004710p 0.004710p 0.000344p 1.59e-07p 1.59e-07p 3.28e-11p
sig0.565 cc 1.19e-11p 1.52e-07p 0.000214p 0.007746p 0.050593p 0.030007p 0.030007p 0.060357p 1.59e-07p 1.59e-07p 3.18e-07p
rc 1.19e-11p 1.52e-07p 0.000214p 0.007746p 0.050593p 0.030007p 0.030007p 0.060357g 1.59e-07p 1.59e-07p 3.18e-07o
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.027788o 0.0 0.0 0.0
zp 45.49 ri 6.08e-10p 3.24e-06p 0.001062p 0.011894p 0.014047p 0.000389p 0.000389p 3.27e-06p 1.88e-10p 1.88e-10p 0.0
sig0.544 cc 6.08e-10p 3.24e-06p 0.001065p 0.012959p 0.027006p 0.013892p 0.013892p 0.027787p 1.88e-10p 1.88e-10p 3.76e-10p
rc 6.08e-10p 3.24e-06p 0.001065p 0.012959p 0.027006p 0.013892p 0.013892p 0.027787n 1.88e-10p 1.88e-10p 3.76e-10o
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.013202l 0.0 0.0 0.0
zp 46.35 ri 0.0 1.20e-09p 7.40e-06p 0.000525p 0.009248p 0.001551p 0.001551p 0.000318p 2.17e-07p 2.17e-07p 1.12e-10p
sig0.555 cc 0.0 1.20e-09p 7.40e-06p 0.000533p 0.009781p 0.006442p 0.006442p 0.013202p 2.17e-07p 2.17e-07p 4.33e-07p
rc 0.0 1.20e-09p 7.40e-06p 0.000533p 0.009781p 0.006442p 0.006442p 0.013202l 2.17e-07p 2.17e-07p 4.33e-07o
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.073801m 0.0 0.0 0.0
zp 45.51 ri 4.15e-10p 3.88e-06p 0.002378p 0.028297p 0.041376p 0.000870p 0.000870p 6.12e-06p 1.65e-10p 1.65e-10p 0.0
sig0.524 cc 4.15e-10p 3.88e-06p 0.002382p 0.030679p 0.072055p 0.036898p 0.036898p 0.073801p 1.65e-10p 1.65e-10p 3.29e-10p
rc 4.15e-10p 3.88e-06p 0.002382p 0.030679p 0.072055p 0.036898p 0.036898p 0.073801l 1.65e-10p 1.65e-10p 3.29e-10o

tc, ru half lives from 80eng2; rh, pd, ag half lives from 89wal1.

mass number 117 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd m 48 cd g 49 in m 49 in g 50 sn g 51 sb g 52 te g
half life 0.343s 1.22 s 5. s 5.3 s 1.22 m 3.4 h 2.49 h 1.94 h 44. m stable 2.80 h 64. m
lambda 2.021e+00 5.682e-01 1.386e-01 1.308e-01 9.469e-03 5.663e-05 7.733e-05 9.925e-05 2.626e-04 0.0 6.876e-05 1.805e-04
z - 1 g 100.0000 100.0000 100.0000 50.0000 50.0000 50.0000 50.0000 92.0000 8.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 1.0000 99.0000 53.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 47.0000 0.0 0.0 0.0
u235t xi 0.0 0.0 0.0 0.001512m 0.001512m 0.000372o 0.000111o 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.009201j 0.005379n 0.006175m 0.0 0.0 0.0 0.0 0.013082j 0.0 0.0
zp 46.42 ri 2.52e-06p 0.000465p 0.008772p 0.001519m 0.001519m 0.000373p 0.000112p 8.59e-08p 3.66e-07p 4.99e-11p 0.0 0.0
sig0.531 cc 2.25e-06p 0.000417p 0.008244p 0.006223p 0.006223p 0.003355p 0.009407p 0.008688p 0.008157p 0.012762p 0.0 0.0
rc 2.52e-06p 0.000467p 0.009240j 0.006138j 0.006138j 0.003443l 0.009319i 0.008608i 0.008200j 0.012762h 0.0 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.036819k 0.0 0.0
zp 46.32 ri 1.52e-05p 0.001846p 0.024197p 0.005090p 0.005090p 0.000459p 0.000122p 1.16e-07p 5.68e-07p 6.38e-11p 0.0 0.0
sig0.537 cc 1.52e-05p 0.001861p 0.026058p 0.018119p 0.018119p 0.009518p 0.027300p 0.025212p 0.023457p 0.036819p 0.0 0.0
rc 1.52e-05p 0.001861p 0.026058p 0.018119p 0.018119p 0.009518o 0.027300o 0.025212o 0.023457n 0.036819j 0.0 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.065332k 0.0 0.0
zp 46.27 ri 0.002776p 0.116698p 0.563960p 0.177005p 0.177005p 0.023783p 0.003872p 2.55e-05p 0.000206p 1.85e-07p 1.33e-11p 0.0
sig0.634 cc 0.002776p 0.119474p 0.683435p 0.518723p 0.518723p 0.283144p 0.781956p 0.722256p 0.682536p 1.065332p 1.33e-11p 0.0
rc 0.002776p 0.119474p 0.683435o 0.518723o 0.518723o 0.283144o 0.781956n 0.722256n 0.682536m 1.065332j 1.33e-11p 0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.037732l 0.0 0.0
zp 45.73 ri 0.000543p 0.011499p 0.022787p 0.001437p 0.001437p 2.27e-05p 6.04e-06p 1.90e-09p 9.29e-09p 0.0 0.0 0.0

sig0.557 cc 0.000543p 0.012042p 0.034828p 0.018851p 0.018851p 0.009448p 0.028283p 0.026115p 0.023891p 0.037732p 0.0
0.0
rc 0.000543p 0.012042p 0.034828p 0.018851p 0.018851p 0.009448o 0.028283o 0.026115n 0.023891n 0.037732k 0.0
0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.149438j 0.433440j 0.0 0.0 0.738228k 0.0 0.0
zp 45.85 ri 0.007762p 0.161984p 0.351204p 0.040939p 0.040939p 0.001607p 0.000262p 4.28e-07p 3.46e-06p 5.20e-10p 0.0
0.0
sig0.605 cc 0.007839p 0.171423p 0.520123p 0.301405p 0.301405p 0.152325p 0.452371p 0.417705p 0.383316p 0.604700p 0.0
0.0
rc 0.007762p 0.169746p 0.520950o 0.301414n 0.301414o 0.152314j 0.452382j 0.417715j 0.383311i 0.604700h 0.0 0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.069423m 0.0 0.0 0.032769k 0.0 0.0
zp 46.52 ri 8.56e-06p 0.001432p 0.022151p 0.009448p 0.009448p 0.001512p 0.000452p 1.65e-06p 7.02e-06p 2.93e-09p 0.0
0.0
sig0.564 cc 8.56e-06p 0.001441p 0.023591p 0.021243p 0.021243p 0.012134p 0.032316p 0.029854p 0.028636p 0.044459p 0.0
0.0
rc 8.56e-06p 0.001441p 0.023591p 0.021243o 0.021243o 0.012134n 0.032316o 0.029854n 0.028636m 0.044459j 0.0
0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.069871k 0.0 0.0
zp 46.54 ri 1.23e-05p 0.002053p 0.034694p 0.014839p 0.014839p 0.002701p 0.000718p 2.64e-06p 1.29e-05p 5.99e-09p 0.0
0.0
sig0.565 cc 1.23e-05p 0.002065p 0.036759p 0.033218p 0.033218p 0.019310p 0.050545p 0.046697p 0.045121p 0.069871p 0.0
0.0
rc 1.23e-05p 0.002065p 0.036759p 0.033218p 0.033218p 0.019310o 0.050545o 0.046697o 0.045121n 0.069871j 0.0
0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.023626l 0.0 0.0
zp 46.02 ri 6.67e-05p 0.003478p 0.016204p 0.001898p 0.001898p 6.19e-05p 1.85e-05p 9.72e-09p 4.14e-08p 1.89e-12p 0.0
0.0
sig0.544 cc 6.67e-05p 0.003545p 0.019749p 0.011773p 0.011773p 0.005948p 0.017678p 0.016323p 0.014975p 0.023626p 0.0
0.0
rc 6.67e-05p 0.003545p 0.019749p 0.011773p 0.011773p 0.005948o 0.017678o 0.016323o 0.014975n 0.023626k 0.0
0.0
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.014124l 0.0 0.0
zp 46.77 ri 3.88e-07p 0.000132p 0.005361p 0.003497p 0.003497p 0.001252p 0.000374p 2.00e-06p 8.54e-06p 7.38e-09p 0.0
0.0
sig0.555 cc 3.88e-07p 0.000133p 0.005494p 0.006244p 0.006244p 0.004374p 0.009740p 0.009007p 0.009351p 0.014124p 0.0
0.0
rc 3.88e-07p 0.000133p 0.005494p 0.006244p 0.006244p 0.004374o 0.009740o 0.009007o 0.009351n 0.014124k 0.0
0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.016969i 0.057399i 0.0 0.040969l 0.066680m 0.0 0.0
zp 45.88 ri 0.000339p 0.014971p 0.050971p 0.003732p 0.003732p 6.01e-05p 1.60e-05p 2.83e-09p 1.38e-08p 0.0 0.0 0.0
sig0.524 cc 0.000339p 0.015310p 0.066281p 0.036873p 0.036873p 0.018497p 0.055325p 0.051084p 0.046747p 0.073822p 0.0
0.0
rc 0.000339p 0.015310p 0.066281p 0.036873o 0.036873p 0.018497i 0.055325i 0.051084i 0.046747h 0.073822g 0.0
0.0

ag-to-cd branching from 80eng2; ru half life from 80eng2; rh, pd, ag, cd, in half lives 89wal1.

1

mass number 118 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g 49 in m 49 in g 50 sn g 51 sb m 51 sb g 52 te g
half life 0.662s 0.316s 2.4 s 2.4 s 4.0 s 50.3 m 4.4 m 5.0 s stable 5.00 h 3.6 m 6.00 d
lambda 1.047e+00 2.194e+00 2.888e-01 2.888e-01 1.733e-01 2.297e-04 2.626e-03 1.386e-01 0.0 3.851e-05 3.209e-03
1.337e-06
z - 1 g 100.0000 100.0000 100.0000 50.0000 50.0000 100.0000 0.0 100.0000 100.0000 -100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 54.0000 0.0 0.0 100.0000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 46.0000 0.0 0.0 0.0 0.0 0.0 0.0 0.0
u235t xi 0.0 0.0 0.0 0.003036m 0.003464m 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.003260n 0.0 0.006548n 0.0 0.0 0.0 0.011343k 0.0 0.0 0.0
zp 46.83 ri 6.92e-08p 3.63e-05p 0.003178p 0.002993p 0.003416m 0.001715p 1.69e-06p 5.06e-06p 4.10e-09p 0.0 0.0 0.0
sig0.531 cc 9.56e-08p 5.02e-05p 0.004442p 0.004806p 0.007017p 0.011339p 1.70e-06p 0.011344p 0.011346p 0.0 0.0
0.0
rc 6.92e-08p 3.64e-05p 0.003215n 0.004601p 0.007139m 0.011339m 1.69e-06p 0.011344l 0.011346j 0.0 0.0 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.033632j 0.0 0.0 0.0
zp 46.75 ri 6.89e-07p 0.000246p 0.015078p 0.007233p 0.007233p 0.003829p 2.89e-06p 1.03e-05p 6.96e-09p 0.0 0.0 0.0

sig0.537 cc 6.89e-07p 0.000246p 0.015324p 0.014895p 0.021747p 0.033619p 2.89e-06p 0.033629p 0.033632p 0.0 0.0 0.0
rc 6.89e-07p 0.000246p 0.015324p 0.014895p 0.021747o 0.033619m 2.89e-06p 0.033629l 0.033632j 0.0 0.0 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.081947k 0.0 0.0 0.0
zp 46.64 ri 0.000397p 0.038571p 0.407298p 0.270522p 0.270522p 0.092831p 0.000271p 0.001535p 3.48e-06p 4.53e-10p 1.59e-10p 0.0
sig0.634 cc 0.000397p 0.038968p 0.446266p 0.493655p 0.720736p 1.080141p 0.000271p 1.081676p 1.081950p 4.53e-10p 1.59e-10p 0.0
rc 0.000397p 0.038968p 0.446266p 0.493655p 0.720736o 1.080141n 0.000271p 1.081676m 1.081950k 4.53e-10p 1.59e-10p 0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.056561m 0.0 0.0 0.037221l 0.0 0.0 0.0
zp 46.11 ri 9.00e-05p 0.005140p 0.028790p 0.004435p 0.004435p 0.000286p 5.98e-08p 2.12e-07p 2.13e-11p 0.0 0.0 0.0
sig0.557 cc 9.00e-05p 0.005230p 0.034019p 0.021445p 0.031309p 0.043176p 7.22e-08p 0.043176p 0.043176p 0.0 0.0 0.0
rc 9.00e-05p 0.005230p 0.034019p 0.021445p 0.031309p 0.043176m 5.98e-08p 0.043176m 0.043176k 0.0 0.0 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.883848m 0.0 0.0 0.800974l 0.0 0.0 0.0
zp 46.20 ri 0.002091p 0.101657p 0.471532p 0.121404p 0.121404p 0.012869p 8.29e-06p 4.70e-05p 1.86e-08p 0.0 0.0 0.0
sig0.605 cc 0.002091p 0.103747p 0.575278p 0.409042p 0.597202p 0.830954p 8.69e-06p 0.831003p 0.831012p 0.0 0.0 0.0
rc 0.002091p 0.103748p 0.575280o 0.409044o 0.597204n 0.830957l 8.29e-06p 0.831004l 0.831012k 0.0 0.0 0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.005603m 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.035489n 0.0 0.0 0.032411k 0.0 0.0 0.0
zp 47.00 ri 2.23e-07p 0.000126p 0.008628p 0.009877p 0.009877p 0.003902m 1.92e-05p 5.77e-05p 1.32e-07p 3.05e-12p 2.12e-12p 0.0
sig0.564 cc 1.95e-07p 0.000111p 0.007673p 0.012494p 0.018241p 0.032382p 2.64e-05p 0.032461p 0.032488p 4.18e-12p 2.90e-12p 0.0
rc 2.23e-07p 0.000126p 0.008754p 0.014254p 0.020811p 0.032411o 1.92e-05p 0.032468m 0.032488k 3.05e-12p 2.12e-12p 0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.059864k 0.0 0.0 0.0
zp 47.01 ri 3.49e-07p 0.000195p 0.013782p 0.015773p 0.015773p 0.014135p 4.51e-05p 0.000160p 3.79e-07p 9.72e-12p 5.71e-12p 0.0

sig0.565 cc 3.49e-07p 0.000195p 0.013977p 0.022761p 0.033232p 0.059658p 4.51e-05p 0.059818p 0.059864p 9.72e-12p 5.71e-12p 0.0
rc 3.49e-07p 0.000195p 0.013977p 0.022761p 0.033232p 0.059658n 4.51e-05p 0.059818m 0.059864k 9.72e-12p 5.71e-12p 0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.023157o 0.0 0.0 0.0
zp 46.51 ri 2.86e-06p 0.000667p 0.011803p 0.004911p 0.004911p 0.000860p 6.43e-07p 1.93e-06p 4.72e-10p 0.0 0.0 0.0
sig0.544 cc 2.86e-06p 0.000670p 0.012473p 0.011147p 0.016275p 0.023154p 6.43e-07p 0.023156p 0.023157p 0.0 0.0 0.0
rc 2.86e-06p 0.000670p 0.012473p 0.011147p 0.016275o 0.023154n 6.43e-07p 0.023156n 0.023157n 0.0 0.0 0.0
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.015417k 0.0 0.0 0.0
zp 47.19 ri 1.44e-08p 1.30e-05p 0.002396p 0.003343p 0.003343p 0.006223p 2.47e-05p 7.40e-05p 3.43e-07p 7.63e-12p 5.30e-12p 0.0
sig0.555 cc 1.44e-08p 1.31e-05p 0.002409p 0.004548p 0.006639p 0.015318p 2.47e-05p 0.015392p 0.015417p 7.63e-12p 5.30e-12p 0.0
rc 1.44e-08p 1.31e-05p 0.002409p 0.004548p 0.006639p 0.015318o 2.47e-05p 0.015392m 0.015417k 7.63e-12p 5.30e-12p 0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.063280k 0.0 0.0 0.0
zp 46.27 ri 2.69e-05p 0.003567p 0.043141p 0.007941p 0.007941p 0.000663p 1.10e-07p 3.89e-07p 2.39e-11p 0.0 0.0 0.0
sig0.524 cc 2.69e-05p 0.003594p 0.046735p 0.031309p 0.045711p 0.063280p 1.10e-07p 0.063280p 0.063281p 0.0 0.0 0.0
rc 2.69e-05p 0.003594p 0.046735p 0.031309p 0.045711o 0.063280n 1.10e-07p 0.063280m 0.063281k 0.0 0.0 0.0

ru, rh, ag half lives 80eng2; pd, ag, cd, in half lives 89wal1; sb half life 90bur1.

1

mass number 119 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	44 ru g	45 rh g	46 pd g	47 ag g	48 cd m	48 cd g	49 in m	49 in g	50 sn m	50 sn g	51 sb g	52 te g
half life	0.195s	0.465s	1.76 s	2.1s	2.20 m	2.69 m	17.9 m	2.3 m	293. d	stable	38.1 h	16. h
lambda	3.555e+00	1.491e+00	3.938e-01	3.301e-01	5.251e-03	4.295e-03	6.454e-04	5.023e-03	2.738e-08	0.0	5.054e-06	1.203e-05
z - 1 g	100.0000	100.0000	100.0000	100.0000	50.0000	50.0000	100.0000	0.0	5.0000	95.0000	-100.0000	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	95.0000	0.0	0.0

z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.0000 0.0 100.0000 0.0 0.0
u235t xi 0.0 0.0 0.0 0.008234n 0.0 0.002778p 0.0 0.000536n 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.008730m 0.003671o 0.008631n 0.0 0.008333p 0.0 0.012471k 0.0 0.0
zp 47.24 ri 6.55e-10p 1.86e-06p 0.000435p 0.007254n 0.002249p 0.002447p 1.59e-05p 0.000472n 1.14e-07p 3.40e-08p 3.89e-12p 0.0
sig0.531 cc 1.98e-09p 5.63e-06p 0.001322p 0.007856p 0.006390p 0.006390p 0.006408p 0.006787p 0.000339p 0.012874p 4.40e-12p 0.0
rc 6.55e-10p 1.86e-06p 0.000437p 0.007690m 0.006094n 0.006292n 0.006308n 0.006881m 0.000344m 0.012874j 3.89e-12p 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.035020j 0.0 0.0
zp 47.18 ri 1.36e-08p 2.68e-05p 0.004519p 0.018594p 0.005838p 0.005838p 3.46e-05p 0.000169p 2.59e-07p 6.89e-08p 8.86e-12p 0.0
sig0.537 cc 1.36e-08p 2.68e-05p 0.004546p 0.023140p 0.017408p 0.017408p 0.017443p 0.018449p 0.000923p 0.035020p 8.86e-12p 0.0
rc 1.36e-08p 2.68e-05p 0.004546p 0.023140p 0.017408p 0.017408o 0.017443o 0.018449o 0.000923o 0.035020j 8.86e-12p 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.084138k 0.0 0.0
zp 47.01 ri 4.06e-05p 0.009277p 0.218810p 0.617676p 0.114085p 0.114085p 0.001113p 0.009005p 3.99e-05p 6.49e-06p 1.99e-08p 0.0
sig0.634 cc 4.06e-05p 0.009317p 0.228127p 0.845803p 0.536987p 0.536987p 0.538100p 0.572897p 0.028685p 1.084139p 1.99e-08p 0.0
rc 4.06e-05p 0.009317p 0.228127p 0.845803o 0.536987o 0.536987o 0.538100n 0.572897n 0.028685n 1.084139k 1.99e-08p 0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.039720l 0.0 0.0
zp 46.55 ri 4.98e-06p 0.001118p 0.018405p 0.018354p 0.000915p 0.000915p 1.44e-06p 7.05e-06p 1.90e-09p 5.06e-10p 0.0 0.0
sig0.557 cc 4.98e-06p 0.001123p 0.019527p 0.037882p 0.019856p 0.019856p 0.019857p 0.020855p 0.001043p 0.039720p 0.0 0.0
rc 4.98e-06p 0.001123p 0.019527p 0.037882o 0.019856o 0.019856o 0.019857o 0.020855o 0.001043o 0.039720k 0.0 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.725951k 0.0 0.0

zp 46.55 ri 0.000260p 0.030111p 0.310499p 0.343409p 0.020611p 0.020611p 4.93e-05p 0.000399p 3.25e-07p 5.29e-08p 2.28e-11p 0.0
sig0.605 cc 0.000260p 0.030371p 0.340870p 0.684279p 0.362751p 0.362751p 0.362800p 0.381290p 0.019065p 0.725951p 2.28e-11p 0.0
rc 0.000260p 0.030371p 0.340870p 0.684279o 0.362751o 0.362751o 0.362800o 0.381290o 0.019065o 0.725951k 2.28e-11p 0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.032249k 0.0 0.0
zp 47.45 ri 3.11e-09p 8.17e-06p 0.001654p 0.014367p 0.007661p 0.007661p 0.000170p 0.000724p 3.68e-06p 1.10e-06p 8.83e-10p 0.0
sig0.564 cc 3.11e-09p 8.17e-06p 0.001662p 0.016029p 0.015675p 0.015675p 0.015845p 0.017192p 0.000863p 0.032249p 8.83e-10p 0.0
rc 3.11e-09p 8.17e-06p 0.001662p 0.016029p 0.015675p 0.015675p 0.015845o 0.017192o 0.000863o 0.032249j 8.83e-10p 0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.055017k 0.0 0.0
zp 47.46 ri 5.19e-09p 1.31e-05p 0.002795p 0.023648p 0.013498p 0.013498p 0.000265p 0.001292p 7.19e-06p 1.91e-06p 1.70e-09p 0.0
sig0.565 cc 5.19e-09p 1.31e-05p 0.002808p 0.026455p 0.026726p 0.026726p 0.026990p 0.029367p 0.001476p 0.055017p 1.70e-09p 0.0
rc 5.19e-09p 1.31e-05p 0.002808p 0.026455p 0.026726p 0.026726p 0.026990p 0.029367o 0.001476o 0.055017k 1.70e-09p 0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.023157o 0.0 0.0
zp 46.97 ri 7.53e-08p 7.51e-05p 0.005037p 0.013769p 0.002112p 0.002112p 9.80e-06p 4.18e-05p 3.22e-08p 9.61e-09p 0.0 0.0
sig0.544 cc 7.53e-08p 7.52e-05p 0.005112p 0.018881p 0.011552p 0.011552p 0.011562p 0.012172p 0.000609p 0.023156p 0.0 0.0
rc 7.53e-08p 7.52e-05p 0.005112p 0.018881p 0.011552p 0.011552o 0.011562o 0.012172o 0.000609o 0.023156n 0.0 0.0
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.018558l 0.0 0.0
zp 47.61 ri 2.34e-10p 1.07e-06p 0.000501p 0.005866p 0.005701p 0.005701p 0.000148p 0.000633p 5.41e-06p 1.61e-06p 1.35e-09p 0.0
sig0.555 cc 2.34e-10p 1.07e-06p 0.000502p 0.006368p 0.008885p 0.008885p 0.009034p 0.009970p 0.000504p 0.018558p 1.35e-09p 0.0

rc 2.34e-10p 1.07e-06p 0.000502p 0.006368p 0.008885p 0.008885p 0.009034p 0.009970p 0.000504o 0.018558l 1.35e-09p
0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.057210m 0.0 0.0
zp 46.65 ri 1.34e-06p 0.000749p 0.024008p 0.029166p 0.001638p 0.001638p 1.78e-06p 8.68e-06p 1.28e-09p 3.40e-10p 0.0
0.0
sig0.524 cc 1.34e-06p 0.000750p 0.024758p 0.053924p 0.028600p 0.028600p 0.028601p 0.030038p 0.001502p 0.057210p 0.0
0.0
rc 1.34e-06p 0.000750p 0.024758p 0.053924o 0.028600o 0.028600o 0.028601o 0.030038o 0.001502o 0.057210l 0.0
0.0

ru, rh, pd half lives 80eng2; ag, cd, in, sn half lives 89wal1.
1

mass number 120 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag g 48 cd g 49 in m 49 in g 50 sn g 51 sb m 51 sb g 52 te g
half life 0.350s 0.172s 3.91 s 1.23 s 50.8 s 46. s 3.1 s stable 5.76 d 16.0 m stable
lambda 1.980e+00 4.030e+00 1.773e-01 5.635e-01 1.364e-02 1.507e-02 2.236e-01 0.0 1.393e-06 7.220e-04 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 50.0000 50.0000 100.0000 -100.0000 -100.0000 0.0
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
u235t xi 0.0 0.0 0.0 0.000992p 0.0 0.000357p 0.000357p 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.004068m 0.0 0.006002m 0.006002m 0.012774k 0.0 0.0 0.0
zp 47.63 ri 3.03e-10p 2.39e-06p 0.002710p 0.000875p 0.008389p 0.000315p 0.000315p 3.00e-06p 1.30e-10p 9.03e-11p 0.0
sig0.531 cc 3.01e-11p 2.38e-07p 0.000270p 0.003335p 0.012206p 0.006303p 0.006303p 0.012609p 1.50e-10p 1.04e-10p 0.0
rc 3.03e-10p 2.39e-06p 0.002712p 0.003587n 0.011976o 0.006303m 0.006303m 0.012609j 1.30e-10p 9.03e-11p 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.035292j 0.0 0.0 0.0
zp 47.60 ri 1.83e-10p 1.08e-06p 0.000936p 0.009375p 0.023917p 0.000527p 0.000527p 8.88e-06p 4.56e-10p 2.68e-10p 0.0
sig0.537 cc 1.83e-10p 1.08e-06p 0.000937p 0.010312p 0.034229p 0.017641p 0.017641p 0.035292p 4.56e-10p 2.68e-10p 0.0
rc 1.83e-10p 1.08e-06p 0.000937p 0.010312p 0.034229p 0.017641p 0.017641p 0.035292j 4.56e-10p 2.68e-10p 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.090448k 0.0 0.0 0.0
zp 47.37 ri 3.24e-06p 0.001726p 0.090836p 0.541120p 0.416049p 0.020145p 0.020145p 0.000424p 3.19e-07p 1.12e-07p 3.95e-11p
sig0.634 cc 3.24e-06p 0.001729p 0.092565p 0.633685p 1.049735p 0.545012p 0.545012p 1.090448p 3.19e-07p 1.12e-07p 3.95e-
11p

rc 3.24e-06p 0.001729p 0.092565p 0.633685o 1.049735o 0.545012o 0.545012o 1.090448k 3.19e-07p 1.12e-07p 3.95e-11p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.038713l 0.0 0.0 0.0
zp 46.98 ri 1.89e-07p 0.000143p 0.008390p 0.022586p 0.007483p 5.59e-05p 5.59e-05p 1.29e-07p 2.83e-12p 1.66e-12p 0.0
sig0.557 cc 1.89e-07p 0.000143p 0.008533p 0.031119p 0.038601p 0.019356p 0.019356p 0.038713p 2.83e-12p 1.66e-12p 0.0
rc 1.89e-07p 0.000143p 0.008533p 0.031119p 0.038601o 0.019356o 0.019356o 0.038713k 2.83e-12p 1.66e-12p 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.777414l 0.0 0.0 0.0
zp 46.90 ri 2.89e-05p 0.008124p 0.191027p 0.454570p 0.120550p 0.001554p 0.001554p 6.49e-06p 7.33e-10p 2.57e-10p 0.0
sig0.605 cc 2.89e-05p 0.008153p 0.199180p 0.653750p 0.774301p 0.388704p 0.388704p 0.777414p 7.33e-10p 2.57e-10p 0.0
rc 2.89e-05p 0.008153p 0.199180p 0.653750p 0.774301o 0.388704o 0.388704o 0.777414k 7.33e-10p 2.57e-10p 0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.030585k 0.0 0.0 0.0
zp 47.89 ri 3.33e-11p 2.75e-07p 0.000243p 0.005680p 0.021377p 0.001606p 0.001606p 7.28e-05p 2.47e-08p 1.71e-08p 2.52e-12p
sig0.564 cc 3.33e-11p 2.75e-07p 0.000243p 0.005923p 0.027300p 0.015256p 0.015256p 0.030585p 2.47e-08p 1.71e-08p 2.52e-12p
rc 3.33e-11p 2.75e-07p 0.000243p 0.005923p 0.027300p 0.015256p 0.015256p 0.030585k 2.47e-08p 1.71e-08p 2.52e-12p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.055690k 0.0 0.0 0.0
zp 47.91 ri 5.26e-11p 4.37e-07p 0.000408p 0.009763p 0.039271p 0.003048p 0.003048p 0.000151p 5.80e-08p 3.41e-08p 6.22e-12p
sig0.565 cc 5.26e-11p 4.37e-07p 0.000409p 0.010172p 0.049443p 0.027769p 0.027769p 0.055690p 5.80e-08p 3.41e-08p 6.22e-12p
rc 5.26e-11p 4.37e-07p 0.000409p 0.010172p 0.049443p 0.027769p 0.027769p 0.055690k 5.80e-08p 3.41e-08p 6.22e-12p
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.025623n 0.0 0.0 0.0
zp 47.43 ri 1.05e-09p 4.60e-06p 0.001249p 0.011829p 0.011979p 0.000280p 0.000280p 1.95e-06p 1.09e-10p 7.57e-11p 0.0
sig0.544 cc 1.05e-09p 4.60e-06p 0.001253p 0.013082p 0.025061p 0.012811p 0.012811p 0.025623p 1.09e-10p 7.57e-11p 0.0
rc 1.05e-09p 4.60e-06p 0.001253p 0.013082p 0.025061o 0.012811o 0.012811o 0.025623m 1.09e-10p 7.57e-11p 0.0
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.021829j 0.0 0.0 0.0
zp 48.03 ri 2.76e-12p 3.46e-08p 7.92e-05p 0.002211p 0.016899p 0.001267p 0.001267p 0.000106p 3.21e-08p 2.23e-08p 5.14e-12p
sig0.555 cc 2.76e-12p 3.46e-08p 7.92e-05p 0.002290p 0.019189p 0.010862p 0.010862p 0.021829p 3.21e-08p 2.23e-08p 5.14e-12p
rc 2.76e-12p 3.46e-08p 7.92e-05p 0.002290p 0.019189p 0.010862p 0.010862p 0.021829j 3.21e-08p 2.23e-08p 5.14e-12p
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.054327m 0.0 0.0 0.0
zp 47.03 ri 4.84e-08p 8.47e-05p 0.010620p 0.031226p 0.012280p 5.78e-05p 5.78e-05p 7.90e-08p 0.0 0.0 0.0
sig0.524 cc 4.84e-08p 8.47e-05p 0.010705p 0.041932p 0.054212p 0.027164p 0.027164p 0.054327p 0.0 0.0 0.0
rc 4.84e-08p 8.47e-05p 0.010705p 0.041932p 0.054212o 0.027164o 0.027164o 0.054327l 0.0 0.0 0.0

ru, rh, pd half lives from 80eng2; ag, cd, in half lives 89wal1.
1

mass number 121 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 45 rh g 46 pd g 47 ag g 48 cd d 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te g 53 i g
half life 0.250s 0.644s 0.78 s 1.5 s 13.5 s 3.8 m 23. s 55. y 1.128d stable 17. d 2.12 h
lambda 2.773e+00 1.076e+00 8.887e-01 4.621e-01 5.134e-02 3.040e-03 3.014e-02 3.996e-10 7.112e-06 0.0 4.719e-07
9.082e-05
z - 1 g 100.0000 100.0000 100.0000 0.0 100.0000 18.0000 82.0000 0.0 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.1840 100.0000 0.0 0.0 0.0 0.0 0.0 0.0 0.0
u235t xi 0.0 0.0 0.0 0.0 0.007861l 0.0 0.002685n 0.0 0.000389p 3.84e-09n 0.0 0.0
xc 0.0 0.0 0.002851m 0.0 0.006364j 0.003142k 0.009803k 0.0 0.011836i 0.013047i 0.0 0.0
zp 48.04 ri 1.44e-08p 4.73e-05p 0.002578p 0.0 0.007239l 0.000324p 0.002472n 2.79e-05p 0.000358p 3.53e-09n 0.0 0.0
sig0.531 cc 8.36e-09p 2.74e-05p 0.001522p 0.0 0.011141p 0.002359p 0.010643p 3.11e-05p 0.013015p 0.013046p 0.0
0.0
rc 1.44e-08p 4.73e-05p 0.002625m 1.24e-06o 0.009865i 0.002100l 0.010562j 2.79e-05p 0.013020h 0.013047i 0.0 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.031918l 0.037835k 0.0 0.0
zp 48.01 ri 4.28e-08p 0.000104p 0.004801p 0.0 0.026833p 0.000843p 0.004116p 8.24e-05p 2.90e-05p 4.77e-08p 1.57e-12p
0.0
sig0.537 cc 4.28e-08p 0.000104p 0.004905p 0.0 0.031738p 0.006556p 0.030141p 8.24e-05p 0.036726p 0.036809p 1.57e-12p
0.0
rc 4.28e-08p 0.000104p 0.004905p 2.22e-06o 0.031740p 0.006556p 0.030143n 8.24e-05p 0.036729k 0.036811j 1.57e-12p
0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.035180i 1.115547k 0.0 0.0
zp 47.74 ri 0.000219p 0.026789p 0.350727p 0.0 0.552436p 0.013275p 0.107405p 0.002410p 0.000529p 7.16e-06p 1.61e-09p
0.0
sig0.634 cc 0.000215p 0.026548p 0.371307p 0.0 0.932275p 0.180858p 0.870043p 0.002369p 1.051421p 1.053797p 1.58e-09p
0.0
rc 0.000219p 0.027008p 0.377735p 0.000346o 0.930517n 0.180768n 0.870429l 0.002410p 1.051726i 1.054143h 1.61e-09p
0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.036187j 0.039441l 0.0 0.0

zp 47.41 ri 1.07e-05p 0.002015p 0.017932p 0.0 0.016082p 0.000147p 0.000717p 2.49e-06p 8.75e-07p 4.87e-10p 0.0 0.0
sig0.557 cc 1.07e-05p 0.002026p 0.019958p 0.0 0.036040p 0.006634p 0.030270p 2.49e-06p 0.036905p 0.036907p 0.0
0.0
rc 1.07e-05p 0.002026p 0.019958p 1.95e-05o 0.036059o 0.006638p 0.030286m 2.49e-06p 0.036924j 0.036927j 0.0 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.844171i 0.788197k 0.0 0.0
zp 47.26 ri 0.001511p 0.085121p 0.452018p 0.0 0.277847p 0.001784p 0.014433p 6.97e-05p 1.53e-05p 3.35e-08p 0.0
0.0
sig0.605 cc 0.001534p 0.087939p 0.546775p 0.0 0.816250p 0.148736p 0.683976p 7.08e-05p 0.832727p 0.832798p 0.0
0.0
rc 0.001511p 0.086632p 0.538650p 0.000663o 0.817159n 0.148873o 0.684504m 6.97e-05p 0.833392i 0.833461h 0.0
0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.76e-07n 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.032416k 0.037808j 0.0 0.0
zp 48.33 ri 9.09e-09p 2.47e-05p 0.002388p 0.0 0.022525p 0.002301p 0.009808p 0.000540p 0.000220p 2.72e-07n 3.68e-10p
0.0
sig0.564 cc 9.09e-09p 2.47e-05p 0.002413p 0.0 0.024937p 0.006789p 0.030255p 0.000540p 0.037265p 0.037807p 3.68e-10p
0.0
rc 9.09e-09p 2.47e-05p 0.002413p 8.59e-07o 0.024939p 0.006790p 0.030257n 0.000540p 0.037268j 0.037808j 3.68e-10p
0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.063088k 0.0 0.0
zp 48.36 ri 1.18e-08p 3.56e-05p 0.003532p 0.0 0.037367p 0.003513p 0.017153p 0.001096p 0.000385p 4.00e-06p 8.98e-10p
0.0
sig0.565 cc 1.18e-08p 3.56e-05p 0.003568p 0.0 0.040935p 0.010882p 0.050720p 0.001096p 0.061986p 0.063087p 8.98e-10p
0.0
rc 1.18e-08p 3.56e-05p 0.003568p 1.18e-06o 0.040936p 0.010882p 0.050721o 0.001096p 0.061988m 0.063088k 8.98e-10p
0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.025881n 0.0 0.0
zp 47.87 ri 1.53e-07p 0.000166p 0.005536p 0.0 0.017402p 0.000520p 0.002218p 2.62e-05p 1.07e-05p 1.45e-08p 0.0 0.0
sig0.544 cc 1.53e-07p 0.000166p 0.005702p 0.0 0.023104p 0.004679p 0.021163p 2.62e-05p 0.025852p 0.025879p 0.0
0.0
rc 1.53e-07p 0.000166p 0.005702p 3.02e-06o 0.023107p 0.004679p 0.021165p 2.62e-05p 0.025855o 0.025882n 0.0
0.0
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.020519j 0.033080m 0.0 0.0
zp 48.45 ri 1.00e-09p 6.16e-06p 0.000803p 0.0 0.013533p 0.001511p 0.006440p 0.000558p 0.000228p 1.97e-06p 5.10e-10p 0.0
sig0.555 cc 1.00e-09p 6.16e-06p 0.000810p 0.0 0.014342p 0.004092p 0.018201p 0.000558p 0.022521p 0.023081p 5.10e-10p 0.0
rc 1.00e-09p 6.16e-06p 0.000810p 3.75e-07o 0.014343p 0.004092p 0.018201o 0.000558p 0.022522j 0.023082j 5.10e-10p 0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.049256j 0.048332k 0.0 0.0
zp 47.43 ri 5.23e-06p 0.002080p 0.022914p 0.0 0.022916p 0.000151p 0.000739p 1.50e-06p 5.28e-07p 9.71e-11p 0.0 0.0
sig0.524 cc 5.23e-06p 0.002085p 0.024999p 0.0 0.047915p 0.008776p 0.040029p 1.50e-06p 0.048806p 0.048807p 0.0 0.0
rc 5.23e-06p 0.002085p 0.024999p 1.41e-05o 0.047929n 0.008779o 0.040041m 1.50e-06p 0.048820j 0.048821i 0.0 0.0

in branching from 71erd1; rh, pd half lives 80eng2; ag, cd, in, sn half lives 89wal1.

1

mass number 122 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag g 48 cd d 48 cd g 49 in m 49 in g 50 sn g 51 sb m 51 sb g 52 te g
half life 0.107s 1.41 s 0.56 s 0.39s 5.3 s 10. s 1.5 s stable 4.2 m 2.72 d stable
lambda 0.0 6.478e+00 4.916e-01 1.238e+00 1.777e+00 1.308e-01 6.931e-02 4.621e-01 0.0 2.751e-03 2.949e-06 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 99.8160 0.0 100.0000 100.0000 0.0 -3.0000 97.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.5450 100.0000 0.0 0.0 0.0 0.0 100.0000 0.0
u235t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.001964o 0.001964o 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.001052n 0.0 0.0 0.0 0.010318m 0.015431j 0.0 0.0 0.0
zp 48.43 ri 0.0 2.85e-10p 4.77e-06p 0.000668p 0.0 0.011931p 0.001257p 0.001257o 0.000365p 2.08e-07p 1.84e-07p 6.10e-11p
sig0.531 cc 0.0 1.68e-10p 2.81e-06p 0.000397p 0.0 0.010816p 0.002112p 0.012927p 0.015483p 2.53e-07p 4.78e-07p 4.63e-07p
rc 0.0 2.85e-10p 4.77e-06p 0.000673o 1.50e-06p 0.012605p 0.001257p 0.013862p 0.015484j 2.08e-07p 3.92e-07p 3.81e-07p
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.040408k 0.0 0.0 0.0

zp 48.41 ri 0.0 8.12e-10p 1.00e-05p 0.001197p 0.0 0.027343p 0.005388p 0.005388p 0.001082p 7.19e-07p 5.42e-07p 2.15e-10p
sig0.537 cc 0.0 8.12e-10p 1.00e-05p 0.001207p 0.0 0.028548p 0.005388p 0.033936p 0.040406p 7.19e-07p 1.26e-06p 1.22e-06p
rc 0.0 8.12e-10p 1.00e-05p 0.001207p 1.53e-06o 0.028550p 0.005388p 0.033937n 0.040408k 7.19e-07p 1.26e-06p 1.22e-06p
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.146017k 0.0 0.0 0.0
zp 48.12 ri 6.41e-09p 2.04e-05p 0.006044p 0.181814p 0.0 0.643561p 0.148880p 0.148874p 0.016801p 6.96e-05p 2.98e-05p 5.56e-08p
sig0.634 cc 6.41e-09p 2.04e-05p 0.006064p 0.187859p 0.0 0.831120p 0.148865p 0.979985p 1.145651p 6.96e-05p 9.94e-05p 9.65e-05p
rc 6.41e-09p 2.04e-05p 0.006065p 0.187879p 0.000372o 0.831466n 0.148880p 0.980340m 1.146024k 6.96e-05p 9.95e-05p 9.65e-05o
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.041073k 0.0 0.0 0.0
zp 47.81 ri 6.30e-11p 6.17e-07p 0.000416p 0.010155p 0.0 0.026627p 0.001908p 0.001908p 5.23e-05p 1.37e-08p 1.03e-08p 0.0
sig0.557 cc 6.30e-11p 6.17e-07p 0.000417p 0.010572p 0.0 0.037180p 0.001908p 0.039088p 0.041049p 1.37e-08p 2.40e-08p 2.33e-08p
rc 6.30e-11p 6.17e-07p 0.000417p 0.010572p 2.37e-05o 0.037203o 0.001908p 0.039112m 0.041073k 1.37e-08p 2.40e-08p 2.33e-08p
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.850248l 0.0 0.0 0.0
zp 47.62 ri 1.09e-07p 0.000199p 0.027420p 0.332734p 0.0 0.428305p 0.030208p 0.030208p 0.000782p 5.54e-07p 2.37e-07p 5.74e-11p
sig0.605 cc 1.09e-07p 0.000199p 0.027605p 0.360184p 0.0 0.788023p 0.030194p 0.818217p 0.849192p 5.54e-07p 7.91e-07p 7.67e-07p
rc 1.09e-07p 0.000199p 0.027618p 0.360352p 0.001060o 0.789054n 0.030208p 0.819262m 0.850252k 5.54e-07p 7.91e-07p 7.67e-07o
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.044656j 0.0 0.0 0.0
zp 48.77 ri 0.0 1.31e-10p 1.62e-06p 0.000465p 0.0 0.016931p 0.010996p 0.010996p 0.005265p 2.09e-05p 1.85e-05p 3.41e-08p
sig0.564 cc 0.0 1.31e-10p 1.62e-06p 0.000467p 0.0 0.017397p 0.010996p 0.028394p 0.044656p 2.09e-05p 3.94e-05p 3.82e-05p

rc 0.0 1.31e-10p 1.62e-06p 0.000467p 2.60e-07o 0.017397p 0.010996p 0.028394o 0.044656j 2.09e-05p 3.94e-05p 3.82e-05p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.069833k 0.0 0.0 0.0
zp 48.80 ri 0.0 1.58e-10p 2.12e-06p 0.000636p 0.0 0.025377p 0.017321p 0.017321p 0.009174p 4.22e-05p 3.19e-05p 7.34e-08p
sig0.565 cc 0.0 1.58e-10p 2.12e-06p 0.000639p 0.0 0.026014p 0.017321p 0.043335p 0.069833p 4.22e-05p 7.41e-05p 7.20e-05p
rc 0.0 1.58e-10p 2.12e-06p 0.000639p 4.01e-07o 0.026014p 0.017321p 0.043336o 0.069833k 4.22e-05p 7.41e-05p 7.20e-05o
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.025881n 0.0 0.0 0.0
zp 48.30 ri 0.0 3.10e-09p 1.33e-05p 0.001625p 0.0 0.016069p 0.003900p 0.003900p 0.000376p 3.08e-07p 2.73e-07p 5.38e-11p
sig0.544 cc 0.0 3.10e-09p 1.33e-05p 0.001639p 0.0 0.017704p 0.003900p 0.021604p 0.025880p 3.08e-07p 5.82e-07p 5.64e-07p
rc 0.0 3.10e-09p 1.33e-05p 0.001639p 1.61e-06o 0.017706p 0.003900p 0.021606o 0.025882n 3.08e-07p 5.82e-07p 5.64e-07p
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.040922j 0.0 0.0 0.0
zp 48.87 ri 0.0 1.91e-11p 5.99e-07p 0.000203p 0.0 0.014888p 0.009148p 0.009148p 0.007533p 2.54e-05p 2.25e-05p 6.23e-08p
sig0.555 cc 0.0 1.91e-11p 5.99e-07p 0.000204p 0.0 0.015091p 0.009148p 0.024239p 0.040922p 2.54e-05p 4.79e-05p 4.65e-05p
rc 0.0 1.91e-11p 5.99e-07p 0.000204p 3.78e-10o 0.015091p 0.009148p 0.024239p 0.040922j 2.54e-05p 4.79e-05p 4.65e-05p
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.036527l 0.0 0.0 0.0
zp 47.83 ri 4.43e-12p 1.28e-07p 0.000233p 0.007448p 0.0 0.026015p 0.001402p 0.001402p 2.86e-05p 2.69e-09p 2.03e-09p 0.0
sig0.524 cc 4.43e-12p 1.28e-07p 0.000233p 0.007682p 0.0 0.033682p 0.001402p 0.035085p 0.036516p 2.69e-09p 4.71e-09p 4.57e-09p
rc 4.43e-12p 1.28e-07p 0.000233p 0.007682p 1.17e-05o 0.033694p 0.001402p 0.035096n 0.036527l 2.69e-09p 4.71e-09p 4.57e-09p

ru, rh pd half lives from 80eng2; ag, cd, in half lives 89wal1.

1

mass number 123 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 45 rh g 46 pd g 47 ag g 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te m 52 te g 53 i g
half life 0.134s 0.300s 0.31 s 2.09 s 47. s 6.0 s 40.1 m 129.2d stable 119.7d 1e+13y 13.2 h
lambda 5.173e+00 2.310e+00 2.236e+00 3.316e-01 1.475e-02 1.155e-01 2.881e-04 6.209e-08 0.0 6.702e-08 2.198e-21 1.459e-05
z - 1 g 100.0000 100.0000 100.0000 99.4550 23.0000 77.0000 100.0000 0.0 100.0000 0.0 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 100.0000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0
u235t xi 0.0 0.0 0.0 0.0 0.000499p 0.007778p 0.000617n 0.001599o 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.000548p 0.0 0.002393m 0.011966m 0.013677h 0.001802j 0.015848j 0.0 0.0 0.0
zp 48.82 ri 8.52e-12p 3.99e-07p 0.000275p 0.010102p 0.000251p 0.003911p 0.000310n 0.000804o 5.17e-06p 1.72e-09p 5.14e-10p 0.0
sig0.531 cc 2.63e-12p 1.23e-07p 8.52e-05p 0.005395p 0.002814p 0.010859p 0.014246p 0.001403p 0.015659p 3.40e-09p 4.42e-09p 0.0
rc 8.52e-12p 3.99e-07p 0.000276p 0.010376p 0.002637m 0.011901m 0.014848h 0.000804l 0.015658g 1.72e-09p 2.23e-09p 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.044064k 0.0 0.0 0.0
zp 48.81 ri 1.37e-11p 4.79e-07p 0.000280p 0.015245p 0.003936p 0.019217p 0.001392p 0.003963p 3.00e-05p 1.13e-08p 3.01e-09p 0.0
sig0.537 cc 1.37e-11p 4.79e-07p 0.000281p 0.015524p 0.007507p 0.031171p 0.040070p 0.003963p 0.044063p 1.13e-08p 1.43e-08p 0.0
rc 1.37e-11p 4.79e-07p 0.000281p 0.015524p 0.007507p 0.031171p 0.040070m 0.003963p 0.044063k 1.13e-08p 1.43e-08p 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.192722k 0.0 0.0 0.0
zp 48.50 ri 1.32e-06p 0.000954p 0.067385p 0.528051p 0.058110p 0.470165p 0.012145p 0.055329p 0.000956p 1.14e-06p 1.85e-07p 1.66e-10p
sig0.634 cc 1.32e-06p 0.000955p 0.068340p 0.596018p 0.195194p 0.929099p 1.136439p 0.055329p 1.192724p 1.14e-06p 1.32e-06p 1.66e-10p
rc 1.32e-06p 0.000955p 0.068340p 0.596018o 0.195194o 0.929099o 1.136439m 0.055329p 1.192724k 1.14e-06p 1.32e-06p 1.66e-10p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.044534l 0.0 0.0 0.0

zp 48.20 ri 2.62e-08p 5.36e-05p 0.004299p 0.028026p 0.001994p 0.009734p 0.000117p 0.000333p 7.33e-07p 5.54e-11p 1.47e-11p 0.0
sig0.557 cc 2.62e-08p 5.36e-05p 0.004353p 0.032356p 0.009436p 0.034648p 0.044201p 0.000333p 0.044534p 5.54e-11p 7.01e-11p 0.0
rc 2.62e-08p 5.36e-05p 0.004353p 0.032356p 0.009436p 0.034648p 0.044201n 0.000333p 0.044534l 5.54e-11p 7.01e-11p 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.921818l 0.0 0.0 0.0
zp 47.99 ri 1.82e-05p 0.006442p 0.188020p 0.545846p 0.019455p 0.157411p 0.001021p 0.004649p 1.49e-05p 2.49e-09p 4.05e-10p 0.0
sig0.605 cc 1.82e-05p 0.006460p 0.194480p 0.739266p 0.189487p 0.726646p 0.917153p 0.004649p 0.921818p 2.49e-09p 2.89e-09p 0.0
rc 1.82e-05p 0.006460p 0.194480p 0.739266o 0.189487n 0.726646o 0.917153m 0.004649p 0.921818k 2.49e-09p 2.89e-09p 0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.044120l 0.0 0.0 0.0
zp 49.22 ri 0.0 3.62e-08p 4.76e-05p 0.004996p 0.004560p 0.019440p 0.004238p 0.010376p 0.000460p 9.67e-07p 2.89e-07p 1.16e-10p
sig0.564 cc 0.0 3.62e-08p 4.76e-05p 0.005043p 0.005720p 0.023324p 0.033282p 0.010376p 0.044120p 9.67e-07p 1.26e-06p 1.16e-10p
rc 0.0 3.62e-08p 4.76e-05p 0.005043p 0.005720p 0.023324p 0.033282o 0.010376p 0.044120l 9.67e-07p 1.26e-06p 1.16e-10p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.076809l 0.0 0.0 0.0
zp 49.24 ri 1.30e-12p 5.65e-08p 7.35e-05p 0.008411p 0.006870p 0.033544p 0.007031p 0.020010p 0.000867p 2.11e-06p 5.62e-07p 2.58e-10p
sig0.565 cc 1.30e-12p 5.65e-08p 7.36e-05p 0.008484p 0.008822p 0.040077p 0.055929p 0.020010p 0.076809p 2.11e-06p 2.67e-06p 2.58e-10p
rc 1.30e-12p 5.65e-08p 7.36e-05p 0.008484p 0.008822p 0.040077p 0.055929o 0.020010p 0.076809k 2.11e-06p 2.67e-06p 2.58e-10p
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.001108j 0.026917n 0.0 0.0 0.0
zp 48.73 ri 3.64e-11p 6.34e-07p 0.000295p 0.009777p 0.002720p 0.011595p 0.000668p 0.001636p 1.36e-05p 3.92e-09p 1.17e-09p 0.0
sig0.544 cc 3.64e-11p 6.34e-07p 0.000295p 0.010071p 0.005036p 0.019350p 0.025054p 0.001636p 0.026704p 3.92e-09p 5.09e-09p 0.0

rc 3.64e-11p 6.34e-07p 0.000295p 0.010071p 0.005036p 0.019350p 0.025054o 0.001636i 0.026704n 3.92e-09p 5.09e-09p 0.0
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000515l 0.062290m 0.0 0.0 0.0
zp 49.20 ri 0.0 0.0 6.94e-08p 0.002165p 0.007986p 0.034043p 0.004702p 0.011511p 8.22e-06p 5.33e-12p 1.59e-12p 0.0
sig0.361 cc 0.0 0.0 6.94e-08p 0.002165p 0.008483p 0.035710p 0.048896p 0.011511p 0.060415p 5.33e-12p 6.93e-12p 0.0
rc 0.0 0.0 6.94e-08p 0.002165p 0.008483p 0.035710p 0.048896o 0.011511d 0.060415m 5.33e-12p 6.93e-12p 0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.029354l 0.0 0.0 0.0
zp 48.23 ri 2.51e-09p 1.55e-05p 0.002125p 0.019437p 0.001284p 0.006268p 6.14e-05p 0.000175p 1.82e-07p 5.09e-12p 1.35e-12p 0.0
sig0.524 cc 2.51e-09p 1.55e-05p 0.002140p 0.021565p 0.006244p 0.022874p 0.029179p 0.000175p 0.029354p 5.09e-12p 6.44e-12p 0.0
rc 2.51e-09p 1.55e-05p 0.002140p 0.021565p 0.006244p 0.022874p 0.029179n 0.000175p 0.029354l 5.09e-12p 6.44e-12p 0.0

rh, pd half lives from 80eng2; ag, cd, in, sn half lives 89wal1; i, te half lives 90bur1.

1

mass number 124 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag g 48 cd g 49 in g 50 sn g 51 sb m 51 sb g 52 te g
half life 0.514s 0.22 s 1.24 s 3.18 s stable 20.2 m 60.20d stable
lambda 0.0 0.0 1.349e+00 3.151e+00 5.590e-01 2.180e-01 0.0 5.719e-04 1.333e-07 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0
u235t xi 0.0 0.0 0.0 0.0 0.015278o 0.004266p 0.0 3.05e-06p 9.57e-06l 0.0
xc 0.0 0.0 0.0 0.0 0.015972o 0.019594l 0.026530j 0.0 0.0 0.0
zp 49.23 ri 0.0 1.04e-12p 2.73e-07p 0.000552p 0.012143o 0.003391p 0.010692p 2.42e-06p 7.61e-06p 3.42e-07p
sig0.531 cc 0.0 0.0 5.30e-09p 1.07e-05p 0.003303p 0.014977p 0.026627p 8.00e-05p 0.000160p 0.000160p
rc 0.0 1.04e-12p 2.73e-07p 0.000552p 0.012695p 0.016086l 0.026777j 2.42e-06p 1.00e-05p 1.04e-05p
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.062982k 0.0 0.0 0.0
zp 49.20 ri 0.0 0.0 2.34e-08p 3.65e-05p 0.008870p 0.028543p 0.025533p 0.000175p 0.000175p 8.13e-07p

sig0.537 cc 0.0 0.0 2.34e-08p 3.66e-05p 0.008907p 0.037450p 0.062982p 0.000175p 0.000350p 0.000350p
rc 0.0 0.0 2.34e-08p 3.66e-05p 0.008907p 0.037450p 0.062982k 0.000175p 0.000350p 0.000350p
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.283332k 0.0 0.0 0.0
zp 48.88 ri 3.11e-12p 6.23e-08p 0.000112p 0.018879p 0.334901p 0.724596o 0.204845p 0.003408p 0.003408p 2.31e-05p
sig0.634 cc 3.11e-12p 6.23e-08p 0.000112p 0.018991p 0.353896p 1.078486p 1.283334p 0.003408p 0.006816p 0.006839p
rc 3.11e-12p 6.23e-08p 0.000112p 0.018991p 0.353892p 1.078488n 1.283334k 0.003408p 0.006816p 0.006839p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.046448k 0.0 0.0 0.0
zp 48.60 ri 0.0 5.60e-10p 4.26e-06p 0.001024p 0.020932p 0.021797p 0.002690p 6.68e-06p 6.68e-06p 4.79e-09p
sig0.557 cc 0.0 5.60e-10p 4.26e-06p 0.001028p 0.021960p 0.043758p 0.046448p 6.68e-06p 1.34e-05p 1.34e-05p
rc 0.0 5.60e-10p 4.26e-06p 0.001028p 0.021960p 0.043758m 0.046448k 6.68e-06p 1.34e-05p 1.34e-05p
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.034792l 0.0 0.0 0.0
zp 48.36 ri 9.42e-11p 1.21e-06p 0.001110p 0.080077p 0.533558p 0.389917p 0.030128p 0.000102p 0.000102p 1.04e-07p
sig0.605 cc 9.42e-11p 1.21e-06p 0.001112p 0.081188p 0.614743p 1.004664p 1.034791p 0.000102p 0.000203p 0.000204p
rc 9.42e-11p 1.21e-06p 0.001112p 0.081188p 0.614746o 1.004664m 1.034791k 0.000102p 0.000203p 0.000204p
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.078617k 0.0 0.0 0.0
zp 49.47 ri 0.0 0.0 0.0 6.16e-10p 0.000274p 0.034702p 0.043642p 5.00e-05p 5.00e-05p 2.83e-10p
sig0.350 cc 0.0 0.0 0.0 6.16e-10p 0.000274p 0.034976p 0.078617p 5.00e-05p 0.000100p 0.000100p
rc 0.0 0.0 0.0 6.16e-10p 0.000274p 0.034976p 0.078617k 5.00e-05p 0.000100p 0.000100p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.120623k 0.0 0.0 0.0
zp 49.47 ri 0.0 0.0 0.0 9.41e-10p 0.000426p 0.052680p 0.067518p 7.56e-05p 7.56e-05p 4.36e-10p
sig0.350 cc 0.0 0.0 0.0 9.41e-10p 0.000426p 0.053106p 0.120623p 7.56e-05p 0.000151p 0.000151p
rc 0.0 0.0 0.0 9.41e-10p 0.000426p 0.053106p 0.120623k 7.56e-05p 0.000151p 0.000151p
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.032093n 0.0 0.0 0.0
zp 49.21 ri 0.0 0.0 1.18e-08p 2.53e-05p 0.003501p 0.018140p 0.010426p 0.000129p 0.000129p 4.51e-07p
sig0.544 cc 0.0 0.0 1.18e-08p 2.53e-05p 0.003526p 0.021667p 0.032093p 0.000129p 0.000259p 0.000259p
rc 0.0 0.0 1.18e-08p 2.53e-05p 0.003526p 0.021667p 0.032093n 0.000129p 0.000259p 0.000259p
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.074582l 0.0 0.0 0.0
zp 49.36 ri 0.0 0.0 0.0 7.22e-09p 0.000975p 0.035273p 0.038333p 2.08e-05p 2.08e-05p 1.57e-10p
sig0.361 cc 0.0 0.0 0.0 7.22e-09p 0.000975p 0.036249p 0.074582p 2.08e-05p 4.17e-05p 4.17e-05p

```
          rc      0.0       0.0       0.0  7.22e-09p 0.000975p 0.036249p 0.074582l 2.08e-05p 4.17e-05p 4.17e-05p
  th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  0.026471l      0.0       0.0       0.0
 zp 48.64 ri      0.0  2.38e-11p 7.28e-07p 0.000335p 0.012253p 0.012304p 0.001579p 2.07e-06p 2.07e-06p 7.29e-10p
 sig0.524 cc      0.0  2.38e-11p 7.28e-07p 0.000335p 0.012588p 0.024892p 0.026471p 2.07e-06p 4.15e-06p 4.15e-06p
          rc      0.0  2.38e-11p 7.28e-07p 0.000335p 0.012588p 0.024892n 0.026471l 2.07e-06p 4.15e-06p 4.15e-06p

   pd, sb half lives from 80eng2; ag, cd, in half lives from 89wal1.
1

     mass number    125              LA-UR-94-3106 (ENDF-349)                          percent yields
 nuclide      46 pd g   47 ag g   48 cd g   49 in m   49 in g   50 sn m   50 sn g   51 sb g   52 te m   52 te g   53 i  g   54 xe g
 half life    0.166s    0.334s    0.68 s    12.2 s    2.36 s    9.5 m     9.63 d    2.758y    58. d     stable    60.14d    17. h
 lambda       4.176e+00 2.075e+00 1.019e+00 5.682e-02 2.937e-01 1.216e-03 8.331e-07 7.969e-09 1.383e-07       0.0 1.334e-07
1.133e-05
  z - 1 g    100.0000  100.0000  100.0000   30.0000   70.0000   50.0000   50.0000  100.0000   22.5000   77.5000 -100.0000 -
100.0000
  z - 1 m       0.0       0.0       0.0       0.0       0.0   50.0000   50.0000  100.0000       0.0       0.0       0.0       0.0
  z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
  u235t   xi      0.0       0.0       0.0  0.007665n 0.007665n 0.016972l 0.013864j      0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0  0.006099k 0.018231k 0.018241j 0.011670i 0.027719h      0.0  0.029454j      0.0       0.0
 zp 49.53 ri      0.0  1.66e-09p 0.005546p 0.004723n 0.004723n 0.010458l 0.008543j 2.74e-05p 2.30e-11p 6.88e-12p      0.0       0.0
 sig0.331 cc      0.0  1.11e-11p 3.71e-05p 0.006207p 0.006222p 0.012463p 0.021514p 0.034022p 0.007655p 0.034022p      0.0
0.0
          rc      0.0  1.66e-09p 0.005546p 0.006387k 0.008606m 0.017955j 0.016039h 0.034022g 0.007655g 0.034022f      0.0       0.0
  u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.070233j      0.0  0.064998j      0.0       0.0
 zp 49.38 ri      0.0  2.35e-09p 0.000522p 0.018352p 0.018352p 0.007999p 0.022767p 3.80e-05p 4.05e-11p 1.08e-11p      0.0       0.0
 sig0.350 cc      0.0  2.35e-09p 0.000522p 0.018508p 0.018717p 0.026612p 0.041380p 0.068030p 0.015307p 0.068030p      0.0
0.0
          rc      0.0  2.35e-09p 0.000522p 0.018508p 0.018717p 0.026612o 0.041380o 0.068030j 0.015307j 0.068030i      0.0       0.0
  u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  0.994229i      0.0       0.0  1.395515k      0.0       0.0
 zp 49.26 ri 8.79e-06p 0.003612p 0.148454p 0.351315p 0.351315p 0.077794p 0.494687n 0.033041p 0.000232p 3.78e-05p 2.11e-
07p 1.48e-11p
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sig0.634 cc 9.73e-06p 0.004005p 0.168235p 0.439117p 0.506411p 0.558825p 0.864820p 1.460197p 0.328802p 1.460497p 2.34e-07p 1.64e-11p
rc 8.79e-06p 0.003621p 0.152075p 0.396937p 0.457767p 0.505146o 0.922039i 1.460226l 0.328783l 1.460497j 2.11e-07p 1.48e-11p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.010744k 0.049376j 0.0 0.102371p 0.0 0.0
zp 48.99 ri 2.07e-07p 0.000175p 0.009775p 0.014625p 0.014625p 0.002384p 0.006787p 0.000153p 2.02e-07p 5.37e-08p 9.98e-12p 0.0
sig0.557 cc 2.07e-07p 0.000175p 0.009950p 0.017610p 0.021590p 0.021984p 0.026387p 0.048524p 0.010918p 0.048524p 6.54e-12p 0.0
rc 2.07e-07p 0.000175p 0.009950p 0.017610p 0.021590p 0.021984n 0.026387i 0.048524j 0.010918j 0.048524i 9.98e-12p 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.540923i 1.213415i 0.0 1.109712k 0.0 0.0
zp 48.74 ri 0.000131p 0.024439p 0.392975p 0.328931p 0.325898p 0.021929p 0.099897p 0.002122p 2.41e-06p 3.92e-07p 2.79e-10p 0.0
sig0.605 cc 0.000130p 0.024503p 0.416403p 0.453076p 0.619637p 0.558225p 0.635981p 1.196322p 0.269175p 1.196325p 2.92e-10p 0.0
rc 0.000131p 0.024570p 0.417545p 0.454194p 0.618180o 0.558116m 0.636084i 1.196323i 0.269175i 1.196325h 2.79e-10p 0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.075788l 0.109636k 0.0 0.124128m 0.0 0.0
zp 49.64 ri 0.0 4.98e-11p 6.95e-05p 0.017071p 0.017071p 0.022269p 0.054520p 0.000658p 4.78e-09p 1.43e-09p 0.0 0.0
sig0.350 cc 0.0 4.98e-11p 6.95e-05p 0.017092p 0.017120p 0.039375p 0.071626p 0.111659p 0.025123p 0.111659p 0.0 0.0
rc 0.0 4.98e-11p 6.95e-05p 0.017092p 0.017120p 0.039375p 0.071626l 0.111659j 0.025123j 0.111659j 0.0 0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.179077k 0.0 0.172987m 0.0 0.0
zp 49.63 ri 0.0 9.29e-11p 0.000125p 0.027263p 0.027263p 0.031787p 0.090471p 0.000937p 6.18e-09p 1.64e-09p 0.0 0.0
sig0.350 cc 0.0 9.29e-11p 0.000125p 0.027301p 0.027351p 0.059113p 0.117796p 0.177846p 0.040015p 0.177846p 0.0 0.0
rc 0.0 9.29e-11p 0.000125p 0.027301p 0.027351p 0.059113p 0.117796p 0.177846k 0.040015k 0.177846j 0.0 0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.019423j 0.048385k 0.0 0.0 0.0 0.0
zp 49.38 ri 0.0 1.74e-09p 0.000323p 0.013698p 0.013698p 0.005555p 0.013599p 2.85e-05p 2.58e-11p 7.70e-12p 0.0 0.0

sig0.350 cc 0.0 1.74e-09p 0.000323p 0.013794p 0.013924p 0.019414p 0.027458p 0.046901p 0.010553p 0.046901p 0.0
0.0
rc 0.0 1.74e-09p 0.000323p 0.013794p 0.013924p 0.019414o 0.027458i 0.046901k 0.010553k 0.046901j 0.0 0.0
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.052845p 0.053441i 0.113520k 0.0 0.130143k 0.0 0.0
zp 49.53 ri 0.0 8.94e-10p 0.000306p 0.021750p 0.021750p 0.021122p 0.051712p 0.000322p 2.69e-09p 8.05e-10p 0.0
0.0
sig0.361 cc 0.0 8.94e-10p 0.000306p 0.021841p 0.021964p 0.043024p 0.073614p 0.116962p 0.026317p 0.116962p 0.0
0.0
rc 0.0 8.94e-10p 0.000306p 0.021842p 0.021964p 0.043025o 0.073615h 0.116962k 0.026317k 0.116962j 0.0 0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.015603j 0.0 0.0 0.033808k 0.0 0.0
zp 49.06 ri 1.99e-08p 4.56e-05p 0.005349p 0.010076p 0.010076p 0.001903p 0.005415p 8.94e-05p 4.54e-08p 1.21e-08p 0.0
0.0
sig0.524 cc 1.99e-08p 4.56e-05p 0.005395p 0.011694p 0.013852p 0.014676p 0.018189p 0.032954p 0.007415p 0.032954p 0.0
0.0
rc 1.99e-08p 4.56e-05p 0.005395p 0.011694p 0.013852p 0.014676o 0.018189j 0.032954l 0.007415m 0.032954k 0.0
0.0

pd, ag half lives from 80eng2; cd, in, sn, sb, te half lives from 89wal1; i half life 90bur1.

1

mass number 126 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 46 pd g 47 ag g 48 cd g 49 in g 50 sn d 50 sn g 51 sb m 51 sb g 52 te g 53 i g 54 xe g
half life 0.252s 0.140s 0.52 s 1.63 s 3.76 s 1.e5y 19.0 m 12.4 d stable 13.02d stable
lambda 2.751e+00 4.951e+00 1.333e+00 4.252e-01 1.843e-01 2.198e-13 6.080e-04 6.470e-07 0.0 6.162e-07 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 100.0000 100.0000 0.0 100.0000 -56.0000 44.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 86.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.6600 100.0000 0.0 14.0000 0.0 0.0 0.0
u235t xi 0.0 0.0 0.0 0.005060p 0.0 0.0 0.002639n 0.001000j 0.0 2.61e-10n 0.0
xc 0.0 0.0 0.012401n 0.018849l 0.0 0.054878j 0.0 0.0 0.056637m 0.0 0.0
zp 49.68 ri 0.0 4.75e-10p 0.008079p 0.003296p 0.0 0.044473p 0.001719p 0.000651p 8.25e-10p 1.70e-10p 0.0
sig0.331 cc 0.0 0.0 1.24e-05p 0.009844p 0.0 0.057998p 0.058137p 0.008221p 0.058218p 0.0 0.0
rc 0.0 4.75e-10p 0.008079o 0.011375n 0.000299m 0.056147j 0.057866j 0.008752l 0.058518j 1.70e-10p 7.50e-11p
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

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        xc      0.0       0.0       0.0       0.0       0.0  0.095539l      0.0       0.0  0.098659k      0.0       0.0
zp 49.54 ri      0.0  1.85e-10p 0.000192p 0.029068p       0.0  0.067877p 0.000109p 7.92e-05p 1.25e-09p       0.0       0.0
sig0.350 cc      0.0  1.85e-10p 0.000192p 0.029261p       0.0  0.097141p 0.097248p 0.013693p 0.097326p       0.0       0.0
        rc      0.0  1.85e-10p 0.000192p 0.029260p 0.000218o 0.097356l 0.097465k 0.013724k 0.097545j       0.0       0.0
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  1.742786k 1.837917i 0.277991k      0.0       0.0       0.0
zp 49.64 ri 6.79e-07p 0.000686p 0.066689p 0.704210p       0.0  0.929494n 0.068019p 0.090165p 0.003077p 5.92e-06p 1.04e-09p
sig0.634 cc 6.76e-07p 0.000683p 0.067076p 0.768153p       0.0  1.699443p 1.768153p 0.338621p 1.862344p 5.98e-06p 2.63e-06p
        rc 6.79e-07p 0.000686p 0.067376p 0.771586o 0.001581o 1.702661j 1.770681i 0.338060j 1.863926h 5.92e-06p 2.61e-06p
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.053853j      0.0       0.0  0.092134p      0.0       0.0
zp 49.28 ri      0.0  9.44e-09p 0.000813p 0.036778p       0.0  0.016254p 9.42e-06p 6.82e-06p 8.73e-12p       0.0       0.0
sig0.350 cc      0.0  9.44e-09p 0.000813p 0.037593p       0.0  0.053848p 0.053855p 0.007545p 0.053860p       0.0       0.0
        rc      0.0  9.44e-09p 0.000813p 0.037590p 0.000229o 0.054072j 0.054082j 0.007578j 0.054089i       0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0  0.003543o 0.006580o      0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  1.322312l      0.0  0.253093i      0.0       0.0       0.0
zp 49.11 ri 1.09e-05p 0.005243p 0.204630p 0.775459p       0.0  0.327245p 0.003520p 0.006536o 2.99e-05p 7.93e-09p       0.0
sig0.605 cc 1.08e-05p 0.005235p 0.209119p 0.982088p       0.0  1.308655p 1.314662p 0.192015p 1.322674p 1.33e-08p 5.85e-09p
        rc 1.09e-05p 0.005254p 0.209884p 0.985343o 0.002527o 1.315115l 1.318635l 0.191145l 1.325201l 7.93e-09p 3.49e-09p
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.196145j      0.0       0.0  0.227983m      0.0       0.0
zp 49.80 ri      0.0  3.87e-12p 2.30e-05p 0.029402p       0.0  0.169027l 0.002340p 0.001374p 1.36e-07p       0.0       0.0
sig0.350 cc      0.0  3.87e-12p 2.30e-05p 0.029477p       0.0  0.198912p 0.200962p 0.029338p 0.202166p       0.0       0.0
        rc      0.0  3.87e-12p 2.30e-05p 0.029425p 0.000158o 0.198610j 0.200950j 0.029507j 0.202324i       0.0       0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.264467j      0.0       0.0  0.196136p      0.0       0.0
zp 49.79 ri      0.0  6.16e-12p 3.44e-05p 0.039981p       0.0  0.223220l 0.001980p 0.001434p 1.18e-07p       0.0       0.0
sig0.350 cc      0.0  6.14e-12p 3.43e-05p 0.039921p       0.0  0.262713p 0.264996p 0.038753p 0.266649p       0.0       0.0
        rc      0.0  6.16e-12p 3.44e-05p 0.040015p 0.000137o 0.263371j 0.265352j 0.038583j 0.266786i       0.0       0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.081994m      0.0       0.0       0.0       0.0       0.0
zp 49.55 ri      0.0  1.77e-10p 0.000124p 0.032584p       0.0  0.049137p 0.000148p 8.66e-05p 1.04e-09p       0.0       0.0
sig0.350 cc      0.0  1.77e-10p 0.000124p 0.032708p       0.0  0.081845p 0.081992p 0.011566p 0.082079p       0.0       0.0
        rc      0.0  1.77e-10p 0.000124p 0.032708p 0.000159o 0.082004m 0.082151m 0.011588m 0.082238m       0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.222513j      0.0       0.0  0.245241m      0.0       0.0
```

zp 49.70 ri 0.0 7.43e-11p 0.000121p 0.038430p 0.0 0.185592m 0.001125p 0.000661p 8.06e-08p 0.0 0.0
sig0.361 cc 0.0 7.43e-11p 0.000121p 0.038543p 0.0 0.224224p 0.225299p 0.032173p 0.225930p 0.0 0.0
rc 0.0 7.43e-11p 0.000121p 0.038552p 0.000188o 0.224332j 0.225457j 0.032225j 0.226118j 0.0 0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.048105m 0.0 0.0 0.0 0.0 0.0
zp 49.33 ri 0.0 3.74e-09p 0.000551p 0.028697p 0.0 0.018715p 9.61e-06p 6.96e-06p 1.54e-11p 0.0 0.0
sig0.350 cc 0.0 3.74e-09p 0.000551p 0.029248p 0.0 0.047964p 0.047973p 0.006723p 0.047980p 0.0 0.0
rc 0.0 3.74e-09p 0.000551p 0.029248p 0.000149o 0.048112l 0.048122l 0.006744l 0.048129l 0.0 0.0

pd, ag half lives from 80eng2; cd, in, sn, sb half lives 89wal1; i half life 90bur1.

1

mass number 127 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 47 ag g 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te m 52 te g 53 i g 54 xe g 55 cs g
half life 0.175s 0.4 s 3.73 s 1.14 s 4.15 m 2.12 h 3.84 d 109. d 9.4 h stable 36.41d 6.2 h
lambda 3.961e+00 1.733e+00 1.858e-01 6.080e-01 2.784e-03 9.082e-05 2.089e-06 7.360e-08 2.048e-05 0.0 2.203e-07
3.105e-05
z - 1 g 100.0000 100.0000 50.0000 50.0000 49.6700 49.6700 100.0000 16.0000 84.0000 100.0000 -100.0000 -
100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 100.0000 100.0000 0.0 0.0 2.4000 0.0 0.0
z - 0 m 0.0 0.0 0.1220 0.0 0.0610 0.0 0.0 0.0 97.6000 0.0 0.0 0.0
u235t xi 0.0 0.0 0.007878o 0.051854n 0.009972p 0.109166i 0.008930m 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.010271o 0.014541l 0.047414m 0.064818l 0.068564k 0.123631i 0.022694m 0.145969n 0.122530i 0.0 0.0
zp 49.84 ri 1.58e-10p 0.008155p 0.006255o 0.041172n 0.007918p 0.086677i 0.007090m 2.43e-08p 9.92e-09p 0.0 0.0
0.0
sig0.331 cc 0.0 4.24e-06p 0.008428p 0.008428p 0.044167p 0.110497p 0.157212p 0.025154p 0.156608p 0.157212p 0.0
0.0
rc 1.58e-10p 0.008155o 0.010333m 0.045250l 0.030393n 0.119485i 0.156969h 0.025115h 0.156366h 0.156969g 0.0
0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.305287g 0.0 0.0 0.308380h 0.0 0.0
zp 49.70 ri 3.90e-11p 0.000106p 0.033041p 0.033041p 0.061664p 0.176148p 0.002474p 3.13e-08p 1.10e-08p 0.0 0.0
0.0
sig0.350 cc 3.91e-11p 0.000106p 0.033163p 0.033163p 0.078266p 0.225510p 0.306255p 0.049001p 0.305079p 0.306255p 0.0
0.0

rc 3.90e-11p 0.000106p 0.033094p 0.033094p 0.078102p 0.225680n 0.306255g 0.049001g 0.305079g 0.306255f 0.0
0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.165332h 0.0 0.0 2.131950k 0.0 0.0
zp 49.99 ri 9.31e-05p 0.020321p 0.229340p 0.229340p 0.223696p 1.019058n 0.440621p 0.015149p 0.003325p 8.08e-05p 3.31e-
08p 1.21e-12p
sig0.634 cc 9.31e-05p 0.020412p 0.239522p 0.239522p 0.342643p 1.377446p 2.160665p 0.361037p 2.170697p 2.179443p 3.35e-
08p 1.22e-12p
rc 9.31e-05p 0.020414p 0.239547p 0.239547p 0.342679p 1.377588m 2.160888h 0.360891i 2.170701g 2.179443g 3.31e-08p
1.21e-12p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.151223i 0.0 0.0 0.113754i 0.0 0.0
zp 49.47 ri 1.19e-09p 0.000412p 0.034416p 0.034416p 0.017427p 0.049600p 0.000203p 2.90e-10p 1.02e-10p 0.0 0.0
0.0
sig0.350 cc 1.19e-09p 0.000412p 0.034622p 0.034622p 0.034624p 0.101419p 0.136246p 0.021799p 0.135723p 0.136246p 0.0
0.0
rc 1.19e-09p 0.000412p 0.034622p 0.034622p 0.034624p 0.101419o 0.136246i 0.021799i 0.135723i 0.136246h 0.0 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.59e-08n 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.464419g 0.0 0.0 1.493819i 0.0 0.0
zp 49.48 ri 0.000805p 0.078267p 0.343271p 0.343271p 0.117332p 0.545822p 0.066582p 0.000505p 0.000111p 1.61e-08n 2.16e-
11p 0.0
sig0.605 cc 0.000811p 0.079675p 0.385725p 0.385725p 0.309816p 1.115901p 1.492806p 0.239351p 1.487675p 1.493420p 2.15e-
11p 0.0
rc 0.000805p 0.079072p 0.382807p 0.382807p 0.307472o 1.118770m 1.492824g 0.239356g 1.487694g 1.493439i 2.16e-11p
0.0
pu239t xi 0.0 0.0 0.028798l 0.028808l 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.406296m 0.496489i 0.0 0.0 0.530271m 0.0 0.0
zp 49.97 ri 0.0 8.87e-06p 0.024001p 0.024009p 0.127171p 0.303602n 0.027620p 1.80e-06p 7.36e-07p 0.0 0.0 0.0
sig0.350 cc 0.0 7.24e-06p 0.019589p 0.019589p 0.137386p 0.341857p 0.506282p 0.081007p 0.504341p 0.506285p 0.0
0.0
rc 0.0 8.87e-06p 0.024005p 0.024014p 0.139099p 0.339535m 0.506253i 0.081002i 0.504312i 0.506256i 0.0 0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.500865j 0.0 0.0
zp 49.95 ri 0.0 9.31e-06p 0.020681p 0.020681p 0.113538p 0.323146p 0.022928p 1.68e-06p 5.89e-07p 0.0 0.0 0.0
sig0.350 cc 0.0 9.31e-06p 0.020686p 0.020686p 0.123813p 0.354107p 0.500847p 0.080137p 0.498926p 0.500850p 0.0
0.0

rc 0.0 9.31e-06p 0.020686p 0.020686p 0.123813p 0.354107p 0.500847n 0.080137o 0.498926l 0.500850j 0.0 0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.233520h 0.0 0.0 0.170749n 0.0 0.0
zp 49.75 ri 1.33e-11p 4.45e-05p 0.024026p 0.024026p 0.052764p 0.128546p 0.003122p 4.01e-08p 1.64e-08p 0.0 0.0 0.0
sig0.350 cc 1.32e-11p 4.44e-05p 0.023983p 0.023983p 0.064532p 0.164723p 0.232369p 0.037179p 0.231477p 0.232369p 0.0
0.0
rc 1.33e-11p 4.45e-05p 0.024048p 0.024048p 0.064708p 0.164538n 0.232368h 0.037179h 0.231476h 0.232369h 0.0
0.0
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.572158l 0.0 0.0 0.520597m 0.0 0.0
zp 49.89 ri 7.38e-12p 3.62e-05p 0.028471p 0.028471p 0.141243p 0.339523p 0.017885p 1.57e-06p 6.40e-07p 0.0 0.0 0.0
sig0.361 cc 7.30e-12p 3.58e-05p 0.028171p 0.028171p 0.153657p 0.384101p 0.555444p 0.088873p 0.553313p 0.555446p 0.0
0.0
rc 7.38e-12p 3.62e-05p 0.028489p 0.028489p 0.155394p 0.382163o 0.555442l 0.088872l 0.553311k 0.555444k 0.0 0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.101868i 0.0 0.0 0.094249l 0.0 0.0
zp 49.51 ri 4.42e-10p 0.000224p 0.022405p 0.022405p 0.014623p 0.041619p 0.000204p 4.69e-10p 1.65e-10p 0.0 0.0
0.0
sig0.350 cc 4.42e-10p 0.000224p 0.022517p 0.022517p 0.025807p 0.075320p 0.101331p 0.016213p 0.100942p 0.101331p 0.0
0.0
rc 4.42e-10p 0.000224p 0.022517p 0.022517p 0.025807p 0.075320n 0.101331i 0.016213i 0.100942h 0.101331h 0.0
0.0

ag half life from 80eng2; cd, in, sn, sb, te half lives 89wal1.
1

mass number 128 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 46 pd g 47 ag g 48 cd g 49 in g 50 sn d 50 sn g 51 sb m 51 sb g 52 te g 53 i g 54 xe g
half life 0.094s 0.28 s 0.80 s 2.5 s 59.1 m 10.1 m 9.1 h stable 25.00m stable
lambda 0.0 7.374e+00 2.476e+00 8.664e-01 2.773e-01 1.955e-04 1.144e-03 2.116e-05 0.0 4.621e-04 0.0
z - 1 g 100.0000 100.0000 100.0000 99.8780 0.0 99.9390 99.8000 0.2000 100.0000 -6.3000 93.7000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 2.9200 100.0000 0.0 0.0 0.0 0.0 0.0
u235t xi 0.0 0.0 0.0 0.026573n 0.0 0.317683h 0.006433p 0.010780m 0.000174n 1.05e-06n 8.42e-11n
xc 0.0 0.0 0.003590p 0.028316m 0.0 0.324478g 0.0 0.0 0.349549g 0.0 1.40e-05m
zp 50.01 ri 1.34e-12p 1.12e-11p 0.003553p 0.026296n 0.0 0.301002g 0.006366p 0.010668p 0.000172n 1.04e-06p 8.33e-11n

sig0.331 cc 0.0 0.0 9.26e-07p 0.011199p 0.0 0.335452p 0.342718p 0.005332p 0.348052p 0.0 0.0
rc 1.34e-12p 1.25e-11p 0.003553p 0.029845l 0.000804n 0.331633f 0.337336g 0.011331p 0.348839g 1.04e-06p 9.71e-07p
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.504509j 0.0 0.0
zp 49.88 ri 0.0 1.52e-12p 2.30e-05p 0.039331p 0.0 0.454318n 0.006013p 0.004354p 9.46e-07p 0.0 0.0
sig0.350 cc 0.0 1.52e-12p 2.30e-05p 0.039322p 0.0 0.493656p 0.498676p 0.005338p 0.504015p 0.0 0.0
rc 0.0 1.52e-12p 2.30e-05p 0.039354p 0.000486o 0.494134m 0.499158l 0.005342p 0.504501j 0.0 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 1.443007n 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.449703k 0.0 0.0
zp 50.21 ri 5.75e-09p 2.28e-05p 0.008311p 0.305470p 0.0 1.367945n 0.309434p 0.412655p 0.049680p 0.000362p 2.51e-07p
sig0.634 cc 5.90e-09p 2.34e-05p 0.008554p 0.322065p 0.0 1.659196p 1.975418p 0.426894p 2.453324p 0.000372p 0.000349p
rc 5.75e-09p 2.28e-05p 0.008334p 0.313794p 0.002437o 1.683985m 1.990050m 0.416023p 2.455776j 0.000362p 0.000340p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.286086i 0.0 0.0
zp 49.67 ri 0.0 7.10e-11p 0.000128p 0.078305p 0.0 0.203587o 0.001243p 0.000900p 2.43e-08p 0.0 0.0
sig0.350 cc 0.0 7.07e-11p 0.000127p 0.078102p 0.0 0.281982p 0.282656p 0.001460p 0.284116p 0.0 0.0
rc 0.0 7.10e-11p 0.000128p 0.078433p 0.001970o 0.283943m 0.284618k 0.001468p 0.286086i 0.0 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.808307i 0.0 0.0 1.700507l 0.0 0.0
zp 49.84 ri 3.42e-08p 0.000110p 0.026645p 0.542980p 0.0 1.130153m 0.102298p 0.135449p 0.005297p 9.48e-06p 1.23e-09p
sig0.605 cc 3.37e-08p 0.000109p 0.026383p 0.561765p 0.0 1.677911p 1.785875p 0.150919p 1.942558p 1.03e-05p 9.66e-06p
rc 3.42e-08p 0.000111p 0.026756p 0.569704o 0.004438o 1.703947i 1.802837j 0.138857p 1.946992j 9.48e-06p 8.88e-06p
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.057553l 0.062270j 0.0 9.21e-05l 1.93e-09o
xc 0.0 0.0 0.0 0.069315o 0.0 0.562861j 0.809156j 0.0 0.788829l 0.0 0.000157f
zp 50.15 ri 0.0 0.0 3.96e-06p 0.069146p 0.0 0.545192k 0.057415l 0.062121p 4.26e-05p 9.18e-05p 1.93e-09o
sig0.350 cc 0.0 0.0 9.89e-07p 0.017250p 0.0 0.651414p 0.702116p 0.031845p 0.734002p 4.42e-12p 4.14e-12p
rc 0.0 0.0 3.96e-06p 0.069150n 0.000150o 0.614450j 0.670636i 0.063350p 0.734035k 9.18e-05p 8.61e-05h
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.879000i 0.0 0.0
zp 50.13 ri 0.0 0.0 1.57e-06p 0.023007p 0.0 0.767421n 0.051247p 0.037110p 3.94e-05p 3.47e-12p 0.0
sig0.350 cc 0.0 0.0 1.57e-06p 0.023006p 0.0 0.790428p 0.840087p 0.038686p 0.878812p 3.46e-12p 3.25e-12p
rc 0.0 0.0 1.57e-06p 0.023009p 0.000188o 0.790604m 0.840270k 0.038691p 0.879000i 3.47e-12p 3.25e-12p
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.379224m 0.0 0.0
zp 49.96 ri 0.0 0.0 6.07e-06p 0.030584p 0.0 0.329147p 0.012086p 0.007098p 1.98e-06p 0.0 0.0
sig0.350 cc 0.0 0.0 6.06e-06p 0.030578p 0.0 0.359726p 0.371088p 0.007815p 0.378905p 0.0 0.0

rc 0.0 0.0 6.07e-06p 0.030590p 0.000327o 0.360045o 0.371411n 0.007818p 0.379232m 0.0 0.0
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.058764l 0.066347j 0.0 6.33e-05k 3.00e-08n
xc 0.0 0.0 0.0 0.0 0.0 0.587642j 0.0 0.0 0.893650k 0.0 3.43e-05l
zp 50.08 ri 0.0 0.0 5.01e-06p 0.021859p 0.0 0.666854j 0.068972p 0.077872p 4.12e-05p 7.43e-05p 3.52e-08n
sig0.361 cc 0.0 0.0 5.67e-06p 0.024771p 0.0 0.781413p 0.814004p 0.021622p 0.835662p 4.15e-12p 3.89e-12p
rc 0.0 0.0 5.01e-06p 0.021864p 0.001254o 0.689959i 0.757551k 0.079252p 0.836848j 7.43e-05p 6.97e-05j
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.002248l 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.182637l 0.0 0.0
zp 49.70 ri 0.0 2.36e-11p 6.26e-05p 0.039877p 0.0 0.139192p 0.000865p 0.002234p 2.48e-08p 0.0 0.0
sig0.350 cc 0.0 2.37e-11p 6.28e-05p 0.040093p 0.0 0.180709p 0.181216p 0.000990p 0.182205p 0.0 0.0
rc 0.0 2.36e-11p 6.26e-05p 0.039939p 0.000394o 0.179501o 0.180006n 0.002593p 0.182599l 0.0 0.0

ag half life from 80eng2; cd, in, sn, sb half lives from 89wal1.
1

mass number 129 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te m 52 te g 53 i g 54 xe g 55 cs g 56 ba g
half life 0.27 s 1.23 s 0.63s 6.9 m 2.4 m 4.40 h 33.6 d 1.16 h 1.6e7y stable 32.06h 2.1 h
lambda 2.567e+00 5.635e-01 1.100e+00 1.674e-03 4.814e-03 4.376e-05 2.388e-07 1.660e-04 1.374e-15 0.0 6.006e-06
9.169e-05
z - 1 g 100.0000 0.0 100.0000 0.0 97.0800 100.0000 16.6000 83.4000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 100.0000 100.0000 0.0 0.0 36.4000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 1.0400 0.0 0.0 0.0 63.6000 0.0 0.0 0.0 0.0
u235t xi 0.0 0.0 0.026598o 0.177824m 0.235766l 0.061880o 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.011988n 0.036963n 0.190789i 0.240761l 0.541370e 0.125596m 0.0 0.551081g 0.776130m 0.0 0.0
zp 50.18 ri 7.24e-07p 0.025343p 0.027540o 0.195872i 0.230330k 0.064073o 1.40e-05p 5.73e-06p 0.0 0.0 0.0 0.0
sig0.331 cc 1.09e-07p 0.003823p 0.003823p 0.136715p 0.342251p 0.543049p 0.090160p 0.510250p 0.543068p 0.543068p 0.0
0.0
rc 7.24e-07p 0.025343l 0.027541n 0.196883h 0.282410j 0.543367e 0.090213e 0.510549e 0.543386d 0.543386d 0.0 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.810688h 1.082692k 0.0 0.0
zp 50.06 ri 3.76e-06p 0.016647p 0.016647p 0.191045p 0.549595o 0.060798p 1.18e-05p 4.14e-06p 0.0 0.0 0.0 0.0
sig0.350 cc 3.78e-06p 0.016728p 0.016732p 0.192446p 0.580704p 0.834247p 0.138497p 0.783850p 0.834263p 0.834263p 0.0
0.0
rc 3.76e-06p 0.016647p 0.016651p 0.191950p 0.582406n 0.835154l 0.138647n 0.784703j 0.835170h 0.835170h 0.0
0.0

u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.148697j 0.0 0.0 0.0 0.0 0.0 0.0
zp 50.55 ri 0.002054p 0.081325p 0.081325p 0.254914p 1.162217n 1.568902m 0.182659p 0.040096p 0.003535p 5.50e-06p 7.80e-10p 0.0
sig0.634 cc 0.002054p 0.081318p 0.083373p 0.255098p 1.324371p 3.148324p 0.705265p 3.114343p 3.374594p 3.374600p 7.80e-10p 0.0
rc 0.002054p 0.081325p 0.083380p 0.255328p 1.324488m 3.148718j 0.705346n 3.114727j 3.375009j 3.375014j 7.80e-10p 0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.021411l 0.171864m 0.0 1.008503l 1.010179i 0.0 0.0
zp 49.87 ri 4.78e-05p 0.067419p 0.067419p 0.220163p 0.625074o 0.032402p 1.16e-06p 4.06e-07p 0.0 0.0 0.0 0.0
sig0.350 cc 4.76e-05p 0.067218p 0.067266p 0.219891p 0.758364p 1.010561p 0.167754p 0.949500p 1.010562p 1.010562p 0.0 0.0
rc 4.78e-05p 0.067419p 0.067467p 0.220943p 0.757990n 1.011335l 0.167883k 0.950228k 1.011337j 1.011337i 0.0 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.027052j 0.528301k 1.412118m 0.0 0.0 0.0 0.0
zp 50.15 ri 0.006751p 0.145231p 0.145231p 0.215735p 0.987507p 0.555988p 0.019108p 0.004194p 9.24e-05p 2.73e-08p 0.0 0.0
sig0.605 cc 0.006740p 0.144985p 0.151725p 0.216403p 1.278117p 2.049200p 0.361572p 1.943692p 2.075407p 2.075407p 0.0 0.0
rc 0.006751p 0.145231p 0.151982p 0.217794p 1.280282o 2.054064j 0.360083j 1.946296i 2.077459i 2.077459i 0.0 0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.046274n 0.0 0.0 1.364224i 0.0 0.0 1.492987m 1.422319m 0.0 0.0
zp 50.34 ri 1.14e-07p 0.005144p 0.005144p 0.289128p 0.690570p 0.380597p 0.000479p 0.000196p 3.85e-10p 0.0 0.0 0.0
sig0.350 cc 1.11e-07p 0.005050p 0.005050p 0.284016p 0.705301p 1.370477p 0.227948p 1.288136p 1.371109p 1.371109p 0.0 0.0
rc 1.14e-07p 0.005144p 0.005144p 0.289475p 0.700707o 1.370779i 0.228028i 1.288451h 1.371454h 1.371454h 0.0 0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.289749k 0.0 0.0 1.500494j 1.477888k 0.0 0.0
zp 50.31 ri 1.88e-07p 0.006440p 0.006440p 0.279887p 0.797260p 0.360281p 0.000393p 0.000138p 2.28e-10p 0.0 0.0 0.0
sig0.350 cc 1.90e-07p 0.006492p 0.006492p 0.282406p 0.816567p 1.450158p 0.241089p 1.362892p 1.450649p 1.450649p 0.0 0.0
rc 1.88e-07p 0.006440p 0.006440p 0.280302p 0.809951o 1.450535j 0.241181k 1.363275j 1.451065i 1.451065i 0.0 0.0

pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.819944m 0.0 0.0 0.0
zp 50.15 ri 1.06e-06p 0.011197p 0.011197p 0.199855p 0.489434p 0.108440p 3.28e-05p 1.34e-05p 5.91e-12p 0.0 0.0 0.0
sig0.350 cc 1.06e-06p 0.011196p 0.011197p 0.199896p 0.511467p 0.819796p 0.136119p 0.770295p 0.819842p 0.819842p 0.0
0.0
rc 1.06e-06p 0.011197p 0.011198p 0.199964p 0.511502p 0.819906o 0.136137o 0.770398n 0.819952m 0.819952m 0.0
0.0
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.259069m 0.0 1.627298m 1.546891m 0.0 0.0
zp 50.33 ri 0.000920p 0.042034p 0.042034p 0.297977p 0.729738p 0.447817p 0.022608p 0.009234p 5.57e-05p 9.63e-09p 0.0
0.0
sig0.555 cc 0.000920p 0.042032p 0.042952p 0.298045p 0.813427p 1.559268p 0.281445p 1.488662p 1.591164p 1.591164p 0.0
0.0
rc 0.000920p 0.042034p 0.042954p 0.298151p 0.813472o 1.559440o 0.281475m 1.488825n 1.591337m 1.591337l 0.0
0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.229763i 0.0 0.0 0.388056k 0.0 0.0 0.0
zp 49.89 ri 9.04e-06p 0.013480p 0.013480p 0.052443p 0.164832o 0.007903p 4.79e-07p 1.68e-07p 0.0 0.0 0.0 0.0
sig0.350 cc 9.63e-06p 0.014367p 0.014377p 0.055895p 0.187409p 0.251727p 0.041787p 0.236517p 0.251728p 0.251728p 0.0
0.0
rc 9.04e-06p 0.013480p 0.013489p 0.052766p 0.191407n 0.252076i 0.041845i 0.236845h 0.252076h 0.252076h 0.0
0.0

cd, in, sn, sb, te, i half lives 89wal1. sb-te branching to fit data; cs half life 90bur1.

1

mass number 130 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 46 pd g 47 ag g 48 cd g 49 in g 50 sn d 50 sn g 51 sb m 51 sb g 52 te g 53 i m 53 i g 54 xe g
half life 0.20 s 0.29 s 0.28 s 3.7 m 6.5 m 38.4 m stable 8.9 m 12.36h stable
lambda 0.0 0.0 3.466e+00 2.390e+00 2.476e+00 3.122e-03 1.777e-03 3.008e-04 0.0 1.298e-03 1.558e-05 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 98.9600 90.0000 10.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 15.0000
z - 0 m 0.0 0.0 0.0 0.0 1.8400 100.0000 0.0 0.0 0.0 0.0 85.0000 0.0
u235t xi 0.0 0.0 0.0 0.008821l 0.0 1.073868k 0.334045i 0.200856j 0.054189l 6.23e-05l 0.000145l 1.84e-08n
xc 0.0 0.0 0.0 0.091037n 0.0 1.078627i 0.0 0.0 1.811317f 0.0 0.0 0.000226l

zp 50.36 ri 6.79e-11p 6.66e-06p 0.087804p 0.009421l 0.0 1.084554i 0.356777p 0.214525p 0.057876l 6.66e-05p 0.000155p 1.97e-08n
sig0.531 cc 0.0 4.04e-08p 0.000533p 0.059992p 0.0 1.342088p 1.479782p 0.293898p 1.810531p 9.43e-06p 3.00e-05p 3.14e-05p
rc 6.79e-11p 6.66e-06p 0.087811p 0.097232n 0.000458o 1.181233h 1.419887n 0.332648p 1.810411f 6.66e-05p 0.000212p 0.000222l
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.794616i 0.0 0.0 0.0
zp 50.27 ri 2.56e-12p 1.45e-07p 0.001120p 0.085911p 0.0 1.322654n 0.209434p 0.151690p 0.024019p 4.80e-06p 1.30e-05p 1.90e-09p
sig0.537 cc 2.56e-12p 1.45e-07p 0.001120p 0.087020p 0.0 1.408784p 1.477357p 0.292550p 1.793924p 4.80e-06p 1.71e-05p 1.78e-05p
rc 2.56e-12p 1.45e-07p 0.001120p 0.087031p 0.000692o 1.409473m 1.477960l 0.292637o 1.794616h 4.80e-06p 1.71e-05p 1.78e-05p
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.573707k 0.0 0.0 0.0
zp 50.95 ri 3.96e-12p 9.41e-08p 0.000199p 0.039650p 0.0 0.819677p 0.879869p 1.166344n 0.668252p 0.004673p 0.021290p 0.000103p
sig0.634 cc 3.96e-12p 9.41e-08p 0.000199p 0.039849p 0.0 0.859139p 1.653089p 1.252245p 3.573579p 0.004673p 0.025262p 0.026067p
rc 3.96e-12p 9.41e-08p 0.000199p 0.039850p 0.000132o 0.859245o 1.653190n 1.252268m 3.573710j 0.004673p 0.025263p 0.026067p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.913651i 0.0 0.0 0.0
zp 50.09 ri 0.0 0.0 5.57e-06p 0.075067p 0.0 1.646625m 0.111468p 0.080722p 5.29e-05p 1.14e-12p 3.09e-12p 0.0
sig0.350 cc 0.0 0.0 5.57e-06p 0.075065p 0.0 1.720929p 1.660299p 0.252808p 1.913160p 1.14e-12p 4.06e-12p 4.23e-12p
rc 0.0 0.0 5.57e-06p 0.075072p 0.000493o 1.721410l 1.660737l 0.252863o 1.913653i 1.14e-12p 4.06e-12p 4.24e-12p
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.148213l 0.0 0.0 0.0
zp 50.43 ri 1.34e-10p 2.06e-06p 0.002280p 0.195696p 0.0 1.529970n 0.560204p 0.742604p 0.118508p 0.000172p 0.000783p 5.88e-07p
sig0.605 cc 1.34e-10p 2.06e-06p 0.002282p 0.197960p 0.0 1.725998p 2.113564p 0.915145p 3.147206p 0.000172p 0.000929p 0.000955p
rc 1.34e-10p 2.07e-06p 0.002282p 0.197978p 0.001091o 1.726981m 2.114486m 0.915302o 3.148297l 0.000172p 0.000929p 0.000955p

pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.525343k 0.467762k 0.0 0.001351j 0.003153j 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.918774k 1.595354j 0.762800j 2.302269l 0.0 0.0 0.004311f
zp 50.67 ri 0.0 1.70e-08p 0.000155p 0.033229p 0.0 0.939551k 0.592438j 0.586676j 0.205138p 0.001407p 0.003284p 2.94e-06p
sig0.564 cc 0.0 1.93e-08p 0.000177p 0.038043p 0.0 1.090427p 1.656391p 0.505475p 2.360368p 0.000335p 0.001067p 0.001118p
rc 0.0 1.70e-08p 0.000155p 0.033384p 0.000154o 0.972742j 1.467906i 0.683950i 2.356994j 0.001407p 0.004480p 0.004694e
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.765228j 0.0 2.441094i 0.0 0.0 0.005100p
zp 50.66 ri 0.0 2.27e-08p 0.000199p 0.039716p 0.0 1.086906n 0.685789n 0.443215p 0.195497p 0.000814p 0.002201p 1.97e-06p
sig0.565 cc 0.0 2.34e-08p 0.000205p 0.041184p 0.0 1.162268p 1.677563p 0.573536p 2.452812p 0.000296p 0.001052p 0.001097p
rc 0.0 2.27e-08p 0.000199p 0.039914p 0.000173o 1.126578m 1.699709j 0.555873p 2.451078i 0.000814p 0.002893p 0.003017p
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.818814k 0.0 0.0 0.0
zp 50.37 ri 0.0 0.0 9.16e-08p 0.010509p 0.0 1.248442n 0.351717p 0.206564p 0.001158p 2.52e-10p 5.89e-10p 0.0
sig0.350 cc 0.0 0.0 9.16e-08p 0.010508p 0.0 1.258884p 1.484686p 0.332437p 1.818281p 2.52e-10p 8.03e-10p 8.41e-10p
rc 0.0 0.0 9.16e-08p 0.010509p 0.000545o 1.259386m 1.485165n 0.332502p 1.818825k 2.52e-10p 8.03e-10p 8.41e-10p
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.574413k 0.387354k 0.0 0.000715k 0.001668k 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.729534k 0.0 0.0 2.110490k 0.0 0.0 0.003597f
zp 50.71 ri 0.0 4.20e-09p 7.97e-05p 0.016619p 0.0 0.777616k 0.625325p 0.421686p 0.247794p 0.000778p 0.001816p 2.58e-06p
sig0.555 cc 0.0 5.47e-09p 0.000104p 0.021722p 0.0 1.033137p 1.453972p 0.411147p 2.090593p 0.000269p 0.000857p 0.000898p
rc 0.0 4.20e-09p 7.97e-05p 0.016698p 8.75e-05o 0.794229j 1.340131n 0.501109p 2.089034k 0.000778p 0.002478p 0.002597g
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.252786p 0.534741m 0.820399l 0.0 0.0 0.0
zp 50.08 ri 0.0 0.0 2.96e-06p 0.031019p 0.0 0.842922n 0.040680p 0.029458p 2.55e-05p 0.0 1.16e-12p 0.0
sig0.350 cc 0.0 0.0 3.27e-06p 0.034374p 0.0 0.866008p 0.824484p 0.119242p 0.943749p 0.0 1.38e-12p 1.43e-12p
rc 0.0 0.0 2.96e-06p 0.031022p 0.001798o 0.875419m 0.828557l 0.117000p 0.945582k 0.0 1.52e-12p 1.58e-12p

cd, in, sn, sb half lives from 89wal1; i half life 90bur1.
1

mass number 131 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 48 cd g 49 in g 50 sn d 50 sn g 51 sb g 52 te m 52 te g 53 i g 54 xe m 54 xe g 55 cs g 56 ba g
half life 0.106s 0.28 s 0.12s 39. s 23.0 m 1.35 d 25.0 m 8.040d 11.9 d stable 9.69 d 11.7 d
lambda 6.539e+00 2.476e+00 5.776e+00 1.777e-02 5.023e-04 5.943e-06 4.621e-04 9.978e-07 6.742e-07 0.0 8.279e-07
6.857e-07
z - 1 g 100.0000 100.0000 0.0 98.1600 100.0000 7.0000 93.0000 100.0000 1.4000 98.6000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 82.0000 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 5.3600 100.0000 0.0 0.0 18.0000 0.0 0.0 100.0000 0.0 0.0
u235t xi 0.0 0.011182o 0.0 0.868382j 1.670005h 0.204692j 0.097542k 0.003938k 0.0 0.0 0.0 0.0
xc 0.0 0.025039n 0.0 0.920644i 2.521120i 0.487791j 2.498128k 2.875734f 0.0 2.890929b 0.0 0.0
zp 50.77 ri 0.013779p 0.011120o 0.0 0.881062i 1.650802h 0.233347j 0.096997k 0.003916k 3.48e-07p 1.42e-07p 2.54e-12p
0.0
sig0.531 cc 3.46e-05p 0.020283p 0.0 1.104537p 2.582795p 0.398411p 2.562598p 2.890649p 0.040469p 2.890650p 2.56e-12p
0.0
rc 0.013779p 0.024899n 0.000334l 0.905836h 2.556638g 0.412311h 2.548887f 2.890898d 0.040473e 2.890898b 2.54e-12p
0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.556966i 0.0 0.0 3.336203f 0.0 3.213873c 0.0 0.0
zp 50.68 ri 9.78e-05p 0.037537p 0.0 1.386575n 1.495610m 0.223835p 0.075411p 0.001081p 2.41e-07p 8.46e-08p 1.62e-12p
0.0
sig0.537 cc 9.97e-05p 0.038331p 0.0 1.449896p 2.973201p 0.389666p 2.899001p 3.219441p 0.045072p 3.219441p 1.42e-12p
0.0
rc 9.78e-05p 0.037635p 9.70e-05o 1.423614m 2.919224i 0.428180o 2.867362i 3.219551e 0.045074f 3.219551c 1.63e-12p
0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 1.429841l 0.0 0.163410p 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.122389h 0.0 4.078419h 0.0 0.0
zp 51.36 ri 1.38e-05p 0.007163p 0.0 0.368568p 2.150054n 1.164511n 0.291590p 0.120171p 0.000909p 0.000199p 1.10e-06p
9.83e-11p
sig0.634 cc 1.31e-05p 0.006846p 0.0 0.358356p 2.409577p 1.435961p 2.777565p 4.101543p 0.058658p 4.103053p 1.49e-06p
1.34e-10p
rc 1.38e-05p 0.007176p 4.04e-05o 0.375653p 2.525706n 1.341310n 2.881933m 4.101978h 0.058336h 4.103087g 1.10e-06p
9.83e-11p

u238f xi 0.0 0.0 0.0 0.0 0.0 0.036151n 0.0 0.0 3.13e-09n 1.10e-09n 0.0 0.0
xc 0.0 0.0 0.0 0.0 3.210811i 0.0 0.0 3.284850e 0.0 3.296003e 0.0 0.0
zp 50.33 ri 2.92e-07p 0.026808p 0.0 2.286725n 0.937446o 0.036484p 0.000355p 7.89e-10p 3.16e-09p 1.11e-09n 0.0 0.0
sig0.350 cc 2.96e-07p 0.027186p 0.0 2.346816p 3.285954p 0.231026p 3.097876p 3.287317p 0.046022p 3.287317p 0.0
0.0
rc 2.92e-07p 0.026808p 0.003470o 2.316511m 3.253956h 0.264260l 3.074101g 3.290794e 0.046071e 3.290794d 0.0
0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.181198m 0.0 0.0 1.08e-06n 2.36e-07n 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.361723j 3.816659i 4.035614g 0.0 3.972010f 0.0 0.0
zp 50.83 ri 0.000251p 0.059045p 0.0 1.174751n 2.489821l 0.159727m 0.097817p 0.011572p 1.09e-06p 2.39e-07n 2.53e-09p
0.0
sig0.605 cc 0.000240p 0.056558p 0.0 1.176190p 3.462332p 0.667393p 3.433399p 3.991923p 0.055903p 3.991943p 2.49e-09p
0.0
rc 0.000251p 0.059296p 0.000548o 1.233503m 3.723324j 0.420359i 3.636173h 3.992439f 0.055895g 3.992440e 2.53e-09p
0.0
pu239t xi 0.0 0.0 0.0 0.0 1.767807k 0.860672j 0.410896k 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.587374k 2.428580l 0.941449j 2.835018k 4.038739f 0.0 3.852844b 0.0 0.0
zp 51.09 ri 9.35e-06p 0.008347p 0.0 0.607673k 1.897361j 0.869584i 0.450557k 0.022934p 3.00e-05p 1.23e-05p 2.62e-09p
0.0
sig0.564 cc 9.82e-06p 0.008782p 0.0 0.647357p 2.857199p 0.894048p 3.101607p 3.856306p 0.054017p 3.856346p 2.49e-09p
0.0
rc 9.35e-06p 0.008356p 8.44e-05o 0.615960j 2.513321i 1.045517h 2.976138g 3.856396d 0.054020f 3.856439b 2.62e-09p
0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 3.183307k 0.0 0.0 4.066453f 0.0 3.875729c 0.0 0.0
zp 51.08 ri 1.16e-05p 0.009381p 0.0 0.684883p 2.199352l 0.713649p 0.251174p 0.020069p 2.67e-05p 9.36e-06p 2.14e-09p
0.0
sig0.565 cc 1.15e-05p 0.009320p 0.0 0.688801p 2.871319p 0.931043p 3.094419p 3.878344p 0.054326p 3.878384p 2.34e-09p
0.0
rc 1.16e-05p 0.009392p 4.10e-05o 0.694144o 2.893496k 0.916194o 3.107040l 3.878388d 0.054324f 3.878424b 2.14e-09p
0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.130203k 0.0 0.002103l 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.173267h 0.0 3.091180e 0.0 0.0
zp 50.77 ri 5.60e-05p 0.029556p 0.0 1.100881n 1.737846n 0.137887p 0.093027p 0.001913l 5.68e-07p 2.32e-07p 8.70e-12p
0.0

sig0.544 cc 5.36e-05p 0.028337p 0.0 1.081368p 2.791623p 0.413365p 2.759638p 3.100643p 0.043410p 3.100644p 9.47e-12p
0.0
rc 5.60e-05p 0.029612p 0.000216o 1.130164m 2.868010l 0.338647o 2.821233k 3.100836h 0.043412h 3.100837e 8.70e-12p
0.0
u233t xi 0.0 0.0 0.0 0.0 1.372699j 1.076436i 0.484107k 0.035018l 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.493011k 1.888900j 1.356248i 0.0 3.540721g 0.0 3.604684c 0.0 0.0
zp 51.11 ri 4.92e-06p 0.004753p 0.0 0.507112k 1.436139i 1.117435i 0.502545p 0.036351l 2.69e-05p 1.10e-05p 1.52e-09p
0.0
sig0.555 cc 5.97e-06p 0.005772p 0.0 0.620863p 2.524848p 0.930087p 2.823230p 3.604235p 0.050485p 3.604272p 1.46e-09p
0.0
rc 4.92e-06p 0.004758p 9.60e-06o 0.511792j 1.947931h 1.253790h 2.539803m 3.604262e 0.050487g 3.604300c 1.52e-09p
0.0
th232f xi 0.0 0.0 0.0 1.223967n 0.388211p 0.011936n 0.004194n 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 1.333428n 1.799371l 0.0 0.0 1.694657h 0.0 1.611979f 0.0 0.0
zp 50.31 ri 0.000544p 0.097198p 0.0 1.119039m 0.389338o 0.010904p 0.003831p 1.98e-05p 6.42e-10p 2.26e-10p 0.0
0.0
sig0.524 cc 0.000495p 0.088800p 0.0 1.106656p 1.599447p 0.126594p 1.515413p 1.619241p 0.022669p 1.619241p 0.0
0.0
rc 0.000544p 0.097743p 0.001873o 1.216856m 1.606194k 0.123338l 1.519792k 1.620949h 0.022693h 1.620949f 0.0
0.0

cd half life from 80eng2; in, sn, sb, te, i, xe half lives from 89wal1.

1

mass number 132 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 48 cd g 49 in g 50 sn g 51 sb m 51 sb g 52 te g 53 i g 54 xe g 55 cs g 56 ba g
half life 0.136s 0.20 s 40. s 2.8 m 4.2 m 3.26 d 2.28 h stable 6.475d stable
lambda 5.097e+00 3.466e+00 1.733e-02 4.126e-03 2.751e-03 2.461e-06 8.445e-05 0.0 1.239e-06 0.0
z - 1 g 100.0000 100.0000 94.6400 50.0000 50.0000 100.0000 100.0000 100.0000 -97.8000 2.2000
z - 1 m 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.2550 0.0 0.0 0.0 0.0 0.0 0.0
u235t xi 0.0 0.006346n 0.608238i 0.899540i 1.304121i 1.623919i 0.018612j 0.0 7.52e-08p 0.0
xc 0.0 0.000280n 0.600531h 0.729904m 2.283782m 4.258550g 4.296033g 4.313420b 0.0 0.0
zp 51.19 ri 0.0 0.006227n 0.591866h 0.862827i 1.303570i 1.530946i 0.018263j 4.22e-05p 7.38e-08p 0.0
sig0.531 cc 1.28e-06p 0.002261p 0.614455p 1.121841p 1.432170p 4.292465p 4.313577p 4.313620p 6.99e-10p 1.54e-11p

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        rc      0.0  0.006227e 0.597759g 1.161706h 1.602449i 4.295102e 4.313365c 4.313407a 7.38e-08p 1.62e-09o
 u235f   xi      0.0       0.0       0.0       0.0       0.0  1.628634l      0.0       0.0       0.0       0.0
        xc      0.0       0.0  0.489589k      0.0       0.0  4.853869f 4.529646h 4.666119c      0.0       0.0
zp 51.10 ri 1.61e-06p 0.001807p 0.321370k 1.543167n 1.719822n 1.074740l 0.010243p 1.71e-05p 2.62e-10p       0.0
sig0.537 cc 4.55e-06p 0.005108p 0.912468p 1.499667p 1.632871p 4.655441p 4.670868p 4.670894p 3.95e-10p 8.70e-12p
        rc 1.61e-06p 0.001809p 0.323081k 1.704707n 1.881363n 4.660811f 4.671054d 4.671071b 2.62e-10p 5.76e-12p
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0  0.776134k      0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  4.070864h 4.847266j 4.916348h      0.0       0.0
zp 51.78 ri 5.34e-07p 0.000753p 0.101053p 0.879927p 0.562576p 2.545881l 0.779825k 0.016320p 4.37e-05p 1.08e-08p
sig0.634 cc 5.56e-07p 0.000785p 0.106007p 0.969597p 0.639022p 4.260588p 4.870062p 4.886336p 4.34e-05p 9.67e-07p
        rc 5.34e-07p 0.000754p 0.101766p 0.930810o 0.613459o 4.090150h 4.869975g 4.886338g 4.37e-05p 9.72e-07p
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0  0.020172n      0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  5.203304e 5.114777f 4.981409g      0.0       0.0
zp 50.73 ri 0.000182p 0.064547p 1.884948n 1.273780n 1.436390n 0.471218p 0.019879n 1.79e-06p 2.85e-11p       0.0
sig0.557 cc 0.000182p 0.064937p 1.952444p 2.254084p 2.417216p 5.144028p 5.147463p 5.147465p 2.93e-11p       0.0
        rc 0.000182p 0.064729p 1.946207m 2.246884l 2.409494l 5.127595e 5.147474e 5.147476e 2.85e-11p       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0  0.170131n      0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  4.632828e 4.923380h 4.842462f      0.0       0.0
zp 51.23 ri 1.55e-05p 0.010206p 0.534125p 1.616900n 1.033756n 1.457725m 0.185524m 0.000414p 1.51e-07p 3.87e-12p
sig0.605 cc 1.59e-05p 0.010443p 0.555577p 1.929709p 1.333934p 4.752941p 4.837693p 4.838105p 1.50e-07p 3.31e-09p
        rc 1.55e-05p 0.010222p 0.543798o 1.888799m 1.305655m 4.652179e 4.837703e 4.838117d 1.51e-07p 3.32e-09p
 pu239t  xi      0.0       0.0       0.0  0.583875l 1.688461k 2.075560i 0.260622k      0.0       0.0       0.0
        xc      0.0       0.0  0.471448m 0.718471k 2.386949p 5.336057f 5.241693i 5.405836b      0.0       0.0
zp 51.53 ri 5.68e-07p 0.001573p 0.484190m 0.545236k 1.855081k 2.253537i 0.265798k 0.001526p 2.98e-07p 5.94e-12p
sig0.564 cc 2.58e-07p 0.000714p 0.220494p 0.930072p 1.242387p 5.223403p 5.405425p 5.406904p 2.89e-07p 6.35e-09p
        rc 5.68e-07p 0.001574p 0.485680l 0.788076i 2.097921j 5.139534f 5.405332d 5.406858b 2.98e-07p 6.55e-09p
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  5.330212f 5.598637h 5.326558c      0.0       0.0
zp 51.52 ri 2.99e-07p 0.000765p 0.229351p 0.905407p 1.020991n 2.997211l 0.174481p 0.001366p 2.60e-07p 5.34e-12p
sig0.565 cc 2.99e-07p 0.000766p 0.230196p 1.020980p 1.136624p 5.156386p 5.328125p 5.329531p 2.68e-07p 5.89e-09p
        rc 2.99e-07p 0.000765p 0.230076p 1.020445o 1.136029m 5.153684f 5.328165e 5.329531c 2.60e-07p 5.73e-09p
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0  0.061796k      0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  4.561156g      0.0  4.562771e      0.0       0.0
zp 51.19 ri 1.99e-06p 0.004029p 0.523935p 1.080221n 1.491734n 1.403572m 0.061012p 5.37e-05p 2.32e-09p       0.0
sig0.544 cc 2.01e-06p 0.004056p 0.531023p 1.352433p 1.766499p 4.531210p 4.564286p 4.564340p 2.33e-09p 5.14e-11p
        rc 1.99e-06p 0.004031p 0.527750o 1.344096m 1.755608m 4.503276g 4.564288g 4.564342e 2.32e-09p 5.10e-11p
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u233t xi 0.0 0.0 0.0 0.450457j 0.653893j 3.614872h 0.194730j 0.0 0.0 0.0
xc 0.0 0.0 0.085646l 0.0 0.0 4.698333h 4.764613h 4.955466c 0.0 0.0
zp 51.51 ri 7.32e-08p 0.000179p 0.084729p 0.446525p 0.648185p 3.579833h 0.193044j 0.001073p 1.10e-07p 2.01e-12p
sig0.555 cc 1.98e-07p 0.000486p 0.230196p 0.745052p 0.985035p 4.833431p 4.952458p 4.953542p 1.12e-07p 2.46e-09p
rc 7.32e-08p 0.000179p 0.084899l 0.488974p 0.690634p 4.759442g 4.952486e 4.953559c 1.10e-07p 2.43e-09p
th232f xi 0.0 0.0 1.524322l 0.444931i 0.501911i 0.0 0.096664m 0.0 0.0 0.0
xc 0.0 0.0 0.0 1.221006l 1.368709l 2.955536f 3.008588h 2.861790f 0.0 0.0
zp 50.70 ri 6.19e-05p 0.034865p 1.536778n 0.448560i 0.506390i 0.346608p 0.097453m 1.57e-07p 0.0 0.0
sig0.524 cc 5.01e-05p 0.028293p 1.271647p 1.327418p 1.415707p 2.968478p 2.969200p 2.969200p 0.0 0.0
rc 6.19e-05p 0.034927p 1.569833n 1.233477l 1.291306l 2.871391f 2.968845f 2.968845e 0.0 0.0

cd half life from 80eng2; in, sn, sb, te, i half lives 89wal1; cs half life 90bur1.

1

mass number 133 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 49 in g 50 sn g 51 sb d 51 sb g 52 te m 52 te g 53 i g 54 xe m 54 xe g 55 cs g 56 ba g 57 la g
half life 0.18 s 1.44 s 1.04s 2.5 m 55.4 m 12.4 m 20.8 h 2.19 d 5.243d stable 10.74y 4. h
lambda 3.851e+00 4.814e-01 6.665e-01 4.621e-03 2.085e-04 9.316e-04 9.257e-06 3.663e-06 1.530e-06 0.0 2.047e-09
4.814e-05
z - 1 g 100.0000 100.0000 0.0 99.7450 42.0000 58.0000 100.0000 2.8000 97.2000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 87.0000 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 18.3000 100.0000 0.0 13.0000 0.0 0.0 100.0000 0.0 0.0 0.0
u235t xi 0.0 0.0 0.0 2.234552j 3.186973i 1.163813j 0.167545h 0.001914h 0.000676i 8.04e-07n 0.0 0.0
xc 0.0 0.139951p 0.0 2.487470j 3.773102i 3.144200k 6.567921h 0.0 6.682699c 6.703292b 0.0 0.0
zp 51.62 ri 0.000171p 0.137730p 0.0 2.256714i 2.986257i 1.148216i 0.165036h 0.001886p 0.000666i 7.92e-07n 1.04e-12p
0.0
sig0.531 cc 0.000170p 0.136975p 0.0 2.189180p 3.938737p 3.014988p 6.694765p 0.188563p 6.696328p 6.696328p 1.05e-12p
0.0
rc 0.000171p 0.137901o 0.003238o 2.397502i 3.993208g 3.057884g 6.697011d 0.189402f 6.699563b 6.699564a 1.04e-12p
0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.419648k 0.004625h 0.001590i 0.0 0.0 0.0
xc 0.0 0.0 0.0 1.818475i 2.757687j 0.0 6.762639f 0.0 6.921065d 6.651064c 0.0 0.0
zp 51.53 ri 0.000270p 0.138079p 0.0 1.523692j 2.051098k 2.618394n 0.383771k 0.004230p 0.001455i 7.52e-08p 0.0
0.0

sig0.537 cc 0.000435p 0.222511p 0.0 2.674661p 3.977431p 3.071152p 6.719483p 0.188840p 6.720421p 6.720422p 0.0
0.0
rc 0.000270p 0.138349p 0.003047o 1.664735i 2.750287j 3.941477m 6.717998f 0.192334h 6.723683c 6.723683b 0.0
0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.142037h 0.030206j 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.366837i 0.0 0.0 5.480379k 0.0 0.0
zp 52.21 ri 5.21e-05p 0.019020p 0.0 0.698930p 2.444996n 0.536703p 1.656838n 0.141766p 0.030148p 0.000833p 5.77e-07p
3.59e-11p
sig0.634 cc 5.26e-05p 0.019274p 0.0 0.725677p 2.775756p 1.324149p 5.413507p 0.245791p 5.528400p 5.529238p 5.80e-07p
3.61e-11p
rc 5.21e-05p 0.019072p 0.000407o 0.718360o 2.746707m 1.310424n 5.356898h 0.291760p 5.528812i 5.529646i 5.77e-07p
3.59e-11p
u238f xi 0.0 0.0 0.0 0.0 2.306512j 0.942254j 0.222166m 0.001436p 0.000491p 0.0 0.0 0.0
xc 0.0 0.0 0.0 4.454493j 0.0 0.0 6.960271f 0.0 6.616172g 6.761194b 0.0 0.0
zp 51.16 ri 0.007398p 0.672605p 0.0 3.096576l 1.961067n 0.801133p 0.188893m 0.001221p 0.000418p 5.32e-09p 0.0
0.0
sig0.557 cc 0.009347p 0.859117p 0.0 4.784942p 3.409109p 3.710143p 6.727026p 0.188426p 6.727119p 6.727119p 0.0
0.0
rc 0.007398p 0.680003o 0.033415o 3.808260j 3.560536m 3.472793m 6.759353e 0.190483f 6.760991d 6.760991b 0.0
0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.014347i 0.002896n 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.967847f 0.0 6.128228g 6.341927l 0.0 0.0
zp 51.65 ri 0.001162p 0.173162p 0.0 2.252615n 2.542226n 0.558051p 0.467740p 0.014415p 0.002910n 7.38e-06p 5.80e-10p
0.0
sig0.605 cc 0.001164p 0.174593p 0.0 2.431474p 3.567497p 2.432969p 6.005300p 0.173508p 6.011837p 6.011844p 5.62e-10p
0.0
rc 0.001162p 0.174325p 0.005358o 2.431853m 3.563604m 2.431794m 5.999870f 0.182412j 6.017195e 6.017202e 5.80e-10p
0.0
pu239t xi 0.0 0.0 0.0 0.0 2.541820j 1.576693k 1.063161j 0.032685i 0.009136k 0.0 0.0 0.0
xc 0.0 0.0 0.0 1.168394j 3.586967i 3.088194k 6.952999f 0.0 7.127129f 7.014053b 0.0 0.0
zp 51.96 ri 3.81e-05p 0.034296p 0.0 1.173643j 2.891422i 1.765602k 1.107495j 0.033799p 0.009448k 2.04e-05p 1.26e-09p
0.0
sig0.564 cc 4.10e-05p 0.036926p 0.0 1.299429p 3.869456p 2.614264p 6.992557p 0.212187p 7.015649p 7.015668p 1.22e-09p
0.0
rc 3.81e-05p 0.034334p 0.000703o 1.208593i 3.399030h 2.908459i 6.973111e 0.229046l 7.016358d 7.016378b 1.26e-09p
0.0

pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.045513i 0.015519i 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 3.563904j 0.0 6.794927g 0.0 6.786059e 6.982965b 0.0 0.0
zp 51.97 ri 3.79e-05p 0.035816p 0.0 1.190091n 3.145722k 1.233965n 1.302613n 0.046466p 0.015844i 2.17e-05p 1.50e-09p
0.0
sig0.565 cc 3.79e-05p 0.035897p 0.0 1.227471p 4.005324p 2.458767p 6.945600p 0.212876p 6.970464p 6.970485p 1.47e-09p
0.0
rc 3.79e-05p 0.035854p 0.000563o 1.226417m 3.660817i 2.421193l 6.908717f 0.239910m 6.971027d 6.971049b 1.50e-09p
0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.067453p 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 6.986321h 0.0 6.655577f 6.726752d 0.0 0.0
zp 51.61 ri 0.000335p 0.159381p 0.0 2.506718n 2.859248n 1.167859n 0.031506p 0.000614p 0.000251p 1.45e-07p 1.39e-12p
0.0
sig0.544 cc 0.000321p 0.153288p 0.0 2.559090p 3.819047p 3.101630p 6.723695p 0.189559p 6.725519p 6.725520p 2.97e-12p
0.0
rc 0.000335p 0.159715p 0.003280o 2.669306o 3.980356o 3.233503n 6.727919h 0.188996h 6.728784e 6.728784c 1.39e-12p
0.0
u233t xi 0.0 0.0 0.0 0.846930j 3.287593h 1.376915i 0.763971j 0.044257i 0.015709h 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.894064j 3.507214i 0.0 5.948034h 0.0 6.115287i 5.942605e 0.0 0.0
zp 51.93 ri 2.28e-05p 0.028170p 0.0 0.798507i 3.069541h 1.285590n 0.712268j 0.041322p 0.014667h 7.47e-06p 3.77e-10p
0.0
sig0.555 cc 2.77e-05p 0.034218p 0.0 1.013163p 3.441729p 2.267028p 5.934558p 0.177132p 5.950001p 5.950009p 4.02e-10p
0.0
rc 2.28e-05p 0.028193p 0.000474o 0.827102i 3.416924h 2.209510m 5.894502g 0.206368m 5.950491f 5.950498d 3.77e-10p
0.0
th232f xi 0.0 0.0 0.0 1.871287l 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.127546g 0.0 4.007682g 3.911491i 0.0 0.0
zp 51.11 ri 0.004472p 0.617630p 0.0 2.241227n 0.845568p 0.295743p 0.016022p 8.91e-06p 3.13e-06p 1.83e-10p 0.0
0.0
sig0.524 cc 0.004052p 0.563691p 0.0 2.991277p 2.006275p 2.259248p 4.019225p 0.112547p 4.019236p 4.019236p 0.0
0.0
rc 0.004472p 0.622102o 0.025558o 2.887300m 2.058234n 2.237947m 4.044633g 0.113259g 4.044645f 4.044645f 0.0
0.0

sb-te branching 66str1; in, sn, sb, te, i, xe half lives 89wal1; ba half life 90bur1.

mass number 134 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 48 cd g 49 in g 50 sn g 51 sb g 52 te d 52 te g 53 i m 53 i g 54 xe m 54 xe g 55 cs g 56 ba g

half life 0.081s 1.04 s 0.8 s 1.82 s 42. m 3.7 m 52.6 m 0.29 s stable 2.062y stable

lambda 0.0 8.557e+00 6.665e-01 8.664e-01 3.809e-01 2.751e-04 3.122e-03 2.196e-04 2.390e+00 0.0 1.066e-08 0.0

z - 1 g 100.0000 100.0000 100.0000 81.7000 0.0 100.0000 0.0 100.0000 0.0 100.0000 0.0 100.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.0000 0.0 0.0 0.0

z - 0 m 0.0 0.0 0.0 0.0 17.8700 100.0000 0.0 98.0000 0.0 100.0000 0.0 0.0

u235t xi 0.0 0.0 0.0 0.0 0.0 6.413813i 0.370249h 0.508568i 0.0 0.0 7.84e-06i 5.34e-10p

xc 0.0 0.0 0.017991p 0.0 0.0 6.909701h 0.0 7.806751d 0.0 7.872636b 8.92e-06j 5.34e-10p

zp 52.08 ri 9.33e-11p 3.47e-06p 0.017694p 0.716547p 0.0 6.215937h 0.364209p 0.500272i 0.024614p 0.010549p 7.71e-06i 5.26e-10p

sig0.531 cc 7.33e-11p 2.73e-06p 0.013903p 0.643896p 0.0 6.830492p 0.412094p 7.803426p 0.033169p 7.847278p 1.20e-05p 1.20e-05p

rc 9.33e-11p 3.47e-06p 0.017698p 0.731006o 0.026049l 6.972992g 0.364209p 7.830189i 0.031899p 7.872636b 7.71e-06i 7.71e-06i

u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.499581l 0.0 6.523377g 0.0 0.0 0.0 7.666769b 0.0 0.0

zp 51.96 ri 3.02e-10p 5.97e-06p 0.016642p 0.488458m 0.0 6.018939h 0.338061p 0.744728n 0.013683p 0.005061p 5.04e-06p 1.89e-10p

sig0.537 cc 5.57e-10p 1.10e-05p 0.030773p 0.927999p 0.0 6.889006p 0.334830p 7.594713p 0.020229p 7.619947p 4.98e-06p 4.98e-06p

rc 3.02e-10p 5.97e-06p 0.016648p 0.502059k 0.044210o 6.565209g 0.338061p 7.641236d 0.020444p 7.666742b 5.04e-06p 5.04e-06p

u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.068613l 0.0 5.710747g 0.0 0.0

zp 52.63 ri 2.06e-10p 2.25e-06p 0.002223p 0.211270p 0.0 2.181326n 1.733939m 1.092708n 0.391622p 0.085966p 0.009083p 1.71e-05p

sig0.634 cc 2.06e-10p 2.25e-06p 0.002218p 0.212410p 0.0 2.389127p 1.728424p 5.188041p 0.424945p 5.698678p 0.009054p 0.009071p

rc 2.06e-10p 2.25e-06p 0.002225p 0.213088p 0.007442o 2.401856m 1.733939m 5.193824j 0.426301p 5.706091g 0.009083p 0.009100p

u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.364565k 0.503447k 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 7.788683g 0.0 8.367710j 0.0 7.474682g 0.0 0.0

zp 51.61 ri 9.37e-08p 0.000492p 0.182103p 2.561023n 0.0 3.953685l 0.318005p 0.439150k 0.001903p 0.000704p 6.46e-07p 1.05e-11p

sig0.557 cc 9.73e-08p 0.000511p 0.189734p 2.816159p 0.0 7.059575p 0.169209p 7.416211p 0.005391p 7.422344p 6.81e-07p 6.81e-07p
rc 9.37e-08p 0.000492p 0.182595p 2.710204m 0.185755n 6.849644g 0.318005p 7.600439i 0.008263p 7.609406g 6.46e-07p 6.46e-07p
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.874260l 0.558953l 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.530772h 0.0 6.234162g 0.0 6.459835f 0.0 0.0
zp 52.08 ri 1.08e-08p 6.55e-05p 0.029211p 1.059859p 0.0 3.722392k 0.934277p 0.597325l 0.050648p 0.011118p 0.000205p 5.03e-08p
sig0.605 cc 1.08e-08p 6.56e-05p 0.029333p 1.085901p 0.0 4.851288p 0.908272p 6.322093p 0.066772p 6.399535p 0.000197p 0.000197p
rc 1.08e-08p 6.55e-05p 0.029276p 1.083778o 0.053508o 4.859678g 0.934277p 6.372594k 0.069333p 6.453046f 0.000205p 0.000205p
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 1.179664i 1.429816i 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.400448n 0.0 4.779535h 0.0 7.321927i 0.0 7.676214b 0.0 0.0
zp 52.42 ri 2.14e-11p 8.95e-07p 0.003842p 0.398940n 0.0 4.397351i 1.184472n 1.435644i 0.171312p 0.073420p 0.000670p 2.02e-07p
sig0.564 cc 1.71e-11p 7.13e-07p 0.003062p 0.320379p 0.0 4.888091p 1.063584p 7.399163p 0.192064p 7.664424p 0.000668p 0.000668p
rc 2.14e-11p 8.95e-07p 0.003843p 0.402080m 0.011931n 4.811363g 1.184472n 7.407789i 0.195002p 7.676211b 0.000670p 0.000670p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.691975j 0.0 6.574475i 0.0 7.386083b 0.0 0.0
zp 52.42 ri 1.84e-11p 7.22e-07p 0.003077p 0.307523p 0.0 4.471085k 1.153222n 1.195227n 0.177571p 0.065677p 0.000663p 2.10e-07p
sig0.565 cc 1.82e-11p 7.14e-07p 0.003042p 0.306486p 0.0 4.732593p 1.129070p 7.112288p 0.196300p 7.372839p 0.000649p 0.000649p
rc 1.84e-11p 7.22e-07p 0.003077p 0.310037p 0.009479o 4.790601i 1.153222m 7.115985g 0.200635p 7.382297b 0.000663p 0.000664p
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 7.207892j 0.0 0.0 0.0 7.915535e 0.0 0.0
zp 52.06 ri 2.62e-10p 9.02e-06p 0.017917p 1.053100n 0.0 5.431116k 0.565884o 0.781459p 0.022497p 0.009642p 2.32e-05p 9.79e-10p
sig0.544 cc 2.59e-10p 8.91e-06p 0.017708p 1.054779p 0.0 6.442540p 0.589004p 7.833151p 0.035197p 7.878383p 2.42e-05p 2.42e-05p
rc 2.62e-10p 9.02e-06p 0.017926p 1.067746m 0.038998o 6.537860j 0.565884o 7.873885g 0.033815p 7.917342e 2.32e-05p 2.32e-05p

u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.856781j 1.171349j 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.917960h 0.0 6.251360h 0.0 6.306626c 0.0 0.0
zp 52.38 ri 1.01e-11p 3.83e-07p 0.002591p 0.201060p 0.0 3.827744i 0.882528p 1.206549j 0.125906p 0.053960p 0.000268p 7.60e-08p
sig0.555 cc 1.14e-11p 4.33e-07p 0.002928p 0.229561p 0.0 4.559761p 0.657560p 6.112229p 0.135251p 6.299809p 0.000260p 0.000260p
rc 1.01e-11p 3.83e-07p 0.002592p 0.203177p 0.006749o 4.037670g 0.882528p 6.109096k 0.143556p 6.306612c 0.000268p 0.000268p
th232f xi 0.0 0.0 0.0 0.0 0.0 3.763281j 0.075090p 0.085176n 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.023423h 0.0 5.351427f 0.0 0.0
zp 51.54 ri 1.98e-08p 0.000206p 0.139463p 1.816971n 0.0 3.114364n 0.062142p 0.070489n 0.000371p 0.000137p 3.04e-08p 0.0
sig0.524 cc 2.07e-08p 0.000215p 0.146212p 2.021547p 0.0 5.038001p 0.065257p 5.175541p 0.001699p 5.177386p 3.23e-08p 3.23e-08p
rc 1.98e-08p 0.000206p 0.139668p 1.931080o 0.173211p 5.218655n 0.062142p 5.350043n 0.001614p 5.351794f 3.04e-08p 3.04e-08p

in half life from 80eng2; sn, sb, te, i half lives 89wal1; cs half life 90bur1.

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mass number 135 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	50 sn g	51 sb g	52 te d	52 te g	53 i d	53 i g	54 xe m	54 xe g	55 cs g	56 ba g	57 la g	58 ce g
half life	0.418s	1.71 s	0.82s	19.0 s	19.0 s	6.57 h	15.3 m	9.10 h	2.3e6y	stable	19.5 h	17.7 h
lambda	1.658e+00	4.053e-01	8.453e-01	3.648e-02	3.648e-02	2.931e-05	7.551e-04	2.116e-05	9.556e-15	0.0	9.874e-06	1.088e-05
z - 1 g	100.0000	100.0000	0.0	82.1300	0.0	100.0000	14.7000	85.3000	100.0000	100.0000	-100.0000	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	28.9790	100.0000	1.1400	100.0000	0.0	100.0000	0.0	0.0	0.0	0.0

u235t xi 0.0 0.196106n 0.0 3.343245i 0.0 3.040683g 0.182725i 0.080541i 0.0 0.0 0.0 0.0
xc 0.000643n 0.147425j 0.0 3.369732j 0.0 6.326131f 1.009646l 6.483991g 6.538549a 0.0 0.0 0.0
zp 52.52 ri 0.000627p 0.145147j 0.0 3.216411i 0.0 2.927576g 0.178135i 0.078518i 0.000491p 7.64e-08p 0.0 0.0
sig0.531 cc 0.000559p 0.143533p 0.0 3.733804p 0.0 6.265296p 1.102374p 6.520755p 6.521256p 6.521257p 0.0 0.0
rc 0.000627n 0.145774i 0.003334o 3.339469h 0.015264n 6.282309e 1.101635e 6.538963c 6.539453a 6.539454a 0.0 0.0
u235f xi 0.0 0.0 0.0 2.017606i 0.0 3.875401j 0.196667i 0.126016m 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 6.440702h 0.0 6.788348d 6.460296d 6.712035k 0.0 0.0
zp 52.39 ri 0.001624p 0.245879p 0.0 2.473594m 0.0 3.603261j 0.185586p 0.119611m 0.000206p 2.45e-08p 0.0 0.0
sig0.537 cc 0.001710p 0.260588p 0.0 4.347589p 0.0 6.436517p 1.054548p 6.582977p 6.583193p 6.583193p 0.0 0.0
rc 0.001624p 0.247503p 0.004070o 2.680938m 0.011742n 6.295940h 1.111089m 6.601137d 6.601343c 6.601343c 0.0
0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 1.013738j 0.463804l 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.299007k 0.0 5.491563j 5.824018k 0.0 0.0 0.0
zp 53.04 ri 0.000169p 0.041463p 0.0 1.044298n 0.0 3.134536l 0.996066n 0.454070l 0.060539p 0.000298p 1.37e-07p
5.65e-12p
sig0.634 cc 0.000176p 0.043271p 0.0 1.121518p 0.0 4.381973p 1.694383p 5.662745p 5.723409p 5.723707p 1.38e-07p
5.66e-12p
rc 0.000169p 0.041632p 0.001672o 1.080163m 0.004095o 4.218794j 1.616229l 5.668930i 5.729469i 5.729767i 1.37e-07p
5.65e-12p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.016143p 0.011461p 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 7.048962f 0.0 6.612247h 6.964637d 6.802482i 0.0 0.0
zp 52.06 ri 0.019027p 1.020443n 0.0 4.620619n 0.0 1.354565n 0.015710p 0.011154p 3.71e-05p 2.26e-09p 0.0 0.0
sig0.557 cc 0.018921p 1.033661p 0.0 5.463183p 0.0 6.821674p 1.028781p 6.856802p 6.856840p 6.856840p 0.0 0.0
rc 0.019027p 1.039470m 0.069561o 5.543897m 0.042213o 6.940674e 1.035989g 6.967538d 6.967575c 6.967575c 0.0
0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.192830i 0.126828k 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.340527f 0.0 5.883122f 6.014779l 0.0 0.0 0.0
zp 52.49 ri 0.002974p 0.296442p 0.0 2.655079n 0.0 2.568857m 0.202020p 0.132909k 0.002672p 1.93e-06p 9.89e-11p
0.0
sig0.605 cc 0.002998p 0.301786p 0.0 2.929853p 0.0 5.532422p 1.036351p 5.804477p 5.807025p 5.807026p 9.43e-11p
0.0
rc 0.002974p 0.299416p 0.018079o 2.919069m 0.016402o 5.504328f 1.011156m 5.839257f 5.841929f 5.841931f 9.89e-11p
0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 4.629603i 0.781444i 0.329876h 0.0 0.0 0.0 0.0
xc 0.0 0.070162n 0.0 0.0 0.0 6.328789g 0.0 7.751045e 7.603379c 0.0 0.0 0.0
zp 52.87 ri 0.000143p 0.066634p 0.0 2.192998m 0.0 4.287474i 0.752289p 0.314135h 0.012604p 1.22e-05p 3.86e-10p
0.0
sig0.564 cc 0.000117p 0.054413p 0.0 2.194793p 0.0 6.502532p 1.737471p 7.603376p 7.616554p 7.616567p 4.04e-10p
0.0
rc 0.000143p 0.066777n 0.000848o 2.248690m 0.005795o 6.541959g 1.713957n 7.608383d 7.620987c 7.621000c 3.86e-10p
0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.829327i 0.597303i 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 5.917653i 0.0 7.182823e 7.570110b 7.584028k 0.0 0.0
zp 52.86 ri 0.000125p 0.052931p 0.0 2.107190n 0.0 3.921975k 0.846455p 0.613907i 0.012519p 1.27e-05p 3.86e-10p
0.0
sig0.565 cc 0.000133p 0.056249p 0.0 2.280631p 0.0 6.444320p 1.752778p 7.532784p 7.545051p 7.545063p 3.75e-10p
0.0
rc 0.000125p 0.053056p 0.001225o 2.151990m 0.007724o 6.081690h 1.740463n 7.542051d 7.554570b 7.554583b 3.86e-10p
0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 3.053360n 0.164360j 0.067133j 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 7.124589g 0.0 7.514243h 7.155946d 0.0 0.0 0.0
zp 52.50 ri 0.000961p 0.217249p 0.0 3.727358m 0.0 3.008700m 0.161402p 0.065501j 0.000731p 1.30e-07p 0.0 0.0
sig0.544 cc 0.000952p 0.216179p 0.0 3.882037p 0.0 6.886692p 1.193987p 7.142528p 7.143270p 7.143270p 0.0 0.0
rc 0.000961p 0.218209p 0.008442o 3.915015m 0.019426o 6.943140g 1.182043l 7.170043f 7.170774d 7.170774d 0.0
0.0
u233t xi 0.0 0.0 0.0 0.0 0.0 3.806554j 0.916197h 0.450597k 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.737156g 0.0 6.368069f 6.185909f 0.0 0.0 0.0
zp 52.82 ri 9.48e-05p 0.037665p 0.0 1.687457m 0.0 3.304766j 0.806279p 0.420652k 0.005891p 4.81e-06p 7.72e-11p
0.0
sig0.555 cc 0.000117p 0.046520p 0.0 2.201254p 0.0 5.400659p 1.395604p 6.248134p 6.254492p 6.254497p 8.33e-11p
0.0
rc 9.48e-05p 0.037760p 0.000951o 1.719420m 0.008211n 5.032397g 1.546041n 6.259328f 6.265219e 6.265224e 7.72e-11p
0.0
th232f xi 0.0 0.0 0.0 4.164811i 0.0 0.840151k 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.844946h 0.0 5.330907g 5.340258i 0.0 0.0 0.0
zp 51.97 ri 0.016231p 0.954187p 0.0 3.785182k 0.0 0.838949k 0.007551p 0.002653p 3.16e-06p 4.44e-11p 0.0 0.0
sig0.524 cc 0.015314p 0.915605p 0.0 4.687331p 0.0 5.430980p 0.805868p 5.441134p 5.441137p 5.441137p 0.0 0.0
rc 0.016231p 0.970417o 0.056458o 4.638644j 0.040782o 5.518375g 0.818752h 5.528579f 5.528582f 5.528582f 0.0
0.0

xe branching from 74dan1; sn half life from 80eng2; sb, te, i, xe, cs half lives 89wal1.

1

mass number 136 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	48 cd g	49 in g	50 sn g	51 sb g	52 te d	52 te g	53 i m	53 i g	54 xe d	54 xe g	55 cs g	56 ba g
half life		0.717s	0.82 s	0.478s	17.5 s	47. s	1.39 m	24.5 s	stable	13.00d	stable	
lambda	0.0	0.0	9.667e-01	8.453e-01	1.450e+00	3.961e-02	1.475e-02	8.311e-03	2.829e-02	0.0	6.171e-07	0.0

z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 71.0210 0.0 98.8600 0.0 100.0000 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 18.0320 100.0000 2.6900 0.0 6.9700 100.0000 0.0 0.0
u235t xi 0.0 0.0 0.0 0.0 0.0 0.990767n 1.519117j 1.482620j 0.0 2.437740o 0.006157g 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.533166j 1.199605j 2.618798l 0.0 6.312199a 0.0 0.006195h
zp 52.93 ri 0.0 1.68e-10p 1.57e-05p 0.011490p 0.0 1.317426j 1.251341i 1.319458j 0.0 2.192577o 0.005538p 4.73e-06p
sig0.531 cc 0.0 2.31e-10p 2.15e-05p 0.015812p 0.0 1.895201p 1.454024p 3.327620p 0.0 6.064723p 0.006933p
0.006939p
rc 0.0 1.68e-10p 1.57e-05p 0.011505p 0.013408o 1.339006j 1.263536i 2.643199i 0.213854j 6.313166a 0.005538p
0.005542h
u235f xi 0.0 0.0 0.0 0.0 0.0 0.849288i 0.0 0.0 0.0 1.398827k 0.009581g 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.849288i 0.0 0.0 0.0 6.219748b 0.012369j 0.0
zp 52.81 ri 0.0 6.87e-10p 3.24e-05p 0.014014p 0.0 1.019846h 1.448771m 1.852948n 0.0 1.712241k 0.011728g 6.33e-
06p
sig0.537 cc 0.0 1.62e-09p 7.65e-05p 0.033194p 0.0 2.456757p 1.367457p 3.796207p 0.0 6.018414p 0.003544p
0.003547p
rc 0.0 6.87e-10p 3.24e-05p 0.014046p 0.000152n 1.029974h 1.453115l 2.871181l 0.178859k 6.215395b 0.011728g
0.011734g
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.241022g 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.070760h 0.214598h 0.0
zp 53.44 ri 0.0 1.33e-09p 9.17e-06p 0.005759p 0.0 0.355047p 1.224422n 1.225466n 0.0 2.171511n 0.226001g
0.002811p
sig0.634 cc 0.0 1.32e-09p 9.13e-06p 0.005747p 0.0 0.357837p 1.220913p 1.574670p 0.0 4.959014p 0.243261p
0.246267p
rc 0.0 1.33e-09p 9.17e-06p 0.005768p 9.28e-05o 0.359236p 1.226566m 1.580607m 0.095293m 5.073977h 0.226001f
0.228813g
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.001010k 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.974599f 0.001618i 0.0
zp 52.48 ri 3.37e-12p 2.70e-07p 0.001418p 0.238622p 0.0 3.525481n 1.344818n 1.328833n 0.0 0.244318p 0.000960k
2.96e-07p
sig0.557 cc 3.34e-12p 2.68e-07p 0.001406p 0.237979p 0.0 3.666284p 1.353070p 4.977558p 0.0 6.572847p 0.000843p
0.000843p
rc 3.37e-12p 2.70e-07p 0.001418p 0.240040p 0.006919o 3.702879m 1.387838m 4.989498k 0.357219k 6.978873f 0.000960j
0.000960j
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.022109h 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.618590f 0.025848h 0.0

zp 52.88 ri 1.26e-12p 6.48e-08p 0.000233p 0.062155p 0.0 1.392768n 1.579552n 1.586213n 0.0 0.804579p 0.021242h 4.42e-05p
sig0.605 cc 1.26e-12p 6.47e-08p 0.000233p 0.062321p 0.0 1.436053p 1.584592p 3.004274p 0.0 5.392586p 0.019730p 0.019770p
rc 1.26e-12p 6.48e-08p 0.000233p 0.062387p 0.001658o 1.438734m 1.593666m 3.008546l 0.217553k 5.624345f 0.021242g 0.021287g
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.088406i 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.510972j 1.367272o 0.0 7.058551d 0.086499h 0.0
zp 53.33 ri 0.0 2.82e-11p 1.93e-06p 0.002923p 0.0 0.506173p 1.641539j 1.250152n 0.0 3.479202n 0.097436i 0.000494p
sig0.564 cc 0.0 3.37e-11p 2.30e-06p 0.003497p 0.0 0.607729p 1.596095p 2.196895p 0.0 6.861739p 0.107750p 0.108240p
rc 0.0 2.82e-11p 1.93e-06p 0.002925p 4.96e-05o 0.508299p 1.645023i 1.752656m 0.169112j 7.045994d 0.097436g 0.097931g
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.117931i 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.936351d 0.127676g 0.0
zp 53.30 ri 0.0 5.21e-11p 3.20e-06p 0.004223p 0.0 0.674538p 1.600773n 1.602290n 0.0 2.924605o 0.123094g 0.000473p
sig0.565 cc 0.0 5.23e-11p 3.21e-06p 0.004243p 0.0 0.680312p 1.608814p 2.281370p 0.0 6.826689p 0.093919p 0.094325p
rc 0.0 5.21e-11p 3.20e-06p 0.004226p 4.71e-05o 0.677586o 1.603880m 2.272152m 0.139563l 6.940200d 0.123094f 0.123567f
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.083976e 0.017527i 0.0
zp 52.92 ri 0.0 1.05e-09p 3.42e-05p 0.029096p 0.0 1.682875n 2.010889n 2.017476n 0.0 1.083810n 0.014113p 9.74e-06p
sig0.544 cc 0.0 1.05e-09p 3.42e-05p 0.029113p 0.0 1.702708p 2.016302p 3.699599p 0.0 6.799068p 0.011381p 0.011389p
rc 0.0 1.05e-09p 3.42e-05p 0.029130p 0.000492o 1.704057m 2.024726m 3.702107m 0.280365k 7.091008e 0.014113j 0.014123j
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.912169m 0.912169m 0.0 0.0 0.108232h 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.594599j 0.0 1.695456p 0.0 6.800963d 0.101537k 0.074224n
zp 53.25 ri 0.0 2.89e-11p 3.00e-06p 0.003278p 0.0 0.717916j 1.104959p 1.104959m 0.0 3.736236n 0.129917h 0.000455p
sig0.555 cc 0.0 3.48e-11p 3.62e-06p 0.003949p 0.0 0.866909p 1.410180p 2.267207p 0.0 6.729180p 0.057278p 0.057517p

rc 0.0 2.89e-11p 3.00e-06p 0.003281p 2.92e-05o 0.720276h 1.107332p 1.817024k 0.114389j 6.774981d 0.129917g 0.130372g
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.934146m 0.934146m 0.0 0.0 0.000169j 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.786610j 0.0 0.0 5.621154f 0.001158o 0.0
zp 52.40 ri 0.0 7.20e-08p 0.000948p 0.193879p 0.0 3.436364n 0.900702m 0.900702p 0.0 0.112267p 0.000163j 4.72e-08p
sig0.524 cc 0.0 7.20e-08p 0.000948p 0.194826p 0.0 3.574719p 0.900699p 4.434666p 0.0 5.447683p 0.000132p 0.000132p
rc 0.0 7.20e-08p 0.000948p 0.194826p 0.002655p 3.577387o 0.921272m 4.437307n 0.150459m 5.621305f 0.000163k 0.000163k

sn half life from 80eng2; sb, te, i half lives from 89wal1.
1

mass number 137 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 50 sn g 51 sb g 52 te g 53 i d 53 i g 54 xe d 54 xe g 55 cs g 56 ba m 56 ba g 57 la g 58 ce g
half life 0.478s 2.5 s 1.6 s 24.5 s 6.50 s 3.82 m 30.17y 2.552m stable 6.e4y 9.0 h
lambda 0.0 1.450e+00 2.773e-01 4.332e-01 2.829e-02 1.066e-01 3.024e-03 7.285e-10 4.527e-03 0.0 3.663e-13 2.139e-05
z - 1 g 100.0000 100.0000 81.9680 0.0 97.3100 0.0 93.0300 100.0000 94.6000 5.4000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 6.7800 100.0000 5.3800 100.0000 0.0 0.0 100.0000 0.0 0.0
u235t xi 0.0 0.0 0.392427j 0.0 2.594013i 0.0 3.211204h 0.060005k 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.466785k 0.0 3.119223i 0.0 6.403739h 6.189676b 0.0 6.116860g 0.0 0.0
zp 53.34 ri 1.86e-05p 0.074336p 0.392414j 0.0 2.622548h 0.0 3.194425g 0.060003k 0.000133p 5.43e-05p 6.93e-09p 0.0
sig0.531 cc 3.45e-07p 0.001378p 0.445705p 0.0 3.367759p 0.0 6.021516p 6.096775p 5.767681p 6.096961p 6.87e-09p 0.0
rc 1.86e-05p 0.074355p 0.453361k 0.004491o 3.068204g 0.079979k 6.128754d 6.188757b 5.854697b 6.188944b 6.93e-09p 0.0
u235f xi 0.0 0.0 0.159905p 0.0 2.378590j 0.0 3.328027j 0.309816p 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.565538i 0.0 6.026612e 6.227328b 0.0 6.140599e 0.0 0.0
zp 53.22 ri 3.74e-07p 0.000841p 0.160814p 0.0 2.401582i 0.0 3.533072h 0.228354n 6.30e-05p 2.21e-05p 2.63e-09p 0.0
sig0.537 cc 1.66e-06p 0.003730p 0.716048p 0.0 3.973099p 0.0 5.982881p 6.027806p 5.702366p 6.027889p 2.55e-09p 0.0
rc 3.74e-07p 0.000841p 0.161503p 0.007381o 2.566122i 0.072788k 5.993123e 6.221477b 5.885580b 6.221562a 2.63e-09p 0.0

u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 3.117080l 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.985189h 5.047388j 0.0 4.875063h 0.0 0.0
zp 53.84 ri 3.16e-07p 0.000515p 0.079303p 0.0 1.289093n 0.0 2.678809k 0.947628n 0.017621p 0.003868p 6.62e-05p 1.89e-08p
sig0.634 cc 3.43e-07p 0.000558p 0.086384p 0.0 1.481179p 0.0 4.163974p 4.889096p 4.643188p 4.911241p 6.80e-05p 1.94e-08p
rc 3.16e-07p 0.000515p 0.079725p 0.001112o 1.367786m 0.028328o 3.979589h 4.927216i 4.678767h 4.948774g 6.62e-05p 1.89e-08p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 4.993729k 0.0 5.789477g 6.054612d 0.0 6.075589e 0.0 0.0
zp 52.88 ri 6.33e-05p 0.038305p 1.567774n 0.0 3.531228l 0.0 1.077366n 0.011212p 6.56e-06p 2.31e-06p 2.45e-10p 0.0
sig0.557 cc 6.56e-05p 0.039734p 1.656135p 0.0 5.292432p 0.0 5.794755p 5.805352p 5.491869p 5.805360p 2.30e-10p 0.0
rc 6.33e-05p 0.038369p 1.599224m 0.037573o 5.125006j 0.196133m 6.041292f 6.052504d 5.725676d 6.052513c 2.45e-10p 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 1.662567j 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 3.247526l 0.0 4.711156g 5.217682h 0.0 5.055462h 0.0 0.0
zp 53.26 ri 1.29e-05p 0.009181p 0.517217p 0.0 2.576174l 0.0 1.673475j 0.421143o 0.000459p 0.000101p 2.21e-07p 6.14e-12p
sig0.605 cc 1.35e-05p 0.009586p 0.547139p 0.0 3.396159p 0.0 4.841322p 4.944064p 4.677526p 4.944603p 2.13e-07p 5.91e-12p
rc 1.29e-05p 0.009193p 0.524753o 0.034555o 3.121366j 0.147594l 4.724875g 5.146018g 4.868592g 5.146578f 2.21e-07p 6.14e-12p
pu239t xi 0.0 0.0 0.0 0.0 2.238691i 0.0 3.817768i 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.551659j 0.0 5.978953f 6.607687b 0.0 6.586149n 0.0 0.0
zp 53.74 ri 4.35e-08p 0.000275p 0.129315p 0.0 2.299454i 0.0 3.683937h 0.597323l 0.004523p 0.001848p 2.82e-06p 8.89e-11p
sig0.564 cc 3.46e-08p 0.000219p 0.102932p 0.0 2.028499p 0.0 6.050000p 6.566140p 6.216071p 6.572484p 2.81e-06p 8.85e-11p
rc 4.35e-08p 0.000275p 0.129541p 0.000794o 2.426305h 0.069015k 6.010143f 6.607467b 6.255187b 6.613840b 2.82e-06p 8.89e-11p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.996585l 0.0 5.556854g 6.573118c 0.0 6.604171c 0.0 0.0
zp 53.71 ri 4.89e-08p 0.000261p 0.115286p 0.0 1.888238l 0.0 3.661183j 1.004452l 0.004076p 0.001432p 2.18e-06p 6.80e-11p

sig0.565 cc 5.10e-08p 0.000273p 0.120466p 0.0 2.087582p 0.0 6.065782p 6.520694p 6.172602p 6.526136p 2.16e-06p 6.72e-11p
rc 4.89e-08p 0.000261p 0.115500p 0.001694o 2.002325k 0.056319l 5.580266g 6.584718c 6.233219c 6.590227b 2.18e-06p 6.80e-11p
pu241t xi 0.0 0.0 0.0 0.0 3.442680k 0.0 2.491940k 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 3.873015i 0.0 6.402721h 6.665146d 0.0 6.587717f 0.0 0.0
zp 53.31 ri 9.17e-07p 0.002729p 0.512159p 0.0 3.514794j 0.0 2.696302j 0.092366p 0.000156p 6.35e-05p 1.40e-08p 0.0
sig0.544 cc 9.37e-07p 0.002788p 0.525337p 0.0 4.068858p 0.0 6.432290p 6.520126p 6.168188p 6.520336p 1.34e-08p 0.0
rc 9.17e-07p 0.002730p 0.514397p 0.007141o 4.022494i 0.119895k 6.558324f 6.650689c 6.291708c 6.650908c 1.40e-08p 0.0
u233t xi 0.0 0.0 0.0 0.0 1.503578j 0.0 4.431608i 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.087678p 0.0 1.670739i 0.0 6.044241h 6.754899c 0.0 6.637432n 0.0 0.0
zp 53.66 ri 3.03e-08p 0.000162p 0.088085p 0.0 1.553986i 0.0 4.483029h 0.710969m 0.002547p 0.001040p 8.03e-07p 1.73e-11p
sig0.555 cc 5.08e-08p 0.000271p 0.147788p 0.0 2.126022p 0.0 6.342446p 6.684051p 6.325639p 6.687611p 7.97e-07p 1.71e-11p
rc 3.03e-08p 0.000162p 0.088218o 0.001323o 1.641155h 0.033034m 6.042829g 6.753798c 6.391640c 6.757386c 8.03e-07p 1.73e-11p
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.066027m 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 4.459037l 0.0 0.0 5.809668h 0.0 6.332271l 0.0 0.0
zp 52.80 ri 1.58e-05p 0.014710p 0.752611n 0.0 1.363207m 0.0 0.238897p 3.360250m 3.17e-07p 1.11e-07p 2.20e-12p 0.0
sig0.524 cc 3.79e-05p 0.035386p 1.837542p 0.0 5.095588p 0.0 5.315697p 5.318717p 5.031506p 5.318717p 4.06e-12p 0.0
rc 1.58e-05p 0.014725p 0.764681o 0.051395o 2.158713m 0.232056m 2.479203m 5.839453h 5.524123h 5.839453h 2.21e-12p 0.0

sb half life from 80eng2; te, i, xe, cs, ba half lives 89wal1.
1

mass number 138 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 50 sn g 51 sb g 52 te g 53 i d 53 i g 54 xe d 54 xe g 55 cs m 55 cs g 56 ba g 57 la g 58 ce g
half life 0.173s 1.4 s 0.580s 6.5 s 2.38 s 14.1 m 2.9 m 32.2 m stable 11.02l stable
lambda 0.0 4.007e+00 4.951e-01 1.195e+00 1.066e-01 2.912e-01 8.193e-04 3.984e-03 3.588e-04 0.0 2.099e-19 0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 93.2200 0.0 94.6200 0.0 100.0000 100.0000 -70.0000 30.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 25.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 7.9620 100.0000 9.8100 100.0000 0.0 75.0000 0.0 0.0 0.0
u235t xi 0.0 0.0 0.0 0.0 1.479883h 0.0 5.351202j 0.226302k 0.245879k 0.0 0.0 0.0
xc 0.0 0.0 0.067167n 0.0 1.375201i 0.0 6.358294h 0.236515p 6.761694c 6.711095c 6.41e-05f 0.0
zp 53.75 ri 3.29e-09p 3.92e-05p 0.066187p 0.0 1.424220g 0.0 4.814466g 0.223390k 0.243212k 0.004116p 3.18e-05p 4.75e-10p
sig0.531 cc 3.89e-09p 4.64e-05p 0.078269p 0.0 1.350412p 0.0 6.370265p 0.161653p 6.653157p 6.697703p 4.56e-07p 1.37e-07p
rc 3.29e-09p 3.92e-05p 0.066226n 0.000531o 1.486487g 0.076312k 6.297292e 0.223390k 6.708046c 6.768054b 3.18e-05h 9.55e-06h
u235f xi 0.0 0.0 0.0 0.0 1.258507i 0.0 4.454714i 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.268495i 0.0 5.915132f 0.0 6.134884h 6.687902c 1.90e-05f 0.0
zp 53.63 ri 1.75e-08p 0.000114p 0.108759p 0.0 1.250715i 0.0 4.683122g 0.114787p 0.554220m 0.002130p 9.77e-06p 1.20e-10p
sig0.537 cc 2.48e-08p 0.000162p 0.154250p 0.0 1.828759p 0.0 6.379947p 0.111499p 6.575070p 6.605013p 1.86e-07p 5.59e-08p
rc 1.75e-08p 0.000114p 0.108873p 0.000780o 1.352987h 0.046057k 6.009376e 0.114787p 6.649686e 6.680527c 9.77e-06h 2.93e-06h
u235he xi 0.0 0.0 0.0 0.0 0.441976m 0.0 2.637617l 0.685746m 0.685746m 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.372503g 0.0 0.0 4.554373j 0.0 0.0
zp 54.22 ri 1.08e-08p 4.37e-05p 0.016351p 0.0 0.511014p 0.0 2.645748k 0.665357p 0.665357p 0.099121p 0.000739p 5.25e-07p
sig0.634 cc 1.01e-08p 4.08e-05p 0.015303p 0.0 0.587878p 0.0 3.054353p 0.708321p 4.293914p 4.570845p 0.000741p 0.000223p
rc 1.08e-08p 4.37e-05p 0.016395p 0.000176o 0.526473p 0.019432o 3.163330g 0.665357p 4.327705l 4.593699i 0.000739p 0.000222p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.029896p 0.029896p 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.536789g 0.0 5.830032h 5.800541e 0.0 0.0
zp 53.27 ri 2.21e-06p 0.004057p 0.550103p 0.0 3.119249n 0.0 2.039963n 0.030166p 0.030166p 0.000204p 1.76e-08p 0.0
sig0.557 cc 2.16e-06p 0.003977p 0.542993p 0.0 3.565213p 0.0 5.474159p 0.035465p 5.536223p 5.545286p 1.70e-08p 5.10e-09p
rc 2.21e-06p 0.004059p 0.554162o 0.009651o 3.645490m 0.212597m 5.701922g 0.030166p 5.754712g 5.762458e 1.76e-08p 5.29e-09p
u238he xi 0.0 0.0 0.587321k 0.0 0.0 0.0 2.224379j 0.202260k 0.202260k 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.691889k 0.0 4.263450f 0.0 4.896262g 5.018602h 0.0 0.0

zp 53.63 ri 1.92e-06p 0.003573p 0.506079p 0.0 2.265879m 0.0 1.845363i 0.174282p 0.174282k 0.004183p 4.34e-06p 3.24e-10p
sig0.605 cc 5.86e-07p 0.001092p 0.155671p 0.0 2.065210p 0.0 4.482581p 0.182280p 4.801570p 4.851983p 5.02e-06p 1.51e-06p
rc 1.92e-06p 0.003575p 0.509654p 0.002369o 2.743347k 0.089721o 4.530838f 0.174282p 4.835832h 4.883589g 4.34e-06p 1.30e-06p
pu239t xi 0.0 0.0 0.0 0.0 1.248539k 0.0 4.135161j 0.568323j 0.295368l 0.0 0.0 0.0
xc 0.0 0.0 0.011227n 0.0 1.209868k 0.0 4.895204f 0.0 5.654682j 6.124537d 0.0 0.0
zp 54.13 ri 3.79e-10p 6.51e-06p 0.011706p 0.0 1.271768j 0.0 3.925729g 0.592920p 0.308151l 0.052586p 6.16e-05p 7.71e-09p
sig0.564 cc 4.46e-10p 7.66e-06p 0.013796p 0.0 0.640858p 0.0 4.902862p 0.586455p 5.929158p 6.127499p 6.05e-05p 1.82e-05p
rc 3.79e-10p 6.51e-06p 0.011713n 6.48e-05o 1.282752i 0.031348m 5.170817e 0.592920p 5.923658i 6.124515d 6.16e-05p 1.85e-05p
pu239f xi 0.0 0.0 0.0 0.0 0.953445l 0.0 3.819892l 0.644798l 0.644798l 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.002694l 0.0 4.431656g 0.0 5.882334k 6.126621c 0.0 0.0
zp 54.11 ri 9.69e-10p 1.48e-05p 0.024974p 0.0 1.023432k 0.0 3.702573h 0.682765p 0.682765l 0.048902p 5.39e-05p 6.69e-09p
sig0.565 cc 6.13e-10p 9.35e-06p 0.015801p 0.0 0.671358p 0.0 4.974477p 0.553094p 5.942391p 6.128277p 5.25e-05p 1.57e-05p
rc 9.69e-10p 1.48e-05p 0.024989p 0.000104o 1.046831k 0.019053o 4.712137f 0.682765p 5.906976j 6.126605c 5.39e-05p 1.62e-05p
pu241t xi 0.0 0.0 0.0 0.0 2.152369k 0.0 3.884275j 0.230253m 0.120132m 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.282512j 0.0 6.541674h 0.0 6.808283i 6.605130d 0.0 0.0
zp 53.70 ri 1.57e-08p 0.000166p 0.105156p 0.0 2.128855j 0.0 4.060574i 0.225887p 0.117854m 0.003306p 7.52e-07p 9.68e-12p
sig0.544 cc 1.49e-08p 0.000158p 0.099728p 0.0 2.120296p 0.0 6.110220p 0.203734p 6.466754p 6.520964p 7.45e-07p 2.23e-07p
rc 1.57e-08p 0.000166p 0.105322p 0.001499o 2.228535i 0.088888k 6.258102g 0.225887p 6.545370h 6.605148d 7.52e-07p 2.25e-07p
u233t xi 0.0 0.0 0.0 0.0 0.676365m 0.0 4.923539i 0.791425j 0.307704j 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.692778m 0.0 5.480561i 0.0 0.0 5.907093f 0.0 0.0
zp 54.06 ri 5.64e-10p 7.77e-06p 0.019513p 0.0 0.595769l 0.0 4.302054h 0.699335p 0.271900p 0.031736p 1.79e-05p 1.86e-09p
sig0.555 cc 5.26e-10p 7.25e-06p 0.018212p 0.0 0.571148p 0.0 5.114400p 0.370145p 5.762154p 5.888365p 1.90e-05p 5.69e-06p

rc 5.64e-10p 7.77e-06p 0.019520p 4.72e-05o 0.614013l 0.021355n 4.904389h 0.699335p 5.700789k 5.907373f 1.79e-05p 5.37e-06p
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.301357i 7.090259l 0.0 0.0
zp 53.20 ri 1.09e-06p 0.003456p 0.754598p 0.0 3.596286n 0.0 2.082960n 0.018324p 0.018324p 4.49e-05p 8.11e-10p 0.0
sig0.524 cc 1.06e-06p 0.003361p 0.737003p 0.0 4.185894p 0.0 6.163151p 0.017815p 6.194327p 6.198825p 7.89e-10p 2.37e-10p
rc 1.09e-06p 0.003457p 0.758056o 0.010458o 4.313404m 0.248819m 6.413122k 0.018324p 6.445189i 6.449815i 8.11e-10p 2.43e-10p

sb half life from 80eng2; te, i, xe, cs half lives from 89wal1.
1

mass number 139 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	51 sb g	52 te g	53 i g	54 xe d	54 xe g	55 cs g	56 ba g	57 la g	58 ce m	58 ce g	59 pr g
half life	0.218s	0.580s	2.30 s	0.86 s	39.7 s	9.3 m	1.396h	stable	56. s	137.7d	4.41 h
lambda	3.180e+00	1.195e+00	3.014e-01	8.060e-01	1.746e-02	1.242e-03	1.379e-04	0.0	1.238e-02	5.826e-08	4.366e-05
z - 1 g	100.0000	100.0000	92.0380	0.0	90.1900	100.0000	100.0000	100.0000	0.0	-100.0000	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	9.2700	100.0000	0.0	0.0	0.0	0.0	100.0000	0.0
u235t xi	0.0	0.0	0.748131k	0.0	4.473094g	1.361134h	0.070524o	0.0	0.0	0.0	0.0
xc	0.0	0.006835n	0.890758l	0.0	5.312932h	6.355181d	6.323382e	6.374794e	0.0	0.0	0.0
zp 54.15 ri	1.40e-06p	0.006664p	0.771484j	0.0	4.323587f	1.305954h	0.068773o	2.27e-05p	7.03e-10p	2.87e-10p	0.0
sig0.531 cc	1.46e-06p	0.006924p	0.541409p	0.0	5.163327p	6.382401p	6.422800p	6.422823p	7.24e-10p	1.02e-09p	0.0
rc	1.40e-06p	0.006665n	0.777619j	0.014208m	5.039130f	6.345084d	6.413857c	6.413880c	7.03e-10p	9.91e-10p	0.0
u235f xi	0.0	0.0	0.469606j	0.0	3.716882j	2.138207k	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.479598j	0.0	4.379002h	0.0	6.121311h	6.343489b	0.0	0.0	0.0
zp 54.02 ri	3.90e-06p	0.009793p	0.460475j	0.0	3.792739h	2.096633o	0.020080p	8.92e-06p	2.25e-10p	7.89e-11p	0.0
sig0.537 cc	6.77e-06p	0.017000p	0.825399p	0.0	5.394160p	6.276960p	6.297399p	6.297408p	2.28e-10p	3.08e-10p	0.0
rc	3.90e-06p	0.009797p	0.469493j	0.010414o	4.226588g	6.323221k	6.343301d	6.343309b	2.25e-10p	3.03e-10p	0.0
u235he xi	0.0	0.0	0.0	0.0	1.789492m	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	2.049270j	0.0	4.771176i	4.837808i	0.0	0.0	0.0
zp 54.60 ri	2.41e-06p	0.002210p	0.196092p	0.0	1.876955k	2.364264n	0.381495p	0.006662p	9.57e-06p	2.10e-06p	1.87e-09p
sig0.634 cc	2.42e-06p	0.002224p	0.199206p	0.0	2.090893p	4.432075p	4.801398p	4.807973p	9.43e-06p	1.15e-05p	1.84e-09p
rc	2.41e-06p	0.002212p	0.198128p	0.002185n	2.057832j	4.422096l	4.803591i	4.810265h	9.57e-06p	1.17e-05p	1.87e-09p

u238f xi 0.0 0.0 0.0 0.0 0.0 0.356918m 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 5.440436i 0.0 6.069929h 5.662193e 0.0 0.0 0.0
zp 53.65 ri 0.000314p 0.120898p 2.055598n 0.0 3.283234l 0.347309p 0.002771p 8.10e-07p 1.02e-11p 3.60e-12p 0.0
sig0.557 cc 0.000312p 0.120175p 2.148603p 0.0 5.248634p 5.587097p 5.589779p 5.589780p 1.03e-11p 1.39e-11p 0.0
rc 0.000314p 0.121213p 2.167160m 0.082263o 5.320058i 5.667367j 5.670139f 5.670140d 1.02e-11p 1.38e-11p 0.0
u238he xi 0.0 0.0 0.925626k 0.0 2.637488j 1.446606k 0.283252n 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 3.673695i 0.0 5.013132g 5.168282h 0.0 0.0 0.0
zp 54.00 ri 8.17e-05p 0.029673p 0.887147p 0.0 2.534054j 1.386470n 0.271477n 8.66e-05p 1.41e-08p 3.10e-09p 0.0
sig0.605 cc 9.38e-05p 0.034152p 1.049680p 0.0 3.969047p 4.970323p 5.003207p 5.003295p 1.45e-08p 1.77e-08p 0.0
rc 8.17e-05p 0.029755p 0.914532p 0.032821o 3.391692i 4.778161k 5.049638g 5.049725f 1.41e-08p 1.72e-08p 0.0
pu239t xi 0.0 0.0 0.318942n 0.0 2.730942j 2.332264m 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.000820n 0.324118n 0.0 3.132969h 5.542959m 5.629208g 0.0 0.0 0.0 0.0
zp 54.51 ri 1.74e-07p 0.000813p 0.318800m 0.0 2.791958h 2.324173m 0.226312p 0.001029p 2.40e-07p 9.80e-08p 3.55e-12p
sig0.564 cc 2.50e-07p 0.001167p 0.190531p 0.0 3.026229p 5.402672p 5.643270p 5.644302p 2.41e-07p 3.39e-07p 3.56e-12p
rc 1.74e-07p 0.000814n 0.319549m 0.005527n 3.085686g 5.409860j 5.636172g 5.637201g 2.40e-07p 3.38e-07p 3.55e-12p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.664148g 5.601524e 0.0 0.0 0.0
zp 54.50 ri 2.83e-07p 0.001303p 0.193056p 0.0 2.936627n 2.257076n 0.238773p 0.000951p 2.41e-07p 8.46e-08p 3.29e-12p
sig0.565 cc 2.82e-07p 0.001298p 0.193476p 0.0 3.100306p 5.372041p 5.607748p 5.608703p 2.42e-07p 3.27e-07p 3.30e-12p
rc 2.83e-07p 0.001303p 0.194255p 0.002955o 3.114780m 5.371856j 5.610630f 5.611581e 2.41e-07p 3.25e-07p 3.29e-12p
pu241t xi 0.0 0.0 0.831829l 0.0 3.728197j 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.017448n 0.831829l 0.0 4.589689i 0.0 0.0 6.226534f 0.0 0.0 0.0
zp 54.07 ri 9.17e-06p 0.018812p 0.888771k 0.0 4.084520i 1.265679n 0.030499p 2.28e-05p 7.04e-10p 2.88e-10p 0.0
sig0.544 cc 6.50e-06p 0.013332p 0.819400p 0.0 5.031647p 6.178663p 6.206847p 6.206868p 6.51e-10p 9.16e-10p 0.0
rc 9.17e-06p 0.018822n 0.906094j 0.019464o 4.921190g 6.186869j 6.217368h 6.217390f 7.04e-10p 9.92e-10p 0.0
u233t xi 0.0 0.0 0.208412p 0.0 2.745806h 2.528117j 0.540116k 0.0 0.0 0.0 0.0
xc 0.0 0.000569n 0.208412p 0.0 3.033218h 0.0 6.220484h 6.430713h 0.0 0.0 0.0
zp 54.45 ri 9.63e-08p 0.000593p 0.217155o 0.0 2.904953h 2.637472n 0.564166k 0.000566p 1.04e-07p 4.25e-08p 0.0
sig0.555 cc 2.74e-07p 0.001689p 0.221734p 0.0 3.908340p 6.087105p 6.302478p 6.303018p 9.93e-08p 1.40e-07p 0.0
rc 9.63e-08p 0.000593n 0.217701n 0.002102o 3.103399g 5.740871l 6.305037h 6.305603g 1.04e-07p 1.46e-07p 0.0
th232f xi 0.0 0.0 0.0 0.0 5.292143j 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 6.814876h 0.0 7.078625g 7.121118i 0.0 0.0 0.0
zp 53.60 ri 0.000186p 0.131165p 2.415437n 0.0 4.476234j 0.233928p 0.001014p 8.73e-08p 0.0 0.0 0.0
sig0.524 cc 0.000204p 0.143935p 2.779324p 0.0 6.700849p 6.972753p 6.973851p 6.973851p 0.0 0.0 0.0
rc 0.000186p 0.131350p 2.536329m 0.097937m 6.861687h 7.095614h 7.096628f 7.096628f 0.0 0.0 0.0

sb half life from 80eng2; i, xe, cs, ba half lives from 89wal1; cehalf life 90bur1.

1

mass number 140 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 52 te g 53 i g 54 xe d 54 xe g 55 cs d 55 cs g 56 ba d 56 ba g 57 la g 58 ce g 59 pr g 60 nd g

half life 0.894s 0.86 s 0.46s 13.6 s 1.72 s 1.06 m 24.9 s 12.75d 1.678d stable 3.39 m 3.37 d

lambda 7.753e-01 8.060e-01 1.507e+00 5.097e-02 4.030e-01 1.090e-02 2.784e-02 6.292e-07 4.781e-06 0.0 3.408e-03 2.381e-06

z - 1 g 100.0000 100.0000 0.0 90.7300 0.0 100.0000 0.0 100.0000 100.0000 100.0000 -100.0000 -100.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

z - 0 m 0.0 0.0 21.3000 100.0000 0.0350 100.0000 0.0470 100.0000 0.0 0.0 0.0 0.0

u235t xi 0.0 0.139187m 0.0 3.615380h 0.0 2.111201g 0.0 0.255455p 0.005308k 0.0 0.0 0.0

xc 0.0 0.156401m 0.0 3.674205h 0.0 5.753656h 0.0 6.337383e 0.0 6.195148c 0.0 0.0

zp 54.55 ri 0.016913p 0.136759m 0.0 3.506005g 0.0 2.070031g 0.0 0.488395m 0.005216p 1.15e-07p 0.0 0.0

sig0.531 cc 0.000478p 0.099746p 0.0 3.821996p 0.0 5.901893p 0.0 6.213576p 6.214072p 6.214072p 0.0 0.0

rc 0.016913p 0.153673m 0.008664n 3.654096f 0.000438m 5.724565e 0.001957o 6.214916d 6.220132d 6.220132b 0.0 0.0

u235f xi 0.0 0.0 0.0 2.546978i 0.0 3.066361j 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 2.715199h 0.0 5.693244i 0.0 5.997320d 6.056961g 5.951098d 0.0 0.0

zp 54.42 ri 0.000904p 0.111390p 0.0 2.587485h 0.0 3.046936i 0.0 0.235512p 0.000204p 3.57e-08p 0.0 0.0

sig0.537 cc 0.001387p 0.172363p 0.0 4.173259p 0.0 5.798220p 0.0 5.966251p 5.966453p 5.966453p 0.0 0.0

rc 0.000904p 0.112294p 0.003588o 2.692957g 0.000313m 5.740206g 0.002061o 5.977779d 5.977983d 5.977983c 0.0 0.0

u235he xi 0.0 0.0 0.0 0.956037l 0.0 0.0 0.0 0.0 0.032892j 0.0 0.0 0.0

xc 0.0 0.023194n 0.0 0.912336j 0.0 0.0 0.0 4.477369g 0.0 4.697296j 0.0 0.0

zp 54.98 ri 0.000110p 0.023443p 0.0 0.912659i 0.0 2.604019n 0.0 0.955548o 0.033401p 0.000164p 6.56e-08p 2.33e-12p

sig0.634 cc 0.000206p 0.044221p 0.0 1.012003p 0.0 3.591802p 0.0 4.487889p 4.525087p 4.525246p 6.35e-08p 2.26e-12p

rc 0.000110p 0.023553n 0.000564n 0.934593h 9.20e-05m 3.538704m 0.001155o 4.495408g 4.528809g 4.528973g 6.56e-08p 2.33e-12p

u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 5.012646i 0.0 6.067932j 0.0 5.880702c 5.885870g 5.695297d 0.0 0.0

zp 54.04 ri 0.018603p 0.869357p 0.0 4.037384k 0.0 0.887258m 0.0 0.026639p 2.48e-05p 1.53e-09p 0.0 0.0

sig0.557 cc 0.017988p 0.858616p 0.0 4.716020p 0.0 5.732722p 0.0 5.759647p 5.759672p 5.759672p 0.0 0.0

rc 0.018603p 0.887960o 0.054745o 4.897775i 0.001117m 5.786150f 0.002401o 5.815190c 5.815215c 5.815215c 0.0
0.0
u238he xi 0.0 0.0 0.0 2.522756j 0.0 0.0 0.0 0.0 0.004305p 6.18e-07n 0.0 0.0
xc 0.0 0.0 0.0 2.822870h 0.0 0.0 0.0 4.602793e 4.583045g 4.699849h 0.0 0.0
zp 54.37 ri 0.004725p 0.349347p 0.0 2.398525i 0.0 1.730367n 0.0 0.137530p 0.004121p 5.92e-07n 1.84e-11p 0.0
sig0.605 cc 0.004694p 0.351693p 0.0 2.684511p 0.0 4.451305p 0.0 4.591046p 4.592014p 4.592015p 1.90e-11p 0.0
rc 0.004725p 0.354072p 0.017050o 2.736824h 0.000476m 4.467667l 0.001811o 4.607008e 4.611129e 4.611130e 1.84e-11p
0.0
pu239t xi 0.0 0.0 0.0 1.498247h 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.058402n 0.0 1.571439h 0.0 3.715652k 0.0 5.260590f 5.343747i 5.394330d 0.0 0.0
zp 54.90 ri 0.000141p 0.059449p 0.0 1.540490g 0.0 2.276613l 0.0 1.480171m 0.010197p 1.31e-05p 3.77e-10p 0.0
sig0.564 cc 7.21e-05p 0.030425p 0.0 1.602615p 0.0 4.417788p 0.0 5.354138p 5.364242p 5.364254p 3.71e-10p 0.0
rc 0.000141p 0.059590n 0.001499n 1.596056f 0.000168m 3.872836j 0.001573o 5.354580e 5.364778e 5.364791d 3.77e-10p
0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.43e-06n 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.206725e 5.592655l 5.359998c 0.0 0.0
zp 54.89 ri 8.12e-05p 0.031795p 0.0 1.619169n 0.0 2.756068n 0.0 0.916762p 0.009870p 5.54e-06n 3.54e-10p 0.0
sig0.565 cc 8.12e-05p 0.031883p 0.0 1.648704p 0.0 4.405433p 0.0 5.321259p 5.330784p 5.330796p 3.48e-10p 0.0
rc 8.12e-05p 0.031876p 0.000775o 1.648866m 0.000169o 4.405103l 0.001457o 5.323323e 5.333193d 5.333198c 3.54e-10p
0.0
pu241t xi 0.0 0.0 0.0 3.034721i 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 3.270386h 0.0 0.0 0.0 5.763977g 0.0 5.767535e 0.0 0.0
zp 54.45 ri 0.001079p 0.208893p 0.0 3.100127h 0.0 2.290671n 0.0 0.175181p 0.000419p 6.32e-08p 0.0 0.0
sig0.544 cc 0.001088p 0.211622p 0.0 3.342277p 0.0 5.590127p 0.0 5.756341p 5.756753p 5.756753p 0.0 0.0
rc 0.001079p 0.209973p 0.007260o 3.297895g 0.000522m 5.589088k 0.001997o 5.766266g 5.766684f 5.766685e 0.0
0.0
u233t xi 0.0 0.0 0.0 1.454481i 0.0 0.0 0.0 1.727760l 0.024217k 0.0 0.0 0.0
xc 0.0 0.0 0.0 1.456942h 0.0 0.0 0.0 6.105773g 6.008447h 6.534726e 0.0 0.0
zp 54.85 ri 7.08e-05p 0.022598p 0.0 1.571375h 0.0 2.892204n 0.0 1.912106l 0.026351k 8.78e-06p 1.14e-10p 0.0
sig0.555 cc 0.000110p 0.035221p 0.0 2.463186p 0.0 5.304159p 0.0 6.414780p 6.421441p 6.421449p 1.05e-10p 0.0
rc 7.08e-05p 0.022669p 0.000367n 1.592310g 0.000120m 4.484633l 0.001717o 6.398456g 6.424807f 6.424816e 1.14e-10p
0.0
th232f xi 0.0 0.0 0.0 6.012269i 0.0 1.134298o 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 6.758540h 0.0 0.0 0.0 7.878462g 8.030420i 7.669881i 0.0 0.0
zp 53.99 ri 0.019482p 1.037331n 0.0 5.728999h 0.0 1.106464n 0.0 0.016627p 4.85e-06p 8.43e-11p 0.0 0.0
sig0.524 cc 0.020070p 1.088694p 0.0 6.803631p 0.0 7.791047p 0.0 7.807980p 7.807985p 7.807985p 0.0 0.0

rc 0.019482p 1.056812m 0.061967o 6.749812g 0.001525m 7.857802i 0.003416o 7.877844g 7.877849f 7.877849f 0.0
0.0

te half life from 80eng2; i, xe, cs, ba, la half lives from 89wal1.

1

mass number 141 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 53 i g 54 xe d 54 xe g 55 cs d 55 cs g 56 ba d 56 ba g 57 la g 58 ce g 59 pr g 60 nd g 61 pm g
half life 0.45s 0.20 s 1.72 s 1.22s 24.9 s 1.69 s 18.3 m 3.90 h 32.50d stable 2.46 h 20.9 m
lambda 1.540e+00 3.466e+00 4.030e-01 5.682e-01 2.784e-02 4.101e-01 6.313e-04 4.937e-05 2.468e-07 0.0 7.827e-05
5.527e-04
z - 1 g 100.0000 0.0 78.7000 0.0 99.9650 0.0 99.9530 100.0000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 13.8610 100.0000 0.4040 100.0000 0.0950 100.0000 0.0 0.0 0.0 0.0 0.0
u235t xi 0.043539m 0.0 1.313084i 0.0 3.136481f 0.0 1.990058l 0.019775l 0.0 0.0 0.0 0.0
xc 0.037962n 0.0 1.333112h 0.0 4.205514i 0.0 5.795845i 6.189111k 5.809116e 5.992033g 0.0 0.0
zp 54.94 ri 0.040716m 0.0 1.219228g 0.0 2.915332f 0.0 1.659608k 0.018492l 4.99e-06p 4.69e-11p 0.0 0.0
sig0.531 cc 0.016614p 0.0 1.516459p 0.0 4.759454p 0.0 5.838864p 5.847069p 5.847074p 5.847074p 0.0 0.0
rc 0.040716m 0.000801o 1.252072g 0.001748k 4.168713e 0.002543o 5.828905g 5.847397f 5.847402d 5.847402d 0.0
0.0
u235f xi 0.0 0.0 0.618530m 0.0 0.0 0.0 0.0 0.0 2.73e-05n 0.0 0.0 0.0
xc 0.0 0.0 0.787235k 0.0 0.0 0.0 5.544305h 0.0 5.974656g 5.939705f 0.0 0.0
zp 54.81 ri 0.016854p 0.0 0.879958k 0.0 3.491201n 0.0 1.557088o 0.004658p 3.22e-05n 1.78e-11p 0.0 0.0
sig0.537 cc 0.037857p 0.0 2.088267p 0.0 5.213825p 0.0 5.934494p 5.938545p 5.938547p 5.938547p 0.0 0.0
rc 0.016854p 0.000314o 0.893537i 0.002298o 4.386722l 0.002692o 5.944441h 5.949099g 5.949131g 5.949131e 0.0
0.0
u235he xi 0.0 0.0 0.248541l 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.002520n 0.0 0.249631l 0.0 0.0 0.0 0.0 0.0 4.507593i 4.437957j 0.0 0.0
zp 55.36 ri 0.002648p 0.0 0.260527k 0.0 2.195544n 0.0 1.839364n 0.186201p 0.001741p 1.71e-06p 1.53e-10p 0.0
sig0.634 cc 0.007471p 0.0 0.390325p 0.0 2.632807p 0.0 4.321254p 4.481412p 4.483061p 4.483062p 1.46e-10p 0.0
rc 0.002648n 0.000101o 0.262712j 0.000370o 2.458534m 0.001345o 4.298087l 4.484289k 4.486030i 4.486032h 1.53e-10p
0.0
u238f xi 0.0 0.0 0.0 0.0 1.816239l 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 3.120597i 0.0 0.0 0.0 5.513796i 4.578061m 5.357638h 5.321537g 0.0 0.0
zp 54.42 ri 0.257037p 0.0 2.982688j 0.0 1.913030n 0.0 0.225783p 0.000445p 9.05e-08p 0.0 0.0 0.0

sig0.557 cc 0.248910p 0.0 3.087934p 0.0 5.177642p 0.0 5.321988p 5.322451p 5.322451p 5.322451p 0.0 0.0
rc 0.257037p 0.005818o 3.190794i 0.006316m 5.109022k 0.003658o 5.336062i 5.336507h 5.336507g 5.336507f 0.0
0.0
u238he xi 0.0 0.0 1.281979k 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 1.317606i 0.0 0.0 0.0 0.0 0.0 4.382176f 4.376638i 0.0 0.0
zp 54.74 ri 0.080048p 0.0 1.294445i 0.0 2.492721n 0.0 0.519246p 0.007985p 1.10e-05p 1.10e-09p 0.0 0.0
sig0.605 cc 0.089536p 0.0 1.510187p 0.0 3.920742p 0.0 4.365226p 4.373002p 4.373013p 4.373013p 0.0 0.0
rc 0.080048p 0.001690o 1.359132h 0.001990k 3.853368l 0.002734o 4.373537j 4.381521h 4.381532f 4.381532f 0.0
0.0
pu239t xi 0.0 0.0 0.480873j 0.0 2.593922m 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.007224n 0.0 0.494336i 0.0 3.758452l 0.0 5.340177i 5.395484k 5.227526f 0.0 0.0 0.0
zp 55.28 ri 0.007039p 0.0 0.473390h 0.0 2.867138l 0.0 1.827892m 0.072131p 0.000229p 2.53e-08p 0.0 0.0
sig0.564 cc 0.003941p 0.0 0.493505p 0.0 3.238899p 0.0 5.173334p 5.245052p 5.245286p 5.245286p 0.0 0.0
rc 0.007039n 0.000347o 0.479277h 0.000578k 3.346826k 0.001463o 5.174608i 5.246739h 5.246968f 5.246968f 0.0
0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.631745i 0.0 5.130559h 5.022504h 0.0 0.0
zp 55.29 ri 0.003640p 0.0 0.479612p 0.0 2.617527n 0.0 1.977906m 0.068897p 0.000246p 2.61e-08p 0.0 0.0
sig0.565 cc 0.003638p 0.0 0.482094p 0.0 3.097434p 0.0 5.072635p 5.145171p 5.145430p 5.145430p 0.0 0.0
rc 0.003640p 2.73e-05o 0.482504o 0.000391o 3.100254m 0.001302o 5.078005i 5.146903i 5.147149g 5.147149g 0.0
0.0
pu241t xi 0.0 0.0 1.402181i 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 1.441107h 0.0 0.0 0.0 0.0 4.663743h 4.907260f 5.041074i 0.0 0.0
zp 54.82 ri 0.034077p 0.0 1.462857h 0.0 2.755205n 0.0 0.652487p 0.004394p 2.29e-06p 3.00e-11p 0.0 0.0
sig0.544 cc 0.035009p 0.0 1.536387p 0.0 4.323735p 0.0 4.894546p 4.898994p 4.898997p 4.898997p 0.0 0.0
rc 0.034077p 0.001211o 1.490887g 0.002236l 4.247806l 0.003080o 4.901377i 4.905772g 4.905774e 4.905774e 0.0
0.0
u233t xi 0.0 0.0 0.367203k 0.0 0.0 0.0 2.668429l 0.167179n 0.0 0.0 0.0 0.0
xc 0.001767n 0.0 0.343371i 0.0 3.761520j 0.0 0.0 6.985092k 6.472720g 6.436941h 0.0 0.0
zp 55.24 ri 0.001723p 0.0 0.340370i 0.0 3.311503j 0.0 2.664181n 0.163066n 0.000185p 1.07e-08p 0.0 0.0
sig0.555 cc 0.004734p 0.0 0.741407p 0.0 3.942857p 0.0 6.416056p 6.477723p 6.477906p 6.477906p 0.0 0.0
rc 0.001723n 1.23e-05o 0.341738h 0.000364k 3.653485i 0.001281o 6.317229l 6.480295k 6.480480g 6.480480g 0.0
0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 4.075679k 0.0 0.0 0.0 0.0 0.0 7.519650g 7.252168i 0.0 0.0
zp 54.38 ri 0.290935p 0.0 4.123825k 0.0 2.903032n 0.0 0.192152p 0.000181p 1.08e-08p 0.0 0.0 0.0

sig0.524 cc 0.314294p 0.0 4.706344p 0.0 7.311531p 0.0 7.437929p 7.438096p 7.438096p 7.438096p 0.0 0.0
rc 0.290935p 0.005876o 4.358666j 0.009235k 7.269408k 0.005535o 7.463678j 7.463859i 7.463859g 7.463859g 0.0
0.0

i, xe, cs, ba, la, ce half lives from 89wal1.
1

mass number 142 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 52 te g 53 i g 54 xe g 55 cs d 55 cs g 56 ba d 56 ba g 57 la g 58 ce g 59 pr g 60 nd g
half life 0.590s 0.2 s 1.22 s 0.96 s 1.8 s 1.78 s 10.7 m 1.54 h 5.e16y 19.16h stable
lambda 1.175e+00 3.466e+00 5.682e-01 7.220e-01 3.851e-01 3.894e-01 1.080e-03 1.250e-04 4.396e-25 1.005e-05 0.0
z - 1 g 100.0000 100.0000 86.1390 0.0 99.5960 0.0 99.9050 100.0000 100.0000 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 3.0560 100.0000 1.6000 100.0000 0.0 0.0 0.0 0.0
u235t xi 0.0 0.0 0.446687i 0.0 2.466257h 0.0 3.486618k 0.099299n 0.0 0.0 0.0
xc 0.0 0.0 0.452715i 0.0 2.485432i 0.0 5.730118k 5.810875h 5.849167b 0.0 0.0
zp 55.33 ri 2.07e-06p 0.005857p 0.434204i 0.0 2.278287g 0.0 3.014448i 0.096524n 0.000176p 4.63e-09p 0.0
sig0.531 cc 4.04e-07p 0.001145p 0.487634p 0.0 2.780061p 0.0 5.768943p 5.824548p 5.824728p 4.74e-09p 4.74e-09p
rc 2.07e-06p 0.005859p 0.439251i 0.001619n 2.717382g 0.023258j 5.752507f 5.849030e 5.849206b 4.63e-09p 4.63e-09p
u235f xi 0.0 0.0 0.0 0.0 2.535743i 0.0 2.975005i 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.655541i 0.0 5.630546i 5.571022g 5.533122d 0.0 0.0
zp 55.21 ri 1.40e-06p 0.002263p 0.566737p 0.0 2.265621i 0.0 2.660746i 0.029909p 7.12e-05p 1.57e-09p 0.0
sig0.537 cc 1.85e-06p 0.002986p 0.749905p 0.0 3.219091p 0.0 5.486727p 5.518770p 5.518847p 1.70e-09p 1.70e-09p
rc 1.40e-06p 0.002265p 0.568688o 0.001944n 2.833955i 0.020201j 5.512210f 5.542119e 5.542190d 1.57e-09p 1.57e-09p
u235he xi 0.0 0.0 0.090249m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.205532i 0.0 0.0
zp 55.75 ri 5.53e-07p 0.000726p 0.090882p 0.0 1.324355n 0.0 2.267951n 0.500838p 0.012191p 3.04e-05p 6.99e-09p
sig0.634 cc 6.15e-07p 0.000808p 0.101787p 0.0 1.453778p 0.0 3.698080p 4.182964p 4.195040p 3.01e-05p 3.01e-05p
rc 5.53e-07p 0.000726p 0.091508p 0.000537o 1.416031m 0.009318o 3.691955l 4.192793k 4.204984i 3.04e-05p 3.04e-05p
u238f xi 0.0 0.0 0.0 0.0 1.992541l 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.533409g 4.591983e 0.0 0.0
zp 54.81 ri 9.27e-05p 0.041885p 1.527375n 0.0 2.279789n 0.0 0.688601p 0.005263p 3.64e-06p 7.46e-11p 0.0
sig0.557 cc 8.72e-05p 0.039487p 1.470763p 0.0 3.986642p 0.0 4.522853p 4.527804p 4.527807p 6.95e-11p 6.95e-11p
rc 9.27e-05p 0.041978p 1.563534m 0.013414n 3.850420l 0.045143m 4.580507h 4.585770f 4.585773d 7.46e-11p 7.46e-11p
u238he xi 0.0 0.0 0.681487l 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.011841n 0.449850i 0.0 0.0 0.0 0.0 4.063737g 3.994116l 0.0 0.0

```
zp 55.12 ri 2.46e-05p 0.012167p 0.482161i      0.0  2.381470n      0.0  1.108218n 0.046240p 0.000168p 4.59e-08p      0.0
sig0.605 cc 3.07e-05p 0.015187p 0.619166p      0.0  2.966387p      0.0  3.978401p 4.022861p 4.023024p 4.46e-08p 4.46e-08p
         rc 2.46e-05p 0.012192n 0.492663h 0.005931o 2.878073m 0.031555m 4.015111i 4.061351g 4.061520g 4.59e-08p 4.59e-08p
 pu239t  xi      0.0       0.0  0.136920j      0.0  1.129340m      0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0  0.139322i      0.0  2.196997n      0.0  4.537347l 4.922252c 4.933527c      0.0       0.0
zp 55.68 ri 5.67e-07p 0.002473p 0.140976j      0.0  1.396628m      0.0  3.076974l 0.299315p 0.003567p 1.09e-06p 3.46e-11p
sig0.564 cc 5.08e-08p 0.000221p 0.105610p      0.0  1.500031p      0.0  4.638082p 4.914595p 4.918051p 1.06e-06p 1.06e-06p
         rc 5.67e-07p 0.002473p 0.143106i 0.000360n 1.539516l 0.011060m 4.626088j 4.925403c 4.928970b 1.09e-06p 1.09e-06p
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.568904h 4.755254c      0.0       0.0
zp 55.69 ri 4.61e-08p 0.000197p 0.096612p      0.0  1.273081n      0.0  3.100960l 0.272299p 0.003675p 1.16e-06p 4.02e-11p
sig0.565 cc 4.73e-08p 0.000202p 0.099202p      0.0  1.403841p      0.0  4.468752p 4.741431p 4.745062p 1.15e-06p 1.15e-06p
         rc 4.61e-08p 0.000197p 0.096781p 0.000361o 1.369832m 0.008946o 4.478437k 4.750736e 4.754411c 1.16e-06p 1.16e-06p
 pu241t  xi      0.0       0.0  0.560617k      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0  0.569588j      0.0       0.0       0.0       0.0       0.0  4.746982d      0.0       0.0
zp 55.20 ri 4.19e-06p 0.008733p 0.546027k      0.0  2.687411n      0.0  1.444295n 0.036400p 6.14e-05p 2.74e-09p      0.0
sig0.544 cc 1.89e-06p 0.003941p 0.531490p      0.0  3.192625p      0.0  4.681175p 4.717145p 4.717206p 2.71e-09p 2.71e-09p
         rc 4.19e-06p 0.008737p 0.553554j 0.003214o 3.241942m 0.027363m 4.710521h 4.746921f 4.746982d 2.74e-09p 2.74e-09p
 u233t   xi      0.0       0.0  0.087667j      0.0       0.0       0.0       0.0  0.451849l      0.0       0.0       0.0
         xc      0.0  8.65e-05n 0.079562i      0.0       0.0       0.0       0.0  6.555128i 6.674606e      0.0       0.0
zp 55.64 ri 2.41e-08p 8.87e-05p 0.089983j      0.0  1.258474n      0.0  4.849915l 0.463785l 0.003433p 5.29e-07p 1.46e-11p
sig0.555 cc 6.75e-08p 0.000248p 0.173754p      0.0  1.789103p      0.0  6.408640p 6.659874p 6.663243p 5.19e-07p 5.19e-07p
         rc 2.41e-08p 8.88e-05n 0.090060h 0.000137n 1.348307m 0.006547o 6.203488j 6.667273i 6.670706e 5.29e-07p 5.29e-07p
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0  2.273588j      0.0       0.0       0.0       0.0  6.658271h 6.287663i      0.0       0.0
zp 54.76 ri 6.12e-05p 0.042333p 2.249491j      0.0  3.527311n      0.0  0.641653p 0.002501p 6.50e-07p 2.46e-12p      0.0
sig0.524 cc 6.60e-05p 0.045691p 2.463739p      0.0  5.828986p      0.0  6.439120p 6.441526p 6.441526p 2.44e-12p 2.44e-12p
         rc 6.12e-05p 0.042395p 2.286009i 0.021443o 5.825528l 0.076233m 6.537879j 6.540380h 6.540380g 2.46e-12p 2.47e-12p

  te half life from 80eng2; i, xe, cs, ba, la half lives 89wal1.
1

    mass number    143              LA-UR-94-3106 (ENDF-349)                                percent yields
nuclide       54 xe g   55 cs d   55 cs g   56 ba d   56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm m   62 sm g
half life     0.30 s    1.1  s    1.78 s    1.001s    14.3 s    14.1 m    1.38 d    13.57d    stable    265. d     64. s    8.83 m
```

lambda 2.310e+00 6.301e-01 3.894e-01 6.925e-01 4.847e-02 8.193e-04 5.813e-06 5.912e-07 0.0 3.027e-08 1.083e-02 1.308e-03
z - 1 g 100.0000 0.0 96.9440 0.0 98.4000 100.0000 100.0000 100.0000 100.0000 -100.0000 0.0 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 4.6120 100.0000 3.1300 100.0000 0.0 0.0 0.0 0.0 0.0 0.0 100.0000
u235t xi 0.0 0.0 1.452357h 0.0 4.018266j 0.476325p 0.031557k 0.0 0.0 0.0 0.0 0.0
xc 0.053337k 0.0 1.414648i 0.0 5.614448h 5.927869k 5.781370f 5.925628i 5.956443a 0.0 0.0 0.0
zp 55.74 ri 0.052966p 0.0 1.403046h 0.0 4.100693h 0.379505p 0.031337k 4.50e-07p 4.80e-12p 0.0 0.0 0.0
sig0.531 cc 0.066872p 0.0 1.505737p 0.0 5.593167p 5.938271p 5.941411p 5.941412p 5.941412p 0.0 0.0 0.0
rc 0.052966k 0.000279n 1.454672g 0.013249j 5.545339g 5.924844g 5.956181e 5.956181c 5.956181a 0.0 0.0 0.0
u235f xi 0.0 0.0 1.208986k 0.0 3.577000i 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.062990l 0.0 1.228969k 0.0 4.805969i 0.0 5.612810e 0.0 5.737361b 0.0 0.0 0.0
zp 55.61 ri 0.063619p 0.0 1.200897j 0.0 3.610601i 0.864938m 0.001393p 1.61e-07p 1.37e-12p 0.0 0.0 0.0
sig0.537 cc 0.131658p 0.0 1.962359p 0.0 5.486882p 5.704624p 5.706026p 5.706027p 5.706027p 0.0 0.0 0.0
rc 0.063619l 0.0 1.262571i 0.011907k 4.864878g 5.729816g 5.731209e 5.731209d 5.731209b 0.0 0.0 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.816581g 0.0 3.789293k 0.0 0.0 0.0
zp 56.15 ri 0.017581p 0.0 0.565247p 0.0 2.128011n 1.046343n 0.063073p 0.000399p 2.39e-07p 1.29e-11p 0.0 0.0
sig0.634 cc 0.017571p 0.0 0.582008p 0.0 2.700807p 3.747365p 3.810404p 3.810804p 3.810804p 1.29e-11p 0.0 0.0
rc 0.017581p 8.43e-05o 0.582375o 0.004689o 2.705757m 3.752100i 3.815172g 3.815571g 3.815571g 1.29e-11p 0.0 0.0
u238f xi 0.0 0.0 1.909946m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.407941j 0.0 0.0 0.0 0.0 0.0 4.680226e 4.381526k 4.612213c 0.0 0.0 0.0
zp 55.19 ri 0.438927j 0.0 2.390381n 0.0 1.742551m 0.044806p 9.01e-05p 6.36e-09p 0.0 0.0 0.0 0.0
sig0.557 cc 0.532877p 0.0 3.178441p 0.0 4.509053p 4.549534p 4.549616p 4.549616p 4.549616p 0.0 0.0 0.0
rc 0.438927i 0.005657n 2.821551m 0.058205m 4.577163i 4.621969g 4.622059e 4.622059d 4.622059c 0.0 0.0 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.926466f 3.236000k 3.850946l 0.0 0.0 0.0
zp 55.50 ri 0.194106p 0.0 1.782497n 0.0 1.748850n 0.187909p 0.001816p 1.23e-06p 7.00e-11p 0.0 0.0 0.0
sig0.605 cc 0.193058p 0.0 1.960537p 0.0 3.687954p 3.876103p 3.877910p 3.877911p 3.877911p 0.0 0.0 0.0
rc 0.194106p 0.001720o 1.972392m 0.029233o 3.718916k 3.906825h 3.908641f 3.908643f 3.908643f 0.0 0.0 0.0
pu239t xi 0.0 0.0 0.599649n 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.011970j 0.0 0.890963n 0.0 3.406499n 0.0 4.303257f 4.720198m 4.413931b 0.0 0.0 0.0
zp 56.08 ri 0.011775p 0.0 0.679806m 0.0 2.886257m 0.815160p 0.026658p 3.36e-05p 2.91e-09p 0.0 0.0 0.0
sig0.564 cc 0.012295p 0.0 0.599400p 0.0 3.527040p 4.382467p 4.409690p 4.409723p 4.409723p 0.0 0.0 0.0
rc 0.011775j 3.43e-05o 0.691255m 0.004957n 3.571410l 4.386569g 4.413228e 4.413261d 4.413261b 0.0 0.0 0.0

```
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  4.330700b      0.0  4.352705b      0.0       0.0       0.0
zp 56.09 ri 0.011816p       0.0  0.547613p       0.0  2.919623n 0.839724p 0.028858p 3.55e-05p 3.51e-09p       0.0       0.0       0.0
sig0.565 cc 0.011825p       0.0  0.559508p       0.0  3.473442p 4.309441p 4.338321p 4.338356p 4.338356p       0.0       0.0       0.0
        rc 0.011816p 4.18e-05o 0.559110o 0.003597o 3.473385m 4.313109f 4.341966b 4.342002b 4.342002a       0.0       0.0       0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  4.295288h 4.455833h 4.581755d       0.0       0.0       0.0
zp 55.60 ri 0.105118p       0.0  1.606878n       0.0  2.672227m 0.201735p 0.001120p 1.91e-07p 1.81e-12p       0.0       0.0       0.0
sig0.544 cc 0.109115p       0.0  1.773971p       0.0  4.357355p 4.554197p 4.555360p 4.555360p 4.555360p       0.0       0.0       0.0
        rc 0.105118p 0.000614o 1.709397m 0.020878o 4.375152k 4.576887h 4.578008f 4.578008e 4.578008c       0.0       0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc 0.004287j       0.0       0.0       0.0  3.962497m       0.0  5.916603h 5.923345i 5.966346c       0.0       0.0       0.0
zp 56.04 ri 0.004481p       0.0  0.404847p       0.0  3.669224m 1.861354n 0.029347p 2.13e-05p 1.53e-09p       0.0       0.0       0.0
sig0.555 cc 0.018989p       0.0  0.763321p       0.0  5.029747p 5.928196p 5.956462p 5.956482p 5.956482p       0.0       0.0       0.0
        rc 0.004481j 3.17e-05o 0.409224p 0.003222o 4.075122l 5.936476h 5.965824f 5.965845e 5.965845c       0.0       0.0       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc 0.727610o       0.0       0.0       0.0       0.0  7.077237k 6.667438g 6.889063i 6.527063g       0.0       0.0       0.0
zp 55.14 ri 0.702973n       0.0  4.071382n       0.0  1.830323n 0.029667p 2.39e-05p 4.14e-10p       0.0       0.0       0.0       0.0
sig0.524 cc 0.839333p       0.0  4.781714p       0.0  6.503846p 6.532188p 6.532212p 6.532212p 6.532212p       0.0       0.0       0.0
        rc 0.702973n 0.010808o 4.763680m 0.099704m 6.617488k 6.647156i 6.647179g 6.647179f 6.647179f       0.0       0.0       0.0

  xe, cs, ba, la, ce, pr half lives from 89wal1.
1

    mass number    144              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide       54 xe g   55 cs g   56 ba d   56 ba g   57 la g   58 ce g   59 pr m   59 pr g   60 nd g   61 pm g   62 sm g
half life      1.2 s     1.01 s     0.59 s     11.4 s     40.7 s     284.6d      7.2 m     17.28m     15.32l     363. d     stable
lambda       5.776e-01 6.863e-01 1.175e+00 6.080e-02 1.703e-02 2.819e-08 1.605e-03 6.685e-04 1.052e-23 2.210e-08       0.0
 z - 1 g    100.0000   95.3880       0.0   96.8700  100.0000  100.0000     0.5000   99.5000  100.0000 -100.0000       0.0
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0    0.0500       0.0       0.0
 z - 0 m       0.0       0.0   13.5900  100.0000       0.0       0.0       0.0   99.9500       0.0       0.0       0.0
 u235t   xi      0.0  0.403074j       0.0  4.005193h 1.073597i       0.0       0.0       0.0  9.57e-09k       0.0       0.0
        xc 0.006048k 0.440723k       0.0  4.374911h 4.628378k 5.356641d       0.0       0.0  5.499964a       0.0       0.0
zp 56.14 ri 0.006051p 0.417711i       0.0  3.975062g 1.069820i 0.034548p 1.28e-05p 1.43e-06p 9.57e-09k       0.0       0.0
sig0.531 cc 0.006743p 0.377608p       0.0  4.655583p 5.456075p 5.491061p 0.027468p 5.491062p 5.491075p       0.0       0.0
        rc 0.006051k 0.423483i 0.010286k 4.395576f 5.465396e 5.499944c 0.027513c 5.499944b 5.499958a       0.0       0.0
```

u235f xi 0.0 0.379550j 0.0 3.006432j 1.847807j 0.0 0.0 0.0 1.28e-08n 0.0 0.0
xc 0.0 0.379550j 0.0 3.385982j 0.0 5.029539e 0.0 0.0 5.268694c 0.0 0.0
zp 56.01 ri 0.0 0.380414j 0.0 3.012590i 1.852016n 0.016799p 4.86e-06p 4.81e-07p 1.29e-08n 0.0 0.0
sig0.537 cc 0.015950p 0.560715p 0.0 4.662922p 5.226437p 5.243534p 0.026223p 5.243526p 5.243539p 0.0 0.0
rc 0.0 0.380414j 0.018776o 3.399873h 5.251889l 5.268689e 0.026348e 5.268681d 5.268694c 0.0 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.172717g 0.0 0.0 3.109113k 0.0 0.0
zp 56.56 ri 0.001828p 0.148058p 0.0 1.316714n 1.486973n 0.216282p 0.003259p 0.000208p 5.52e-06p 8.02e-10p 0.0
sig0.634 cc 0.001826p 0.149677p 0.0 1.461816p 2.949356p 3.165052p 0.019117p 3.168544p 3.168560p 8.10e-10p 0.0
rc 0.001828p 0.149802p 0.003915o 1.465742m 2.952715k 3.168997g 0.019104m 3.172455g 3.172470g 8.02e-10p 0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.127722l 0.0 0.0 0.0 4.954642j 4.496778e 0.0 0.0 4.568718d 0.0 0.0
zp 55.59 ri 0.122653l 1.742550n 0.0 2.456573m 0.211318p 0.001431p 3.03e-07p 3.00e-08p 5.10e-12p 0.0 0.0
sig0.557 cc 0.125376p 1.789417p 0.0 4.267404p 4.471266p 4.472734p 0.022364p 4.472723p 4.472734p 0.0 0.0
rc 0.122653k 1.859546m 0.077276o 4.335191k 4.546509g 4.547940e 0.022740e 4.547929d 4.547940c 0.0 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.725660g 0.0 0.0 3.619900l 0.0 0.0
zp 55.91 ri 0.037303p 0.898383p 0.0 2.176171n 0.588546p 0.015651p 3.11e-05p 1.98e-06p 5.18e-09p 0.0 0.0
sig0.605 cc 0.037169p 0.930612p 0.0 3.079087p 3.669616p 3.685211p 0.018457p 3.685235p 3.685244p 0.0 0.0
rc 0.037303p 0.933966o 0.037677o 3.118580m 3.707126i 3.722777g 0.018645g 3.722801g 3.722810g 0.0 0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.001084m 0.231024n 0.0 0.0 4.075936j 3.731911d 0.0 0.0 3.740063a 0.0 0.0
zp 56.49 ri 0.000743p 0.157667n 0.0 2.156517n 1.309264n 0.116409p 0.000329p 3.66e-05p 1.37e-07p 1.12e-12p 0.0
sig0.564 cc 0.000952p 0.121910p 0.0 2.205690p 3.577536p 3.736574p 0.019163p 3.737098p 3.737108p 1.63e-12p 0.0
rc 0.000743n 0.158376n 0.003809o 2.313746n 3.623010j 3.739419c 0.019026g 3.739775b 3.739785a 1.12e-12p 0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.68e-08n 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.666505d 0.0 0.0 3.672940c 0.0 0.0
zp 56.50 ri 0.000907p 0.114062p 0.0 2.044728n 1.349605n 0.164326p 0.000516p 5.10e-05p 5.68e-08n 1.96e-12p 0.0
sig0.565 cc 0.000907p 0.114950p 0.0 2.157293p 3.505164p 3.669988p 0.018865p 3.670545p 3.670554p 1.96e-12p 0.0
rc 0.000907p 0.114927p 0.002384o 2.158442m 3.508047j 3.672373d 0.018878g 3.672930c 3.672940c 1.96e-12p 0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.168466d 0.0 0.0 4.281446d 0.0 0.0
zp 56.00 ri 0.013321p 0.654259p 0.0 2.891486n 0.657604p 0.012821p 6.98e-06p 7.76e-07p 2.68e-10p 0.0 0.0
sig0.544 cc 0.013370p 0.669410p 0.0 3.550072p 4.195054p 4.207922p 0.021047p 4.207919p 4.207930p 0.0 0.0
rc 0.013321p 0.666966o 0.019377o 3.556953l 4.214557f 4.227378d 0.021144d 4.227375d 4.227386c 0.0 0.0
u233t xi 0.0 0.0 0.0 0.0 1.344416k 0.0 0.0 0.0 0.0 0.0 0.0

```
        xc 0.000708p      0.0       0.0  3.372834i 4.591306i 4.665286f      0.0       0.0  4.731226d      0.0       0.0
zp 56.43 ri 0.000688p 0.102276p      0.0  3.177551i 1.285005k 0.160275p 0.000248p 2.75e-05p 9.13e-08p      0.0       0.0
sig0.555 cc 0.001598p 0.145328p      0.0  3.274125p 4.557218p 4.721164p 0.023861p 4.721436p 4.721448p      0.0       0.0
        rc 0.000688p 0.102933p 0.003317o 3.280578h 4.565583h 4.725858f 0.023877f 4.726122e 4.726134c      0.0       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  7.974604h      0.0       0.0  7.764487i      0.0       0.0
zp 55.53 ri 0.234354p 2.962114n      0.0  4.488876m 0.203219p 0.000768p 3.98e-08p 3.94e-09p      0.0       0.0       0.0
sig0.524 cc 0.231880p 3.152024p      0.0  7.577152p 7.779219p 7.779979p 0.038900p 7.779959p 7.779979p      0.0       0.0
        rc 0.234354p 3.185660m 0.137278o 7.712103k 7.915322j 7.916090h 0.039580h 7.916070h 7.916090g      0.0       0.0

  xe, cs, ba, la, ce, pr, half lives from 89wal1.
1

    mass number    145              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide      54 xe g   55 cs g   56 ba d   56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g
half life      0.9 s     0.59 s    0.340s     4.0 s     24. s    3.00 m    5.98 h    stable    17.7 y    340. d
lambda      7.702e-01 1.175e+00 2.039e+00 1.733e-01 2.888e-02 3.851e-03 3.220e-05       0.0 1.242e-09 2.360e-08
 z - 1 g    100.0000  100.0000       0.0   86.4100  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0   13.3000  100.0000       0.0       0.0       0.0       0.0       0.0       0.0
 u235t   xi      0.0  0.083524j      0.0  1.972831l 2.162651j 0.094370p      0.0       0.0       0.0       0.0
        xc 7.90e-05m 0.087741m      0.0  2.149167i 3.617218k      0.0       0.0  3.933647a      0.0       0.0
zp 56.54 ri 7.16e-05p 0.075624j      0.0  1.866341i 1.915103j 0.085444p 0.000333p 5.55e-08p      0.0       0.0
sig0.531 cc 0.000290p 0.079520p      0.0  2.194449p 3.763833p 3.931757p 3.932109p 3.932109p      0.0       0.0
        rc 7.16e-05n 0.075695j 0.001018l 1.932767i 3.847870h 3.933313i 3.933646c 3.933647a      0.0       0.0
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  3.756849i      0.0  3.775731b      0.0       0.0
zp 56.41 ri 0.000851p 0.137308p      0.0  2.319821n 1.242507n 0.091847p 0.000145p 1.83e-08p      0.0       0.0
sig0.537 cc 0.000852p 0.138385p      0.0  2.443862p 3.681531p 3.773529p 3.773673p 3.773673p      0.0       0.0
        rc 0.000851p 0.138159p 0.002027o 2.441231m 3.683738i 3.775585f 3.775731d 3.775731b      0.0       0.0
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.709183i      0.0       0.0       0.0
zp 56.96 ri 0.000141p 0.028665p      0.0  0.605595p 1.543330n 0.514493p 0.020436p 8.34e-05p 3.18e-08p 1.08e-12p
sig0.634 cc 0.000141p 0.028803p      0.0  0.630589p 2.173845p 2.688310p 2.708745p 2.708828p 3.18e-08p 1.08e-12p
        rc 0.000141p 0.028805p 0.000441o 0.630926o 2.174257m 2.688749k 2.709185i 2.709269i 3.18e-08p 1.08e-12p
 u238f   xi      0.0  0.533083l      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0  3.660819k 4.014682i 3.808642c      0.0       0.0
zp 55.98 ri 0.013014p 0.555613p      0.0  2.580316n 0.708872p 0.012735p 1.14e-05p 5.34e-10p      0.0       0.0
sig0.557 cc 0.016064p 0.701885p      0.0  3.150944p 3.762564p 3.775164p 3.775174p 3.775174p      0.0       0.0
        rc 0.013014p 0.568627p 0.015699o 3.087365m 3.796237i 3.808971g 3.808983e 3.808983c      0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.008301h 2.942673l      0.0       0.0
zp 56.31 ri 0.004283p 0.272944p      0.0  1.620907n 1.062050n 0.073082p 0.000435p 1.94e-07p 6.15e-12p      0.0
sig0.605 cc 0.004278p 0.276890p      0.0  1.860463p 2.922645p 2.995638p 2.996072p 2.996072p 6.21e-12p      0.0
        rc 0.004283p 0.277227p 0.007785o 1.868243m 2.930294k 3.003376j 3.003811h 3.003811h 6.15e-12p      0.0
 pu239t  xi      0.0  0.050979p      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.986310a      0.0       0.0
zp 56.89 ri 5.67e-05p 0.027973p      0.0  0.802924n 1.696854n 0.456244p 0.005777p 5.93e-06p 2.00e-10p      0.0
sig0.564 cc 3.91e-05p 0.019349p      0.0  0.824477p 2.524527p 2.981415p 2.987200p 2.987206p 2.00e-10p      0.0
        rc 5.67e-05p 0.028030p 0.000283o 0.827428o 2.524282n 2.980526e 2.986304c 2.986310a 2.00e-10p      0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.004180b      0.0       0.0
zp 56.91 ri 3.58e-05p 0.017510p      0.0  0.799224p 1.684049n 0.499093p 0.006469p 7.54e-06p 2.67e-10p      0.0
sig0.565 cc 3.58e-05p 0.017545p      0.0  0.814425p 2.498444p 2.997527p 3.003996p 3.004004p 2.67e-10p      0.0
        rc 3.58e-05p 0.017546p 0.000177o 0.814562o 2.498611m 2.997704f 3.004173d 3.004180b 2.67e-10p      0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.118471h 3.264638d      0.0       0.0
zp 56.40 ri 0.000855p 0.141727p      0.0  1.844334n 1.217852n 0.074309p 0.000158p 2.11e-08p      0.0       0.0
sig0.544 cc 0.000871p 0.145174p      0.0  2.004347p 3.183685p 3.259346p 3.259506p 3.259506p      0.0       0.0
        rc 0.000855p 0.142582p 0.003053o 1.970592m 3.188444j 3.262754h 3.262911f 3.262911d      0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.444062d      0.0       0.0
zp 56.83 ri 5.94e-05p 0.024346p      0.0  1.167189n 1.770503n 0.481334p 0.003718p 3.13e-06p 5.19e-11p      0.0
sig0.555 cc 5.94e-05p 0.024405p      0.0  1.188318p 2.958778p 3.440115p 3.443832p 3.443835p 5.19e-11p      0.0
        rc 5.94e-05p 0.024406p 0.000227o 1.188505m 2.959008l 3.440341h 3.444059f 3.444062d 5.19e-11p      0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.097987i 5.360021g      0.0       0.0
zp 55.92 ri 0.019770p 0.990366p      0.0  3.786212n 0.645266p 0.007176p 1.90e-06p 2.33e-11p      0.0       0.0
sig0.524 cc 0.019941p 1.018857p      0.0  4.679706p 5.303089p 5.310327p 5.310329p 5.310329p      0.0       0.0
        rc 0.019770p 1.010136o 0.027150o 4.686220l 5.331486k 5.338661j 5.338663h 5.338663f      0.0       0.0

  xe, cs, ba, la, ce, pr half lives from 89wal1; pm, sm half lives 90bur1.
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    mass number    146              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       54 xe g   55 cs g   56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g
half life     0.563s    0.322s    2.20 s     6.3 s    13.5 m    24.2 m    stable    5.53 y    1.0e8y
lambda       1.231e+00 2.153e+00 3.151e-01 1.100e-01 8.557e-04 4.774e-04       0.0 3.975e-09 2.198e-16
 z - 1 g    100.0000  100.0000   86.7000  100.0000  100.0000  100.0000  100.0000  -65.0000   35.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u235t   xi      0.0  0.007637k 0.812511k 1.557900l 0.585666l       0.0       0.0  4.50e-10l      0.0
         xc 1.06e-05n 0.009049m 0.938017i 2.396767i 2.937519h       0.0  2.997119a      0.0       0.0
zp 56.94 ri 1.06e-05p 0.007641k 0.913892h 1.489987j 0.582973k 0.003624p 3.19e-06p 4.50e-10p       0.0
sig0.531 cc 9.68e-06p 0.007351p 0.910021p 2.343372p 2.993524p 2.997150p 2.997153p 2.19e-11p 7.67e-12p
         rc 1.06e-05n 0.007652j 0.920526g 2.410513h 2.993486e 2.997110c 2.997113a 4.50e-10p 1.58e-10o
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.921372b      0.0       0.0
zp 56.82 ri 3.40e-05p 0.015204p 1.151058n 1.328474n 0.426803p 0.001826p 1.22e-06p 7.23e-12p       0.0
sig0.537 cc 3.40e-05p 0.015238p 1.164268p 2.492742p 2.919545p 2.921371p 2.921372p 7.23e-12p 2.53e-12p
         rc 3.40e-05p 0.015238p 1.164269m 2.492742l 2.919545f 2.921371d 2.921372b 7.23e-12p 2.53e-12p
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.198982k      0.0       0.0
zp 57.38 ri 6.07e-06p 0.003307p 0.178054p 1.083193n 0.849878p 0.084079p 0.000906p 9.42e-07p 8.85e-11p
sig0.634 cc 6.07e-06p 0.003314p 0.180927p 1.264120p 2.113999p 2.198078p 2.198985p 9.42e-07p 3.30e-07p
         rc 6.07e-06p 0.003314p 0.180927p 1.264120m 2.113999n 2.198078m 2.198985k 9.42e-07p 3.30e-07p
 u238f   xi      0.0  0.117193m      0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  3.640410h      0.0  3.445366c      0.0       0.0
zp 56.38 ri 0.000935p 0.117103p 1.984612n 1.271410n 0.087053p 0.000215p 3.90e-08p       0.0       0.0
sig0.557 cc 0.001407p 0.177639p 2.149663p 3.355225p 3.437488p 3.437701p 3.437701p       0.0       0.0
         rc 0.000935p 0.118038p 2.086951m 3.358360j 3.445413g 3.445628e 3.445628c       0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  2.408382j      0.0  2.521040k      0.0       0.0
zp 56.70 ri 0.000344p 0.058187p 0.851555p 1.312342n 0.218679p 0.003567p 4.44e-06p 3.99e-10p       0.0
sig0.605 cc 0.000345p 0.058617p 0.903617p 2.212140p 2.433386p 2.436878p 2.436882p 3.90e-10p 1.37e-10p
         rc 0.000344p 0.058531p 0.902302o 2.214643l 2.433322i 2.436889i 2.436894i 3.99e-10p 1.40e-10p
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0  0.003661n      0.0       0.0  2.424455e      0.0  2.458115a      0.0       0.0
zp 57.30 ri 1.53e-06p 0.002127p 0.237588p 1.161360n 1.037799n 0.019472p 8.11e-05p 7.89e-09p       0.0
sig0.564 cc 1.07e-06p 0.001489p 0.237812p 1.392705p 2.424663p 2.458092p 2.458231p 1.35e-08p 4.74e-09p
        rc 1.53e-06p 0.002129p 0.239434p 1.400793o 2.438593e 2.458065c 2.458146a 7.89e-09p 2.76e-09p
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.460050b      0.0       0.0
zp 57.32 ri 9.46e-07p 0.001328p 0.224485p 1.122492n 1.075466m 0.036289p 0.000167p 1.74e-08p       0.0
sig0.565 cc 9.46e-07p 0.001329p 0.225638p 1.348133p 2.423595p 2.459884p 2.460051p 1.74e-08p 6.07e-09p
        rc 9.46e-07p 0.001329p 0.225637p 1.348129m 2.423595h 2.459884d 2.460051b 1.74e-08p 6.07e-09p
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.766456c      0.0       0.0
zp 56.79 ri 4.07e-05p 0.022914p 0.904741p 1.546667n 0.293069p 0.002077p 9.43e-07p 1.09e-11p       0.0
sig0.544 cc 4.07e-05p 0.022955p 0.924642p 2.471309p 2.764378p 2.766455p 2.766456p 1.09e-11p 3.83e-12p
        rc 4.07e-05p 0.022955p 0.924643o 2.471309l 2.764378g 2.766455e 2.766456c 1.09e-11p 3.83e-12p
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.10e-08l      0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.585897c      0.0       0.0
zp 57.23 ri 1.66e-06p 0.001704p 0.352028p 1.090309n 1.122088m 0.019915p 7.80e-05p 1.10e-08p       0.0
sig0.555 cc 1.66e-06p 0.001706p 0.353507p 1.443815p 2.565904p 2.585819p 2.585897p 3.34e-09p 1.17e-09p
        rc 1.66e-06p 0.001706p 0.353507p 1.443816m 2.565904g 2.585819e 2.585897c 1.10e-08p 3.84e-09p
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  3.505516l 4.567662h      0.0       0.0
zp 56.31 ri 0.001338p 0.202798p 2.756623n 1.567210o 0.053467p 4.61e-05p 3.25e-09p       0.0       0.0
sig0.524 cc 0.001478p 0.225577p 3.241750p 4.492345p 4.551429p 4.551479p 4.551479p       0.0       0.0
        rc 0.001338p 0.204135p 2.933608l 4.500818l 4.554285k 4.554331i 4.554331g       0.0       0.0

  xe half life from 80eng2; cs, ba, la, ce, pr half lives 89wal1.
1

    mass number    147              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g
half life     0.892s    4.02 s     56. s    13.4 m    10.98d    2.623y    11.03l    24.3 d    38.0 h
lambda      7.771e-01 1.724e-01 1.238e-02 8.621e-04 7.306e-07 8.380e-09 2.051e-19 3.301e-07 5.067e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u235t   xi 0.369741n 0.864366l 0.920494m 0.404119o      0.0       0.0       0.0       0.0       0.0
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xc 0.236958m 0.920494j 2.162038j 0.0 2.254295e 2.365544h 2.240959c 0.0 0.0
zp 57.35 ri 0.245895l 0.643310k 0.998042k 0.359571p 6.72e-05p 2.49e-09p 0.0 0.0 0.0
sig0.531 cc 0.151363p 1.179453p 2.218905p 2.246814p 2.246885p 2.246885p 2.246885p 0.0 0.0
rc 0.245895l 0.889205i 1.887247i 2.246818m 2.246885e 2.246885d 2.246885c 0.0 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.156070d 0.0 2.126728c 0.0 0.0
zp 57.22 ri 0.242743p 1.115446n 0.765375n 0.015295p 2.81e-05p 8.62e-10p 0.0 0.0 0.0
sig0.537 cc 0.241259p 1.349888p 2.123657p 2.138859p 2.138887p 2.138887p 2.138887p 0.0 0.0
rc 0.242743p 1.358189m 2.123564h 2.138859f 2.138887d 2.138887d 2.138887c 0.0 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.623639g 0.0 1.619288k 0.0 0.0
zp 57.80 ri 0.032434p 0.483482p 0.888613o 0.212884p 0.005929p 1.66e-05p 4.31e-09p 0.0 0.0
sig0.634 cc 0.032431p 0.515873p 1.404524p 1.617413p 1.623342p 1.623358p 1.623358p 0.0 0.0
rc 0.032434p 0.515916p 1.404529m 1.617413i 1.623342g 1.623358g 1.623358g 0.0 0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.643672e 0.0 2.570683d 0.0 0.0
zp 56.78 ri 0.844939p 1.480922n 0.264374p 0.002483p 1.43e-06p 2.85e-11p 0.0 0.0 0.0
sig0.557 cc 0.838895p 2.319631p 2.590253p 2.592718p 2.592719p 2.592719p 2.592719p 0.0 0.0
rc 0.844939o 2.325861l 2.590235i 2.592718g 2.592719e 2.592719d 2.592719c 0.0 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 6.05e-08n 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.092667f 0.0 2.041417k 0.0 0.0
zp 57.11 ri 0.323745p 1.227390n 0.517745p 0.022181p 7.94e-05p 6.05e-08p 0.0 0.0 0.0
sig0.605 cc 0.323620p 1.550536p 2.068889p 2.091061p 2.091141p 2.091141p 2.091141p 0.0 0.0
rc 0.323745p 1.551135m 2.068880j 2.091061h 2.091141f 2.091141f 2.091141f 0.0 0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.027291g 2.076105j 2.000896d 0.0 0.0
zp 57.71 ri 0.035275p 0.610582p 1.216387m 0.139149p 0.001587p 6.49e-07p 1.83e-11p 0.0 0.0
sig0.564 cc 0.035097p 0.642586p 1.861455p 2.001402p 2.002981p 2.002981p 2.002981p 0.0 0.0
rc 0.035275p 0.645857o 1.862245l 2.001394i 2.002981g 2.002981f 2.002981d 0.0 0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.980066e 0.0 1.991932c 0.0 0.0
zp 57.72 ri 0.034192p 0.575523p 1.238844m 0.140361p 0.001718p 7.04e-07p 2.26e-11p 0.0 0.0
sig0.565 cc 0.034285p 0.611367p 1.848865p 1.988916p 1.990639p 1.990639p 1.990639p 0.0 0.0
rc 0.034192p 0.609715o 1.848560k 1.988921g 1.990639e 1.990639d 1.990639c 0.0 0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.344921h 2.356753h 2.278561e 0.0 0.0

zp 57.17 ri 0.285384p 1.327459n 0.656892o 0.015192p 2.33e-05p 9.40e-10p 0.0 0.0 0.0
sig0.544 cc 0.281577p 1.591331p 2.269937p 2.284926p 2.284949p 2.284949p 2.284949p 0.0 0.0
rc 0.285384p 1.612842m 2.269734k 2.284926i 2.284949g 2.284949f 2.284949e 0.0 0.0
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.766283h 1.687864i 1.729068i 0.0 0.0
zp 57.63 ri 0.043185p 0.534080p 1.081526m 0.078857p 0.000752p 1.50e-07p 2.94e-12p 0.0 0.0
sig0.555 cc 0.042945p 0.574057p 1.659234p 1.737653p 1.738401p 1.738401p 1.738401p 0.0 0.0
rc 0.043185p 0.577265o 1.658792l 1.737649j 1.738401h 1.738401g 1.738401g 0.0 0.0
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.963669h 0.0 3.008722i 0.0 0.0
zp 56.71 ri 1.134961n 1.624020n 0.218833p 0.000848p 1.62e-07p 0.0 0.0 0.0 0.0
sig0.524 cc 1.135847p 2.760247p 2.977813p 2.978661p 2.978662p 2.978662p 2.978662p 0.0 0.0
rc 1.134961m 2.758981l 2.977814k 2.978661j 2.978662h 2.978662h 2.978662g 0.0 0.0

cs, ba, la, ce, pr, nd, pm half lives from 89wal1.
1

mass number 148 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 54 xe g 55 cs g 56 ba g 57 la d 57 la g 58 ce d 58 ce g 59 pr g 60 nd g 61 pm m 61 pm g 62 sm g
half life 0.15 s 0.64 s 0.695s 1.1 s 2.41 s 56. s 2.27 m stable 41.3 d 5.37 d 8.e15y
lambda 0.0 4.621e+00 1.083e+00 9.973e-01 6.301e-01 2.876e-01 1.238e-02 5.089e-03 0.0 1.943e-07 1.494e-06 2.747e-24
z - 1 g 100.0000 100.0000 100.0000 0.0 100.0000 0.0 100.0000 100.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 95.4000
z - 0 m 0.0 0.0 0.0 0.5750 100.0000 1.0600 100.0000 0.0 0.0 0.0 4.6000 0.0
u235t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 8.39e-09k 4.61e-09n 0.0
xc 0.0 0.0 0.022992o 0.0 0.0 0.0 1.629861k 0.0 1.673660a 0.0 0.0 0.0
zp 57.75 ri 1.10e-09p 1.31e-05p 0.022186p 0.0 0.336309p 0.0 1.235569m 0.077727p 0.000993p 8.10e-09p 4.45e-09p 1.64e-12p
sig0.531 cc 9.60e-10p 1.14e-05p 0.019323p 0.0 0.334704p 0.0 1.591957p 1.671776p 1.672796p 7.88e-08p 3.74e-08p 1.13e-07p
rc 1.10e-09p 1.31e-05p 0.022199o 5.94e-06o 0.358514p 0.000857o 1.594940j 1.672666c 1.673660a 8.10e-09p 4.82e-09p 1.26e-08p
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.683442b 0.0 0.0 0.0

zp 57.63 ri 6.21e-09p 4.06e-05p 0.038619p 0.0 0.422298p 0.0 1.164697m 0.055890p 0.000518p 3.41e-08p 1.26e-08p 0.0
sig0.537 cc 6.21e-09p 4.06e-05p 0.038645p 0.0 0.460790p 0.0 1.625675p 1.681544p 1.682062p 3.41e-08p 1.42e-08p 4.67e-08p
rc 6.21e-09p 4.06e-05p 0.038660p 1.48e-05o 0.460972p 0.001364o 1.627033j 1.682923d 1.683442b 3.41e-08p 1.42e-08p 4.67e-08p
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 9.43e-06k 1.24e-06l 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.197987k 0.0 0.0 0.0
zp 58.22 ri 2.62e-09p 1.06e-05p 0.003972p 0.0 0.149265p 0.0 0.649974p 0.368598p 0.025848p 9.42e-06p 1.24e-06p 1.37e-07p
sig0.634 cc 2.62e-09p 1.06e-05p 0.003981p 0.0 0.153209p 0.0 0.803099p 1.171644p 1.197485p 0.000158p 4.20e-05p 0.000193p
rc 2.62e-09p 1.06e-05p 0.003982p 1.71e-06o 0.153249p 0.000309o 0.803532o 1.172130m 1.197979k 9.42e-06p 1.67e-06p 1.08e-05p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.765217j 0.0 2.112494c 0.0 0.0 0.0
zp 57.17 ri 1.82e-06p 0.002455p 0.249052p 0.0 1.089866p 0.0 0.745756o 0.017502p 3.59e-05p 1.66e-09p 6.13e-10p 0.0
sig0.557 cc 1.97e-06p 0.002666p 0.272917p 0.0 1.455638p 0.0 2.088457p 2.104636p 2.104669p 1.53e-09p 6.37e-10p 2.10e-09p
rc 1.82e-06p 0.002457p 0.251509p 0.000272o 1.341647o 0.007544o 2.094947g 2.112449e 2.112485c 1.66e-09p 6.89e-10p 2.27e-09o
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.730346l 0.0 0.0 0.0
zp 57.52 ri 5.30e-07p 0.000740p 0.079521p 0.0 0.764969p 0.0 0.791808p 0.088784p 0.000896p 5.73e-07p 1.26e-07p 3.89e-11p
sig0.605 cc 5.30e-07p 0.000740p 0.080228p 0.0 0.844900p 0.0 1.637077p 1.725823p 1.726719p 5.72e-07p 1.52e-07p 6.98e-07p
rc 5.30e-07p 0.000741p 0.080262p 7.84e-05o 0.845309o 0.003711o 1.640829n 1.729612m 1.730508l 5.73e-07p 1.52e-07p 6.98e-07p
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.30e-06j 1.20e-06m 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.859497o 0.0 1.642120b 0.0 0.0 0.0
zp 58.12 ri 9.09e-11p 1.51e-06p 0.002643p 0.0 0.117055p 0.0 0.890372o 0.617924o 0.013730p 4.50e-06p 1.26e-06p 1.90e-09p
sig0.564 cc 1.33e-10p 2.22e-06p 0.003885p 0.0 0.175842p 0.0 1.323055p 1.628616p 1.641716p 1.04e-05p 4.95e-06p 1.49e-05p

rc 9.09e-11p 1.51e-06p 0.002645p 1.25e-06o 0.119701p 0.000387o 1.010460m 1.628383f 1.642114b 4.50e-06p 1.46e-06p 5.76e-06p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.661454a 0.0 0.0 0.0
zp 58.12 ri 1.47e-10p 2.32e-06p 0.004027p 0.0 0.172180p 0.0 1.166580n 0.304758p 0.013473p 1.12e-05p 4.13e-06p 1.96e-09p
sig0.565 cc 1.47e-10p 2.32e-06p 0.004029p 0.0 0.176188p 0.0 1.342758p 1.647549p 1.661021p 1.12e-05p 4.65e-06p 1.53e-05p
rc 1.47e-10p 2.32e-06p 0.004029p 1.39e-06o 0.176211p 0.000416o 1.343207m 1.647965f 1.661438a 1.12e-05p 4.65e-06p 1.53e-05p
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.932103c 0.0 0.0 0.0
zp 57.58 ri 1.62e-08p 0.000116p 0.050184p 0.0 0.724807p 0.0 1.077030m 0.076858p 0.000427p 4.60e-08p 1.97e-08p 0.0
sig0.544 cc 1.62e-08p 0.000116p 0.050273p 0.0 0.774702p 0.0 1.852178p 1.928995p 1.929422p 4.60e-08p 2.18e-08p 6.57e-08p
rc 1.62e-08p 0.000116p 0.050300p 3.04e-05o 0.775137o 0.002651o 1.854818j 1.931676e 1.932103c 4.60e-08p 2.19e-08p 6.58e-08p
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 9.82e-07i 3.10e-07l 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.301585d 0.0 0.0 0.0
zp 58.03 ri 1.64e-10p 2.06e-06p 0.004721p 0.0 0.131826p 0.0 1.007344m 0.151060p 0.006306p 9.82e-07p 3.10e-07p 3.06e-10p
sig0.555 cc 1.64e-10p 2.06e-06p 0.004723p 0.0 0.136532p 0.0 1.143892p 1.294952p 1.301257p 2.27e-06p 1.08e-06p 3.24e-06p
rc 1.64e-10p 2.06e-06p 0.004723p 1.46e-06o 0.136550p 0.000324o 1.144219l 1.295278f 1.301584d 9.82e-07p 3.55e-07p 1.29e-06p
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.874820k 0.0 2.006913g 0.0 0.0 0.0
zp 57.10 ri 8.91e-07p 0.001988p 0.312890p 0.0 1.121087n 0.0 0.557112o 0.006588p 5.73e-06p 5.30e-11p 1.96e-11p 0.0
sig0.524 cc 9.00e-07p 0.002010p 0.318325p 0.0 1.451733p 0.0 1.993283p 1.999666p 1.999671p 5.13e-11p 2.14e-11p 7.03e-11p
rc 8.91e-07p 0.001989p 0.314878p 0.000200o 1.436165m 0.005375o 1.998652j 2.005240i 2.005246g 5.30e-11p 2.20e-11p 7.26e-11o

cs, ba, la, ce, pr half lives 89wal1.

mass number 149 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	56 ba g	57 la d	57 la g	58 ce d	58 ce g	59 pr g	60 nd g	61 pm g	62 sm g	63 eu g	64 gd g
half life	0.36 s	0.962s	1.10 s	0.608s	5.2 s	2.3 m	1.72 h	2.212d	1.e16y	93. d	9.3 d
lambda	1.925e+00	7.205e-01	6.301e-01	1.140e+00	1.333e-01	5.023e-03	1.119e-04	3.627e-06	2.198e-24	8.626e-08	8.626e-07
z - 1 g	100.0000	0.0	99.4250	0.0	98.9400	100.0000	100.0000	100.0000	100.0000	-100.0000	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	10.9280	100.0000	0.3990	100.0000	0.0	0.0	0.0	0.0	0.0	0.0
u235t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.772538j	0.0	1.082690h	1.048990i	1.082007d	0.0	0.0
zp 58.15 ri	0.001033p	0.0	0.079881p	0.0	0.697958l	0.296837n	0.006808p	3.87e-06p	1.71e-10p	0.0	0.0
sig0.531 cc	0.001157p	0.0	0.090580p	0.0	0.871035p	1.074798p	1.081551p	1.081555p	1.081555p	0.0	0.0
rc	0.001033p	5.49e-06o	0.080915p	4.18e-05o	0.778056j	1.074894i	1.081701g	1.081705f	1.081705d	0.0	0.0
u235f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	1.008019i	1.063368l	1.036976c	0.0	0.0
zp 58.03 ri	0.002564p	0.0	0.125962p	0.0	0.757693n	0.148580p	0.003460p	1.64e-06p	5.72e-11p	0.0	0.0
sig0.537 cc	0.002609p	0.0	0.130810p	0.0	0.885815p	1.033335p	1.036857p	1.036858p	1.036858p	0.0	0.0
rc	0.002564p	1.62e-05o	0.128527p	7.59e-05o	0.884934m	1.033514i	1.036973g	1.036975e	1.036975c	0.0	0.0
u235he xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.794303n	0.824292m	0.0	0.0
zp 58.64 ri	0.000297p	0.0	0.028882p	0.0	0.304981p	0.408550p	0.069512p	0.001352p	2.66e-06p	4.69e-10p	0.0
sig0.634 cc	0.000298p	0.0	0.029301p	0.0	0.335260p	0.742100p	0.811904p	0.813262p	0.813265p	4.61e-10p	0.0
rc	0.000297p	1.51e-06o	0.029179p	1.42e-05o	0.333865p	0.742415o	0.811927n	0.813279m	0.813282l	4.69e-10p	0.0
u238f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	1.733004j	1.721265i	1.624682d	0.0	0.0
zp 57.58 ri	0.047282p	0.0	0.664060p	0.0	0.842753o	0.077033p	0.000497p	1.18e-07p	1.57e-12p	0.0	0.0
sig0.557 cc	0.045479p	0.0	0.684124p	0.0	1.549539p	1.623634p	1.624112p	1.624112p	1.624112p	0.0	0.0
rc	0.047282p	0.000594o	0.711665o	0.000873o	1.547747l	1.624780j	1.625277h	1.625277f	1.625277d	0.0	0.0
u238he xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	1.381106i	1.728030k	1.386237l	0.0	0.0
zp 57.92 ri	0.013641p	0.0	0.336438p	0.0	0.858322o	0.246702p	0.006279p	1.56e-05p	2.29e-09p	0.0	0.0
sig0.605 cc	0.013987p	0.0	0.358921p	0.0	1.213133p	1.451061p	1.457499p	1.457513p	1.457513p	0.0	0.0
rc	0.013641p	0.000158o	0.350159p	0.000382o	1.205151n	1.451853k	1.458132i	1.458147i	1.458147i	0.0	0.0
pu239t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	1.106341j	1.245745i	1.216504d	0.0	0.0
zp 58.52 ri	0.000217p	0.0	0.036334p	0.0	0.562005p	0.568300o	0.049827p	0.000243p	8.19e-08p	0.0	0.0

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sig0.564 cc 0.000234p      0.0  0.039431p      0.0  0.645322p 1.162516p 1.216271p 1.216508p 1.216508p      0.0       0.0
        rc 0.000217p 1.31e-06o 0.036552p 2.08e-05o 0.598190o 1.166490k 1.216317g 1.216561e 1.216561c      0.0       0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.308788m      0.0  1.241118b      0.0       0.0
zp 58.53 ri 0.000241p      0.0  0.038978p      0.0  0.641633p 0.500287o 0.060124p 0.000252p 9.43e-08p 1.05e-12p      0.0
sig0.565 cc 0.000235p      0.0  0.038128p      0.0  0.661540p 1.182397p 1.240851p 1.241109p 1.241109p 1.07e-12p      0.0
        rc 0.000241p 1.21e-06o 0.039219p 1.95e-05o 0.680456o 1.180742k 1.240867f 1.241118d 1.241118b 1.05e-12p      0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.524850h 1.554981i 1.468932e      0.0       0.0
zp 57.98 ri 0.005291p      0.0  0.244795p      0.0  1.020023n 0.202310p 0.004066p 2.29e-06p 7.18e-11p      0.0       0.0
sig0.544 cc 0.005219p      0.0  0.246679p      0.0  1.256387p 1.469829p 1.473840p 1.473842p 1.473842p      0.0       0.0
        rc 0.005291p 4.02e-05o 0.250096p 0.000230o 1.267697m 1.470007j 1.474073h 1.474076g 1.474076e      0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.785794i 0.777244g      0.0       0.0
zp 58.42 ri 0.000254p      0.0  0.030295p      0.0  0.470675p 0.253791p 0.023378p 5.36e-05p 1.25e-08p      0.0       0.0
sig0.555 cc 0.000253p      0.0  0.030431p      0.0  0.499072p 0.754779p 0.778068p 0.778122p 0.778122p      0.0       0.0
        rc 0.000254p 1.20e-06o 0.030548p 1.28e-05o 0.500912p 0.754703l 0.778081j 0.778134h 0.778134g      0.0       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.136011k 1.094787i 0.891172l      0.0       0.0
zp 57.50 ri 0.034756p      0.0  0.472330p      0.0  0.553956p 0.027436p 7.92e-05p 4.71e-09p      0.0       0.0       0.0
sig0.524 cc 0.034218p      0.0  0.499106p      0.0  1.055981p 1.082992p 1.083070p 1.083070p 1.083070p      0.0       0.0
        rc 0.034756p 0.000264o 0.507151p 0.000394o 1.056125n 1.083561l 1.083640j 1.083640i 1.083640h      0.0       0.0

  ba, la, ce, pr, nd, pm half lives from 89wal1.
1

    mass number    150              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       54 xe g   55 cs g   56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g
half life              0.124s    0.962s    0.608s     4.4 s     6.2 s    stable    2.68 h    stable
lambda            0.0 5.590e+00 7.205e-01 1.140e+00 1.575e-01 1.118e-01       0.0 7.184e-05       0.0
 z - 1 g    100.0000  100.0000  100.0000   89.0720   99.6010  100.0000  100.0000       0.0  100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u235t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.00e-05o      0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.653284b      0.0       0.0
zp 58.55 ri       0.0  1.99e-09p 5.02e-05p 0.010423p 0.391792p 0.218353p 0.032725p 3.00e-05p 1.22e-08p
```

sig0.531 cc 0.0 1.99e-09p 5.02e-05p 0.010467p 0.402187p 0.620550p 0.653273p 5.21e-05p 5.21e-05p
rc 0.0 1.99e-09p 5.02e-05p 0.010467p 0.402217p 0.620570k 0.653295b 3.00e-05p 3.00e-05p
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.685811b 0.0 0.0
zp 58.43 ri 0.0 1.13e-08p 0.000149p 0.018902p 0.456920p 0.189733p 0.020199p 2.51e-05p 4.57e-09p
sig0.537 cc 0.0 1.13e-08p 0.000149p 0.019035p 0.475877p 0.665611p 0.685811p 2.51e-05p 2.51e-05p
rc 0.0 1.13e-08p 0.000149p 0.019035p 0.475879o 0.665611i 0.685811b 2.51e-05p 2.51e-05p
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000899k 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.508464k 0.0 0.0
zp 59.06 ri 0.0 5.02e-09p 1.38e-05p 0.003557p 0.093674p 0.293784p 0.119925p 0.000903p 3.06e-05p
sig0.634 cc 0.0 4.98e-09p 1.37e-05p 0.003539p 0.096419p 0.387028p 0.505954p 0.005885p 0.005916p
rc 0.0 5.02e-09p 1.38e-05p 0.003569p 0.097228p 0.391012o 0.510937k 0.000903p 0.000933p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.273453d 0.0 0.0
zp 57.98 ri 2.89e-10p 4.81e-06p 0.005432p 0.213974p 0.860426o 0.190822p 0.004261p 3.29e-06p 1.71e-10p
sig0.557 cc 2.89e-10p 4.81e-06p 0.005437p 0.218816p 1.078369p 1.269192p 1.273453p 3.29e-06p 3.29e-06p
rc 2.89e-10p 4.81e-06p 0.005437p 0.218817p 1.078370m 1.269192f 1.273453d 3.29e-06p 3.29e-06p
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.52e-05n 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.080808l 0.0 0.0
zp 58.32 ri 1.51e-10p 1.74e-06p 0.001445p 0.094369p 0.574091p 0.384471p 0.027047p 2.52e-05p 7.62e-08p
sig0.605 cc 1.51e-10p 1.74e-06p 0.001446p 0.095647p 0.669296p 1.053701p 1.080745p 0.000165p 0.000165p
rc 1.51e-10p 1.74e-06p 0.001446p 0.095657p 0.669366o 1.053838n 1.080884l 2.52e-05p 2.52e-05p
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.001149j 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.965919a 0.0 0.0
zp 58.91 ri 0.0 6.34e-10p 1.20e-05p 0.005212p 0.277995p 0.509405p 0.173706p 0.001150p 2.54e-06p
sig0.564 cc 0.0 6.34e-10p 1.20e-05p 0.005219p 0.283000p 0.791946p 0.965531p 0.001926p 0.001929p
rc 0.0 6.34e-10p 1.20e-05p 0.005223p 0.283196p 0.792602n 0.966307a 0.001150p 0.001152p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.994646b 0.0 0.0
zp 58.93 ri 0.0 5.58e-10p 1.11e-05p 0.004882p 0.277434p 0.521021p 0.191318p 0.002225p 3.24e-06p
sig0.565 cc 0.0 5.58e-10p 1.11e-05p 0.004892p 0.282306p 0.803327p 0.994646p 0.002225p 0.002228p
rc 0.0 5.58e-10p 1.11e-05p 0.004892p 0.282306p 0.803327n 0.994646b 0.002225p 0.002228p
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.209388d 0.0 0.0
zp 58.38 ri 0.0 6.59e-08p 0.000368p 0.057286p 0.705712p 0.420793p 0.025499p 5.08e-05p 6.10e-09p
sig0.544 cc 0.0 6.59e-08p 0.000368p 0.057613p 0.763095p 1.183889p 1.209388p 5.08e-05p 5.08e-05p

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        rc      0.0  6.59e-08p 0.000368p 0.057614p 0.763096o 1.183889i 1.209388d 5.08e-05p 5.08e-05p
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.505275e      0.0       0.0
zp 58.82 ri       0.0  4.09e-10p 1.09e-05p 0.003188p 0.202839p 0.219779p 0.079472p 0.000437p 4.87e-07p
sig0.555 cc       0.0  4.09e-10p 1.09e-05p 0.003197p 0.206023p 0.425803p 0.505275p 0.000437p 0.000437p
        rc      0.0  4.09e-10p 1.09e-05p 0.003197p 0.206024p 0.425803n 0.505275e 0.000437p 0.000437p
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.561984m      0.0       0.0
zp 57.90 ri 2.82e-11p 1.04e-06p 0.002419p 0.096565p 0.409094p 0.053867p 0.000690p 1.45e-07p 1.87e-12p
sig0.524 cc 2.82e-11p 1.04e-06p 0.002420p 0.098718p 0.507422p 0.561287p 0.561977p 1.45e-07p 1.45e-07p
        rc 2.82e-11p 1.04e-06p 0.002420p 0.098721p 0.507421o 0.561287n 0.561977m 1.45e-07p 1.45e-07p

  cs, ba, la half lives from 80eng2; ce, pr half lives from 89wal1.
1

    mass number    151              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g
half life     0.719s     1.0 s    22.4 s    12.4 m    1.183d     90. y    stable    120. d    17.6 h
lambda      9.640e-01 6.931e-01 3.094e-02 9.316e-04 6.782e-06 2.442e-10       0.0 6.685e-08 1.094e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u235t   xi      0.0       0.0       0.0       0.0       0.0       0.0  2.40e-10n      0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.390501i 0.418560d 0.421969g      0.0       0.0
zp 58.96 ri 0.001028p 0.099032p 0.238577p 0.079517p 0.000642p 4.75e-07p 2.49e-10n      0.0       0.0
sig0.531 cc 0.001061p 0.103250p 0.336082p 0.418134p 0.418797p 0.418797p 0.418797p      0.0       0.0
        rc 0.001028p 0.100061p 0.338637n 0.418154h 0.418797f 0.418797d 0.418797d      0.0       0.0
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0  9.55e-10n      0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.411630c 0.410561c 0.426232f      0.0       0.0
zp 58.83 ri 0.002367p 0.136695p 0.219110p 0.053499p 0.000319p 1.63e-07p 9.55e-10n      0.0       0.0
sig0.537 cc 0.002369p 0.139138p 0.358144p 0.411671p 0.411990p 0.411991p 0.411991p      0.0       0.0
        rc 0.002367p 0.139062p 0.358173m 0.411671e 0.411990c 0.411991b 0.411991b      0.0       0.0
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.357774j      0.0       0.0       0.0
zp 59.48 ri 0.000319p 0.021503p 0.161520p 0.155178p 0.018997p 0.000257p 3.39e-07p 4.06e-11p      0.0
sig0.634 cc 0.000319p 0.021822p 0.183342p 0.338520p 0.357517p 0.357774p 0.357774p 4.06e-11p      0.0
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        rc 0.000319p 0.021822p 0.183341p 0.338520n 0.357517l 0.357774j 0.357774j 4.06e-11p       0.0
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.822286g 0.808175e 0.746470g      0.0       0.0
zp 58.37 ri 0.044811p 0.455942p 0.280756p 0.017840p 4.85e-05p 7.76e-09p       0.0       0.0       0.0
sig0.557 cc 0.044232p 0.494281p 0.781739p 0.799349p 0.799397p 0.799397p 0.799397p       0.0       0.0
        rc 0.044811p 0.500752p 0.781508j 0.799349h 0.799397f 0.799397e 0.799397d       0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.800729h      0.0  0.810459l      0.0       0.0
zp 58.72 ri 0.017663p 0.270942p 0.434750p 0.076840p 0.001274p 1.68e-06p 1.59e-10p       0.0       0.0
sig0.605 cc 0.017672p 0.288761p 0.723312p 0.800194p 0.801469p 0.801471p 0.801471p       0.0       0.0
        rc 0.017663p 0.288604p 0.723354m 0.800195j 0.801469h 0.801471h 0.801471h       0.0       0.0
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.711017h 0.738486c 0.743585m      0.0       0.0
zp 59.30 ri 0.000479p 0.063141p 0.372091p 0.291906p 0.010770p 3.85e-05p 4.55e-09p       0.0       0.0
sig0.564 cc 0.000490p 0.065067p 0.445620p 0.727373p 0.738388p 0.738426p 0.738426p       0.0       0.0
        rc 0.000479p 0.063620p 0.435711p 0.727617h 0.738388e 0.738426c 0.738426c       0.0       0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.748264j 0.784360c 0.790295g      0.0       0.0
zp 59.33 ri 0.000419p 0.061872p 0.374096p 0.335772p 0.012727p 5.35e-05p 6.79e-09p       0.0       0.0
sig0.565 cc 0.000433p 0.064271p 0.450257p 0.771754p 0.784886p 0.784939p 0.784939p       0.0       0.0
        rc 0.000419p 0.062291p 0.436386p 0.772158h 0.784886e 0.784939c 0.784939c       0.0       0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.877058h 0.914182e      0.0       0.0       0.0
zp 58.77 ri 0.008099p 0.301698p 0.514733o 0.087906p 0.000586p 2.58e-07p 2.81e-12p       0.0       0.0
sig0.544 cc 0.008327p 0.318511p 0.822040p 0.912418p 0.913021p 0.913021p 0.913021p       0.0       0.0
        rc 0.008099p 0.309797p 0.824529m 0.912435i 0.913021g 0.913021e 0.913021e       0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.323794i 0.315244g 0.315405m      0.0       0.0
zp 59.21 ri 0.000281p 0.040138p 0.161058p 0.111595p 0.002645p 7.00e-06p 3.82e-10p       0.0       0.0
sig0.555 cc 0.000278p 0.039928p 0.199030p 0.313105p 0.315718p 0.315725p 0.315725p       0.0       0.0
        rc 0.000281p 0.040419p 0.201478p 0.313072j 0.315718h 0.315725f 0.315725f       0.0       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.382123i      0.0  0.177427m      0.0       0.0
zp 58.29 ri 0.021374p 0.231721p 0.106540p 0.004018p 3.81e-06p 1.22e-10p       0.0       0.0       0.0
sig0.524 cc 0.021314p 0.253407p 0.359647p 0.363653p 0.363657p 0.363657p 0.363657p       0.0       0.0
        rc 0.021374p 0.253095p 0.359635m 0.363653k 0.363657i 0.363657i 0.363657i       0.0       0.0
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la half life from 80eng2; ce, pr, nd, pm, sm half lives 89wal1.
1

mass number 152 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 56 ba g 57 la g 58 ce g 59 pr g 60 nd g 61 pm m 61 pm g 62 sm g 63 eu m 63 eu g 64 gd g
half life 0.420s 0.285s 3.1 s 3.2 s 11.4 m 7.5 m 4.1 m stable 9.3 h 13. y 14.04l
lambda 1.650e+00 2.432e+00 2.236e-01 2.166e-01 1.013e-03 1.540e-03 2.818e-03 0.0 2.070e-05 1.691e-09 2.005e-22
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 0.0 100.0000 100.0000 -23.0000 -72.0000 28.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 77.0000
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
u235t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.266932d 0.0 0.0 0.0
zp 59.35 ri 1.49e-08p 4.53e-05p 0.020538p 0.102561p 0.140994o 0.001392p 0.001392p 9.65e-06p 1.36e-10p 1.36e-10p 0.0
sig0.531 cc 1.49e-08p 4.53e-05p 0.020580p 0.123122p 0.264139p 0.001392p 0.265531p 0.266932p 1.36e-10p 1.36e-10p 1.43e-10p
rc 1.49e-08p 4.53e-05p 0.020584p 0.123144p 0.264138h 0.001392p 0.265530f 0.266932d 1.36e-10p 1.36e-10p 1.43e-10p
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.270856e 0.0 0.0 0.0
zp 59.22 ri 8.22e-08p 0.000137p 0.035366p 0.120275p 0.113425p 0.000825p 0.000825p 4.09e-06p 4.68e-11p 4.68e-11p 0.0
sig0.537 cc 8.22e-08p 0.000137p 0.035503p 0.155777p 0.269203p 0.000825p 0.270028p 0.270856p 4.68e-11p 4.68e-11p 4.91e-11p
rc 8.22e-08p 0.000137p 0.035503p 0.155778p 0.269203i 0.000825p 0.270028g 0.270856e 4.68e-11p 4.68e-11p 4.91e-11p
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.257674k 0.0 0.0 0.0
zp 59.89 ri 1.14e-08p 2.09e-05p 0.003623p 0.065688p 0.145051p 0.020931p 0.020931p 0.001424p 2.47e-06p 2.47e-06p 1.59e-09p
sig0.634 cc 1.14e-08p 2.09e-05p 0.003644p 0.069332p 0.214383p 0.020931p 0.235314p 0.257673p 2.47e-06p 2.47e-06p 2.59e-06p
rc 1.14e-08p 2.09e-05p 0.003644p 0.069332p 0.214383o 0.020931p 0.235314m 0.257672k 2.47e-06p 2.47e-06p 2.59e-06p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.530227d 0.0 0.0 0.0
zp 58.76 ri 1.50e-05p 0.005813p 0.184457p 0.285779p 0.053738p 0.000213p 0.000213p 2.50e-07p 2.19e-12p 2.19e-12p 0.0
sig0.557 cc 1.50e-05p 0.005828p 0.190284p 0.476064p 0.529801p 0.000213p 0.530014p 0.530227p 2.19e-12p 2.19e-12p 2.30e-12p
rc 1.50e-05p 0.005828p 0.190285p 0.476063m 0.529801h 0.000213p 0.530014f 0.530227d 2.19e-12p 2.19e-12p 2.30e-12p
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.578793l 0.0 0.0 0.0
zp 59.12 ri 4.40e-06p 0.002176p 0.087037p 0.337432p 0.145735p 0.003192p 0.003192p 2.34e-05p 3.20e-09p 3.20e-09p 0.0

sig0.605 cc 4.40e-06p 0.002181p 0.089218p 0.426650p 0.572385p 0.003192p 0.575577p 0.578793p 3.20e-09p 3.20e-09p 3.36e-09p
rc 4.40e-06p 0.002181p 0.089218p 0.426650p 0.572385o 0.003192p 0.575577n 0.578793l 3.20e-09p 3.20e-09p 3.36e-09p
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.576317d 0.0 0.0 0.0
zp 59.69 ri 5.36e-09p 2.41e-05p 0.011808p 0.160486p 0.370121n 0.016724p 0.016724p 0.000430p 6.79e-08p 6.79e-08p 4.43e-12p
sig0.564 cc 5.36e-09p 2.41e-05p 0.011832p 0.172317p 0.542438p 0.016724p 0.559163p 0.576317p 6.79e-08p 6.79e-08p 7.13e-08p
rc 5.36e-09p 2.41e-05p 0.011832p 0.172318p 0.542438k 0.016724p 0.559163i 0.576317d 6.79e-08p 6.79e-08p 7.13e-08p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.626702e 0.0 0.0 0.0
zp 59.73 ri 4.11e-09p 1.98e-05p 0.010907p 0.160006p 0.414344n 0.020408p 0.020408p 0.000609p 1.09e-07p 1.09e-07p 8.49e-12p
sig0.565 cc 4.11e-09p 1.98e-05p 0.010926p 0.170930p 0.585277p 0.020408p 0.605685p 0.626702p 1.09e-07p 1.09e-07p 1.14e-07p
rc 4.11e-09p 1.98e-05p 0.010926p 0.170932p 0.585276k 0.020408p 0.605685i 0.626702e 1.09e-07p 1.09e-07p 1.14e-07p
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.717632e 0.0 0.0 0.0
zp 59.15 ri 4.60e-07p 0.000817p 0.094050p 0.414587p 0.203923p 0.002124p 0.002124p 6.11e-06p 1.16e-10p 1.16e-10p 0.0
sig0.544 cc 4.60e-07p 0.000817p 0.094867p 0.509455p 0.713378p 0.002124p 0.715502p 0.717632p 1.16e-10p 1.16e-10p 1.22e-10p
rc 4.60e-07p 0.000817p 0.094867p 0.509455o 0.713378i 0.002124p 0.715502g 0.717632e 1.16e-10p 1.16e-10p 1.22e-10p
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.213639g 0.0 0.0 0.0
zp 59.60 ri 3.32e-09p 1.08e-05p 0.006675p 0.055689p 0.144137n 0.003522p 0.003522p 8.39e-05p 5.71e-09p 5.71e-09p 0.0
sig0.555 cc 3.32e-09p 1.08e-05p 0.006685p 0.062373p 0.206512p 0.003521p 0.210034p 0.213639p 5.71e-09p 5.71e-09p 5.99e-09p
rc 3.32e-09p 1.08e-05p 0.006685p 0.062375p 0.206512k 0.003522p 0.210033i 0.213639g 5.71e-09p 5.71e-09p 6.00e-09p
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.075546m 0.0 0.0 0.0
zp 58.69 ri 1.38e-06p 0.000754p 0.032211p 0.037052p 0.005511p 8.54e-06p 8.54e-06p 3.58e-09p 0.0 0.0 0.0
sig0.524 cc 1.38e-06p 0.000755p 0.032966p 0.070017p 0.075528p 8.54e-06p 0.075537p 0.075545p 0.0 0.0 0.0
rc 1.38e-06p 0.000755p 0.032966p 0.070017p 0.075528o 8.54e-06p 0.075537n 0.075545l 0.0 0.0 0.0

ba, la half lives from 80eng2; ce, pr, nd, pm half lives 89wal1.
1

mass number 153 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 57 la g 58 ce g 59 pr g 60 nd g 61 pm g 62 sm g 63 eu g 64 gd g 65 tb g
half life 0.326s 1.47 s 4.3 s 28.9 s 5.4 m 1.929d stable 241.6d 2.34 d

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lambda      2.126e+00 4.715e-01 1.612e-01 2.398e-02 2.139e-03 4.159e-06       0.0 3.321e-08 3.428e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u235t   xi    0.0       0.0       0.0       0.0       0.0       0.0  2.30e-07n      0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  0.150767h 0.162057g      0.0       0.0
zp 59.74 ri 1.42e-06p 0.001705p 0.036747p 0.110955o 0.008801p 8.01e-05p 2.33e-07n      0.0       0.0
sig0.531 cc 1.48e-06p 0.001775p 0.039995p 0.149053p 0.158207p 0.158290p 0.158290p      0.0       0.0
         rc 1.42e-06p 0.001707p 0.038454p 0.149409l 0.158210j 0.158290h 0.158290g      0.0       0.0
 u235f   xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  0.172666h 0.161023h      0.0       0.0
zp 59.61 ri 5.95e-06p 0.003930p 0.054768p 0.101811o 0.006500p 4.19e-05p 4.60e-09p      0.0       0.0
sig0.537 cc 5.80e-06p 0.003836p 0.057219p 0.160680p 0.167016p 0.167056p 0.167056p      0.0       0.0
         rc 5.95e-06p 0.003936p 0.058704p 0.160515l 0.167014j 0.167056h 0.167056g      0.0       0.0
 u235he  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  0.216367l 0.198665k      0.0       0.0
zp 60.30 ri 1.01e-06p 0.000458p 0.020592p 0.105942p 0.070677p 0.005890p 5.03e-05p 4.32e-08p 3.34e-12p
sig0.634 cc 1.01e-06p 0.000459p 0.021051p 0.126992p 0.197668p 0.203558p 0.203611p 4.54e-08p 3.51e-12p
         rc 1.01e-06p 0.000459p 0.021051p 0.126993p 0.197671n 0.203560l 0.203611k 4.32e-08p 3.34e-12p
 u238f   xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  0.417595f 0.403104h      0.0       0.0
zp 59.14 ri 0.000650p 0.055768p 0.244145p 0.111363p 0.002856p 4.94e-06p 3.03e-10p      0.0       0.0
sig0.557 cc 0.000648p 0.056224p 0.300213p 0.411935p 0.414782p 0.414787p 0.414787p      0.0       0.0
         rc 0.000650p 0.056418p 0.300563o 0.411926j 0.414782h 0.414787f 0.414787f      0.0       0.0
 u238he  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  0.406928j 0.360446k      0.0       0.0
zp 59.51 ri 0.000181p 0.018994p 0.178553p 0.174184p 0.019813p 0.000195p 1.39e-07p 7.55e-12p      0.0
sig0.605 cc 0.000178p 0.018849p 0.194355p 0.372254p 0.391729p 0.391921p 0.391921p 7.89e-12p      0.0
         rc 0.000181p 0.019176p 0.197728p 0.371912n 0.391726l 0.391921j 0.391921i 7.55e-12p      0.0
 pu239t  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  0.361181i 0.362785m      0.0       0.0
zp 60.07 ri 8.51e-07p 0.001061p 0.049312p 0.240450p 0.068317p 0.002115p 2.51e-06p 2.17e-10p      0.0
sig0.564 cc 8.51e-07p 0.001062p 0.050375p 0.290824p 0.359141p 0.361256p 0.361259p 2.16e-10p      0.0
         rc 8.51e-07p 0.001062p 0.050375p 0.290824o 0.359141k 0.361256i 0.361259i 2.17e-10p      0.0
 pu239f  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  0.467575n 0.425798h      0.0       0.0
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zp 60.13 ri 6.31e-07p 0.000959p 0.049703p 0.279142p 0.092474p 0.003564p 4.49e-06p 5.02e-10p       0.0
sig0.565 cc 6.11e-07p 0.000929p 0.049063p 0.332837p 0.422391p 0.425843p 0.425848p 5.32e-10p       0.0
        rc 6.31e-07p 0.000960p 0.050662p 0.329805o 0.422279l 0.425843j 0.425848h 5.02e-10p       0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.541241h 0.539339i      0.0       0.0
zp 59.53 ri 4.71e-05p 0.017472p 0.219056p 0.286152p 0.017772p 8.45e-05p 1.11e-08p       0.0       0.0
sig0.544 cc 4.71e-05p 0.017504p 0.236370p 0.522742p 0.540499p 0.540584p 0.540584p       0.0       0.0
        rc 4.71e-05p 0.017519p 0.236575p 0.522727l 0.540499j 0.540584h 0.540584h       0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.101100i 0.119174l      0.0       0.0
zp 60.00 ri 2.68e-07p 0.000410p 0.014352p 0.074415p 0.014111p 0.000396p 2.76e-07p 1.74e-11p       0.0
sig0.555 cc 2.68e-07p 0.000411p 0.014762p 0.089178p 0.103289p 0.103685p 0.103685p 1.60e-11p       0.0
        rc 2.68e-07p 0.000411p 0.014762p 0.089178o 0.103289k 0.103685i 0.103685i 1.74e-11p       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.029168l 0.033715m      0.0       0.0
zp 59.09 ri 3.55e-05p 0.004595p 0.018841p 0.007437p 1.00e-04p 7.13e-08p 1.11e-12p       0.0       0.0
sig0.524 cc 3.55e-05p 0.004630p 0.023472p 0.030909p 0.031009p 0.031009p 0.031009p       0.0       0.0
        rc 3.55e-05p 0.004630p 0.023472p 0.030909o 0.031009n 0.031009l 0.031009k       0.0       0.0

  la, ce half lives from 80eng2; pr, nd, pm, sm half lives 89wal1; gd half life 90bur1.

1

    mass number    154              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm m   61 pm g   62 sm g   63 eu g   64 gd g
half life              0.149s    2.02 s     2.3 s    25.9 s     2.7 m     1.7 m    stable     8.8 y    stable
lambda            0.0 4.652e+00 3.431e-01 3.014e-01 2.676e-02 4.279e-03 6.796e-03       0.0 2.498e-09       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000       0.0  100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u235t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.074439d      0.0       0.0
zp 60.14 ri       0.0  1.46e-08p 9.12e-05p 0.005021p 0.058026p 0.005414p 0.005414p 0.000473p 1.94e-07p 1.12e-11p
sig0.531 cc       0.0  1.46e-08p 9.12e-05p 0.005112p 0.063138p 0.005414p 0.068551p 0.074439p 1.94e-07p 1.94e-07p
        rc      0.0  1.46e-08p 9.12e-05p 0.005112p 0.063138n 0.005414p 0.068551k 0.074439d 1.94e-07p 1.94e-07p
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.072319d 0.0 0.0
zp 59.99 ri 3.65e-12p 8.00e-08p 0.000246p 0.007911p 0.056615p 0.003669p 0.003669p 0.000209p 6.21e-08p 2.58e-12p
sig0.537 cc 3.65e-12p 8.00e-08p 0.000246p 0.008157p 0.064772p 0.003669p 0.068441p 0.072319p 6.21e-08p 6.21e-08p
rc 3.65e-12p 8.00e-08p 0.000246p 0.008157p 0.064772m 0.003669p 0.068441j 0.072319d 6.21e-08p 6.21e-08p
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.126674m 0.0 0.0
zp 60.71 ri 1.96e-12p 2.60e-08p 3.10e-05p 0.003538p 0.043422p 0.033239p 0.033239p 0.013205p 0.000301p 6.83e-07p
sig0.634 cc 1.96e-12p 2.60e-08p 3.10e-05p 0.003569p 0.046991p 0.033239p 0.080230p 0.126674p 0.000301p 0.000301p
rc 1.96e-12p 2.60e-08p 3.10e-05p 0.003569p 0.046991p 0.033239p 0.080230p 0.126674m 0.000301p 0.000301p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.216281d 0.0 0.0
zp 59.52 ri 7.11e-09p 2.83e-05p 0.008002p 0.088175p 0.112523p 0.003754p 0.003754p 4.39e-05p 8.25e-09p 0.0
sig0.557 cc 7.11e-09p 2.83e-05p 0.008030p 0.096205p 0.208728p 0.003754p 0.212482p 0.216281p 8.25e-09p 8.25e-09p
rc 7.11e-09p 2.83e-05p 0.008030p 0.096205p 0.208728j 0.003754p 0.212482g 0.216281d 8.25e-09p 8.25e-09p
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.252121l 0.0 0.0
zp 59.89 ri 2.72e-09p 1.00e-05p 0.002752p 0.063183p 0.147074p 0.019071p 0.019071p 0.000959p 1.95e-06p 2.90e-10p
sig0.605 cc 2.72e-09p 1.00e-05p 0.002762p 0.065945p 0.213019p 0.019071p 0.232090p 0.252121p 1.95e-06p 1.95e-06p
rc 2.72e-09p 1.00e-05p 0.002762p 0.065945p 0.213019o 0.019071p 0.232090n 0.252121l 1.95e-06p 1.95e-06p
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.259760e 0.0 0.0
zp 60.45 ri 0.0 1.82e-08p 8.57e-05p 0.009700p 0.150721p 0.044938p 0.044938p 0.009376p 2.80e-05p 9.26e-09p
sig0.564 cc 0.0 1.82e-08p 8.57e-05p 0.009786p 0.160507p 0.044938p 0.205445p 0.259760p 2.80e-05p 2.80e-05p
rc 0.0 1.82e-08p 8.57e-05p 0.009786p 0.160507p 0.044938p 0.205445n 0.259760e 2.80e-05p 2.80e-05p
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.267203e 0.0 0.0
zp 60.52 ri 0.0 1.01e-08p 5.79e-05p 0.007710p 0.145701p 0.050376p 0.050376p 0.012983p 4.72e-05p 2.02e-08p
sig0.565 cc 0.0 1.01e-08p 5.79e-05p 0.007768p 0.153469p 0.050376p 0.203845p 0.267203p 4.72e-05p 4.73e-05p
rc 0.0 1.01e-08p 5.79e-05p 0.007768p 0.153469p 0.050376p 0.203845n 0.267203e 4.72e-05p 4.73e-05p
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.379114f 0.0 0.0
zp 59.91 ri 7.59e-11p 1.60e-06p 0.001964p 0.073819p 0.257551o 0.022546p 0.022546p 0.000687p 3.07e-07p 7.91e-12p
sig0.544 cc 7.59e-11p 1.60e-06p 0.001965p 0.075784p 0.333335p 0.022546p 0.355881p 0.379114p 3.07e-07p 3.07e-07p
rc 7.59e-11p 1.60e-06p 0.001965p 0.075784p 0.333335m 0.022546p 0.355881k 0.379114f 3.07e-07p 3.07e-07p
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.046688g 0.0 0.0

zp 60.39 ri 0.0 2.92e-09p 2.04e-05p 0.001628p 0.031872p 0.005907p 0.005907p 0.001353p 2.08e-06p 6.08e-10p
sig0.555 cc 0.0 2.92e-09p 2.04e-05p 0.001648p 0.033521p 0.005907p 0.039428p 0.046688p 2.08e-06p 2.08e-06p
rc 0.0 2.92e-09p 2.04e-05p 0.001648p 0.033521p 0.005907p 0.039428m 0.046688g 2.08e-06p 2.08e-06p
th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.006876m 0.0 0.0
zp 59.48 ri 5.45e-11p 4.58e-07p 0.000254p 0.002759p 0.003719p 7.14e-05p 7.14e-05p 4.54e-07p 2.20e-11p 0.0
sig0.524 cc 5.45e-11p 4.58e-07p 0.000254p 0.003013p 0.006733p 7.14e-05p 0.006804p 0.006876p 2.20e-11p 2.20e-11p
rc 5.45e-11p 4.58e-07p 0.000254p 0.003013p 0.006733p 7.14e-05p 0.006804o 0.006876m 2.20e-11p 2.20e-11p

la, ce half lives 80eng2; pr, nd, pm half lives 89wal1; eu half life 90bur1.

1

mass number 155 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 58 ce g 59 pr g 60 nd g 61 pm g 62 sm g 63 eu g 64 gd g 65 tb g 66 dy g
half life 0.528s 1.12 s 8.9 s 48. s 22.2 m 4.71 y stable 5.3 d 9.6 h
lambda 1.313e+00 6.189e-01 7.788e-02 1.444e-02 5.204e-04 4.667e-09 0.0 1.514e-06 2.006e-05
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
u235t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.032584p 0.032288h 0.029850l 0.0 0.0
zp 60.53 ri 2.55e-06p 0.000673p 0.017539p 0.012610p 0.001310p 2.63e-06p 4.08e-10p 0.0 0.0
sig0.531 cc 2.55e-06p 0.000676p 0.018215p 0.030825p 0.032135p 0.032138p 0.032138p 0.0 0.0
rc 2.55e-06p 0.000676p 0.018215p 0.030825l 0.032135j 0.032138h 0.032138h 0.0 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.035415l 0.041685k 0.0 0.0
zp 60.37 ri 1.17e-05p 0.001658p 0.025012p 0.011996p 0.000793p 1.10e-06p 1.33e-10p 0.0 0.0
sig0.537 cc 1.17e-05p 0.001669p 0.026682p 0.038677p 0.039470p 0.039472p 0.039472p 0.0 0.0
rc 1.17e-05p 0.001669p 0.026682p 0.038677n 0.039470m 0.039472k 0.039472k 0.0 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.079663k 0.074942m 0.0 0.0
zp 61.10 ri 1.61e-06p 0.000454p 0.013072p 0.044408p 0.019721p 0.001065p 5.84e-06p 3.11e-09p 0.0
sig0.634 cc 1.61e-06p 0.000456p 0.013528p 0.057936p 0.077658p 0.078723p 0.078729p 3.21e-09p 0.0
rc 1.61e-06p 0.000456p 0.013528p 0.057937p 0.077658m 0.078723k 0.078729k 3.11e-09p 0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

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        xc      0.0       0.0       0.0       0.0       0.0  0.143497l 0.140000l      0.0       0.0
zp 59.91 ri 0.000847p 0.029649p 0.092176p 0.018530p 0.000312p 2.11e-07p 8.04e-12p      0.0       0.0
sig0.557 cc 0.000847p 0.030496p 0.122672p 0.141202p 0.141515p 0.141515p 0.141515p      0.0       0.0
        rc 0.000847p 0.030496p 0.122672p 0.141202o 0.141515n 0.141515l 0.141515k      0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.155257l      0.0       0.0
zp 60.26 ri 0.000286p 0.016108p 0.085540p 0.050238p 0.003069p 1.61e-05p 6.35e-09p      0.0       0.0
sig0.605 cc 0.000286p 0.016394p 0.101934p 0.152172p 0.155241p 0.155257p 0.155257p      0.0       0.0
        rc 0.000286p 0.016394p 0.101934p 0.152172p 0.155241o 0.155257n 0.155257l      0.0       0.0
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.197002p 0.163892k 0.170318m      0.0       0.0
zp 60.83 ri 3.46e-06p 0.001429p 0.050720p 0.092104p 0.021275p 0.000193p 1.66e-07p 4.65e-12p      0.0
sig0.564 cc 3.46e-06p 0.001432p 0.052141p 0.144226p 0.165497p 0.165724p 0.165724p 5.48e-12p      0.0
        rc 3.46e-06p 0.001432p 0.052152p 0.144256p 0.165531m 0.165724k 0.165724k 4.65e-12p      0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.208822k      0.0       0.0
zp 60.91 ri 2.48e-06p 0.001216p 0.055517p 0.116970p 0.034666p 0.000449p 5.24e-07p 1.85e-11p      0.0
sig0.565 cc 2.48e-06p 0.001219p 0.056735p 0.173706p 0.208372p 0.208821p 0.208821p 1.85e-11p      0.0
        rc 2.48e-06p 0.001219p 0.056735p 0.173705o 0.208372n 0.208821m 0.208821k 1.85e-11p      0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.241414j      0.0       0.0       0.0
zp 60.28 ri 0.000142p 0.016223p 0.151854p 0.070009p 0.003182p 4.63e-06p 4.01e-10p      0.0       0.0
sig0.544 cc 0.000142p 0.016364p 0.168218p 0.238227p 0.241410p 0.241414p 0.241414p      0.0       0.0
        rc 0.000142p 0.016364p 0.168218p 0.238227n 0.241410l 0.241414j 0.241414j      0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.021431l      0.0       0.0
zp 60.79 ri 5.04e-07p 0.000183p 0.007840p 0.010754p 0.002634p 1.81e-05p 1.35e-08p      0.0       0.0
sig0.555 cc 5.04e-07p 0.000183p 0.008024p 0.018778p 0.021412p 0.021430p 0.021430p      0.0       0.0
        rc 5.04e-07p 0.000183p 0.008024p 0.018778p 0.021412o 0.021430n 0.021430l      0.0       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.003617m      0.0       0.0
zp 59.87 ri 1.76e-05p 0.000752p 0.002490p 0.000354p 3.50e-06p 7.80e-10p      0.0       0.0       0.0
sig0.524 cc 1.76e-05p 0.000769p 0.003260p 0.003614p 0.003617p 0.003617p 0.003617p      0.0       0.0
        rc 1.76e-05p 0.000769p 0.003260p 0.003614p 0.003617o 0.003617n 0.003617m      0.0       0.0

  ce, pr half lives from 80eng2; nd, pm, sm, eu half lives 89wal1.
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    mass number    156              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb m   65 tb g   66 dy g
half life     0.596s    0.379s     5.5 s    26.7 s     9.4 h    15.2 d    stable     5.0 h     5.1 d    2.e14y
lambda      1.163e+00 1.829e+00 1.260e-01 2.596e-02 2.048e-05 5.278e-07       0.0 3.851e-05 1.573e-06 1.099e-22
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  -50.0000 -100.0000       0.0
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   50.0000       0.0
 u235t   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0  0.013716o 0.013215h 0.016617i      0.0       0.0       0.0
zp 60.92 ri 5.73e-08p 4.07e-05p 0.004702p 0.007064p 0.003031p 1.62e-05p 1.43e-08p      0.0       0.0       0.0
sig0.531 cc 5.73e-08p 4.07e-05p 0.004743p 0.011807p 0.014839p 0.014854p 0.014854p      0.0       0.0       0.0
         rc 5.73e-08p 4.07e-05p 0.004743p 0.011807o 0.014838j 0.014854h 0.014854g      0.0       0.0       0.0
 u235f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0  0.019949g 0.021709h 0.016943k      0.0       0.0       0.0
zp 60.75 ri 4.15e-07p 0.000148p 0.009082p 0.008714p 0.002306p 8.28e-06p 3.92e-09p      0.0       0.0       0.0
sig0.537 cc 4.15e-07p 0.000148p 0.009230p 0.017944p 0.020251p 0.020259p 0.020259p      0.0       0.0       0.0
         rc 4.15e-07p 0.000148p 0.009230p 0.017944m 0.020250g 0.020259f 0.020259f      0.0       0.0       0.0
 u235he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0  0.058268g 0.052482k      0.0       0.0       0.0
zp 61.50 ri 6.39e-08p 4.63e-05p 0.003270p 0.025626p 0.025637p 0.003274p 4.41e-05p 3.65e-09p 5.73e-08p 7.65e-12p
sig0.634 cc 6.39e-08p 4.63e-05p 0.003316p 0.028941p 0.054577p 0.057852p 0.057898p 3.85e-09p 6.22e-08p 8.05e-12p
         rc 6.39e-08p 4.63e-05p 0.003317p 0.028943p 0.054579l 0.057854g 0.057898g 3.65e-09p 5.91e-08p 7.65e-12p
 u238f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0  0.075376f 0.089367j      0.0       0.0       0.0
zp 60.29 ri 5.45e-05p 0.005247p 0.046874p 0.022648p 0.001207p 2.38e-06p 3.57e-10p      0.0       0.0       0.0
sig0.557 cc 5.45e-05p 0.005302p 0.052176p 0.074824p 0.076031p 0.076033p 0.076033p      0.0       0.0       0.0
         rc 5.45e-05p 0.005302p 0.052176p 0.074824j 0.076031h 0.076033f 0.076033f      0.0       0.0       0.0
 u238he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0  0.140306l 0.114355g 0.112308l      0.0       0.0       0.0
zp 60.64 ri 2.36e-05p 0.003425p 0.043555p 0.058621p 0.008647p 9.69e-05p 1.01e-07p      0.0  7.28e-12p      0.0
sig0.605 cc 2.36e-05p 0.003448p 0.046995p 0.105605p 0.114251p 0.114368p 0.114368p      0.0  9.31e-12p      0.0
         rc 2.36e-05p 0.003449p 0.047004p 0.105624m 0.114271i 0.114368g 0.114368g      0.0  7.51e-12p      0.0
 pu239t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0  0.116975i 0.126832h 0.133374m      0.0       0.0       0.0
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zp 61.21 ri 1.23e-07p 0.000130p 0.016012p 0.062135p 0.044559p 0.001178p 3.94e-06p 2.92e-11p 2.63e-10p       0.0
sig0.564 cc 1.23e-07p 0.000130p 0.016148p 0.078306p 0.122882p 0.124014p 0.124018p 2.68e-11p 2.55e-10p       0.0
         rc 1.23e-07p 0.000130p 0.016142p 0.078277p 0.122836i 0.124014h 0.124018h 2.92e-11p 2.77e-10p       0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0  1.28e-06n      0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.149453i 0.166423j      0.0       0.0       0.0
zp 61.29 ri 7.86e-08p 0.000101p 0.015647p 0.072458p 0.064538p 0.002009p 1.32e-06n 7.66e-11p 7.74e-10p       0.0
sig0.565 cc 7.86e-08p 0.000101p 0.015747p 0.088201p 0.152736p 0.154746p 0.154754p 7.24e-11p 7.68e-10p       0.0
         rc 7.86e-08p 0.000101p 0.015748p 0.088205p 0.152743k 0.154753i 0.154754h 7.66e-11p 8.13e-10p       0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  0.166762h 0.176548h      0.0       0.0       0.0       0.0
zp 60.65 ri 7.58e-06p 0.002740p 0.072186p 0.086018p 0.011120p 5.30e-05p 1.53e-08p       0.0       0.0       0.0
sig0.544 cc 7.58e-06p 0.002748p 0.074935p 0.160953p 0.172074p 0.172125p 0.172125p       0.0       0.0       0.0
         rc 7.58e-06p 0.002748p 0.074934p 0.160952l 0.172072h 0.172125g 0.172125g       0.0       0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.012833i 0.012183m      0.0       0.0       0.0
zp 61.18 ri 1.31e-08p 1.15e-05p 0.002054p 0.005583p 0.005068p 7.82e-05p 2.56e-07p       0.0  8.44e-12p       0.0
sig0.555 cc 1.31e-08p 1.15e-05p 0.002065p 0.007648p 0.012716p 0.012794p 0.012794p       0.0  9.14e-12p       0.0
         rc 1.31e-08p 1.15e-05p 0.002065p 0.007648p 0.012716k 0.012794i 0.012794i       0.0  8.91e-12p       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  0.002637k 0.002877l 0.002626l      0.0       0.0       0.0
zp 60.26 ri 1.22e-06p 0.000157p 0.001845p 0.000661p 2.67e-05p 2.03e-08p       0.0       0.0       0.0       0.0
sig0.524 cc 1.22e-06p 0.000158p 0.002003p 0.002664p 0.002690p 0.002690p 0.002690p       0.0       0.0       0.0
         rc 1.22e-06p 0.000158p 0.002003p 0.002664l 0.002690j 0.002690j 0.002690j       0.0       0.0       0.0

  ce, pr half lives from 80eng2; nd, pm, sm, eu half lives 89wal1.
1

    mass number    157              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g
half life     0.214s    0.380s    2.48 s    10.9 s     8.0 m    15.13h    stable    160. y     8.1 h
lambda       3.239e+00 1.824e+00 2.795e-01 6.359e-02 1.444e-03 1.273e-05       0.0 1.374e-10 2.377e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u235t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.006098j 0.006604m      0.0       0.0
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zp 61.31 ri 4.59e-10p 1.65e-06p 0.000485p 0.002934p 0.002667p 6.35e-05p 1.48e-07p 4.93e-12p       0.0
sig0.531 cc 4.59e-10p 1.65e-06p 0.000486p 0.003420p 0.006087p 0.006150p 0.006151p 4.73e-12p       0.0
        rc 4.59e-10p 1.65e-06p 0.000486p 0.003420p 0.006087l 0.006150j 0.006151j 4.93e-12p       0.0
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.010583m      0.0       0.0
zp 61.13 ri 6.64e-09p 1.11e-05p 0.001604p 0.005755p 0.003165p 4.74e-05p 6.50e-08p 1.48e-12p       0.0
sig0.537 cc 6.64e-09p 1.11e-05p 0.001615p 0.007370p 0.010535p 0.010583p 0.010583p 1.48e-12p       0.0
        rc 6.64e-09p 1.11e-05p 0.001615p 0.007370p 0.010535o 0.010583n 0.010583m 1.48e-12p       0.0
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.037707k      0.0       0.0
zp 61.89 ri 1.67e-09p 3.06e-06p 0.000530p 0.009613p 0.021226p 0.006126p 0.000208p 7.22e-07p 2.32e-10p
sig0.634 cc 1.67e-09p 3.07e-06p 0.000533p 0.010146p 0.031372p 0.037498p 0.037707p 7.22e-07p 2.32e-10p
        rc 1.67e-09p 3.07e-06p 0.000533p 0.010146p 0.031372o 0.037498m 0.037707k 7.22e-07p 2.32e-10p
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.041376l      0.0       0.0
zp 60.67 ri 2.19e-06p 0.000704p 0.016089p 0.021600p 0.002960p 1.96e-05p 8.04e-09p       0.0       0.0
sig0.557 cc 2.19e-06p 0.000707p 0.016796p 0.038396p 0.041356p 0.041375p 0.041375p       0.0       0.0
        rc 2.19e-06p 0.000707p 0.016796p 0.038396p 0.041356o 0.041375n 0.041375l       0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.078790l 0.082132l      0.0       0.0
zp 61.01 ri 1.37e-06p 0.000511p 0.015662p 0.047531p 0.016100p 0.000542p 1.53e-06p 3.13e-10p       0.0
sig0.605 cc 1.37e-06p 0.000513p 0.016175p 0.063706p 0.079806p 0.080347p 0.080349p 3.06e-10p       0.0
        rc 1.37e-06p 0.000513p 0.016175p 0.063706p 0.079806n 0.080347l 0.080349k 3.13e-10p       0.0
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.073715i 0.080564m      0.0       0.0
zp 61.59 ri 1.79e-09p 7.19e-06p 0.002182p 0.027409p 0.041066p 0.003458p 2.90e-05p 8.17e-09p       0.0
sig0.564 cc 1.79e-09p 7.19e-06p 0.002189p 0.029599p 0.070666p 0.074124p 0.074152p 7.81e-09p       0.0
        rc 1.79e-09p 7.19e-06p 0.002189p 0.029599p 0.070665l 0.074123i 0.074152i 8.17e-09p       0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.104476j 0.108505k      0.0       0.0
zp 61.67 ri 1.23e-09p 5.81e-06p 0.002283p 0.033606p 0.063819p 0.006354p 6.91e-05p 2.43e-08p       0.0
sig0.565 cc 1.23e-09p 5.81e-06p 0.002288p 0.035895p 0.099715p 0.106069p 0.106137p 2.39e-08p       0.0
        rc 1.23e-09p 5.81e-06p 0.002288p 0.035895p 0.099714m 0.106068j 0.106137j 2.43e-08p       0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.135369h      0.0       0.0       0.0
zp 61.03 ri 2.59e-07p 0.000313p 0.025153p 0.080537p 0.028942p 0.000423p 4.15e-07p 1.06e-11p       0.0
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 sig0.544 cc 2.59e-07p 0.000314p 0.025466p 0.106003p 0.134946p 0.135369p 0.135369p 1.06e-11p       0.0
          rc 2.59e-07p 0.000314p 0.025466p 0.106003o 0.134946j 0.135369h 0.135369h 1.06e-11p       0.0
  u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0  0.006359j 0.005927m      0.0       0.0
 zp 61.56 ri 1.34e-10p 5.25e-07p 0.000212p 0.002160p 0.003707p 0.000222p 1.66e-06p 2.73e-10p       0.0
 sig0.555 cc 1.34e-10p 5.26e-07p 0.000212p 0.002372p 0.006078p 0.006301p 0.006302p 2.82e-10p       0.0
          rc 1.34e-10p 5.26e-07p 0.000212p 0.002372p 0.006078l 0.006301j 0.006302j 2.73e-10p       0.0
  th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0  0.000932m      0.0       0.0       0.0
 zp 60.64 ri 2.36e-08p 1.28e-05p 0.000398p 0.000470p 5.13e-05p 1.58e-07p 2.37e-11p       0.0       0.0
 sig0.524 cc 2.36e-08p 1.28e-05p 0.000410p 0.000880p 0.000932p 0.000932p 0.000932p       0.0       0.0
          rc 2.36e-08p 1.28e-05p 0.000410p 0.000880o 0.000932n 0.000932m 0.000932m       0.0       0.0

   ce, pr, nd half lives from 80eng2; pm, sm, eu half lives 89wal1.
1

     mass number    158              LA-UR-94-3106 (ENDF-349)                              percent yields
 nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb m   65 tb g   66 dy g
 half life              0.169s    2.69 s     4.8 s     5.5 m    45.9 m    stable    10.9 s    150. y    stable
 lambda            0.0 4.101e+00 2.577e-01 1.444e-01 2.100e-03 2.517e-04       0.0 6.359e-02 1.465e-10       0.0
  z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  -84.0000   16.0000
  z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
  z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
  u235t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0  0.002966m 0.003430l      0.0       0.0       0.0
 zp 61.69 ri 3.87e-12p 3.75e-08p 5.19e-05p 0.000706p 0.002398p 0.000128p 1.48e-06p 1.33e-11p 1.20e-10p       0.0
 sig0.531 cc 3.87e-12p 3.75e-08p 5.19e-05p 0.000758p 0.003156p 0.003285p 0.003286p 1.22e-11p 1.22e-10p 1.95e-11p
          rc 3.87e-12p 3.75e-08p 5.19e-05p 0.000758p 0.003156n 0.003285l 0.003286k 1.33e-11p 1.33e-10p 2.13e-11p
  u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  0.006495l      0.0       0.0       0.0
 zp 61.51 ri 9.25e-11p 4.04e-07p 0.000262p 0.002020p 0.004073p 0.000139p 8.78e-07p 4.77e-12p 4.83e-11p       0.0
 sig0.537 cc 9.25e-11p 4.04e-07p 0.000262p 0.002282p 0.006355p 0.006494p 0.006494p 4.77e-12p 5.30e-11p 8.48e-12p
          rc 9.25e-11p 4.04e-07p 0.000262p 0.002282p 0.006355o 0.006494n 0.006494l 4.77e-12p 5.30e-11p 8.48e-12p
  u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  0.023470k      0.0       0.0       0.0
 zp 62.27 ri 3.18e-11p 1.45e-07p 6.12e-05p 0.002571p 0.012425p 0.007799p 0.000609p 3.06e-07p 4.79e-06p 4.08e-09p
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sig0.634 cc 3.18e-11p 1.45e-07p 6.13e-05p 0.002632p 0.015057p 0.022856p 0.023470p 3.06e-07p 5.10e-06p 8.20e-07p
        rc 3.18e-11p 1.45e-07p 6.13e-05p 0.002632p 0.015057p 0.022856m 0.023470k 3.06e-07p 5.10e-06p 8.20e-07p
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.018487l      0.0       0.0       0.0
zp 61.05 ri 4.98e-08p 4.66e-05p 0.003346p 0.010760p 0.004257p 7.76e-05p 1.11e-07p       0.0  4.38e-12p       0.0
sig0.557 cc 4.98e-08p 4.66e-05p 0.003392p 0.014152p 0.018409p 0.018487p 0.018487p       0.0  4.81e-12p       0.0
        rc 4.98e-08p 4.66e-05p 0.003392p 0.014152p 0.018409o 0.018487n 0.018487l       0.0  4.81e-12p       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.042593l      0.0       0.0       0.0
zp 61.39 ri 3.89e-08p 3.87e-05p 0.003004p 0.021432p 0.016722p 0.001386p 1.01e-05p 3.36e-10p 5.26e-09p       0.0
sig0.605 cc 3.89e-08p 3.87e-05p 0.003042p 0.024474p 0.041197p 0.042582p 0.042592p 3.36e-10p 5.60e-09p 8.96e-10p
        rc 3.89e-08p 3.87e-05p 0.003042p 0.024474p 0.041197o 0.042582n 0.042592l 3.36e-10p 5.60e-09p 8.96e-10p
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.041439l      0.0       0.0       0.0
zp 61.97 ri 1.86e-11p 1.96e-07p 0.000219p 0.006387p 0.029300p 0.005380p 0.000152p 1.11e-08p 9.99e-08p 8.54e-12p
sig0.564 cc 1.86e-11p 1.96e-07p 0.000219p 0.006607p 0.035906p 0.041287p 0.041439p 1.11e-08p 1.11e-07p 1.78e-08p
        rc 1.86e-11p 1.96e-07p 0.000219p 0.006607p 0.035906p 0.041287n 0.041439l 1.11e-08p 1.11e-07p 1.78e-08p
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.065658l      0.0       0.0       0.0
zp 62.05 ri 1.30e-11p 1.65e-07p 0.000233p 0.008193p 0.046609p 0.010248p 0.000374p 3.11e-08p 3.14e-07p 3.57e-11p
sig0.565 cc 1.30e-11p 1.65e-07p 0.000233p 0.008427p 0.055035p 0.065283p 0.065657p 3.11e-08p 3.45e-07p 5.53e-08p
        rc 1.30e-11p 1.65e-07p 0.000233p 0.008427p 0.055035p 0.065283n 0.065657l 3.11e-08p 3.45e-07p 5.53e-08p
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.092244m      0.0       0.0       0.0
zp 61.40 ri 5.13e-09p 2.04e-05p 0.005056p 0.044068p 0.041320p 0.001775p 5.62e-06p 4.82e-11p 4.34e-10p       0.0
sig0.544 cc 5.13e-09p 2.04e-05p 0.005076p 0.049144p 0.090464p 0.092238p 0.092244p 4.82e-11p 4.82e-10p 7.72e-11p
        rc 5.13e-09p 2.04e-05p 0.005076p 0.049144p 0.090464o 0.092238n 0.092244m 4.82e-11p 4.82e-10p 7.72e-11p
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.002055m      0.0       0.0       0.0
zp 61.95 ri       0.0  6.40e-09p 1.15e-05p 0.000255p 0.001588p 0.000194p 6.44e-06p 2.59e-10p 2.33e-09p       0.0
sig0.555 cc       0.0  6.40e-09p 1.15e-05p 0.000266p 0.001854p 0.002048p 0.002055p 2.59e-10p 2.59e-09p 4.14e-10p
        rc       0.0  6.40e-09p 1.15e-05p 0.000266p 0.001854p 0.002048o 0.002055m 2.59e-10p 2.59e-09p 4.14e-10p
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000464n      0.0       0.0       0.0
zp 61.01 ri 5.00e-10p 8.18e-07p 9.61e-05p 0.000267p 9.94e-05p 8.78e-07p 5.60e-10p       0.0       0.0       0.0
sig0.524 cc 5.00e-10p 8.18e-07p 9.70e-05p 0.000364p 0.000464p 0.000464p 0.000464p       0.0       0.0       0.0
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        rc 5.00e-10p 8.18e-07p 9.70e-05p 0.000364p 0.000464o 0.000464o 0.000464n      0.0       0.0       0.0

  pr, nd half lives from 80eng2; pm, sm, eu half lives from 89wal1.
1

    mass number    159              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g
half life     0.181s    0.642s     3.0 s    11.3 s    18.1 m    18.6 h    stable    144.4d     8.3 s     33. m
lambda      3.830e+00 1.080e+00 2.310e-01 6.134e-02 6.383e-04 1.035e-05       0.0 5.556e-08 8.351e-02 3.501e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000       0.0 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000
 u235t   xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc     0.0       0.0       0.0       0.0  0.001094n 0.001003i 0.001095m      0.0       0.0       0.0
zp 62.07 ri 4.88e-10p 1.77e-06p 0.000106p 0.000742p 0.000156p 3.71e-06p 1.70e-09p      0.0       0.0       0.0
sig0.531 cc 4.88e-10p 1.77e-06p 0.000108p 0.000849p 0.001005p 0.001009p 0.001009p      0.0       0.0       0.0
        rc 4.88e-10p 1.77e-06p 0.000108p 0.000850o 0.001005k 0.001009i 0.001009i      0.0       0.0       0.0
 u235f   xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc     0.0       0.0       0.0       0.0       0.0  0.003056l 0.002963l      0.0       0.0       0.0
zp 61.89 ri 1.02e-08p 1.67e-05p 0.000534p 0.002163p 0.000289p 4.48e-06p 1.27e-09p      0.0       0.0       0.0
sig0.537 cc 1.02e-08p 1.67e-05p 0.000550p 0.002714p 0.003003p 0.003007p 0.003007p      0.0       0.0       0.0
        rc 1.02e-08p 1.67e-05p 0.000550p 0.002714p 0.003003n 0.003007l 0.003007k      0.0       0.0       0.0
 u235he  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc     0.0       0.0       0.0       0.0       0.0  0.012552k 0.011761k      0.0       0.0       0.0
zp 62.66 ri 3.74e-09p 3.96e-06p 0.000403p 0.004446p 0.006150p 0.001100p 2.16e-05p 4.36e-08p      0.0  7.49e-12p
sig0.634 cc 3.74e-09p 3.97e-06p 0.000407p 0.004853p 0.011003p 0.012103p 0.012126p 4.52e-08p      0.0  8.35e-12p
        rc 3.74e-09p 3.97e-06p 0.000407p 0.004853p 0.011004n 0.012104k 0.012126j 4.36e-08p      0.0  8.06e-12p
 u238f   xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc     0.0       0.0       0.0       0.0       0.0  0.008417l 0.009033m      0.0       0.0       0.0
zp 61.43 ri 2.18e-06p 0.000437p 0.004098p 0.003862p 0.000219p 9.06e-07p 1.45e-10p      0.0       0.0       0.0
sig0.557 cc 2.18e-06p 0.000439p 0.004537p 0.008399p 0.008618p 0.008619p 0.008619p      0.0       0.0       0.0
        rc 2.18e-06p 0.000439p 0.004537p 0.008399o 0.008618n 0.008619l 0.008619l      0.0       0.0       0.0
 u238he  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc     0.0       0.0       0.0       0.0       0.0  0.026227l 0.025663l      0.0       0.0       0.0
zp 61.76 ri 2.49e-06p 0.000489p 0.008248p 0.014432p 0.002795p 5.12e-05p 7.36e-08p 7.75e-12p      0.0       0.0
sig0.605 cc 2.49e-06p 0.000492p 0.008740p 0.023172p 0.025967p 0.026018p 0.026018p 7.83e-12p      0.0       0.0
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        rc 2.49e-06p 0.000492p 0.008740p 0.023172o 0.025967m 0.026018k 0.026018k 7.75e-12p      0.0       0.0
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.020560i 0.022461m      0.0       0.0       0.0
zp 62.35 ri 4.13e-09p 1.19e-05p 0.001221p 0.012124p 0.006842p 0.000453p 1.28e-06p 2.59e-10p      0.0       0.0
sig0.564 cc 4.13e-09p 1.19e-05p 0.001233p 0.013356p 0.020198p 0.020652p 0.020653p 2.47e-10p      0.0       0.0
        rc 4.13e-09p 1.19e-05p 0.001233p 0.013356p 0.020198k 0.020652i 0.020653i 2.59e-10p      0.0       0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.038547k      0.0       0.0       0.0
zp 62.43 ri 3.76e-09p 1.40e-05p 0.001697p 0.021515p 0.014100p 0.001217p 4.03e-06p 1.12e-09p      0.0       0.0
sig0.565 cc 3.76e-09p 1.40e-05p 0.001711p 0.023226p 0.037326p 0.038543p 0.038547p 1.12e-09p      0.0       0.0
        rc 3.76e-09p 1.40e-05p 0.001711p 0.023226p 0.037326o 0.038543m 0.038547k 1.12e-09p      0.0       0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.048030h      0.0       0.0       0.0       0.0
zp 61.77 ri 6.50e-07p 0.000512p 0.012776p 0.030981p 0.003723p 3.71e-05p 1.06e-08p      0.0       0.0       0.0
sig0.544 cc 6.50e-07p 0.000513p 0.013289p 0.044270p 0.047993p 0.048030p 0.048030p      0.0       0.0       0.0
        rc 6.50e-07p 0.000513p 0.013289p 0.044270m 0.047993j 0.048030h 0.048030h      0.0       0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.000886i 0.000800p      0.0       0.0       0.0
zp 62.33 ri 1.21e-10p 5.12e-07p 4.68e-05p 0.000572p 0.000249p 1.77e-05p 2.95e-08p 5.24e-12p      0.0       0.0
sig0.555 cc 1.21e-10p 5.12e-07p 4.73e-05p 0.000619p 0.000868p 0.000886p 0.000886p 5.51e-12p      0.0       0.0
        rc 1.21e-10p 5.12e-07p 4.73e-05p 0.000619p 0.000868k 0.000886i 0.000886i 5.24e-12p      0.0       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  9.77e-05n      0.0       0.0       0.0
zp 61.39 ri 1.41e-08p 4.92e-06p 4.81e-05p 4.32e-05p 1.48e-06p 2.95e-09p      0.0       0.0       0.0       0.0
sig0.524 cc 1.41e-08p 4.93e-06p 5.30e-05p 9.62e-05p 9.77e-05p 9.77e-05p 9.77e-05p      0.0       0.0       0.0
        rc 1.41e-08p 4.93e-06p 5.30e-05p 9.62e-05p 9.77e-05o 9.77e-05o 9.77e-05n      0.0       0.0       0.0

  pr, nd, pm half lives from 80eng2; sm, eu, gd half lives 89wal1; dy half life 90bur1.

1

    mass number    160              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g
half life                      0.789s    0.729s     9.6 s     38. s    stable    72.3 d    stable
lambda            0.0       0.0 8.785e-01 9.508e-01 7.220e-02 1.824e-02       0.0 1.110e-07       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000
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 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u235t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.84e-08p      0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000320n      0.0       0.0
zp 62.45 ri      0.0  2.82e-12p 5.04e-08p 7.55e-06p 0.000211p 9.03e-05p 1.01e-05p 2.84e-08p 1.93e-12p
sig0.531 cc      0.0  2.82e-12p 5.05e-08p 7.60e-06p 0.000219p 0.000309p 0.000319p 1.16e-08p 1.16e-08p
         rc      0.0  2.82e-12p 5.05e-08p 7.60e-06p 0.000219p 0.000309o 0.000319n 2.84e-08p 2.84e-08p
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001132l      0.0       0.0
zp 62.27 ri      0.0  9.11e-11p 7.06e-07p 5.42e-05p 0.000834p 0.000228p 1.51e-05p 1.12e-08p 1.20e-12p
sig0.537 cc      0.0  9.11e-11p 7.06e-07p 5.49e-05p 0.000889p 0.001117p 0.001132p 1.12e-08p 1.12e-08p
         rc      0.0  9.11e-11p 7.06e-07p 5.49e-05p 0.000889p 0.001117n 0.001132l 1.12e-08p 1.12e-08p
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.10e-05j      0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.007160k      0.0       0.0
zp 63.04 ri      0.0  8.47e-11p 2.23e-07p 5.46e-05p 0.001376p 0.004133p 0.001623p 2.11e-05p 3.78e-07p
sig0.634 cc      0.0  8.41e-11p 2.21e-07p 5.44e-05p 0.001420p 0.005521p 0.007132p 7.63e-05p 7.67e-05p
         rc      0.0  8.47e-11p 2.23e-07p 5.48e-05p 0.001431p 0.005564p 0.007187k 2.11e-05p 2.15e-05p
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.003544m      0.0       0.0
zp 61.80 ri 6.06e-12p 5.76e-08p 3.77e-05p 0.000895p 0.002288p 0.000320p 4.25e-06p 1.89e-09p      0.0
sig0.557 cc 6.06e-12p 5.76e-08p 3.77e-05p 0.000932p 0.003220p 0.003539p 0.003544p 1.89e-09p 1.89e-09p
         rc 6.06e-12p 5.76e-08p 3.77e-05p 0.000932p 0.003220p 0.003539o 0.003544m 1.89e-09p 1.89e-09p
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.11e-05k      0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.015655l      0.0       0.0
zp 62.14 ri 1.43e-11p 1.02e-07p 5.33e-05p 0.002237p 0.009071p 0.004094p 0.000188p 2.11e-05p 2.09e-10p
sig0.605 cc 1.44e-11p 1.03e-07p 5.35e-05p 0.002294p 0.011377p 0.015477p 0.015665p 7.28e-07p 7.28e-07p
         rc 1.43e-11p 1.02e-07p 5.34e-05p 0.002291p 0.011362p 0.015456n 0.015645l 2.11e-05p 2.11e-05o
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.009675m      0.0       0.0
zp 62.72 ri      0.0  4.76e-11p 5.06e-07p 0.000126p 0.003992p 0.004590p 0.000967p 6.28e-06p 4.68e-09p
sig0.564 cc      0.0  4.76e-11p 5.06e-07p 0.000126p 0.004118p 0.008708p 0.009675p 6.28e-06p 6.28e-06p
         rc      0.0  4.76e-11p 5.06e-07p 0.000126p 0.004118p 0.008708n 0.009675l 6.28e-06p 6.28e-06p
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.016033n      0.0       0.0
zp 62.81 ri      0.0  3.27e-11p 4.51e-07p 0.000140p 0.005719p 0.008001p 0.002173p 1.81e-05p 1.84e-08p
sig0.565 cc      0.0  3.27e-11p 4.51e-07p 0.000140p 0.005859p 0.013860p 0.016033p 1.81e-05p 1.81e-05p
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```
        rc      0.0  3.27e-11p 4.51e-07p 0.000140p 0.005859p 0.013860p 0.016033n 1.81e-05p 1.81e-05p
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.020499m      0.0       0.0
zp 62.14 ri      0.0  1.12e-08p 2.87e-05p 0.002148p 0.013771p 0.004418p 0.000133p 1.25e-07p 6.82e-12p
sig0.544 cc      0.0  1.12e-08p 2.87e-05p 0.002177p 0.015947p 0.020365p 0.020499p 1.25e-07p 1.25e-07p
        rc      0.0  1.12e-08p 2.87e-05p 0.002177p 0.015947p 0.020365o 0.020499m 1.25e-07p 1.25e-07p
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000316n      0.0       0.0
zp 62.71 ri      0.0       0.0  1.57e-08p 3.27e-06p 0.000153p 0.000126p 3.41e-05p 1.36e-07p 1.08e-10p
sig0.555 cc      0.0       0.0  1.57e-08p 3.29e-06p 0.000156p 0.000282p 0.000316p 1.36e-07p 1.36e-07p
        rc      0.0       0.0  1.57e-08p 3.29e-06p 0.000156p 0.000282o 0.000316n 1.36e-07p 1.36e-07p
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  6.92e-05n      0.0       0.0
zp 61.77 ri      0.0  4.13e-10p 6.12e-07p 1.62e-05p 4.80e-05p 4.35e-06p 3.64e-08p 4.87e-12p      0.0
sig0.524 cc      0.0  4.13e-10p 6.12e-07p 1.68e-05p 6.48e-05p 6.92e-05p 6.92e-05p 4.87e-12p 4.87e-12p
        rc      0.0  4.13e-10p 6.12e-07p 1.68e-05p 6.48e-05p 6.92e-05o 6.92e-05n 4.87e-12p 4.87e-12p

  nd, pm half lives from 80eng2; sm, eu half lives from 89wal1.
1

    mass number    161              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide      60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g
half life     0.311s    0.790s    4.78 s     27. s    3.66 m    6.91 d    stable     6.8 s     2.5 h     3.1 h
lambda      2.229e+00 8.774e-01 1.450e-01 2.567e-02 3.156e-03 1.161e-06       0.0 1.019e-01 7.702e-05 6.211e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000  -73.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  -27.0000
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 u235t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  8.54e-05h 7.61e-05n      0.0       0.0       0.0
zp 62.83 ri 6.16e-10p 4.40e-07p 2.83e-05p 4.54e-05p 1.11e-05p 5.96e-08p 2.51e-11p      0.0       0.0       0.0
sig0.531 cc 6.16e-10p 4.41e-07p 2.88e-05p 7.41e-05p 8.52e-05p 8.53e-05p 8.53e-05p      0.0       0.0       0.0
        rc 6.16e-10p 4.41e-07p 2.88e-05p 7.41e-05n 8.52e-05j 8.53e-05h 8.53e-05h      0.0       0.0       0.0
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.000334i 0.000331l      0.0       0.0       0.0
zp 62.65 ri 1.30e-08p 4.53e-06p 0.000153p 0.000153p 2.26e-05p 7.66e-08p 2.15e-11p      0.0       0.0       0.0
sig0.537 cc 1.30e-08p 4.55e-06p 0.000158p 0.000311p 0.000333p 0.000333p 0.000333p      0.0       0.0       0.0
```

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        rc 1.30e-08p 4.55e-06p 0.000158p 0.000311n 0.000333k 0.000333i 0.000333h      0.0       0.0       0.0
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.005317j 0.005139k      0.0       0.0       0.0
zp 63.42 ri 1.07e-08p 6.43e-06p 0.000379p 0.002509p 0.002134p 0.000230p 2.67e-06p 2.14e-10p 2.84e-09p       0.0
sig0.634 cc 1.07e-08p 6.44e-06p 0.000386p 0.002894p 0.005029p 0.005259p 0.005261p 2.17e-10p 3.10e-09p       0.0
        rc 1.07e-08p 6.44e-06p 0.000386p 0.002894p 0.005029l 0.005259j 0.005261j 2.14e-10p 3.05e-09p       0.0
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.001216g 0.001208m      0.0       0.0       0.0
zp 62.17 ri 1.74e-06p 0.000128p 0.000774p 0.000301p 1.06e-05p 1.58e-08p 1.37e-12p      0.0       0.0       0.0
sig0.557 cc 1.74e-06p 0.000130p 0.000904p 0.001205p 0.001215p 0.001215p 0.001215p      0.0       0.0       0.0
        rc 1.74e-06p 0.000130p 0.000904p 0.001205k 0.001215i 0.001215g 0.001215g      0.0       0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.008476h 0.008276l      0.0       0.0       0.0
zp 62.51 ri 3.85e-06p 0.000403p 0.003793p 0.003844p 0.000421p 4.14e-06p 3.11e-09p      0.0       0.0       0.0
sig0.605 cc 3.85e-06p 0.000407p 0.004200p 0.008044p 0.008465p 0.008469p 0.008469p      0.0       0.0       0.0
        rc 3.85e-06p 0.000407p 0.004200p 0.008044m 0.008465j 0.008469h 0.008469h      0.0       0.0       0.0
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.004835i 0.004965m      0.0       0.0       0.0
zp 63.10 ri 1.13e-08p 1.04e-05p 0.000780p 0.002767p 0.001255p 2.85e-05p 5.53e-08p      0.0  3.07e-12p      0.0
sig0.564 cc 1.13e-08p 1.04e-05p 0.000790p 0.003558p 0.004813p 0.004841p 0.004841p      0.0  3.49e-12p      0.0
        rc 1.13e-08p 1.04e-05p 0.000790p 0.003558p 0.004813k 0.004841i 0.004841i      0.0  3.53e-12p      0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.008003h 0.013390k      0.0       0.0       0.0
zp 63.19 ri 9.92e-09p 1.11e-05p 0.001106p 0.004682p 0.002772p 7.77e-05p 2.77e-07p 2.75e-12p 2.02e-11p      0.0
sig0.565 cc 9.92e-09p 1.11e-05p 0.001117p 0.005799p 0.008571p 0.008649p 0.008649p 2.06e-12p 1.71e-11p      0.0
        rc 9.92e-09p 1.11e-05p 0.001117p 0.005799p 0.008571j 0.008649h 0.008649h 2.75e-12p 2.29e-11p      0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.008466h 0.008537m      0.0       0.0       0.0
zp 62.51 ri 1.05e-06p 0.000244p 0.004316p 0.003592p 0.000315p 9.41e-07p 1.73e-10p      0.0       0.0       0.0
sig0.544 cc 1.05e-06p 0.000245p 0.004561p 0.008152p 0.008467p 0.008468p 0.008468p      0.0       0.0       0.0
        rc 1.05e-06p 0.000245p 0.004561p 0.008152l 0.008467j 0.008468h 0.008468h      0.0       0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.000122i 0.000109p      0.0       0.0       0.0
zp 63.09 ri 2.40e-10p 2.18e-07p 2.20e-05p 6.46e-05p 3.42e-05p 5.59e-07p 9.94e-10p      0.0       0.0       0.0
sig0.555 cc 2.40e-10p 2.19e-07p 2.22e-05p 8.68e-05p 0.000121p 0.000122p 0.000122p      0.0       0.0       0.0
        rc 2.40e-10p 2.19e-07p 2.22e-05p 8.68e-05p 0.000121k 0.000122i 0.000122i      0.0       0.0       0.0
```

th232f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.45e-05m 0.0 0.0 0.0 0.0
zp 62.15 ri 1.30e-08p 1.37e-06p 9.93e-06p 3.10e-06p 7.52e-08p 4.42e-11p 0.0 0.0 0.0 0.0
sig0.524 cc 1.30e-08p 1.38e-06p 1.13e-05p 1.44e-05p 1.45e-05p 1.45e-05p 1.45e-05p 0.0 0.0 0.0
rc 1.30e-08p 1.38e-06p 1.13e-05p 1.44e-05o 1.45e-05n 1.45e-05m 1.45e-05m 0.0 0.0 0.0

nd, pm, sm half lives from 80eng2; eu, gd, tb half lives 89wal1.
1

mass number 162 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 60 nd g 61 pm g 62 sm g 63 eu g 64 gd g 65 tb m 65 tb g 66 dy g 67 ho m 67 ho g 68 er g
half life 0.324s 5.26 s 11. s 8.4 m 2.23 h 7.6 m stable 66. m 13. m stable
lambda 0.0 2.139e+00 1.318e-01 6.301e-02 1.375e-03 8.634e-05 1.520e-03 0.0 1.750e-04 8.887e-04 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 2.0000 98.0000 100.0000 -37.0000 -100.0000 0.0
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 63.0000 0.0
u235t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.59e-05n 0.0 0.0 0.0
zp 63.22 ri 3.48e-12p 6.80e-09p 2.03e-06p 6.99e-06p 6.79e-06p 4.52e-08p 4.52e-08p 2.03e-10p 0.0 0.0 0.0
sig0.531 cc 3.48e-12p 6.80e-09p 2.03e-06p 9.02e-06p 1.58e-05p 3.61e-07p 1.55e-05p 1.59e-05p 0.0 0.0 0.0
rc 3.48e-12p 6.80e-09p 2.03e-06p 9.02e-06p 1.58e-05p 3.61e-07o 1.55e-05o 1.59e-05n 0.0 0.0 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.77e-05m 0.0 0.0 0.0
zp 63.03 ri 1.08e-10p 9.61e-08p 1.38e-05p 2.79e-05p 1.59e-05p 6.49e-08p 6.49e-08p 1.73e-10p 0.0 0.0 0.0
sig0.537 cc 1.08e-10p 9.62e-08p 1.39e-05p 4.17e-05p 5.76e-05p 1.22e-06p 5.65e-05p 5.77e-05p 0.0 0.0 0.0
rc 1.08e-10p 9.62e-08p 1.39e-05p 4.17e-05p 5.76e-05o 1.22e-06o 5.65e-05n 5.77e-05m 0.0 0.0 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.002783k 0.0 0.0 0.0
zp 63.80 ri 2.67e-10p 3.96e-07p 5.56e-05p 0.000829p 0.001523p 0.000182p 0.000182p 1.02e-05p 2.34e-08p 5.13e-09p 7.39e-12p
sig0.634 cc 2.67e-10p 3.96e-07p 5.60e-05p 0.000885p 0.002408p 0.000231p 0.002542p 0.002783p 2.34e-08p 1.99e-08p 7.39e-12p
rc 2.67e-10p 3.96e-07p 5.60e-05p 0.000885p 0.002408o 0.000231p 0.002542m 0.002783k 2.34e-08p 1.99e-08p 7.39e-12p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000340n 0.0 0.0 0.0
zp 62.55 ri 4.43e-08p 9.18e-06p 0.000164p 0.000151p 1.63e-05p 3.49e-08p 3.49e-08p 2.15e-11p 0.0 0.0 0.0
sig0.557 cc 4.43e-08p 9.22e-06p 0.000173p 0.000324p 0.000340p 6.84e-06p 0.000333p 0.000340p 0.0 0.0 0.0
rc 4.43e-08p 9.22e-06p 0.000173p 0.000324p 0.000340o 6.84e-06o 0.000333o 0.000340n 0.0 0.0 0.0

```
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.005937l      0.0       0.0       0.0
zp 62.88 ri 2.53e-07p 6.77e-05p 0.001517p 0.003454p 0.000876p 1.08e-05p 1.08e-05p 4.27e-08p 5.06e-12p 1.11e-12p       0.0
sig0.605 cc 2.53e-07p 6.79e-05p 0.001585p 0.005039p 0.005915p 0.000129p 0.005807p 0.005937p 5.06e-12p 4.30e-12p       0.0
         rc 2.53e-07p 6.79e-05p 0.001585p 0.005039p 0.005915o 0.000129o 0.005807n 0.005937l 5.06e-12p 4.30e-12p       0.0
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.002231m      0.0       0.0       0.0
zp 63.48 ri 1.75e-10p 4.16e-07p 0.000111p 0.000863p 0.001194p 3.12e-05p 3.12e-05p 4.39e-07p 5.16e-11p 2.21e-11p       0.0
sig0.564 cc 1.75e-10p 4.16e-07p 0.000111p 0.000974p 0.002168p 7.46e-05p 0.002156p 0.002231p 5.16e-11p 5.46e-11p       0.0
         rc 1.75e-10p 4.16e-07p 0.000111p 0.000974p 0.002168o 7.46e-05p 0.002156n 0.002231l 5.16e-11p 5.46e-11p       0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.006141l      0.0       0.0       0.0
zp 63.57 ri 2.09e-10p 6.22e-07p 0.000215p 0.002063p 0.003623p 0.000118p 0.000118p 2.23e-06p 3.61e-10p 1.33e-10p       0.0
sig0.565 cc 2.09e-10p 6.22e-07p 0.000216p 0.002279p 0.005902p 0.000236p 0.005902p 0.006141p 3.61e-10p 3.61e-10p       0.0
         rc 2.09e-10p 6.22e-07p 0.000216p 0.002279p 0.005902o 0.000236p 0.005902n 0.006141l 3.61e-10p 3.61e-10p       0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.27e-05n      0.0       0.0       0.0
zp 62.88 ri 8.93e-11p 6.69e-08p 3.44e-06p 7.42e-06p 1.79e-06p 8.34e-09p 8.34e-09p 1.01e-11p       0.0       0.0       0.0
sig0.544 cc 8.93e-11p 6.69e-08p 3.50e-06p 1.09e-05p 1.27e-05p 2.63e-07p 1.25e-05p 1.27e-05p       0.0       0.0       0.0
         rc 8.93e-11p 6.69e-08p 3.50e-06p 1.09e-05p 1.27e-05o 2.63e-07o 1.25e-05o 1.27e-05n       0.0       0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.27e-05p      0.0       0.0       0.0
zp 63.47 ri      0.0  1.66e-09p 6.98e-07p 4.09e-06p 7.66e-06p 1.32e-07p 1.32e-07p 2.13e-09p       0.0       0.0       0.0
sig0.555 cc      0.0  1.66e-09p 6.99e-07p 4.79e-06p 1.24e-05p 3.81e-07p 1.23e-05p 1.27e-05p       0.0       0.0       0.0
         rc      0.0  1.66e-09p 6.99e-07p 4.79e-06p 1.24e-05p 3.81e-07o 1.23e-05p 1.27e-05o       0.0       0.0       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  7.98e-06n      0.0       0.0       0.0
zp 62.52 ri 5.61e-10p 1.72e-07p 4.36e-06p 3.16e-06p 2.84e-07p 2.49e-10p 2.49e-10p       0.0       0.0       0.0       0.0
sig0.524 cc 5.61e-10p 1.72e-07p 4.53e-06p 7.70e-06p 7.98e-06p 1.60e-07p 7.82e-06p 7.98e-06p       0.0       0.0       0.0
         rc 5.61e-10p 1.72e-07p 4.53e-06p 7.70e-06p 7.98e-06o 1.60e-07o 7.82e-06o 7.98e-06n       0.0       0.0       0.0

  pm, sm half lives from 80eng2; eu, gd, tb half lives from 89wal1.
1

    mass number    163              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide       60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g
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half life                    1.27 s    7.60 s    1.13 m    19.5 m    stable    1.07 s     33. y     75. m
lambda          0.0       0.0 5.458e-01 9.120e-02 1.022e-02 5.924e-04       0.0 6.478e-01 6.660e-10 1.540e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 u235t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  6.11e-06n      0.0       0.0       0.0
zp 63.60 ri      0.0  1.82e-10p 1.37e-07p 1.94e-06p 3.81e-06p 2.14e-07p 1.24e-09p      0.0       0.0       0.0
sig0.531 cc      0.0  1.82e-10p 1.38e-07p 2.08e-06p 5.89e-06p 6.11e-06p 6.11e-06p      0.0       0.0       0.0
         rc      0.0  1.82e-10p 1.38e-07p 2.08e-06p 5.89e-06p 6.11e-06o 6.11e-06n      0.0       0.0       0.0
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  9.62e-06m      0.0       0.0       0.0
zp 63.40 ri      0.0  1.64e-09p 5.52e-07p 4.20e-06p 4.71e-06p 1.57e-07p 5.18e-10p      0.0       0.0       0.0
sig0.537 cc      0.0  1.64e-09p 5.54e-07p 4.76e-06p 9.46e-06p 9.62e-06p 9.62e-06p      0.0       0.0       0.0
         rc      0.0  1.64e-09p 5.54e-07p 4.76e-06p 9.46e-06o 9.62e-06n 9.62e-06m      0.0       0.0       0.0
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001584k      0.0       0.0       0.0
zp 64.17 ri 5.56e-12p 2.00e-08p 6.64e-06p 0.000223p 0.000877p 0.000449p 2.83e-05p 1.31e-08p 1.75e-07p 1.18e-10p
sig0.634 cc 5.56e-12p 2.00e-08p 6.66e-06p 0.000230p 0.001107p 0.001556p 0.001584p 1.31e-08p 1.88e-07p 1.18e-10p
         rc 5.56e-12p 2.00e-08p 6.66e-06p 0.000230p 0.001107p 0.001556m 0.001584k 1.31e-08p 1.88e-07p 1.18e-10p
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000204n      0.0       0.0       0.0
zp 62.92 ri 1.56e-09p 1.06e-06p 4.87e-05p 0.000122p 3.20e-05p 4.37e-07p 3.87e-10p      0.0       0.0       0.0
sig0.557 cc 1.56e-09p 1.06e-06p 4.97e-05p 0.000172p 0.000204p 0.000204p 0.000204p      0.0       0.0       0.0
         rc 1.56e-09p 1.06e-06p 4.97e-05p 0.000172p 0.000204o 0.000204o 0.000204n      0.0       0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.003393l      0.0       0.0       0.0
zp 63.25 ri 9.52e-09p 6.59e-06p 0.000362p 0.001880p 0.001080p 6.44e-05p 3.30e-07p 8.86e-12p 1.18e-10p      0.0
sig0.605 cc 9.52e-09p 6.60e-06p 0.000369p 0.002249p 0.003329p 0.003393p 0.003393p 8.86e-12p 1.27e-10p      0.0
         rc 9.52e-09p 6.60e-06p 0.000369p 0.002249p 0.003329o 0.003393n 0.003393l 8.86e-12p 1.27e-10p      0.0
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000916m      0.0       0.0       0.0
zp 63.86 ri 1.31e-12p 1.19e-08p 7.95e-06p 0.000207p 0.000599p 0.000101p 1.74e-06p 1.43e-10p 9.58e-10p      0.0
sig0.564 cc 1.31e-12p 1.19e-08p 7.96e-06p 0.000215p 0.000814p 0.000914p 0.000916p 1.43e-10p 1.10e-09p      0.0
         rc 1.31e-12p 1.19e-08p 7.96e-06p 0.000215p 0.000814p 0.000914o 0.000916m 1.43e-10p 1.10e-09p      0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

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        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.003147n      0.0       0.0       0.0
zp 63.96 ri 1.63e-12p 1.85e-08p 1.70e-05p 0.000551p 0.002127p 0.000441p 1.06e-05p 1.07e-09p 7.81e-09p       0.0
sig0.565 cc 1.63e-12p 1.86e-08p 1.71e-05p 0.000568p 0.002695p 0.003136p 0.003147p 1.07e-09p 8.88e-09p       0.0
        rc 1.63e-12p 1.86e-08p 1.71e-05p 0.000568p 0.002695p 0.003136o 0.003147m 1.07e-09p 8.88e-09p       0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.90e-06n      0.0       0.0       0.0
zp 63.24 ri 1.61e-12p 3.82e-09p 5.78e-07p 3.25e-06p 2.02e-06p 5.47e-08p 1.05e-10p      0.0       0.0       0.0
sig0.544 cc 1.61e-12p 3.82e-09p 5.82e-07p 3.83e-06p 5.85e-06p 5.90e-06p 5.90e-06p      0.0       0.0       0.0
        rc 1.61e-12p 3.82e-09p 5.82e-07p 3.83e-06p 5.85e-06p 5.90e-06o 5.90e-06n      0.0       0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.93e-06p      0.0       0.0       0.0
zp 63.85 ri      0.0  5.31e-11p 5.14e-08p 1.17e-06p 4.16e-06p 5.36e-07p 9.75e-09p      0.0  3.42e-12p      0.0
sig0.555 cc      0.0  5.31e-11p 5.14e-08p 1.22e-06p 5.38e-06p 5.92e-06p 5.93e-06p      0.0  3.93e-12p      0.0
        rc      0.0  5.31e-11p 5.14e-08p 1.22e-06p 5.38e-06p 5.92e-06p 5.93e-06o      0.0  3.93e-12p      0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  4.64e-06n      0.0       0.0       0.0
zp 62.90 ri 1.26e-11p 1.66e-08p 1.17e-06p 2.81e-06p 6.50e-07p 4.73e-09p 1.75e-12p      0.0       0.0       0.0
sig0.524 cc 1.26e-11p 1.66e-08p 1.18e-06p 3.99e-06p 4.64e-06p 4.64e-06p 4.64e-06p      0.0       0.0       0.0
        rc 1.26e-11p 1.66e-08p 1.18e-06p 3.99e-06p 4.64e-06o 4.64e-06o 4.64e-06n      0.0       0.0       0.0

  sm, eu half lives from 80eng2; gd, tb half lives from 89wal1.
1

    mass number    164              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide       60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g
half life                     1.39 s    1.58 s     45. s     3.0 m    stable     37. m     24. m    stable
lambda           0.0       0.0 4.987e-01 4.387e-01 1.540e-02 3.851e-03       0.0 3.122e-04 4.814e-04       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  -47.0000   53.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 u235t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.88e-06n      0.0       0.0       0.0
zp 63.98 ri      0.0  1.66e-12p 6.04e-09p 2.01e-07p 1.49e-06p 1.80e-07p 4.78e-09p      0.0       0.0       0.0
sig0.531 cc      0.0  1.66e-12p 6.04e-09p 2.07e-07p 1.70e-06p 1.88e-06p 1.88e-06p      0.0  1.15e-12p      0.0
        rc      0.0  1.66e-12p 6.04e-09p 2.07e-07p 1.70e-06p 1.88e-06o 1.88e-06n      0.0  1.15e-12p      0.0
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

xc 0.0 0.0 0.0 0.0 0.0 0.0 5.77e-06m 0.0 0.0 0.0
zp 63.78 ri 0.0 4.01e-11p 6.21e-08p 1.06e-06p 4.33e-06p 3.16e-07p 4.70e-09p 0.0 0.0 0.0
sig0.537 cc 0.0 4.01e-11p 6.21e-08p 1.12e-06p 5.45e-06p 5.77e-06p 5.77e-06p 0.0 0.0 0.0
rc 0.0 4.01e-11p 6.21e-08p 1.12e-06p 5.45e-06p 5.77e-06o 5.77e-06m 0.0 0.0 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000976k 0.0 0.0 0.0
zp 64.55 ri 0.0 7.28e-10p 5.94e-07p 4.70e-05p 0.000410p 0.000453p 6.44e-05p 8.38e-07p 1.84e-07p 1.59e-09p
sig0.634 cc 0.0 7.28e-10p 5.95e-07p 4.76e-05p 0.000457p 0.000911p 0.000976p 8.38e-07p 1.02e-06p 5.43e-07p
rc 0.0 7.28e-10p 5.95e-07p 4.76e-05p 0.000457p 0.000911m 0.000976k 8.38e-07p 1.02e-06p 5.43e-07p
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000125n 0.0 0.0 0.0
zp 63.29 ri 3.88e-11p 7.57e-08p 1.09e-05p 6.51e-05p 4.70e-05p 1.68e-06p 4.94e-09p 0.0 0.0 0.0
sig0.557 cc 3.88e-11p 7.58e-08p 1.10e-05p 7.61e-05p 0.000123p 0.000125p 0.000125p 0.0 0.0 0.0
rc 3.88e-11p 7.58e-08p 1.10e-05p 7.61e-05p 0.000123p 0.000125o 0.000125n 0.0 0.0 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.001992l 0.0 0.0 0.0
zp 63.61 ri 2.80e-10p 4.95e-07p 6.67e-05p 0.000790p 0.000996p 0.000137p 1.73e-06p 1.40e-09p 3.07e-10p 0.0
sig0.605 cc 2.80e-10p 4.95e-07p 6.71e-05p 0.000857p 0.001853p 0.001991p 0.001992p 1.40e-09p 1.71e-09p 9.05e-10p
rc 2.80e-10p 4.95e-07p 6.71e-05p 0.000857p 0.001853o 0.001991n 0.001992l 1.40e-09p 1.71e-09p 9.05e-10p
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000330m 0.0 0.0 0.0
zp 64.23 ri 0.0 1.72e-10p 4.17e-07p 2.52e-05p 0.000222p 7.75e-05p 4.48e-06p 4.93e-09p 2.11e-09p 1.20e-12p
sig0.564 cc 0.0 1.72e-10p 4.17e-07p 2.56e-05p 0.000248p 0.000325p 0.000330p 4.93e-09p 7.05e-09p 3.74e-09p
rc 0.0 1.72e-10p 4.17e-07p 2.56e-05p 0.000248p 0.000325o 0.000330m 4.93e-09p 7.05e-09p 3.74e-09o
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.001793n 0.0 0.0 0.0
zp 64.34 ri 0.0 3.62e-10p 1.21e-06p 9.65e-05p 0.001143p 0.000511p 4.09e-05p 6.46e-08p 2.39e-08p 2.20e-11p
sig0.565 cc 0.0 3.62e-10p 1.21e-06p 9.77e-05p 0.001241p 0.001752p 0.001793p 6.46e-08p 8.85e-08p 4.69e-08p
rc 0.0 3.62e-10p 1.21e-06p 9.77e-05p 0.001241p 0.001752o 0.001793m 6.46e-08p 8.85e-08p 4.69e-08o
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.97e-06n 0.0 0.0 0.0
zp 63.61 ri 0.0 9.39e-11p 4.47e-08p 7.04e-07p 1.13e-06p 8.76e-08p 5.34e-10p 0.0 0.0 0.0
sig0.544 cc 0.0 9.39e-11p 4.48e-08p 7.49e-07p 1.88e-06p 1.97e-06p 1.97e-06p 0.0 0.0 0.0
rc 0.0 9.39e-11p 4.48e-08p 7.49e-07p 1.88e-06p 1.97e-06o 1.97e-06n 0.0 0.0 0.0
u233t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.95e-06p 0.0 0.0 0.0

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zp 64.23 ri      0.0       0.0  2.26e-09p 1.13e-07p 1.45e-06p 3.60e-07p 2.64e-08p 1.75e-11p 7.51e-12p      0.0
sig0.555 cc      0.0       0.0  2.26e-09p 1.15e-07p 1.56e-06p 1.92e-06p 1.95e-06p 1.75e-11p 2.50e-11p 1.33e-11p
        rc      0.0       0.0  2.26e-09p 1.15e-07p 1.56e-06p 1.92e-06p 1.95e-06o 1.75e-11p 2.50e-11p 1.33e-11o
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.04e-06n      0.0       0.0       0.0
zp 63.27 ri      0.0  6.50e-10p 1.79e-07p 1.04e-06p 7.96e-07p 1.60e-08p 2.50e-11p      0.0       0.0       0.0
sig0.524 cc      0.0  6.51e-10p 1.80e-07p 1.22e-06p 2.02e-06p 2.04e-06p 2.04e-06p      0.0       0.0       0.0
        rc      0.0  6.51e-10p 1.80e-07p 1.22e-06p 2.02e-06p 2.04e-06o 2.04e-06n      0.0       0.0       0.0

  sm, eu half lives from 80eng2; gd, tb half lives from 89wal1.
1

    mass number    165              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy m   66 dy g   67 ho g   68 er g   69 tm g
half life              0.454s    1.35 s    0.705m     2.1 m    1.26 m    2.33 h    stable    10.36h    30.06h
lambda            0.0 1.527e+00 5.134e-01 1.639e-02 5.501e-03 9.169e-03 8.264e-05       0.0 1.859e-05 6.405e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000   50.0000   50.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0    2.5000       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0   97.5000       0.0       0.0       0.0
 u235t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.52e-07p      0.0       0.0
zp 64.36 ri      0.0  2.55e-10p 3.87e-08p 6.14e-07p 2.81e-07p 2.29e-09p 1.53e-08p 2.05e-11p      0.0       0.0
sig0.531 cc      0.0  2.55e-10p 3.90e-08p 6.53e-07p 9.34e-07p 4.69e-07p 9.40e-07p 9.52e-07p      0.0       0.0
        rc      0.0  2.55e-10p 3.90e-08p 6.53e-07p 9.34e-07p 4.69e-07o 9.40e-07n 9.52e-07n      0.0       0.0
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.31e-06m      0.0       0.0
zp 64.16 ri      0.0  2.66e-09p 1.95e-07p 1.64e-06p 4.53e-07p 1.93e-09p 1.41e-08p 1.12e-11p      0.0       0.0
sig0.537 cc      0.0  2.66e-09p 1.98e-07p 1.84e-06p 2.29e-06p 1.15e-06p 2.28e-06p 2.31e-06p      0.0       0.0
        rc      0.0  2.66e-09p 1.98e-07p 1.84e-06p 2.29e-06p 1.15e-06o 2.28e-06n 2.31e-06m      0.0       0.0
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000538k      0.0       0.0
zp 64.93 ri 1.68e-11p 3.39e-08p 6.43e-06p 0.000127p 0.000305p 6.69e-06p 8.89e-05p 3.55e-06p 1.35e-08p 4.79e-12p
sig0.634 cc 1.68e-11p 3.39e-08p 6.47e-06p 0.000134p 0.000439p 0.000226p 0.000529p 0.000538p 1.35e-08p 4.79e-12p
        rc 1.68e-11p 3.39e-08p 6.47e-06p 0.000134p 0.000439p 0.000226p 0.000529m 0.000538k 1.35e-08p 4.79e-12p
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  7.66e-05n      0.0       0.0
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zp 63.67 ri 3.54e-09p 1.45e-06p 2.60e-05p 4.44e-05p 4.78e-06p 4.82e-09p 3.54e-08p 1.30e-11p      0.0       0.0
sig0.557 cc 3.54e-09p 1.45e-06p 2.74e-05p 7.18e-05p 7.66e-05p 3.83e-05p 7.57e-05p 7.66e-05p      0.0       0.0
        rc 3.54e-09p 1.45e-06p 2.74e-05p 7.18e-05p 7.66e-05p 3.83e-05o 7.57e-05n 7.66e-05m      0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001097l      0.0       0.0
zp 63.98 ri 2.33e-08p 8.02e-06p 0.000228p 0.000649p 0.000206p 4.50e-07p 5.98e-06p 1.65e-08p 3.11e-12p      0.0
sig0.605 cc 2.33e-08p 8.04e-06p 0.000237p 0.000885p 0.001091p 0.000546p 0.001084p 0.001097p 3.11e-12p      0.0
        rc 2.33e-08p 8.04e-06p 0.000237p 0.000885p 0.001091o 0.000546o 0.001084m 0.001097l 3.11e-12p      0.0
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000134n      0.0       0.0
zp 64.61 ri 2.22e-12p 1.40e-08p 3.04e-06p 5.96e-05p 6.33e-05p 1.08e-06p 7.24e-06p 4.76e-08p 2.11e-11p      0.0
sig0.564 cc 2.22e-12p 1.40e-08p 3.05e-06p 6.27e-05p 0.000126p 6.41e-05p 0.000133p 0.000134p 2.11e-11p      0.0
        rc 2.22e-12p 1.40e-08p 3.05e-06p 6.27e-05p 0.000126p 6.41e-05p 0.000133n 0.000134m 2.11e-11p      0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000897o      0.0       0.0
zp 64.72 ri 5.05e-12p 4.50e-08p 1.26e-05p 0.000344p 0.000456p 1.00e-05p 7.36e-05p 6.35e-07p 4.20e-10p      0.0
sig0.565 cc 5.05e-12p 4.51e-08p 1.27e-05p 0.000357p 0.000813p 0.000417p 0.000886p 0.000897p 4.20e-10p      0.0
        rc 5.05e-12p 4.51e-08p 1.27e-05p 0.000357p 0.000813p 0.000417p 0.000886n 0.000897n 4.20e-10p      0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.15e-07n      0.0       0.0
zp 63.98 ri 1.41e-12p 2.17e-09p 1.01e-07p 4.22e-07p 8.89e-08p 2.17e-10p 1.45e-09p      0.0       0.0       0.0
sig0.544 cc 1.41e-12p 2.18e-09p 1.03e-07p 5.24e-07p 6.13e-07p 3.07e-07p 6.07e-07p 6.15e-07p      0.0       0.0
        rc 1.41e-12p 2.18e-09p 1.03e-07p 5.24e-07p 6.13e-07p 3.07e-07o 6.07e-07n 6.15e-07m      0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.32e-07p      0.0       0.0
zp 64.60 ri      0.0  6.05e-11p 1.24e-08p 3.13e-07p 2.67e-07p 5.15e-09p 3.44e-08p 1.55e-10p      0.0       0.0
sig0.555 cc      0.0  6.06e-11p 1.24e-08p 3.25e-07p 5.93e-07p 3.01e-07p 6.25e-07p 6.32e-07p      0.0       0.0
        rc      0.0  6.06e-11p 1.24e-08p 3.25e-07p 5.93e-07p 3.01e-07o 6.25e-07n 6.32e-07n      0.0       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.53e-07n      0.0       0.0
zp 63.65 ri 6.56e-12p 5.49e-09p 1.18e-07p 2.14e-07p 1.61e-08p 9.20e-12p 6.75e-11p      0.0       0.0       0.0
sig0.524 cc 6.56e-12p 5.49e-09p 1.23e-07p 3.37e-07p 3.53e-07p 1.77e-07p 3.49e-07p 3.53e-07p      0.0       0.0
        rc 6.56e-12p 5.49e-09p 1.23e-07p 3.37e-07p 3.53e-07p 1.77e-07o 3.49e-07n 3.53e-07m      0.0       0.0

  sm, eu, gd half lives from 80eng2; tb, dy half lives from 89wal1.
1
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mass number 166 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	62 sm g	63 eu g	64 gd g	65 tb g	66 dy g	67 ho m	67 ho g	68 er g	69 tm g	70 yb g
half life						3.400d	1.2e3y	1.117d	stable	7.70 h	56.7 h
lambda	0.0	0.0	0.0	0.0	2.360e-06	1.832e-11	7.182e-06	0.0	2.501e-05	3.396e-06
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	0.0	100.0000	100.0000	-100.0000	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
u235t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	3.46e-07p	0.0	0.0	4.43e-07p	0.0	0.0
zp 64.74 ri	6.43e-12p	2.50e-09p	1.66e-07p	1.54e-07p	3.98e-08p	9.41e-11p	4.03e-11p	0.0	0.0	0.0
sig0.531 cc	6.43e-12p	2.51e-09p	1.69e-07p	3.23e-07p	3.63e-07p	8.22e-11p	3.63e-07p	3.63e-07p	0.0	0.0
rc	6.43e-12p	2.51e-09p	1.69e-07p	3.23e-07o	3.63e-07n	9.41e-11p	3.63e-07n	3.63e-07n	0.0	0.0
u235f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.62e-07m	0.0	0.0
zp 64.54 ri	9.64e-11p	1.74e-08p	5.78e-07p	3.20e-07p	4.68e-08p	6.03e-11p	2.23e-11p	0.0	0.0	0.0
sig0.537 cc	9.64e-11p	1.75e-08p	5.95e-07p	9.15e-07p	9.62e-07p	6.03e-11p	9.62e-07p	9.62e-07p	0.0	0.0
rc	9.64e-11p	1.75e-08p	5.95e-07p	9.15e-07p	9.62e-07o	6.03e-11p	9.62e-07n	9.62e-07m	0.0	0.0
u235he xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.000277j	0.0	0.0	0.000268k	0.0	0.0
zp 65.31 ri	1.29e-09p	5.98e-07p	2.75e-05p	0.000145p	9.84e-05p	6.66e-06p	1.46e-06p	7.45e-08p	6.56e-11p	0.0
sig0.634 cc	1.29e-09p	5.99e-07p	2.81e-05p	0.000173p	0.000271p	6.87e-06p	0.000272p	0.000279p	6.76e-11p	0.0
rc	1.29e-09p	6.00e-07p	2.81e-05p	0.000173p	0.000271j	6.66e-06p	0.000273j	0.000279j	6.56e-11p	0.0
u238f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.67e-05n	0.0	0.0
zp 64.04 ri	1.75e-07p	8.16e-06p	3.82e-05p	9.87e-06p	2.61e-07p	1.77e-10p	6.54e-11p	0.0	0.0	0.0
sig0.557 cc	1.75e-07p	8.34e-06p	4.66e-05p	5.64e-05p	5.67e-05p	1.77e-10p	5.67e-05p	5.67e-05p	0.0	0.0
rc	1.75e-07p	8.34e-06p	4.66e-05p	5.64e-05p	5.67e-05o	1.77e-10p	5.67e-05o	5.67e-05n	0.0	0.0
u238he xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.000634k	0.0	0.0	0.000620l	0.0	0.0
zp 64.35 ri	7.14e-07p	5.02e-05p	0.000327p	0.000234p	1.77e-05p	9.42e-08p	2.07e-08p	5.74e-11p	0.0	0.0
sig0.605 cc	7.14e-07p	5.09e-05p	0.000378p	0.000612p	0.000629p	9.53e-08p	0.000630p	0.000630p	0.0	0.0
rc	7.14e-07p	5.09e-05p	0.000378p	0.000612m	0.000629k	9.42e-08p	0.000630k	0.000630j	0.0	0.0
pu239t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	6.67e-05l	0.0	0.0	5.57e-05p	0.0	0.0
zp 64.99 ri	4.35e-10p	2.39e-07p	1.59e-05p	3.55e-05p	1.48e-05p	1.32e-07p	5.64e-08p	3.14e-10p	0.0	0.0

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sig0.564 cc 4.34e-10p 2.39e-07p 1.61e-05p 5.16e-05p 6.64e-05p 1.44e-07p 6.64e-05p 6.66e-05p       0.0        0.0
         rc 4.35e-10p 2.39e-07p 1.61e-05p 5.16e-05p 6.64e-05l 1.32e-07p 6.65e-05l 6.66e-05l       0.0        0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000635o      0.0       0.0
zp 65.10 ri 1.74e-09p 1.27e-06p 0.000115p 0.000330p 0.000185p 2.51e-06p 9.27e-07p 8.28e-09p       0.0        0.0
sig0.565 cc 1.74e-09p 1.27e-06p 0.000116p 0.000446p 0.000631p 2.51e-06p 0.000632p 0.000635p       0.0        0.0
         rc 1.74e-09p 1.27e-06p 0.000116p 0.000446p 0.000631o 2.51e-06p 0.000632o 0.000635n       0.0        0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.14e-07n      0.0       0.0
zp 64.35 ri 1.54e-10p 2.18e-08p 2.48e-07p 1.37e-07p 7.61e-09p 9.65e-12p 4.14e-12p       0.0        0.0        0.0
sig0.544 cc 1.54e-10p 2.20e-08p 2.70e-07p 4.06e-07p 4.14e-07p 9.65e-12p 4.14e-07p 4.14e-07p       0.0        0.0
         rc 1.54e-10p 2.20e-08p 2.70e-07p 4.06e-07p 4.14e-07o 9.65e-12p 4.14e-07o 4.14e-07n       0.0        0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.68e-07p      0.0       0.0
zp 64.98 ri 2.19e-12p 1.04e-09p 1.04e-07p 1.69e-07p 9.26e-08p 5.66e-10p 2.43e-10p 1.48e-12p       0.0        0.0
sig0.555 cc 2.19e-12p 1.04e-09p 1.05e-07p 2.75e-07p 3.67e-07p 5.66e-10p 3.68e-07p 3.68e-07p       0.0        0.0
         rc 2.19e-12p 1.04e-09p 1.05e-07p 2.75e-07p 3.67e-07o 5.66e-10p 3.68e-07o 3.68e-07o       0.0        0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.38e-07n      0.0       0.0
zp 64.02 ri 2.93e-10p 1.72e-08p 1.02e-07p 1.88e-08p 3.55e-10p       0.0        0.0        0.0        0.0        0.0
sig0.524 cc 2.93e-10p 1.75e-08p 1.19e-07p 1.38e-07p 1.38e-07p       0.0  1.38e-07p 1.38e-07p       0.0        0.0
         rc 2.93e-10p 1.75e-08p 1.19e-07p 1.38e-07p 1.38e-07o       0.0  1.38e-07o 1.38e-07n       0.0        0.0

  dy, ho half lives from 89wal1.
1

    mass number    167              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide       62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho g   68 er m   68 er g   69 tm g   70 yb g
half life                                     6.2 m     3.1 h    2.28 s    stable    9.24 d    17.5 m
lambda           0.0       0.0       0.0       0.0 1.863e-03 6.211e-05 3.040e-01       0.0 8.682e-07 6.601e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000   10.0000   90.0000   -2.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  -98.0000       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 u235t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.47e-07n      0.0       0.0
zp 65.13 ri       0.0  2.24e-10p 3.68e-08p 1.34e-07p 7.51e-08p 1.03e-09p       0.0  1.10e-12p       0.0        0.0
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sig0.531 cc 0.0 2.24e-10p 3.70e-08p 1.71e-07p 2.46e-07p 2.47e-07p 2.47e-08p 2.47e-07p 0.0 0.0
rc 0.0 2.24e-10p 3.70e-08p 1.71e-07p 2.46e-07o 2.47e-07o 2.47e-08o 2.47e-07n 0.0 0.0
u235f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.85e-07m 0.0 0.0
zp 64.92 ri 1.64e-12p 1.38e-09p 1.04e-07p 2.12e-07p 6.64e-08p 5.23e-10p 0.0 0.0 0.0 0.0
sig0.537 cc 1.64e-12p 1.38e-09p 1.06e-07p 3.18e-07p 3.84e-07p 3.85e-07p 3.85e-08p 3.85e-07p 0.0 0.0
rc 1.64e-12p 1.38e-09p 1.06e-07p 3.18e-07p 3.84e-07o 3.85e-07n 3.85e-08o 3.85e-07m 0.0 0.0
u235he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000185k 0.0 0.0
zp 65.69 ri 4.47e-11p 5.08e-08p 5.55e-06p 6.52e-05p 9.58e-05p 1.83e-05p 2.78e-08p 3.70e-07p 8.61e-10p 0.0
sig0.634 cc 4.47e-11p 5.09e-08p 5.60e-06p 7.08e-05p 0.000167p 0.000185p 1.85e-05p 0.000185p 8.61e-10p 0.0
rc 4.47e-11p 5.09e-08p 5.60e-06p 7.08e-05p 0.000167o 0.000185m 1.85e-05o 0.000185k 8.61e-10p 0.0
u238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.35e-05m 0.0 0.0 0.0 0.0
zp 64.42 ri 1.32e-08p 2.01e-06p 2.34e-05p 1.69e-05p 1.19e-06p 3.75e-09p 0.0 0.0 0.0 0.0
sig0.557 cc 1.32e-08p 2.03e-06p 2.54e-05p 4.23e-05p 4.35e-05p 4.35e-05p 4.35e-06p 4.35e-05p 0.0 0.0
rc 1.32e-08p 2.03e-06p 2.54e-05p 4.23e-05o 4.35e-05n 4.35e-05m 4.35e-06m 4.35e-05l 0.0 0.0
u238he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000369l 0.0 0.0
zp 64.71 ri 4.88e-08p 8.46e-06p 0.000127p 0.000199p 3.44e-05p 5.56e-07p 4.97e-11p 6.61e-10p 0.0 0.0
sig0.605 cc 4.88e-08p 8.51e-06p 0.000135p 0.000334p 0.000368p 0.000369p 3.69e-05p 0.000369p 0.0 0.0
rc 4.88e-08p 8.51e-06p 0.000135p 0.000334p 0.000368o 0.000369n 3.69e-05o 0.000369l 0.0 0.0
pu239t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.52e-05n 0.0 0.0
zp 65.36 ri 3.46e-12p 6.93e-09p 1.08e-06p 7.45e-06p 6.38e-06p 2.93e-07p 1.57e-10p 1.05e-09p 0.0 0.0
sig0.564 cc 3.46e-12p 6.93e-09p 1.09e-06p 8.54e-06p 1.49e-05p 1.52e-05p 1.52e-06p 1.52e-05p 0.0 0.0
rc 3.46e-12p 6.93e-09p 1.09e-06p 8.54e-06p 1.49e-05p 1.52e-05o 1.52e-06o 1.52e-05n 0.0 0.0
pu239f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000267n 0.0 0.0
zp 65.48 ri 2.08e-11p 5.55e-08p 1.26e-05p 0.000112p 0.000134p 8.16e-06p 6.06e-09p 4.45e-08p 1.01e-11p 0.0
sig0.565 cc 2.08e-11p 5.55e-08p 1.26e-05p 0.000125p 0.000259p 0.000267p 2.67e-05p 0.000267p 1.01e-11p 0.0
rc 2.08e-11p 5.55e-08p 1.26e-05p 0.000125p 0.000259p 0.000267o 2.67e-05o 0.000267n 1.01e-11p 0.0
pu241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.04e-07n 0.0 0.0
zp 64.72 ri 2.66e-12p 1.20e-09p 3.86e-08p 5.51e-08p 8.63e-09p 4.94e-11p 0.0 0.0 0.0 0.0
sig0.544 cc 2.66e-12p 1.20e-09p 3.98e-08p 9.49e-08p 1.03e-07p 1.04e-07p 1.04e-08p 1.04e-07p 0.0 0.0

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        rc 2.66e-12p 1.20e-09p 3.98e-08p 9.49e-08p 1.03e-07o 1.04e-07o 1.04e-08o 1.04e-07n      0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.09e-08p      0.0       0.0
zp 65.36 ri      0.0  1.71e-11p 3.80e-09p 2.26e-08p 2.36e-08p 8.21e-10p      0.0  3.04e-12p      0.0       0.0
sig0.555 cc      0.0  1.71e-11p 3.82e-09p 2.64e-08p 5.01e-08p 5.09e-08p 5.09e-09p 5.09e-08p      0.0       0.0
        rc      0.0  1.71e-11p 3.82e-09p 2.64e-08p 5.01e-08p 5.09e-08o 5.09e-09o 5.09e-08o      0.0       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.77e-08n      0.0       0.0
zp 64.40 ri 1.57e-11p 3.78e-09p 5.69e-08p 3.51e-08p 1.86e-09p 2.56e-12p      0.0       0.0       0.0       0.0
sig0.524 cc 1.57e-11p 3.80e-09p 6.07e-08p 9.58e-08p 9.77e-08p 9.77e-08p 9.77e-09p 9.77e-08p      0.0       0.0
        rc 1.57e-11p 3.80e-09p 6.07e-08p 9.58e-08p 9.77e-08o 9.77e-08o 9.77e-09o 9.77e-08n      0.0       0.0

  dy, ho half lives from 89wal1; er, tm half life 90bur1.
1

    mass number    168              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide      62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb g
half life                                   8.5 m     3.0 m    stable    93.1 d    stable
lambda          0.0       0.0       0.0       0.0 1.359e-03 3.851e-03       0.0 8.617e-08       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000       0.0
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u235t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.71e-08n      0.0       0.0
zp 65.51 ri      0.0  2.85e-12p 2.18e-09p 1.73e-08p 3.64e-08p 1.16e-09p 6.79e-12p      0.0       0.0
sig0.531 cc      0.0  2.85e-12p 2.18e-09p 1.95e-08p 5.59e-08p 5.71e-08p 5.71e-08p      0.0       0.0
        rc      0.0  2.85e-12p 2.18e-09p 1.95e-08p 5.59e-08p 5.71e-08o 5.71e-08n      0.0       0.0
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  9.62e-08m      0.0       0.0
zp 65.30 ri      0.0  2.81e-11p 9.35e-09p 3.97e-08p 4.62e-08p 8.53e-10p 2.74e-12p      0.0       0.0
sig0.537 cc      0.0  2.82e-11p 9.38e-09p 4.91e-08p 9.53e-08p 9.62e-08p 9.62e-08p      0.0       0.0
        rc      0.0  2.82e-11p 9.38e-09p 4.91e-08p 9.53e-08o 9.62e-08n 9.62e-08m      0.0       0.0
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000107k      0.0       0.0
zp 66.07 ri      0.0  2.67e-09p 7.02e-07p 1.89e-05p 6.04e-05p 2.52e-05p 1.28e-06p 6.73e-09p 3.33e-12p
sig0.634 cc      0.0  2.67e-09p 7.05e-07p 1.96e-05p 8.00e-05p 0.000105p 0.000107p 6.73e-09p 3.33e-12p
```

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        rc      0.0  2.67e-09p 7.05e-07p 1.96e-05p 8.00e-05p 0.000105m 0.000107k 6.73e-09p 3.33e-12p
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.84e-05n      0.0       0.0
zp 64.79 ri 6.36e-10p 2.70e-07p 9.32e-06p 1.56e-05p 3.16e-06p 2.74e-08p 1.76e-11p      0.0       0.0
sig0.557 cc 6.36e-10p 2.71e-07p 9.59e-06p 2.52e-05p 2.83e-05p 2.84e-05p 2.84e-05p      0.0       0.0
        rc 6.36e-10p 2.71e-07p 9.59e-06p 2.52e-05p 2.83e-05o 2.84e-05o 2.84e-05n      0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000200l      0.0       0.0
zp 65.08 ri 2.05e-09p 9.14e-07p 3.32e-05p 0.000118p 4.65e-05p 1.85e-06p 6.14e-09p 1.51e-12p      0.0
sig0.605 cc 2.05e-09p 9.16e-07p 3.41e-05p 0.000152p 0.000198p 0.000200p 0.000200p 1.51e-12p      0.0
        rc 2.05e-09p 9.16e-07p 3.41e-05p 0.000152p 0.000198o 0.000200n 0.000200l 1.51e-12p      0.0
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  4.29e-06n      0.0       0.0
zp 65.74 ri      0.0  1.23e-10p 6.99e-08p 1.09e-06p 2.83e-06p 2.91e-07p 4.32e-09p 1.58e-12p      0.0
sig0.564 cc      0.0  1.23e-10p 7.01e-08p 1.16e-06p 3.99e-06p 4.28e-06p 4.29e-06p 1.58e-12p      0.0
        rc      0.0  1.23e-10p 7.01e-08p 1.16e-06p 3.99e-06p 4.28e-06o 4.29e-06n 1.58e-12p      0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  7.66e-05n      0.0       0.0
zp 65.86 ri      0.0  8.92e-10p 7.20e-07p 1.50e-05p 5.34e-05p 7.31e-06p 1.57e-07p 8.28e-11p      0.0
sig0.565 cc      0.0  8.92e-10p 7.21e-07p 1.57e-05p 6.91e-05p 7.64e-05p 7.66e-05p 8.28e-11p      0.0
        rc      0.0  8.92e-10p 7.21e-07p 1.57e-05p 6.91e-05p 7.64e-05o 7.66e-05n 8.28e-11p      0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  9.50e-06n      0.0       0.0
zp 65.09 ri 1.06e-11p 1.55e-08p 1.49e-06p 5.60e-06p 2.36e-06p 4.11e-08p 4.89e-11p      0.0       0.0
sig0.544 cc 1.06e-11p 1.55e-08p 1.51e-06p 7.11e-06p 9.46e-06p 9.50e-06p 9.50e-06p      0.0       0.0
        rc 1.06e-11p 1.55e-08p 1.51e-06p 7.11e-06p 9.46e-06o 9.50e-06o 9.50e-06n      0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.29e-08p      0.0       0.0
zp 65.74 ri      0.0       0.0  2.09e-10p 2.57e-09p 9.44e-09p 6.69e-10p 1.20e-11p      0.0       0.0
sig0.555 cc      0.0       0.0  2.10e-10p 2.78e-09p 1.22e-08p 1.29e-08p 1.29e-08p      0.0       0.0
        rc      0.0       0.0  2.10e-10p 2.78e-09p 1.22e-08p 1.29e-08p 1.29e-08o      0.0       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.30e-08n      0.0       0.0
zp 64.77 ri      0.0  3.55e-10p 1.95e-08p 2.79e-08p 5.24e-09p 2.11e-11p      0.0       0.0       0.0
sig0.524 cc      0.0  3.56e-10p 1.98e-08p 4.77e-08p 5.30e-08p 5.30e-08p 5.30e-08p      0.0       0.0
        rc      0.0  3.56e-10p 1.98e-08p 4.77e-08p 5.30e-08o 5.30e-08o 5.30e-08n      0.0       0.0
```

dy, ho half lives from 89wal1.
1

mass number 169 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	63 eu g	64 gd g	65 tb g	66 dy g	67 ho g	68 er g	69 tm g	70 yb m	70 yb g	71 lu m	71 lu g
half life				4.7 m	9.40 d	stable	46. s	32.02d	2.7 m	1.42 d	
lambda	0.0	0.0	0.0	0.0	2.458e-03	8.535e-07	0.0	1.507e-02	2.505e-07	4.279e-03	5.650e-06
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	0.0	-100.0000	0.0	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	100.0000
u235t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	2.38e-08n	0.0	0.0	0.0	0.0
zp 65.89 ri	0.0	1.19e-10p	4.07e-09p	1.74e-08p	2.23e-09p	3.27e-11p	0.0	0.0	0.0	0.0	0.0
sig0.531 cc	0.0	1.19e-10p	4.19e-09p	2.16e-08p	2.38e-08p	2.38e-08p	2.38e-08p	0.0	0.0	0.0	0.0
rc	0.0	1.19e-10p	4.19e-09p	2.16e-08p	2.38e-08p	2.38e-08o	2.38e-08n	0.0	0.0	0.0	0.0
u235f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	5.77e-08m	0.0	0.0	0.0	0.0
zp 65.68 ri	1.14e-12p	9.47e-10p	1.62e-08p	3.77e-08p	2.82e-09p	2.26e-11p	0.0	0.0	0.0	0.0	0.0
sig0.537 cc	1.14e-12p	9.48e-10p	1.72e-08p	5.49e-08p	5.77e-08p	5.77e-08p	5.77e-08p	0.0	0.0	0.0	0.0
rc	1.14e-12p	9.48e-10p	1.72e-08p	5.49e-08p	5.77e-08o	5.77e-08n	5.77e-08m	0.0	0.0	0.0	0.0
u235he xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	7.91e-05j	7.61e-05k	0.0	0.0	0.0	0.0
zp 66.45 ri	1.27e-10p	8.15e-08p	5.14e-06p	3.62e-05p	3.28e-05p	3.76e-06p	4.67e-08p	4.01e-12p	5.33e-11p	0.0	0.0
sig0.634 cc	1.27e-10p	8.16e-08p	5.22e-06p	4.15e-05p	7.42e-05p	7.80e-05p	7.80e-05p	4.09e-12p	5.84e-11p	0.0	0.0
rc	1.27e-10p	8.16e-08p	5.22e-06p	4.15e-05p	7.42e-05m	7.80e-05j	7.80e-05j	4.01e-12p	5.73e-11p	0.0	0.0
u238f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	1.70e-05n	0.0	0.0	0.0	0.0
zp 65.16 ri	2.36e-08p	2.15e-06p	9.93e-06p	4.78e-06p	1.29e-07p	2.37e-10p	0.0	0.0	0.0	0.0	0.0
sig0.557 cc	2.36e-08p	2.17e-06p	1.21e-05p	1.69e-05p	1.70e-05p	1.70e-05p	1.70e-05p	0.0	0.0	0.0	0.0
rc	2.36e-08p	2.17e-06p	1.21e-05p	1.69e-05o	1.70e-05o	1.70e-05o	1.70e-05n	0.0	0.0	0.0	0.0
u238he xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.000130j	0.000127l	0.0	0.0	0.0	0.0
zp 65.45 ri	8.34e-08p	7.52e-06p	6.16e-05p	5.48e-05p	5.22e-06p	4.42e-08p	2.84e-11p	0.0	0.0	0.0	0.0
sig0.605 cc	8.34e-08p	7.61e-06p	6.92e-05p	0.000124p	0.000129p	0.000129p	0.000129p	0.0	0.0	0.0	0.0
rc	8.34e-08p	7.61e-06p	6.92e-05p	0.000124n	0.000129l	0.000129j	0.000129j	0.0	0.0	0.0	0.0

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 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.47e-06n      0.0       0.0       0.0       0.0
zp 66.12 ri 2.27e-12p 3.29e-09p 1.76e-07p 9.71e-07p 3.12e-07p 1.11e-08p 1.52e-11p      0.0       0.0       0.0       0.0
sig0.564 cc 2.27e-12p 3.29e-09p 1.79e-07p 1.15e-06p 1.46e-06p 1.47e-06p 1.47e-06p      0.0       0.0       0.0       0.0
         rc 2.27e-12p 3.29e-09p 1.79e-07p 1.15e-06p 1.46e-06p 1.47e-06o 1.47e-06n      0.0       0.0       0.0       0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.58e-05n      0.0       0.0       0.0       0.0
zp 66.24 ri 1.42e-11p 3.00e-08p 2.12e-06p 1.65e-05p 6.82e-06p 3.54e-07p 6.74e-10p      0.0       0.0       0.0       0.0
sig0.565 cc 1.42e-11p 3.01e-08p 2.15e-06p 1.87e-05p 2.55e-05p 2.58e-05p 2.58e-05p      0.0       0.0       0.0       0.0
         rc 1.42e-11p 3.01e-08p 2.15e-06p 1.87e-05p 2.55e-05p 2.58e-05o 2.58e-05n      0.0       0.0       0.0       0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  4.02e-06n      0.0       0.0       0.0       0.0
zp 65.46 ri 5.82e-10p 1.74e-07p 1.79e-06p 1.96e-06p 9.95e-08p 3.81e-10p      0.0       0.0       0.0       0.0       0.0
sig0.544 cc 5.82e-10p 1.74e-07p 1.96e-06p 3.92e-06p 4.02e-06p 4.02e-06p 4.02e-06p      0.0       0.0       0.0       0.0
         rc 5.82e-10p 1.74e-07p 1.96e-06p 3.92e-06p 4.02e-06o 4.02e-06o 4.02e-06n      0.0       0.0       0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  4.40e-09p      0.0       0.0       0.0       0.0
zp 66.12 ri      0.0  8.94e-12p 4.42e-10p 3.12e-09p 8.02e-10p 3.17e-11p      0.0       0.0       0.0       0.0       0.0
sig0.555 cc      0.0  8.94e-12p 4.51e-10p 3.57e-09p 4.37e-09p 4.40e-09p 4.40e-09p      0.0       0.0       0.0       0.0
         rc      0.0  8.94e-12p 4.51e-10p 3.57e-09p 4.37e-09p 4.40e-09o 4.40e-09o      0.0       0.0       0.0       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.69e-08n      0.0       0.0       0.0       0.0
zp 65.15 ri 2.09e-11p 3.29e-09p 1.60e-08p 7.46e-09p 1.21e-10p      0.0       0.0       0.0       0.0       0.0       0.0
sig0.524 cc 2.09e-11p 3.31e-09p 1.93e-08p 2.68e-08p 2.69e-08p 2.69e-08p 2.69e-08p      0.0       0.0       0.0       0.0
         rc 2.09e-11p 3.31e-09p 1.93e-08p 2.68e-08o 2.69e-08o 2.69e-08o 2.69e-08n      0.0       0.0       0.0       0.0

  ho, er half lives from 89wal1; yb half life 90bur1.
1

    mass number    170              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide      62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g   69 tm g   70 yb g
half life                                                   43. s     2.8 m    stable    128.6d    stable
lambda          0.0       0.0       0.0       0.0       0.0 1.612e-02 4.126e-03       0.0 6.238e-08       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000   -0.2000   99.8000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

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 u235t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.01e-09n      0.0       0.0
zp 66.27 ri      0.0       0.0  2.68e-12p 2.24e-10p 3.73e-09p 4.93e-10p 4.93e-10p 6.42e-11p      0.0       0.0
sig0.531 cc      0.0       0.0  2.68e-12p 2.26e-10p 3.95e-09p 4.93e-10p 4.45e-09p 5.01e-09p      0.0       0.0
         rc      0.0       0.0  2.68e-12p 2.26e-10p 3.95e-09p 4.93e-10p 4.45e-09o 5.01e-09n      0.0       0.0
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.92e-08m      0.0       0.0
zp 66.06 ri      0.0       0.0  4.36e-11p 1.74e-09p 1.50e-08p 1.18e-09p 1.18e-09p 8.31e-11p      0.0       0.0
sig0.537 cc      0.0       0.0  4.36e-11p 1.78e-09p 1.68e-08p 1.18e-09p 1.80e-08p 1.92e-08p      0.0       0.0
         rc      0.0       0.0  4.36e-11p 1.78e-09p 1.68e-08p 1.18e-09p 1.80e-08o 1.92e-08m      0.0       0.0
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.24e-05k      0.0       0.0
zp 66.83 ri      0.0  2.42e-12p 3.85e-09p 5.79e-07p 9.22e-06p 9.00e-06p 9.00e-06p 4.59e-06p 1.37e-07p 4.11e-10p
sig0.634 cc      0.0  2.42e-12p 3.85e-09p 5.83e-07p 9.80e-06p 9.00e-06p 1.88e-05p 3.24e-05p 1.37e-07p 1.37e-07p
         rc      0.0  2.42e-12p 3.85e-09p 5.83e-07p 9.80e-06p 9.00e-06p 1.88e-05p 3.24e-05k 1.37e-07p 1.37e-07p
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.02e-05n      0.0       0.0
zp 65.54 ri      0.0  1.16e-09p 3.48e-07p 4.05e-06p 5.43e-06p 1.91e-07p 1.91e-07p 2.37e-09p      0.0       0.0
sig0.557 cc      0.0  1.16e-09p 3.49e-07p 4.40e-06p 9.82e-06p 1.91e-07p 1.00e-05p 1.02e-05p      0.0       0.0
         rc      0.0  1.16e-09p 3.49e-07p 4.40e-06p 9.82e-06p 1.91e-07p 1.00e-05o 1.02e-05n      0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.95e-05l      0.0       0.0
zp 65.81 ri 1.37e-12p 4.08e-09p 9.13e-07p 1.73e-05p 3.38e-05p 3.66e-06p 3.66e-06p 1.52e-07p 2.51e-10p      0.0
sig0.605 cc 1.37e-12p 4.09e-09p 9.17e-07p 1.82e-05p 5.20e-05p 3.66e-06p 5.57e-05p 5.95e-05p 2.51e-10p 2.51e-10p
         rc 1.37e-12p 4.09e-09p 9.17e-07p 1.82e-05p 5.20e-05p 3.66e-06p 5.57e-05n 5.95e-05l 2.51e-10p 2.51e-10p
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.18e-07n      0.0       0.0
zp 66.49 ri      0.0       0.0  8.09e-11p 1.03e-08p 1.77e-07p 5.83e-08p 5.83e-08p 1.35e-08p 4.53e-11p      0.0
sig0.564 cc      0.0       0.0  8.10e-11p 1.04e-08p 1.88e-07p 5.83e-08p 2.46e-07p 3.18e-07p 4.53e-11p 4.53e-11p
         rc      0.0       0.0  8.10e-11p 1.04e-08p 1.88e-07p 5.83e-08p 2.46e-07p 3.18e-07n 4.53e-11p 4.53e-11p
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  7.66e-06n      0.0       0.0
zp 66.62 ri      0.0       0.0  8.46e-10p 1.50e-07p 3.70e-06p 1.63e-06p 1.63e-06p 5.45e-07p 2.64e-09p 1.53e-12p
sig0.565 cc      0.0       0.0  8.46e-10p 1.51e-07p 3.85e-06p 1.63e-06p 5.48e-06p 7.66e-06p 2.64e-09p 2.64e-09p
         rc      0.0       0.0  8.46e-10p 1.51e-07p 3.85e-06p 1.63e-06p 5.48e-06p 7.66e-06n 2.64e-09p 2.64e-09p
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

```
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.64e-06m      0.0       0.0
zp 65.83 ri      0.0  1.36e-11p 1.29e-08p 3.84e-07p 1.09e-06p 7.68e-08p 7.68e-08p 1.84e-09p      0.0       0.0
sig0.544 cc      0.0  1.36e-11p 1.29e-08p 3.97e-07p 1.48e-06p 7.68e-08p 1.56e-06p 1.64e-06p      0.0       0.0
        rc      0.0  1.36e-11p 1.29e-08p 3.97e-07p 1.48e-06p 7.68e-08p 1.56e-06o 1.64e-06m      0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.62e-09n      0.0       0.0
zp 66.50 ri      0.0       0.0       0.0  3.85e-11p 1.01e-09p 2.47e-10p 2.47e-10p 7.63e-11p      0.0       0.0
sig0.555 cc      0.0       0.0       0.0  3.88e-11p 1.05e-09p 2.47e-10p 1.30e-09p 1.62e-09p      0.0       0.0
        rc      0.0       0.0       0.0  3.88e-11p 1.05e-09p 2.47e-10p 1.30e-09p 1.62e-09n      0.0       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.07e-08n      0.0       0.0
zp 65.52 ri      0.0       0.0  3.29e-10p 4.03e-09p 6.06e-09p 1.31e-10p 1.31e-10p      0.0       0.0       0.0
sig0.524 cc      0.0       0.0  3.30e-10p 4.36e-09p 1.04e-08p 1.31e-10p 1.06e-08p 1.07e-08p      0.0       0.0
        rc      0.0       0.0  3.30e-10p 4.36e-09p 1.04e-08p 1.31e-10p 1.06e-08o 1.07e-08n      0.0       0.0

  ho half life from 89wal1; tm half life 90bur1.
1

    mass number    171              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide      64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb g   71 lu m   71 lu g   72 hf g
half life                                   7.52 h    1.92 y    stable     78. s    8.24 d    12.2 h
lambda          0.0       0.0       0.0       0.0 2.560e-05 1.145e-08       0.0 8.887e-03 9.736e-07 1.578e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 u235t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.35e-09n      0.0       0.0       0.0
zp 66.65 ri      0.0  2.92e-11p 1.09e-09p 1.07e-09p 1.58e-10p      0.0       0.0       0.0       0.0       0.0
sig0.531 cc      0.0  2.92e-11p 1.12e-09p 2.19e-09p 2.35e-09p 2.35e-09p 2.35e-09p      0.0       0.0       0.0
        rc      0.0  2.92e-11p 1.12e-09p 2.19e-09p 2.35e-09o 2.35e-09o 2.35e-09n      0.0       0.0       0.0
 u235f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  6.73e-09m      0.0       0.0       0.0
zp 66.44 ri 1.23e-12p 2.18e-10p 4.01e-09p 2.31e-09p 1.88e-10p      0.0       0.0       0.0       0.0       0.0
sig0.537 cc 1.23e-12p 2.19e-10p 4.23e-09p 6.55e-09p 6.73e-09p 6.73e-09p 6.73e-09p      0.0       0.0       0.0
        rc 1.23e-12p 2.19e-10p 4.23e-09p 6.55e-09p 6.73e-09o 6.73e-09n 6.73e-09m      0.0       0.0       0.0
 u235he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

```
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.76e-05k      0.0       0.0       0.0
zp 67.20 ri 1.80e-10p 6.43e-08p 2.31e-06p 9.65e-06p 5.25e-06p 3.53e-07p 2.51e-09p      0.0       0.0       0.0
sig0.634 cc 1.80e-10p 6.44e-08p 2.37e-06p 1.20e-05p 1.73e-05p 1.76e-05p 1.76e-05p      0.0  1.70e-12p      0.0
        rc 1.80e-10p 6.44e-08p 2.37e-06p 1.20e-05p 1.73e-05o 1.76e-05m 1.76e-05k      0.0  1.70e-12p      0.0
 u238f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  5.72e-06o      0.0       0.0       0.0       0.0       0.0
zp 65.91 ri 3.42e-08p 1.20e-06p 3.72e-06p 7.48e-07p 1.26e-08p 8.52e-12p      0.0       0.0       0.0       0.0
sig0.557 cc 3.42e-08p 1.23e-06p 4.95e-06p 5.70e-06p 5.72e-06p 5.72e-06p 5.72e-06p      0.0       0.0       0.0
        rc 3.42e-08p 1.23e-06p 4.95e-06p 5.70e-06o 5.72e-06n 5.72e-06n 5.72e-06n      0.0       0.0       0.0
 u238he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.30e-05l      0.0       0.0       0.0
zp 66.18 ri 9.20e-08p 4.26e-06p 1.89e-05p 9.30e-06p 4.70e-07p 2.01e-09p      0.0       0.0       0.0       0.0
sig0.605 cc 9.20e-08p 4.35e-06p 2.32e-05p 3.25e-05p 3.30e-05p 3.30e-05p 3.30e-05p      0.0       0.0       0.0
        rc 9.20e-08p 4.35e-06p 2.32e-05p 3.25e-05o 3.30e-05o 3.30e-05n 3.30e-05l      0.0       0.0       0.0
 pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.57e-07n      0.0       0.0       0.0
zp 66.87 ri 2.40e-12p 1.12e-09p 4.43e-08p 8.87e-08p 2.27e-08p 2.71e-10p      0.0       0.0       0.0       0.0
sig0.564 cc 2.40e-12p 1.12e-09p 4.54e-08p 1.34e-07p 1.57e-07p 1.57e-07p 1.57e-07p      0.0       0.0       0.0
        rc 2.40e-12p 1.12e-09p 4.54e-08p 1.34e-07p 1.57e-07o 1.57e-07o 1.57e-07n      0.0       0.0       0.0
 pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.58e-06n      0.0       0.0       0.0
zp 67.00 ri 1.49e-11p 9.52e-09p 5.57e-07p 1.46e-06p 5.43e-07p 9.04e-09p 1.38e-11p      0.0       0.0       0.0
sig0.565 cc 1.49e-11p 9.53e-09p 5.66e-07p 2.03e-06p 2.57e-06p 2.58e-06p 2.58e-06p      0.0       0.0       0.0
        rc 1.49e-11p 9.53e-09p 5.66e-07p 2.03e-06p 2.57e-06o 2.58e-06o 2.58e-06n      0.0       0.0       0.0
 pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.19e-07n      0.0       0.0       0.0
zp 66.20 ri 2.13e-10p 1.91e-08p 1.44e-07p 5.40e-08p 1.95e-09p 2.20e-12p      0.0       0.0       0.0       0.0
sig0.544 cc 2.13e-10p 1.93e-08p 1.63e-07p 2.18e-07p 2.19e-07p 2.19e-07p 2.19e-07p      0.0       0.0       0.0
        rc 2.13e-10p 1.93e-08p 1.63e-07p 2.18e-07p 2.19e-07o 2.19e-07o 2.19e-07n      0.0       0.0       0.0
 u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  4.47e-10p      0.0       0.0       0.0
zp 66.88 ri      0.0  2.47e-12p 1.36e-10p 2.35e-10p 7.26e-11p      0.0       0.0       0.0       0.0       0.0
sig0.555 cc      0.0  2.47e-12p 1.39e-10p 3.73e-10p 4.46e-10p 4.47e-10p 4.47e-10p      0.0       0.0       0.0
        rc      0.0  2.47e-12p 1.39e-10p 3.73e-10p 4.46e-10o 4.47e-10o 4.47e-10o      0.0       0.0       0.0
 th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  4.64e-09n      0.0       0.0       0.0
```

```
zp 65.90 ri 1.91e-11p 8.96e-10p 3.22e-09p 5.00e-10p 5.44e-12p      0.0       0.0       0.0       0.0       0.0
sig0.524 cc 1.91e-11p 9.15e-10p 4.14e-09p 4.64e-09p 4.64e-09p 4.64e-09p 4.64e-09p      0.0       0.0       0.0
        rc 1.91e-11p 9.15e-10p 4.14e-09p 4.64e-09p 4.64e-09o 4.64e-09o 4.64e-09n      0.0       0.0       0.0

  er, tm half lives from 89wal1.
1

    mass number    172              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide      64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb g   71 lu m   71 lu g   72 hf g
half life                                   2.05 d    2.65 d    stable      4. m    6.70 d    1.87 y
lambda           0.0       0.0       0.0       0.0 3.913e-06 3.027e-06       0.0 2.888e-03 1.197e-06 1.175e-08
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 u235t   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  7.70e-10n      0.0       0.0       0.0
zp 67.04 ri      0.0  1.05e-12p 1.77e-10p 3.69e-10p 2.20e-10p 1.68e-12p      0.0       0.0       0.0       0.0
sig0.531 cc      0.0  1.05e-12p 1.78e-10p 5.47e-10p 7.68e-10p 7.69e-10p 7.69e-10p      0.0       0.0       0.0
        rc      0.0  1.05e-12p 1.78e-10p 5.47e-10p 7.68e-10o 7.69e-10o 7.69e-10n      0.0       0.0       0.0
 u235f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.92e-09m      0.0       0.0       0.0
zp 66.81 ri      0.0  1.05e-11p 7.73e-10p 8.68e-10p 2.71e-10p 1.13e-12p      0.0       0.0       0.0       0.0
sig0.537 cc      0.0  1.05e-11p 7.83e-10p 1.65e-09p 1.92e-09p 1.92e-09p 1.92e-09p      0.0       0.0       0.0
        rc      0.0  1.05e-11p 7.83e-10p 1.65e-09p 1.92e-09o 1.92e-09n 1.92e-09m      0.0       0.0       0.0
 u235he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  1.78e-05k      0.0  1.54e-05k      0.0       0.0       0.0
zp 67.58 ri 9.81e-12p 8.59e-09p 7.28e-07p 6.76e-06p 7.96e-06p 1.08e-06p 1.84e-08p 1.54e-11p 1.54e-11p      0.0
sig0.634 cc 9.74e-12p 8.54e-09p 7.31e-07p 7.45e-06p 1.53e-05p 1.65e-05p 1.66e-05p 1.69e-11p 3.39e-11p      0.0
        rc 9.81e-12p 8.60e-09p 7.37e-07p 7.50e-06p 1.55e-05l 1.65e-05l 1.66e-05j 1.54e-11p 3.08e-11p      0.0
 u238f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  1.07e-05o      0.0       0.0       0.0       0.0       0.0
zp 66.28 ri 8.13e-09p 7.60e-07p 6.61e-06p 3.12e-06p 1.62e-07p 3.09e-10p      0.0       0.0       0.0       0.0
sig0.557 cc 8.13e-09p 7.68e-07p 7.38e-06p 1.05e-05p 1.07e-05p 1.07e-05p 1.07e-05p      0.0       0.0       0.0
        rc 8.13e-09p 7.68e-07p 7.38e-06p 1.05e-05o 1.07e-05n 1.07e-05n 1.07e-05n      0.0       0.0       0.0
 u238he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  2.13e-05o      0.0  2.13e-05l      0.0       0.0       0.0
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 zp 66.54 ri 8.08e-09p 9.13e-07p 9.20e-06p 9.96e-06p 1.17e-06p 1.24e-08p 1.02e-11p      0.0       0.0       0.0
 sig0.605 cc 8.08e-09p 9.21e-07p 1.01e-05p 2.01e-05p 2.12e-05p 2.13e-05p 2.13e-05p      0.0       0.0       0.0
         rc 8.08e-09p 9.21e-07p 1.01e-05p 2.01e-05o 2.12e-05n 2.13e-05m 2.13e-05l      0.0       0.0       0.0
  pu239t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  4.94e-08n      0.0       0.0       0.0
 zp 67.25 ri      0.0  4.07e-11p 5.62e-09p 2.41e-08p 1.91e-08p 5.40e-10p 1.94e-12p      0.0       0.0       0.0
 sig0.564 cc      0.0  4.08e-11p 5.66e-09p 2.98e-08p 4.89e-08p 4.94e-08p 4.94e-08p      0.0       0.0       0.0
         rc      0.0  4.08e-11p 5.66e-09p 2.98e-08p 4.89e-08p 4.94e-08o 4.94e-08n      0.0       0.0       0.0
  pu239f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  7.66e-07n      0.0       0.0       0.0
 zp 67.38 ri      0.0  2.82e-10p 5.65e-08p 3.30e-07p 3.65e-07p 1.45e-08p 7.90e-11p      0.0       0.0       0.0
 sig0.565 cc      0.0  2.82e-10p 5.68e-08p 3.86e-07p 7.51e-07p 7.66e-07p 7.66e-07p      0.0       0.0       0.0
         rc      0.0  2.82e-10p 5.68e-08p 3.86e-07p 7.51e-07p 7.66e-07o 7.66e-07n      0.0       0.0       0.0
  pu241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  7.31e-08n      0.0       0.0       0.0
 zp 66.57 ri 5.85e-12p 1.64e-09p 3.45e-08p 3.35e-08p 3.47e-09p 1.25e-11p      0.0       0.0       0.0       0.0
 sig0.544 cc 5.85e-12p 1.65e-09p 3.61e-08p 6.96e-08p 7.31e-08p 7.31e-08p 7.31e-08p      0.0       0.0       0.0
         rc 5.85e-12p 1.65e-09p 3.61e-08p 6.96e-08p 7.31e-08o 7.31e-08o 7.31e-08n      0.0       0.0       0.0
  u233t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.51e-10p      0.0       0.0       0.0
 zp 67.25 ri      0.0       0.0  1.92e-11p 6.26e-11p 6.77e-11p 1.27e-12p      0.0       0.0       0.0       0.0
 sig0.555 cc      0.0       0.0  1.93e-11p 8.18e-11p 1.50e-10p 1.51e-10p 1.51e-10p      0.0       0.0       0.0
         rc      0.0       0.0  1.93e-11p 8.18e-11p 1.50e-10p 1.51e-10o 1.51e-10o      0.0       0.0       0.0
  th232f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.39e-09n      0.0       0.0       0.0
 zp 66.27 ri 1.01e-12p 1.35e-10p 1.63e-09p 5.99e-10p 2.50e-11p      0.0       0.0       0.0       0.0       0.0
 sig0.524 cc 1.01e-12p 1.36e-10p 1.76e-09p 2.36e-09p 2.39e-09p 2.39e-09p 2.39e-09p      0.0       0.0       0.0
         rc 1.01e-12p 1.36e-10p 1.76e-09p 2.36e-09p 2.39e-09o 2.39e-09o 2.39e-09n      0.0       0.0       0.0

   er, tm half lives from 89wal1.
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type          value   err.     value                nuclide     material       value      no.   treatment

  66        u235t    es    cu         0.0000001 99.0   0.0080940 99.0000000%    0                  100000.0000000   87wah1     36
  66 ni g   u235t    rc    cu         0.0000001 50.0   0.0000020 50.0000000%  143 ce g      u235t     100.0000000   69mun1      0
```

66	ni g	u235t	cm	cu		0.0000000	0.0	0.0000001	32.0000000%	0			0.0000000	73net2	0
66	ni g	u235t	rc	cu		0.0000000	50.0	0.0000002	50.0000000%	140	ba g	u235t	64.4000000	61roy1	0
66	ni g	u235t	rc	cu	su	0.0000000	0.0	0.0000005	99.9000000%	0			100.0000000	74rao1	0
66	ni g	u235t	cm	in		0.0000000	0.0	0.0006789	30.0000000%	0			100000.0000000	88wah1	0
66	co g	u235t	cm	in		0.0000000	0.0	0.0003340	11.0000000%	0			10000.0000000	88wah1	0
66	fe g	u235t	cm	in		0.0000000	0.0	0.0003989	12.0000000%	0			10000.0000000	88wah1	0
66	mn g	u235t	cm	in		0.0000000	0.0	0.0008361	62.0000000%	0			1000000.0000000	88wah1	0
66		u235f	es	cu		0.0000007	20.0	0.0000009	20.0000000%	0			0.0000000	74mee1	0
66	ni g	u235f	cm	cu		0.0000000	0.0	0.0000005	64.0000000%	0			0.0000000	73net2	0
66		u235he	es	cu		0.0002967	10.0	0.0003010	10.0000000%	0			0.0000000	89rid1	0
66	ni g	u235he	rc	re		0.0002760	10.7	0.0000028	0.0000003	0			0.0100000	69net1	0
66	ni g	u235he	cm	cu	x3	0.0000000	0.0	0.0002800	9.9000000%	0			0.0000000	73net2	0
66	ni g	u235he	rc	cu	x4	0.0000000	0.0	0.0004000	0.0000000	99	mo g	u235he	5.1700000	61val1	0
66	ni g	u238f	es	cu	x3	0.0000000	0.0	0.0000019	32.0000000%	0			100.0000000	73net2	0
66	ni g	u238f	rc	cu		0.0000037	39.9	0.0000040	0.0000016	0			0.0000000	79rao1	0
66	ni g	u238f	rc	cu	su	0.0000000	0.0	0.0000040	0.0000016	0			0.0000000	74rao1	0
66		u238he	es	cu		0.0000854	15.0	0.0000863	15.0000000%	0			0.0000000	74mee9	0
66		u238he	es	cu		0.0000002	30.0	0.0000002	0.0000000	0			0.0000000	87rid1	0
66	ni g	u238he	rc	re		0.0000841	10.6	0.0000009	0.0000001	0			0.0100000	69net1	0
66	ni g	u238he	cm	cu	x3	0.0000000	0.0	0.0000850	0.0000090	0			0.0000000	73dar1	0
66	ni g	u238he	cm	cu	x3	0.0000000	0.0	0.0000850	9.9000000%	0			0.0000000	73net2	0
66		pu239t	es	cu		0.0000002	99.0	0.0020330	99.0000000%	0			10000.0000000	87wah1	36
66	ni g	pu239t	cm	cu		0.0000000	0.0	0.0000005	32.0000000%	0			0.0000000	73net2	0
66	ni g	pu239t	cm	in		0.0000000	0.0	0.0006452	14.0000000%	0			10000.0000000	88wah1	0
66	co g	pu239t	cm	in		0.0000000	0.0	0.0001036	11.0000000%	0			1000.0000000	88wah1	0
66	fe g	pu239t	cm	in		0.0000000	0.0	0.0002964	19.0000000%	0			10000.0000000	88wah1	0
66		pu239f	es	cu		0.0000009	20.0	0.0000010	20.0000000%	0			0.0000000	74mee1	0
66		pu239f	es	cu		0.0000007	30.0	0.0000008	0.0000000	148	nd g	pu239f	1.7300000	70lis1	0
66		pu241t	es	cu		0.0000001	20.0	0.0000001	20.0000000%	0			0.0000000	74mee1	0
66		pu241t	es	cu		0.0000002	30.0	0.0000002	0.0000000	0			0.0000000	87rid1	0
66		u233t	es	cu		0.0000003	99.0	0.0029670	99.0000000%	0			10000.0000000	87wah1	36
66	ni g	u233t	cm	cu		0.0000000	0.0	0.0000001	32.0000000%	0			0.0000000	73net2	0
66	ni g	th232f	es	cu		0.0000011	32.0	0.0000012	32.0000000%	0			0.0000000	73net2	0
67		u235t	es	cu		0.0000004	99.0	0.0042350	99.0000000%	0			10000.0000000	87wah1	36
67		u235t	es	cu		0.0000004	30.0	0.0000003	0.0000000	0			0.0000000	87rid1	0
67	cu g	u235t	rc	cu		0.0000004	50.0	0.0000060	50.0000000%	143	ce g	u235t	100.0000000	69mun1	0

67	cu g	u235t	cm	cu		0.0000000	0.0	0.0000004	32.0000000%	0	0.0000000	73net2	0
67	cu g	u235t	rc	cu	su	0.0000000	0.0	0.0000016	99.9000000%	0	100.0000000	74rao1	0
67	ni g	u235t	cm	in		0.0000000	0.0	0.0001069	15.0000000%	0	1000.0000000	88wah1	0
67	co g	u235t	cm	in		0.0000000	0.0	0.0002379	11.0000000%	0	1000.0000000	88wah1	0
67	fe g	u235t	cm	in		0.0000000	0.0	0.0007689	17.0000000%	0	10000.0000000	88wah1	0
67		u235f	es	cu		0.0000023	20.0	0.0000028	20.0000000%	0	0.0000000	74mee1	0
67	cu g	u235f	cm	cu		0.0000000	0.0	0.0000018	64.0000000%	0	0.0000000	73net2	0
67		u235he	es	cu		0.0005915	10.0	0.0006000	10.0000000%	0	0.0000000	74mee8	0
67	cu g	u235he	rc	re		0.0006407	13.8	0.0000065	0.0000009	0	0.0100000	69net1	0
67	cu g	u235he	cm	cu	x3	0.0000000	0.0	0.0006500	14.9000000%	0	0.0000000	73net2	0
67	cu g	u238f	es	cu	x3	0.0000000	0.0	0.0000065	32.0000000%	0	100.0000000	73net2	0
67	cu g	u238f	rc	cu		0.0000215	40.1	0.0000232	0.0000093	0	0.0000000	79rao1	0
67	cu g	u238f	rc	cu	su	0.0000000	0.0	0.0000232	0.0000093	0	0.0000000	74rao1	0
67		u238he	cm	cu	su	0.0000000	0.0	0.0001400	0.0000400	0	0.0000000	73dar1	0
67		u238he	es	cu		0.0001389	15.0	0.0001410	15.0000000%	0	0.0000000	74mee9	0
67	cu g	u238he	rc	re		0.0001379	28.6	0.0000014	0.0000004	0	0.0100000	69net1	0
67	cu g	u238he	cm	cu	x3	0.0000000	0.0	0.0001400	29.9000000%	0	0.0000000	73net2	0
67		pu239t	es	cu		0.0000004	99.0	0.0041960	99.0000000%	0	10000.0000000	87wah1	36
67		pu239t	es	cu		0.0000004	30.0	0.0000004	0.0000000	0	0.0000000	87rid1	0
67	cu g	pu239t	cm	cu	x3	0.0000000	0.0	0.0000017	32.0000000%	0	0.0000000	73net2	0
67	cu g	pu239t	cm	in		0.0000000	0.0	0.0001499	44.0000000%	0	10000.0000000	88wah1	0
67	ni g	pu239t	cm	in		0.0000000	0.0	0.0002181	11.0000000%	0	1000.0000000	88wah1	0
67	co g	pu239t	cm	in		0.0000000	0.0	0.0001671	11.0000000%	0	1000.0000000	88wah1	0
67	fe g	pu239t	cm	in		0.0000000	0.0	0.0001518	41.0000000%	0	10000.0000000	88wah1	0
67		pu239f	es	cu		0.0000031	20.0	0.0000033	20.0000000%	0	0.0000000	74mee1	0
67		pu239f	es	cu		0.0000024	30.0	0.0000027	0.0000000	148	nd g	pu239f	1.7300000	70lis1	0
67		pu241t	es	cu		0.0000003	20.0	0.0000003	20.0000000%	0	0.0000000	74mee1	0
67		pu241t	es	cu		0.0000011	30.0	0.0000011	0.0000000	0	0.0000000	87rid1	0
67		u233t	es	cu		0.0000011	99.0	0.0013280	99.0000000%	0	1000.0000000	87wah1	36
67	cu g	u233t	cm	cu		0.0000000	0.0	0.0000004	32.0000000%	0	0.0000000	73net2	0
67	cu g	th232f	es	cu		0.0000039	32.0	0.0000040	32.0000000%	0	0.0000000	73net2	0
68		u235t	es	cu		0.0000007	99.0	0.0072790	99.0000000%	0	10000.0000000	87wah1	36
68		u235t	es	cu		0.0000007	30.0	0.0000007	0.0000000	0	0.0000000	87rid1	0
68	cu g	u235t	cm	in		0.0000000	0.0	0.0000341	50.0000000%	0	10000.0000000	88wah1	0
68	cu m	u235t	cm	in		0.0000000	0.0	0.0000796	50.0000000%	0	10000.0000000	88wah1	0
68	ni g	u235t	cm	in		0.0000000	0.0	0.0004228	11.0000000%	0	1000.0000000	88wah1	0

68	co g	u235t	cm	in	0.0000000	0.0	0.0002566	11.0000000%	0		1000.0000000	88wah1	0
68	fe g	u235t	cm	in	0.0000000	0.0	0.0003701	36.0000000%	0		10000.0000000	88wah1	0
68		u235f	es	cu	0.0000040	20.0	0.0000049	20.0000000%	0		0.0000000	74mee1	0
68		u235he	es	cu	0.0008819	30.0	0.0000090	0.0000000	0		0.0100000	69net1	0
68		u235he	es	cu	0.0008878	10.0	0.0009060	10.0000000%	0		0.0000000	74mee8	0
68		u238f	es	cu	0.0000305	30.0	0.0000330	0.0000000	0		0.0000000	79rao1	0
68		u238f	es	cu	0.0000010	99.0	0.0000011	99.0000000%	0		0.0000000	87wah1	36
68		u238he	es	cu	0.0002955	30.0	0.0000030	0.0000000	0		0.0100000	69net1	0
68		u238he	es	cu	su 0.0000000	0.0	0.0002700	0.0000000	0		0.0000000	73dar1	0
68		u238he	es	cu	0.0002994	15.0	0.0003040	15.0000000%	0		0.0000000	74mee9	0
68		pu239t	es	cu	0.0000016	99.0	0.0015140	99.0000000%	0		1000.0000000	87wah1	36
68		pu239t	es	cu	0.0000016	30.0	0.0000015	0.0000000	0		0.0000000	87rid1	0
68	cu g	pu239t	cm	in	0.0000000	0.0	0.0000484	20.0000000%	0		1000.0000000	88wah1	0
68	cu m	pu239t	cm	in	0.0000000	0.0	0.0001129	20.0000000%	0		1000.0000000	88wah1	0
68	ni g	pu239t	cm	in	0.0000000	0.0	0.0001065	11.0000000%	0		100.0000000	88wah1	0
68	co g	pu239t	cm	in	0.0000000	0.0	0.0002719	14.0000000%	0		1000.0000000	88wah1	0
68		pu239f	es	cu	0.0000090	20.0	0.0000097	20.0000000%	0		0.0000000	74mee1	0
68		pu239f	es	cu	0.0000071	30.0	0.0000080	0.0000000	148	nd g	pu239f	1.7300000	70lis1	0
68		pu241t	es	cu	0.0000006	20.0	0.0000006	20.0000000%	0		0.0000000	74mee1	0
68		pu241t	es	cu	0.0000033	30.0	0.0000034	0.0000000	0		0.0000000	87rid1	0
68		u233t	es	cu	0.0000034	99.0	0.0040650	99.0000000%	0		1000.0000000	87wah1	36
68		th232f	es	cu	0.0000143	30.0	0.0000145	0.0000000	0		0.0000000	74mee0	0
69		u235t	es	cu	0.0000016	99.0	0.0015970	99.0000000%	0		1000.0000000	87wah1	36
69		u235t	es	cu	0.0000016	30.0	0.0000015	0.0000000	0		0.0000000	87rid1	0
69	cu g	u235t	cm	in	0.0000000	0.0	0.0001212	22.0000000%	0		1000.0000000	88wah1	0
69	ni g	u235t	cm	in	0.0000000	0.0	0.0001135	11.0000000%	0		100.0000000	88wah1	0
69	co g	u235t	cm	in	0.0000000	0.0	0.0003278	13.0000000%	0		1000.0000000	88wah1	0
69	fe g	u235t	cm	in	0.0000000	0.0	0.0001147	89.0000000%	0		10000.0000000	88wah1	0
69		u235f	es	cu	0.0000087	20.0	0.0000106	20.0000000%	0		0.0000000	74mee1	0
69		u235he	es	cu	0.0013203	30.0	0.0000140	0.0000000	0		0.0100000	69net1	0
69		u238f	es	cu	0.0000388	30.0	0.0000420	0.0000000	0		0.0000000	79rao1	0
69		u238f	es	cu	0.0000031	99.0	0.0000034	99.0000000%	0		0.0000000	87wah1	36
69		u238he	es	cu	0.0004925	30.0	0.0000050	0.0000000	0		0.0100000	69net1	0
69		u238he	es	cu	su 0.0000000	0.0	0.0004800	0.0000000	0		0.0000000	73dar1	0
69		u238he	es	cu	0.0005033	15.0	0.0005110	15.0000000%	0		0.0000000	74mee9	0
69		pu239t	es	cu	0.0000058	99.0	0.0055060	99.0000000%	0		1000.0000000	87wah1	36

69 pu239t es cu 0.0000059 30.0 0.0000056 0.0000000 0 0.0000000 87rid1 0
69 zn g pu239t cm in 0.0000000 0.0 0.0001378 79.0000000% 0 10000.0000000 88wah1 0
69 zn m pu239t cm in 0.0000000 0.0 0.0005876 79.0000000% 0 10000.0000000 88wah1 0
69 cu g pu239t cm in 0.0000000 0.0 0.0001587 12.0000000% 0 100.0000000 88wah1 0
69 ni g pu239t cm in 0.0000000 0.0 0.0003438 11.0000000% 0 100.0000000 88wah1 0
69 co g pu239t cm in 0.0000000 0.0 0.0004095 24.0000000% 0 1000.0000000 88wah1 0
69 pu239f es cu 0.0000334 20.0 0.0000360 20.0000000% 0 0.0000000 74mee1 0
69 pu239f es cu 0.0000263 30.0 0.0000295 0.0000000 148 nd g pu239f 1.7300000 70lis1 0
69 pu241t es cu 0.0000013 20.0 0.0000013 20.0000000% 0 0.0000000 74mee1 0
69 pu241t es cu 0.0000090 30.0 0.0000094 0.0000000 0 0.0000000 87rid1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

69 u233t es cu 0.0000094 99.0 0.0011160 99.0000000% 0 100.0000000 87wah1 36
69 th232f es cu 0.0000330 30.0 0.0000335 0.0000000 0 0.0000000 74mee0 0
70 u235t es cu 0.0000038 99.0 0.0037090 99.0000000% 0 1000.0000000 87wah1 36
70 u235t es cu 0.0000036 30.0 0.0000036 0.0000000 0 0.0000000 87rid1 0
70 zn g u235t cm in 0.0000000 0.0 0.0002191 89.0000000% 0 10000.0000000 88wah1 0
70 cu g u235t cm in 0.0000000 0.0 0.0001629 13.0000000% 0 1000.0000000 88wah1 0
70 cu m u235t cm in 0.0000000 0.0 0.0004887 13.0000000% 0 1000.0000000 88wah1 0
70 ni g u235t cm in 0.0000000 0.0 0.0002816 11.0000000% 0 100.0000000 88wah1 0
70 co g u235t cm in 0.0000000 0.0 0.0002166 22.0000000% 0 1000.0000000 88wah1 0
70 u235f es cu 0.0000189 20.0 0.0000230 20.0000000% 0 0.0000000 74mee1 0
70 u235he es cu 0.0023517 30.0 0.0000240 0.0000000 0 0.0100000 69net1 0
70 u235he es cu 0.0023615 10.0 0.0024100 10.0000000% 0 0.0000000 74mee8 0
70 u238f es cu 0.0000473 30.0 0.0000500 0.0000000 0 0.0000000 79rao1 0
70 u238f es cu 0.0000093 99.0 0.0000098 99.0000000% 0 0.0000000 87wah1 36
70 u238he es cu 0.0008865 30.0 0.0000090 0.0000000 0 0.0100000 69net1 0
70 u238he es cu su 0.0000000 0.0 0.0008800 0.0000000 0 0.0000000 73dar1 0
70 u238he es cu 0.0009043 15.0 0.0009180 15.0000000% 0 0.0000000 74mee9 0
70 pu239t es cu 0.0000197 99.0 0.0018890 99.0000000% 0 100.0000000 87wah1 36
70 pu239t es cu 0.0000199 30.0 0.0000191 0.0000000 0 0.0000000 87rid1 0
70 zn g pu239t cm in 0.0000000 0.0 0.0001266 33.0000000% 0 100.0000000 88wah1 0
70 cu g pu239t cm in 0.0000000 0.0 0.0002131 11.0000000% 0 100.0000000 88wah1 0
70 cu m pu239t cm in 0.0000000 0.0 0.0006392 11.0000000% 0 100.0000000 88wah1 0

70	ni g	pu239t	cm	in	0.0000000	0.0	0.0008839	11.0000000%	0			100.0000000	88wah1	0
70	co g	pu239t	cm	in	0.0000000	0.0	0.0003294	56.0000000%	0			1000.0000000	88wah1	0
70		pu239f	es	cu	0.0000929	20.0	0.0001000	20.0000000%	0			0.0000000	74mee1	0
70		pu239f	es	cu	0.0000733	30.0	0.0000822	0.0000000	148	nd g	pu239f	1.7300000	70lis1	0
70		pu241t	es	cu	0.0000045	20.0	0.0000047	20.0000000%	0			0.0000000	74mee1	0
70		pu241t	es	cu	0.0000353	30.0	0.0000366	0.0000000	0			0.0000000	87rid1	0
70		u233t	es	cu	0.0000367	99.0	0.0043540	99.0000000%	0			100.0000000	87wah1	36
70		th232f	es	cu	0.0000654	20.0	0.0000661	20.0000000%	0			0.0000000	74mee0	0
71		u235t	es	cu	0.0000087	99.0	0.0085270	99.0000000%	0			1000.0000000	87wah1	36
71		u235t	es	cu	0.0000083	30.0	0.0000082	0.0000000	0			0.0000000	87rid1	0
71	zn g	u235t	cm	in	0.0000000	0.0	0.0000561	36.0000000%	0			1000.0000000	88wah1	0
71	zn m	u235t	cm	in	0.0000000	0.0	0.0002392	36.0000000%	0			1000.0000000	88wah1	0
71	cu g	u235t	cm	in	0.0000000	0.0	0.0003691	11.0000000%	0			100.0000000	88wah1	0
71	ni g	u235t	cm	in	0.0000000	0.0	0.0004384	11.0000000%	0			100.0000000	88wah1	0
71	co g	u235t	cm	in	0.0000000	0.0	0.0001470	50.0000000%	0			1000.0000000	88wah1	0
71		u235f	es	cu	0.0000465	20.0	0.0000566	20.0000000%	0			0.0000000	74mee1	0
71		u235he	es	cu	0.0039195	30.0	0.0000400	0.0000000	0			0.0100000	69net1	0
71		u235he	es	cu	0.0039489	10.0	0.0040300	10.0000000%	0			0.0000000	74mee8	0
71		u238f	es	cu	0.0000518	30.0	0.0000560	0.0000000	0			0.0000000	79rao1	0
71		u238f	es	cu	0.0000248	99.0	0.0000268	99.0000000%	0			0.0000000	87wah1	36
71		u238he	es	cu	0.0015760	30.0	0.0000160	0.0000000	0			0.0100000	69net1	0
71		u238he	es	cu	su 0.0000000	0.0	0.0016000	0.0000000	0			0.0000000	73dar1	0
71		u238he	es	cu	0.0015957	15.0	0.0016200	15.0000000%	0			0.0000000	74mee9	0
71		pu239t	es	cu	0.0000364	99.0	0.0034320	99.0000000%	0			100.0000000	87wah1	36
71		pu239t	es	cu	0.0000367	30.0	0.0000346	0.0000000	0			0.0000000	87rid1	0
71	zn g	pu239t	cm	in	0.0000000	0.0	0.0001264	16.0000000%	0			100.0000000	88wah1	0
71	zn m	pu239t	cm	in	0.0000000	0.0	0.0005389	16.0000000%	0			100.0000000	88wah1	0
71	cu g	pu239t	cm	in	0.0000000	0.0	0.0002061	11.0000000%	0			10.0000000	88wah1	0
71	ni g	pu239t	cm	in	0.0000000	0.0	0.0007084	16.0000000%	0			100.0000000	88wah1	0
71		pu239f	es	cu	0.0002026	30.0	0.0002460	0.0000000	148	nd g	pu239f	1.7300000	70lis1	0
71		pu241t	es	cu	0.0000067	20.0	0.0000070	20.0000000%	0			0.0000000	74mee1	0
71		pu241t	es	cu	0.0001551	30.0	0.0001610	0.0000000	0			0.0000000	87rid1	0
71		u233t	es	cu	0.0001618	99.0	0.0019190	99.0000000%	0			10.0000000	87wah1	36
71		th232f	es	cu	0.0001663	20.0	0.0001680	20.0000000%	0			0.0000000	74mee0	0
72		u235t	cm	cu	0.0000000	0.0	0.0000160	0.0000000	0			0.0000000	72sid1	0
72		u235t	cm	cu	0.0000000	0.0	0.0000160	0.0000000	0			0.0000000	73lam1	0

72 u235t cm cu x3 0.0000000 0.0 0.0000066 45.4000000% 0 0.0000000 77cro1 0
72 u235t es cu 0.0000300 99.0 0.0029710 99.0000000% 0 100.0000000 87wah1 36
72 zn g u235t cm cu 0.0000000 0.0 0.0000237 16.0000000% 0 0.0000000 73net2 0
72 zn g u235t rc cu 0.0000264 11.6 0.0000260 0.0000030 99 mo g u235t 6.0600000 61mae1 0
72 zn g u235t rc cu su 0.0000000 0.0 0.0000059 0.0000023 0 0.0000000 74rao1 0
72 zn g u235t rc cu x4 0.0000000 0.0 0.0000150 0.0000000 140 ba g u235t 6.1000000 51sie1 0
72 zn g u235t cm in 0.0000000 0.0 0.0004848 17.0000000% 0 100.0000000 88wah1 0
72 cu g u235t cm in 0.0000000 0.0 0.0001562 11.0000000% 0 10.0000000 88wah1 0
72 ni g u235t cm in 0.0000000 0.0 0.0008758 15.0000000% 0 100.0000000 88wah1 0
72 u235f es cu 0.0001658 20.0 0.0002020 20.0000000% 0 0.0000000 74mee1 0
72 zn g u235f cm cu 0.0000000 0.0 0.0001189 64.0000000% 0 0.0000000 73net2 0
72 u235he cm cu 0.0000000 0.0 0.0065100 10.6000000% 0 0.0000000 77cro1 0
72 u235he es cu 0.0060033 10.0 0.0060900 10.0000000% 0 0.0000000 74mee8 0
72 zn g u235he rc re 0.0048307 10.0 220.0000000 10.0000000% 99 mo g u235t 0.0000000 62hic1 7
72 zn g u235he rc re 0.0062103 5.0 0.0000630 0.0000030 0 0.0100000 69net1 0
72 zn g u235he cm cu 0.0000000 0.0 0.0063000 4.9000000% 0 0.0000000 73net2 0
72 zn g u235he rc cu 0.0076396 30.1 0.0078000 0.0000000 99 mo g u235he 5.1700000 61val1 0
72 u238f es cu x3 0.0000000 0.0 0.0000100 0.0000000 0 0.0000000 72sid1 0
72 u238f cm cu x3 0.0000000 0.0 0.0000654 40.0000000% 0 0.0000000 77cro1 0
72 zn g u238f cm cu x3 0.0000000 0.0 0.0000043 32.0000000% 0 0.0000000 73net2 0
72 zn g u238f rc cu 0.0000605 38.2 0.0000654 0.0000250 0 0.0000000 79rao1 0
72 zn g u238f rc cu su 0.0000000 0.0 0.0000654 0.0000251 0 0.0000000 74rao1 0
72 u238he cm cu su 0.0000000 0.0 0.0030000 0.0004000 0 0.0000000 73dar1 0
72 u238he es cu 0.0030276 15.0 0.0030600 15.0000000% 0 0.0000000 74mee9 0
72 u238he cm cu x3 0.0000000 0.0 0.0030000 14.0000000% 0 0.0000000 77cro1 0
72 u238he es cu 0.0001118 30.0 0.0001130 0.0000000 0 0.0000000 87rid1 0
72 zn g u238he rc re 0.0029682 13.3 0.0000300 0.0000040 0 0.0100000 69net1 0
72 zn g u238he cm cu x3 0.0000000 0.0 0.0030000 12.9000000% 0 0.0000000 73net2 0
72 pu239t cm cu 0.0000000 0.0 0.0001100 0.0000000 0 0.0000000 72sid1 0
72 pu239t cm cu 0.0000000 0.0 0.0001100 0.0000000 0 0.0000000 73lam1 0
72 pu239t cm cu x3 0.0000000 0.0 0.0001140 15.0000000% 0 0.0000000 77cro1 0
72 pu239t es cu 0.0001205 99.0 0.0011090 99.0000000% 0 10.0000000 87wah1 36
72 ga g pu239t cm in 0.0000000 0.0 0.0001668 57.0000000% 0 100.0000000 88wah1 0
72 zn g pu239t rc cu 0.0001194 60.0 0.0001100 0.0000000 140 ba g pu239t 5.3600000 51ste3 0
72 zn g pu239t cm cu 0.0000000 0.0 0.0001106 32.0000000% 0 0.0000000 73net2 0
72 zn g pu239t cm cu x3 0.0000000 0.0 0.0001200 0.0000000 0 0.0000000 60kat1 0

72 zn g pu239t cm in 0.0000000 0.0 0.0005040 11.0000000% 0 10.0000000 88wah1 0
72 cu g pu239t cm in 0.0000000 0.0 0.0005171 11.0000000% 0 10.0000000 88wah1 0
72 ni g pu239t cm in 0.0000000 0.0 0.0008185 32.0000000% 0 100.0000000 88wah1 0
72 pu239f es cu 0.0005197 30.0 0.0006310 0.0000000 148 nd g pu239f 1.7300000 70lis1 0
72 pu241t es cu 0.0000246 20.0 0.0000260 20.0000000% 0 0.0000000 74mee1 0
72 pu241t cm cu x3 0.0000000 0.0 0.0000100 0.0000000 0 0.0000000 72sid1 0
72 pu241t es cu 0.0000160 99.0 0.0000169 99.0000000% 0 0.0000000 87wah1 36
72 u233t cm cu 0.0000000 0.0 0.0000100 0.0000000 0 0.0000000 72sid1 0
72 u233t cm cu 0.0000000 0.0 0.0001000 0.0000000 0 0.0000000 73lam1 0
72 u233t es cu 0.0004879 99.0 0.0054880 99.0000000% 0 10.0000000 87wah1 36
72 u233t es cu 0.0004099 30.0 0.0004610 0.0000000 0 0.0000000 87rid1 0
72 zn g u233t cm cu 0.0000000 0.0 0.0000283 32.0000000% 0 0.0000000 73net2 0
72 th232f cm cu 0.0000000 0.0 0.0003300 0.0000000 0 0.0000000 72sid1 0
72 th232f cm cu 0.0000000 0.0 0.0003600 0.0000000 0 0.0000000 74lam1 0
72 th232f cm cu 0.0000000 0.0 0.0001560 13.4000000% 0 0.0000000 77cro1 0
72 th232f es cu 0.0004427 20.0 0.0004460 20.0000000% 0 0.0000000 74mee0 0
72 zn g th232f rc cu x4 0.0000000 0.0 0.0001300 0.0000000 89 sr g th232f 6.0000000 50nid1 0
72 zn g th232f rc cu 0.0003651 24.6 0.0003300 0.0000800 89 sr g th232f 6.7000000 51tur1 0
72 zn g th232f cm cu 0.0000000 0.0 0.0002650 16.0000000% 0 0.0000000 73net2 0
72 zn g th232f cm cu 0.0000000 0.0 0.0003300 0.0000000 0 0.0000000 60kat1 0
72 zn g th232f rc cu x4 0.0000000 0.0 16.4200000 24.2000000% 89 sr g u235t 0.0000000 51tur1 7
73 u235t cm cu 0.0000000 0.0 0.0001100 0.0000000 0 0.0000000 72sid1 0
73 u235t cm cu 0.0000000 0.0 0.0001000 0.0000000 0 0.0000000 73lam1 0
73 u235t cm cu 0.0000000 0.0 0.0001020 50.0000000% 0 0.0000000 77cro1 0
73 u235t es cu 0.0001107 99.0 0.0010890 99.0000000% 0 10.0000000 87wah1 36
73 u235t es cu 0.0001002 30.0 0.0000986 0.0000000 0 0.0000000 87rid1 0
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0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

73 ga g u235t rc cu 0.0001032 60.0 0.0001000 0.0000000 140 ba g u235t 6.1000000 51sie1 0
73 ga g u235t cm cu 0.0000000 0.0 0.0001100 0.0000000 0 0.0000000 60kat1 0
73 ga g u235t cm in 0.0000000 0.0 0.0001189 62.0000000% 0 100.0000000 88wah1 0
73 zn g u235t cm in 0.0000000 0.0 0.0003946 12.0000000% 0 10.0000000 88wah1 0
73 cu g u235t cm in 0.0000000 0.0 0.0005958 11.0000000% 0 10.0000000 88wah1 0
73 ni g u235t cm in 0.0000000 0.0 0.0008725 30.0000000% 0 100.0000000 88wah1 0

73		u235f	es	cu		0.0005241	20.0	0.0006000	20.0000000%	0			0.0000000	74mee1	0
73		u235he	cm	cu		0.0000000	0.0	0.0111000	20.0000000%	0			0.0000000	77cro1	0
73		u235he	es	cu		0.0113665	10.0	0.0116000	10.0000000%	0			0.0000000	74mee8	0
73	ga g	u235he	rc	cu		0.0111962	30.1	0.0115000	0.0000000	99	mo g	u235he	5.1700000	61val1	0
73		u238f	es	cu	x3	0.0000000	0.0	0.0000500	0.0000000	0			0.0000000	72sid1	0
73		u238f	es	cu		0.0002028	40.0	0.0002142	40.0000000%	0			0.0000000	87wah1	36
73	ga g	u238f	rc	cu		0.0002074	20.1	0.0002190	0.0000440	0			0.0000000	79rao1	0
73		u238he	es	cu		0.0047492	30.0	0.0000480	0.0000000	0			0.0100000	69net1	0
73		u238he	cm	cu	su	0.0000000	0.0	0.0054000	0.0010000	0			0.0000000	73dar1	0
73		u238he	es	cu		0.0052736	15.0	0.0053300	15.0000000%	0			0.0000000	74mee9	0
73		u238he	cm	cu		0.0000000	0.0	0.0054000	19.0000000%	0			0.0000000	77cro1	0
73	ga g	u238he	rc	cu		0.0053428	18.9	0.0053000	0.0010000	99	mo g	u238he	5.6000000	71swi2	0
73		pu239t	es	cu		0.0002608	30.0	0.0002500	0.0000000	0			0.0000000	63wea1	0
73		pu239t	cm	cu	x3	0.0000000	0.0	0.0002500	0.0000000	0			0.0000000	72sid1	0
73		pu239t	cm	cu	x3	0.0000000	0.0	0.0002500	0.0000000	0			0.0000000	73lam1	0
73		pu239t	cm	cu	x3	0.0000000	0.0	0.0002900	20.0000000%	0			0.0000000	77cro1	0
73		pu239t	es	cu		0.0002779	99.0	0.0026640	99.0000000%	0			10.0000000	87wah1	36
73	ga g	pu239t	cm	in		0.0000000	0.0	0.0001757	25.0000000%	0			10.0000000	88wah1	0
73	zn g	pu239t	cm	in		0.0000000	0.0	0.0001659	11.0000000%	0			1.0000000	88wah1	0
73	cu g	pu239t	cm	in		0.0000000	0.0	0.0008148	12.0000000%	0			10.0000000	88wah1	0
73	ni g	pu239t	cm	in		0.0000000	0.0	0.0003976	76.0000000%	0			100.0000000	88wah1	0
73		pu239f	es	cu		0.0007065	30.0	0.0008180	0.0000000	148	nd g	pu239f	1.7300000	70lis1	0
73		pu241t	cm	cu		0.0000000	0.0	0.0000500	0.0000000	0			0.0000000	72sid1	0
73		pu241t	es	cu		0.0000578	20.0	0.0000600	20.0000000%	0			0.0000000	74mee1	0
73		u233t	cm	cu		0.0000000	0.0	0.0004000	0.0000000	0			0.0000000	72sid1	0
73		u233t	cm	cu		0.0000000	0.0	0.0003300	0.0000000	0			0.0000000	73lam1	0
73		u233t	es	cu		0.0011552	20.0	0.0012230	20.0000000%	0			0.0000000	87wah1	36
73		th232f	es	cu		0.0006581	20.0	0.0006630	20.0000000%	0			0.0000000	74mee0	0
73		th232f	cm	cu	x3	0.0000000	0.0	0.0004500	0.0000000	0			0.0000000	72sid1	0
73		th232f	cm	cu	x3	0.0000000	0.0	0.0005000	0.0000000	0			0.0000000	74lam1	0
73		th232f	cm	cu	x3	0.0000000	0.0	0.0004690	44.0000000%	0			0.0000000	77cro1	0
73	ga g	th232f	rc	cu		0.0004979	49.1	0.0004500	0.0002200	89	sr g	th232f	6.7000000	51tur1	0
73	ga g	th232f	cm	cu	x3	0.0000000	0.0	0.0004500	0.0000000	0			0.0000000	60kat1	0
73	ga g	th232f	rc	cu	x4	0.0000000	0.0	3.0530000	48.9000000%	89	sr g	u235t	0.0000000	51tur1	7
74		u235t	cm	cu		0.0000000	0.0	0.0003500	0.0000000	0			0.0000000	72sid1	0
74		u235t	cm	cu	x3	0.0000000	0.0	0.0003500	0.0000000	0			0.0000000	73lam1	0

74		u235t	cm	cu		0.0000000	0.0	0.0003400	15.0000000%	0				0.0000000	77cro1	0			
74		u235t	es	cu		0.0003272	99.0	0.0032200	99.0000000%	0				10.0000000	87wah1	36			
74	ga g	u235t	rc	cu		0.0003388	20.0	0.0003400	20.0000000%	140	ba g	u235t		6.3200000	60mar1	0			
74	ga g	u235t	cm	in		0.0000000	0.0	0.0001465	26.0000000%	0				10.0000000	88wah1	0			
74	zn g	u235t	cm	in		0.0000000	0.0	0.0002098	11.0000000%	0				1.0000000	88wah1	0			
74	cu g	u235t	cm	in		0.0000000	0.0	0.0008745	12.0000000%	0				10.0000000	88wah1	0			
74	ni g	u235t	cm	in		0.0000000	0.0	0.0005472	71.0000000%	0				100.0000000	88wah1	0			
74		u235f	cm	cu		0.0000000	0.0	0.0015000	0.0000000	0				0.0000000	72sid1	0			
74		u235f	es	cu		0.0011905	20.0	0.0014500	20.0000000%	0				0.0000000	77cro1	0			
74		u235he	es	cu		0.0166578	30.0	0.0001700	0.0000000	0				0.0100000	69net1	0			
74		u235he	cm	cu		0.0000000	0.0	0.0187000	20.0000000%	0				0.0000000	77cro1	0			
74		u235he	es	cu		0.0170497	10.0	0.0174000	10.0000000%	0				0.0000000	74mee8	0			
74		u238f	cm	cu		0.0000000	0.0	0.0003100	20.0000000%	0				0.0000000	77cro1	0			
74		u238f	es	cu	x3	0.0000000	0.0	0.0001000	0.0000000	0				0.0000000	72sid1	0			
74		u238f	es	cu		0.0002774	30.0	0.0003000	0.0000000	0				0.0000000	79rao1	0			
74		u238he	es	cu		0.0078802	30.0	0.0000800	0.0000000	0				0.0100000	69net1	0			
74		u238he	cm	cu	su	0.0000000	0.0	0.0082000	0.0000000	0				0.0000000	73dar1	0			
74		u238he	es	cu		0.0080378	15.0	0.0081600	15.0000000%	0				0.0000000	74mee9	0			
74		u238he	cm	cu		0.0000000	0.0	0.0082000	20.0000000%	0				0.0000000	77cro1	0			
74		pu239t	cm	cu		0.0000000	0.0	0.0006200	0.0000000	0				0.0000000	72sid1	0			
74		pu239t	cm	cu	x3	0.0000000	0.0	0.0006200	0.0000000	0				0.0000000	73lam1	0			
74		pu239t	cm	cu		0.0000000	0.0	0.0006600	20.0000000%	0				0.0000000	77cro1	0			
74		pu239t	es	cu		0.0006366	30.0	0.0006000	0.0000000	0				0.0000000	63wea1	0			
74		pu239t	es	cu		0.0006282	99.0	0.0059210	99.0000000%	0				10.0000000	87wah1	36			
74	ga g	pu239t	cm	in		0.0000000	0.0	0.0009712	14.0000000%	0				10.0000000	88wah1	0			
74	zn g	pu239t	cm	in		0.0000000	0.0	0.0004273	11.0000000%	0				1.0000000	88wah1	0			
74	cu g	pu239t	cm	in		0.0000000	0.0	0.0006896	20.0000000%	0				10.0000000	88wah1	0			
74		pu239f	es	cu		0.0018576	20.0	0.0020000	20.0000000%	0				0.0000000	74mee1	0			
74		pu239f	es	cu		0.0014629	30.0	0.0016400	0.0000000	148	nd g	pu239f		1.7300000	70lis1	0			
74		pu239f	cm	cu	x3	0.0000000	0.0	0.0001000	0.0000000	0				0.0000000	72sid1	0			
74		pu241t	cm	cu		0.0000000	0.0	0.0001000	0.0000000	0				0.0000000	72sid1	0			
74		pu241t	es	cu		0.0000948	20.0	0.0001000	20.0000000%	0				0.0000000	74mee1	0			
74		u233t	cm	cu		0.0000000	0.0	0.0009000	0.0000000	0				0.0000000	72sid1	0			
74		u233t	cm	cu	x3	0.0000000	0.0	0.0009000	0.0000000	0				0.0000000	73lam1	0			
74		u233t	cm	cu		0.0000000	0.0	0.0008700	20.0000000%	0				0.0000000	77cro1	0			
74		u233t	es	cu		0.0027085	20.0	0.0029390	20.0000000%	0				0.0000000	87wah1	36			

74		th232f	es	cu	cm	0.0010919	30.0	0.0011000	0.0000000	0	0.0000000	72sid1	0
74		th232f	es	cu		0.0011812	20.0	0.0011900	20.0000000%	0	0.0000000	74mee0	0
74		th232f	cm	cu	x3	0.0000000	0.0	0.0011000	20.0000000%	0	0.0000000	77cro1	0
75	as g	u235t	es	cu		0.0012098	30.0	0.0012000	0.0000000	0	0.0000000	63wea1	0
75		u235t	cm	cu	x3	0.0000000	0.0	0.0012000	0.0000000	0	0.0000000	72sid1	0
75		u235t	es	cu	cm	0.0010081	30.0	0.0010000	0.0000000	0	0.0000000	73lam1	0
75		u235t	cm	cu		0.0000000	0.0	0.0011000	20.0000000%	0	0.0000000	77cro1	0
75		u235t	es	cu		0.0010283	20.0	0.0010200	20.0000000%	0	0.0000000	87wah1	36
75	ga g	u235t	cm	in		0.0000000	0.0	0.0001845	14.0000000%	0	1.0000000	88wah1	0
75	ga g	u235t	sp	cu		0.0007763	48.1	0.0007700	0.0003700	0	0.0000000	90rud1	0
75	ga g	u235t	sp	cu		0.0011896	23.7	0.0011800	0.0002800	0	0.0000000	90rud1	0
75	zn g	u235t	cm	in		0.0000000	0.0	0.0006954	11.0000000%	0	1.0000000	88wah1	0
75	zn g	u235t	sp	cu		0.0008368	9.6	0.0008300	0.0000800	0	0.0000000	90rud1	0
75	cu g	u235t	cm	in		0.0000000	0.0	0.0001351	19.0000000%	0	1.0000000	88wah1	0
75		u235f	es	cu		0.0035304	20.0	0.0043000	20.0000000%	0	0.0000000	77cro1	0
75		u235f	cm	cu	x3	0.0000000	0.0	0.0180000	0.0000000	0	0.0000000	72sid1	0
75		u235he	es	cu		0.0264565	30.0	0.0002700	0.0000000	0	0.0100000	69net1	0
75		u235he	cm	cu		0.0000000	0.0	0.0310000	20.0000000%	0	0.0000000	77cro1	0
75		u235he	es	cu		0.0270444	10.0	0.0276000	10.0000000%	0	0.0000000	74mee8	0
75		u238f	cm	cu		0.0000000	0.0	0.0007500	20.0000000%	0	0.0000000	77cro1	0
75		u238f	es	cu	x3	0.0000000	0.0	0.0003000	0.0000000	0	0.0000000	72sid1	0
75		u238f	es	cu		0.0004624	30.0	0.0005000	0.0000000	0	0.0000000	79rao1	0
75		u238f	es	cu	x3	0.0000000	0.0	0.0002100	0.0000000	0	0.0000000	74mae1	0
75		u238he	es	cu		0.0137903	30.0	0.0001400	0.0000000	0	0.0100000	69net1	0
75		u238he	cm	cu	su	0.0000000	0.0	0.0130000	0.0000000	0	0.0000000	73dar1	0
75		u238he	es	cu		0.0138888	15.0	0.0141000	15.0000000%	0	0.0000000	74mee9	0
75		u238he	cm	cu		0.0000000	0.0	0.0130000	20.0000000%	0	0.0000000	77cro1	0
75		pu239t	es	cu		0.0014427	30.0	0.0014000	0.0000000	0	0.0000000	63wea1	0
75		pu239t	cm	cu	x3	0.0000000	0.0	0.0014000	0.0000000	0	0.0000000	72sid1	0
75		pu239t	cm	cu	x3	0.0000000	0.0	0.0016000	0.0000000	0	0.0000000	73lam1	0
75		pu239t	cm	cu	x3	0.0000000	0.0	0.0016000	20.0000000%	0	0.0000000	77cro1	0
75		pu239t	es	cu		0.0013407	20.0	0.0013010	20.0000000%	0	0.0000000	87wah1	36
75	ge g	pu239t	cm	in		0.0000000	0.0	0.0000599	42.0000000%	0	10.0000000	88wah1	0
75	ge m	pu239t	cm	in		0.0000000	0.0	0.0004006	42.0000000%	0	10.0000000	88wah1	0
75	ga g	pu239t	cm	in		0.0000000	0.0	0.0004938	11.0000000%	0	1.0000000	88wah1	0
75	zn g	pu239t	cm	in		0.0000000	0.0	0.0007237	11.0000000%	0	1.0000000	88wah1	0

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 75 cu g   pu239t   cm    in        0.0000000  0.0   0.0005306 43.0000000%    0                  10.0000000   88wah1      0
 75        pu239f   cm    cu        0.0000000  0.0   0.0003000  0.0000000     0                  0.0000000   72sid1      0
 75        pu239f   es    cu        0.0022628 30.0   0.0026200  0.0000000   148 nd g      pu239f      1.7300000   70lis1      0
 75        pu239f   es    cu        0.0028328 30.0   0.0031500  0.0000000     0                  0.0000000   74mae1      0
 75        pu241t   cm    cu        0.0000000  0.0   0.0003000  0.0000000     0                  0.0000000   72sid1      0
 75        pu241t   es    cu        0.0002844 20.0   0.0003000 20.0000000%    0                  0.0000000   74mee1      0
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0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type        value   err.     value                nuclide     material       value      no.   treatment

 75        u233t    cm    cu        0.0000000  0.0   0.0023000  0.0000000     0                  0.0000000   72sid1      0
 75        u233t    cm    cu    x3  0.0000000  0.0   0.0023000  0.0000000     0                  0.0000000   73lam1      0
 75        u233t    cm    cu        0.0000000  0.0   0.0022000 20.0000000%    0                  0.0000000   77cro1      0
 75        u233t    es    cu        0.0079816 20.0   0.0086610 20.0000000%    0                  0.0000000   87wah1     36
 75        th232f   es    cu    cm  0.0025809 30.0   0.0026000  0.0000000     0                  0.0000000   72sid1      0
 75        th232f   cm    cu        0.0000000  0.0   0.0024000 20.0000000%    0                  0.0000000   77cro1      0
 75        th232f   es    cu        0.0029482 20.0   0.0029700 20.0000000%    0                  0.0000000   74mee0      0
 76        u235t    cm    cu    x3  0.0000000  0.0   0.0035000  0.0000000     0                  0.0000000   63wea1      0
 76        u235t    cm    cu    x3  0.0000000  0.0   0.0035000  0.0000000     0                  0.0000000   72sid1      0
 76        u235t    cm    cu    x3  0.0000000  0.0   0.0030000 30.0000000%    0                  0.0000000   73lam1     36
 76        u235t    es    cu        0.0031178 20.0   0.0031000 20.0000000%    0                  0.0000000   77cro1      0
 76        u235t    es    cu    su  0.0000000  0.0   0.0032140 20.0000000%    0                  0.0000000   87wah1     36
 76        u235t    es    cu        0.0030947  7.0   0.0030770  7.0000000%    0                  0.0000000   88wah1     36
 76 ge g   u235t    cm    in        0.0000000  0.0   0.0002536 99.0000000%    0                  1.0000000   88wah1     36
 76 ga g   u235t    cm    in        0.0000000  0.0   0.0011690 22.0000000%    0                  1.0000000   88wah1      0
 76 ga g   u235t    sp    cu    x1  0.0000000  0.0   0.0043000  0.0010000     0                  0.0000000   90rud1      0
 76 zn g   u235t    es    in        0.0015911 11.0   0.0015820 11.0000000%    0                  1.0000000   88wah1      0
 76 zn g   u235t    sp    cu    x1  0.0000000  0.0   0.0048000  0.0008000     0                  0.0000000   90rud1      0
 76 cu g   u235t    es    in        0.0000717 11.0   0.0000713 11.0000000%    0                  1.0000000   88wah1      0
 76        u235f    es    re        0.0203025 12.8   7.2000000 10.0000000%   76          u235t       1.0000000   74mee4      0
 76        u235f    es    cu        0.0109261 20.0   0.0120000 20.0000000%    0                  0.0000000   77cro1      0
 76        u235f    cm    cu    x3  0.0000000  0.0   0.0300000  0.0000000     0                  0.0000000   72sid1      0
 76        u235he   es    cu        0.0391947 30.0   0.0004000  0.0000000     0                  0.0100000   69net1      0
 76        u235he   es    cu        0.0400766 10.0   0.0409000 10.0000000%    0                  0.0000000   74mee8      0
 76        u235he   cm    cu    x3  0.0000000  0.0   0.0490000 20.0000000%    0                  0.0000000   77cro1      0
 76        u238f    es    cu        0.0009468 30.0   0.0010000  0.0000000     0                  0.0000000   72sid1      0
```

76		u238f	cm	cu		0.0000000	0.0	0.0016500	20.0000000%	0			0.0000000	77cro1	0
76		u238f	es	cu		0.0006533	30.0	0.0006900	0.0000000	0			0.0000000	74mae1	0
76		u238he	es	cu		0.0216705	30.0	0.0002200	0.0000000	0			0.0100000	69net1	0
76		u238he	es	cu	su	0.0000000	0.0	0.0190000	0.0000000	0			0.0000000	73dar1	0
76		u238he	es	cu		0.0220645	15.0	0.0224000	15.0000000%	0			0.0000000	74mee9	0
76		u238he	cm	cu		0.0000000	0.0	0.0205000	20.0000000%	0			0.0000000	77cro1	0
76	ge g	pu239t	es	cu		0.0031945	30.0	0.0031000	0.0000000	0			0.0000000	63wea1	0
76		pu239t	cm	cu	x3	0.0000000	0.0	0.0031000	0.0000000	0			0.0000000	72sid1	0
76		pu239t	cm	cu	x3	0.0000000	0.0	0.0035000	0.0000000	0			0.0000000	73lam1	0
76		pu239t	es	cu		0.0028132	20.0	0.0027300	20.0000000%	0			0.0000000	87wah1	36
76	ge g	pu239t	cm	in		0.0000000	0.0	0.0004040	20.0000000%	0			1.0000000	88wah1	0
76		pu239t	cm	cu	x3	0.0000000	0.0	0.0031000	20.0000000%	0			0.0000000	77cro1	0
76	ga g	pu239t	cm	in		0.0000000	0.0	0.0013710	11.0000000%	0			1.0000000	88wah1	0
76	zn g	pu239t	cm	in		0.0000000	0.0	0.0009566	14.0000000%	0			1.0000000	88wah1	0
76		pu239f	es	cu		0.0061301	20.0	0.0066000	20.0000000%	0			0.0000000	74mee1	0
76		pu239f	es	cu		0.0048346	30.0	0.0054200	0.0000000	148	nd	g	pu239f	1.7300000	70lis1	0
76		pu239f	es	cu		0.0060465	30.0	0.0065100	0.0000000	0			0.0000000	74mae1	0
76		pu239f	cm	cu	x3	0.0000000	0.0	0.0010000	0.0000000	0			0.0000000	72sid1	0
76		pu241t	es	cu		0.0009479	20.0	0.0010000	20.0000000%	0			0.0000000	74mee1	0
76		pu241t	cm	cu	x3	0.0000000	0.0	0.0006000	0.0000000	0			0.0000000	72sid1	0
76		u233t	cm	cu	x3	0.0000000	0.0	0.0068000	0.0000000	0			0.0000000	73lam1	0
76		u233t	cm	cu	x3	0.0000000	0.0	0.0068000	0.0000000	0			0.0000000	72sid1	0
76		u233t	es	cu		0.0138418	20.0	0.0150200	20.0000000%	0			0.0000000	87wah1	36
76		u233t	cm	cu	x3	0.0000000	0.0	0.0069000	20.0000000%	0			0.0000000	77cro1	0
76		th232f	es	cu	cm	0.0059559	30.0	0.0060000	0.0000000	0			0.0000000	72sid1	0
76		th232f	cm	cu		0.0000000	0.0	0.0049000	20.0000000%	0			0.0000000	77cro1	0
76		th232f	es	cu		0.0070875	20.0	0.0071400	20.0000000%	0			0.0000000	74mee0	0
77		u235t	cm	cu		0.0000000	0.0	0.0083000	0.0000000	0			0.0000000	72sid1	0
77		u235t	cm	cu	x3	0.0000000	0.0	0.0080000	0.0000000	0			0.0000000	73lam1	0
77		u235t	cm	cu		0.0000000	0.0	0.0083000	0.0008000	0			0.0000000	73wal1	0
77		u235t	ms	cu		0.0082472	12.2	0.0082000	0.0010000	0			0.0000000	76dii1	0
77		u235t	cm	cu		0.0000000	0.0	0.0077200	15.2000000%	0			0.0000000	77cro1	0
77		u235t	es	cu		0.0071469	20.0	0.0071060	20.0000000%	0			0.0000000	87wah1	36
77	as g	u235t	rc	cu		0.0092975	60.0	0.0091000	0.0000000	140	ba	g	u235t	6.1000000	51ste1	0
77	as g	u235t	rc	cu		0.0067678	60.0	0.0067000	0.0000000	140	ba	g	u235t	6.1700000	53sug1	0
77	ge g	u235t	rc	cu		0.0037803	60.0	0.0037000	0.0000000	140	ba	g	u235t	6.1000000	51ste1	0

77	ge g	u235t	rc	cu		0.0023233	60.0	0.0023000	0.0000000	140	ba g	u235t	6.1700000	53sug1	0
77	ge g	u235t	cm	in		0.0000000	0.0	0.0007961	35.0000000%	0			1.0000000	88wah1	0
77	ge m	u235t	rc	cu		0.0048388	60.0	0.0050000	0.0030000	140	ba g	u235t	6.4400000	59kje1	36
77	ge m	u235t	cm	in		0.0000000	0.0	0.0001190	35.0000000%	0			1.0000000	88wah1	0
77	ga g	u235t	rc	fc		0.0045887	61.1	0.5730000	0.3440000	77	as g	u235t	1.0000000	68wis1	36
77	ga g	u235t	rc	fc		0.0068870	12.3	0.8600000	0.0800000	77		u235t	1.0000000	81seh1	0
77	ga g	u235t	cm	in		0.0000000	0.0	0.0041250	11.0000000%	0			1.0000000	88wah1	0
77	ga g	u235t	sp	in	x1	0.0000000	0.0	0.0011000	99.0000000%	0			0.0000000	90rud1	36
77	ga g	u235t	sp	cu		0.0061351	9.8	0.0061000	0.0006000	0			0.0000000	90rud1	0
77	ga g	u235t	sp	cu		0.0115662	27.8	0.0115000	0.0032000	0			0.0000000	90rud1	0
77	zn g	u235t	cm	in		0.0000000	0.0	0.0020200	14.0000000%	0			1.0000000	88wah1	0
77	zn g	u235t	sp	cu		0.0050288	38.0	0.0050000	0.0019000	0			0.0000000	90rud1	0
77		u235f	cm	cu		0.0000000	0.0	0.0480000	0.0000000	0			0.0000000	72sid1	0
77		u235f	es	re		0.0355159	12.8	4.9000000	10.0000000%	77		u235t	1.0000000	74mee4	0
77		u235f	es	cu		0.0227627	20.0	0.0250000	20.0000000%	0			0.0000000	77cro1	0
77		u235he	es	cu		0.0666311	10.0	0.0680000	10.0000000%	0			0.0000000	74mee8	0
77		u235he	cm	cu	x3	0.0000000	0.0	0.0680000	10.0000000%	0			0.0000000	77cro1	0
77	as g	u235he	rc	cu		0.0662035	30.1	0.0680000	0.0000000	99	mo g	u235he	5.1700000	61val1	0
77		u238f	cm	cu	es	0.0000000	0.0	0.0037000	0.0000000	0			0.0000000	63wea1	0
77		u238f	es	cu		0.0034069	30.0	0.0035000	0.0000000	0			0.0000000	72sid1	0
77		u238f	cm	cu		0.0000000	0.0	0.0035100	24.5000000%	0			0.0000000	77cro1	0
77		u238f	es	cu		0.0025309	30.0	0.0026000	0.0000000	0			0.0000000	74mae1	0
77	as g	u238f	rc	cu		0.0031820	60.0	0.0036000	0.0000000	140	ba g	u238f	6.4000000	52eng1	0
77	as g	u238f	rc	cu		0.0035728	27.8	0.0036000	0.0010000	140	ba g	u238f	5.7000000	54kel1	0
77	as g	u238f	rc	re		0.0033869	15.1	0.0005640	0.0000000	99	mo g	u238f	1.0000000	68bor2	0
77	as g	u238f	cm	cu		0.0000000	0.0	0.0038000	0.0000000	0			0.0000000	60kat1	0
77	as g	u238f	rc	cu	su	0.0000000	0.0	0.0015100	0.0006400	0			0.0000000	74rao1	0
77	as g	u238f	rc	cu	x4	0.0000000	0.0	0.0015100	0.0003000	0			0.0000000	79rao1	0
77	ge g	u238f	rc	cu	x1	0.0000000	0.0	0.0043000	0.0000000	140	ba g	u238f	6.1000000	51eng3	0
77		u238he	cm	cu	su	0.0000000	0.0	0.0300000	0.0040000	0			0.0000000	73dar1	0
77		u238he	es	cu		0.0319589	15.0	0.0322000	15.0000000%	0			0.0000000	74mee9	0
77		u238he	cm	cu		0.0000000	0.0	0.0320000	9.4000000%	0			0.0000000	77cro1	0
77	as g	u238he	rc	cu		0.0285700	15.1	1.0000000	0.0000000	140	ba g	u238he	160.0000000	67bor1	0
77	as g	u238he	rc	re		0.0330147	15.1	0.0058300	0.0000000	99	mo g	u238he	1.0000000	67bor1	0
77	as g	u238he	es	cu		0.0357304	30.0	0.0003600	0.0000000	0			0.0100000	69net1	0
77	as g	u238he	rc	cu		0.0303369	16.7	0.0300000	0.0050000	99	mo g	u238he	5.6000000	71swi2	0

77 ge g u238he rc cu x1 0.0000000 0.0 0.0300000 0.0050000 99 mo g u238he 5.6000000 71swi2 0
77 pu239t cm cu x3 0.0000000 0.0 0.0075000 0.0000000 0 0.0000000 73lam1 0
77 pu239t cm cu 0.0000000 0.0 0.0073000 0.0015000 0 0.0000000 73wal1 0
77 pu239t cm cu x3 0.0000000 0.0 0.0070100 50.0000000% 0 0.0000000 77cro1 0
77 pu239t cm cu x3 0.0000000 0.0 0.0073000 0.0000000 0 0.0000000 72sid1 0
77 pu239t es cu 0.0063561 20.0 0.0062220 20.0000000% 0 0.0000000 87wah1 36
77 as g pu239t rc re 0.0074387 10.0 0.9000000 0.0420000 99 mo g u235t 0.0000000 64cro1 7
77 as g pu239t cm in 0.0000000 0.0 0.0007872 75.0000000% 0 10.0000000 88wah1 0
77 ge g pu239t cm in 0.0000000 0.0 0.0018060 12.0000000% 0 1.0000000 88wah1 0
77 ge m pu239t cm in 0.0000000 0.0 0.0002700 12.0000000% 0 1.0000000 88wah1 0
77 ga g pu239t cm in 0.0000000 0.0 0.0033170 11.0000000% 0 1.0000000 88wah1 0
77 zn g pu239t cm in 0.0000000 0.0 0.0007523 25.0000000% 0 1.0000000 88wah1 0
77 pu239f cm cu es 0.0000000 0.0 0.0190000 0.0000000 148 nd g pu239f 1.7500000 65and1 0
77 pu239f cm cu 0.0000000 0.0 0.0150000 42.2000000% 0 0.0000000 77cro1 0
77 pu239f es cu 0.0156329 30.0 0.0162100 0.0000000 0 0.0000000 74mae1 0
77 as g pu239f rc cu 0.0128336 15.4 0.0130000 0.0020000 140 ba g pu239f 5.2000000 71cun1 0
77 as g pu239f rc cu 0.0119595 12.3 0.0124000 0.0015000 99 mo g pu239f 5.9800000 72cun1 0
77 as g pu239f es cu cm 0.0183236 30.0 0.0190000 0.0000000 0 0.0000000 72sid1 0
77 as g pu239f rc re 0.0124379 10.0 1.6550000 0.0790000 99 mo g u235t 0.0000000 64cro1 7
77 as g pu239f es cu 0.0103732 30.0 0.0112000 0.0000000 148 nd g pu239f 1.7300000 70lis1 0
77 pu241t cm cu 0.0000000 0.0 0.0045000 0.0000000 0 0.0000000 72sid1 0
77 pu241t es cu 0.0018957 20.0 0.0020000 20.0000000% 0 0.0000000 74mee1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

77 pu241t cm cu 0.0000000 0.0 0.0004290 7.0000000% 0 0.0000000 77cro1 0
77 as g pu241t rc cu x1 0.0000000 0.0 0.0004500 0.0000300 137 cs g pu239t 0.0073000 69cro2 25
77 u233t cm cu x3 0.0000000 0.0 0.0200000 0.0000000 0 0.0000000 73lam1 0
77 u233t cm cu 0.0000000 0.0 0.0200000 0.0040000 0 0.0000000 73wal1 0
77 u233t cm cu 0.0000000 0.0 0.0193000 15.0000000% 0 0.0000000 77cro1 0
77 u233t cm cu x3 0.0000000 0.0 0.0200000 0.0000000 0 0.0000000 72sid1 0
77 u233t es cu 0.0247278 20.0 0.0261800 20.0000000% 0 0.0000000 87wah1 36
77 as g u233t rc cu 0.0172736 60.1 0.0190000 0.0000000 99 mo g u233t 5.1000000 47ste1 0
77 as g u233t es cu 0.0283360 20.0 0.0300000 20.0000000% 0 0.0000000 74mee1 0
77 ge g u233t rc cu 0.0090914 60.1 0.0100000 0.0000000 99 mo g u233t 5.1000000 47ste1 0

77 th232f rc cu rp 0.0083535 73.8 0.0200000 0.0000000 no. relative values = 1 51tur1
77 th232f es cu cm 0.0149448 30.0 0.0150000 0.0000000 0 0.0000000 72sid1 0
77 th232f cm cu 0.0000000 0.0 0.0100000 0.0000000 0 0.0000000 74lam1 0
77 th232f cm cu 0.0000000 0.0 0.0116000 17.9000000% 0 0.0000000 77cro1 0
77 th232f es cu 0.0122548 20.0 0.0123000 20.0000000% 0 0.0000000 74mee0 0
77 th232f cm cu 0.0000000 0.0 0.0113000 0.0017000 0 0.0000000 81ert1 0
77 th232f cm cu 0.0000000 0.0 0.0100000 0.0000000 0 0.0000000 73lam1 0
77 as g th232f rc re 0.0108169 10.0 2.8300000 0.1400000 99 mo g u235t 0.0000000 63iye1 7
77 as g th232f rc re 0.0133931 15.5 0.0018000 0.0000000 89 sr g th232f 1.0000000 73dub1 0
77 as g th232f rc cu 0.0099632 50.0 0.0100000 0.0050000 0 0.0000000 71swi3 0
77 as g th232f rc re 0.0104168 30.3 0.0014000 30.0000000% 89 sr g th232f 1.0000000 76lis1 0
77 as g th232f cm cu x3 0.0000000 0.0 0.0200000 0.0000000 0 0.0000000 60kat1 0
77 as g th232f rc cu x4 0.0000000 0.0 1.5080000 35.0000000% 89 sr g u235t 0.0000000 51tur1 7
77 ge g th232f rc cu x1 0.0000000 0.0 0.0910000 0.0000000 89 sr g th232f 6.0000000 50nid1 0
77 ge g th232f rc cu 0.0052753 23.6 0.0090000 0.0020000 77 th232f 0.0200000 51tur1 0
77 ge g th232f cm cu 0.0000000 0.0 0.0090000 0.0000000 0 0.0000000 60kat1 0
77 ge g th232f rc cu x1 0.0000000 0.0 0.0113000 0.0017000 0 0.0000000 81ert1 0
77 ge m th232f rc cu x1 0.0000000 0.0 1.6710000 22.2000000% 89 sr g u235t 0.0000000 51tur1 7
78 u235t cm cu 0.0000000 0.0 0.0200000 0.0000000 0 0.0000000 72sid1 0
78 u235t cm cu 0.0000000 0.0 0.0200000 0.0000000 0 0.0000000 73lam1 0
78 se g u235t cm cu 0.0000000 0.0 0.0200000 0.0020000 0 0.0000000 73wal1 0
78 u235t ms cu 0.0217243 9.3 0.0216000 0.0020000 0 0.0000000 76dii1 0
78 u235t cm cu 0.0000000 0.0 0.0205000 10.6000000% 0 0.0000000 77cro1 0
78 u235t es cu 0.0200145 20.0 0.0199000 20.0000000% 0 0.0000000 87wah1 36
78 as g u235t rc cu 0.0220688 60.0 0.0216000 0.0000000 140 ba g u235t 6.1000000 51ste1 0
78 as g u235t rc cu 0.0163473 20.0 0.0160000 0.0020000 140 ba g u235t 6.1000000 53cun1 0
78 as g u235t rc cu 0.0202023 60.0 0.0200000 0.0000000 140 ba g u235t 6.1700000 53sug1 0
78 as g u235t rc in x4 0.0000000 0.0 0.0018000 0.0006000 140 ba g u235t 6.1700000 53sug1 0
78 as g u235t rc fi 0.0001898 34.3 0.0090000 0.0030000 78 u235t 1.0000000 59kje1 0
78 as g u235t rc in 0.0001645 29.4 0.0001700 0.0000500 140 ba g u235t 6.4400000 59kje1 0
78 as g u235t cm in 0.0000000 0.0 0.0001713 76.0000000% 0 1.0000000 88wah1 0
78 ge g u235t rc cu 0.0181863 60.0 0.0178000 0.0000000 140 ba g u235t 6.1000000 51ste1 0
78 ge g u235t rc cu 0.0181820 60.0 0.0180000 0.0000000 140 ba g u235t 6.1700000 53sug1 0
78 ge g u235t cm in 0.0000000 0.0 0.0059400 55.0000000% 0 1.0000000 88wah1 0
78 ga g u235t rc fc 0.0151859 30.2 0.7200000 0.2100000 78 u235t 1.0000000 72mar1 0
78 ga g u235t cm in 0.0000000 0.0 0.0083010 56.0000000% 0 1.0000000 88wah1 0

78	ga	g	u235t	sp	in	x1	0.0000000	0.0	0.0048000	0.0015000	0				0.0000000	90rud1	0		
78	ga	g	u235t	sp	cu		0.0108622	21.3	0.0108000	0.0023000	0				0.0000000	90rud1	0		
78	zn	g	u235t	cm	in		0.0000000	0.0	0.0054450	58.0000000%	0				1.0000000	88wah1	0		
78	zn	g	u235t	sp	cu		0.0048276	33.3	0.0048000	0.0016000	0				0.0000000	90rud1	0		
78			u235f	cm	cu		0.0000000	0.0	0.0760000	0.0000000	0				0.0000000	72sid1	0		
78			u235f	es	re		0.0610863	12.8	3.2000000	10.0000000%	78	u235t			1.0000000	74mee4	0		
78			u235f	es	cu		0.0474374	20.0	0.0521000	20.0000000%	0				0.0000000	77cro1	0		
78			u235he	es	cu		0.0979869	30.0	0.0010000	0.0000000	0				0.0100000	69net1	0		
78			u235he	cm	cu		0.0000000	0.0	0.1130000	20.0000000%	0				0.0000000	77cro1	0		
78			u235he	es	cu		0.0999466	10.0	0.1020000	10.0000000%	0				0.0000000	74mee8	0		
78			u238f	es	cu		0.0132555	30.0	0.0140000	0.0000000	0				0.0000000	72sid1	0		
78			u238f	cm	cu		0.0000000	0.0	0.0081000	20.0000000%	0				0.0000000	77cro1	0		
78			u238f	es	cu		0.0091842	30.0	0.0097000	0.0000000	0				0.0000000	74mae1	0		
78			u238he	es	cu		0.0571314	30.0	0.0005800	0.0000000	0				0.0100000	69net1	0		
78			u238he	cm	cu	x3	0.0000000	0.0	0.0410000	0.0040000	0				0.0000000	73dar1	0		
78			u238he	es	cu		0.0571314	15.0	0.0580000	15.0000000%	0				0.0000000	74mee9	0		
78			u238he	cm	cu	x3	0.0000000	0.0	0.0412000	11.5000000%	0				0.0000000	77cro1	0		
78	as	g	u238he	rc	cu	x1	0.0000000	0.0	0.0410000	0.0100000	99	mo	g	u238he	5.6000000	71swi2	0		
78	ge	g	u238he	rc	cu	x1	0.0000000	0.0	0.0400000	0.0050000	99	mo	g	u238he	5.6000000	71swi2	0		
78			pu239t	cm	cu	x3	0.0000000	0.0	0.0250000	0.0000000	0				0.0000000	72sid1	0		
78			pu239t	cm	cu	x3	0.0000000	0.0	0.0280000	0.0000000	0				0.0000000	73lam1	0		
78			pu239t	cm	cu	x3	0.0000000	0.0	0.0250000	0.0050000	0				0.0000000	73wal1	0		
78			pu239t	cm	cu	x3	0.0000000	0.0	0.0278000	6.0000000%	0				0.0000000	77cro1	0		
78			pu239t	cm	cu	x3	0.0000000	0.0	0.0251900	20.0000000%	0				0.0000000	87wah1	36		
78			pu239t	es	cu		0.0187761	20.0	0.0180000	20.0000000%	0				0.0000000	89rid1	0		
78	as	g	pu239t	rc	re	x1	0.0000000	0.0	1.3520000	0.0730000	99	mo	g	u235t	0.0000000	64cro1	7		
78	as	g	pu239t	cm	in		0.0000000	0.0	0.0013080	31.0000000%	0				1.0000000	88wah1	0		
78	ge	g	pu239t	cm	in		0.0000000	0.0	0.0150500	11.0000000%	0				1.0000000	88wah1	0		
78	ga	g	pu239t	cm	in		0.0000000	0.0	0.0079390	11.0000000%	0				1.0000000	88wah1	0		
78	zn	g	pu239t	cm	in		0.0000000	0.0	0.0007952	59.0000000%	0				1.0000000	88wah1	0		
78			pu239f	cm	cu		0.0000000	0.0	0.0260000	20.0000000%	0				0.0000000	77cro1	0		
78			pu239f	cm	cu		0.0000000	0.0	0.0390000	0.0000000	0				0.0000000	72sid1	0		
78			pu239f	es	cu		0.0176189	30.0	0.0204000	0.0000000	148	nd	g	pu239f	1.7300000	70lis1	0		
78			pu239f	es	cu		0.0282384	30.0	0.0314000	0.0000000	0				0.0000000	74mae1	0		
78			pu241t	cm	cu		0.0000000	0.0	0.0082000	0.0000000	0				0.0000000	72sid1	0		
78			pu241t	cm	cu		0.0000000	0.0	0.0082000	0.0005000	0				0.0000000	73wal1	0		

78		pu241t	es	re	cm	0.0133343	18.9	1.0000000	0.1000000	78	as	g	pu241t	1.0000000	74mee1	0
78		pu241t	cm	cu		0.0000000	0.0	0.0091000	6.0000000%	0				0.0000000	77cro1	0
78	as	g	pu241t	rc	cu	x1	0.0000000	0.0	0.0082000	0.0005000	137	cs	g	pu239t	0.0250000	69cro2	25
78	as	g	pu241t	es	cu		0.0048157	30.0	0.0050000	0.0000000	0				0.0000000	89rid1	0
78		u233t	cm	cu		0.0000000	0.0	0.0480000	0.0000000	0				0.0000000	72sid1	0
78		u233t	cm	cu		0.0000000	0.0	0.0400000	0.0000000	0				0.0000000	73lam1	0
78		u233t	es	cu		0.0566719	20.0	0.0600000	0.0120000	0				0.0000000	73wal1	0
78		u233t	cm	cu		0.0000000	0.0	0.0668000	20.0000000%	0				0.0000000	77cro1	0
78		u233t	es	cu		0.0510047	20.0	0.0540000	20.0000000%	0				0.0000000	87wah1	36
78		th232f	es	cu	cm	0.0318336	30.0	0.0320000	0.0000000	0				0.0000000	72sid1	0
78		th232f	es	cu	cm	0.0348180	30.0	0.0350000	0.0000000	0				0.0000000	73lam1	0
78		th232f	cm	cu		0.0000000	0.0	0.0240000	20.0000000%	0				0.0000000	77cro1	0
78	as	g	th232f	rc	cu		0.0358128	11.1	0.0360000	0.0040000	0				0.0000000	71swi3	0
78	ge	g	th232f	rc	cu	x1	0.0000000	0.0	0.0730000	0.0110000	0				0.0000000	81ert1	0
79		u235t	cm	cu		0.0000000	0.0	0.0560000	0.0000000	0				0.0000000	72sid1	0
79		u235t	cm	cu		0.0000000	0.0	0.0560000	0.0000000	0				0.0000000	73lam1	0
79		u235t	cm	cu		0.0000000	0.0	0.0560000	0.0060000	0				0.0000000	73wal1	0
79		u235t	ms	cu		0.0440787	6.8	0.0439000	0.0030000	0				0.0000000	76dii1	0
79		u235t	sp	cu		0.0643738	31.3	0.0640000	0.0200000	0				0.9982400	76woh2	0
79		u235t	cm	cu		0.0000000	0.0	0.0431000	20.0000000%	0				0.0000000	77cro1	0
79		u235t	es	cu		0.0441791	20.0	0.0440000	20.0000000%	0				0.0000000	87wah1	36
79	se	g	u235t	rc	cu	x4	0.0000000	0.0	0.0300000	0.0000000	144	ce	g	u235t	5.0000000	51gle1	0
79	as	g	u235t	rc	cu		0.0540596	20.0	0.0530000	0.0050000	140	ba	g	u235t	6.1000000	53cun1	0
79	as	g	u235t	ms	fi		0.0026952	33.8	6.0000000	2.0000000	79			u235t	100.0000000	76sie1	0
79	as	g	u235t	ms	fi	su	0.0000000	0.0	5.7000000	2.0000000	79			u235t	100.0000000	76wol1	0
79	as	g	u235t	cm	in		0.0000000	0.0	0.0029070	53.0000000%	0				1.0000000	88wah1	0
79	ge	g	u235t	rc	fc		0.0274010	18.9	0.6100000	0.1100000	79			u235t	1.0000000	72mar1	0
79	ge	g	u235t	ms	fi		0.0235828	11.1	52.5000000	5.0000000	79			u235t	100.0000000	76sie1	0
79	ge	g	u235t	ms	fi	su	0.0000000	0.0	51.9000000	5.0000000	79			u235t	100.0000000	76wol1	0
79	ge	g	u235t	cm	in		0.0000000	0.0	0.0231000	9.0000000%	0				1.0000000	88wah1	0
79	ge	g	u235t	sp	cu		0.0210855	76.2	0.0210000	0.0160000	0				0.0000000	90rud1	0
79	ge	g	u235t	sp	in	x1	0.0000000	0.0	0.0050000	99.0000000%	0				0.0000000	90rud1	36
79	ge	m	u235t	sp	in	x6	0.0000000	0.0	0.0180000	0.0030000	0				0.0000000	90rud1	0
79	ge	m	u235t	sp	cu	x6	0.0000000	0.0	0.0190000	0.0030000	0				0.0000000	90rud1	0
79	ga	g	u235t	es	fc		0.0168000	30.5	0.3740000	0.0000000	79			u235t	1.0000000	74wol1	0
79	ga	g	u235t	ms	fi		0.0169796	12.0	37.8000000	4.0000000	79			u235t	100.0000000	76sie1	0

79 ga g u235t ms fi su 0.0000000 0.0 38.4000000 4.0000000 79 u235t 100.0000000 76wol1 0
79 ga g u235t cm in 0.0000000 0.0 0.0163700 10.0000000% 0 1.0000000 88wah1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

79 ga g u235t sp cu 0.0212863 19.3 0.0212000 0.0041000 0 0.0000000 90rud1 0
79 ga g u235t sp in 0.0186757 22.6 0.0186000 0.0042000 0 0.0000000 90rud1 0
79 zn g u235t ms fi 0.0016620 40.9 3.7000000 1.5000000 79 u235t 100.0000000 76sie1 0
79 zn g u235t ms fi su 0.0000000 0.0 4.0000000 1.5000000 79 u235t 100.0000000 76wol1 0
79 zn g u235t cm in 0.0000000 0.0 0.0015570 75.0000000% 0 1.0000000 88wah1 0
79 zn g u235t sp cu 0.0016065 43.8 0.0016000 0.0007000 0 0.0000000 90rud1 0
79 u235f cm cu 0.0000000 0.0 0.1200000 0.0000000 0 0.0000000 72sid1 0
79 u235f es re 0.0936760 11.5 2.3000000 10.0000000% 79 u235t 1.0000000 74mee4 0
79 u235f es cu 0.0823098 20.0 0.0904000 20.0000000% 0 0.0000000 77cro1 0
79 u235he cm cu 0.0000000 0.0 0.1663000 0.0000000 0 0.0000000 63wea1 0
79 u235he es cu 0.1616783 20.0 0.1650000 20.0000000% 0 0.0000000 77cro1 0
79 u235he es cu 0.1695173 10.0 0.1730000 10.0000000% 0 0.0000000 74mee8 0
79 u238f es cu 0.0388198 30.0 0.0410000 0.0000000 0 0.0000000 72sid1 0
79 u238f cm cu 0.0000000 0.0 0.0180000 20.0000000% 0 0.0000000 77cro1 0
79 u238f es cu 0.0265110 30.0 0.0280000 0.0000000 0 0.0000000 74mae1 0
79 u238he es cu 0.1332738 15.0 0.1353000 15.0000000% 0 0.0000000 63wea1 36
79 u238he cm cu x3 0.0000000 0.0 0.1800000 0.0300000 0 0.0000000 73dar1 0
79 u238he cm cu x3 0.0000000 0.0 0.1840000 17.0000000% 0 0.0000000 77cro1 0
79 as g u238he rc cu x1 0.0000000 0.0 0.1800000 0.0300000 99 mo g u238he 5.6000000 71swi2 0
79 pu239t cm cu 0.0000000 0.0 0.0250000 0.0000000 0 0.0000000 72sid1 0
79 pu239t cm cu 0.0000000 0.0 0.0600000 0.0000000 0 0.0000000 73lam1 0
79 pu239t es cu 0.0501905 20.0 0.0500000 0.0100000 0 0.0000000 73wal1 0
79 pu239t cm cu 0.0000000 0.0 0.0520000 20.0000000% 0 0.0000000 77cro1 0
79 pu239t es cu 0.0435855 2.0 0.0434200 2.0000000% 0 0.0000000 87wah1 36
79 as g pu239t cm in 0.0000000 0.0 0.0077440 16.0000000% 0 1.0000000 88wah1 0
79 ge g pu239t cm in 0.0000000 0.0 0.0281100 11.0000000% 0 1.0000000 88wah1 0
79 ga g pu239t es fc 0.0053894 30.1 0.1230000 0.0000000 79 pu239t 1.0000000 74wol1 0
79 ga g pu239t cm in 0.0000000 0.0 0.0068920 17.0000000% 0 1.0000000 88wah1 0
79 pu239f cm cu 0.0000000 0.0 0.0700000 0.0000000 0 0.0000000 72sid1 0
79 pu239f es cu 0.0675081 20.0 0.0700000 20.0000000% 0 0.0000000 74mee1 0

79		pu239f	es	re		0.0618824	10.2	1.4700000	10.0000000%	79		pu239t	1.0000000	74mee4	0
79		pu239f	cm	cu		0.0000000	0.0	0.0419000	20.0000000%	0			0.0000000	77cro1	0
79		pu239f	es	cu		0.0363062	30.0	0.0392000	0.0000000	148	nd g	pu239f	1.7300000	70lis1	0
79		pu239f	es	cu		0.0604680	30.0	0.0627000	0.0000000	0			0.0000000	74mae1	0
79		pu241t	es	cu		0.0154102	18.7	0.0160000	0.0030000	0			0.0000000	73wal1	0
79		pu241t	es	cu		0.0144471	20.0	0.0150000	20.0000000%	0			0.0000000	77cro1	0
79		pu241t	cm	cu	x3	0.0000000	0.0	0.0070000	0.0000000	0			0.0000000	72sid1	0
79		u233t	cm	cu		0.0000000	0.0	0.1100000	0.0000000	0			0.0000000	72sid1	0
79		u233t	cm	cu		0.0000000	0.0	0.0900000	0.0000000	0			0.0000000	73lam1	0
79		u233t	es	cu		0.1511251	18.7	0.1600000	0.0300000	0			0.0000000	73wal1	0
79		u233t	cm	cu		0.0000000	0.0	0.1340000	20.0000000%	0			0.0000000	77cro1	0
79		u233t	es	cu		0.1353514	20.0	0.1433000	20.0000000%	0			0.0000000	87wah1	36
79	as g	u233t	sp	fi		0.0090405	24.5	6.6700000	1.2350000	79		u233t	100.0000000	83qua1	0
79	as g	u233t	sp	in		0.0075563	25.0	0.0080000	0.0020000	0			0.0000000	88qua1	0
79	ge g	u233t	sp	fi		0.1079577	16.8	79.6500000	3.7940000	79		u233t	100.0000000	83qua1	0
79	ge g	u233t	sp	in		0.0925641	15.3	0.0980000	0.0150000	0			0.0000000	88qua1	0
79	ga g	u233t	sp	fi		0.0181353	21.1	13.3800000	1.8340000	79		u233t	100.0000000	83qua1	0
79	ga g	u233t	sp	in		0.0151125	18.7	0.0160000	0.0030000	0			0.0000000	88qua1	0
79	zn g	u233t	sp	fi	ul	0.0000000	0.0	0.3000000	0.2920000	79		u233t	100.0000000	83qua1	0
79	zn g	u233t	sp	in	ul	0.0000000	0.0	0.0004000	0.0004000	0			0.0000000	88qua1	0
79		th232f	cm	cu	x3	0.0000000	0.0	0.0560000	0.0000000	0			0.0000000	65eng1	0
79		th232f	es	cu	cm	0.0756048	30.0	0.0760000	0.0000000	0			0.0000000	72sid1	0
79		th232f	es	cu	cm	0.0795840	30.0	0.0800000	0.0000000	0			0.0000000	73lam1	0
79		th232f	es	cu		0.0841601	20.0	0.0846000	20.0000000%	0			0.0000000	74mee0	0
79		th232f	cm	cu	x3	0.0000000	0.0	0.0542000	20.0000000%	0			0.0000000	77cro1	0
79	as g	th232f	rc	cu		0.0746100	10.7	0.0750000	0.0080000	0			0.0000000	71swi3	0
80	kr g	u235t	ms	fc	ul	0.0000000	0.0	0.0001000	0.0001000	80		u235t	1.0000000	56ken1	0
80	kr g	u235t	ms	cu	ul	0.0000000	0.0	0.0000006	0.0000001	83	kr g	u235t	0.5300000	70tra1	0
80	br g	u235t	ms	in	ul	0.0000000	0.0	0.0000006	0.0000001	83	kr g	u235t	0.5300000	70tra1	0
80	br g	u235t	cm	in		0.0000000	0.0	0.0001638	18.0000000%	0			1000.0000000	88wah1	0
80	br m	u235t	cm	in		0.0000000	0.0	0.0004915	18.0000000%	0			1000.0000000	88wah1	0
80		u235t	cm	cu		0.0000000	0.0	0.1100000	0.0000000	0			0.0000000	73lam1	0
80	se g	u235t	es	cu	cm	0.1203454	20.0	0.1200000	0.0240000	0			0.0000000	73wal1	0
80		u235t	ms	cu		0.1303741	4.6	0.1300000	0.0060000	0			0.0000000	76dii1	0
80		u235t	sp	cu		0.1156096	13.9	0.1150000	0.0160000	0			0.9975900	76woh2	0
80		u235t	cm	cu		0.0000000	0.0	0.0953000	20.0000000%	0			0.0000000	77cro1	0

80		u235t	cm	cu	x3	0.0000000	0.0	0.0600000	0.0000000	0			0.0000000	72sid1	0
80		u235t	es	cu		0.1303741	20.0	0.1300000	20.0000000%	0			0.0000000	87wah1	36
80	as g	u235t	ms	fi		0.0091735	28.5	7.1000000	2.0000000	80	u235t		100.0000000	76sie1	0
80	as g	u235t	ms	fi	su	0.0000000	0.0	10.1000000	3.0000000	80	u235t		100.0000000	75cle2	0
80	as g	u235t	ms	in		0.0150432	26.7	0.0150000	0.0040000	0			0.0000000	79cle1	0
80	as g	u235t	ms	fi	su	0.0000000	0.0	7.1000000	2.0000000	80	u235t		100.0000000	76wol1	0
80	as g	u235t	sp	fi		0.0169257	27.0	13.1000000	3.5000000	80	u235t		100.0000000	80lan1	0
80	as g	u235t	cm	in		0.0000000	0.0	0.0144200	18.0000000%	0			1.0000000	88wah1	0
80	ge g	u235t	ms	fi		0.1074975	6.3	83.2000000	4.0000000	80	u235t		100.0000000	76sie1	0
80	ge g	u235t	ms	fi	su	0.0000000	0.0	82.7000000	3.2000000	80	u235t		100.0000000	75cle2	0
80	ge g	u235t	ms	in		0.0902590	14.4	0.0900000	0.0130000	0			0.0000000	79cle1	0
80	ge g	u235t	ms	fi	su	0.0000000	0.0	83.9000000	4.0000000	80	u235t		100.0000000	76wol1	0
80	ge g	u235t	sp	fi		0.1007789	7.0	78.0000000	4.5000000	80	u235t		100.0000000	80lan1	0
80	ge g	u235t	cm	in		0.0000000	0.0	0.1042000	4.0000000%	0			1.0000000	88wah1	0
80	ge g	u235t	sp	cu		0.1153310	14.8	0.1150000	0.0170000	0			0.0000000	90rud1	0
80	ge g	u235t	sp	in		0.1032964	5.8	0.1030000	0.0060000	0			0.0000000	90rud1	0
80	ga g	u235t	ms	fi		0.0125328	26.1	9.7000000	2.5000000	80	u235t		100.0000000	76sie1	0
80	ga g	u235t	ms	fi	su	0.0000000	0.0	7.2000000	1.4000000	80	u235t		100.0000000	75cle2	0
80	ga g	u235t	ms	in		0.0100288	40.0	0.0100000	0.0040000	0			0.0000000	79cle1	0
80	ga g	u235t	ms	fi	su	0.0000000	0.0	9.0000000	2.5000000	80	u235t		100.0000000	76wol1	0
80	ga g	u235t	cm	in		0.0000000	0.0	0.0102000	21.0000000%	0			1.0000000	88wah1	0
80	ga g	u235t	sp	in		0.0119342	21.0	0.0119000	0.0025000	0			0.0000000	90rud1	0
80	ga g	u235t	sp	cu		0.0121348	20.7	0.0121000	0.0025000	0			0.0000000	90rud1	0
80	ga g	u235t	sp	cu		0.0120345	34.2	0.0120000	0.0041000	0			0.0000000	90rud1	0
80		u235f	cm	cu		0.0000000	0.0	0.1900000	0.0000000	0			0.0000000	72sid1	0
80		u235f	es	re		0.1759537	10.8	1.5000000	10.0000000%	80	u235t		1.0000000	74mee4	0
80		u235f	es	cu	x3	0.0000000	0.0	0.1070000	20.0000000%	0			0.0000000	77cro1	0
80		u235f	es	cu	x3	0.0000000	0.0	0.0920000	0.0180000	0			0.0000000	81mae1	0
80		u235f	cm	cu	x3	0.0000000	0.0	0.0920000	0.0180000	0			0.0000000	81mae1	0
80	se g	u235he	cm	cu		0.0000000	0.0	0.1932000	0.0000000	0			0.0000000	63wea1	0
80		u235he	es	cu		0.2400678	20.0	0.2450000	20.0000000%	0			0.0000000	77cro1	0
80		u235he	es	cu		0.2567256	10.0	0.2620000	10.0000000%	0			0.0000000	74mee8	0
80		u238f	es	cu	x3	0.0000000	0.0	0.0870000	0.0000000	0			0.0000000	72sid1	0
80		u238f	es	cu		0.0364749	20.0	0.0379000	20.0000000%	0			0.0000000	77cro1	0
80		u238f	es	cu	x3	0.0000000	0.0	0.0280000	0.0060000	0			0.0000000	81mae1	0
80		u238f	cm	cu	x3	0.0000000	0.0	0.0280000	0.0060000	0			0.0000000	81mae1	0

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 80       u238f    es    cu        0.0567815 30.0   0.0590000  0.0000000     0                    0.0000000   74mae1      0
 80 se g   u238he   es    cu        0.2107951 30.0   0.2140000  0.0000000     0                    0.0000000   63wea1      0
 80       u238he   es    cu    su   0.0000000  0.0   0.2500000  0.0000000     0                    0.0000000   73dar1      0
 80       u238he   es    cu        0.2133562 15.0   0.2166000 15.0000000%    0                    0.0000000   74mee9      0
 80       u238he   cm    cu        0.0000000  0.0   0.2390000 20.0000000%    0                    0.0000000   77cro1      0
 80 kr g   pu239t   ms    cu    ul   0.0000000  0.0   0.0000015  0.0000000    83 kr g      pu239t      0.3000000   70tra1      0
 80 br g   pu239t   es    fi        0.0000004 99.9   0.0000037  0.0000037    80           pu239t      1.0000000   70tra1     40
 80 br m   pu239t   es    fi        0.0000011 99.9   0.0000112  0.0000112    80           pu239t      1.0000000   70tra1     40
 80       pu239t   es    cu        0.0938803 20.0   0.0900000 20.0000000%    0                    0.0000000   77cro1      0
 80       pu239t   cm    cu    x3   0.0000000  0.0   0.1100000  0.0000000     0                    0.0000000   73lam1      0
 80       pu239t   cm    cu    x3   0.0000000  0.0   0.1200000  0.0200000     0                    0.0000000   73wal1      0
 80       pu239t   cm    cu    x3   0.0000000  0.0   0.0480000  0.0000000     0                    0.0000000   72sid1      0
 80       pu239t   cm    cu    x3   0.0000000  0.0   0.1036000 20.0000000%    0                    0.0000000   87wah1     36
 80 se g   pu239t   cm    in        0.0000000  0.0   0.0035170 51.0000000%    0                    1.0000000   88wah1      0
 80 as g   pu239t   cm    in        0.0000000  0.0   0.0357100 11.0000000%    0                    1.0000000   88wah1      0
 80 ge g   pu239t   cm    in        0.0000000  0.0   0.0591000 11.0000000%    0                    1.0000000   88wah1      0
 80 ga g   pu239t   es    fc    x3   0.0000000  0.0   0.0314000  0.0000000    80           pu239t      1.0000000   74wol1      0
 80 ga g   pu239t   cm    in        0.0000000  0.0   0.0044440 35.0000000%    0                    1.0000000   88wah1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type        value   err.     value                nuclide     material       value      no.   treatment

 80 kr g   pu239f   ms    fc    x1   0.0000000  0.0   0.1000000  0.0500000    80           pu239f      1.0000000   56ken1      0
 80       pu239f   cm    cu        0.0000000  0.0   0.1100000  0.0000000     0                    0.0000000   72sid1      0
 80       pu239f   es    cu        0.1021683 20.0   0.1100000 20.0000000%    0                    0.0000000   74mee1      0
 80       pu239f   es    re        0.1072587 24.7   1.2300000 10.0000000%   80           pu239t      1.0000000   74mee4      0
 80       pu239f   cm    cu        0.0000000  0.0   0.0717000 20.0000000%    0                    0.0000000   77cro1      0
 80       pu239f   es    cu        0.0510219 30.0   0.0572000  0.0000000   148 nd g      pu239f      1.7300000   70lis1      0
 80       pu239f   es    cu        0.0905582 30.0   0.0975000  0.0000000     0                    0.0000000   74mae1      0
 80       pu241t   cm    cu        0.0000000  0.0   0.0300000  0.0000000     0                    0.0000000   72sid1      0
 80       pu241t   es    cu        0.0317836 21.2   0.0330000  0.0070000     0                    0.0000000   73wal1      0
 80       pu241t   es    cu        0.0269679 20.0   0.0280000 20.0000000%    0                    0.0000000   77cro1      0
 80 kr g   u233t    ms    fc    x1   0.0000000  0.0   0.0005000  0.0005000    80           u233t       1.0000000   56ken1      0
 80 kr g   u233t    ms    cu    ul   0.0000000  0.0   0.0000200  0.0000000    83 kr g      u233t       1.1700000   70tra1      0
 80 br g   u233t    es    fi        0.0000028 99.9   0.0000125  0.0000125    80           u233t       1.0000000   70tra1     40
 80 br m   u233t    es    fi        0.0000083 99.9   0.0000375  0.0000375    80           u233t       1.0000000   70tra1     40
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80		u233t	cm	cu		0.0000000	0.0	0.2400000	0.0000000	0			0.0000000	72sid1	0
80		u233t	cm	cu		0.0000000	0.0	0.1800000	0.0000000	0			0.0000000	73lam1	0
80		u233t	es	cu		0.2455783	19.2	0.2600000	0.0500000	0			0.0000000	73wal1	0
80		u233t	cm	cu		0.0000000	0.0	0.2660000	20.0000000%	0			0.0000000	77cro1	0
80		u233t	es	cu		0.2203593	20.0	0.2333000	20.0000000%	0			0.0000000	87wah1	36
80	se g	u233t	sp	fi	ul	0.0000000	0.0	1.3000000	0.4510000	80		u233t	100.0000000	83qua1	0
80	se g	u233t	sp	in		0.0037781	25.0	0.0040000	0.0010000	0			0.0000000	88qua1	0
80	as g	u233t	sp	fi		0.0399218	18.1	18.0600000	1.5390000	80		u233t	100.0000000	83qua1	0
80	as g	u233t	sp	in		0.0500602	11.3	0.0530000	0.0060000	0			0.0000000	88qua1	0
80	ge g	u233t	sp	fi		0.1712922	16.8	77.4900000	2.9640000	80		u233t	100.0000000	83qua1	0
80	ge g	u233t	sp	in		0.2144088	9.3	0.2270000	0.0210000	0			0.0000000	88qua1	0
80	ga g	u233t	sp	fi	ul	0.0000000	0.0	3.1500000	0.8160000	80		u233t	100.0000000	83qua1	0
80	ga g	u233t	sp	in		0.0085008	33.3	0.0090000	0.0030000	0			0.0000000	88qua1	0
80		th232f	cm	cu	x3	0.0000000	0.0	0.1500000	0.0000000	0			0.0000000	65eng1	0
80		th232f	es	cu	cm	0.1687499	30.0	0.1700000	0.0000000	0			0.0000000	72sid1	0
80		th232f	es	cu	cm	0.1985293	30.0	0.2000000	0.0000000	0			0.0000000	73lam1	0
80		th232f	cm	cu		0.0000000	0.0	0.1310000	20.0000000%	0			0.0000000	77cro1	0
80		th232f	es	cu		0.2034925	20.0	0.2050000	20.0000000%	0			0.0000000	74mee0	0
81		u235t	cm	cu		0.0000000	0.0	0.2200000	0.0000000	0			0.0000000	72sid1	0
81		u235t	cm	cu		0.0000000	0.0	0.2200000	0.0000000	0			0.0000000	73lam1	0
81		u235t	cm	cu	x3	0.0000000	0.0	0.2000000	0.0200000	0			0.0000000	73wal1	0
81		u235t	ms	cu		0.1903867	3.7	0.1900000	0.0070000	0			0.0000000	76dii1	0
81		u235t	sp	cu		0.2023848	10.4	0.2020000	0.0210000	0			1.0001300	76woh2	0
81		u235t	cm	cu		0.0000000	0.0	0.2090000	10.0000000%	0			0.0000000	77cro1	0
81	se g	u235t	rc	cu		0.2053483	10.0	0.2100000	0.0200000	140	ba g	u235t	6.3500000	62cro1	0
81	se g	u235t	cm	re	x3	0.0000000	0.0	23.0000000	10.0000000	81	se m	u235t	1.0000000	63cro1	0
81	se g	u235t	ms	fi		0.0011023	37.1	0.5400000	0.2000000	81		u235t	100.0000000	76sie1	40
81	se g	u235t	rc	re		0.1943953	32.1	28.0000000	0.0000000	81	se m	u235t	1.0000000	61val1	0
81	se g	u235t	ms	fi	ul	0.0000000	0.0	0.2730000	0.2400000	81		u235t	100.0000000	75cle2	40
81	se g	u235t	ms	in		0.0010421	25.0	0.0010400	0.0002600	0			0.0000000	79cle1	18
81	se g	u235t	ms	fi	su	0.0000000	0.0	0.5850000	0.1820000	81		u235t	100.0000000	76wol1	40
81	se g	u235t	sp	fi		0.0010349	30.9	0.5070000	0.1560000	81		u235t	100.0000000	80lan1	40
81	se g	u235t	cm	in		0.0000000	0.0	0.0009330	40.0000000%	0			1.0000000	88wah1	0
81	se g	u235t	rc	in	x4	0.0000000	0.0	0.1250000	0.0000000	140	ba g	u235t	6.1000000	51gle1	0
81	se m	u235t	rc	cu		0.0081434	60.0	0.0080000	0.0000000	140	ba g	u235t	6.1000000	51gle1	0
81	se m	u235t	rc	cu		0.0074317	11.9	0.0076000	0.0009000	140	ba g	u235t	6.3500000	62cro1	0

81	se	m	u235t	ms	fi		0.0072668	36.6	3.5600000	1.3000000	81	u235t	100.0000000	76sie1	40
81	se	m	u235t	rc	re	rp	0.0072898	63.3	1.0000000	0.0000000	no. relative values =		1	61val1	
81	se	m	u235t	ms	fi	ul	0.0000000	0.0	1.8270000	0.9600000	81	u235t	100.0000000	75cle2	40
81	se	m	u235t	ms	in		0.0069742	25.0	0.0069600	0.0017400	0		0.0000000	79cle1	18
81	se	m	u235t	ms	fi	su	0.0000000	0.0	3.9150000	1.2180000	81	u235t	100.0000000	76wol1	40
81	se	m	u235t	sp	fi		0.0069259	30.9	3.3930000	1.0440000	81	u235t	100.0000000	80lan1	40
81	se	m	u235t	cm	in		0.0000000	0.0	0.0062420	40.0000000%	0		1.0000000	88wah1	0
81	as	g	u235t	ms	fi		0.0542965	9.8	26.6000000	2.5000000	81	u235t	100.0000000	76sie1	0
81	as	g	u235t	ms	fi	su	0.0000000	0.0	33.8000000	4.2000000	81	u235t	100.0000000	75cle2	0
81	as	g	u235t	ms	in		0.0691404	11.6	0.0690000	0.0080000	0		0.0000000	79cle1	0
81	as	g	u235t	ms	fi	su	0.0000000	0.0	26.3000000	2.5000000	81	u235t	100.0000000	76wol1	0
81	as	g	u235t	sp	fi		0.0691974	11.3	33.9000000	3.7000000	81	u235t	100.0000000	80lan1	0
81	as	g	u235t	cm	in		0.0000000	0.0	0.0680300	9.0000000%	0		1.0000000	88wah1	0
81	as	g	u235t	sp	in		0.0561140	12.5	0.0560000	0.0070000	0		0.0000000	90rud1	0
81	as	g	u235t	sp	cu		0.2595271	8.9	0.2590000	0.0230000	0		0.0000000	90rud1	0
81	ge	g	u235t	ms	fi		0.1314547	5.4	64.4000000	3.0000000	81	u235t	100.0000000	76sie1	0
81	ge	g	u235t	ms	fi	su	0.0000000	0.0	62.6000000	3.9000000	81	u235t	100.0000000	75cle2	0
81	ge	g	u235t	ms	in		0.1212462	11.6	0.1210000	0.0140000	0		0.0000000	79cle1	0
81	ge	g	u235t	ms	fi	su	0.0000000	0.0	64.2000000	3.0000000	81	u235t	100.0000000	76wol1	0
81	ge	g	u235t	sp	fi		0.1214527	7.1	59.5000000	3.9000000	81	u235t	100.0000000	80lan1	0
81	ge	g	u235t	cm	in		0.0000000	0.0	0.1215000	4.0000000%	0		1.0000000	88wah1	0
81	ge	g	u235t	sp	in		0.1372788	16.1	0.1370000	0.0220000	0		0.0000000	90rud1	0
81	ge	g	u235t	sp	cu		0.1402849	13.6	0.1400000	0.0190000	0		0.0000000	90rud1	0
81	ge	m	u235t	sp	in	x6	0.0000000	0.0	0.0600000	0.0130000	0		0.0000000	90rud1	0
81	ge	m	u235t	sp	cu	x6	0.0000000	0.0	0.0630000	0.0120000	0		0.0000000	90rud1	0
81	ga	g	u235t	ms	fi		0.0100020	30.7	4.9000000	1.5000000	81	u235t	100.0000000	76sie1	0
81	ga	g	u235t	ms	fi	su	0.0000000	0.0	1.5000000	0.6000000	81	u235t	100.0000000	75cle2	0
81	ga	g	u235t	ms	in		0.0050102	60.0	0.0050000	0.0030000	0		0.0000000	79cle1	0
81	ga	g	u235t	ms	fi	su	0.0000000	0.0	5.0000000	1.5000000	81	u235t	100.0000000	76wol1	0
81	ga	g	u235t	sp	fi		0.0055113	55.6	2.7000000	1.5000000	81	u235t	100.0000000	80lan1	0
81	ga	g	u235t	cm	in		0.0000000	0.0	0.0048990	29.0000000%	0		1.0000000	88wah1	0
81	ga	g	u235t	sp	cu		0.0060122	16.7	0.0060000	0.0010000	0		0.0000000	90rud1	0
81			u235f	cm	cu		0.0000000	0.0	0.3100000	0.0000000	0		0.0000000	72sid1	0
81			u235f	es	re		0.2410874	10.4	1.3000000	10.0000000%	81	u235t	1.0000000	74mee4	0
81			u235f	es	cu		0.2303582	20.0	0.2530000	20.0000000%	0		0.0000000	77cro1	0
81			u235f	es	cu		0.1766383	20.1	0.1940000	0.0390000	0		0.0000000	81mae1	0

81 u235f cm cu 0.0000000 0.0 0.1940000 0.0390000 0 0.0000000 81mae1 0
81 u235f es cu x3 0.0000000 0.0 0.2200000 0.0500000 148 nd g u235f 1.6800000 74mae1 0
81 u235he cm cu x3 0.0000000 0.0 0.2544000 0.0000000 0 0.0000000 63wea1 0
81 u235he es cu 0.3439339 8.7 0.3510000 8.7000000% 0 0.0000000 77cro1 0
81 se g u235he rc re x1 0.0000000 0.0 5.9000000 0.0000000 81 se m u235he 1.0000000 61val1 0
81 se g u235he rc cu 0.2920741 30.1 0.3000000 0.0000000 99 mo g u235he 5.1700000 61val1 0
81 se m u235he rc cu x1 0.0000000 0.0 0.0510000 0.0000000 99 mo g u235he 5.1700000 61val1 0
81 u238f cm cu 0.0000000 0.0 0.1600000 0.0000000 0 0.0000000 72sid1 0
81 u238f es cu 0.0861609 19.8 0.0910000 0.0180000 0 0.0000000 81mae1 0
81 u238f cm cu x3 0.0000000 0.0 0.0910000 0.0180000 0 0.0000000 81mae1 0
81 u238f es cu su 0.0000000 0.0 0.1500000 0.0400000 148 nd g u238f 2.0800000 74mae1 0
81 u238f cm cu x3 0.0000000 0.0 0.0847000 20.0000000% 0 0.0000000 77cro1 0
81 u238he es cu x3 0.0000000 0.0 0.3204000 0.0000000 0 0.0000000 63wea1 0
81 u238he cm cu su 0.0000000 0.0 0.3400000 0.0500000 0 0.0000000 73dar1 0
81 u238he es cu 0.3332334 15.0 0.3368000 15.0000000% 0 0.0000000 74mee9 0
81 u238he cm cu 0.0000000 0.0 0.3390000 15.0000000% 0 0.0000000 77cro1 0
81 se g u238he rc cu 0.3326633 15.2 0.3300000 0.0500000 99 mo g u238he 5.6000000 71swi2 0
81 pu239t cm cu 0.0000000 0.0 0.1800000 0.0000000 0 0.0000000 72sid1 0
81 pu239t cm cu x3 0.0000000 0.0 0.1860000 0.0000000 0 0.0000000 73lam1 0
81 pu239t cm cu x3 0.0000000 0.0 0.1800000 0.0200000 0 0.0000000 73wal1 0
81 pu239t cm cu x3 0.0000000 0.0 0.1840000 14.0000000% 0 0.0000000 77cro1 0
81 se g pu239t rc cu 0.1833727 14.0 0.1780000 0.0250000 0 0.0000000 63cro1 10
81 se g pu239t cm in 0.0000000 0.0 0.0026600 22.0000000% 0 1.0000000 88wah1 0
81 se m pu239t rc cu x1 0.0000000 0.0 0.0044000 0.0014000 0 0.0000000 63cro1 10
81 se m pu239t cm in 0.0000000 0.0 0.0177700 22.0000000% 0 1.0000000 88wah1 0
81 as g pu239t cm in 0.0000000 0.0 0.0880800 11.0000000% 0 1.0000000 88wah1 0
81 ge g pu239t cm in 0.0000000 0.0 0.0460100 13.0000000% 0 1.0000000 88wah1 0
81 ga g pu239t cm in 0.0000000 0.0 0.0014280 91.0000000% 0 1.0000000 88wah1 0
81 pu239f cm cu 0.0000000 0.0 0.1800000 0.0000000 0 0.0000000 72sid1 0
81 pu239f es cu 0.1709380 20.0 0.1800000 20.0000000% 0 0.0000000 74mee1 0
81 pu239f es re 0.2005575 18.9 1.1500000 10.0000000% 81 pu239t 1.0000000 74mee4 0
81 pu239f cm cu 0.0000000 0.0 0.1160000 20.0000000% 0 0.0000000 77cro1 0
81 pu239f es cu 0.1335495 7.2 0.1400000 0.0100000 148 nd g pu239f 1.6540000 77mae1 0
81 pu239f es cu 0.0745119 30.0 0.0817000 0.0000000 148 nd g pu239f 1.7300000 70lis1 0
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nuclide	material	tech.	type		value	err.	value		nuclide	material	value	no.	treatment
81	pu239f	es	cu	su	0.0000000	0.0	0.1600000	0.0100000	148 nd g	pu239f	1.6500000	74mae1	0
81	pu241t	es	cu		0.0626041	20.0	0.0650000	0.0130000	0		0.0000000	73wal1	0
81	pu241t	es	cu		0.0616410	20.0	0.0640000	20.0000000%	0		0.0000000	77cro1	0
81	pu241t	cm	cu	x3	0.0000000	0.0	0.0500000	0.0000000	0		0.0000000	72sid1	0
81	u233t	cm	cu		0.0000000	0.0	0.3400000	0.0000000	0		0.0000000	72sid1	0
81	u233t	cm	cu	x3	0.0000000	0.0	0.3300000	0.0000000	0		0.0000000	73lam1	0
81	u233t	cm	cu		0.0000000	0.0	0.3400000	0.0400000	0		0.0000000	73wal1	0
81	u233t	cm	cu		0.0000000	0.0	0.3300000	12.5000000%	0		0.0000000	77cro1	0
81	u233t	ms	cu		0.3688138	2.9	0.3740000	0.0110000	0		0.0000000	80weh1	0
81 br g	u233t	sp	fi	ul	0.0000000	0.0	1.5500000	0.3330000	81	u233t	100.0000000	83qua1	0
81 br g	u233t	sp	in	ul	0.0000000	0.0	0.0060000	0.0010000	0		0.0000000	88qua1	0
81 se g	u233t	rc	cu		0.3017911	12.5	0.3220000	0.0400000	140 ba g	u235t	6.5200000	62cro1	0
81 se g	u233t	rc	re	x1	0.0000000	0.0	28.0000000	6.0000000	81 se m	u233t	1.0000000	63cro1	0
81 se g	u233t	rc	re	x1	0.0000000	0.0	23.0000000	20.0000000%	81 se m	u233t	1.0000000	61val1	0
81 se g	u233t	ms	in		0.0035895	35.7	0.0036400	0.0013000	0		0.0000000	80weh1	18
81 se g	u233t	sp	fi		0.0030223	15.5	0.8333000	0.1245000	81	u233t	100.0000000	83qua1	40
81 se g	u233t	sp	in		0.0032049	15.4	0.0032500	0.0005000	0		0.0000000	88qua1	18
81 se m	u233t	rc	cu		0.0131214	14.3	0.0140000	0.0020000	140 ba g	u235t	6.5200000	62cro1	0
81 se m	u233t	ms	in		0.0240222	35.7	0.0243600	0.0087000	0		0.0000000	80weh1	18
81 se m	u233t	sp	fi		0.0202261	15.5	5.5767000	0.8334000	81	u233t	100.0000000	83qua1	40
81 se m	u233t	sp	in		0.0214484	16.1	0.0217500	0.0035000	0		0.0000000	88qua1	18
81 as g	u233t	ms	in		0.2011711	8.3	0.2040000	0.0170000	0		0.0000000	80weh1	0
81 as g	u233t	sp	fi		0.1973753	6.4	54.4200000	2.5510000	81	u233t	100.0000000	83qua1	0
81 as g	u233t	sp	in		0.2110325	8.4	0.2140000	0.0180000	0		0.0000000	88qua1	0
81 ge g	u233t	ms	in		0.1094608	13.5	0.1110000	0.0150000	0		0.0000000	80weh1	0
81 ge g	u233t	sp	fi		0.1330343	6.6	36.6800000	1.9470000	81	u233t	100.0000000	83qua1	0
81 ge g	u233t	sp	in		0.1420032	9.0	0.1440000	0.0130000	0		0.0000000	88qua1	0
81 ga g	u233t	ms	in	x1	0.0000000	0.0	0.0310000	0.0100000	0		0.0000000	80weh1	0
81 ga g	u233t	sp	fi		0.0034455	36.4	0.9500000	0.3440000	81	u233t	100.0000000	83qua1	0
81 ga g	u233t	sp	in		0.0039445	25.0	0.0040000	0.0010000	0		0.0000000	88qua1	0
81	th232f	cm	cu	x3	0.0000000	0.0	0.3600000	0.0000000	0		0.0000000	65eng1	0
81	th232f	es	cu	cm	0.3879721	30.0	0.3900000	0.0000000	0		0.0000000	72sid1	0
81	th232f	es	cu	cm	0.3979201	30.0	0.4000000	0.0000000	0		0.0000000	73lam1	0
81	th232f	cm	cu		0.0000000	0.0	0.3350000	20.0000000%	0		0.0000000	77cro1	0

81		th232f	es	cu		0.4267693	20.0	0.4290000	20.0000000%	0				0.0000000	74mee0	0
81	se g	th232f	rc	cu		0.4974001	10.0	0.5000000	0.0500000	0				0.0000000	71swi3	0
82	kr g	u235t	ms	fc	ul	0.0000000	0.0	0.0006000	0.0006000	82		u235t		1.0000000	56ken1	0
82	kr g	u235t	ms	cu		0.0000466	10.9	0.0000460	0.0000050	83	kr g	u235t		0.5300000	70tra1	0
82	br g	u235t	rc	in		0.0000411	30.0	0.0000410	0.0000000	0				0.0000000	55coo1	0
82	br g	u235t	rc	in		0.0000288	30.0	0.0000287	0.0000000	0				0.0000000	55coo1	18
82	br g	u235t	es	fi		0.0000432	10.9	0.0001330	0.0000140	82		u235t		1.0000000	70tra1	40
82	br g	u235t	ms	fi	ul	0.0000000	0.0	1.1900000	0.7000000	82		u235t		100.0000000	76sie1	40
82	br g	u235t	rc	in		0.0000245	60.0	0.0000245	0.0000000	0				0.0000000	49gle2	18
82	br g	u235t	rc	in		0.0000282	26.7	0.0000210	0.0000056	83	br g	u235t		0.4000000	51fel1	40
82	br g	u235t	ms	fi	ul	0.0000000	0.0	1.1200000	0.7000000	82		u235t		100.0000000	76wol1	40
82	br g	u235t	cm	in		0.0000000	0.0	0.0003553	11.0000000%	0				10.0000000	88wah1	0
82	br m	u235t	rc	in		0.0000123	30.0	0.0000123	0.0000000	0				0.0000000	55coo1	18
82	br m	u235t	es	fi		0.0000185	10.9	0.0000570	0.0000060	82		u235t		1.0000000	70tra1	40
82	br m	u235t	ms	fi	ul	0.0000000	0.0	0.5100000	0.3000000	82		u235t		100.0000000	76sie1	40
82	br m	u235t	rc	in		0.0000105	60.0	0.0000105	0.0000000	0				0.0000000	49gle2	18
82	br m	u235t	rc	in		0.0000121	26.7	0.0000090	0.0000024	83	br g	u235t		0.4000000	51fel1	40
82	br m	u235t	ms	fi	ul	0.0000000	0.0	0.4800000	0.3000000	82		u235t		100.0000000	76wol1	40
82	br m	u235t	cm	in		0.0000000	0.0	0.0001523	11.0000000%	0				10.0000000	88wah1	0
82		u235t	cm	cu	x3	0.0000000	0.0	0.3500000	0.0000000	0				0.0000000	72sid1	0
82		u235t	cm	cu		0.0000000	0.0	0.3500000	0.0000000	0				0.0000000	73lam1	0
82	se g	u235t	es	cu	cm	0.3306716	18.2	0.3300000	0.0600000	0				0.0000000	73wal1	0
82		u235t	ms	cu		0.3216532	2.8	0.3210000	0.0090000	0				0.0000000	76dii1	0
82	se g	u235t	ms	fi		0.0308917	16.0	9.5000000	1.5000000	82		u235t		100.0000000	76sie1	0
82		u235t	sp	cu		0.3353866	5.7	0.3350000	0.0190000	0				1.0008800	76woh2	0
82		u235t	cm	cu		0.0000000	0.0	0.3340000	20.0000000%	0				0.0000000	77cro1	0
82	se g	u235t	sp	fi		0.0383708	13.0	11.8000000	1.5000000	82		u235t		100.0000000	78str1	0
82	se g	u235t	ms	fi	su	0.0000000	0.0	11.0000000	2.5000000	82		u235t		100.0000000	75cle2	0
82	se g	u235t	ms	in		0.0430875	18.6	0.0430000	0.0080000	0				0.0000000	79cle1	0
82	se g	u235t	ms	fi	su	0.0000000	0.0	9.7000000	1.4000000	82		u235t		100.0000000	76wol1	0
82	se g	u235t	sp	fi		0.0422729	15.6	13.0000000	2.0000000	82		u235t		100.0000000	80lan1	0
82	se g	u235t	cm	in		0.0000000	0.0	0.0386800	10.0000000%	0				1.0000000	88wah1	0
82	as g	u235t	ms	fi	su	0.0000000	0.0	41.6000000	2.1000000	82		u235t		100.0000000	75cle2	18
82	as g	u235t	ms	fi	su	0.0000000	0.0	39.2000000	2.4000000	82		u235t		100.0000000	76wol1	18
82	as g	u235t	ms	fi	x1	0.0000000	0.0	39.0000000	2.5000000	82		u235t		100.0000000	76sie1	18
82	as g	u235t	sp	fi	x1	0.0000000	0.0	36.4000000	2.0000000	82		u235t		100.0000000	78str1	18

82	as	g	u235t	ms	in		0.1332707	6.8	0.1330000	0.0090000	0		0.0000000	79cle1	18
82	as	g	u235t	sp	fi	x1	0.0000000	0.0	39.9000000	2.2000000	82	u235t	100.0000000	80lan1	18
82	as	g	u235t	cm	in		0.0000000	0.0	0.1441000	3.0000000%	0		1.0000000	88wah1	18
82	as	g	u235t	sp	in	x1	0.0000000	0.0	0.1900000	0.0700000	0		0.0000000	90rud1	0
82	as	g	u235t	sp	cu	x1	0.0000000	0.0	0.3500000	0.0700000	0		0.0000000	90rud1	0
82	as	m	u235t	ms	fi	su	0.0000000	0.0	8.8000000	0.4000000	82	u235t	100.0000000	75cle2	18
82	as	m	u235t	ms	fi	su	0.0000000	0.0	8.3000000	0.5000000	82	u235t	100.0000000	76wol1	18
82	as	m	u235t	ms	fi	x1	0.0000000	0.0	8.2000000	0.5000000	82	u235t	100.0000000	76sie1	18
82	as	m	u235t	sp	fi	x1	0.0000000	0.0	7.7000000	0.4000000	82	u235t	100.0000000	78str1	18
82	as	m	u235t	ms	in		0.0280570	7.1	0.0280000	0.0020000	0		0.0000000	79cle1	18
82	as	m	u235t	sp	fi	x1	0.0000000	0.0	8.4000000	0.5000000	82	u235t	100.0000000	80lan1	18
82	as	m	u235t	cm	in		0.0000000	0.0	0.0304000	3.0000000%	0		1.0000000	88wah1	18
82	as	m	u235t	sp	in	x1	0.0000000	0.0	0.0400000	0.0120000	0		0.0000000	90rud1	0
82	as	m	u235t	sp	cu	x1	0.0000000	0.0	0.0400000	0.0120000	0		0.0000000	90rud1	0
82	ge	g	u235t	ms	fi		0.1284446	8.1	39.5000000	3.0000000	82	u235t	100.0000000	76sie1	0
82	ge	g	u235t	sp	fi		0.1320215	6.6	40.6000000	2.4000000	82	u235t	100.0000000	78str1	0
82	ge	g	u235t	ms	fi	su	0.0000000	0.0	38.6000000	2.7000000	82	u235t	100.0000000	75cle2	0
82	ge	g	u235t	ms	in		0.1272584	10.2	0.1270000	0.0130000	0		0.0000000	79cle1	0
82	ge	g	u235t	ms	fi	su	0.0000000	0.0	39.1000000	2.8000000	82	u235t	100.0000000	76wol1	0
82	ge	g	u235t	sp	fi		0.1238921	7.9	38.1000000	2.8000000	82	u235t	100.0000000	80lan1	0
82	ge	g	u235t	cm	in		0.0000000	0.0	0.1278000	4.0000000%	0		1.0000000	88wah1	0
82	ge	g	u235t	sp	in		0.1573195	19.1	0.1570000	0.0300000	0		0.0000000	90rud1	0
82	ge	g	u235t	sp	cu		0.1633317	16.0	0.1630000	0.0260000	0		0.0000000	90rud1	0
82	ga	g	u235t	ms	fi		0.0068287	47.7	2.1000000	1.0000000	82	u235t	100.0000000	76sie1	0
82	ga	g	u235t	sp	fi		0.0113812	43.0	3.5000000	1.5000000	82	u235t	100.0000000	78str1	0
82	ga	g	u235t	ms	in		0.0020041	50.0	0.0020000	0.0010000	0		0.0000000	79cle1	0
82	ga	g	u235t	ms	fi	ul	0.0000000	0.0	2.1000000	0.9000000	82	u235t	100.0000000	76wol1	0
82	ga	g	u235t	sp	fi		0.0019511	66.7	0.6000000	0.4000000	82	u235t	100.0000000	80lan1	0
82	ga	g	u235t	cm	in		0.0000000	0.0	0.0063510	62.0000000%	0		1.0000000	88wah1	0
82			u235f	cm	cu		0.0000000	0.0	0.4300000	0.0000000	0		0.0000000	72sid1	0
82			u235f	es	re		0.3397932	10.4	1.1500000	10.0000000%	82	u235t	1.0000000	74mee4	0
82			u235f	es	cu		0.3623816	20.0	0.3980000	20.0000000%	0		0.0000000	77cro1	0
82			u235f	es	cu		0.3186773	20.0	0.3500000	0.0700000	0		0.0000000	81mae1	0
82			u235f	cm	cu		0.0000000	0.0	0.3500000	0.0700000	0		0.0000000	81mae1	0
82			u235f	es	cu	x3	0.0000000	0.0	0.3600000	0.0900000	148	nd g	u235f	1.6800000	74mae1	0
82	br	g	u235he	cm	cu		0.0000000	0.0	0.0040000	0.0000000	0		0.0000000	60kat1	0

82 br g u235he rc in 0.0038832 5.0 0.0039630 3.0000000% 0 0.0000000 76for1 18
82 br g u235he rc fi cm 0.0011363 31.3 0.0019700 0.0005740 82 u235he 1.0000000 72net2 40
82 br g u235he rc fc 0.0017304 61.1 0.0030000 0.0000000 82 u235he 1.0000000 53for2 0
82 br g u235he rc re 0.0016120 10.0 36.0800000 1.7600000 99 mo g u235t 0.0000000 56for1 7
82 br g u235he rc cu 0.0004868 30.1 0.0005000 0.0000000 99 mo g u235he 5.1700000 61val1 0
82 br g u235he rc fc su 0.0000000 0.0 0.0016000 5.0000000% 82 u235he 1.0000000 56for1 0
82 br m u235he rc in 0.0008524 5.0 0.0008699 3.0000000% 0 0.0000000 76for1 18
82 br m u235he rc fi cm 0.0002498 31.2 0.0004330 0.0001260 82 u235he 1.0000000 72net2 40
82 br m u235he rc re 0.0001066 10.0 7.9200000 0.2400000 99 mo g u235t 0.0000000 56for1 7
82 u235he es cu 0.4987531 20.0 0.5090000 20.0000000% 0 0.0000000 77cro1 0
82 u235he es cu 0.6114380 10.0 0.6240000 10.0000000% 0 0.0000000 74mee8 0
82 u238f cm cu x3 0.0000000 0.0 0.2600000 0.0000000 0 0.0000000 72sid1 0
82 u238f cm cu 0.0000000 0.0 0.1690000 20.0000000% 0 0.0000000 77cro1 0
82 u238f es cu 0.1924797 20.0 0.2000000 0.0400000 0 0.0000000 81mae1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

82 u238f cm cu 0.0000000 0.0 0.2000000 0.0400000 0 0.0000000 81mae1 0
82 u238f es cu 0.2443557 24.0 0.2500000 0.0600000 148 nd g u238f 2.0800000 74mae1 0
82 br g u238he rc in 0.0000739 22.7 0.0000750 0.0000170 0 0.0000000 80li 1 0
82 se g u238he es cu 0.4458219 30.0 0.4526000 0.0000000 0 0.0000000 63wea1 0
82 u238he es cu su 0.0000000 0.0 0.4800000 0.0000000 0 0.0000000 73dar1 0
82 u238he es cu 0.4544901 15.0 0.4614000 15.0000000% 0 0.0000000 74mee9 0
82 u238he cm cu 0.0000000 0.0 0.4770000 20.0000000% 0 0.0000000 77cro1 0
82 kr g pu239t ms cu 0.0001568 11.9 0.0001520 0.0000180 83 kr g pu239t 0.3000000 70tra1 0
82 br g pu239t rc in ul 0.0000000 0.0 0.0025200 0.0001400 0 0.0000000 65mar1 18
82 br g pu239t cm fi x3 0.0000000 0.0 0.0006650 0.0000770 82 pu239t 1.0000000 70tra1 40
82 br g pu239t cm in 0.0000000 0.0 0.0001056 26.0000000% 0 1.0000000 88wah1 0
82 br m pu239t rc in ul 0.0000000 0.0 0.0010800 0.0000600 0 0.0000000 65mar1 18
82 br m pu239t cm fi x3 0.0000000 0.0 0.0002850 0.0000330 82 pu239t 1.0000000 70tra1 40
82 br m pu239t cm in 0.0000000 0.0 0.0000452 26.0000000% 0 1.0000000 88wah1 0
82 pu239t cm cu 0.0000000 0.0 0.1700000 0.0000000 0 0.0000000 72sid1 0
82 pu239t cm cu 0.0000000 0.0 0.2400000 0.0000000 0 0.0000000 73lam1 0
82 pu239t es cu 0.2294851 18.2 0.2200000 0.0400000 0 0.0000000 73wal1 0
82 pu239t cm cu 0.0000000 0.0 0.2300000 20.0000000% 0 0.0000000 77cro1 0

82	se g	pu239t	cm	in		0.0000000	0.0	0.0723400	13.0000000%	0			1.0000000	88wah1	0
82	as g	pu239t	cm	in		0.0000000	0.0	0.0966700	11.0000000%	0			1.0000000	88wah1	0
82	ge g	pu239t	cm	in		0.0000000	0.0	0.0223600	23.0000000%	0			1.0000000	88wah1	0
82	kr g	pu239f	ms	fc	x1	0.0000000	0.0	0.1000000	0.0500000	82		pu239f	1.0000000	56ken1	0
82		pu239f	cm	cu		0.0000000	0.0	0.2600000	0.0000000	0			0.0000000	72sid1	0
82		pu239f	es	cu		0.2507443	20.0	0.2600000	20.0000000%	0			0.0000000	74mee1	0
82		pu239f	es	re		0.2422939	24.7	1.1000000	10.0000000%	82		pu239t	1.0000000	74mee4	0
82		pu239f	cm	cu		0.0000000	0.0	0.1930000	20.0000000%	0			0.0000000	77cro1	0
82		pu239f	es	cu		0.2131221	9.1	0.2200000	0.0200000	148	nd g	pu239f	1.6540000	77mae1	0
82		pu239f	es	cu		0.2121683	9.1	0.2200000	0.0200000	0			0.0000000	77mae1	0
82		pu239f	es	cu	x3	0.0000000	0.0	0.1418000	0.0000000	148	nd g	pu239f	1.7300000	70lis1	0
82		pu239f	es	cu	su	0.0000000	0.0	0.2300000	0.0200000	148	nd g	pu239f	1.6500000	74mae1	0
82		pu241t	cm	cu		0.0000000	0.0	0.0700000	0.0000000	0			0.0000000	72sid1	0
82		pu241t	es	cu		0.1177884	20.0	0.1200000	0.0240000	0			0.0000000	73wal1	0
82		pu241t	es	cu		0.1472355	20.0	0.1500000	20.0000000%	0			0.0000000	77cro1	0
82		pu241t	es	cu		0.1374198	7.1	0.1400000	0.0100000	0			0.0000000	77mae1	0
82	kr g	u233t	ms	fc		0.0014494	32.1	0.0025000	0.0008000	82		u233t	1.0000000	56ken1	0
82	kr g	u233t	ms	cu		0.0010304	12.5	0.0012000	0.0001500	83	kr g	u233t	1.1700000	70tra1	0
82	br g	u233t	rc	cu		0.0009070	10.4	0.0007460	0.0000170	140	ba g	u233t	5.2100000	60san1	0
82	br g	u233t	es	fi		0.0006493	12.8	0.0011200	0.0001400	82		u233t	1.0000000	70tra1	40
82	br g	u233t	rc	in		0.0005171	10.0	0.0005222	2.3000000%	0			0.0000000	60san1	18
82	br g	u233t	sp	fi	ul	0.0000000	0.0	0.7700000	0.1925000	82		u233t	100.0000000	83qua1	40
82	br g	u233t	sp	in	ul	0.0000000	0.0	0.0049000	0.0014000	0			0.0000000	88qua1	18
82	br m	u233t	es	fi		0.0002783	12.8	0.0004800	0.0000600	82		u233t	1.0000000	70tra1	40
82	br m	u233t	rc	in		0.0002216	10.0	0.0002238	2.3000000%	0			0.0000000	60san1	18
82	br m	u233t	sp	fi	ul	0.0000000	0.0	0.3300000	0.0825000	82		u233t	100.0000000	83qua1	40
82	br m	u233t	sp	in	ul	0.0000000	0.0	0.0021000	0.0006000	0			0.0000000	88qua1	18
82		u233t	es	cu		0.5941167	20.0	0.6000000	0.1200000	0			0.0000000	73wal1	0
82		u233t	cm	cu	x3	0.0000000	0.0	0.7300000	0.0000000	0			0.0000000	72sid1	0
82		u233t	cm	cu	x3	0.0000000	0.0	0.6830000	20.0000000%	0			0.0000000	77cro1	0
82		u233t	ms	cu		0.5852050	2.4	0.5910000	0.0140000	0			0.0000000	80weh1	0
82	se g	u233t	ms	in		0.1643723	6.0	0.1660000	0.0100000	0			0.0000000	80weh1	0
82		u233t	cm	cu	x3	0.0000000	0.0	0.6000000	0.0000000	0			0.0000000	73lam1	0
82	se g	u233t	sp	fi		0.1893482	6.1	32.6600000	1.7610000	82		u233t	100.0000000	83qua1	0
82	se g	u233t	sp	in		0.1970487	8.0	0.1990000	0.0160000	0			0.0000000	88qua1	0
82	as g	u233t	ms	in		0.1549655	3.8	0.3130000	0.0120000	0			0.0000000	80weh1	37

82 as g u233t sp fi 0.1531715 5.7 52.8400000 1.8260000 82 u233t 100.0000000 83qua1 37
82 as g u233t sp in 0.1594213 6.5 0.3220000 0.0210000 0 0.0000000 88qua1 37
82 as m u233t ms in 0.1549655 3.8 0.3130000 0.0120000 0 0.0000000 80weh1 37
82 as m u233t sp fi 0.1531715 5.7 52.8400000 1.8260000 82 u233t 100.0000000 83qua1 37
82 as m u233t sp in 0.1594213 6.5 0.3220000 0.0210000 0 0.0000000 88qua1 37
82 ge g u233t ms in 0.0841665 9.4 0.0850000 0.0080000 0 0.0000000 80weh1 0
82 ge g u233t sp fi 0.0776873 6.6 13.4000000 0.7920000 82 u233t 100.0000000 83qua1 0
82 ge g u233t sp in 0.0811960 8.5 0.0820000 0.0070000 0 0.0000000 88qua1 0
82 ga g u233t ms in x1 0.0000000 0.0 0.0270000 0.0060000 0 0.0000000 80weh1 0
82 br g th232f rc fi le 0.0000405 34.0 0.0000380 0.0000000 82 th232f 1.0000000 57ale1 40
82 br g th232f rc cu ul 0.0000000 0.0 0.0000180 0.0000180 89 sr g th232f 1.0000000 57ale1 0
82 br g th232f rc in ul 0.0000000 0.0 0.0002300 0.0002300 0 0.0000000 82ert1 0
82 br g th232f rc in 0.0000993 20.0 0.0001000 0.0000200 0 0.0000000 82li 1 0
82 br m th232f rc fi le 0.0000150 34.0 0.0000140 0.0000000 82 th232f 1.0000000 57ale1 40
82 th232f es cu x3 0.0000000 0.0 1.0000000 0.0000000 0 0.0000000 65eng1 0
82 th232f cm cu x3 0.0000000 0.0 0.8800000 0.0000000 0 0.0000000 72sid1 0
82 th232f es cu cm 0.9926465 30.0 1.0000000 0.0000000 0 0.0000000 73lam1 0
82 th232f cm cu 0.0000000 0.0 0.7660000 20.0000000% 0 0.0000000 77cro1 0
82 th232f es cu 1.1117641 20.0 1.1200000 20.0000000% 0 0.0000000 74mee0 0
83 kr g u235t ms re rp 0.5384239 6.3 3.8170000 0.0000000 no. relative values = 1 55bla1
83 kr g u235t ms re rp 0.5268763 4.0 14.1000000 0.0000000 no. relative values = 2 55wan1
83 kr g u235t ms re rp 0.5354716 1.9 1.0000000 0.0000000 no. relative values = 3 63mch1
83 u235t cm cu x3 0.0000000 0.0 0.5600000 0.0000000 0 0.0000000 72sid1 0
83 u235t cm cu 0.0000000 0.0 0.5320000 0.0000000 0 0.0000000 73lam1 0
83 u235t cm cu 0.0000000 0.0 0.5350000 0.0130000 0 0.0000000 73wal1 0
83 u235t ms cu 0.5602015 2.1 0.5600000 0.0120000 0 0.0000000 76dii1 0
83 kr g u235t ms cu rp 0.5376584 11.2 0.5860000 0.0000000 no. relative values = 2 49tho1
83 kr g u235t ms cu nr 0.5289809 0.7 0.5570000 0.2000000% 86 kr g u235t 2.0700000 56bla1 0
83 u235t cm cu 0.0000000 0.0 0.5300000 3.0000000% 0 0.0000000 77cro1 0
83 u235t sp cu x4 0.0000000 0.0 0.6270000 0.0280000 0 0.9938100 76woh2 0
83 kr g u235t ms re 0.5397199 0.6 0.0293400 0.0001000 148 nd g u235t 0.0910100 76mae1 0
83 kr g u235t ms cu 0.5441957 2.0 0.5440000 0.0060000 0 0.0000000 78mae1 0
83 kr g u235t ms cu 0.5391939 2.0 0.5390000 0.0060000 0 0.0000000 78mae1 0
83 kr g u235t ms cu 0.5471968 2.0 0.5470000 0.0060000 0 0.0000000 78mae1 0
83 kr g u235t ms cu 0.5261892 2.0 0.5260000 0.0080000 0 0.0000000 70lis1 0
83 kr g u235t cm cu x3 0.0000000 0.0 0.5860000 0.0000000 131 xe g u235t 2.8000000 51cor2 0

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 83       u235t    es    re        0.5276688  2.2   1.0000000  2.0000000%   83          u235f      1.0930000   74mee4     0
 83 kr g   u235t    ms    cu    cm   0.5431953  6.0   0.5430000  0.0000000     0                     0.0000000   80mae3     0
 83 kr g   u235t    ms    cu        0.5451961  5.0   0.5450000  5.0000000%    0                     0.0000000   55pet2    36
 83 br g   u235t    rc    re    x4   0.0000000  0.0   0.9000000  0.0000000    84 br g      u235t      1.2000000   41mou1     0
 83 br g   u235t    rc    cu    x4   0.0000000  0.0   0.4000000  0.0000000   140 ba g      u235t      6.1000000   51gle6     0
 83 br g   u235t    rc    cu    x4   0.0000000  0.0   0.3000000  0.0000000   140 ba g      u235t      6.1000000   51kat2     0
 83 br g   u235t    ms    fi        0.0166297 32.3   3.1000000  1.0000000    83          u235t    100.0000000   76sie1     0
 83 br g   u235t    sp    fi        0.0193119 19.5   3.6000000  0.7000000    83          u235t    100.0000000   78str1     0
 83 br g   u235t    sp    re    x4   0.0000000  0.0   0.2100000 28.0000000%   88 br g      u235t      1.0000000   75ree1    36
 83 br g   u235t    rc    cu    x4   0.0000000  0.0   0.4800000 15.0000000%   83 se g      u235t      0.2100000   47arn1     0
 83 br g   u235t    ms    fi    su   0.0000000  0.0   4.8000000  2.3000000    83          u235t    100.0000000   75cle2     0
 83 br g   u235t    ms    in        0.0250090 40.0   0.0250000  0.0100000     0                     0.0000000   79cle1     0
 83 br g   u235t    ms    fi    su   0.0000000  0.0   3.3000000  1.0000000    83          u235t    100.0000000   76wol1     0
 83 br g   u235t    sp    fi        0.0214576 42.5   4.0000000  1.7000000    83          u235t    100.0000000   80lan1     0
 83 br g   u235t    cm    in        0.0000000  0.0   0.0237100 30.0000000%    0                     1.0000000   88wah1     0
 83 br g   u235t    es    cu        0.5401943 30.0   0.5400000 30.0000000%    0                     0.0000000   89rid1     0
 83 br g   u235t    es    fc        0.5364324 30.0   0.9999850 30.0000000%   83          u235t      1.0000000   89rid1     0
 83 se g   u235t    rc    cu    rp   0.2152462 44.9   0.2100000  0.0000000  no. relative values =    2            47arn1
 83 se g   u235t    rc    cu        0.2134068 60.0   0.2100000  0.0000000   140 ba g      u235t      6.1000000   51gle6     0
 83 se g   u235t    rc    cu        0.2128147 10.1   0.2180000  0.0220000   140 ba g      u235t      6.3500000   62cro1     0
 83 se g   u235t    rc    re    cm   0.1684193 12.8   0.6700000  0.0500000    83 se m      u235t      1.0000000   63cro1     0
 83 se g   u235t    rc    fc    sm   0.0000000  0.0   0.9500000  0.0000000    83          u235t      1.0000000   71kra2     0
 83 se g   u235t    rc    fc    sm   0.0000000  0.0   0.9300000  0.0000000    83          u235t      1.0000000   73kra2     0
 83 se g   u235t    ms    fi    su   0.0000000  0.0  26.4870000  2.3490000    83          u235t    100.0000000   75cle2    40
 83 se g   u235t    ms    fi    su   0.0000000  0.0  25.1910000  1.6200000    83          u235t    100.0000000   76wol1    40
 83 se g   u235t    ms    fi        0.1355692  6.4  25.2720000  1.6200000    83          u235t    100.0000000   76sie1    40
 83 se g   u235t    sp    fi        0.1403489  5.0  26.1630000  1.1340000    83          u235t    100.0000000   78str1    40
 83 se g   u235t    ms    in    su   0.0000000  0.0   0.1952100  0.0186900     0                     0.0000000   79cle1    18
 83 se g   u235t    sp    fi        0.1655509  7.4  30.8610000  2.2680000    83          u235t    100.0000000   80lan1    40
 83 se g   u235t    cm    in        0.0000000  0.0   0.1488000  5.0000000%    0                     1.0000000   88wah1     0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type          value   err.     value                nuclide     material       value       no.   treatment

 83 se g   u235t    sp    in    x4   0.0000000  0.0   0.4600000  0.1100000     0                     0.0000000   90rud1     0
 83 se g   u235t    sp    cu    x4   0.0000000  0.0   0.5000000  0.0900000     0                     0.0000000   90rud1     0
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83	se	m	u235t	rc	cu		0.3413754	20.4	0.2700000	7.0000000%	83	se	g	u235t	0.2100000	47arn1	0
83	se	m	u235t	rc	cu		0.3319128	10.0	0.3400000	0.0200000	140	ba	g	u235t	6.3500000	62cro1	0
83	se	m	u235t	rc	fc	sm	0.0000000	0.0	0.9300000	0.0000000	83			u235t	1.0000000	73kra2	0
83	se	m	u235t	ms	fi	su	0.0000000	0.0	6.2130000	0.5510000	83			u235t	100.0000000	75cle2	40
83	se	m	u235t	ms	fi	su	0.0000000	0.0	5.9090000	0.3800000	83			u235t	100.0000000	76wol1	40
83	se	m	u235t	ms	fi		0.0318002	6.4	5.9280000	0.3800000	83			u235t	100.0000000	76sie1	40
83	se	m	u235t	sp	fi		0.0329214	5.0	6.1370000	0.2660000	83			u235t	100.0000000	78str1	40
83	se	m	u235t	ms	in	su	0.0000000	0.0	0.0457900	0.0043700	0				0.0000000	79cle1	18
83	se	m	u235t	sp	fi		0.0388329	7.4	7.2390000	0.5320000	83			u235t	100.0000000	80lan1	40
83	se	m	u235t	cm	in		0.0000000	0.0	0.0349000	5.0000000%	0				1.0000000	88wah1	0
83	se	m	u235t	sp	in	x4	0.0000000	0.0	0.0580000	0.0360000	0				0.0000000	90rud1	0
83	se	m	u235t	sp	cu	x4	0.0000000	0.0	0.1740000	0.0240000	0				0.0000000	90rud1	0
83	as	g	u235t	rc	fc		0.4291458	10.2	0.8000000	0.0800000	83	br	g	u235t	1.0000000	68mar1	0
83	as	g	u235t	cm	fc		0.0000000	0.0	0.7600000	0.0630000	83			u235t	1.0000000	73kra2	0
83	as	g	u235t	ms	fi		0.3004067	3.6	56.0000000	2.0000000	83			u235t	100.0000000	76sie1	0
83	as	g	u235t	sp	fi		0.2977245	5.0	55.5000000	1.4000000	83			u235t	100.0000000	78str1	0
83	as	g	u235t	ms	fi	su	0.0000000	0.0	53.9000000	3.1000000	83			u235t	100.0000000	75cle2	0
83	as	g	u235t	ms	in		0.3141130	7.6	0.3140000	0.0240000	0				0.0000000	79cle1	0
83	as	g	u235t	ms	fi	su	0.0000000	0.0	56.1000000	2.0000000	83			u235t	100.0000000	76wol1	0
83	as	g	u235t	sp	fi		0.2660745	5.7	49.6000000	2.8000000	83			u235t	100.0000000	80lan1	0
83	as	g	u235t	cm	in		0.0000000	0.0	0.3391000	3.0000000%	0				1.0000000	88wah1	0
83	as	g	u235t	sp	in		0.0860309	31.4	0.0860000	0.0270000	0				0.0000000	90rud1	0
83	as	g	u235t	sp	cu		0.1340482	19.4	0.1340000	0.0260000	0				0.0000000	90rud1	0
83	ge	g	u235t	rc	fc	x1	0.0000000	0.0	0.0340000	0.0150000	83			u235t	1.0000000	72mar1	0
83	ge	g	u235t	ms	fi		0.0520347	10.3	9.7000000	1.0000000	83			u235t	100.0000000	76sie1	0
83	ge	g	u235t	sp	fi		0.0461339	9.3	8.6000000	0.8000000	83			u235t	100.0000000	78str1	0
83	ge	g	u235t	ms	fi	su	0.0000000	0.0	8.6000000	1.5000000	83			u235t	100.0000000	75cle2	0
83	ge	g	u235t	ms	in		0.0530191	13.2	0.0530000	0.0070000	0				0.0000000	79cle1	0
83	ge	g	u235t	ms	fi	su	0.0000000	0.0	9.5000000	1.0000000	83			u235t	100.0000000	76wol1	0
83	ge	g	u235t	sp	fi		0.0445246	13.3	8.3000000	1.1000000	83			u235t	100.0000000	80lan1	0
83	ge	g	u235t	cm	in		0.0000000	0.0	0.0368800	20.0000000%	0				1.0000000	88wah1	0
83	ge	g	u235t	sp	in		0.0480173	6.2	0.0480000	0.0030000	0				0.0000000	90rud1	0
83	kr	g	u235f	ms	re		0.5970059	1.8	16.5400000	0.0000000	86	kr	g	u235f	53.5100000	70ebe1	0
83			u235f	es	cu	cm	0.6051748	30.0	0.6100000	0.0000000	0				0.0000000	72sid1	0
83			u235f	cm	cu		0.0000000	0.0	0.5780000	4.5000000%	0				0.0000000	77cro1	0
83	kr	g	u235f	ms	cu		0.5942618	2.0	0.5990000	0.0040000	0				0.0000000	80mae1	0

83 kr g u235f ms cu rp 0.5867647 3.5 0.6140000 0.0000000 no. relative values = 1 70lis1
83 u235f es re 0.5814747 2.1 1.0930000 2.0000000% 83 u235t 1.0000000 74mee4 0
83 kr g u235f ms cu cm 0.5888053 6.0 0.5935000 0.0000000 0 0.0000000 80mae3 0
83 kr g u235f ms cu 0.5694596 2.0 0.5740000 0.0030000 0 0.0000000 81mae1 0
83 kr g u235f cm cu 0.0000000 0.0 0.5740000 0.0030000 0 0.0000000 81mae1 0
83 kr g u235f ms cu 0.5656520 1.0 0.5690000 0.0050000 148 nd g u235f 1.6800000 74mae1 0
83 br g u235f rc re x1 0.0000000 0.0 0.6000000 0.0000000 84 br g u235f 0.9000000 41mou1 0
83 br g u235f es fc 0.5719661 30.0 0.9999860 30.0000000% 83 u235f 1.0000000 89rid1 0
83 u235he es cu 1.1130213 30.0 1.1210000 0.0000000 0 0.0000000 63wea1 0
83 u235he es cu 0.9521743 14.4 0.9590000 14.4000000% 0 0.0000000 77cro1 0
83 u235he es cu 1.1080569 10.0 1.1160000 10.0000000% 0 0.0000000 74mee8 0
83 br g u235he es cu cm 1.2212455 30.0 1.2300000 0.0000000 0 0.0000000 69gun2 0
83 br g u235he es cu 1.1517437 30.0 1.1600000 0.0000000 0 0.0000000 60kat1 0
83 br g u235he rc cu 1.1191797 5.0 2.5000000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
83 br g u235he rc re su 0.0000000 0.0 2.5000000 0.2000000 99 mo g u235t 0.0000000 56for1 7
83 br g u235he rc cu 0.8188040 30.1 0.8300000 0.0000000 99 mo g u235he 5.1700000 61val1 0
83 kr g u238f es cu 0.3620524 30.0 0.4200000 0.0000000 83 kr g u235t 0.6200000 55wan1 0
83 kr g u238f ms re rp 0.3904988 28.8 14.5000000 0.0000000 no. relative values = 1 55wan1
83 u238f cm cu 0.0000000 0.0 0.4000000 0.0000000 0 0.0000000 72sid1 0
83 u238f cm cu 0.0000000 0.0 0.3950000 5.0000000% 0 0.0000000 77cro1 0
83 kr g u238f ms cu 0.3986706 2.7 0.4000000 0.0110000 0 0.0000000 81mae1 0
83 kr g u238f cm cu 0.0000000 0.0 0.4000000 0.0110000 0 0.0000000 81mae1 0
83 kr g u238f ms cu 0.3998333 1.2 0.3950000 0.0040000 148 nd g u238f 2.0800000 74mae1 0
83 u238f rc cu x4 0.0000000 0.0 0.5100000 0.0400000 0 0.0000000 85li 1 0
83 br g u238f rc cu x4 0.0000000 0.0 0.1170000 0.0200000 0 0.0000000 75har1 0
83 br g u238f rc cu 0.2591359 15.0 0.2600000 0.0000000 0 0.0000000 75fly4 0
83 br g u238f es cu 0.3189365 9.4 0.3200000 0.0300000 0 0.0000000 78gin1 0
83 br g u238f rc cu 0.2790694 10.7 0.2800000 0.0300000 0 0.0000000 78nag1 0
83 u238he es cu 0.5950206 30.0 0.5966000 0.0000000 0 0.0000000 63wea1 0
83 kr g u238he ms re 0.6627803 3.0 0.4230000 0.0040000 86 kr g u238he 1.0000000 68gor1 0
83 u238he cm cu su 0.0000000 0.0 0.6830000 0.0280000 0 0.0000000 73dar1 0
83 u238he es cu 0.6492765 15.0 0.6510000 15.0000000% 0 0.0000000 74mee9 0
83 u238he cm cu 0.0000000 0.0 0.7190000 4.2000000% 0 0.0000000 77cro1 0
83 u238he cm cu 0.0000000 0.0 0.7220000 19.9000000% 0 0.0000000 75dar1 0
83 br g u238he rc cu 0.6961427 10.4 0.6800000 0.0500000 139 ba g u238he 4.9200000 64jam1 0
83 br g u238he cm cu 0.0000000 0.0 0.6500000 0.0000000 0 0.0000000 69gun2 0

83 br g u238he cm cu 0.0000000 0.0 0.6200000 0.0000000 0 0.0000000 60kat1 0
83 br g u238he rc cu 0.7113138 8.7 0.7000000 0.0600000 99 mo g u238he 5.6000000 75ada1 0
83 se g u238he rc cu 0.2593117 20.0 0.2600000 0.0520000 0 0.0000000 75dar1 0
83 pu239t cm cu 0.0000000 0.0 0.2900000 0.0000000 0 0.0000000 72sid1 0
83 pu239t cm cu 0.0000000 0.0 0.2980000 0.0000000 0 0.0000000 73lam1 0
83 pu239t cm cu 0.0000000 0.0 0.2950000 0.0070000 0 0.0000000 73wal1 0
83 kr g pu239t ms cu 0.2902763 3.4 0.2900000 0.0100000 0 0.0000000 59fri1 0
83 kr g pu239t ms cu rp 0.2969302 3.2 1.0000000 0.0000000 no. relative values = 1 59fri1
83 pu239t cm cu 0.0000000 0.0 0.3010000 3.6000000% 0 0.0000000 77cro1 0
83 kr g pu239t ms cu 0.2962820 2.0 0.2960000 0.0030000 0 0.0000000 79mae2 0
83 kr g pu239t ms re 0.2968922 0.7 0.0217800 0.0000800 148 nd g pu239t 0.1205800 76mae1 0
83 kr g pu239t cm cu 0.0000000 0.0 0.2900000 4.0000000% 0 0.0000000 59fic1 0
83 kr g pu239t es re 0.2983642 1.4 0.1930000 1.0000000% 84 kr g pu239t 0.3110000 81mae2 36
83 kr g pu239t es cu cm 0.2982839 1.0 0.2980000 1.0000000% 0 0.0000000 81mae2 0
83 kr g pu239t ms cu 0.3013235 10.0 0.3010000 0.0300000 85 rb g pu239t 0.5740000 70lis1 36
83 br g pu239t rc cu x4 0.0000000 0.0 0.0800000 0.0000000 140 ba g pu239t 5.3600000 51ste3 0
83 br g pu239t rc cu 0.3049562 15.2 0.3030000 0.0460000 0 0.0000000 63cro1 9
83 br g pu239t rc re x4 0.0000000 0.0 0.5870000 0.0480000 99 mo g u235t 0.0000000 64cro1 7
83 br g pu239t rc cu 0.2654476 5.4 0.2900000 0.0150000 99 mo g pu239t 6.7900000 71ram1 0
83 br g pu239t rc cu 0.2802668 7.1 0.2800000 0.0200000 0 0.0000000 84jai1 0
83 br g pu239t rc cu 0.2602477 7.7 0.2600000 0.0200000 0 0.0000000 84jai1 0
83 br g pu239t cm in 0.0000000 0.0 0.0152900 33.0000000% 0 1.0000000 88wah1 0
83 se g pu239t rc cu 0.1571034 13.4 0.1570000 0.0210000 0 0.0000000 63cro1 10
83 se g pu239t rc re rp 0.1254897 44.2 1.0800000 0.0000000 no. relative values = 1 63cro1
83 se g pu239t cm in 0.0000000 0.0 0.1318000 11.0000000% 0 1.0000000 88wah1 0
83 se m pu239t rc re 0.1514769 16.5 1.0000000 0.1200000 83 se g pu239t 1.0800000 63cro1 0
83 se m pu239t cm in 0.0000000 0.0 0.0309000 11.0000000% 0 1.0000000 88wah1 0
83 as g pu239t cm in 0.0000000 0.0 0.0986600 11.0000000% 0 1.0000000 88wah1 0
83 ge g pu239t cm in 0.0000000 0.0 0.0067530 55.0000000% 0 1.0000000 88wah1 0
83 pu239f cm cu x3 0.0000000 0.0 0.3800000 0.0000000 0 0.0000000 72sid1 0
83 pu239f cm cu 0.0000000 0.0 0.3170000 8.4000000% 0 0.0000000 77cro1 0
83 kr g pu239f ms cu 0.3124165 0.7 0.3120000 0.0020000 148 nd g pu239f 1.6540000 77mae1 0
83 kr g pu239f ms cu rp 0.3150099 2.3 0.1970000 0.0000000 no. relative values = 2 80mae4
83 kr g pu239f ms cu su 0.0000000 0.0 0.3090000 0.0020000 148 nd g pu239f 1.6500000 74mae1 0
83 pu239f es re 0.3194657 10.0 1.0800000 10.0000000% 83 pu239t 1.0000000 74mee4 0
83 kr g pu239f es re 0.3148854 1.4 0.1970000 1.0000000% 84 kr g pu239f 0.3110000 81mae2 36

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 83 kr g   pu239f   es    cu    cm   0.3219837  1.0   0.3230000  1.0000000%    0                    0.0000000   81mae2     0
 83 kr g   pu239f   ms    cu    x4   0.0000000  0.0   0.3660000  0.0480000   148 nd g      pu239f      1.7300000   70lis1     36
 83 kr g   pu239f   ms    cu    x4   0.0000000  0.0   0.2980000  0.0150000     0                    0.0000000   77mae1     36
 83        pu241t   cm    cu        0.0000000  0.0   0.2000000  0.0000000     0                    0.0000000   72sid1     0
 83        pu241t   cm    cu        0.0000000  0.0   0.2020000  0.0050000     0                    0.0000000   73wal1     0
 83        pu241t   cm    cu        0.0000000  0.0   0.2020000  4.5000000%    0                    0.0000000   77cro1     0
 83 kr g   pu241t   ms    cu        0.1983517  2.0   0.1990000  0.0020000     0                    0.0000000   77mae1     0
 83 kr g   pu241t   ms    cu        0.2068919  3.1   0.2000000  0.0060000   148 nd g      pu241t      1.8616500   70lis1     0
 83 br g   pu241t   rc    cu        0.2076547  5.0   0.2100000  0.0100000   137 cs g      pu239t      0.3000000   69cro2     25
 83        u233t    cm    cu    x3   0.0000000  0.0   1.1400000  0.0000000     0                    0.0000000   72sid1     0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value      no.   treatment

 83        u233t    cm    cu        0.0000000  0.0   1.0230000  0.0000000     0                    0.0000000   73lam1     0
 83        u233t    cm    cu    x3   0.0000000  0.0   1.0000000  0.0200000     0                    0.0000000   73wal1     0
 83 kr g   u233t    ms    cu        1.0132362  4.2   1.1800000  4.0000000%   86 kr g      u233t       3.3000000   61bid1     0
 83        u233t    cm    cu        0.0000000  0.0   1.0100000 13.9000000%    0                    0.0000000   77cro1     0
 83 kr g   u233t    ms    cu        1.0120095  1.6   1.2000000  0.0100000    86 kr g      u233t       3.3600000   54fle1     0
 83        u233t    ms    cu        1.0035090  2.0   1.0070000  0.0180000     0                    0.0000000   80weh1     0
 83 kr g   u233t    ms    cu        1.0264293  2.0   1.0300000  0.0100000     0                    0.0000000   70lis1     0
 83 br g   u233t    es    in        0.0337227 56.0   0.0338400 56.0000000%    0                    0.0000000   88wah1     0
 83 br g   u233t    ms    in        0.0139515 42.9   0.0140000  0.0060000     0                    0.0000000   80weh1     0
 83 br g   u233t    rc    cu    x1   0.0000000  0.0   0.7900000  0.0000000    99 mo g      u233t       5.1000000   47ste1     0
 83 br g   u233t    sp    fi        0.0497425 26.8   4.9200000  1.3160000    83           u233t     100.0000000   83qua1     0
 83 br g   u233t    sp    in        0.0558059 26.8   0.0560000  0.0150000     0                    0.0000000   88qua1     0
 83 se g   u233t    rc    cu        0.3788496 10.0   0.4000000  0.0300000   140 ba g      u235t       6.5200000   62cro1     0
 83 se g   u233t    rc    re        0.2489282 64.8   0.6200000  0.0500000    83 se m      u233t       1.0000000   63cro1     0
 83 se g   u233t    rc    cu        0.5480933 12.7   0.5500000  0.0700000     0                    0.0000000   77gud1     0
 83 se g   u233t    ms    in        0.4783360  2.9   0.4800000  0.0140000     0                    0.0000000   80weh1     18
 83 se g   u233t    sp    fi        0.5038063  5.1  49.8312000  1.8492000    83           u233t     100.0000000   83qua1     40
 83 se g   u233t    sp    in        0.5618056  5.9   0.5637600  0.0332000     0                    0.0000000   88qua1     18
 83 se m   u233t    rc    re    rp   0.9240304 33.6   1.0000000  0.0000000  no. relative values =    1            63cro1
 83 se m   u233t    ms    in        0.1126083  2.7   0.1130000  0.0030000     0                    0.0000000   80weh1     18
 83 se m   u233t    sp    fi        0.1181768  5.1  11.6888000  0.4338000    83           u233t     100.0000000   83qua1     40
 83 se m   u233t    sp    in        0.1317816  5.9   0.1322400  0.0078000     0                    0.0000000   88qua1     18
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83	as g	u233t	ms	in		0.3507797	4.0	0.3520000	0.0140000	0				0.0000000	80weh1	0
83	as g	u233t	sp	fi		0.3248426	6.7	32.1300000	2.1410000	83		u233t		100.0000000	83qua1	0
83	as g	u233t	sp	in		0.3617416	8.0	0.3630000	0.0290000	0				0.0000000	88qua1	0
83	ge g	u233t	ms	in	x4	0.0000000	0.0	0.0480000	0.0070000	0				0.0000000	80weh1	0
83	ge g	u233t	sp	fi	su	0.0000000	0.0	1.4300000	0.3050000	83		u233t		100.0000000	83qua1	0
83	ge g	u233t	sp	in	x4	0.0000000	0.0	0.0160000	0.0040000	0				0.0000000	88qua1	0
83	ge g	u233t	es	in	cm	0.0306334	54.0	0.0307400	54.0000000%	0				0.0000000	88wah1	0
83	kr g	th232f	ms	cu		2.1829151	2.1	1.9900000	0.0100000	86	kr g	th232f		6.0000000	57ken1	0
83		th232f	es	cu	cm	1.9881708	30.0	1.9900000	0.0000000	0				0.0000000	65eng1	0
83		th232f	es	cu	cm	2.1380329	30.0	2.1400000	0.0000000	0				0.0000000	72sid1	0
83		th232f	es	cu	cm	1.8682811	30.0	1.8700000	0.0000000	0				0.0000000	73lam1	0
83		th232f	cm	cu		0.0000000	0.0	1.9800000	0.0000000	0				0.0000000	74lam1	0
83	kr g	th232f	cm	cu		0.0000000	0.0	1.9900000	0.0000000	0				0.0000000	60kat1	0
83		th232f	cm	cu		0.0000000	0.0	2.0000000	9.7000000%	0				0.0000000	77cro1	0
83		th232f	es	cu		2.2279502	5.0	2.2300000	5.0000000%	0				0.0000000	74mee0	0
83	br g	th232f	rc	cu		2.3977940	60.0	2.4000000	0.0000000	0				0.0000000	50nid1	0
83	br g	th232f	rc	cu		2.1158563	24.0	1.9000000	0.4500000	89	sr g	th232f		6.7000000	51tur1	0
83	br g	th232f	rc	cu		2.1637415	10.8	0.2900000	0.0100000	89	sr g	th232f		1.0000000	57ale1	0
83	br g	th232f	rc	re		2.1196763	10.0	8.2100000	0.5900000	99	mo g	u235t		0.0000000	63iye1	7
83	br g	th232f	cm	cu		0.0000000	0.0	1.9000000	0.0000000	0				0.0000000	60kat1	0
83	br g	th232f	rc	cu		2.0843967	5.4	1.9700000	0.0200000	99	mo g	th232f		2.7800000	68lyl1	0
83	br g	th232f	rc	re		2.0886944	7.5	8.0900000	0.6100000	99	mo g	u235t		0.0000000	81ert1	7
83	br g	th232f	cm	cu		0.0000000	0.0	2.1000000	0.1200000	0				0.0000000	81ert1	0
83	br g	th232f	rc	cu		2.3051201	23.7	2.7270000	23.7000000%	89	sr g	u235t		0.0000000	51tur1	7
83	se g	th232f	rc	cu		0.8991727	16.7	0.9000000	0.1500000	0				0.0000000	86ric1	0
84	rb g	u235t	cm	in		0.0000000	0.0	0.0002002	13.0000000%	0				100000.0000000	88wah1	0
84	rb g	u235t	rc	in		0.0000000	12.5	0.0000024	0.0000003	0				1000.0000000	75fly1	0
84	rb g	u235t	rc	in	su	0.0000000	0.0	0.0000024	0.0000003	0				1000.0000000	66fly1	0
84	kr g	u235t	ms	re		0.9968418	1.1	1.8580000	1.0000000%	83	kr g	u235t		1.0000000	63mch1	0
84		u235t	cm	cu		0.0000000	0.0	1.0000000	0.0000000	0				0.0000000	72sid1	0
84		u235t	cm	cu		0.0000000	0.0	1.0000000	0.0000000	0				0.0000000	73lam1	0
84		u235t	cm	cu		0.0000000	0.0	0.9860000	0.0230000	0				0.0000000	73wal1	0
84		u235t	ms	cu		1.0305240	2.0	1.0300000	0.0190000	0				0.0000000	76dii1	0
84		u235t	sp	cu		1.0565584	5.0	0.9740000	0.0330000	0				0.9223300	76woh2	0
84		u235t	cm	cu		0.0000000	0.0	0.9930000	2.2000000%	0				0.0000000	77cro1	0
84	kr g	u235t	ms	cu		1.0205189	2.0	1.0200000	0.0110000	0				0.0000000	78mae1	0

84	kr g	u235t	ms	cu		1.0065118	2.0	1.0060000	0.0100000	0			0.0000000	78mae1	0
84	kr g	u235t	ms	cu		1.0245210	2.0	1.0240000	0.0110000	0			0.0000000	78mae1	0
84	kr g	u235t	ms	cu		1.0005088	2.0	1.0000000	0.0100000	0			0.0000000	70lis1	0
84	kr g	u235t	ms	cu		0.9979515	2.1	1.0900000	2.0000000%	83	kr g	u235t	0.5860000	49tho1	36
84	kr g	u235t	ms	re		0.9866519	2.1	25.9300000	2.0000000%	83	kr g	u235t	14.1000000	55wan1	36
84	kr g	u235t	ms	cu	nr	0.9688346	2.1	1.0200000	2.0000000%	86	kr g	u235t	2.0700000	56bla1	36
84		u235t	es	re		0.9774551	2.4	1.0000000	2.0000000%	84		u235f	1.0550000	74mee4	0
84	kr g	u235t	ms	re	su	0.0000000	0.0	0.0548700	0.0002300	148	nd g	u235t	0.0910100	76mae1	0
84	kr g	u235t	ms	cu	cm	1.0165169	6.0	1.0160000	0.0000000	0			0.0000000	80mae3	0
84	kr g	u235t	cm	cu	x3	0.0000000	0.0	1.0900000	0.0000000	131	xe g	u235t	2.8000000	51cor2	0
84	kr g	u235t	ms	cu		1.0005088	5.0	1.0000000	5.0000000%	0			0.0000000	55pet2	36
84	br g	u235t	rc	cu	x4	0.0000000	0.0	0.6500000	0.0000000	140	ba g	u235t	6.1000000	51kat1	0
84	br g	u235t	rc	cu		0.9080144	10.0	0.9300000	0.0500000	140	ba g	u235t	6.3500000	62cro1	0
84	br g	u235t	es	fc	cm	0.9664187	7.0	0.9640000	0.0670000	84		u235t	1.0000000	73ami1	0
84	br g	u235t	rc	cu		0.9279438	10.1	0.9200000	0.0600000	99	mo g	u235t	6.0600000	60sat1	0
84	br g	u235t	ms	in		0.0234119	20.0	0.0234000	0.0046800	0			0.0000000	79cle1	18
84	br g	u235t	ms	fi		0.0180452	20.0	1.8000000	0.3600000	84		u235t	100.0000000	76sie1	40
84	br g	u235t	ms	fi	su	0.0000000	0.0	2.0520000	0.9360000	84		u235t	100.0000000	75cle2	40
84	br g	u235t	ms	fi	su	0.0000000	0.0	1.7640000	0.3600000	84		u235t	100.0000000	76wol1	40
84	br g	u235t	sp	fi		0.0180452	16.0	1.8000000	0.2880000	84		u235t	100.0000000	78str1	40
84	br g	u235t	sp	fi		0.0238196	18.2	2.3760000	0.4320000	84		u235t	100.0000000	80lan1	40
84	br g	u235t	cm	in		0.0000000	0.0	0.0181200	20.0000000%	0			1.0000000	88wah1	0
84	br g	u235t	rc	cu	su	0.0000000	0.0	0.9000000	0.0400000	0			0.0000000	57sat1	0
84	br g	u235t	sp	cu		1.0105138	5.9	1.0100000	0.0600000	0			0.0000000	90rud1	0
84	br g	u235t	rc	cu	x4	0.0000000	0.0	0.0060000	0.0000000	140	ba g	u235t	0.0430000	51gru1	0
84	br g	u235t	sp	re	x4	0.0000000	0.0	0.4300000	0.0100000	88	br g	u235t	1.0000000	75ree1	0
84	br m	u235t	rc	cu	su	0.0000000	0.0	0.0190000	0.0020000	0			0.0000000	57sat1	0
84	br m	u235t	rc	cu		0.0191641	15.9	0.0190000	0.0030000	99	mo g	u235t	6.0600000	60sat1	0
84	br m	u235t	es	in		0.0192268	8.0	0.0192170	8.0000000%	0			0.0000000	74mee1	0
84	br m	u235t	ms	fi	su	0.0000000	0.0	3.6480000	1.6640000	84		u235t	100.0000000	75cle2	40
84	br m	u235t	ms	fi	su	0.0000000	0.0	3.2000000	0.6400000	84		u235t	100.0000000	76sie1	40
84	br m	u235t	ms	fi	su	0.0000000	0.0	3.1360000	0.6400000	84		u235t	100.0000000	76wol1	40
84	br m	u235t	sp	fi	x4	0.0000000	0.0	3.2000000	0.5120000	84		u235t	100.0000000	78str1	40
84	br m	u235t	ms	in	su	0.0000000	0.0	0.0416000	0.0083200	0			0.0000000	79cle1	18
84	br m	u235t	sp	fi	x4	0.0000000	0.0	4.2240000	0.7680000	84		u235t	100.0000000	80lan1	40
84	br m	u235t	rc	in		0.0195099	33.8	0.0195000	0.0066000	0			0.0000000	87lee1	0

```
 84 br m   u235t    cm    in    x3   0.0000000  0.0    0.0322000 20.0000000%    0                    1.0000000   88wah1      0
 84 br m   u235t    es    in         0.0187095 20.0    0.0187000 20.0000000%    0                    0.0000000   89rid1      0
 84 br m   u235t    sp    in         0.0170086 11.8    0.0170000  0.0020000     0                    0.0000000   90rud1      0
 84 se g   u235t    rc    fc         0.9684238  5.0    0.9660000  0.0210000    84          u235t     1.0000000   73kra2      0
 84 se g   u235t    es    cu         0.9804986 30.0    0.9800000  0.0000000     0                    0.0000000   60sat1      0
 84 se g   u235t    ms    fi         0.6937363  3.7   69.2000000  2.5000000    84          u235t   100.0000000   76sie1      0
 84 se g   u235t    sp    fi         0.7107789  5.0   70.9000000  1.1000000    84          u235t   100.0000000   78str1      0
 84 se g   u235t    ms    fi    su   0.0000000  0.0   72.8000000  3.1000000    84          u235t   100.0000000   75cle2      0
 84 se g   u235t    ms    in         0.7033577  4.1    0.7030000  0.0290000     0                    0.0000000   79cle1      0
 84 se g   u235t    ms    fi    su   0.0000000  0.0   69.7000000  2.5000000    84          u235t   100.0000000   76wol1      0
 84 se g   u235t    sp    fi         0.7208040  5.0   71.9000000  1.8000000    84          u235t   100.0000000   80lan1      0
 84 se g   u235t    cm    in         0.0000000  0.0    0.6483000  3.0000000%    0                    1.0000000   88wah1      0
 84 se g   u235t    sp    in         0.7093607  5.0    0.7090000  0.0090000     0                    0.0000000   90rud1      0
 84 se g   u235t    sp    cu         0.9704935 15.5    0.9700000  0.1500000     0                    0.0000000   90rud1      0
 84 as g   u235t    cm    fc    x3   0.0000000  0.0    0.3980000  0.0550000    84          u235t     1.0000000   73kra2      0
 84 as g   u235t    cm    in         0.0000000  0.0    0.2277000  7.0000000%    0                    1.0000000   88wah1      0
 84 as g   u235t    es    cu         0.2111073 15.0    0.2110000 15.0000000%    0                    0.0000000   89rid1      0
 84 as g   u235t    es    fc    x4   0.0000000  0.0    0.3540000  0.0000000    84          u235t     1.0000000   74wol1      0
 84 as g   u235t    ms    fi         0.2355896  6.0   23.5000000  1.4000000    84          u235t   100.0000000   76sie1      0
 84 as g   u235t    ms    fi    su   0.0000000  0.0   21.0000000  2.2000000    84          u235t   100.0000000   75cle2      0
 84 as g   u235t    ms    fi    su   0.0000000  0.0   23.3000000  1.4000000    84          u235t   100.0000000   76wol1      0
 84 as g   u235t    ms    in         0.2051043  8.3    0.2050000  0.0170000     0                    0.0000000   79cle1      0
 84 as g   u235t    rc    fc    x4   0.0000000  0.0    0.1700000  0.0200000    84 br g     u235t     1.0000000   68mar1      0
 84 as g   u235t    sp    cu         0.2541292  5.0    0.2540000  0.0120000     0                    0.0000000   90rud1      0
 84 as g   u235t    sp    fi         0.2105269  7.7   21.0000000  1.6000000    84          u235t   100.0000000   80lan1      0
 84 as g   u235t    sp    fi         0.2175445  5.0   21.7000000  0.9000000    84          u235t   100.0000000   78str1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value      no.   treatment

 84 ge g   u235t    rc    fc    x1   0.0000000  0.0    0.0160000  0.0060000    84          u235t     1.0000000   72mar1      0
 84 ge g   u235t    es    fc         0.0325815 30.0    0.0325000  0.0000000    84          u235t     1.0000000   74wol1      0
 84 ge g   u235t    ms    fi         0.0230577 30.4    2.3000000  0.7000000    84          u235t   100.0000000   76sie1      0
 84 ge g   u235t    sp    fi         0.0240602 20.8    2.4000000  0.5000000    84          u235t   100.0000000   78str1      0
 84 ge g   u235t    ms    fi    ul   0.0000000  0.0    0.5000000  0.5000000    84          u235t   100.0000000   75cle2      0
 84 ge g   u235t    ms    in         0.0050025 60.0    0.0050000  0.0030000     0                    0.0000000   79cle1      0
```

84 ge g u235t ms fi su 0.0000000 0.0 2.1000000 0.7000000 84 u235t 100.0000000 76wol1 0
84 ge g u235t sp fi 0.0050125 60.0 0.5000000 0.3000000 84 u235t 100.0000000 80lan1 0
84 ge g u235t cm in 0.0000000 0.0 0.0133100 38.0000000% 0 1.0000000 88wah1 0
84 ge g u235t sp cu su 0.0000000 0.0 0.0340000 0.0090000 0 0.0000000 90rud1 0
84 ge g u235t rc cu 0.0340173 26.5 0.0340000 0.0090000 0 0.0000000 90rud2 0
84 kr g u235f ms re 1.0774653 1.8 29.9500000 0.0000000 86 kr g u235f 53.5100000 70ebe1 0
84 kr g u235f ms re x4 0.0000000 0.0 1.2400000 3.0000000% 148 nd g u235f 1.7500000 72kry1 0
84 u235f es cu cm 1.0580303 30.0 1.0700000 0.0000000 0 0.0000000 72sid1 0
84 u235f cm cu 0.0000000 0.0 1.0400000 4.5000000% 0 0.0000000 77cro1 0
84 kr g u235f ms cu 1.0728625 2.0 1.0850000 0.0060000 0 0.0000000 80mae1 0
84 kr g u235f ms cu 0.9934684 1.4 1.0700000 0.0100000 83 kr g u235f 0.6140000 70lis1 0
84 u235f es re 1.0452775 2.1 1.0550000 2.0000000% 84 u235t 1.0000000 74mee4 0
84 kr g u235f ms cu cm 1.0599090 6.0 1.0719000 0.0000000 0 0.0000000 80mae3 0
84 kr g u235f ms cu 1.0293547 2.0 1.0410000 0.0070000 0 0.0000000 81mae1 0
84 kr g u235f cm cu 0.0000000 0.0 1.0410000 0.0070000 0 0.0000000 81mae1 0
84 kr g u235f ms cu 1.0205578 1.1 1.0300000 0.0100000 148 nd g u235f 1.6800000 74mae1 0
84 kr g u235he es cu 1.5001788 30.0 1.5310000 0.0000000 0 0.0000000 63wea1 0
84 u235he es cu 1.5080178 10.0 1.5390000 10.0000000% 0 0.0000000 74mee8 0
84 u235he cm cu x3 0.0000000 0.0 1.0300000 10.0000000% 0 0.0000000 77cro1 0
84 br g u235he rc cu x4 0.0000000 0.0 1.0300000 0.0000000 99 mo g u235he 5.1700000 61val1 0
84 kr g u238f es cu 0.8870420 30.0 0.8900000 0.0000000 0 0.0000000 55wan1 0
84 u238f cm cu 0.0000000 0.0 0.8500000 0.0000000 0 0.0000000 72sid1 0
84 u238f cm cu 0.0000000 0.0 0.8150000 5.0000000% 0 0.0000000 77cro1 0
84 kr g u238f ms cu 0.8242514 2.7 0.8270000 0.0220000 0 0.0000000 81mae1 0
84 kr g u238f cm cu 0.0000000 0.0 0.8270000 0.0220000 0 0.0000000 81mae1 0
84 kr g u238f ms cu 0.8259847 1.2 0.8160000 0.0080000 148 nd g u238f 2.0800000 74mae1 0
84 u238f rc cu x4 0.0000000 0.0 0.9800000 0.0600000 0 0.0000000 85li 1 0
84 br g u238f rc cu x4 0.0000000 0.0 0.2100000 0.0200000 0 0.0000000 75har1 0
84 kr g u238he ms re 1.1218693 3.0 0.7160000 0.0070000 86 kr g u238he 1.0000000 68gor1 0
84 u238he cm cu su 0.0000000 0.0 1.2200000 0.0300000 0 0.0000000 73dar1 0
84 u238he es cu 1.0980852 15.0 1.1010000 15.0000000% 0 0.0000000 74mee9 0
84 u238he cm cu 0.0000000 0.0 1.2600000 5.0000000% 0 0.0000000 77cro1 0
84 br g u238he rc cu x4 0.0000000 0.0 1.3300000 0.0400000 139 ba g u238he 4.9200000 64jam1 0
84 br g u238he cm cu 0.0000000 0.0 1.2000000 0.0000000 0 0.0000000 69gun2 0
84 br g u238he cm cu 0.0000000 0.0 1.1000000 0.0000000 0 0.0000000 60kat1 0
84 br g u238he rc cu 1.1076172 7.5 1.0900000 0.0800000 99 mo g u238he 5.6000000 75ada1 0

84 br g u238he rc cu 1.0970879 8.2 1.1000000 0.0900000 0 0.0000000 85liu1 0
84 rb g pu239t rc in 0.0000000 10.0 0.0000390 10.0000000% 0 1000.0000000 75fly1 0
84 rb g pu239t cm in 0.0000000 0.0 0.0003692 10.0000000% 0 10000.0000000 88wah1 0
84 kr g pu239t ms cu 0.4708955 4.3 0.4700000 0.0200000 0 0.0000000 59fri1 0
84 kr g pu239t ms cu 0.4779089 2.0 0.4770000 0.0050000 0 0.0000000 79mae2 0
84 kr g pu239t cm cu x3 0.0000000 0.0 0.4700000 4.0000000% 0 0.0000000 59fic1 0
84 pu239t cm cu x3 0.0000000 0.0 0.4700000 0.0000000 0 0.0000000 72sid1 0
84 pu239t cm cu x3 0.0000000 0.0 0.4820000 0.0000000 0 0.0000000 73lam1 0
84 pu239t cm cu x3 0.0000000 0.0 0.4770000 0.0110000 0 0.0000000 73wal1 0
84 kr g pu239t ms re su 0.0000000 0.0 0.0350200 0.0001800 148 nd g pu239t 0.1205800 76mae1 0
84 pu239t cm cu x3 0.0000000 0.0 0.4840000 4.5000000% 0 0.0000000 77cro1 0
84 kr g pu239t ms cu 0.4879875 3.3 0.4870000 3.3000000% 85 rb g pu239t 0.5740000 70lis1 36
84 kr g pu239t es cu cm 0.4809146 1.0 0.4800000 1.0000000% 0 0.0000000 81mae2 0
84 br g pu239t rc cu 0.4100175 10.0 0.4070000 0.0400000 0 0.0000000 63cro1 9
84 br g pu239t cm in 0.0000000 0.0 0.0239900 16.0000000% 0 1.0000000 88wah1 0
84 br m pu239t cm in 0.0000000 0.0 0.0426400 16.0000000% 0 1.0000000 88wah1 0
84 se g pu239t cm in 0.0000000 0.0 0.3080000 11.0000000% 0 1.0000000 88wah1 0
84 as g pu239t es fc 0.0683363 30.0 0.1420000 0.0000000 84 pu239t 1.0000000 74wol1 0
84 as g pu239t cm in 0.0000000 0.0 0.0584400 17.0000000% 0 1.0000000 88wah1 0
84 pu239f es cu cm 0.5176861 30.0 0.5200000 0.0000000 0 0.0000000 72sid1 0
84 pu239f cm cu 0.0000000 0.0 0.5000000 6.6000000% 0 0.0000000 77cro1 0
84 kr g pu239f ms cu 0.4950128 0.9 0.4950000 0.0040000 148 nd g pu239f 1.6540000 77mae1 0
84 kr g pu239f ms cu 0.4738819 2.0 0.4760000 0.0050000 0 0.0000000 77mae1 0
84 kr g pu239f ms cu 0.5344566 2.4 0.5590000 0.0130000 148 nd g pu239f 1.7300000 70lis1 0
84 kr g pu239f ms cu 0.4952291 0.9 0.3106000 0.0004000 83 kr g pu239f 0.1970000 80mae4 0
84 kr g pu239f ms cu su 0.0000000 0.0 0.4900000 0.0020000 148 nd g pu239f 1.6500000 74mae1 0
84 pu239f es re 0.5116648 10.0 1.0700000 10.0000000% 84 pu239t 1.0000000 74mee4 0
84 kr g pu239f es cu cm 0.5077306 1.0 0.5100000 1.0000000% 0 0.0000000 81mae2 0
84 pu241t cm cu 0.0000000 0.0 0.3500000 0.0000000 0 0.0000000 72sid1 0
84 pu241t cm cu 0.0000000 0.0 0.3600000 0.0080000 0 0.0000000 73wal1 0
84 pu241t cm cu 0.0000000 0.0 0.3530000 5.0000000% 0 0.0000000 77cro1 0
84 kr g pu241t ms cu 0.3473920 2.0 0.3490000 0.0030000 0 0.0000000 77mae1 0
84 kr g pu241t ms cu 0.3646698 2.9 0.3530000 0.0100000 148 nd g pu241t 1.8616500 70lis1 0
84 br g pu241t rc cu 0.3110375 5.0 0.3410000 0.0130000 137 cs g pu239t 0.4700000 69cro2 25
84 rb g u233t rc in 0.0000001 11.0 0.0000660 11.0000000% 0 1000.0000000 75fly1 0
84 u233t cm cu 0.0000000 0.0 1.6900000 0.0000000 0 0.0000000 73lam1 0

84 u233t cm cu 0.0000000 0.0 1.6600000 0.0400000 0 0.0000000 73wal1 0
84 kr g u233t ms cu 1.6915892 4.2 1.9700000 4.0000000% 86 kr g u233t 3.3000000 61bid1 0
84 u233t cm cu 0.0000000 0.0 1.7600000 8.7000000% 0 0.0000000 77cro1 0
84 u233t cm cu x3 0.0000000 0.0 1.9100000 0.0000000 0 0.0000000 72sid1 0
84 kr g u233t ms cu 1.6866825 1.5 2.0000000 0.0100000 86 kr g u233t 3.3600000 54fle1 0
84 u233t ms cu 1.6592279 2.0 1.6650000 0.0230000 0 0.0000000 80weh1 0
84 kr g u233t ms cu 1.7240025 2.0 1.7300000 0.0200000 0 0.0000000 70lis1 0
84 kr g u233t sp fi ul 0.0000000 0.0 1.1200000 0.3070000 84 u233t 100.0000000 83qua1 0
84 kr g u233t sp in ul 0.0000000 0.0 0.0200000 0.0060000 0 0.0000000 88qua1 0
84 br g u233t rc re x4 0.0000000 0.0 0.6500000 0.0700000 140 ba g u233t 5.4000000 68lee1 0
84 br g u233t ms in 0.0771317 5.6 0.0774000 0.0043000 0 0.0000000 80weh1 18
84 br g u233t sp fi 0.0865449 9.1 5.1408000 0.4630000 84 u233t 100.0000000 83qua1 40
84 br g u233t sp in 0.0904055 9.5 0.0907200 0.0086000 0 0.0000000 88qua1 18
84 br m u233t ms in 0.1371230 5.6 0.1376000 0.0077000 0 0.0000000 80weh1 18
84 br m u233t sp fi 0.1538575 9.1 9.1392000 0.8230000 84 u233t 100.0000000 83qua1 40
84 br m u233t sp in 0.1607209 9.5 0.1612800 0.0154000 0 0.0000000 88qua1 18
84 se g u233t ms in 1.2526423 2.0 1.2570000 0.0240000 0 0.0000000 80weh1 0
84 se g u233t sp fi 1.2860182 5.1 76.3900000 2.2400000 84 u233t 100.0000000 83qua1 0
84 se g u233t sp in 1.3423303 5.0 1.3470000 0.0610000 0 0.0000000 88qua1 0
84 as g u233t ms in 0.1714037 8.1 0.1720000 0.0140000 0 0.0000000 80weh1 0
84 as g u233t sp fi 0.1223897 19.3 7.2700000 1.4000000 84 u233t 100.0000000 83qua1 0
84 as g u233t sp in 0.1275563 19.5 0.1280000 0.0250000 0 0.0000000 88qua1 0
84 ge g u233t ms in 0.0209272 38.1 0.0210000 0.0080000 0 0.0000000 80weh1 0
84 ge g u233t sp fi 0.0158248 33.2 0.9400000 0.3120000 84 u233t 100.0000000 83qua1 0
84 ge g u233t sp in 0.0169411 35.3 0.0170000 0.0060000 0 0.0000000 88qua1 0
84 th232f cm cu es 0.0000000 0.0 3.6500000 0.0000000 0 0.0000000 65eng1 0
84 th232f es cu x3 0.0000000 0.0 3.1100000 0.0000000 0 0.0000000 72sid1 0
84 th232f es cu cm 3.4377641 30.0 3.4400000 0.0000000 0 0.0000000 73lam1 0
84 th232f cm cu 0.0000000 0.0 3.6200000 0.0000000 0 0.0000000 74lam1 0
84 kr g th232f cm cu 0.0000000 0.0 3.6500000 0.0000000 0 0.0000000 60kat1 0
84 kr g th232f ms cu 4.0049182 2.1 3.6500000 0.0200000 86 kr g th232f 6.0000000 57ken1 0
84 th232f cm cu 0.0000000 0.0 3.8000000 10.0000000% 0 0.0000000 77cro1 0
84 th232f es cu 4.1073287 5.0 4.1100000 5.0000000% 0 0.0000000 74mee0 0
84 br g th232f rc cu 3.4330665 10.8 0.4600000 10.0000000% 89 sr g th232f 1.0000000 57ale1 0
84 br g th232f rc cu x4 0.0000000 0.0 2.9900000 0.0600000 99 mo g th232f 2.7800000 68lyl1 0
84 br g th232f rc re 3.8849432 7.8 8.1900000 0.6400000 99 mo g u235t 0.0000000 81ert1 7

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 84 br g   th232f   rc    cu        4.3071987  6.0   4.3100000  0.2600000     0                    0.0000000   86ric1      0
 84 br g   th232f   cm    cu        0.0000000  0.0   3.8400000  0.3100000     0                    0.0000000   81ert1      0
 84 br g   th232f   es    fc        4.0161139  2.4   0.9984000  2.0000000%   84          th232f      1.0000000   89rid1      0
 84 br g   th232f   es    cu        4.0073937  4.0   4.0100000  4.0000000%    0                    0.0000000   89rid1      0
 84 se g   th232f   rc    cu    x1  0.0000000  0.0   2.3200000  0.1100000   140 ba g      th232f      7.9700000   85chu1      0
 85 rb g   u235t    es    in    .0  0.0024656 99.9   0.0024650 99.9000000%    0                    0.0000000   88wah1     36
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                 nuclide     material      value      no.   treatment

 85        u235t    cm    cu        0.0000000  0.0   1.3280000  0.0000000     0                    0.0000000   73lam1      0
 85        u235t    cm    cu        0.0000000  0.0   1.3300000  0.0300000     0                    0.0000000   73wal1      0
 85        u235t    cm    cu        0.0000000  0.0   1.3200000  1.1000000%    0                    0.0000000   77cro1      0
 85 rb g   u235t    ms    cu        1.3003307  6.0   1.3000000  0.0000000     0                    0.0000000   53wil1      0
 85 rb g   u235t    ms    cu        1.3003307  2.0   1.3000000  2.0000000%    0                    0.0000000   55pet2      0
 85 rb g   u235t    ms    cu        1.3120699  0.7   0.7838000  0.0051000   148 nd g      u235t       1.0000000   70lis1      0
 85        u235t    es    cu        1.3003307 30.0   1.3000000  0.0000000     0                    0.0000000   72sid1      0
 85 rb g   u235t    es    re        1.3160754  0.3   0.2842000  0.3000000%    0                    0.2160000   74mee7      0
 85        u235t    ms    cu        1.3403409  2.0   1.3400000  0.0220000     0                    0.0000000   76dii1      0
 85 rb g   u235t    ms    re        1.3230390  0.6   0.0719300  0.0001800   148 nd g      u235t       0.0910100   76mae1      0
 85        u235t    sp    cu        1.4303638  8.5   1.4300000  8.5000000%    0                    0.0000000   76woh2     36
 85 rb g   u235t    ms    cu        1.3343393  2.0   1.3340000  0.0090000     0                    0.0000000   78mae1      0
 85 rb g   u235t    ms    cu        1.3243368  2.0   1.3240000  0.0090000     0                    0.0000000   78mae1      0
 85 rb g   u235t    ms    cu        1.3403409  2.0   1.3400000  0.0090000     0                    0.0000000   78mae1      0
 85 rb g   u235t    ms    cu    cm  1.3333391  6.0   1.3330000  0.0000000     0                    0.0000000   80mae3      0
 85 rb g   u235t    es    re        1.3165533  2.0   1.0000000  0.0193000    85 kr m       u235t       0.9807000   89rid1      0
 85 rb g   u235t    es    re        1.3173775  2.0   1.0000000  2.0000000%   85 kr g       u235t       0.2152000   89rid1      0
 85 kr g   u235t    ms    cu        0.2901561  1.6   0.3170000  0.0000000    83 kr g       u235t       0.5860000   49tho1      0
 85 kr g   u235t    rc    cu        0.2807671 20.0   0.2400000  0.0200000     0                    0.0000000   51hoa1     34
 85 kr g   u235t    gc    cu        0.2792174  2.1   1.0000000  2.0000000%  133 xe g       u235t      24.0000000   53kat2      0
 85 kr g   u235t    ms    re        0.2824516  2.1   2.0100000  2.0000000%   83 kr g       u235t       3.8170000   55bla1      0
 85 kr g   u235t    ms    re        0.2887306  1.4   7.5900000  0.1000000    83 kr g       u235t      14.1000000   55wan1      0
 85 kr g   u235t    ms    cu        0.2848789  0.7   0.3000000  0.2000000%   86 kr g       u235t       2.0700000   56bla1      0
 85 kr g   u235t    gc    cu        0.2842723  0.3   0.2842000  0.0009000     0                    0.0000000   62gra1      0
 85 kr g   u235t    ms    re        0.2891072  1.1   0.5390000  1.0000000%   83 kr g       u235t       1.0000000   63mch1      0
 85 kr g   u235t    rc    cu        0.2730694  5.0   0.2730000  3.0000000%    0                    0.0000000   65kat1      0
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85	kr g	u235t	ms	cu	0.2852709	1.3	0.2880000	0.0035000	148	nd g	u235t	1.6900000	71lis1	0	
85	kr g	u235t	ms	cu	0.2870730	2.0	0.2870000	0.0020000	0			0.0000000	76mae2	0	
85	kr g	u235t	gc	cu	0.2846724	0.9	0.2846000	0.0025000	0			0.0000000	80jaf1	36	
85	kr g	u235t	es	re	0.2832770	2.0	0.2194000	2.0000000%	85	kr m	u235t	1.0000000	89rid1	0	
85	kr g	u235t	es	fc	0.2838621	2.0	0.2152000	2.0000000%	85		u235t	1.0000000	89rid1	0	
85	kr g	u235t	cm	cu	0.0000000	0.0	0.3170000	0.0000000	131	xe g	u235t	2.8000000	51cor2	0	
85	kr g	u235t	cm	cu	0.0000000	0.0	0.2880000	0.0000000	0			0.0000000	73lam1	0	
85	kr g	u235t	cm	cu	0.0000000	0.0	0.2721000	33.0000000%	0			0.0000000	73net2	0	
85	kr g	u235t	ms	re	x2	0.0000000	0.0	0.0390000	5.0000000%	134	xe g	u235t	1.0000000	49arr1	0
85	kr g	u235t	ms	fi		0.0224372	33.3	1.7010000	0.5670000	85		u235t	100.0000000	76sie1	40
85	kr g	u235t	sp	fi		0.0299163	17.9	2.2680000	0.4050000	85		u235t	100.0000000	78str1	40
85	kr g	u235t	ms	in		0.0263967	30.7	0.0263900	0.0081000	0			0.0000000	79cle1	18
85	kr g	u235t	ms	fi		0.0235057	31.8	1.7820000	0.5670000	85		u235t	100.0000000	76wol1	40
85	kr g	u235t	sp	fi		0.0213688	35.0	1.6200000	0.5670000	85		u235t	100.0000000	80lan1	40
85	kr g	u235t	es	in		0.0272669	56.0	0.0272600	56.0000000%	0			1.0000000	88wah1	0
85	kr g	u235t	es	fi		0.0264868	50.0	0.0200800	50.0000000%	85		u235t	1.0000000	89rid1	0
85	kr m	u235t	sp	in	ul	0.0000000	0.0	0.0050000	0.0005000	91	kr g	u235t	1.0000000	69ehr1	14
85	kr m	u235t	ms	fi		0.0052631	33.3	0.3990000	0.1330000	85		u235t	100.0000000	76sie1	40
85	kr m	u235t	ms	fi		0.0055137	31.8	0.4180000	0.1330000	85		u235t	100.0000000	76wol1	40
85	kr m	u235t	sp	fi		0.0070174	17.9	0.5320000	0.0950000	85		u235t	100.0000000	78str1	40
85	kr m	u235t	ms	in		0.0026107	72.8	0.0026100	0.0019000	0			0.0000000	79cle1	18
85	kr m	u235t	sp	fi		0.0050124	35.0	0.3800000	0.1330000	85		u235t	100.0000000	80lan1	40
85	kr m	u235t	es	in		0.0064016	56.0	0.0064000	56.0000000%	0			1.0000000	88wah1	0
85	kr m	u235t	rc	re		1.1726641	30.4	0.3300000	0.1000000	88	kr g	u235t	1.0000000	49koc1	0
85	kr m	u235t	rc	cu		1.3603460	5.0	1.3600000	0.0500000	0			0.0000000	71mcl1	0
85	kr m	u235t	es	cu		1.3283378	8.0	1.3280000	8.0000000%	0			0.0000000	73net2	0
85	kr m	u235t	rc	cu		1.3854371	7.4	1.3700000	0.1000000	87	kr g	u235t	2.5300000	74bla1	0
85	kr m	u235t	es	re		1.2903872	0.3	0.2842000	0.3000000%	0			0.2203000	74mee1	0
85	kr m	u235t	es	cu		1.2915727	2.2	0.9791600	0.0208400	85		u235t	1.0000000	74mee5	0
85	kr m	u235t	rc	cu		1.3303383	5.3	1.3300000	0.0700000	0			0.0000000	76thi1	0
85	kr m	u235t	rc	cu		1.3003307	5.0	1.3000000	0.0500000	0			0.0000000	77gud1	0
85	kr m	u235t	rc	cu		1.2603205	5.0	1.2600000	4.0000000%	0			0.0000000	80ram1	0
85	kr m	u235t	es	fc		1.2936040	2.0	0.9807000	0.0193000	85		u235t	1.0000000	89rid1	0
85	kr m	u235t	es	re		1.2921588	5.0	1.0000000	5.0000000%	85	kr g	u235t	0.2194000	89rid1	0
85	br g	u235t	ms	fi		0.2334740	7.4	17.7000000	1.3000000	85		u235t	100.0000000	76sie1	0
85	br g	u235t	sp	fi		0.2097308	5.0	15.9000000	0.6000000	85		u235t	100.0000000	78str1	0

85	br g	u235t	ms	in		0.2810715	7.8	0.2810000	0.0220000	0			0.0000000	79cle1	0
85	br g	u235t	sp	fi		0.2598552	6.6	19.7000000	1.3000000	85	u235t		100.0000000	80lan1	0
85	br g	u235t	es	in		0.2784708	7.0	0.2784000	7.0000000%	0			1.0000000	88wah1	0
85	br g	u235t	es	fi		0.2396735	8.0	0.1817000	8.0000000%	85	u235t		1.0000000	89rid1	0
85	br g	u235t	es	in		0.2390608	10.0	0.2390000	10.0000000%	0			0.0000000	89rid1	0
85	br g	u235t	sp	in	ul	0.0000000	0.0	0.0630000	0.0630000	0			0.0000000	75ree1	0
85	br g	u235t	ms	fi	su	0.0000000	0.0	18.6000000	2.3000000	85	u235t		100.0000000	75cle2	0
85	br g	u235t	ms	fi	su	0.0000000	0.0	16.7000000	1.6000000	85	u235t		100.0000000	76wol1	0
85	br g	u235t	sp	in	x1	0.0000000	0.0	1.1800000	0.1900000	84	br g	u235t	1.0100000	90rud1	0
85	br g	u235t	es	cu		1.3273376	8.0	1.3270000	8.0000000%	0			0.0000000	73net2	0
85	br g	u235t	sp	re		1.1037224	5.7	0.6200000	0.0100000	88	br g	u235t	1.0000000	75ree1	0
85	br g	u235t	es	fc		1.2878001	3.0	0.9763000	3.0000000%	85	rb g	u235t	1.0000000	89rid1	36
85	br g	u235t	sp	cu		1.8045595	14.1	1.8500000	0.2600000	84	br g	u235t	1.0100000	90rud1	36
85	se g	u235t	cm	fc	x3	0.0000000	0.0	0.8115000	0.2730000	85	u235t		1.0000000	73ami1	0
85	se g	u235t	rc	fc	x1	0.0000000	0.0	0.8180000	0.0660000	85	u235t		1.0000000	73kra2	0
85	se g	u235t	cm	cu	x3	0.0000000	0.0	1.1570000	10.0000000%	0			0.0000000	73net2	0
85	se g	u235t	ms	fi		0.4458429	2.2	67.6000000	1.5000000	85	u235t		100.0000000	76sie1	37
85	se g	u235t	rc	cu	x1	0.0000000	0.0	1.1200000	10.0000000%	84	se g	u235t	0.9800000	60sat1	0
85	se g	u235t	sp	fi		0.4781599	5.0	72.5000000	1.0000000	85	u235t		100.0000000	78str1	37
85	se g	u235t	ms	fi	su	0.0000000	0.0	73.8000000	2.9000000	85	u235t		100.0000000	75cle2	37
85	se g	u235t	ms	in		0.5016276	3.5	1.0030000	0.0350000	0			0.0000000	79cle1	37
85	se g	u235t	ms	fi	su	0.0000000	0.0	68.4000000	1.6000000	85	u235t		100.0000000	76wol1	37
85	se g	u235t	sp	fi		0.4629907	5.0	70.2000000	1.5000000	85	u235t		100.0000000	80lan1	37
85	se g	u235t	rc	in		0.5001272	30.0	1.0000000	30.0000000%	0			0.0000000	82ren1	37
85	se g	u235t	cm	in		0.0000000	0.0	0.5100000	3.0000000%	0			1.0000000	88wah1	0
85	se g	u235t	sp	in		0.4151056	16.9	0.8300000	0.1400000	0			0.0000000	90rud1	37
85	se m	u235t	ms	fi		0.4458429	2.2	67.6000000	1.5000000	85	u235t		100.0000000	76sie1	37
85	se m	u235t	sp	fi		0.4781599	5.0	72.5000000	1.0000000	85	u235t		100.0000000	78str1	37
85	se m	u235t	ms	fi	su	0.0000000	0.0	73.8000000	2.9000000	85	u235t		100.0000000	75cle2	37
85	se m	u235t	ms	in		0.5016276	3.5	1.0030000	0.0350000	0			0.0000000	79cle1	37
85	se m	u235t	ms	fi	su	0.0000000	0.0	68.4000000	1.6000000	85	u235t		100.0000000	76wol1	37
85	se m	u235t	sp	fi		0.4629907	5.0	70.2000000	1.5000000	85	u235t		100.0000000	80lan1	37
85	se m	u235t	rc	in		0.5001272	30.0	1.0000000	30.0000000%	0			0.0000000	82ren1	37
85	se m	u235t	cm	in		0.0000000	0.0	0.5100000	3.0000000%	0			1.0000000	88wah1	0
85	se m	u235t	sp	in		0.4151056	16.9	0.8300000	0.1400000	0			0.0000000	90rud1	37
85	se m	u235t	sp	cu	sm	0.0000000	0.0	0.9300000	0.1100000	0			0.0000000	90rud1	0

85 as g u235t rc in x1 0.0000000 0.0 0.0630000 0.0000000 0 0.0000000 67mar1 0
85 as g u235t cm fi x3 0.0000000 0.0 0.0484600 0.0097000 85 u235t 1.0000000 73ami1 0
85 as g u235t es cu x3 0.0000000 0.0 0.3400000 0.0000000 0 0.0000000 73kra1 0
85 as g u235t cm cu 0.0000000 0.0 0.1943000 33.0000000% 0 0.0000000 73net2 0
85 as g u235t ms fi 0.1503731 7.0 11.4000000 0.8000000 85 u235t 100.0000000 76sie1 0
85 as g u235t sp fi 0.1173965 5.6 8.9000000 0.5000000 85 u235t 100.0000000 78str1 0
85 as g u235t ms fi su 0.0000000 0.0 7.6000000 1.4000000 85 u235t 100.0000000 75cle2 0
85 as g u235t ms in 0.1160295 12.1 0.1160000 0.0140000 0 0.0000000 79cle1 0
85 as g u235t ms fi su 0.0000000 0.0 11.5000000 0.8000000 85 u235t 100.0000000 76wol1 0
85 as g u235t sp fi 0.1068440 11.1 8.1000000 0.9000000 85 u235t 100.0000000 80lan1 0
85 as g u235t cm in 0.0000000 0.0 0.1429000 14.0000000% 0 1.0000000 88wah1 0
85 as g u235t sp cu x1 0.0000000 0.0 0.2200000 0.0600000 0 0.0000000 90rud1 0
85 ge g u235t ms fi ul 0.0000000 0.0 1.2000000 0.5000000 85 u235t 100.0000000 76sie1 0
85 ge g u235t ms fi ul 0.0000000 0.0 1.2000000 0.6000000 85 u235t 100.0000000 76wol1 0
85 u235f es cu cm 1.4816660 30.0 1.4900000 0.0000000 0 0.0000000 72sid1 0
85 rb g u235f ms cu 1.3325050 5.0 1.3400000 5.0000000% 0 0.0000000 73cro3 0
85 rb g u235f ms cu 1.2927287 5.0 1.3000000 5.0000000% 0 0.0000000 73cro3 0
85 rb g u235f ms cu 1.3653204 2.0 1.3730000 0.0090000 0 0.0000000 80mae1 0
85 rb g u235f ms cu aj 1.3123692 2.4 1.3800000 0.0300000 87 rb g u235f 2.6600000 70lis1 0
85 u235f cm cu 0.0000000 0.0 1.3300000 2.8000000% 0 0.0000000 77cro1 0
85 rb g u235f ms cu 1.3798032 1.8 1.3200000 0.0000000 87 rb g u235f 2.4200000 71cro2 0
85 rb g u235f ms cu 1.4042078 1.8 1.3600000 0.0000000 87 rb g u235f 2.4500000 71cro2 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

85 rb g u235f ms cu cm 1.3692980 6.0 1.3770000 0.0000000 0 0.0000000 80mae3 0
85 u235f rc cu 1.4520979 5.1 1.5200000 0.0500000 140 ba g u235f 6.2200000 77bla1 0
85 rb g u235f ms cu 1.3543819 2.0 1.3620000 0.0070000 0 0.0000000 81mae1 0
85 rb g u235f ms cu 1.3523931 2.0 1.3600000 0.0080000 0 0.0000000 81mae1 0
85 rb g u235f ms cu 1.3563707 2.0 1.3640000 0.0080000 0 0.0000000 81mae1 0
85 rb g u235f cm cu 0.0000000 0.0 1.3620000 0.0070000 0 0.0000000 81mae1 0
85 rb g u235f ms cu su 0.0000000 0.0 1.3500000 0.0100000 148 nd g u235f 1.6800000 74mae1 0
85 kr g u235f cm cu 0.0000000 0.0 0.2770000 14.9000000% 0 0.0000000 73net2 0
85 kr g u235f es re 0.2751674 4.5 0.2029000 0.0090000 85 u235f 1.0000000 74mee5 0
85 kr m u235f cm cu 0.0000000 0.0 1.2900000 14.9000000% 0 0.0000000 73net2 0

85 kr m u235f rc cu 1.3822253 5.0 1.3900000 5.0000000% 0 0.0000000 74bal1 0
85 kr m u235f rc cu 1.3034741 5.4 1.3300000 0.0100000 88 kr g u235f 3.4900000 74bal1 0
85 kr m u235f rc cu 1.4003725 5.2 1.4600000 0.0400000 138 xe g u235f 6.2300000 74bal1 0
85 kr m u235f rc cu 1.3620062 5.2 1.4200000 0.0400000 138 xe g u235f 6.2300000 74bal1 0
85 kr m u235f rc cu 1.2927287 5.0 1.3000000 0.0500000 0 0.0000000 77gud1 0
85 br g u235f cm cu 0.0000000 0.0 1.2890000 14.9000000% 0 0.0000000 73net2 0
85 se g u235f cm cu x3 0.0000000 0.0 1.1010000 16.1000000% 0 0.0000000 73net2 0
85 as g u235f cm cu x3 0.0000000 0.0 0.1658000 35.0000000% 0 0.0000000 73net2 0
85 rb g u235he cm cu 0.0000000 0.0 2.0390000 0.0000000 0 0.0000000 63wea1 0
85 u235he cm cu 0.0000000 0.0 1.3900000 20.0000000% 0 0.0000000 77cro1 0
85 kr g u235he cm cu 0.0000000 0.0 0.3470000 14.9000000% 0 0.0000000 73net2 0
85 kr g u235he es re 0.3426916 5.2 0.2067000 0.0090000 85 u235he 1.0000000 74mee5 0
85 kr m u235he cm cu 0.0000000 0.0 1.6200000 14.9000000% 0 0.0000000 73net2 0
85 kr m u235he es cu 1.6775146 10.0 1.6860000 10.0000000% 0 0.0000000 74mee8 0
85 kr m u235he rc cu 1.8307396 5.0 1.8400000 5.0000000% 0 0.0000000 74bal1 0
85 kr m u235he rc cu 1.5956899 5.7 1.7000000 0.0200000 88 kr g u235he 3.4700000 74bal1 0
85 kr m u235he rc cu 1.5675307 5.7 1.6700000 0.0200000 88 kr g u235he 3.4700000 74bal1 0
85 kr m u235he rc cu 1.6296289 6.9 2.0500000 0.1300000 138 xe g u235he 3.9600000 74bal1 0
85 kr m u235he rc cu 1.5421854 5.9 1.9400000 0.1000000 138 xe g u235he 3.9600000 74bal1 0
85 br g u235he cm cu 0.0000000 0.0 1.6130000 14.9000000% 0 0.0000000 73net2 0
85 se g u235he cm cu x3 0.0000000 0.0 1.2270000 18.0000000% 0 0.0000000 73net2 0
85 as g u235he cm cu x3 0.0000000 0.0 0.1113000 47.0000000% 0 0.0000000 73net2 0
85 u238f es cu 0.7282844 30.0 0.7300000 0.0000000 0 0.0000000 72sid1 0
85 rb g u238f es fi 0.0000001 30.0 0.0000149 0.0000000 85 u238f 100.0000000 74wol1 0
85 u238f cm cu 0.0000000 0.0 0.7390000 5.0000000% 0 0.0000000 77cro1 0
85 u238f rc cu x4 0.0000000 0.0 1.1300000 0.0900000 140 ba g u238f 6.1600000 77bla1 0
85 rb g u238f ms cu 0.7322750 2.0 0.7340000 0.0070000 0 0.0000000 81mae1 0
85 rb g u238f ms cu 0.7522280 2.0 0.7540000 0.0080000 0 0.0000000 81mae1 0
85 rb g u238f ms cu 0.7452445 2.1 0.7470000 0.0160000 0 0.0000000 81mae1 0
85 rb g u238f cm cu 0.0000000 0.0 0.7450000 0.0100000 0 0.0000000 81mae1 0
85 rb g u238f ms cu 0.7467467 1.5 0.7370000 0.0100000 148 nd g u238f 2.0800000 74mae1 0
85 u238f rc cu 0.7881434 6.3 0.7900000 0.0500000 0 0.0000000 85li 1 0
85 kr g u238f ms re 0.1497984 9.2 5.5000000 0.5000000 83 kr g u238f 14.5000000 55wan1 0
85 kr g u238f es cu 0.1526404 30.0 0.1530000 0.0000000 0 0.0000000 60kat1 0
85 kr g u238f es re cm 0.1483356 4.6 0.2001000 0.0090000 85 u238f 1.0000000 74mee5 0
85 kr g u238f es cu x3 0.0000000 0.0 0.2190000 14.9000000% 85 u238f 1.0202000 73net2 0

85 kr g u238f rc cu x4 0.0000000 0.0 0.2800000 7.1000000% 0 0.0000000 87chu1 0
85 kr m u238f rc cu 0.7482374 15.0 0.7500000 0.0000000 0 0.0000000 75fly4 0
85 kr m u238f es cu 0.8080964 9.9 0.8100000 0.0800000 0 0.0000000 78gin1 0
85 kr m u238f rc cu rp 0.6976770 14.7 0.5900000 0.0000000 no. relative values = 2 77gud1
85 kr m u238f rc cu 0.7681904 5.0 0.7700000 0.0300000 0 0.0000000 78nag1 0
85 kr m u238f rc cu 0.7582139 5.0 0.7600000 5.0000000% 0 0.0000000 74bal1 0
85 kr m u238f rc cu 0.6680833 5.7 0.7800000 0.0100000 88 kr g u238f 2.3600000 74bal1 0
85 kr m u238f rc cu 0.6595181 5.7 0.7700000 0.0100000 88 kr g u238f 2.3600000 74bal1 0
85 kr m u238f rc cu 0.7315392 5.7 0.7600000 0.0200000 138 xe g u238f 5.9100000 74bal1 0
85 kr m u238f rc cu 0.7219137 5.7 0.7500000 0.0200000 138 xe g u238f 5.9100000 74bal1 0
85 kr m u238f rc cu 0.6285194 20.6 0.6300000 0.1300000 0 0.0000000 85chi1 0
85 kr m u238f es cu x3 0.0000000 0.0 1.0200000 14.9000000% 85 u238f 1.0202000 73net2 0
85 kr m u238f rc cu 0.7392586 94.5 0.7410000 94.5000000% 0 0.0000000 88afa1 0
85 kr m u238f rc cu 0.8636655 13.9 0.8657000 13.9000000% 0 0.0000000 88afa1 0
85 br g u238f cm cu x3 0.0000000 0.0 1.0200000 14.9000000% 0 0.0000000 73net2 0
85 se g u238f cm cu x3 0.0000000 0.0 0.9776000 14.9000000% 0 0.0000000 73net2 0
85 as g u238f cm cu x3 0.0000000 0.0 0.3463000 26.0000000% 0 0.0000000 73net2 0
85 u238he cm cu su 0.0000000 0.0 1.0800000 0.0500000 0 0.0000000 73dar1 0
85 u238he cm cu 0.0000000 0.0 1.0700000 11.4000000% 0 0.0000000 77cro1 0
85 u238he es cu 1.0016723 4.2 1.0030000 4.2000000% 0 0.0000000 74mee5 0
85 u238he ms re 0.9962744 3.0 0.6350000 0.0060000 86 kr g u238he 1.0000000 68gor1 0
85 kr g u238he rc re x1 0.0000000 0.0 0.9440000 0.0330000 99 mo g u235t 0.0000000 68gor1 7
85 kr g u238he cm cu x3 0.0000000 0.0 0.2600000 14.9000000% 0 0.0000000 73net2 0
85 kr g u238he es cu cm 0.1997353 2.0 0.2000000 0.0040000 0 0.0000000 74mee5 0
85 kr m u238he rc cu 1.0216459 5.0 1.0230000 0.0460000 0 0.0000000 75dar1 0
85 kr m u238he rc cu 1.0114311 7.3 0.9800000 7.0000000% 87 kr g u238he 1.6300000 75cav1 0
85 kr m u238he rc cu 0.9687160 5.0 0.9700000 5.0000000% 0 0.0000000 74bal1 0
85 kr m u238he rc cu 0.9288719 5.4 0.9600000 0.0100000 88 kr g u238he 2.2300000 74bal1 0
85 kr m u238he rc cu 0.9288719 5.4 0.9600000 0.0200000 88 kr g u238he 2.2300000 74bal1 0
85 kr m u238he rc cu 1.0722535 5.4 1.0000000 0.0400000 138 xe g u238he 4.2200000 74bal1 0
85 kr m u238he rc cu 1.0293634 5.6 0.9600000 0.0500000 138 xe g u238he 4.2200000 74bal1 0
85 kr m u238he rc cu x4 0.0000000 0.0 1.4400000 0.3000000 0 0.0000000 76raj1 0
85 kr m u238he rc cu su 0.0000000 0.0 1.5800000 0.2600000 140 ba g u238he 4.4800000 74dar1 0
85 kr m u238he rc cu su 0.0000000 0.0 0.9400000 0.1500000 0 0.0000000 71bla1 0
85 kr m u238he rc cu su 0.0000000 0.0 1.5200000 0.3000000 0 0.0000000 73dar2 0
85 kr m u238he rc cu su 0.0000000 0.0 1.5800000 0.2600000 0 0.0000000 73dar4 0

85 kr m u238he cm cu x3 0.0000000 0.0 1.2100000 9.9000000% 0 0.0000000 73net2 0
85 kr m u238he es cu 1.0006737 4.2 1.0020000 4.2000000% 0 0.0000000 74mee5 0
85 kr m u238he rc cu 1.0486101 5.7 1.0500000 0.0600000 0 0.0000000 85liu1 0
85 kr m u238he rc cu 1.1398990 6.3 1.1400000 0.0700000 140 ba g u238he 4.6000000 80zhe1 0
85 br g u238he cm cu 0.0000000 0.0 1.2090000 9.9000000% 0 0.0000000 73net2 0
85 se g u238he cm cu x3 0.0000000 0.0 1.1120000 11.0000000% 0 0.0000000 73net2 0
85 as g u238he cm cu 0.0000000 0.0 0.2661000 33.0000000% 0 0.0000000 73net2 0
85 rb g pu239t ms cu 0.5503705 5.5 0.5500000 0.0300000 0 0.0000000 59fri1 0
85 rb g pu239t ms cu 0.5753874 2.0 0.5750000 0.0070000 0 0.0000000 79mae2 0
85 rb g pu239t ms re 0.5760393 0.7 0.0422700 0.0002000 148 nd g pu239t 0.1205800 76mae1 0
85 rb g pu239t ms cu 0.5743867 2.0 0.5740000 0.0110000 0 0.0000000 70lis1 0
85 rb g pu239t ms cu rp 0.5635081 1.9 0.5740000 0.0000000 no. relative values = 11 70lis1
85 rb g pu239t ms cu aw 0.5750152 1.0 0.5724000 0.0050000 87 rb g pu239t 1.0000000 59fic1 0
85 pu239t es cu 0.5603772 30.0 0.5600000 0.0000000 0 0.0000000 72sid1 0
85 pu239t es cu 0.5663813 30.0 0.5660000 0.0000000 0 0.0000000 73lam1 0
85 pu239t es cu 0.5583759 2.3 0.5580000 0.0130000 0 0.0000000 73wal1 0
85 pu239t es cu 0.5583759 4.6 0.5580000 4.6000000% 0 0.0000000 77cro1 0
85 rb g pu239t es cu cm 0.5773887 1.0 0.5770000 1.0000000% 0 0.0000000 81mae2 0
85 rb g pu239t es re 0.5789717 0.9 1.0000000 0.5000000% 85 kr m pu239t 0.9748000 74mee7 36
85 rb g pu239t es re 0.5749419 1.1 0.3640000 1.0000000% 87 rb g pu239t 0.6360000 81mae2 36
85 rb g pu239t es re 0.5583926 0.9 1.0000000 0.5000000% 85 kr g pu239t 0.2199000 89rid1 36
85 kr g pu239t ms re rp 0.1298272 3.2 0.2260000 0.0000000 no. relative values = 1 71lis1
85 kr g pu239t ms re rp 0.1271847 3.2 0.2214000 0.0000000 no. relative values = 1 76mae2
85 kr g pu239t ms cu 0.1300876 2.4 0.1300000 0.0031000 0 0.0000000 71lis1 0
85 kr g pu239t es cu 0.1290869 30.0 0.1290000 0.0000000 0 0.0000000 73lam1 0
85 kr g pu239t es cu 0.1260849 32.1 0.1260000 32.1000000% 0 0.0000000 73net2 0
85 kr g pu239t es re 0.1272681 0.9 0.2255000 0.5000000% 85 kr m pu239t 1.0000000 74mee7 36
85 kr g pu239t es re 0.1263230 0.6 0.2199000 0.5000000% 85 rb g pu239t 1.0000000 74mee7 36
85 kr g pu239t gc cu 0.1182796 4.0 0.1182000 4.0000000% 0 0.0000000 62gra1 36
85 kr g pu239t es in 0.0156305 52.0 0.0156200 52.0000000% 0 1.0000000 88wah1 0
85 kr g pu239t gc cu 0.1314885 0.8 0.1314000 0.0011000 0 0.0000000 62gra1 0
85 kr g pu239t rc cu x4 0.0000000 0.0 0.0990000 9.0000000% 0 0.0000000 65kat1 36
85 kr m pu239t rc cu x4 0.0000000 0.0 0.5000000 0.0600000 0 0.0000000 77gud1 0
85 kr m pu239t rc cu 0.5903975 5.0 0.5900000 5.0000000% 0 0.0000000 74bal1 0
85 kr m pu239t rc cu 0.5508553 5.4 0.5800000 0.0200000 88 kr g pu239t 1.3400000 74bal1 0
85 kr m pu239t rc cu 0.6039972 6.8 0.6000000 0.0400000 138 xe g pu239t 5.1400000 74bal1 0

85 kr m pu239t rc cu 0.5803907 8.6 0.5800000 0.0500000 0 0.0000000 80dic1 0
85 kr m pu239t rc cu 0.5703840 5.0 0.5700000 4.3000000% 0 0.0000000 80ram1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

85 kr m pu239t rc cu su 0.0000000 0.0 0.7200000 0.0300000 99 mo g u235t 1.3000000 71ram1 31
85 kr m pu239t es cu 0.5923988 2.0 0.5920000 2.0000000% 0 0.0000000 73net2 0
85 kr m pu239t es re 0.5445256 0.9 1.0000000 0.5000000% 85 kr g pu239t 0.2255000 74mee7 36
85 kr m pu239t es re 0.5599805 0.6 0.9748000 0.5000000% 85 rb g pu239t 1.0000000 74mee7 36
85 kr m pu239t rc cu x4 0.0000000 0.0 0.6900000 0.0200000 0 0.0000000 84jai1 0
85 kr m pu239t es in 0.0036725 52.0 0.0036700 52.0000000% 0 1.0000000 88wah1 0
85 br g pu239t es cu 0.5902974 2.0 0.5899000 2.0000000% 0 0.0000000 73net2 0
85 br g pu239t es re 0.5565912 1.5 0.9689000 1.5000000% 85 rb g pu239t 1.0000000 74mee7 36
85 br g pu239t es in 0.2308554 11.0 0.2307000 11.0000000% 0 1.0000000 88wah1 0
85 se g pu239t cm cu x3 0.0000000 0.0 0.4515000 10.0000000% 0 0.0000000 73net2 0
85 se g pu239t cm in 0.0000000 0.0 0.1676000 11.0000000% 0 1.0000000 88wah1 0
85 se m pu239t cm in 0.0000000 0.0 0.1676000 11.0000000% 0 1.0000000 88wah1 0
85 as g pu239t cm cu x3 0.0000000 0.0 0.0419500 45.0000000% 0 0.0000000 73net2 0
85 as g pu239t es fc 0.0224613 30.0 0.0391000 0.0000000 85 pu239t 1.0000000 74wol1 0
85 as g pu239t cm in 0.0000000 0.0 0.0276000 35.0000000% 0 1.0000000 88wah1 0
85 pu239f cm cu x3 0.0000000 0.0 0.6900000 0.0000000 0 0.0000000 72sid1 0
85 rb g pu239f ms cu 0.5993519 0.9 0.5980000 0.0050000 148 nd g pu239f 1.6540000 77mae1 0
85 rb g pu239f ms cu 0.5946740 2.0 0.5960000 0.0080000 0 0.0000000 77mae1 0
85 rb g pu239f ms cu su 0.0000000 0.0 0.6720000 0.0120000 148 nd g pu239f 1.7300000 70lis1 0
85 rb g pu239f es fi 0.0001127 30.0 0.0001870 30.0000000% 85 pu239f 1.0000000 74wol1 36
85 rb g pu239f ms cu 0.6007176 1.1 0.3659000 0.0004000 87 rb g pu239f 0.6341000 80mae4 0
85 rb g pu239f ms cu su 0.0000000 0.0 0.5950000 0.0060000 148 nd g pu239f 1.6500000 74mae1 0
85 pu239f es re 0.6071579 10.0 1.0600000 10.0000000% 85 pu239t 1.0000000 74mee4 0
85 pu239f es cu 0.6126339 6.1 0.6140000 6.1000000% 0 0.0000000 77cro1 0
85 rb g pu239f es cu cm 0.6156272 1.0 0.6170000 1.0000000% 0 0.0000000 81mae2 0
85 pu239f es re 0.6161910 5.1 1.0000000 4.3000000% 85 kr g pu239f 0.2077000 74mee7 36
85 pu239f es re 0.6006715 1.9 1.0000000 1.2000000% 85 kr m pu239f 0.9877000 74mee7 36
85 rb g pu239f es re 0.6035706 1.4 0.3670000 1.0000000% 87 rb g pu239f 0.6330000 81mae2 36
85 kr g pu239f es cu 0.1237241 14.9 0.1240000 14.9000000% 0 0.0000000 73net2 0
85 kr g pu239f es re 0.1252115 4.4 0.2077000 0.0090000 85 pu239f 1.0000000 74mee5 36

85 kr g pu239f es re 0.1244708 4.5 0.2098000 4.3000000% 85 kr m pu239f 1.0000000 74mee7 36
85 kr m pu239f rc cu 0.6086428 5.0 0.6100000 5.0000000% 0 0.0000000 74bal1 0
85 kr m pu239f rc cu 0.5722123 5.7 0.6100000 0.0100000 88 kr g pu239f 1.3700000 74bal1 0
85 kr m pu239f rc cu 0.6598830 5.4 0.6400000 0.0200000 138 xe g pu239f 4.5600000 74bal1 0
85 kr m pu239f rc cu 0.6083297 5.4 0.5900000 0.0100000 138 xe g pu239f 4.5600000 74bal1 0
85 kr m pu239f es cu 0.5776120 14.9 0.5789000 14.9000000% 0 0.0000000 73net2 0
85 kr m pu239f es fc 0.5954329 1.3 0.9877000 0.0123000 85 pu239f 1.0000000 74mee5 36
85 kr m pu239f es re 0.6100232 5.1 1.0000000 4.3000000% 85 kr g pu239f 0.2098000 74mee7 36
85 kr m pu239f rc cu 0.4988875 12.0 0.5000000 0.0600000 0 0.0000000 77gud1 0
85 br g pu239f es cu 0.5750178 14.9 0.5763000 14.9000000% 0 0.0000000 73net2 0
85 se g pu239f cm cu x3 0.0000000 0.0 0.4267000 18.0000000% 0 0.0000000 73net2 0
85 as g pu239f cm cu x3 0.0000000 0.0 0.0351600 47.0000000% 0 0.0000000 73net2 0
85 pu241t cm cu 0.0000000 0.0 0.3900000 0.0000000 0 0.0000000 72sid1 0
85 pu241t cm cu 0.0000000 0.0 0.3920000 0.0090000 0 0.0000000 73wal1 0
85 rb g pu241t ms cu 0.3967033 2.0 0.3980000 0.0030000 0 0.0000000 77mae1 0
85 rb g pu241t ms cu 0.4003358 2.7 0.3870000 0.0100000 148 nd g pu241t 1.8616500 70lis1 0
85 pu241t es cu 0.4035042 4.3 1.0000000 3.2000000% 85 kr m pu241t 0.9982000 74mee5 0
85 pu241t es cu 0.4278118 3.2 0.0864000 3.2000000% 0 0.2013000 74mee5 0
85 rb g pu241t ms cu 0.3853177 3.2 0.0864000 3.2000000% 0 0.2235000 71lis1 0
85 pu241t cm cu 0.0000000 0.0 0.3890000 3.5000000% 0 0.0000000 77cro1 0
85 kr g pu241t ms cu 0.0880366 3.3 0.0864000 0.0028000 148 nd g pu241t 1.8900000 71lis1 0
85 kr g pu241t ms cu rp 0.0905512 4.9 0.2235000 0.0000000 no. relative values = 1 71lis1
85 kr m pu241t es cu 0.4269634 3.2 0.0864000 3.2000000% 0 0.2017000 74mee5 0
85 u233t cm cu 0.0000000 0.0 2.1900000 0.0000000 0 0.0000000 73lam1 0
85 u233t cm cu 0.0000000 0.0 2.1800000 0.0500000 0 0.0000000 73wal1 0
85 rb g u233t ms cu 2.2753215 4.2 2.5400000 4.0000000% 87 rb g u233t 4.4700000 61bid1 0
85 rb g u233t ms cu 2.2718340 1.3 1.0000000 0.0122000 85 kr g u233t 0.2296000 71lis1 0
85 u233t ms cu 2.1754321 2.0 2.1830000 0.0260000 0 0.0000000 80weh1 0
85 rb g u233t ms cu 2.2123038 2.0 2.2200000 0.0200000 0 0.0000000 70lis1 0
85 u233t cm cu x3 0.0000000 0.0 2.4500000 0.0000000 0 0.0000000 72sid1 0
85 u233t cm cu 0.0000000 0.0 2.2700000 4.3000000% 0 0.0000000 77cro1 0
85 rb g u233t sp fi ul 0.0000000 0.0 0.3600000 0.0760000 85 u233t 100.0000000 83qua1 0
85 rb g u233t sp in ul 0.0000000 0.0 0.0080000 0.0020000 0 0.0000000 88qua1 0
85 kr g u233t gc cu 0.4930847 0.3 0.4948000 0.0016000 0 0.0000000 62gra1 0
85 kr g u233t ms cu 0.5102250 2.3 0.5120000 0.0120000 0 0.0000000 71lis1 0
85 kr g u233t ms cu rp 0.5118662 4.0 0.2296000 0.0000000 no. relative values = 1 71lis1

85	kr g	u233t	ms	cu		0.5001014	2.1	0.5930000	0.0090000	86	kr g	u233t	3.3600000	54fle1	0
85	kr g	u233t	cm	cu		0.0000000	0.0	0.5070000	0.0000000	0			0.0000000	73lam1	0
85	kr g	u233t	cm	cu		0.0000000	0.0	0.4688000	32.1000000%	0			0.0000000	73net2	0
85	kr g	u233t	ms	in		0.0944714	17.9	0.0948000	0.0170000	0			0.0000000	80weh1	18
85	kr g	u233t	sp	fi	ul	0.0000000	0.0	3.1428000	1.4480000	85		u233t	100.0000000	83qua1	40
85	kr g	u233t	es	re		0.5136717	5.7	0.2407000	5.3000000%	85	kr m	u233t	1.0000000	74mee7	36
85	kr g	u233t	es	re		0.5154333	5.4	0.2312000	5.3000000%	85	rb g	u233t	1.0000000	74mee7	36
85	kr g	u233t	sp	in		0.0702257	46.0	0.0704700	0.0324000	0			0.0000000	88qua1	18
85	kr m	u233t	rc	cu	x4	0.0000000	0.0	2.3700000	7.0000000%	0			0.0000000	66gor1	36
85	kr m	u233t	rc	cu	x4	0.0000000	0.0	3.0500000	0.2800000	87	kr g	u233t	4.8500000	77gud1	0
85	kr m	u233t	es	re		2.0931673	1.5	0.9389000	0.0111000	85		u233t	1.0000000	74mee5	0
85	kr m	u233t	cm	cu		0.0000000	0.0	2.1860000	2.0000000%	0			0.0000000	73net2	0
85	kr m	u233t	ms	in		0.0221230	18.0	0.0222000	0.0040000	0			0.0000000	80weh1	18
85	kr m	u233t	es	re		2.1670673	5.3	1.0000000	5.3000000%	85	kr g	u233t	0.2407000	74mee7	36
85	kr m	u233t	sp	fi		0.0164350	46.1	0.7372000	0.3397000	85		u233t	100.0000000	83qua1	40
85	kr m	u233t	es	re		2.3210647	1.6	1.0000000	1.2000000%	85	rb g	u233t	0.9605000	74mee7	36
85	kr m	u233t	sp	in		0.0164727	46.0	0.0165300	0.0076000	0			0.0000000	88qua1	18
85	br g	u233t	cm	cu		0.0000000	0.0	2.1770000	2.0000000%	0			0.0000000	73net2	0
85	br g	u233t	ms	in		0.8201469	2.7	0.8230000	0.0220000	0			0.0000000	80weh1	0
85	br g	u233t	sp	fi		0.9684438	7.8	43.4400000	3.3790000	85		u233t	100.0000000	83qua1	0
85	br g	u233t	sp	in		0.9676338	8.3	0.9710000	0.0810000	0			0.0000000	88qua1	0
85	se g	u233t	cm	cu	x3	0.0000000	0.0	1.6340000	10.0000000%	0			0.0000000	73net2	0
85	se g	u233t	ms	in		0.5660309	2.2	1.1360000	0.0250000	0			0.0000000	80weh1	37
85	se g	u233t	sp	fi		0.5347174	7.5	47.9700000	3.5500000	85		u233t	100.0000000	83qua1	37
85	se g	u233t	sp	in		0.5341418	8.0	1.0720000	0.0860000	0			0.0000000	88qua1	37
85	se m	u233t	ms	in		0.5660309	2.2	1.1360000	0.0250000	0			0.0000000	80weh1	37
85	se m	u233t	sp	fi		0.5347174	7.5	47.9700000	3.5500000	85		u233t	100.0000000	83qua1	37
85	se m	u233t	sp	in		0.5341418	8.0	1.0720000	0.0860000	0			0.0000000	88qua1	37
85	as g	u233t	cm	cu		0.0000000	0.0	0.1413000	45.0000000%	0			0.0000000	73net2	0
85	as g	u233t	ms	in		0.1066291	10.3	0.1070000	0.0110000	0			0.0000000	80weh1	0
85	as g	u233t	sp	fi	ul	0.0000000	0.0	3.0300000	0.7290000	85		u233t	100.0000000	83qua1	0
85	as g	u233t	sp	in		0.0677643	23.5	0.0680000	0.0160000	0			0.0000000	88qua1	0
85	ge g	u233t	sp	fi	ul	0.0000000	0.0	1.3300000	0.2190000	85		u233t	100.0000000	83qua1	0
85	ge g	u233t	sp	in	ul	0.0000000	0.0	0.0300000	0.0050000	0			0.0000000	88qua1	0
85		th232f	es	cu	cm	4.0873417	30.0	4.0900000	0.0000000	0			0.0000000	72sid1	0
85		th232f	es	cu	cm	3.9974002	30.0	4.0000000	0.0000000	0			0.0000000	73lam1	0

85 th232f es cu cm 3.9274456 30.0 3.9300000 0.0000000 0 0.0000000 74lam1 0
85 th232f es cu 4.2372442 5.0 4.2400000 5.0000000% 0 0.0000000 74mee0 0
85 th232f ms re 3.9024991 2.5 1.3600000 0.0200000 132 te g th232f 1.0000000 68har1 0
85 th232f cm cu 0.0000000 0.0 4.5000000 0.0000000 0 0.0000000 65eng1 0
85 th232f cm cu 0.0000000 0.0 4.2200000 6.7000000% 0 0.0000000 77cro1 0
85 kr g th232f cm cu 0.0000000 0.0 0.8221000 32.1000000% 0 0.0000000 73net2 0
85 kr g th232f cm cu 0.0000000 0.0 0.8700000 0.0000000 0 0.0000000 60kat1 0
85 kr g th232f cm cu 0.0000000 0.0 0.8200000 0.0000000 0 0.0000000 73lam1 0
85 kr g th232f es cu cm 0.8294605 2.0 0.8300000 2.0000000% 0 0.0000000 75mee1 0
85 kr m th232f rc re 4.3935167 8.4 2.6800000 8.4000000% 140 ba g u235t 0.0000000 73bra1 7
85 kr m th232f ms cu 4.2572829 2.1 3.8800000 0.0200000 86 kr g th232f 6.0000000 57ken1 0
85 kr m th232f rc cu 4.1972702 8.3 4.2000000 0.3500000 0 0.0000000 77gud1 0
85 kr m th232f cm cu 0.0000000 0.0 4.0620000 4.0000000% 0 0.0000000 73net2 0
85 kr m th232f rc cu 4.4271207 5.0 4.4300000 0.1800000 0 0.0000000 86ric1 0
85 br g th232f cm cu 0.0000000 0.0 4.0620000 4.0000000% 0 0.0000000 73net2 0
85 br g th232f rc fi 0.1957303 10.7 4.7000000 0.5000000 85 th232f 100.0000000 90hen1 0
85 se g th232f cm cu x3 0.0000000 0.0 3.8770000 4.0000000% 0 0.0000000 73net2 0
85 as g th232f cm cu x3 0.0000000 0.0 1.3030000 22.0000000% 0 0.0000000 73net2 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

86 rb g u235t rc in 0.0000112 60.0 0.0000112 0.0000000 0 0.0000000 49gle2 18
86 rb g u235t rc in ul 0.0000000 0.0 0.0001800 0.0001700 140 ba g u235t 6.1000000 51fel2 0
86 rb g u235t rc in 0.0000090 30.0 0.0000090 0.0000000 0 0.0000000 55coo1 18
86 rb g u235t rc in 0.0000108 30.0 0.0000108 0.0000000 0 0.0000000 60gru1 18
86 rb g u235t rc in x4 0.0000000 0.0 0.0000210 0.0000020 0 0.0000000 75fly1 0
86 rb g u235t ms in 0.0000089 5.2 0.0000086 0.0000005 87 rb g u235t 2.5000000 66mch1 40
86 rb g u235t cm in 0.0000000 0.0 0.0002030 12.0000000% 0 10.0000000 88wah1 0
86 rb m u235t rc in x6 0.0000000 0.0 0.0000160 0.0000000 0 0.0000000 55coo1 18
86 rb m u235t rc in x6 0.0000000 0.0 0.0000192 0.0000000 0 0.0000000 60gru1 18
86 rb m u235t rc in x6 0.0000000 0.0 0.0000198 0.0000000 0 0.0000000 49gle2 18
86 rb m u235t ms in x6 0.0000000 0.0 0.0000154 0.0000008 87 rb g u235t 2.5000000 66mch1 40
86 kr g u235t ms re 1.9927932 1.6 52.3800000 0.0000000 83 kr g u235t 14.1000000 55wan1 0
86 kr g u235t ms re 1.9488627 1.1 3.6330000 1.0000000% 83 kr g u235t 1.0000000 63mch1 0
86 u235t cm cu 0.0000000 0.0 2.0300000 0.0000000 0 0.0000000 72sid1 0

86 u235t cm cu 0.0000000 0.0 1.9700000 0.0000000 0 0.0000000 73lam1 0
86 u235t cm cu 0.0000000 0.0 1.9600000 0.0500000 0 0.0000000 73wal1 0
86 u235t ms cu 1.9907159 2.0 1.9900000 0.0230000 0 0.0000000 76dii1 0
86 kr g u235t ms fi 0.1081229 18.2 5.5000000 1.0000000 86 u235t 100.0000000 76sie1 0
86 kr g u235t ms cu 1.9132183 1.6 2.0900000 0.0000000 83 kr g u235t 0.5860000 49tho1 0
86 kr g u235t ms cu rp 1.9563309 3.2 2.0700000 0.0000000 no. relative values = 1 56bla1
86 u235t sp cu 1.9703174 5.0 1.9300000 0.0500000 0 0.9798900 76woh2 0
86 u235t cm cu 0.0000000 0.0 1.9500000 1.6000000% 0 0.0000000 77cro1 0
86 kr g u235t ms re 2.0238624 2.0 0.2570000 0.0050000 134 xe g u235t 1.0000000 56bla1 0
86 kr g u235t sp fi 0.1140206 8.6 5.8000000 0.5000000 86 u235t 100.0000000 78str1 0
86 kr g u235t cm cu x3 0.0000000 0.0 2.0900000 0.0000000 131 xe g u235t 2.8000000 51cor2 0
86 kr g u235t ms re 1.9646247 0.6 0.1068000 0.0005000 148 nd g u235t 0.0910100 76mae1 0
86 kr g u235t ms fi su 0.0000000 0.0 5.8000000 1.5000000 86 u235t 100.0000000 75cle2 0
86 kr g u235t ms in 0.1310471 13.7 0.1310000 0.0180000 0 0.0000000 79cle1 0
86 kr g u235t ms cu 1.9827130 2.0 1.9820000 0.0210000 0 0.0000000 78mae1 0
86 kr g u235t ms cu 1.9597047 2.0 1.9590000 0.0200000 0 0.0000000 78mae1 0
86 kr g u235t ms cu 1.9957177 2.0 1.9950000 0.0210000 0 0.0000000 78mae1 0
86 kr g u235t ms cu 1.9406979 2.0 1.9400000 0.0200000 0 0.0000000 70lis1 0
86 u235t es re 1.9320696 2.2 1.0000000 2.0000000% 86 u235f 1.0080000 74mee4 0
86 kr g u235t ms cu cm 1.9797119 6.0 1.9790000 0.0000000 0 0.0000000 80mae3 0
86 kr g u235t ms fi su 0.0000000 0.0 5.3000000 0.9000000 86 u235t 100.0000000 76wol1 0
86 kr g u235t sp fi 0.1336793 13.2 6.8000000 0.9000000 86 u235t 100.0000000 80lan1 0
86 kr g u235t cm in 0.0000000 0.0 0.1172000 19.0000000% 0 1.0000000 88wah1 0
86 kr g u235t ms cu 2.0207267 5.0 2.0200000 5.0000000% 0 0.0000000 55pet2 36
86 br g u235t ms fi 0.2880002 5.1 29.3000000 1.5000000 86 u235t 100.0000000 76sie1 37
86 br g u235t sp re 1.4777194 5.7 0.8300000 0.0200000 88 br g u235t 1.0000000 75ree1 0
86 br g u235t sp in 0.2678463 47.1 0.5355000 0.2520000 0 0.0000000 75ree1 37
86 br g u235t sp fi 0.3400958 5.0 34.6000000 1.2000000 86 u235t 100.0000000 78str1 37
86 br g u235t ms fi su 0.0000000 0.0 20.3000000 2.9000000 86 u235t 100.0000000 75cle2 37
86 br g u235t ms in 0.3066103 7.5 0.6130000 0.0460000 0 0.0000000 79cle1 37
86 br g u235t ms fi su 0.0000000 0.0 30.4000000 1.5000000 86 u235t 100.0000000 76wol1 37
86 br g u235t sp fi 0.3106077 6.0 31.6000000 1.9000000 86 u235t 100.0000000 80lan1 37
86 br g u235t rc in 0.3251169 6.2 0.6500000 0.0400000 0 0.0000000 81mar1 37
86 br g u235t cm in 0.0000000 0.0 0.3247000 9.0000000% 0 1.0000000 88wah1 0
86 br g u235t rc in 0.2951061 16.9 0.5900000 0.1000000 0 0.0000000 88lee1 37
86 br g u235t sp in 0.3701331 9.5 0.7400000 0.0700000 0 0.0000000 90rud1 37

86 br g u235t sp cu 1.7606331 8.5 1.7600000 0.1500000 0 0.0000000 90rud1 0
86 br m u235t ms fi 0.2880002 5.1 29.3000000 1.5000000 86 u235t 100.0000000 76sie1 37
86 br m u235t sp in 0.2678463 47.1 0.5355000 0.2520000 0 0.0000000 75ree1 37
86 br m u235t sp fi 0.3400958 5.0 34.6000000 1.2000000 86 u235t 100.0000000 78str1 37
86 br m u235t ms fi su 0.0000000 0.0 20.3000000 2.9000000 86 u235t 100.0000000 75cle2 37
86 br m u235t ms in 0.3066103 7.5 0.6130000 0.0460000 0 0.0000000 79cle1 37
86 br m u235t ms fi su 0.0000000 0.0 30.4000000 1.5000000 86 u235t 100.0000000 76wol1 37
86 br m u235t rc in 0.3251169 6.2 0.6500000 0.0400000 0 0.0000000 81mar1 37
86 br m u235t sp fi 0.3106077 6.0 31.6000000 1.9000000 86 u235t 100.0000000 80lan1 37
86 br m u235t cm in 0.0000000 0.0 0.3247000 9.0000000% 0 1.0000000 88wah1 0
86 br m u235t rc in 0.2951061 16.9 0.5900000 0.1000000 0 0.0000000 88lee1 37
86 br m u235t sp in 0.3701331 9.5 0.7400000 0.0700000 0 0.0000000 90rud1 37
86 se g u235t ms fi 1.1873864 3.3 60.4000000 2.0000000 86 u235t 100.0000000 76sie1 0
86 se g u235t sp fi 1.1402055 5.0 58.0000000 1.3000000 86 u235t 100.0000000 78str1 0
86 se g u235t ms fi su 0.0000000 0.0 72.5000000 4.2000000 86 u235t 100.0000000 75cle2 0
86 se g u235t ms in 1.1754227 4.4 1.1750000 0.0520000 0 0.0000000 79cle1 0
86 se g u235t ms fi su 0.0000000 0.0 60.0000000 2.0000000 86 u235t 100.0000000 76wol1 0
86 se g u235t rc cu 1.2604533 5.0 1.2600000 0.0400000 0 0.0000000 81mar1 0
86 se g u235t sp fi 1.1913182 5.0 60.6000000 1.9000000 86 u235t 100.0000000 80lan1 0
86 se g u235t rc in x1 0.0000000 0.0 0.7200000 30.0000000% 0 0.0000000 82ren1 0
86 se g u235t cm in 0.0000000 0.0 1.1850000 4.0000000% 0 1.0000000 88wah1 0
86 se g u235t sp in 0.7402662 18.9 0.7400000 0.1400000 0 0.0000000 90rud1 0
86 as g u235t sp fi 0.0314539 25.0 1.6000000 0.4000000 86 u235t 100.0000000 78str1 0
86 as g u235t es cu ul 0.0000000 0.0 0.1500000 0.1500000 0 0.0000000 73kra1 0
86 as g u235t ms fi ul 0.0000000 0.0 1.4000000 1.2000000 86 u235t 100.0000000 75cle2 0
86 as g u235t ms in 0.0200072 50.0 0.0200000 0.0100000 0 0.0000000 79cle1 0
86 as g u235t ms fi su 0.0000000 0.0 4.3000000 0.9000000 86 u235t 100.0000000 76wol1 0
86 as g u235t sp fi 0.0196587 50.0 1.0000000 0.5000000 86 u235t 100.0000000 80lan1 0
86 as g u235t cm in 0.0000000 0.0 0.0390100 66.0000000% 0 1.0000000 88wah1 0
86 as g u235t ms fi x4 0.0000000 0.0 4.8000000 1.0000000 86 u235t 100.0000000 76sie1 0
86 ge g u235t sp cu 0.8703130 13.8 0.8700000 0.1200000 0 0.0000000 90rud1 0
86 kr g u235f ms re rp 1.8386961 11.2 53.5100000 0.0000000 no. relative values = 2 70ebe1
86 kr g u235f ms re x4 0.0000000 0.0 2.2400000 3.0000000% 148 nd g u235f 1.7500000 72kry1 0
86 u235f es cu cm 1.9147334 30.0 1.9300000 0.0000000 0 0.0000000 72sid1 0
86 u235f cm cu 0.0000000 0.0 1.9600000 4.5000000% 0 0.0000000 77cro1 0
86 kr g u235f ms cu 1.9742588 2.0 1.9900000 0.0110000 0 0.0000000 80mae1 0

86 kr g u235f ms cu 1.8418982 2.6 1.9300000 0.0500000 148 nd g u235f 1.7500000 70lis1 0
86 u235f es re 1.9651647 2.1 1.0080000 2.0000000% 86 u235t 1.0000000 74mee4 0
86 kr g u235f ms cu cm 1.9673142 6.0 1.9830000 0.0000000 0 0.0000000 80mae3 0
86 kr g u235f ms cu 1.9573933 2.0 1.9730000 0.0120000 0 0.0000000 81mae1 0
86 kr g u235f cm cu 0.0000000 0.0 1.9730000 0.0120000 0 0.0000000 81mae1 0
86 kr g u235f ms cu 1.9484675 1.1 1.9600000 0.0200000 148 nd g u235f 1.6800000 74mae1 0
86 kr g u235f rc in 0.1686553 29.4 0.1700000 0.0500000 0 0.0000000 81mar1 0
86 br g u235f rc in sm 0.0000000 0.0 0.8400000 0.0300000 0 0.0000000 81mar1 0
86 se g u235f rc cu x1 0.0000000 0.0 0.9200000 0.0300000 0 0.0000000 81mar1 0
86 rb g u235he rc fi cm 0.0001615 32.9 0.0000920 0.0000220 86 u235he 1.0000000 72net2 40
86 rb m u235he cm fi x6 0.0000000 0.0 0.0003280 0.0001080 86 u235he 1.0000000 72net2 40
86 kr g u235he cm cu x3 0.0000000 0.0 2.5030000 0.0000000 0 0.0000000 63wea1 0
86 u235he es cu 1.8139033 20.0 1.8900000 20.0000000% 0 0.0000000 77cro1 0
86 kr g u238f es cu 1.2274399 30.0 1.4400000 0.0000000 86 kr g u235t 2.3000000 55wan1 0
86 u238f cm cu 0.0000000 0.0 1.3800000 0.0000000 0 0.0000000 72sid1 0
86 kr g u238f cm cu 0.0000000 0.0 1.3800000 0.0000000 0 0.0000000 60kat1 0
86 u238f cm cu 0.0000000 0.0 1.2800000 5.0000000% 0 0.0000000 77cro1 0
86 kr g u238f ms cu 1.2939519 2.6 1.2970000 0.0340000 0 0.0000000 81mae1 0
86 kr g u238f cm cu 0.0000000 0.0 1.2970000 0.0340000 0 0.0000000 81mae1 0
86 kr g u238f ms cu 1.2969277 1.1 1.2800000 0.0100000 148 nd g u238f 2.0800000 74mae1 0
86 rb g u238he rc fi 0.0000133 40.1 0.0000085 40.0000000% 86 u238he 1.0000000 73net1 0
86 rb m u238he rc fi 0.0000650 40.1 0.0000415 40.0000000% 86 u238he 1.0000000 73net1 0
86 kr g u238he ms re rp 1.5716731 2.3 1.0000000 0.0000000 no. relative values = 3 68gor1
86 u238he cm cu su 0.0000000 0.0 1.7000000 0.0800000 0 0.0000000 73dar1 0
86 u238he es cu 1.5369204 15.0 1.5410000 15.0000000% 0 0.0000000 74mee9 0
86 u238he cm cu x3 0.0000000 0.0 1.7600000 6.0000000% 0 0.0000000 77cro1 0
86 rb g pu239t sp fi x1 0.0000000 0.0 0.0030000 33.0000000% 86 pu239t 1.0000000 84sch1 36
86 rb g pu239t rc in x1 0.0000000 0.0 0.0000396 0.0000000 0 0.0000000 55coo1 18
86 rb g pu239t es in 0.0001842 11.0 0.0001840 11.0000000% 0 0.0000000 87wah1 0
86 rb g pu239t rc in x1 0.0000000 0.0 0.0000230 0.0000000 0 0.0000000 60gru1 0
86 rb g pu239t cm in 0.0000000 0.0 0.0001837 11.0000000% 0 1.0000000 88wah1 0
86 rb g pu239t rc in 0.0001902 10.5 0.0001900 0.0000200 0 0.0000000 75fly1 0
86 rb m pu239t rc in x6 0.0000000 0.0 0.0000704 0.0000000 0 0.0000000 55coo1 18
86 pu239t cm cu 0.0000000 0.0 0.7500000 0.0000000 0 0.0000000 72sid1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special

nuclide	material	tech.	type	value	err.	value	nuclide	material	value	no.	treatment
86	pu239t	cm	cu	0.0000000	0.0	0.7640000	0.0000000	0	0.0000000	73lam1	0
86	pu239t	cm	cu	0.0000000	0.0	0.7580000	0.0170000	0	0.0000000	73wal1	0
86 kr g	pu239t	ms	cu	0.7507145	2.7	0.7500000	0.0200000	0	0.0000000	59fri1	0
86	pu239t	cm	cu	0.0000000	0.0	0.7700000	5.0000000%	0	0.0000000	77cro1	0
86 kr g	pu239t	ms	cu	0.7637269	2.0	0.7630000	0.0080000	0	0.0000000	79mae2	0
86 kr g	pu239t	ms	re	0.7659492	0.7	0.0561900	0.0002200	148 nd g	pu239t	0.1205800	76mae1 0
86 kr g	pu239t	ms	cu	0.7707336	2.1	0.7700000	0.0160000	0	0.0000000	70lis1	0
86 kr g	pu239t	es	re	0.7667848	1.4	0.4960000	1.0000000%	84 kr g	pu239t	0.3110000	81mae2 36
86 kr g	pu239t	es	cu	cm 0.7657288	1.0	0.7650000	1.0000000%	0	0.0000000	81mae2	0
86 kr g	pu239t	sp	fi	0.0720740	21.0	0.0940000	21.0000000%	86	pu239t	1.0000000	84sch1 36
86 kr g	pu239t	cm	in	0.0000000	0.0	0.0733800	21.0000000%	0	1.0000000	88wah1	0
86 br g	pu239t	sp	fi	0.1932197	5.0	0.5040000	5.0000000%	86	pu239t	1.0000000	84sch1 37
86 br g	pu239t	cm	in	0.0000000	0.0	0.1851000	17.0000000%	0	1.0000000	88wah1	0
86 br m	pu239t	sp	fi	0.1932197	5.0	0.5040000	5.0000000%	86	pu239t	1.0000000	84sch1 37
86 br m	pu239t	cm	in	0.0000000	0.0	0.1851000	17.0000000%	0	1.0000000	88wah1	0
86 se g	pu239t	sp	fi	0.2997972	5.0	0.3910000	5.0000000%	86	pu239t	1.0000000	84sch1 36
86 se g	pu239t	cm	in	0.0000000	0.0	0.2839000	5.0000000%	0	1.0000000	88wah1	0
86 as g	pu239t	sp	fi	0.0061340	99.9	0.0080000	0.0200000	86	pu239t	1.0000000	84sch1 36
86 as g	pu239t	cm	in	0.0000000	0.0	0.0058880	90.0000000%	0	1.0000000	88wah1	0
86	pu239f	es	cu	cm 0.8959952	30.0	0.9000000	0.0000000	0	0.0000000	72sid1	0
86	pu239f	cm	cu	0.0000000	0.0	0.7910000	6.3000000%	0	0.0000000	77cro1	0
86 kr g	pu239f	ms	cu	0.7840203	0.8	0.7840000	0.0060000	148 nd g	pu239f	1.6540000	77mae1 0
86 kr g	pu239f	ms	cu	0.7536315	2.0	0.7570000	0.0080000	0	0.0000000	77mae1	0
86 kr g	pu239f	ms	cu	0.8432750	2.3	0.8820000	0.0200000	148 nd g	pu239f	1.7300000	70lis1 0
86 kr g	pu239f	ms	cu	0.7849365	0.9	0.4923000	0.0007000	83 kr g	pu239f	0.1970000	80mae4 0
86 kr g	pu239f	ms	cu	su 0.0000000	0.0	0.7770000	0.0040000	148 nd g	pu239f	1.6500000	74mae1 0
86	pu239f	es	re	0.8007386	10.0	1.0500000	10.0000000%	86	pu239t	1.0000000	74mee4 0
86 kr g	pu239f	es	cu	cm 0.8014179	1.0	0.8050000	1.0000000%	0	0.0000000	81mae2	0
86 kr g	pu239f	es	re	0.7853920	1.4	0.4920000	1.0000000%	84 kr g	pu239f	0.3110000	81mae2 36
86	pu241t	cm	cu	0.0000000	0.0	0.6000000	0.0000000	0	0.0000000	72sid1	0
86	pu241t	cm	cu	0.0000000	0.0	0.6010000	5.0000000%	0	0.0000000	77cro1	0
86	pu241t	cm	cu	0.0000000	0.0	0.6080000	0.0140000	0	0.0000000	73wal1	0
86 kr g	pu241t	ms	cu	0.5833000	2.0	0.5860000	0.0050000	0	0.0000000	77mae1	0
86 kr g	pu241t	ms	cu	0.6208684	3.1	0.6010000	0.0180000	148 nd g	pu241t	1.8616500	70lis1 0

86 sr g u233t ms re ul 0.0000000 0.0 0.0080000 0.0000000 88 sr g u233t 1.0000000 61gor1 0
86 rb g u233t rc fi x1 0.0000000 0.0 0.0000259 0.0000026 86 u233t 1.0000000 60gru1 40
86 rb g u233t rc in 0.0009155 9.8 0.0009200 0.0000900 0 0.0000000 75fly1 0
86 rb g u233t sp in ul 0.0000000 0.0 0.0280000 0.0070000 0 0.0000000 88qua1 0
86 rb m u233t rc fi x6 0.0000000 0.0 0.0000461 0.0000046 86 u233t 1.0000000 60gru1 40
86 u233t cm cu 0.0000000 0.0 2.8600000 0.0000000 0 0.0000000 73lam1 0
86 u233t cm cu 0.0000000 0.0 2.8000000 0.0600000 0 0.0000000 73wal1 0
86 kr g u233t ms cu rp 2.8196860 9.0 3.3000000 0.0000000 no. relative values = 2 61bid1
86 u233t cm cu 0.0000000 0.0 2.9300000 8.5000000% 0 0.0000000 77cro1 0
86 u233t cm cu x3 0.0000000 0.0 3.3200000 0.0000000 0 0.0000000 72sid1 0
86 kr g u233t ms cu rp 2.8254932 2.3 3.3600000 0.0000000 no. relative values = 2 54fle1
86 u233t ms cu 2.8151302 2.0 2.8290000 0.0300000 0 0.0000000 80weh1 0
86 kr g u233t ms in 0.5672055 3.2 0.5700000 0.0180000 0 0.0000000 80weh1 0
86 kr g u233t ms cu 2.8857821 2.0 2.9000000 0.0300000 0 0.0000000 70lis1 0
86 kr g u233t sp fi 0.5910916 8.6 20.8900000 1.7730000 86 u233t 100.0000000 83qua1 0
86 kr g u233t sp in 0.6677103 9.1 0.6710000 0.0610000 0 0.0000000 88qua1 0
86 br g u233t ms in 0.6935828 2.0 1.3940000 0.0270000 0 0.0000000 80weh1 37
86 br g u233t sp fi 0.7001705 5.7 49.4900000 2.7500000 86 u233t 100.0000000 83qua1 37
86 br g u233t sp in 0.7906048 6.4 1.5890000 0.1010000 0 0.0000000 88qua1 37
86 br m u233t ms in 0.6935828 2.0 1.3940000 0.0270000 0 0.0000000 80weh1 37
86 br m u233t sp fi 0.7001705 5.7 49.4900000 2.7500000 86 u233t 100.0000000 83qua1 37
86 br m u233t sp in 0.7906048 6.4 1.5890000 0.1010000 0 0.0000000 88qua1 37
86 se g u233t ms in 0.8100092 2.8 0.8140000 0.0230000 0 0.0000000 80weh1 0
86 se g u233t sp fi 0.7959506 9.6 28.1300000 2.6770000 86 u233t 100.0000000 83qua1 0
86 se g u233t sp in 0.8985729 10.0 0.9030000 0.0900000 0 0.0000000 88qua1 0
86 as g u233t ms in 0.0497549 18.0 0.0500000 0.0090000 0 0.0000000 80weh1 0
86 as g u233t sp fi ul 0.0000000 0.0 0.6200000 0.2070000 86 u233t 100.0000000 83qua1 0
86 as g u233t sp in 0.0199019 35.0 0.0200000 0.0070000 0 0.0000000 88qua1 0
86 rb g th232f rc fi ul 0.0000000 0.0 0.0000480 0.0000480 86 th232f 1.0000000 57ale1 40
86 rb g th232f rc cu ul 0.0000000 0.0 0.0001800 0.0000000 89 sr g th232f 1.0000000 57ale1 0
86 rb g th232f rc in ul 0.0000000 0.0 0.0003800 99.0000000% 0 0.0000000 82ert1 0
86 rb m th232f rc fi x6 0.0000000 0.0 0.0001020 0.0001020 86 th232f 1.0000000 57ale1 40
86 kr g th232f ms cu rp 6.5292133 3.7 6.0000000 0.0000000 no. relative values = 1 57ken1
86 th232f es cu cm 5.9944849 30.0 6.0000000 0.0000000 0 0.0000000 65eng1 0
86 th232f es cu cm 6.3041999 30.0 6.3100000 0.0000000 0 0.0000000 72sid1 0
86 th232f es cu cm 5.6547974 30.0 5.6600000 0.0000000 0 0.0000000 73lam1 0

86 th232f cm cu 0.0000000 0.0 5.9700000 0.0000000 0 0.0000000 74lam1 0
86 kr g th232f cm cu 0.0000000 0.0 6.0000000 0.0000000 0 0.0000000 60kat1 0
86 th232f cm cu 0.0000000 0.0 6.3700000 10.0000000% 0 0.0000000 77cro1 0
86 th232f es cu 6.7138231 5.0 6.7200000 5.0000000% 0 0.0000000 74mee0 0
86 kr g th232f ms cu rp 6.6106745 2.2 6.0000000 0.0000000 no. relative values = 1 57ken1
86 kr g th232f ms re rp 6.5497107 3.2 1.0000000 0.0000000 no. relative values = 2 68har1
86 br g th232f rc fi 0.6055121 21.8 18.4000000 4.0000000 86 th232f 100.0000000 90hen1 37
86 br m th232f rc fi 0.6055121 21.8 18.4000000 4.0000000 86 th232f 100.0000000 90hen1 37
87 u235t cm cu 0.0000000 0.0 2.5400000 0.0000000 0 0.0000000 72sid1 0
87 u235t cm cu 0.0000000 0.0 2.5600000 0.0000000 0 0.0000000 73lam1 0
87 u235t cm cu 0.0000000 0.0 2.5300000 0.0600000 0 0.0000000 73wal1 0
87 u235t cm cu 0.0000000 0.0 2.5400000 4.1000000% 0 0.0000000 77cro1 0
87 u235t es re 2.5704884 2.2 1.0000000 2.0000000% 87 u235f 0.9900000 74mee4 0
87 rb g u235t ms cu 2.4908958 2.0 2.4900000 2.0000000% 0 0.0000000 55pet2 0
87 rb g u235t ms fi ul 0.0000000 0.0 1.6000000 1.0000000 87 u235t 100.0000000 76sie1 0
87 rb g u235t sp fi ul 0.0000000 0.0 1.6000000 0.5000000 87 u235t 100.0000000 78str1 0
87 rb g u235t ms re 2.5735112 0.6 0.1399000 0.0003000 148 nd g u235t 0.0910100 76mae1 0
87 rb g u235t ms fi ul 0.0000000 0.0 1.6000000 0.8000000 87 u235t 100.0000000 75cle2 0
87 rb g u235t ms in ul 0.0000000 0.0 0.0430000 0.0160000 0 0.0000000 79cle1 0
87 rb g u235t ms cu nr 2.5384333 0.6 2.5400000 0.0100000 85 rb g u235t 1.3200000 70lis1 0
87 rb g u235t ms cu 2.5819285 2.0 2.5810000 0.0190000 0 0.0000000 78mae1 0
87 rb g u235t ms cu 2.5799278 2.0 2.5790000 0.0190000 0 0.0000000 78mae1 0
87 rb g u235t ms cu 2.5999350 2.0 2.5990000 0.0190000 0 0.0000000 78mae1 0
87 rb g u235t ms cu 2.6009353 2.0 2.6000000 0.0290000 0 0.0000000 76dii1 0
87 rb g u235t sp cu 2.5186844 5.0 2.4500000 0.0600000 0 0.9730800 76woh2 0
87 rb g u235t ms cu cm 2.5869303 6.0 2.5860000 0.0000000 0 0.0000000 80mae3 0
87 rb g u235t ms fi su 0.0000000 0.0 1.6000000 1.0000000 87 u235t 100.0000000 76wol1 0
87 rb g u235t sp fi ul 0.0000000 0.0 1.8000000 0.6000000 87 u235t 100.0000000 80lan1 0
87 rb g u235t ms cu x4 0.0000000 0.0 2.7500000 7.5000000% 0 0.0000000 53wil1 36
87 kr g u235t cm cu 0.0000000 0.0 2.5520000 2.0000000% 0 0.0000000 73net2 0
87 kr g u235t cm fi 0.0000000 0.0 0.1520000 0.0130000 87 u235t 1.0000000 73ami1 0
87 kr g u235t cm in 0.0000000 0.0 0.4955000 6.0000000% 0 1.0000000 88wah1 0
87 kr g u235t ms fi 0.4405404 5.8 17.2000000 1.0000000 87 u235t 100.0000000 76sie1 0
87 kr g u235t ms fi su 0.0000000 0.0 17.5000000 1.0000000 87 u235t 100.0000000 76wol1 0
87 kr g u235t ms fi su 0.0000000 0.0 20.0000000 2.3000000 87 u235t 100.0000000 75cle2 0
87 kr g u235t ms in 0.5331917 7.7 0.5330000 0.0410000 0 0.0000000 79cle1 0

87 kr g u235t rc cu 2.4208706 5.8 2.4200000 0.1400000 0 0.0000000 76thi1 0
87 kr g u235t rc cu 2.4808922 6.2 2.4800000 6.2000000% 0 0.0000000 80ram1 0
87 kr g u235t rc cu rp 2.5397982 13.1 2.5300000 0.0000000 no. relative values = 2 74bla1
87 kr g u235t rc cu x4 0.0000000 0.0 2.2900000 0.1800000 0 0.0000000 71mcl1 0
87 kr g u235t rc cu x4 0.0000000 0.0 3.0200000 20.0000000% 0 0.0000000 77gud1 36
87 kr g u235t rc cu x4 0.0000000 0.0 3.3900000 0.4200000 85 kr m u235t 1.3300000 81hsu1 0
87 kr g u235t rc in x4 0.0000000 0.0 0.3600000 0.0300000 0 0.0000000 72ehr1 0
87 kr g u235t rc re 2.4877314 21.5 0.7000000 0.1500000 88 kr g u235t 1.0000000 49koc1 0
87 kr g u235t sp cu 2.5846560 14.2 2.5600000 0.3600000 88 kr g u235t 3.5200000 85rud1 0
87 kr g u235t sp cu 2.6209425 5.0 2.6200000 0.1000000 0 0.0000000 75bri1 0
87 kr g u235t sp fi 0.4738371 5.0 18.5000000 0.9000000 87 u235t 100.0000000 78str1 0
87 kr g u235t sp fi x4 0.0000000 0.0 21.7000000 1.4000000 87 u235t 100.0000000 80lan1 0
87 kr g u235t sp in 0.5401943 7.4 0.5400000 0.0400000 0 0.0000000 75bri1 0
87 kr g u235t sp in su 0.0000000 0.0 0.1600000 0.0150000 91 kr g u235t 1.0000000 69ehr1 14
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

87 br g u235t cm cu 0.0000000 0.0 2.1880000 6.0000000% 0 0.0000000 73net2 0
87 br g u235t cm in 0.0000000 0.0 1.4870000 3.0000000% 0 1.0000000 88wah1 0
87 br g u235t es fc x3 0.0000000 0.0 0.9500000 0.0400000 87 u235t 1.0000000 71gri1 0
87 br g u235t es in 1.1904281 3.4 1.1900000 0.0400000 0 0.0000000 69bra2 0
87 br g u235t ms fi 1.3164988 3.5 51.4000000 1.8000000 87 u235t 100.0000000 76sie1 0
87 br g u235t ms fi su 0.0000000 0.0 51.5000000 1.8000000 87 u235t 100.0000000 76wol1 0
87 br g u235t ms fi su 0.0000000 0.0 55.5000000 2.4000000 87 u235t 100.0000000 75cle2 0
87 br g u235t ms in 1.2734580 3.9 1.2730000 0.0500000 0 0.0000000 79cle1 0
87 br g u235t rc cu 2.0907519 19.6 2.0900000 0.4100000 0 0.0000000 88lee1 0
87 br g u235t rc cu x4 0.0000000 0.0 2.6900000 0.0000000 0 0.0000000 60sat1 0
87 br g u235t rc cu x4 0.0000000 0.0 3.1300000 0.2000000 139 ba g u235t 6.3000000 53ste1 0
87 br g u235t rc fc x4 0.0000000 0.0 0.9500000 0.0400000 87 u235t 1.0000000 73kra2 0
87 br g u235t rc fi 1.1474542 14.3 44.8000000 6.4000000 87 u235t 100.0000000 78kra1 0
87 br g u235t rc fi su 0.0000000 0.0 0.4300000 0.1100000 87 u235t 1.0000000 73kra3 0
87 br g u235t rc fi su 0.0000000 0.0 0.4220000 0.1080000 87 u235t 1.0000000 77kra1 0
87 br g u235t rc in 1.2004317 25.0 1.2000000 0.3000000 0 0.0000000 66sil1 0
87 br g u235t rc in x4 0.0000000 0.0 0.3200000 0.0200000 88 br g u235t 1.0000000 66sil1 0
87 br g u235t sp cu 2.1907878 5.5 2.1900000 0.1200000 0 0.0000000 90rud1 0

87	br g	u235t	sp	cu		2.0807483	5.0	2.0800000	0.1000000	0			0.0000000	75bri1	0
87	br g	u235t	sp	fi		1.3241826	5.0	51.7000000	1.6000000	87	u235t		100.0000000	80lan1	0
87	br g	u235t	sp	fi		1.4445629	5.0	56.4000000	0.9000000	87	u235t		100.0000000	78str1	0
87	br g	u235t	sp	in		1.4205108	5.0	1.4200000	0.0400000	0			0.0000000	90rud1	0
87	br g	u235t	sp	in		1.1904281	16.8	1.1900000	0.2000000	0			0.0000000	75bri1	0
87	br g	u235t	sp	in		1.7331233	23.6	1.7325000	0.4095000	0			0.0000000	75ree1	0
87	br g	u235t	sp	re	x4	0.0000000	0.0	0.9500000	0.0200000	88	br g	u235t	1.0000000	75ree1	0
87	se g	u235t	rc	cu	su	0.0000000	0.0	1.1700000	0.2500000	0			0.0000000	68tom1	0
87	se g	u235t	es	fc		1.2294152	20.8	0.4800000	0.1000000	87	u235t		1.0000000	68tom1	0
87	se g	u235t	rc	fc		1.0501255	17.1	0.4100000	0.0700000	87	u235t		1.0000000	70kra1	0
87	se g	u235t	rc	cu		0.6502338	20.0	0.6500000	0.1300000	0			0.0000000	70mar1	0
87	se g	u235t	rc	fc		1.0501255	17.1	0.4100000	0.0700000	87	u235t		1.0000000	71kra2	0
87	se g	u235t	rc	cu		0.6602374	19.7	0.6600000	0.1300000	0			0.0000000	71tom1	0
87	se g	u235t	cm	cu		0.0000000	0.0	0.9204000	21.0000000%	0			0.0000000	73net2	0
87	se g	u235t	ms	fi		0.7120363	4.3	27.8000000	1.2000000	87	u235t		100.0000000	76sie1	0
87	se g	u235t	es	fc		1.0424416	17.5	0.4070000	0.0710000	87	u235t		1.0000000	73kra2	0
87	se g	u235t	rc	fc		1.1679444	13.8	0.4560000	0.0630000	87	u235t		1.0000000	71gri1	0
87	se g	u235t	sp	fi		0.6019012	5.0	23.5000000	0.8000000	87	u235t		100.0000000	78str1	0
87	se g	u235t	ms	fi	su	0.0000000	0.0	22.9000000	2.3000000	87	u235t		100.0000000	75cle2	0
87	se g	u235t	ms	in		0.6092191	6.2	0.6090000	0.0380000	0			0.0000000	79cle1	0
87	se g	u235t	ms	fi	su	0.0000000	0.0	27.5000000	1.2000000	87	u235t		100.0000000	76wol1	0
87	se g	u235t	sp	fi		0.6351979	5.3	24.8000000	1.3000000	87	u235t		100.0000000	80lan1	0
87	se g	u235t	rc	in	x1	0.0000000	0.0	0.0668000	30.0000000%	0			0.0000000	82ren1	0
87	se g	u235t	cm	in		0.0000000	0.0	0.6244000	5.0000000%	0			1.0000000	88wah1	0
87	se g	u235t	sp	in		0.9703490	19.6	0.9700000	0.1900000	0			0.0000000	90rud1	0
87	se g	u235t	sp	cu		1.0303705	15.5	1.0300000	0.1600000	0			0.0000000	90rud1	0
87	as g	u235t	rc	fc		0.0640320	60.0	0.0250000	0.0150000	87	u235t		1.0000000	71kra2	0
87	as g	u235t	rc	fc		0.0461031	50.0	1.8000000	0.9000000	87	u235t		100.0000000	73kra1	0
87	as g	u235t	cm	cu		0.0000000	0.0	0.0193500	90.0000000%	0			0.0000000	73net2	0
87	as g	u235t	ms	fi		0.0512256	50.0	2.0000000	1.0000000	87	u235t		100.0000000	76sie1	0
87	as g	u235t	rc	fc	su	0.0000000	0.0	0.0400000	0.0200000	87	u235t		1.0000000	70kra1	0
87	as g	u235t	ms	fi	su	0.0000000	0.0	1.9000000	0.9000000	87	u235t		100.0000000	76wol1	0
87	as g	u235t	cm	in		0.0000000	0.0	0.0429700	52.0000000%	0			1.0000000	88wah1	0
87		u235f	cm	cu		0.0000000	0.0	2.4600000	3.8000000%	0			0.0000000	77cro1	0
87	rb g	u235f	ms	cu	su	0.0000000	0.0	2.4500000	0.0000000	143	nd g	u235f	5.9000000	71cro2	0
87	rb g	u235f	ms	cu	su	0.0000000	0.0	2.4200000	0.0000000	143	nd g	u235f	5.9000000	71cro2	0

87 rb g u235f ms cu 2.3909365 5.0 2.4100000 5.0000000% 0 0.0000000 73cro3 0
87 rb g u235f ms cu 2.3611738 5.0 2.3800000 5.0000000% 0 0.0000000 73cro3 0
87 rb g u235f ms cu 2.5695127 2.0 2.5900000 0.0160000 0 0.0000000 80mae1 0
87 rb g u235f ms cu rp 2.6079728 6.9 2.6600000 0.0000000 no. relative values = 1 70lis1
87 rb g u235f ms cu rp 2.4805155 15.8 2.4200000 0.0000000 no. relative values = 1 71cro2
87 rb g u235f ms cu rp 2.4374049 15.8 2.4500000 0.0000000 no. relative values = 1 71cro2
87 rb g u235f es cu cm 2.5794336 30.0 2.6000000 0.0000000 0 0.0000000 72sid1 0
87 rb g u235f es re 2.5146475 2.1 0.9900000 2.0000000% 87 u235t 1.0000000 74mee4 0
87 rb g u235f ms cu cm 2.5863782 6.0 2.6070000 0.0000000 0 0.0000000 80mae3 0
87 rb g u235f ms cu 2.5923308 2.0 2.6130000 0.0150000 0 0.0000000 81mae1 0
87 rb g u235f ms cu 2.5814178 2.0 2.6020000 0.0150000 0 0.0000000 81mae1 0
87 rb g u235f ms cu 2.5853861 2.0 2.6060000 0.0150000 0 0.0000000 81mae1 0
87 rb g u235f cm cu 0.0000000 0.0 2.6070000 0.0140000 0 0.0000000 81mae1 0
87 rb g u235f ms cu su 0.0000000 0.0 2.5700000 0.0200000 148 nd g u235f 1.6800000 74mae1 0
87 kr g u235f cm cu 0.0000000 0.0 2.5560000 4.0000000% 0 0.0000000 73net2 0
87 kr g u235f rc cu 2.3853107 5.1 0.9400000 0.0400000 87 kr g u235t 1.0000000 77deb1 0
87 kr g u235f rc cu 2.3512529 5.0 2.3700000 5.0000000% 0 0.0000000 74bal1 0
87 kr g u235f rc cu 2.2293209 5.4 2.2800000 0.0200000 88 kr g u235f 3.4900000 74bal1 0
87 kr g u235f rc cu 2.3827421 5.2 2.4900000 0.0500000 138 xe g u235f 6.2300000 74bal1 0
87 kr g u235f rc cu 2.3157574 5.2 2.4200000 0.0700000 138 xe g u235f 6.2300000 74bal1 0
87 kr g u235f rc re x4 0.0000000 0.0 1.1400000 0.0330000 140 ba g u235t 0.0000000 75raj1 7
87 kr g u235f rc cu 2.4685336 5.1 2.5900000 0.0700000 140 ba g u235f 6.2200000 77bla1 0
87 kr g u235f rc in 0.4166777 19.0 0.4200000 0.0800000 0 0.0000000 81mar1 0
87 kr g u235f rc cu x4 0.0000000 0.0 2.9000000 20.0000000% 0 0.0000000 81mar1 36
87 kr g u235f rc cu x4 0.0000000 0.0 3.0200000 20.0000000% 0 0.0000000 77gud1 36
87 br g u235f cm cu 0.0000000 0.0 2.1320000 8.1000000% 0 0.0000000 73net2 0
87 br g u235f rc fc 2.1956590 19.6 0.8700000 0.1700000 87 u235f 1.0000000 74ami2 0
87 br g u235f rc cu 2.0337842 5.0 2.0500000 0.0800000 0 0.0000000 81mar1 0
87 br g u235f rc cu 2.3314111 5.0 2.3500000 0.0900000 0 0.0000000 81wal1 0
87 br g u235f rc in 1.5575811 5.1 1.5700000 0.0800000 0 0.0000000 81mar1 0
87 se g u235f cm cu 0.0000000 0.0 0.8315000 22.0000000% 0 0.0000000 73net2 0
87 as g u235f cm cu x3 0.0000000 0.0 0.0152600 90.0000000% 0 0.0000000 73net2 0
87 u235he cm cu 0.0000000 0.0 2.5100000 20.0000000% 0 0.0000000 77cro1 0
87 kr g u235he es cu 2.9865905 30.0 3.0080000 0.0000000 0 0.0000000 63wea1 0
87 kr g u235he ms cu 2.7468642 7.7 2.8000000 0.2000000 90 u235he 4.6500000 72boc1 0
87 kr g u235he ms in 0.8340213 17.9 0.8400000 0.1500000 0 0.0000000 72boc1 0

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 87 kr g   u235he   cm    cu        0.0000000  0.0   2.5400000  7.9000000%    0                    0.0000000   73net2      0
 87 kr g   u235he   es    cu        2.4524197 10.0   2.4700000 10.0000000%    0                    0.0000000   74mee8      0
 87 kr g   u235he   rc    cu        2.6509962  5.0   2.6700000  5.0000000%    0                    0.0000000   74bal1      0
 87 kr g   u235he   rc    cu        2.3229527  5.7   2.4800000  0.0500000    88 kr g      u235he      3.4700000   74bal1      0
 87 kr g   u235he   rc    cu        2.2761189  5.7   2.4300000  0.0200000    88 kr g      u235he      3.4700000   74bal1      0
 87 kr g   u235he   rc    cu        2.2687675  5.7   2.8600000  0.0400000   138 xe g      u235he      3.9600000   74bal1      0
 87 kr g   u235he   rc    cu        2.2925658  5.7   2.8900000  0.0500000   138 xe g      u235he      3.9600000   74bal1      0
 87 br g   u235he   cm    cu        0.0000000  0.0   1.7930000 12.0000000%    0                    0.0000000   73net2      0
 87 se g   u235he   cm    cu    x3  0.0000000  0.0   0.4793000 33.0000000%    0                    0.0000000   73net2      0
 87 as g   u235he   cm    cu    x3  0.0000000  0.0   0.0047780 90.0000000%    0                    0.0000000   73net2      0
 87        u238f    cm    cu        0.0000000  0.0   1.6000000  5.0000000%    0                    0.0000000   77cro1      0
 87        u238f    rc    cu        1.7957698  5.0   1.8000000  0.0600000    0                    0.0000000   85li 1      0
 87 rb g   u238f    es    fi        0.0001466 30.0   0.0000904  0.0000000    87          u238f       1.0000000   74wol1      0
 87 rb g   u238f    es    cu        1.6960048 30.0   1.7000000  0.0000000    0                    0.0000000   72sid1      0
 87 rb g   u238f    ms    cu        1.6211811  2.0   1.6250000  0.0160000    0                    0.0000000   81mae1      0
 87 rb g   u238f    ms    cu        1.6301599  2.0   1.6340000  0.0170000    0                    0.0000000   81mae1      0
 87 rb g   u238f    cm    cu        0.0000000  0.0   1.6300000  0.0150000    0                    0.0000000   81mae1      0
 87 rb g   u238f    ms    cu        1.6312919  1.4   1.6100000  0.0200000   148 nd g      u238f       2.0800000   74mae1      0
 87 kr g   u238f    es    cu        1.4126723 32.0   1.4160000 32.0000000%    0                    0.0000000   73net2      0
 87 kr g   u238f    rc    cu        1.5264043 15.0   1.5300000  0.0000000    0                    0.0000000   75fly4      0
 87 kr g   u238f    es    cu        1.6560988  6.0   1.6600000  0.1000000    0                    0.0000000   78gin1      0
 87 kr g   u238f    rc    cu        1.4445277  8.9   1.1500000  0.1000000    85 kr m      u238f       0.5900000   77gud1      0
 87 kr g   u238f    rc    cu        1.5663103  5.0   1.5700000  0.0700000    0                    0.0000000   78nag1      0
 87 kr g   u238f    rc    cu        1.5363808  5.0   1.5400000  5.0000000%    0                    0.0000000   74bal1      0
 87 kr g   u238f    rc    cu        1.3361666  5.7   1.5600000  0.0200000    88 kr g      u238f       2.3600000   74bal1      0
 87 kr g   u238f    rc    cu        1.3361666  5.7   1.5600000  0.0300000    88 kr g      u238f       2.3600000   74bal1      0
 87 kr g   u238f    rc    cu        1.4823294  5.7   1.5400000  0.0300000   138 xe g      u238f       5.9100000   74bal1      0
 87 kr g   u238f    rc    cu        1.4534529  5.7   1.5100000  0.0400000   138 xe g      u238f       5.9100000   74bal1      0
 87 kr g   u238f    rc    cu        1.5153213  5.0   1.6100000  0.0600000   140 ba g      u238f       6.1600000   77bla1      0
 87 kr g   u238f    rc    cu        1.7159578  7.6   1.7200000  0.1300000    0                    0.0000000   85chi1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value      no.   treatment

 87 kr g   u238f    rc    cu        1.0575089 12.3   1.0600000 12.3000000%    0                    0.0000000   88afa1      0
 87 kr g   u238f    rc    cu        1.1971799 12.5   1.2000000 12.5000000%    0                    0.0000000   88afa1      0
```

87 br g u238f es cu 1.3627898 32.0 1.3660000 32.0000000% 0 0.0000000 73net2 0
87 br g u238f rc fc 1.3460203 14.5 0.8300000 0.1200000 87 u238f 1.0000000 71gri1 0
87 br g u238f rc cu 2.0152528 8.9 2.0200000 0.1800000 0 0.0000000 81wal1 0
87 se g u238f es cu 0.8961889 35.0 0.8983000 35.0000000% 0 0.0000000 73net2 0
87 as g u238f es cu 0.0509999 55.0 0.0511200 55.0000000% 0 0.0000000 73net2 0
87 u238he cm cu su 0.0000000 0.0 1.6100000 0.0800000 0 0.0000000 73dar1 0
87 u238he cm cu 0.0000000 0.0 2.0900000 16.0000000% 0 0.0000000 77cro1 0
87 kr g u238he es cu 1.8774788 30.0 1.8810000 0.0000000 0 0.0000000 63wea1 0
87 kr g u238he rc cu 1.6868363 5.0 1.6900000 0.0500000 0 0.0000000 71bri1 0
87 kr g u238he ms in 0.0788521 25.3 0.0790000 0.0200000 0 0.0000000 72boc1 0
87 kr g u238he ms cu 1.8144074 8.5 1.6300000 0.1300000 90 u238he 2.8600000 72boc1 0
87 kr g u238he rc cu su 0.0000000 0.0 2.0100000 0.3400000 0 0.0000000 73dar4 0
87 kr g u238he cm cu 0.0000000 0.0 1.9100000 6.1000000% 0 0.0000000 73net2 0
87 kr g u238he rc cu su 0.0000000 0.0 2.0100000 0.3400000 140 ba g u238he 4.4800000 74dar1 0
87 kr g u238he rc cu 1.8874601 5.0 1.8910000 0.0830000 0 0.0000000 75dar1 0
87 kr g u238he rc cu 2.1286420 16.0 2.1300000 0.3400000 140 ba g u238he 4.6000000 76raj1 0
87 kr g u238he es cu 1.7038045 15.0 1.7070000 15.0000000% 0 0.0000000 74mee9 0
87 kr g u238he rc cu rp 1.8026191 25.4 1.6300000 0.0000000 no. relative values = 1 75cav1
87 kr g u238he rc cu 1.5870235 5.0 1.5900000 5.0000000% 0 0.0000000 74bal1 0
87 kr g u238he rc cu 1.5182586 5.4 1.5700000 0.0200000 88 kr g u238he 2.2300000 74bal1 0
87 kr g u238he rc cu 1.5182586 5.4 1.5700000 0.0400000 88 kr g u238he 2.2300000 74bal1 0
87 kr g u238he rc cu 1.7575303 5.4 1.6400000 0.0600000 138 xe g u238he 4.2200000 74bal1 0
87 kr g u238he rc cu 1.6717971 5.4 1.5600000 0.0700000 138 xe g u238he 4.2200000 74bal1 0
87 kr g u238he rc cu 1.7431962 6.5 1.6300000 0.1000000 91 u238he 3.6100000 77feu1 0
87 kr g u238he rc cu 1.7067989 5.3 1.7100000 0.0900000 0 0.0000000 85liu1 0
87 br g u238he cm cu 0.0000000 0.0 1.7570000 7.0000000% 0 0.0000000 73net2 0
87 br g u238he rc fc 1.3802633 11.2 0.8200000 0.0900000 87 u238he 1.0000000 71gri1 0
87 se g u238he cm cu 0.0000000 0.0 0.9275000 22.0000000% 0 0.0000000 73net2 0
87 as g u238he cm cu x3 0.0000000 0.0 0.0307200 50.0000000% 0 0.0000000 73net2 0
87 pu239t cm cu 0.0000000 0.0 0.9200000 0.0000000 0 0.0000000 72sid1 0
87 pu239t cm cu 0.0000000 0.0 0.9800000 0.0000000 0 0.0000000 73lam1 0
87 pu239t cm cu 0.0000000 0.0 0.9700000 0.0220000 0 0.0000000 73wal1 0
87 pu239t cm cu 0.0000000 0.0 0.8250000 17.2000000% 0 0.0000000 77cro1 0
87 rb g pu239t ms cu 1.0049565 2.0 1.0040000 0.0120000 0 0.0000000 79mae2 0
87 rb g pu239t ms re 1.0025906 0.7 0.0735500 0.0003000 148 nd g pu239t 0.1205800 76mae1 0
87 rb g pu239t ms cu 1.0010707 2.0 1.0000000 0.0200000 85 rb g pu239t 0.5740000 70lis1 0

87	rb	g	pu239t	ms	cu		0.9282569	6.0	0.9120000	6.0000000%	133	cs	g	pu239t	6.9000000	59fic1	36
87	rb	g	pu239t	es	cu	cm	1.0109622	1.0	1.0100000	1.0000000%	0				0.0000000	81mae2	0
87	rb	g	pu239t	es	re		0.9784558	6.0	1.0000000	2.0000000%	87	br	g	pu239t	0.7067000	74mee5	36
87	rb	g	pu239t	sp	fi		0.0150732	99.9	0.0150000	0.0200000	87			pu239t	1.0000000	84sch1	36
87	rb	g	pu239t	es	re		1.0039969	1.1	0.6360000	1.0000000%	85	rb	g	pu239t	0.3640000	81mae2	36
87	rb	g	pu239t	cm	in		0.0000000	0.0	0.0101900	84.0000000%	0				1.0000000	88wah1	0
87	kr	g	pu239t	cm	cu		0.0000000	0.0	0.9446000	2.0000000%	0				0.0000000	73net2	0
87	kr	g	pu239t	ms	cu		0.9909432	4.0	0.9900000	0.0400000	0				0.0000000	76bri2	0
87	kr	g	pu239t	rc	cu	x4	0.0000000	0.0	0.6300000	20.0000000%	97	zr	g	pu239t	5.4600000	74jen1	0
87	kr	g	pu239t	ms	in		0.3002858	6.7	0.3000000	0.0200000	0				0.0000000	77bri1	0
87	kr	g	pu239t	rc	cu		0.9954365	5.4	0.9900000	0.0400000	91	kr	g	pu239t	0.7110000	77bri1	0
87	kr	g	pu239t	rc	cu		0.9609146	6.2	0.9600000	0.0600000	0				0.0000000	77gud1	0
87	kr	g	pu239t	rc	cu		0.9308860	5.0	0.9300000	5.0000000%	0				0.0000000	74bal1	0
87	kr	g	pu239t	rc	cu		0.8550138	5.4	0.9000000	0.0100000	88	kr	g	pu239t	1.3400000	74bal1	0
87	kr	g	pu239t	rc	cu		0.8550138	5.4	0.9000000	0.0200000	88	kr	g	pu239t	1.3400000	74bal1	0
87	kr	g	pu239t	rc	cu		0.9767344	5.3	0.9700000	0.0500000	138	xe	g	pu239t	5.1400000	74bal1	0
87	kr	g	pu239t	rc	cu		0.9465261	5.5	0.9400000	0.0500000	138	xe	g	pu239t	5.1400000	74bal1	0
87	kr	g	pu239t	rc	cu		0.8708288	9.2	0.8700000	0.0800000	0				0.0000000	80dic1	0
87	kr	g	pu239t	es	re		0.9998246	1.1	0.9950000	0.0100000	87	rb	g	pu239t	1.0000000	74mee5	36
87	kr	g	pu239t	sp	fi		0.2863906	7.0	0.2850000	7.0000000%	87			pu239t	1.0000000	84sch1	36
87	kr	g	pu239t	es	re		0.9736338	6.0	1.0000000	2.0000000%	87	br	g	pu239t	0.7102000	74mee5	36
87	kr	g	pu239t	cm	in		0.0000000	0.0	0.2952000	6.0000000%	0				1.0000000	88wah1	0
87	br	g	pu239t	rc	fc		0.8340498	20.0	0.8300000	20.0000000%	87			pu239t	1.0000000	71gri1	36
87	br	g	pu239t	cm	cu	x3	0.0000000	0.0	0.6732000	10.0000000%	0				0.0000000	73net2	0
87	br	g	pu239t	rc	cu		0.6956621	5.8	0.6950000	0.0400000	0				0.0000000	77bri1	0
87	br	g	pu239t	rc	in		0.5905621	8.5	0.5900000	0.0500000	0				0.0000000	77bri1	0
87	br	g	pu239t	sp	fi		0.5617275	5.0	0.5590000	5.0000000%	87			pu239t	1.0000000	84sch1	36
87	br	g	pu239t	cm	in		0.0000000	0.0	0.5407000	5.0000000%	0				1.0000000	88wah1	0
87	se	g	pu239t	rc	fc	x1	0.0000000	0.0	0.3310000	0.0610000	87			pu239t	1.0000000	71gri1	0
87	se	g	pu239t	cm	cu	x3	0.0000000	0.0	0.1834000	32.1000000%	0				0.0000000	73net2	0
87	se	g	pu239t	sp	fi		0.1406831	14.0	0.1400000	14.0000000%	87			pu239t	1.0000000	84sch1	36
87	se	g	pu239t	cm	in		0.0000000	0.0	0.1338000	14.0000000%	0				1.0000000	88wah1	0
87	as	g	pu239t	cm	cu		0.0000000	0.0	0.0018800	90.0000000%	0				0.0000000	73net2	0
87	as	g	pu239t	sp	fi	ul	0.0000000	0.0	0.0010000	0.0200000	87			pu239t	1.0000000	84sch1	0
87			pu239f	cm	cu		0.0000000	0.0	1.0500000	5.9000000%	0				0.0000000	77cro1	0
87			pu239f	es	re		1.0444312	10.0	1.0450000	10.0000000%	87			pu239t	1.0000000	74mee4	36

87 rb g pu239f ms cu 1.0380268 1.0 1.0380000 0.0100000 148 nd g pu239f 1.6540000 77mae1 0
87 rb g pu239f ms cu 1.0055057 2.0 1.0100000 0.0150000 0 0.0000000 77mae1 0
87 rb g pu239f ms cu 1.1090691 1.8 1.1600000 0.0200000 148 nd g pu239f 1.7300000 70lis1 0
87 rb g pu239f es cu cm 1.1448827 30.0 1.1500000 0.0000000 0 0.0000000 72sid1 0
87 rb g pu239f ms cu rp 1.0423952 3.2 0.6341000 0.0000000 no. relative values = 1 80mae4
87 rb g pu239f ms cu su 0.0000000 0.0 1.0300000 0.0100000 148 nd g pu239f 1.6500000 74mae1 0
87 rb g pu239f es re 1.0374679 1.1 0.6330000 1.0000000% 85 rb g pu239f 0.3670000 81mae2 36
87 rb g pu239f es cu cm 1.0602609 1.0 1.0650000 1.0000000% 0 0.0000000 81mae2 0
87 kr g pu239f cm cu 0.0000000 0.0 1.1010000 2.0000000% 0 0.0000000 73net2 0
87 kr g pu239f rc cu 1.1768845 25.0 1.1000000 25.0000000% 97 zr g pu239f 4.9000000 74jen1 0
87 kr g pu239f rc cu 0.9557282 5.0 0.9600000 5.0000000% 0 0.0000000 74bal1 0
87 kr g pu239f rc cu 0.8891632 5.7 0.9500000 0.0200000 88 kr g pu239f 1.3700000 74bal1 0
87 kr g pu239f rc cu 0.8891632 5.7 0.9500000 0.0100000 88 kr g pu239f 1.3700000 74bal1 0
87 kr g pu239f rc cu 1.0184804 5.4 0.9900000 0.0400000 138 xe g pu239f 4.5600000 74bal1 0
87 kr g pu239f rc cu 0.9567543 5.4 0.9300000 0.0100000 138 xe g pu239f 4.5600000 74bal1 0
87 kr g pu239f es re 1.0338325 1.4 0.9953000 0.0100000 87 rb g pu239f 1.0000000 74mee5 36
87 kr g pu239f rc cu 0.9557282 6.2 0.9600000 0.0600000 0 0.0000000 77gud1 0
87 br g pu239f cm cu 0.0000000 0.0 0.7481000 12.0000000% 0 0.0000000 73net2 0
87 br g pu239f rc cu 0.7964401 6.2 0.8000000 0.0500000 0 0.0000000 81wal1 0
87 se g pu239f cm cu x3 0.0000000 0.0 0.1853000 32.1000000% 0 0.0000000 73net2 0
87 as g pu239f cm cu 0.0000000 0.0 0.0016500 90.0000000% 0 0.0000000 73net2 0
87 pu241t cm cu 0.0000000 0.0 0.7400000 0.0000000 0 0.0000000 72sid1 0
87 pu241t cm cu 0.0000000 0.0 0.7500000 0.0170000 0 0.0000000 73wal1 0
87 pu241t cm cu 0.0000000 0.0 0.7410000 5.0000000% 0 0.0000000 77cro1 0
87 rb g pu241t ms cu 0.7505260 2.0 0.7540000 0.0050000 0 0.0000000 77mae1 0
87 rb g pu241t ms cu 0.7654966 2.8 0.7410000 0.0200000 148 nd g pu241t 1.8616500 70lis1 0
87 kr g pu241t ms cu 0.7107103 6.9 0.7140000 0.0490000 0 0.0000000 76bri2 0
87 kr g pu241t es re cm 0.7493190 10.2 1.0000000 0.1000000 87 rb g pu241t 1.0000000 74mee1 0
87 kr g pu241t ms in 0.1045162 9.5 0.1050000 0.0100000 0 0.0000000 77bri1 0
87 kr g pu241t rc cu 0.7462558 6.9 0.7140000 0.0400000 91 kr g pu241t 0.9300000 77bri1 0
87 br g pu241t rc cu 0.6071894 6.6 0.6100000 0.0400000 0 0.0000000 77bri1 0
87 br g pu241t rc in 0.4280188 14.0 0.4300000 0.0600000 0 0.0000000 77bri1 0
87 u233t cm cu x3 0.0000000 0.0 4.5000000 0.0000000 0 0.0000000 72sid1 0
87 u233t cm cu 0.0000000 0.0 4.0100000 0.0000000 0 0.0000000 73lam1 0
87 u233t cm cu 0.0000000 0.0 3.9800000 0.0900000 0 0.0000000 73wal1 0
87 u233t cm cu 0.0000000 0.0 4.0800000 8.5000000% 0 0.0000000 77cro1 0

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 87 sr g   u233t    sp    fi    ul   0.0000000  0.0   0.1377000  0.1377000    87          u233t     100.0000000   83qua1     40
 87 sr g   u233t    sp    in    ul   0.0000000  0.0   0.0056700  0.0057000     0                     0.0000000   88qua1     18
 87 sr m   u233t    sp    fi    ul   0.0000000  0.0   0.0323000  0.0323000    87          u233t     100.0000000   83qua1     40
 87 sr m   u233t    sp    in    ul   0.0000000  0.0   0.0013300  0.0013000     0                     0.0000000   88qua1     18
 87 rb g   u233t    ms    cu    rp   3.9177251 12.7   4.4700000  0.0000000  no. relative values =    1            61bid1
 87 rb g   u233t    ms    in         0.0706519 18.3   0.0710000  0.0130000     0                     0.0000000   80weh1      0
 87 rb g   u233t    ms    cu         4.0400950  2.0   4.0600000  0.0300000     0                     0.0000000   70lis1      0
 87 rb g   u233t    ms    cu         3.9505362  2.0   3.9700000  0.0350000     0                     0.0000000   80weh1      0
 87 rb g   u233t    sp    fi         0.0827684 40.6   2.0700000  0.8390000    87          u233t     100.0000000   83qua1      0
 87 rb g   u233t    sp    in         0.0825931 41.0   0.0830000  0.0340000     0                     0.0000000   88qua1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value       no.   treatment

 87 kr g   u233t    cm    cu         0.0000000  0.0   3.9680000  2.0000000%    0                     0.0000000   73net2      0
 87 kr g   u233t    sp    cu         4.0500460  5.0   4.0700000  0.1400000     0                     0.0000000   75bri1      0
 87 kr g   u233t    sp    in         1.8807339  5.0   1.8900000  0.0900000     0                     0.0000000   75bri1      0
 87 kr g   u233t    ms    in         1.7951555  2.0   1.8040000  0.0320000     0                     0.0000000   80weh1      0
 87 kr g   u233t    sp    fi         1.9852418  5.2  49.6500000  2.1880000    87          u233t     100.0000000   83qua1      0
 87 kr g   u233t    sp    in         1.9862142  5.1   1.9960000  0.1010000     0                     0.0000000   88qua1      0
 87 br g   u233t    rc    in    x1   0.0000000  0.0   3.0000000  0.8000000     0                     0.0000000   66sil1      0
 87 br g   u233t    rc    fc         2.2391449  7.3   0.5600000  0.0400000    87          u233t       1.0000000   71gri1      0
 87 br g   u233t    cm    cu         0.0000000  0.0   2.7490000 12.0000000%    0                     0.0000000   73net2      0
 87 br g   u233t    sp    in         1.7613222  7.3   1.7700000  0.1300000     0                     0.0000000   75bri1      0
 87 br g   u233t    sp    cu         2.1693121  6.0   2.1800000  0.1300000     0                     0.0000000   75bri1      0
 87 br g   u233t    ms    in         1.7225134  2.0   1.7310000  0.0320000     0                     0.0000000   80weh1      0
 87 br g   u233t    rc    in    x4   0.0000000  0.0   0.5500000  0.0200000    88 br g      u233t       1.0000000   66sil1      0
 87 br g   u233t    sp    fi         1.6313770  5.2  40.8000000  1.5250000    87          u233t     100.0000000   83qua1      0
 87 br g   u233t    sp    in         1.6319596  5.0   1.6400000  0.0730000     0                     0.0000000   88qua1      0
 87 se g   u233t    rc    fi    x1   0.0000000  0.0   0.1900000  0.0410000    87          u233t       1.0000000   71gri1      0
 87 se g   u233t    cm    cu         0.0000000  0.0   0.7076000 32.1000000%    0                     0.0000000   73net2      0
 87 se g   u233t    ms    in         0.3622154  6.6   0.3640000  0.0240000     0                     0.0000000   80weh1      0
 87 se g   u233t    sp    fi         0.2547027 12.3   6.3700000  0.7800000    87          u233t     100.0000000   83qua1      0
 87 se g   u233t    sp    in         0.2547449 12.5   0.2560000  0.0320000     0                     0.0000000   88qua1      0
 87 se g   u233t    es    in         0.3367409 18.0   0.3384000 18.0000000%    0                     0.0000000   88wah1      0
 87 se g   u233t    es    in         0.3263919 20.0   0.3280000 20.0000000%    0                     0.0000000   89rid1      0
```

87 as g u233t sp fi ul 0.0000000 0.0 0.9400000 0.1570000 87 u233t 100.0000000 83qua1 0
87 as g u233t cm cu 0.0000000 0.0 0.0066670 90.0000000% 0 0.0000000 73net2 0
87 as g u233t sp in ul 0.0000000 0.0 0.0380000 0.0060000 0 0.0000000 88qua1 0
87 th232f es cu cm 6.5914205 30.0 6.6000000 0.0000000 0 0.0000000 65eng1 0
87 th232f es cu cm 6.6313685 30.0 6.6400000 0.0000000 0 0.0000000 72sid1 0
87 th232f es cu cm 5.9822134 30.0 5.9900000 0.0000000 0 0.0000000 73lam1 0
87 th232f cm cu 0.0000000 0.0 6.3100000 0.0000000 0 0.0000000 74lam1 0
87 th232f cm cu 0.0000000 0.0 7.0000000 10.0000000% 0 0.0000000 77cro1 0
87 th232f es cu 7.1407055 5.0 7.1500000 5.0000000% 0 0.0000000 74mee0 0
87 kr g th232f cm cu 0.0000000 0.0 6.8100000 4.0000000% 0 0.0000000 73net2 0
87 kr g th232f rc cu 6.3916805 7.8 6.4000000 0.5000000 0 0.0000000 77gud1 0
87 kr g th232f ms re 6.9606173 2.6 1.0580000 0.0180000 86 kr g th232f 1.0000000 68har1 0
87 kr g th232f rc cu x4 0.0000000 0.0 4.4200000 0.3100000 140 ba g th232f 7.9700000 85chu1 0
87 kr g th232f rc cu 6.1320185 6.7 6.1400000 0.4100000 0 0.0000000 86ric1 0
87 br g th232f cm cu 0.0000000 0.0 6.5390000 4.0000000% 0 0.0000000 73net2 0
87 br g th232f rc fc 6.3580230 11.5 0.9000000 0.1000000 87 th232f 1.0000000 71gri1 0
87 br g th232f rc cu 7.6001076 5.1 7.6100000 0.3900000 0 0.0000000 81wal1 0
87 se g th232f cm cu 0.0000000 0.0 4.1830000 13.0000000% 0 0.0000000 73net2 0
87 as g th232f cm cu x3 0.0000000 0.0 0.2207000 45.0000000% 0 0.0000000 73net2 0
88 y g u235t rc in ul 0.0000000 0.0 0.0000000 0.0000000 91 y g u235t 1.0000000 87jia1 0
88 u235t ms cu x4 0.0000000 0.0 0.6800000 0.0000000 90 sr g u235t 1.0000000 53wil1 0
88 sr g u235t ms cu 3.5578560 1.8 3.5300000 0.0000000 90 sr g u235t 5.7400000 55pet2 0
88 sr g u235t ms re 3.5926686 2.2 0.6210000 2.0000000% 90 sr g u235t 1.0000000 62far2 0
88 u235t cm cu 0.0000000 0.0 3.5500000 0.0000000 0 0.0000000 72sid1 0
88 u235t cm cu 0.0000000 0.0 3.6200000 0.0000000 0 0.0000000 73lam1 0
88 u235t cm cu 0.0000000 0.0 3.5900000 0.0700000 0 0.0000000 73wal1 0
88 u235t ms cu 3.6318468 2.0 3.6300000 0.0430000 0 0.0000000 76dii1 0
88 u235t sp cu 3.4999850 5.0 3.4500000 0.0700000 0 0.9862200 76woh2 0
88 u235t cm cu 0.0000000 0.0 3.6000000 2.1000000% 0 0.0000000 77cro1 0
88 sr g u235t ms cu 3.6118366 6.0 3.6100000 0.0000000 0 0.0000000 55gle1 0
88 sr g u235t ms cu 3.5608107 2.0 3.5590000 0.0240000 0 0.0000000 78mae1 0
88 sr g u235t ms cu 3.5448025 2.0 3.5430000 0.0240000 0 0.0000000 78mae1 0
88 sr g u235t ms cu 3.5418010 2.0 3.5400000 0.0240000 0 0.0000000 78mae1 0
88 sr g u235t ms cu 3.6118366 2.0 3.6100000 0.0200000 0 0.0000000 70lis1 0
88 u235t es re 3.5858805 2.1 1.0000000 2.0000000% 88 u235f 0.9750000 74mee4 0
88 sr g u235t ms cu cm 3.5488046 6.0 3.5470000 0.0000000 0 0.0000000 80mae3 0

88 sr g u235t ms cu rp 3.5305138 6.0 3.5700000 0.0000000 no. relative values = 1 86chi1
88 sr g u235t ms cu 3.5317959 5.0 3.5300000 5.0000000% 0 0.0000000 55pet2 36
88 rb g u235t ms fi ul 0.0000000 0.0 2.4000000 0.8000000 88 u235t 100.0000000 76sie1 0
88 rb g u235t sp in ul 0.0000000 0.0 0.0060000 0.0060000 0 0.0000000 75ree1 0
88 rb g u235t sp fi ul 0.0000000 0.0 1.9000000 0.4000000 88 u235t 100.0000000 78str1 0
88 rb g u235t sp fi 0.0228917 9.6 0.6400000 0.0610000 88 u235t 100.0000000 79bal1 0
88 rb g u235t ms fi ul 0.0000000 0.0 2.7000000 2.7000000 88 u235t 100.0000000 75cle2 0
88 rb g u235t ms in ul 0.0000000 0.0 0.1330000 0.0400000 0 0.0000000 79cle1 0
88 rb g u235t rc cu 3.4617603 6.1 3.4600000 0.2100000 0 0.0000000 76thi1 0
88 rb g u235t ms fi ul 0.0000000 0.0 2.4000000 0.8000000 88 u235t 100.0000000 76wol1 0
88 rb g u235t sp fi ul 0.0000000 0.0 3.8000000 1.2000000 88 u235t 100.0000000 80lan1 0
88 rb g u235t es in 0.0215610 9.0 0.0215500 9.0000000% 0 1.0000000 88wah1 0
88 rb g u235t sp fi ul 0.0000000 0.0 2.6000000 0.5000000% 88 u235t 100.0000000 79str1 0
88 rb g u235t sp in ul 0.0000000 0.0 0.1640000 0.0160000 0 0.0000000 90rud1 0
88 rb g u235t sp cu x4 0.0000000 0.0 3.2600000 0.3400000 0 0.0000000 90rud1 0
88 rb g u235t es fi 0.0243496 21.4 0.0068076 21.4000000% 88 u235t 1.0000000 91jam2 0
88 kr g u235t cm cu 0.0000000 0.0 3.6110000 2.0000000% 0 0.0000000 73net2 0
88 kr g u235t cm in 0.0000000 0.0 1.7400000 3.0000000% 0 1.0000000 88wah1 0
88 kr g u235t ms fi 1.6667993 4.3 46.6000000 2.0000000 88 u235t 100.0000000 76sie1 0
88 kr g u235t ms fi su 0.0000000 0.0 46.0000000 3.1000000 88 u235t 100.0000000 75cle2 0
88 kr g u235t ms fi su 0.0000000 0.0 46.1000000 1.8000000 88 u235t 100.0000000 76wol1 0
88 kr g u235t ms in 1.7248771 3.9 1.7240000 0.0670000 0 0.0000000 79cle1 0
88 kr g u235t rc cu 3.6875728 5.2 3.0900000 0.1280000 138 xe g u235t 5.2800000 74haw1 0
88 kr g u235t rc cu 3.4795646 5.1 3.4400000 0.1400000 87 kr g u235t 2.5300000 74bla1 0
88 kr g u235t rc cu 3.4769665 12.0 3.7400000 0.4500000 133 xe g u235t 7.2100000 81hsu1 0
88 kr g u235t rc cu x4 0.0000000 0.0 2.8600000 6.8000000% 0 0.0000000 80ram1 0
88 kr g u235t rc cu x4 0.0000000 0.0 3.3100000 0.1100000 0 0.0000000 77gud1 0
88 kr g u235t rc cu x4 0.0000000 0.0 3.7300000 0.2200000 0 0.0000000 71mcl1 0
88 kr g u235t rc in 1.3206716 7.6 1.3200000 0.1000000 0 0.0000000 72ehr1 0
88 kr g u235t rc re x4 0.0000000 0.0 1.0000000 30.0000000% 85 kr m u235t 0.3300000 49koc1 0
88 kr g u235t rc re rp 3.6558548 67.7 1.0000000 0.0000000 no. relative values = 1 49koc1
88 kr g u235t sp cu 3.4517552 5.0 3.4500000 0.1700000 0 0.0000000 75bri1 0
88 kr g u235t sp fi 1.7669504 5.0 49.4000000 1.5000000 88 u235t 100.0000000 78str1 0
88 kr g u235t sp fi 1.7776808 5.0 49.7000000 1.5000000 88 u235t 100.0000000 80lan1 0
88 kr g u235t sp fi 1.9386378 5.0 54.2000000 1.1000000% 88 u235t 100.0000000 79str1 0
88 kr g u235t sp in 1.9209768 5.7 1.9200000 0.1100000 0 0.0000000 75bri1 0

```
 88 kr g   u235t    sp    in    su   0.0000000  0.0   0.5700000  0.0500000    91 kr g      u235t       1.0000000   69ehr1     14
 88 br g   u235t    rc    in    x4   0.0000000  0.0   2.0000000  0.5000000     0                    0.0000000   66sil1      0
 88 br g   u235t    es    in    x4   0.0000000  0.0   2.1400000  0.1200000     0                    0.0000000   69bra2      0
 88 br g   u235t    rc    in    x4   0.0000000  0.0   2.3200000  0.7200000     0                    0.0000000   69bra2      0
 88 br g   u235t    rc    in    x4   0.0000000  0.0   2.0600000  0.6700000     0                    0.0000000   69bra2      0
 88 br g   u235t    rc    fi    x4   0.0000000  0.0   0.5600000  0.2300000    88          u235t       1.0000000   73kra3      0
 88 br g   u235t    es    cu         2.1490928 15.0   2.1480000 15.0000000%    0                    0.0000000   73net2      0
 88 br g   u235t    ms    fi         1.4271522  5.1  39.9000000  2.0000000    88          u235t     100.0000000   76sie1      0
 88 br g   u235t    sp    in         1.5758013 21.0   1.5750000  0.3310000     0                    0.0000000   75ree1      0
 88 br g   u235t    sp    re    rp   2.0050532  7.3   1.0000000  0.0000000  no. relative values =    6            75ree1
 88 br g   u235t    sp    cu         1.5307784  6.5   1.5300000  0.1000000     0                    0.0000000   75bri1      0
 88 br g   u235t    sp    in         1.2406309  8.1   1.2400000  0.1000000     0                    0.0000000   75bri1      0
 88 br g   u235t    sp    fi         1.5094191  5.0  42.2000000  1.4000000    88          u235t     100.0000000   78str1      0
 88 br g   u235t    cm    fc    x3   0.0000000  0.0   0.8000000  0.0500000    88          u235t       1.0000000   71gri1      0
 88 br g   u235t    cm    fc    x3   0.0000000  0.0   0.8000000  0.0500000    88          u235t       1.0000000   73kra2      0
 88 br g   u235t    ms    fi    su   0.0000000  0.0  42.5000000  2.6000000    88          u235t     100.0000000   75cle2      0
 88 br g   u235t    ms    in         1.3416822  4.3   1.3410000  0.0580000     0                    0.0000000   79cle1      0
 88 br g   u235t    rc    fi         1.4808046 18.1  41.4000000  7.5000000    88          u235t     100.0000000   78kra1      0
 88 br g   u235t    ms    fi    su   0.0000000  0.0  40.7000000  1.8000000    88          u235t     100.0000000   76wol1      0
 88 br g   u235t    rc    cu         1.9209768  5.2   1.9200000  0.1000000     0                    0.0000000   81mar1      0
 88 br g   u235t    sp    fi         1.3842303  5.0  38.7000000  1.4000000    88          u235t     100.0000000   80lan1      0
 88 br g   u235t    cm    in         0.0000000  0.0   1.5800000  3.0000000%    0                    1.0000000   88wah1      0
 88 br g   u235t    rc    fi         1.5845324 19.9   0.4430000 19.9000000%    88          u235t       1.0000000   83mei1      0
 88 br g   u235t    sp    fi         1.3091171  5.0  36.6000000  1.1000000%    88          u235t     100.0000000   79str1      0
 88 br g   u235t    sp    cu         1.6586656 11.3   1.7000000  0.1900000    84 br g      u235t       1.0100000   85rud1      0
 88 br g   u235t    rc    cu         1.9109717 11.5   1.9100000  0.2200000     0                    0.0000000   88lee1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value      no.   treatment

 88 br g   u235t    sp    in    x4   0.0000000  0.0   1.1100000  0.1300000     0                    0.0000000   90rud1      0
 88 br g   u235t    sp    cu    x4   0.0000000  0.0   1.3200000  0.0700000     0                    0.0000000   90rud1      0
 88 br g   u235t    rc    fi    su   0.0000000  0.0   0.5600000  0.1750000    88          u235t       1.0000000   77kra1      0
 88 br g   u235t    cm    fi         0.0000000  0.0   0.3792500  2.6000000%   88          u235t       1.0000000   91jam2      0
 88 br g   u235t    cm    in         0.0000000  0.0   1.4300000  3.0000000%    0                    0.0000000   89rid1      0
 88 br g   u235t    cm    cu         0.0000000  0.0   1.8000000 10.0000000%    0                    0.0000000   89rid1      0
```

88	se	g	u235t	rc	fc	x4	0.0000000	0.0	0.2400000	0.0600000	88	u235t	1.0000000	70kra1	0
88	se	g	u235t	rc	cu		0.3901984	12.8	0.3900000	0.0500000	0		0.0000000	71tom1	0
88	se	g	u235t	rc	fc	x1	0.0000000	0.0	0.2220000	0.0560000	88	u235t	1.0000000	73kra2	0
88	se	g	u235t	cm	cu		0.0000000	0.0	0.4177000	32.1000000%	0		0.0000000	73net2	0
88	se	g	u235t	es	fc		0.4113346	30.0	0.1150000	0.0000000	88	u235t	1.0000000	74wol1	0
88	se	g	u235t	ms	fi		0.3612591	9.9	10.1000000	1.0000000	88	u235t	100.0000000	76sie1	0
88	se	g	u235t	sp	fi		0.2289166	6.3	6.4000000	0.4000000	88	u235t	100.0000000	78str1	0
88	se	g	u235t	ms	fi		0.3147604	22.7	8.8000000	2.0000000	88	u235t	100.0000000	75cle2	0
88	se	g	u235t	ms	in		0.2691369	15.2	0.2690000	0.0410000	0		0.0000000	79cle1	0
88	se	g	u235t	ms	fi		0.3541054	10.1	9.9000000	1.0000000	88	u235t	100.0000000	76wol1	0
88	se	g	u235t	sp	fi		0.2789922	14.1	7.8000000	1.1000000	88	u235t	100.0000000	80lan1	0
88	se	g	u235t	rc	in	x1	0.0000000	0.0	0.0552000	30.0000000%	0		0.0000000	82ren1	0
88	se	g	u235t	es	in		0.3135594	11.0	0.3134000	11.0000000%	0		1.0000000	88wah1	0
88	se	g	u235t	sp	fi		0.2360703	5.0	6.6000000	0.6000000%	88	u235t	100.0000000	79str1	0
88	se	g	u235t	sp	in		0.2491267	12.4	0.2490000	0.0310000	0		0.0000000	90rud1	0
88	se	g	u235t	es	in		0.3381720	16.0	0.3380000	16.0000000%	0		0.0000000	74mee1	0
88	se	g	u235t	es	in		0.3441750	16.0	0.3440000	16.0000000%	0		0.0000000	89rid1	36
88	se	g	u235t	es	fi		0.2445009	7.4	0.0683570	7.4000000%	88	u235t	1.0000000	91jam2	0
88	as	g	u235t	ms	fi	ul	0.0000000	0.0	1.0000000	0.5000000	88	u235t	100.0000000	76sie1	0
88	as	g	u235t	ms	fi	ul	0.0000000	0.0	0.9000000	0.5000000	88	u235t	100.0000000	76wol1	0
88			u235f	es	cu	cm	3.6096962	30.0	3.6300000	0.0000000	0		0.0000000	72sid1	0
88			u235f	cm	cu		0.0000000	0.0	3.6200000	7.6000000%	0		0.0000000	77cro1	0
88	sr	g	u235f	ms	cu		3.4495968	2.0	3.4690000	0.0640000	0		0.0000000	80mae1	0
88	sr	g	u235f	ms	cu		3.4723858	2.3	3.6300000	0.0800000	148	nd g	u235f	1.7500000	70lis1	0
88			u235f	es	re		3.4661348	2.1	0.9750000	2.0000000%	88	u235t	1.0000000	74mee4	0
88	sr	g	u235f	ms	cu	cm	3.4923563	6.0	3.5120000	0.0000000	0		0.0000000	80mae3	0
88			u235f	rc	cu		3.2003473	5.1	3.3500000	0.0400000	140	ba g	u235f	6.2200000	77bla1	0
88	sr	g	u235f	ms	cu		3.5321325	2.0	3.5520000	0.0190000	0		0.0000000	81mae1	0
88	sr	g	u235f	ms	cu		3.5341213	2.0	3.5540000	0.0210000	0		0.0000000	81mae1	0
88	sr	g	u235f	ms	cu		3.5281549	2.0	3.5480000	0.0200000	0		0.0000000	81mae1	0
88	sr	g	u235f	cm	cu		0.0000000	0.0	3.5510000	0.0190000	0		0.0000000	81mae1	0
88	sr	g	u235f	ms	cu		3.4974960	1.0	3.5100000	0.0300000	148	nd g	u235f	1.6800000	74mae1	0
88	rb	g	u235f	rc	cu	x1	0.0000000	0.0	4.0000000	3.0000000%	0		0.0000000	72sch1	0
88	rb	g	u235f	rc	cu		3.5904830	5.2	1.0100000	0.0150000	88	rb g	u235t	1.0000000	77deb1	0
88	rb	g	u235f	rc	in		0.0596644	83.3	0.0600000	0.0500000	0		0.0000000	81mar1	0
88	kr	g	u235f	cm	cu	x3	0.0000000	0.0	3.3500000	14.9000000%	0		0.0000000	73net2	0

88 kr g u235f rc re x4 0.0000000 0.0 1.2340000 0.0170000 140 ba g u235t 0.0000000 75raj1 7
88 kr g u235f rc cu 3.5301437 5.0 3.5500000 5.0000000% 0 0.0000000 74bal1 0
88 kr g u235f rc cu 3.4817481 5.2 3.6300000 0.1500000 138 xe g u235f 6.2300000 74bal1 0
88 kr g u235f rc cu 3.4529733 5.2 3.6000000 0.1400000 138 xe g u235f 6.2300000 74bal1 0
88 kr g u235f rc cu 3.4721565 5.2 3.6200000 0.0800000 138 xe g u235f 6.2300000 74bal1 0
88 kr g u235f rc cu 3.4529733 5.2 3.6000000 0.0600000 138 xe g u235f 6.2300000 74bal1 0
88 kr g u235f rc cu rp 3.4232050 5.0 3.4900000 0.0000000 no. relative values = 10 74bal1
88 kr g u235f rc cu 3.2914861 5.0 3.3100000 0.1100000 0 0.0000000 77gud1 0
88 kr g u235f rc in 1.3822253 7.2 1.3900000 0.1000000 0 0.0000000 81mar1 0
88 br g u235f cm cu x3 0.0000000 0.0 1.8730000 21.0000000% 0 0.0000000 73net2 0
88 br g u235f rc cu 2.0186456 5.0 2.0300000 0.0800000 0 0.0000000 81mar1 0
88 br g u235f rc in 1.8396524 5.0 1.8500000 0.0700000 0 0.0000000 81mar1 0
88 se g u235f cm cu x3 0.0000000 0.0 0.3274000 47.0000000% 0 0.0000000 73net2 0
88 sr g u235he es cu 3.5499044 20.0 3.5860000 20.0000000% 0 0.0000000 63wea1 36
88 u235he ms cu x4 0.0000000 0.0 2.8000000 0.2000000 90 u235he 4.6500000 72boc1 0
88 u235he cm cu 0.0000000 0.0 3.3300000 20.0000000% 0 0.0000000 77cro1 0
88 u235he es cu 3.4152734 10.0 3.4500000 10.0000000% 0 0.0000000 74mee8 0
88 kr g u235he ms in 1.3265120 19.4 1.3400000 0.2600000 0 0.0000000 72boc1 0
88 kr g u235he cm cu 0.0000000 0.0 3.4800000 9.9000000% 0 0.0000000 73net2 0
88 kr g u235he rc cu 3.4350721 5.0 3.4700000 4.3000000% 0 0.0000000 74bal1 0
88 kr g u235he rc cu 3.1636795 5.7 4.0000000 0.1100000 138 xe g u235he 3.9600000 74bal1 0
88 kr g u235he rc cu 3.2269531 5.7 4.0800000 0.0600000 138 xe g u235he 3.9600000 74bal1 0
88 kr g u235he rc cu 3.1874071 5.7 4.0300000 0.1500000 138 xe g u235he 3.9600000 74bal1 0
88 kr g u235he rc cu 3.2585899 5.7 4.1200000 0.0500000 138 xe g u235he 3.9600000 74bal1 0
88 kr g u235he rc cu rp 3.2804053 4.3 3.4700000 0.0000000 no. relative values = 14 74bal1
88 br g u235he cm cu x3 0.0000000 0.0 1.4100000 23.0000000% 0 0.0000000 73net2 0
88 se g u235he cm cu x3 0.0000000 0.0 0.1493000 46.0000000% 0 0.0000000 73net2 0
88 u238f cm cu 0.0000000 0.0 2.1000000 0.0000000 0 0.0000000 72sid1 0
88 u238f cm cu 0.0000000 0.0 1.9500000 5.0000000% 0 0.0000000 77cro1 0
88 u238f rc cu 1.9745775 5.0 2.1000000 0.0700000 140 ba g u238f 6.1600000 77bla1 0
88 sr g u238f ms cu 2.0362100 2.0 2.0430000 0.0250000 0 0.0000000 81mae1 0
88 sr g u238f ms cu 1.9245822 3.6 1.9310000 0.0690000 0 0.0000000 81mae1 0
88 sr g u238f cm cu 0.0000000 0.0 1.9870000 0.0600000 0 0.0000000 81mae1 0
88 sr g u238f ms cu 1.9839829 2.6 1.9600000 0.0500000 148 nd g u238f 2.0800000 74mae1 0
88 u238f rc cu 2.0730870 5.3 2.0800000 0.1100000 0 0.0000000 85li 1 0
88 rb g u238f rc cu 2.2785427 7.2 2.3800000 0.1700000 140 ba g u238f 6.0500000 78deb1 0

88 rb g u238f rc cu 2.2785427 5.5 2.3800000 0.1300000 140 ba g u238f 6.0500000 78deb1 0
88 kr g u238f rc cu x4 0.0000000 0.0 1.7000000 0.0000000 0 0.0000000 68bel1 0
88 kr g u238f cm cu 0.0000000 0.0 2.1100000 14.9000000% 0 0.0000000 73net2 0
88 kr g u238f rc cu 1.7840509 15.0 1.7900000 0.0000000 0 0.0000000 75fly4 0
88 kr g u238f es cu 1.9335523 4.1 1.9400000 0.0800000 0 0.0000000 78gin1 0
88 kr g u238f rc cu 1.9435191 5.0 1.9500000 0.0900000 0 0.0000000 78nag1 0
88 kr g u238f rc cu 2.3222561 5.0 2.3300000 5.0000000% 0 0.0000000 74bal1 0
88 kr g u238f rc cu 2.2309407 5.7 2.3200000 0.0600000 138 xe g u238f 5.9100000 74bal1 0
88 kr g u238f rc cu 2.1924762 5.7 2.2800000 0.0600000 138 xe g u238f 5.9100000 74bal1 0
88 kr g u238f rc cu rp 2.1851359 4.8 2.3600000 0.0000000 no. relative values = 11 74bal1
88 kr g u238f rc cu 1.8936853 12.6 1.9000000 0.2400000 0 0.0000000 85chi1 0
88 kr g u238f rc cu 1.8438514 5.4 1.8500000 0.1000000 0 0.0000000 77gud1 0
88 kr g u238f rc cu 1.4750812 14.9 1.4800000 14.9000000% 0 0.0000000 88afa1 0
88 kr g u238f rc cu 1.5946823 10.6 1.6000000 10.6000000% 0 0.0000000 88afa1 0
88 br g u238f cm cu 0.0000000 0.0 1.7600000 17.0000000% 0 0.0000000 73net2 0
88 br g u238f rc fc 1.3745687 35.3 0.6800000 0.2400000 88 u238f 1.0000000 71gri1 0
88 se g u238f cm cu x3 0.0000000 0.0 0.6863000 26.0000000% 0 0.0000000 73net2 0
88 sr g u238he es cu 2.2637543 30.0 2.2680000 0.0000000 0 0.0000000 63wea1 0
88 u238he ms cu 1.9702461 8.9 1.7700000 0.1500000 90 u238he 2.8600000 72boc1 0
88 u238he cm cu su 0.0000000 0.0 1.7500000 0.0900000 0 0.0000000 73dar1 0
88 u238he es cu 2.2827188 15.0 2.2870000 15.0000000% 0 0.0000000 74mee9 0
88 u238he cm cu 0.0000000 0.0 2.7100000 7.0000000% 0 0.0000000 77cro1 0
88 u238he rc cu 1.8929185 5.4 1.7700000 0.0700000 91 u238he 3.6100000 77feu1 0
88 kr g u238he rc cu su 0.0000000 0.0 1.3500000 0.1000000 0 0.0000000 71bla1 0
88 kr g u238he ms in 0.5988768 11.7 0.6000000 0.0700000 0 0.0000000 72boc1 0
88 kr g u238he cm cu 0.0000000 0.0 2.2800000 9.9000000% 0 0.0000000 73net2 0
88 kr g u238he rc cu 1.8365555 15.0 1.8400000 15.0000000% 0 0.0000000 71bri1 36
88 kr g u238he rc cu 1.8225817 15.0 1.8260000 15.0000000% 0 0.0000000 75dar1 36
88 kr g u238he rc cu 2.0114430 8.2 1.9500000 8.0000000% 87 kr g u238he 1.6300000 75cav1 0
88 kr g u238he rc cu 2.1958816 5.0 2.2000000 5.0000000% 0 0.0000000 74bal1 0
88 kr g u238he rc cu 2.2612128 5.4 2.1100000 0.0400000 138 xe g u238he 4.2200000 74bal1 0
88 kr g u238he rc cu 2.2719295 5.4 2.1200000 0.0200000 138 xe g u238he 4.2200000 74bal1 0
88 kr g u238he rc cu 2.3898126 5.4 2.2300000 0.0500000 138 xe g u238he 4.2200000 74bal1 0
88 kr g u238he rc cu 2.4005292 5.4 2.2400000 0.0500000 138 xe g u238he 4.2200000 74bal1 0
88 kr g u238he rc cu su 0.0000000 0.0 1.9500000 0.1500000 87 kr g u238he 1.6300000 74bla1 0
88 kr g u238he rc cu x4 0.0000000 0.0 2.7300000 0.1800000 140 ba g u238he 4.6000000 76raj1 0

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 88 kr g   u238he   rc    cu        1.9363683  5.2   1.9400000  0.1000000     0                    0.0000000   85liu1     0
 88 kr g   u238he   rc    cu        1.9787376  6.7   1.9800000  0.1300000   140 ba g      u238he      4.6000000   80zhe1     0
 88 kr g   u238he   rc    cu    rp   2.2852977  4.6   2.2300000  0.0000000  no. relative values =   12            74bal1
 88 br g   u238he   cm    cu        0.0000000  0.0   1.6250000 14.0000000%    0                    0.0000000   73net2     0
 88 br g   u238he   rc    fc    ul   0.0000000  0.0   1.3300000  0.2100000    88          u238he      1.0000000   71gri1     0
 88 se g   u238he   cm    cu    x3   0.0000000  0.0   0.4426000 33.0000000%    0                    0.0000000   73net2     0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value      no.   treatment

 88 sr g   pu239t   ms    cu        1.3525723  6.0   1.3500000  0.0000000     0                    0.0000000   58kri1     0
 88        pu239t   cm    cu        0.0000000  0.0   1.4200000  0.0000000     0                    0.0000000   72sid1     0
 88        pu239t   cm    cu        0.0000000  0.0   1.3850000  0.0000000     0                    0.0000000   73lam1     0
 88        pu239t   cm    cu        0.0000000  0.0   1.3700000  0.0200000     0                    0.0000000   73wal1     0
 88        pu239t   cm    cu        0.0000000  0.0   1.3800000  7.2000000%    0                    0.0000000   77cro1     0
 88 sr g   pu239t   ms    cu        1.3926485  2.9   1.3900000  0.0400000     0                    0.0000000   59ani1     0
 88 sr g   pu239t   ms    cu        1.2854446  2.0   1.2830000  0.0150000     0                    0.0000000   79mae2     0
 88 sr g   pu239t   ms    cu        1.3527318  2.3   1.3500000  0.0300000    85 rb g      pu239t      0.5740000   70lis1     0
 88 sr g   pu239t   ms    cu        1.3766053  2.3   0.6530000  0.0071000    90 sr g      pu239t      1.0000000   59fic1     0
 88 sr g   pu239t   ms    cu    rp   1.3335113  6.2   1.3600000  0.0000000  no. relative values =    1            86chi1
 88 sr g   pu239t   es    cu    cm   1.2924580  1.0   1.2900000  1.0000000%    0                    0.0000000   81mae2     0
 88 sr g   pu239t   es    re        1.3624878  2.2   0.3925000  1.0000000%   90 sr g      pu239t      0.6073000   81mae2    36
 88 rb g   pu239t   rc    cu        1.2523817 10.4   1.2500000  0.1300000     0                    0.0000000   80dic1     0
 88 rb g   pu239t   sp    fi        0.0599550 44.0   0.0450000 44.0000000%   88          pu239t      1.0000000   84sch1    36
 88 rb g   pu239t   cm    in        0.0000000  0.0   0.0644900 37.0000000%    0                    1.0000000   88wah1     0
 88 kr g   pu239t   cm    cu        0.0000000  0.0   1.3050000  2.0000000%    0                    0.0000000   73net2     0
 88 kr g   pu239t   ms    cu        1.2523817  4.8   1.2500000  0.0600000     0                    0.0000000   76bri2     0
 88 kr g   pu239t   rc    cu        1.2951528  5.2   1.0800000  0.0400000   138 xe g      pu239t      4.3200000   74haw1     0
 88 kr g   pu239t   ms    in        0.7213719  8.3   0.7200000  0.0600000     0                    0.0000000   77bri1     0
 88 kr g   pu239t   rc    cu        1.2580605  5.4   1.2500000  0.0600000    91 kr g      pu239t      0.7110000   77bri1     0
 88 kr g   pu239t   rc    cu    x4   0.0000000  0.0   1.6200000  0.1000000     0                    0.0000000   77gud1     0
 88 kr g   pu239t   rc    cu        1.3826294  5.0   1.3800000  5.0000000%    0                    0.0000000   74bal1     0
 88 kr g   pu239t   rc    cu        1.4614565  5.2   1.4500000  0.0700000   138 xe g      pu239t      5.1400000   74bal1     0
 88 kr g   pu239t   rc    cu        1.4513775  5.2   1.4400000  0.0600000   138 xe g      pu239t      5.1400000   74bal1     0
 88 kr g   pu239t   rc    cu        1.4110615  5.2   1.4000000  0.0600000   138 xe g      pu239t      5.1400000   74bal1     0
 88 kr g   pu239t   rc    cu        1.4009825  5.2   1.3900000  0.0500000   138 xe g      pu239t      5.1400000   74bal1     0
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88 kr g pu239t rc cu 1.2123055 9.9 1.2100000 0.1200000 0 0.0000000 80dic1 0
88 kr g pu239t rc cu x4 0.0000000 0.0 0.9000000 11.8000000% 0 0.0000000 80ram1 0
88 kr g pu239t sp fi 0.7567652 5.1 0.5680000 5.0000000% 88 pu239t 1.0000000 84sch1 36
88 kr g pu239t cm in 0.0000000 0.0 0.7902000 4.0000000% 0 0.0000000 88wah1 0
88 kr g pu239t rc cu rp 1.3935944 5.0 1.3400000 0.0000000 no. relative values = 11 74bal1
88 br g pu239t rc fc 0.8127232 49.2 0.6100000 0.3000000 88 pu239t 1.0000000 71gri1 0
88 br g pu239t cm cu x3 0.0000000 0.0 0.5377000 21.0000000% 0 0.0000000 73net2 0
88 br g pu239t rc cu 0.5310099 5.7 0.5300000 0.0300000 0 0.0000000 77bri1 0
88 br g pu239t rc in 0.5009527 6.0 0.5000000 0.0300000 0 0.0000000 77bri1 0
88 br g pu239t sp fi 0.4716459 6.1 0.3540000 6.0000000% 88 pu239t 1.0000000 84sch1 36
88 br g pu239t cm in 0.0000000 0.0 0.4766000 5.0000000% 0 1.0000000 88wah1 0
88 se g pu239t cm cu x3 0.0000000 0.0 0.0583100 45.0000000% 0 0.0000000 73net2 0
88 se g pu239t sp fi 0.0439670 61.0 0.0330000 61.0000000% 88 pu239t 1.0000000 84sch1 36
88 se g pu239t cm in 0.0000000 0.0 0.0432400 61.0000000% 0 1.0000000 88wah1 0
88 pu239f es cu cm 1.3955949 30.0 1.4000000 0.0000000 0 0.0000000 72sid1 0
88 pu239f cm cu 0.0000000 0.0 1.3300000 4.7000000% 0 0.0000000 77cro1 0
88 sr g pu239f ms cu 1.3197596 1.0 1.3180000 0.0120000 148 nd g pu239f 1.6540000 77mae1 0
88 sr g pu239f ms cu 1.2819536 2.0 1.2860000 0.0180000 0 0.0000000 77mae1 0
88 sr g pu239f ms cu 1.3785779 2.1 1.4400000 0.0300000 148 nd g pu239f 1.7300000 70lis1 0
88 sr g pu239f ms cu rp 1.3209451 3.2 0.3928000 0.0000000 no. relative values = 1 80mae4
88 sr g pu239f ms cu su 0.0000000 0.0 1.3100000 0.0200000 148 nd g pu239f 1.6500000 74mae1 0
88 pu239f es re 1.3786291 2.2 1.0400000 2.0000000% 88 pu239t 1.0000000 74mee4 0
88 sr g pu239f es re 1.3222710 1.2 0.3930000 1.0000000% 90 sr g pu239f 0.6069000 81mae2 36
88 sr g pu239f es cu cm 1.3357837 1.0 1.3400000 1.0000000% 0 0.0000000 81mae2 0
88 kr g pu239f cm cu 0.0000000 0.0 1.2700000 14.9000000% 0 0.0000000 73net2 0
88 kr g pu239f rc cu 1.3557208 5.0 1.3600000 5.0000000% 0 0.0000000 74bal1 0
88 kr g pu239f rc cu 1.4318597 5.4 1.3900000 0.0500000 138 xe g pu239f 4.5600000 74bal1 0
88 kr g pu239f rc cu 1.3803539 5.4 1.3400000 0.0300000 138 xe g pu239f 4.5600000 74bal1 0
88 kr g pu239f rc cu 1.3700528 5.4 1.3300000 0.0200000 138 xe g pu239f 4.5600000 74bal1 0
88 kr g pu239f rc cu rp 1.3805508 5.4 1.3700000 0.0000000 no. relative values = 10 74bal1
88 kr g pu239f rc cu 1.6149027 6.2 1.6200000 0.1000000 0 0.0000000 77gud1 0
88 br g pu239f cm cu x3 0.0000000 0.0 0.4819000 26.0000000% 0 0.0000000 73net2 0
88 se g pu239f cm cu x3 0.0000000 0.0 0.0463300 47.0000000% 0 0.0000000 73net2 0
88 pu241t cm cu 0.0000000 0.0 0.9500000 0.0000000 0 0.0000000 72sid1 0
88 pu241t cm cu 0.0000000 0.0 0.9550000 5.0000000% 0 0.0000000 77cro1 0
88 pu241t cm cu 0.0000000 0.0 0.9660000 0.0150000 0 0.0000000 73wal1 0

88 sr g pu241t ms cu 0.9638495 2.0 0.9670000 0.0060000 0 0.0000000 77mae1 0
88 sr g pu241t ms cu 0.9868743 2.7 0.9540000 0.0250000 148 nd g pu241t 1.8616500 70lis1 0
88 sr g pu241t ms cu 1.0177810 2.1 1.0200000 0.0200000 148 nd g pu241t 1.9300000 86chi1 0
88 sr g pu241t ms cu rp 0.9914351 6.4 0.9780000 0.0000000 no. relative values = 1 86chi1
88 kr g pu241t ms cu 0.9967420 8.0 1.0000000 0.0800000 0 0.0000000 76bri2 0
88 kr g pu241t es re cm 0.9860555 10.1 0.9990000 0.1000000 88 pu241t 1.0000000 74mee1 0
88 kr g pu241t ms in 0.4136479 9.6 0.4150000 0.0400000 0 0.0000000 77bri1 0
88 kr g pu241t rc cu 1.0465931 8.9 1.0000000 0.0800000 91 kr g pu241t 0.9300000 77bri1 0
88 br g pu241t rc cu 0.5880778 10.2 0.5900000 0.0600000 0 0.0000000 77bri1 0
88 br g pu241t rc in 0.4983710 16.0 0.5000000 0.0800000 0 0.0000000 77bri1 0
88 u233t cm cu 0.0000000 0.0 5.3600000 0.0000000 0 0.0000000 72sid1 0
88 u233t cm cu 0.0000000 0.0 5.5400000 0.0000000 0 0.0000000 73lam1 0
88 u233t cm cu 0.0000000 0.0 5.5300000 0.0900000 0 0.0000000 73wal1 0
88 sr g u233t ms cu su 0.0000000 0.0 0.9280000 0.0060000 90 sr g u233t 1.0000000 59gor1 0
88 sr g u233t ms cu x4 0.0000000 0.0 5.1700000 0.1500000 90 sr g u233t 5.5800000 61gor1 0
88 sr g u233t ms cu rp 5.4312540 9.0 5.3600000 0.0000000 no. relative values = 2 61bid1
88 u233t cm cu 0.0000000 0.0 5.4500000 3.5000000% 0 0.0000000 77cro1 0
88 sr g u233t ms cu su 0.0000000 0.0 5.3000000 0.3000000 0 0.0000000 58ani1 0
88 sr g u233t ms cu 5.2740156 5.7 5.3000000 0.3000000 0 0.0000000 59ani1 0
88 u233t ms cu 5.4083538 2.0 5.4350000 0.0410000 0 0.0000000 80weh1 0
88 sr g u233t ms cu 5.5426919 2.0 5.5700000 0.0400000 0 0.0000000 70lis1 0
88 sr g u233t sp fi ul 0.0000000 0.0 1.5800000 0.4030000 88 u233t 100.0000000 83qua1 0
88 sr g u233t ms cu rp 5.4911335 4.6 5.4600000 0.0000000 no. relative values = 2 86chi1
88 sr g u233t sp in ul 0.0000000 0.0 0.0850000 0.0220000 0 0.0000000 88qua1 0
88 rb g u233t ms in 0.3134556 7.0 0.3150000 0.0220000 0 0.0000000 80weh1 0
88 rb g u233t sp fi su 0.0000000 0.0 8.1900000 0.8810000 88 u233t 100.0000000 83qua1 0
88 rb g u233t sp in 0.4378428 10.9 0.4400000 0.0480000 0 0.0000000 88qua1 0
88 rb g u233t es fi 0.3148814 7.0 0.0579000 6.9000000% 88 u233t 1.0000000 91jam2 0
88 rb g u233t es in 0.3511698 20.0 0.3529000 20.0000000% 0 0.0000000 88wah1 0
88 rb g u233t es in 0.3522644 20.0 0.3540000 20.0000000% 0 0.0000000 89rid1 0
88 kr g u233t cm cu 0.0000000 0.0 5.3740000 2.0000000% 0 0.0000000 73net2 0
88 kr g u233t sp cu 5.2541137 5.0 5.2800000 0.1800000 0 0.0000000 75bri1 0
88 kr g u233t sp in 3.8808794 5.0 3.9000000 0.1700000 0 0.0000000 75bri1 0
88 kr g u233t ms in 3.8092324 2.0 3.8280000 0.0470000 0 0.0000000 80weh1 0
88 kr g u233t sp fi 3.6649144 5.2 67.3900000 1.9970000 88 u233t 100.0000000 83qua1 0
88 kr g u233t sp in 3.6062326 5.0 3.6240000 0.1290000 0 0.0000000 88qua1 0

88 br g u233t rc in x1 0.0000000 0.0 2.9000000 0.7000000 0 0.0000000 66sil1 0
88 br g u233t rc fc x1 0.0000000 0.0 0.4700000 0.0600000 88 u233t 1.0000000 71gri1 0
88 br g u233t cm cu 0.0000000 0.0 2.1080000 21.0000000% 0 0.0000000 73net2 0
88 br g u233t sp in 1.2637736 7.9 1.2700000 0.1000000 0 0.0000000 75bri1 0
88 br g u233t sp cu 1.3632833 7.3 1.3700000 0.1000000 0 0.0000000 75bri1 0
88 br g u233t ms in 1.1622736 2.9 1.1680000 0.0340000 0 0.0000000 80weh1 0
88 br g u233t rc cu 1.0846560 20.2 1.0900000 0.2200000 0 0.0000000 81gud1 0
88 br g u233t sp fi 1.1056197 6.7 20.3300000 1.3330000 88 u233t 100.0000000 83qua1 0
88 br g u233t sp in 1.0886364 6.9 1.0940000 0.0750000 0 0.0000000 88qua1 0
88 se g u233t cm cu x3 0.0000000 0.0 0.2127000 45.0000000% 0 0.0000000 73net2 0
88 se g u233t ms in 0.1233921 12.1 0.1240000 0.0150000 0 0.0000000 80weh1 0
88 se g u233t sp fi ul 0.0000000 0.0 1.6600000 0.2130000 88 u233t 100.0000000 83qua1 0
88 se g u233t sp in 0.0885637 13.5 0.0890000 0.0120000 0 0.0000000 88qua1 0
88 as g u233t sp fi ul 0.0000000 0.0 0.8500000 0.1250000 88 u233t 100.0000000 83qua1 0
88 as g u233t sp in ul 0.0000000 0.0 0.0460000 0.0070000 0 0.0000000 88qua1 0
88 th232f es cu cm 6.9935657 30.0 7.0000000 0.0000000 0 0.0000000 65eng1 0
88 th232f es cu cm 6.7737679 30.0 6.7800000 0.0000000 0 0.0000000 72sid1 0
88 th232f es cu cm 6.3141907 30.0 6.3200000 0.0000000 0 0.0000000 73lam1 0
88 th232f cm cu 0.0000000 0.0 6.6600000 0.0000000 0 0.0000000 74lam1 0
88 th232f cm cu 0.0000000 0.0 7.0800000 5.7000000% 0 0.0000000 77cro1 0
88 th232f es cu 7.4731245 5.0 7.4800000 5.0000000% 0 0.0000000 74mee0 0
88 kr g th232f rc re 6.9916951 6.7 1.5500000 6.7000000% 140 ba g u235t 0.0000000 73bra1 7
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

88 kr g th232f cm cu 0.0000000 0.0 7.1690000 4.0000000% 0 0.0000000 73net2 0
88 kr g th232f rc cu 6.7937495 7.4 6.8000000 0.5000000 0 0.0000000 77gud1 0
88 kr g th232f ms re 7.3384188 2.2 1.1150000 0.0110000 86 kr g th232f 1.0000000 68har1 0
88 kr g th232f rc cu 6.7637771 6.5 6.7700000 0.4400000 0 0.0000000 86ric1 0
88 br g th232f cm cu 0.0000000 0.0 5.8710000 8.1000000% 0 0.0000000 73net2 0
88 br g th232f rc fc ul 0.0000000 0.0 1.3400000 0.1900000 88 th232f 1.0000000 71gri1 0
88 br g th232f rc cu x1 0.0000000 0.0 4.8800000 0.3200000 140 ba g th232f 7.9700000 85chu1 0
88 se g th232f cm cu 0.0000000 0.0 2.1840000 22.0000000% 0 0.0000000 73net2 0
89 y g u235t ms re rp 4.6289617 6.4 1.0000000 0.0000000 no. relative values = 1 62far2
89 u235t cm cu 0.0000000 0.0 4.7500000 0.0000000 0 0.0000000 72sid1 0

89		u235t	cm	cu		0.0000000	0.0	4.8400000	0.0000000	0			0.0000000	73lam1	0
89		u235t	cm	cu		0.0000000	0.0	4.7400000	0.0900000	0			0.0000000	73wal1	0
89		u235t	ms	cu		4.8434823	2.0	4.8400000	0.0640000	0			0.0000000	76dii1	0
89		u235t	sp	cu		4.7736055	5.0	4.7800000	0.0900000	0			1.0020600	76woh2	0
89		u235t	cm	cu		0.0000000	0.0	4.7600000	1.9000000%	0			0.0000000	77cro1	0
89	sr g	u235t	rc	cu		4.6763068	60.0	4.6000000	0.0000000	140	ba g	u235t	6.1000000	51nov1	0
89	sr g	u235t	rc	cu		4.7834392	20.0	4.7800000	1.5000000%	0			0.0000000	53ree1	0
89	sr g	u235t	rc	cu	rp	5.0494242	36.5	4.7800000	0.0000000	no. relative values =		3		53ree1	
89	sr g	u235t	rc	cu	rp	5.2110860	31.6	4.7800000	0.0000000	no. relative values =		1		55ree1	
89	sr g	u235t	rc	re	rp	5.0739807	31.6	0.8700000	0.0000000	no. relative values =		1		56her1	
89	sr g	u235t	rc	cu		4.6508921	10.0	4.7400000	1.3000000%	140	ba g	u235t	6.3200000	57bae1	0
89	sr g	u235t	ms	re		4.7391551	2.2	0.8190000	2.0000000%	90	sr g	u235t	1.0000000	62far2	0
89	sr g	u235t	cm	cu		0.0000000	0.0	4.7100000	5.0000000%	0			0.0000000	73net2	0
89	sr g	u235t	rc	cu		4.8835111	5.0	4.8800000	0.2400000	0			0.0000000	74rao1	0
89	sr g	u235t	ms	fi		0.0331560	85.7	0.7000000	0.6000000	89		u235t	100.0000000	76sie1	0
89	sr g	u235t	rc	cu	rp	4.1480425	15.9	4.7300000	0.0000000	no. relative values =		1		69erd1	
89	sr g	u235t	ms	fi	ul	0.0000000	0.0	0.7000000	0.6000000	89		u235t	100.0000000	76sie1	0
89	sr g	u235t	rc	cu		4.6148387	20.0	0.0320000	0.0030000	140	ba g	u235t	0.0430000	51gru1	0
89	sr g	u235t	ms	in		0.0090065	77.8	0.0090000	0.0070000	0			0.0000000	79cle1	0
89	sr g	u235t	rc	re	nr	4.5134811	10.0	0.7800000	0.0200000	90	sr g	u235t	1.0000000	56her1	0
89	sr g	u235t	ms	fi	su	0.0000000	0.0	0.7000000	0.6000000	89		u235t	100.0000000	76wol1	0
89	sr g	u235t	sp	fi		0.0094731	99.9	0.2000000	0.2000000	89		u235t	100.0000000	80lan1	0
89	rb g	u235t	ms	in		0.1901367	21.1	0.1900000	0.0400000	0			0.0000000	72bal1	0
89	rb g	u235t	ms	in		0.2201583	31.8	0.2200000	0.0700000	0			0.0000000	72cha1	0
89	rb g	u235t	es	fi		0.1908839	30.0	0.0403000	0.0000000	89		u235t	1.0000000	72ree1	0
89	rb g	u235t	cm	cu		0.0000000	0.0	4.7070000	5.0000000%	0			0.0000000	73net2	0
89	rb g	u235t	ms	fi		0.2273556	18.8	4.8000000	0.9000000	89		u235t	100.0000000	76sie1	0
89	rb g	u235t	sp	re		5.1345121	5.1	0.9200000	0.0200000	91	rb g	u235t	1.0000000	75ree1	0
89	rb g	u235t	sp	in	x4	0.0000000	0.0	0.0351000	0.0029000	0			0.0000000	75ree1	0
89	rb g	u235t	sp	fi	su	0.0000000	0.0	0.0640000	0.0160000	89		u235t	1.0000000	74sie2	0
89	rb g	u235t	sp	fi		0.2463019	13.5	5.2000000	0.7000000	89		u235t	100.0000000	78str1	0
89	rb g	u235t	sp	fi		0.1847264	5.1	3.9000000	0.1900000	89		u235t	100.0000000	79bal1	0
89	rb g	u235t	ms	fi	su	0.0000000	0.0	6.7000000	2.5000000	89		u235t	100.0000000	75cle2	0
89	rb g	u235t	ms	in	x4	0.0000000	0.0	0.3420000	0.0540000	0			0.0000000	79cle1	0
89	rb g	u235t	rc	cu		4.4532017	5.0	4.4500000	0.1700000	0			0.0000000	76thi1	0
89	rb g	u235t	rc	cu		4.4431945	6.0	4.4400000	6.0000000%	0			0.0000000	80ram1	0

89	rb	g	u235t	ms	fi	su	0.0000000	0.0	4.8000000	0.9000000	89	u235t	100.0000000	76wol1	0
89	rb	g	u235t	sp	fi	x4	0.0000000	0.0	7.1000000	1.0000000	89	u235t	100.0000000	80lan1	0
89	rb	g	u235t	es	in		0.1989430	7.0	0.1988000	7.0000000%	0		1.0000000	88wah1	0
89	rb	g	u235t	sp	fi	x4	0.0000000	0.0	6.4000000	0.5000000%	89	u235t	100.0000000	79str1	0
89	rb	g	u235t	sp	in	x1	0.0000000	0.0	1.1700000	0.1100000	0		0.0000000	90rud1	0
89	rb	g	u235t	sp	cu	x1	0.0000000	0.0	6.2300000	0.5000000	0		0.0000000	90rud1	0
89	rb	g	u235t	es	in		0.2271633	20.0	0.2270000	20.0000000%	0		0.0000000	89rid1	0
89	rb	g	u235t	es	fi		0.2451840	10.8	0.0517640	10.8000000%	89	u235t	1.0000000	91jam2	0
89	kr	g	u235t	rc	fc		4.5471110	10.0	0.9600000	0.0040000	89	sr g	u235t	1.0000000	58wah1	0
89	kr	g	u235t	sp	in	su	0.0000000	0.0	1.4500000	0.3000000	91	kr g	u235t	1.0000000	69ehr1	14
89	kr	g	u235t	rc	in		3.2623455	5.8	3.2600000	0.1900000	0		0.0000000	72ehr1	0
89	kr	g	u235t	es	fi	cm	3.2777094	5.9	0.6920000	0.0400000	89	u235t	1.0000000	73ami1	0
89	kr	g	u235t	cm	cu		0.0000000	0.0	4.4700000	7.0000000%	0		0.0000000	73net2	0
89	kr	g	u235t	ms	fi		3.1971876	3.1	67.5000000	2.0000000	89	u235t	100.0000000	76sie1	0
89	kr	g	u235t	sp	fi	su	0.0000000	0.0	0.5890000	0.0400000	89	u235t	1.0000000	74sie2	0
89	kr	g	u235t	sp	cu		4.6333312	5.0	4.6300000	0.1700000	0		0.0000000	75bri1	0
89	kr	g	u235t	sp	in		3.4925110	5.0	3.4900000	0.1500000	0		0.0000000	75bri1	0
89	kr	g	u235t	sp	fi		3.4055969	5.1	71.9000000	0.7000000	89	u235t	100.0000000	78str1	0
89	kr	g	u235t	ms	fi	su	0.0000000	0.0	71.0000000	3.2000000	89	u235t	100.0000000	75cle2	0
89	kr	g	u235t	ms	in		3.4835045	2.7	3.4810000	0.0940000	0		0.0000000	79cle1	0
89	kr	g	u235t	ms	fi	su	0.0000000	0.0	67.5000000	2.0000000	89	u235t	100.0000000	76wol1	0
89	kr	g	u235t	rc	cu		5.2637845	21.5	5.2600000	1.1300000	0		0.0000000	84chu1	0
89	kr	g	u235t	sp	fi		3.4245432	5.1	72.3000000	1.3000000	89	u235t	100.0000000	80lan1	0
89	kr	g	u235t	rc	cu	x4	0.0000000	0.0	5.2600000	1.1300000	0		0.0000000	85has1	0
89	kr	g	u235t	cm	in		0.0000000	0.0	3.5340000	2.0000000%	0		1.0000000	88wah1	0
89	kr	g	u235t	sp	fi		3.4103335	5.1	72.0000000	0.9000000%	89	u235t	100.0000000	79str1	0
89	kr	g	u235t	sp	in		3.7627053	15.4	3.7600000	0.5800000	0		0.0000000	90rud1	0
89	kr	g	u235t	sp	cu		4.7734320	14.3	4.7700000	0.6800000	0		0.0000000	90rud1	0
89	br	g	u235t	cm	cu	x3	0.0000000	0.0	1.4230000	22.0000000%	0		0.0000000	73net2	0
89	br	g	u235t	cm	in		0.0000000	0.0	1.1670000	4.0000000%	0		1.0000000	88wah1	0
89	br	g	u235t	cm	in	x3	0.0000000	0.0	2.1300000	0.0700000	0		0.0000000	69bra2	0
89	br	g	u235t	es	fc	x1	0.0000000	0.0	0.5600000	0.0000000	89	u235t	1.0000000	71gri1	0
89	br	g	u235t	ms	fi		1.1746704	5.7	24.8000000	1.4000000	89	u235t	100.0000000	76sie1	0
89	br	g	u235t	ms	fi	su	0.0000000	0.0	22.3000000	2.4000000	89	u235t	100.0000000	75cle2	0
89	br	g	u235t	ms	fi	su	0.0000000	0.0	24.8000000	1.4000000	89	u235t	100.0000000	76wol1	0
89	br	g	u235t	ms	in		0.9556871	6.2	0.9550000	0.0590000	0		0.0000000	79cle1	0

89	br g	u235t	rc	fi		1.2362459	20.3	0.2610000	20.3000000%	89	u235t	1.0000000	83mei1	0
89	br g	u235t	rc	fi		1.4872843	20.4	31.4000000	6.4000000	89	u235t	100.0000000	78kra1	0
89	br g	u235t	rc	fi	su	0.0000000	0.0	0.4800000	0.0700000	89	u235t	1.0000000	73kra3	0
89	br g	u235t	rc	fi	su	0.0000000	0.0	0.3140000	0.0640000	89	u235t	1.0000000	77kra1	0
89	br g	u235t	rc	in		1.4042634	20.5	1.2300000	0.2500000	88	br g	u235t	1.5600000	83eng1	0
89	br g	u235t	rc	in		1.6011512	35.6	1.6000000	0.5700000	0			0.0000000	69bra2	0
89	br g	u235t	rc	in	x1	0.0000000	0.0	1.2000000	0.1000000	88	br g	u235t	1.0000000	66sil1	0
89	br g	u235t	rc	in	x1	0.0000000	0.0	2.0100000	0.7100000	0			0.0000000	69bra2	0
89	br g	u235t	rc	in	x1	0.0000000	0.0	2.1000000	0.5000000	0			0.0000000	66sil1	0
89	br g	u235t	sp	cu		0.9006475	8.9	0.9000000	0.0800000	0			0.0000000	90rud1	0
89	br g	u235t	sp	cu		1.1378181	7.0	1.1370000	0.0800000	0			0.0000000	75bri1	0
89	br g	u235t	sp	fi		0.9425783	5.6	19.9000000	1.1000000	89	u235t	100.0000000	80lan1	0
89	br g	u235t	sp	fi		1.0420463	5.1	22.0000000	0.9000000	89	u235t	100.0000000	78str1	0
89	br g	u235t	sp	fi		0.9757343	5.1	20.6000000	0.8000000%	89	u235t	100.0000000	79str1	0
89	br g	u235t	sp	fi	su	0.0000000	0.0	0.3140000	0.0350000	89	u235t	1.0000000	74sie2	0
89	br g	u235t	sp	in		0.9907123	14.1	0.9900000	0.1400000	0			0.0000000	90rud1	0
89	br g	u235t	sp	in		1.0507555	9.5	1.0500000	0.1000000	0			0.0000000	75bri1	0
89	br g	u235t	sp	in		1.2448950	26.6	1.2440000	0.3310000	0			0.0000000	75ree1	0
89	br g	u235t	sp	re	x4	0.0000000	0.0	0.7200000	0.0400000	88	br g	u235t	1.0000000	75ree1	0
89	se g	u235t	rc	cu		0.1100791	36.4	0.1100000	0.0400000	0			0.0000000	71tom1	0
89	se g	u235t	cm	fc		0.0000000	0.0	0.0230000	0.0100000	89	u235t	1.0000000	73ami1	0
89	se g	u235t	cm	fc	x3	0.0000000	0.0	0.0300000	0.0050000	89	u235t	1.0000000	73kra2	0
89	se g	u235t	es	fc		0.1070466	30.0	0.0226000	0.0000000	89	u235t	1.0000000	74wol1	0
89	se g	u235t	ms	fi		0.1042046	36.4	2.2000000	0.8000000	89	u235t	100.0000000	76sie1	0
89	se g	u235t	sp	fi	su	0.0000000	0.0	0.0330000	0.0120000	89	u235t	1.0000000	74sie2	0
89	se g	u235t	sp	fi		0.0426292	33.3	0.9000000	0.3000000	89	u235t	100.0000000	78str1	0
89	se g	u235t	ms	in		0.0240173	54.2	0.0240000	0.0130000	0			0.0000000	79cle1	0
89	se g	u235t	ms	fi	su	0.0000000	0.0	2.2000000	0.8000000	89	u235t	100.0000000	76wol1	0
89	se g	u235t	sp	fi		0.0236829	60.0	0.5000000	0.3000000	89	u235t	100.0000000	80lan1	0
89	se g	u235t	cm	in		0.0000000	0.0	0.0890600	39.0000000%	0			1.0000000	88wah1	0
89	se g	u235t	sp	fi		0.0473657	5.1	1.0000000	0.3000000%	89	u235t	100.0000000	79str1	0
89	as g	u235t	es	cu		0.0001521	30.0	0.0001520	0.0000000	0			0.0000000	74mee2	0
89		u235f	cm	cu		0.0000000	0.0	4.3600000	6.0000000%	0			0.0000000	77cro1	0
89		u235f	es	cu		4.5228323	5.0	4.5740000	0.2300000	0			0.0000000	81mae1	0
89		u235f	es	cu		4.5218435	5.0	4.5730000	0.2300000	0			0.0000000	81mae1	0
89		u235f	es	cu		4.5218435	5.0	4.5730000	0.2300000	0			0.0000000	81mae2	0

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 89        u235f    cm    cu        0.0000000  0.0   4.5730000  0.2300000     0                    0.0000000   81mae1      0
 89 sr g   u235f    cm    cu        0.0000000  0.0   4.4040000  5.0000000%    0                    0.0000000   73net2      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.    value                 nuclide     material      value      no.   treatment

 89 sr g   u235f    es    cu        4.4686562  5.1   4.5100000  0.2300000   148 nd g     u235f       1.6800000   74mae1      0
 89 sr g   u235f    es    cu    cm   4.4002194 30.0   4.4500000  0.0000000     0                    0.0000000   72sid1      0
 89 sr g   u235f    rc    cu        4.4297321  5.0   0.9730000  2.4000000%   99 mo g     u235t       0.0000000   76for1      7
 89 sr g   u235f    rc    cu        4.5116798  5.0   0.9910000  2.4000000%   99 mo g     u235t       0.0000000   76for1      7
 89 sr g   u235f    rc    cu        4.5162325  5.0   0.9920000  2.4000000%   99 mo g     u235t       0.0000000   76for1      7
 89 sr g   u235f    rc    cu        4.5617590  5.0   1.0020000  2.4000000%   99 mo g     u235t       0.0000000   76for1      7
 89 sr g   u235f    rc    cu        4.3364823  5.1   4.2200000  0.2100000   140 ba g     u235f       5.7500000   70bow1      0
 89 sr g   u235f    rc    cu        4.3823525 10.1   4.4000000  0.4000000    99 mo g     u235f       5.9000000   60bon1      0
 89 sr g   u235f    rc    cu        4.4139800  5.1   4.4000000  0.1800000   140 ba g     u235f       5.8900000   72cun2      0
 89 sr g   u235f    rc    cu        4.1611255  5.0   0.9140000  1.8000000%   99 mo g     u235t       0.0000000   76for1      7
 89 sr g   u235f    rc    cu        4.2066520  5.0   0.9240000  2.4000000%   99 mo g     u235t       0.0000000   76for1      7
 89 sr g   u235f    rc    cu        4.2112047  5.0   0.9250000  2.4000000%   99 mo g     u235t       0.0000000   76for1      7
 89 sr g   u235f    rc    cu        4.2248627  5.0   0.9280000  2.4000000%   99 mo g     u235t       0.0000000   76for1      7
 89 sr g   u235f    rc    cu        4.2339680  5.0   0.9300000  2.4000000%   99 mo g     u235t       0.0000000   76for1      7
 89 sr g   u235f    rc    cu        4.2339680  5.0   0.9300000  2.4000000%   99 mo g     u235t       0.0000000   76for1      7
 89 sr g   u235f    rc    cu        4.2385206  5.0   0.9310000  2.4000000%   99 mo g     u235t       0.0000000   76for1      7
 89 sr g   u235f    rc    cu        4.2885998  5.0   0.9420000  2.4000000%   99 mo g     u235t       0.0000000   76for1      7
 89 sr g   u235f    rc    cu        4.3068104  5.0   0.9460000  2.4000000%   99 mo g     u235t       0.0000000   76for1      7
 89 sr g   u235f    rc    cu        4.3432317  5.0   0.9540000  1.8000000%   99 mo g     u235t       0.0000000   76for1      7
 89 sr g   u235f    rc    cu        4.4661533  5.0   0.9810000  2.4000000%   99 mo g     u235t       0.0000000   76for1      7
 89 sr g   u235f    rc    cu        4.5071272  5.0   0.9900000  2.4000000%   99 mo g     u235t       0.0000000   76for1      7
 89 sr g   u235f    rc    cu    x4   0.0000000  0.0   5.6000000  0.4000000    99 mo g     u235f       6.4000000   60pet1      0
 89 sr g   u235f    rc    cu    x4   0.0000000  0.0   1.0470000  2.4000000%   99 mo g     u235t       0.0000000   76for1      7
 89 sr g   u235f    rc    cu    x4   0.0000000  0.0   1.0900000  2.4000000%   99 mo g     u235t       0.0000000   76for1      7
 89 sr g   u235f    rc    re    su   0.0000000  0.0   0.9280000  0.6400000%   99 mo g     u235t       0.0000000   64cow1      7
 89 rb g   u235f    cm    cu        0.0000000  0.0   4.4000000  5.0000000%    0                    0.0000000   73net2      0
 89 rb g   u235f    rc    in        0.4153016 52.4   0.4200000  0.2200000     0                    0.0000000   81mar1      0
 89 kr g   u235f    rc    cu        4.3112262  5.0   4.3600000  0.1000000     0                    0.0000000   72hof1      0
 89 kr g   u235f    rc    fc    su   0.0000000  0.0   0.9350000  0.0060000    89          u235f       1.0000000   72wol1      0
 89 kr g   u235f    cm    cu        0.0000000  0.0   4.1400000  7.0000000%    0                    0.0000000   73net2      0
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89	kr g	u235f	rc	fc		4.0440243	5.2	0.9350000	0.0060000	89		u235f	1.0000000	75wol1	0
89	kr g	u235f	rc	cu		4.4101075	5.0	4.4600000	5.0000000%	0			0.0000000	74bal1	0
89	kr g	u235f	rc	cu		4.2099971	5.4	4.3200000	0.1200000	88	kr g	u235f	3.4900000	74bal1	0
89	kr g	u235f	rc	cu		4.2392331	5.4	4.3500000	0.1200000	88	kr g	u235f	3.4900000	74bal1	0
89	kr g	u235f	rc	cu		4.3171961	5.4	4.4300000	0.0900000	88	kr g	u235f	3.4900000	74bal1	0
89	kr g	u235f	rc	cu		4.2919389	5.2	4.5000000	0.1700000	138	xe g	u235f	6.2300000	74bal1	0
89	kr g	u235f	rc	cu		4.3682400	5.2	4.5800000	0.1600000	138	xe g	u235f	6.2300000	74bal1	0
89	kr g	u235f	rc	cu		4.2824012	5.2	4.4900000	0.1100000	138	xe g	u235f	6.2300000	74bal1	0
89	kr g	u235f	rc	cu		4.3587024	5.2	4.5700000	0.0700000	138	xe g	u235f	6.2300000	74bal1	0
89	kr g	u235f	rc	cu		4.3606669	5.0	4.4100000	0.2200000	0			0.0000000	81mar1	0
89	kr g	u235f	rc	in		2.6796842	9.2	2.7100000	0.2500000	0			0.0000000	81mar1	0
89	br g	u235f	cm	cu	x3	0.0000000	0.0	1.2020000	32.1000000%	0			0.0000000	73net2	0
89	br g	u235f	rc	in		1.3447862	5.0	1.3600000	0.0500000	0			0.0000000	81mar1	0
89		u235he	cm	cu	es	0.0000000	0.0	4.3470000	0.0000000	0			0.0000000	63wea1	0
89		u235he	ms	cu		3.9323309	8.0	4.0000000	0.3000000	90		u235he	4.6500000	72boc1	0
89		u235he	cm	cu		0.0000000	0.0	4.2400000	4.4000000%	0			0.0000000	77cro1	0
89		u235he	es	cu		4.1917966	10.0	4.2130000	10.0000000%	0			0.0000000	74mee8	0
89	sr g	u235he	rc	re		4.3160630	10.0	1.0900000	0.0100000	99	mo g	u235t	0.0000000	56for1	7
89	sr g	u235he	rc	re		4.3954338	10.4	0.8600000	0.0400000	99	mo g	u235he	1.0000000	58pro1	0
89	sr g	u235he	rc	re		3.8409001	10.0	0.9700000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
89	sr g	u235he	cm	cu		0.0000000	0.0	4.1600000	0.0000000	0			0.0000000	69gun2	0
89	sr g	u235he	cm	cu		0.0000000	0.0	3.9300000	4.1000000%	0			0.0000000	73net2	0
89	sr g	u235he	cm	cu		0.0000000	0.0	4.5000000	0.0000000	0			0.0000000	60kat1	0
89	sr g	u235he	rc	re	su	0.0000000	0.0	1.0100000	0.7200000%	99	mo g	u235t	0.0000000	64cow1	7
89	sr g	u235he	rc	cu		3.9992877	5.0	1.0100000	2.4000000%	99	mo g	u235t	0.0000000	76for1	7
89	sr g	u235he	rc	cu		4.3160630	5.0	1.0900000	2.4000000%	99	mo g	u235t	0.0000000	76for1	7
89	sr g	u235he	rc	cu		3.7993048	10.4	4.2000000	0.4000000	99	mo g	u235he	5.6500000	60bon1	0
89	rb g	u235he	cm	cu		0.0000000	0.0	3.9190000	4.1000000%	0			0.0000000	73net2	0
89	kr g	u235he	ms	in		2.5371663	17.3	2.5500000	0.4400000	0			0.0000000	72boc1	0
89	kr g	u235he	cm	cu		0.0000000	0.0	3.4780000	7.0000000%	0			0.0000000	73net2	0
89	kr g	u235he	rc	cu		4.0196673	5.0	4.0400000	5.0000000%	0			0.0000000	74bal1	0
89	kr g	u235he	rc	cu		3.4916663	5.7	3.7200000	0.1200000	88	kr g	u235he	3.4700000	74bal1	0
89	kr g	u235he	rc	cu		3.5855283	5.7	3.8200000	0.1100000	88	kr g	u235he	3.4700000	74bal1	0
89	kr g	u235he	rc	cu		3.4165767	5.7	3.6400000	0.1400000	88	kr g	u235he	3.4700000	74bal1	0
89	kr g	u235he	rc	cu		3.5104387	5.7	3.7400000	0.0400000	88	kr g	u235he	3.4700000	74bal1	0
89	kr g	u235he	rc	cu		3.4102966	5.7	4.2900000	0.1900000	138	xe g	u235he	3.9600000	74bal1	0

89	kr g	u235he	rc	cu		3.4977401	5.7	4.4000000	0.0700000	138 xe g	u235he	3.9600000	74bal1	0
89	kr g	u235he	rc	cu		3.4341448	5.7	4.3200000	0.1900000	138 xe g	u235he	3.9600000	74bal1	0
89	br g	u235he	cm	cu	x3	0.0000000	0.0	0.6502000	32.1000000%	0		0.0000000	73net2	0
89		u238f	cm	cu	es	0.0000000	0.0	2.5000000	0.0000000	0		0.0000000	64wal1	0
89		u238f	es	cu	cm	2.7408603	30.0	2.7500000	0.0000000	0		0.0000000	72sid1	0
89		u238f	cm	cu		0.0000000	0.0	3.0100000	6.7000000%	0		0.0000000	77cro1	0
89		u238f	cm	cu		0.0000000	0.0	2.6140000	0.1830000	0		0.0000000	81mae1	0
89		u238f	es	cu		2.6216916	5.5	2.5900000	0.1400000	148 nd g	u238f	2.0800000	74mae1	0
89		u238f	rc	cu		2.7607938	5.0	2.7700000	0.0900000	0		0.0000000	85li 1	0
89		u238f	rc	cu	x4	0.0000000	0.0	3.3300000	0.1000000	0		0.0000000	85li 1	0
89	sr g	u238f	rc	cu		3.1334278	60.0	3.3000000	0.0000000	140 ba g	u238f	6.1000000	51eng3	0
89	sr g	u238f	rc	cu		2.9865484	60.0	3.3000000	0.0000000	140 ba g	u238f	6.4000000	52eng1	0
89	sr g	u238f	rc	cu		2.7436234	20.0	2.7000000	0.3000000	140 ba g	u238f	5.7000000	54kel1	0
89	sr g	u238f	rc	cu		2.9969043	15.0	3.1200000	0.0000000	140 ba g	u238f	6.0300000	72cun2	36
89	sr g	u238f	cm	cu		0.0000000	0.0	2.6750000	10.0000000%	0		0.0000000	73net2	0
89	sr g	u238f	rc	cu		3.1195973	5.1	3.1300000	0.1600000	0		0.0000000	74rao1	0
89	sr g	u238f	cm	cu		0.0000000	0.0	2.9000000	0.0000000	0		0.0000000	60kat1	0
89	sr g	u238f	rc	cu		3.4469516	30.0	3.7000000	0.0000000	99 mo g	u238f	6.6000000	60pet1	36
89	sr g	u238f	rc	re		2.3818005	10.0	0.5000000	5.0000000%	99 mo g	u235t	0.0000000	61lev1	7
89	sr g	u238f	rc	re	su	0.0000000	0.0	0.5510000	0.5600000%	99 mo g	u235t	0.0000000	64cow1	7
89	sr g	u238f	rc	cu		2.4717576	15.0	2.4800000	0.0000000	0		0.0000000	75fly4	0
89	sr g	u238f	rc	cu		2.6390350	5.0	0.5540000	2.4000000%	99 mo g	u235t	0.0000000	76for1	7
89	sr g	u238f	rc	cu		2.7438342	5.0	0.5760000	2.4000000%	99 mo g	u235t	0.0000000	76for1	7
89	sr g	u238f	rc	cu		2.7295434	5.0	0.5730000	2.4000000%	99 mo g	u235t	0.0000000	76for1	7
89	sr g	u238f	rc	cu		2.7247798	5.0	0.5720000	2.4000000%	99 mo g	u235t	0.0000000	76for1	7
89	sr g	u238f	rc	cu		3.2825046	6.7	3.4400000	0.2300000	140 ba g	u238f	6.0700000	77har1	0
89	sr g	u238f	rc	cu		2.7343070	5.0	0.5740000	2.4000000%	99 mo g	u235t	0.0000000	76for1	7
89	sr g	u238f	rc	cu		2.6247442	5.0	0.5510000	2.4000000%	99 mo g	u235t	0.0000000	76for1	7
89	sr g	u238f	rc	cu		3.7176032	10.5	3.7300000	0.3900000	0		0.0000000	75har1	0
89	sr g	u238f	rc	cu		3.8648446	30.0	4.4000000	0.0000000	99 mo g	u238f	7.0000000	60bon1	36
89	sr g	u238f	rc	cu		2.9601291	5.0	2.9700000	0.1400000	0		0.0000000	85chi1	0
89	sr g	u238f	rc	cu		2.5437630	5.0	0.5340000	2.4000000%	99 mo g	u235t	0.0000000	76for1	7
89	sr g	u238f	rc	cu		2.5818718	5.0	0.5420000	2.4000000%	99 mo g	u235t	0.0000000	76for1	7
89	sr g	u238f	rc	cu		2.5866354	5.0	0.5430000	2.4000000%	99 mo g	u235t	0.0000000	76for1	7
89	sr g	u238f	rc	cu		2.5961626	5.0	0.5450000	1.0000000%	99 mo g	u235t	0.0000000	76for1	7
89	rb g	u238f	cm	cu		0.0000000	0.0	2.6750000	10.0000000%	0		0.0000000	73net2	0

89 rb g u238f ms in 0.1126244 55.8 0.1130000 0.0630000 0 0.0000000 74bal2 0
89 rb g u238f ms in su 0.0000000 0.0 0.0400000 0.0210000 93 rb g u238f 1.0000000 74bal2 0
89 rb g u238f cm fi 0.0000000 0.0 0.0250000 0.0160000 89 u238f 1.0000000 74wol1 0
89 rb g u238f rc in 0.0757474 63.2 0.0760000 0.0480000 0 0.0000000 74wol4 0
89 rb g u238f es cu 2.4518241 7.7 2.4600000 0.1900000 0 0.0000000 78gin1 0
89 rb g u238f rc cu 2.2524888 13.3 2.2600000 0.3000000 0 0.0000000 78nag1 0
89 rb g u238f rc cu 2.6112923 13.4 2.6200000 13.4000000% 0 0.0000000 87chu1 0
89 rb g u238f rc cu 3.0099629 12.9 3.0200000 12.9000000% 0 0.0000000 88afa1 0
89 rb g u238f rc cu 3.0199297 14.2 3.0300000 14.2000000% 0 0.0000000 88afa1 0
89 rb g u238f rc cu 2.8604614 12.5 2.8700000 12.5000000% 0 0.0000000 88afa1 0
89 rb g u238f rc cu 3.2491653 11.0 3.2600000 11.0000000% 0 0.0000000 88afa1 0
89 kr g u238f rc cu 2.6212591 15.0 2.6300000 0.0000000 0 0.0000000 72hof1 0
89 kr g u238f rc fc su 0.0000000 0.0 0.9960000 0.0050000 89 u238f 1.0000000 72wol1 0
89 kr g u238f cm cu 0.0000000 0.0 2.6430000 10.0000000% 0 0.0000000 73net2 0
89 kr g u238f rc fc 2.7408568 5.2 0.9960000 0.0050000 89 u238f 1.0000000 75wol1 0
89 kr g u238f rc cu 2.9401956 5.0 2.9500000 5.0000000% 0 0.0000000 74bal1 0
89 kr g u238f rc cu 2.5412074 5.7 2.9700000 0.1400000 88 kr g u238f 2.3600000 74bal1 0
89 kr g u238f rc cu 2.6011011 5.7 3.0400000 0.1500000 88 kr g u238f 2.3600000 74bal1 0
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0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

89 kr g u238f rc cu 2.5839886 5.7 3.0200000 0.1500000 88 kr g u238f 2.3600000 74bal1 0
89 kr g u238f rc cu 2.6438824 5.7 3.0900000 0.1500000 88 kr g u238f 2.3600000 74bal1 0
89 kr g u238f rc cu 2.6828986 6.4 2.7900000 0.1600000 138 xe g u238f 5.9100000 74bal1 0
89 kr g u238f rc cu 2.7405953 6.6 2.8500000 0.1700000 138 xe g u238f 5.9100000 74bal1 0
89 kr g u238f rc cu 2.7598276 6.6 2.8700000 0.1700000 138 xe g u238f 5.9100000 74bal1 0
89 kr g u238f rc cu 2.8175243 5.7 2.9300000 0.1400000 138 xe g u238f 5.9100000 74bal1 0
89 br g u238f cm cu 0.0000000 0.0 1.5160000 18.0000000% 0 0.0000000 73net2 0
89 u238he cm cu es 0.0000000 0.0 2.6470000 0.0000000 0 0.0000000 63wea1 0
89 u238he ms cu 2.8050962 9.2 2.5200000 0.2200000 90 u238he 2.8600000 72boc1 0
89 u238he cm cu su 0.0000000 0.0 2.6100000 0.0700000 0 0.0000000 73dar1 0
89 u238he es cu 3.0432923 15.0 3.0490000 15.0000000% 0 0.0000000 74mee9 0
89 u238he cm cu 0.0000000 0.0 2.9800000 6.8000000% 0 0.0000000 77cro1 0
89 u238he rc cu 2.6629193 5.4 2.4900000 0.0400000 91 u238he 3.6100000 77feu1 0
89 sr g u238he rc re 3.0443587 10.0 0.6900000 0.0100000 99 mo g u235t 0.0000000 56for1 7

89 sr g u238he rc re 3.1322141 10.1 0.5500000 0.0300000 99 mo g u238he 1.0000000 58pro1 0
89 sr g u238he rc cu x4 0.0000000 0.0 2.0000000 0.2000000 140 ba g u238he 4.3000000 62bro1 0
89 sr g u238he cm cu 0.0000000 0.0 2.7600000 0.0000000 0 0.0000000 69gun2 0
89 sr g u238he cm cu 0.0000000 0.0 2.8300000 6.1000000% 0 0.0000000 73net2 0
89 sr g u238he rc cu x4 0.0000000 0.0 2.3000000 0.1200000 99 mo g u238he 5.5800000 57cun1 0
89 sr g u238he cm cu 0.0000000 0.0 2.7000000 0.0000000 0 0.0000000 60kat1 0
89 sr g u238he rc re su 0.0000000 0.0 0.6640000 0.5600000% 99 mo g u235t 0.0000000 64cow1 7
89 sr g u238he rc cu 2.9296437 5.0 0.6640000 2.4000000% 99 mo g u235t 0.0000000 76for1 7
89 sr g u238he rc cu 3.0443587 5.0 0.6900000 2.4000000% 99 mo g u235t 0.0000000 76for1 7
89 sr g u238he rc cu 3.2440789 6.4 3.1900000 0.2000000 99 mo g u238he 5.6000000 75ada1 0
89 sr g u238he rc cu 2.8912746 10.1 3.3000000 0.3000000 99 mo g u238he 6.5000000 60bon1 0
89 rb g u238he cm cu 0.0000000 0.0 2.8290000 6.1000000% 0 0.0000000 73net2 0
89 rb g u238he rc cu 2.8047397 5.0 2.8100000 0.1400000 0 0.0000000 75dar1 0
89 rb g u238he rc cu 2.8746087 5.9 2.8800000 0.1700000 0 0.0000000 85liu1 0
89 kr g u238he rc cu 2.5651890 5.0 2.5700000 0.0800000 0 0.0000000 71bri1 0
89 kr g u238he rc cu 2.7947584 11.1 2.8000000 0.3100000 0 0.0000000 71com1 0
89 kr g u238he ms in 1.3973792 13.6 1.4000000 0.1900000 0 0.0000000 72boc1 0
89 kr g u238he cm cu 0.0000000 0.0 2.7510000 6.1000000% 0 0.0000000 73net2 0
89 kr g u238he rc cu 3.0642530 20.8 3.0700000 0.6400000 0 0.0000000 75dar1 0
89 kr g u238he rc fc 2.8282327 5.4 0.9700000 0.0100000 89 u238he 1.0000000 77feu1 0
89 kr g u238he rc cu 2.7648146 5.0 2.7700000 5.0000000% 0 0.0000000 74bal1 0
89 kr g u238he rc cu 2.7270512 5.4 2.8200000 0.1200000 88 kr g u238he 2.2300000 74bal1 0
89 kr g u238he rc cu 2.7077105 5.4 2.8000000 0.0600000 88 kr g u238he 2.2300000 74bal1 0
89 kr g u238he rc cu 2.7173808 5.4 2.8100000 0.1100000 88 kr g u238he 2.2300000 74bal1 0
89 kr g u238he rc cu 2.6980401 5.4 2.7900000 0.0400000 88 kr g u238he 2.2300000 74bal1 0
89 kr g u238he rc cu 2.8613451 5.4 2.6700000 0.1000000 138 xe g u238he 4.2200000 74bal1 0
89 kr g u238he rc cu 2.8399118 5.4 2.6500000 0.0300000 138 xe g u238he 4.2200000 74bal1 0
89 kr g u238he rc cu 3.0220948 5.4 2.8200000 0.1300000 138 xe g u238he 4.2200000 74bal1 0
89 kr g u238he rc cu 3.0006616 5.4 2.8000000 0.0600000 138 xe g u238he 4.2200000 74bal1 0
89 br g u238he cm cu x3 0.0000000 0.0 1.1700000 22.0000000% 0 0.0000000 73net2 0
89 pu239t cm cu 0.0000000 0.0 1.7300000 0.0000000 0 0.0000000 72sid1 0
89 pu239t cm cu 0.0000000 0.0 1.7400000 0.0000000 0 0.0000000 73lam1 0
89 pu239t cm cu 0.0000000 0.0 1.7400000 0.0400000 0 0.0000000 73wal1 0
89 pu239t cm cu 0.0000000 0.0 1.7200000 3.3000000% 0 0.0000000 77cro1 0
89 y g pu239t ms cu rp 1.7332763 4.6 1.0000000 0.0000000 no. relative values = 1 59fic1
89 sr g pu239t rc cu 1.8048402 60.0 1.8000000 0.0000000 140 ba g pu239t 5.3600000 51ste3 0

89	sr	g	pu239t	rc	cu		1.7466308	5.0	1.7400000	0.0500000	0		0.0000000	65mar1	0
89	sr	g	pu239t	rc	cu		1.7900028	8.3	1.9500000	0.1600000	99	mo g	pu239t	6.7900000	71ram1	0
89	sr	g	pu239t	cm	cu		0.0000000	0.0	1.6680000	2.0000000%	0		0.0000000	73net2	0
89	sr	g	pu239t	rc	re		1.6176983	10.1	0.3010000	2.0000000%	140	ba g	pu239t	1.0000000	59bar1	0
89	sr	g	pu239t	rc	cu		1.6756231	5.0	0.3470000	2.4000000%	99	mo g	u235t	0.0000000	76for1	7
89	sr	g	pu239t	ms	cu		1.6571801	5.4	0.7846000	5.0000000%	90	sr g	pu239t	1.0000000	59fic1	36
89	sr	g	pu239t	rc	cu		1.7240952	5.0	0.4200000	0.0100000	140	ba g	u235t	0.0000000	86chi1	7
89	sr	g	pu239t	sp	fi		0.0155601	99.9	0.0090000	0.0200000	89		pu239t	1.0000000	84sch1	36
89	sr	g	pu239t	rc	cu		1.7767451	9.0	1.7700000	0.1600000	0		0.0000000	84jai1	0
89	sr	g	pu239t	rc	cu		1.8570499	8.6	1.8500000	0.1600000	0		0.0000000	84jai1	0
89	rb	g	pu239t	cm	cu		0.0000000	0.0	1.6630000	2.0000000%	0		0.0000000	73net2	0
89	rb	g	pu239t	rc	in		0.2720327	32.5	0.2710000	0.0880000	0		0.0000000	75bal1	0
89	rb	g	pu239t	rc	cu	x4	0.0000000	0.0	1.4600000	6.2000000%	0		0.0000000	80ram1	0
89	rb	g	pu239t	sp	fi		0.2610641	13.2	0.1510000	13.0000000%	89		pu239t	1.0000000	84sch1	36
89	rb	g	pu239t	cm	in		0.0000000	0.0	0.2371000	5.0000000%	0		1.0000000	88wah1	0
89	kr	g	pu239t	rc	fc		1.4799321	5.7	85.6000000	0.5000000	89	sr g	pu239t	100.0000000	65wol1	0
89	kr	g	pu239t	cm	cu		0.0000000	0.0	1.4810000	6.0000000%	0		0.0000000	73net2	0
89	kr	g	pu239t	ms	cu		1.5057162	3.3	1.5000000	0.0500000	0		0.0000000	76bri2	0
89	kr	g	pu239t	ms	in		1.1343062	4.4	1.1300000	0.0500000	0		0.0000000	77bri1	0
89	kr	g	pu239t	rc	cu		1.5125436	5.4	1.5000000	0.0500000	91	kr g	pu239t	0.7110000	77bri1	0
89	kr	g	pu239t	rc	cu		1.5057162	5.0	1.5000000	5.0000000%	0		0.0000000	74bal1	0
89	kr	g	pu239t	rc	cu		1.3814450	6.5	1.4500000	0.0900000	88	kr g	pu239t	1.3400000	74bal1	0
89	kr	g	pu239t	rc	cu		1.3909722	5.4	1.4600000	0.0500000	88	kr g	pu239t	1.3400000	74bal1	0
89	kr	g	pu239t	rc	cu		1.3814450	5.9	1.4500000	0.0800000	88	kr g	pu239t	1.3400000	74bal1	0
89	kr	g	pu239t	rc	cu		1.3909722	5.4	1.4600000	0.0400000	88	kr g	pu239t	1.3400000	74bal1	0
89	kr	g	pu239t	rc	cu		1.5753158	5.2	1.5600000	0.0500000	138	xe g	pu239t	5.1400000	74bal1	0
89	kr	g	pu239t	rc	cu		1.5854140	5.2	1.5700000	0.0600000	138	xe g	pu239t	5.1400000	74bal1	0
89	kr	g	pu239t	rc	cu		1.5349231	5.2	1.5200000	0.0300000	138	xe g	pu239t	5.1400000	74bal1	0
89	kr	g	pu239t	rc	cu		1.5248249	5.2	1.5100000	0.0400000	138	xe g	pu239t	5.1400000	74bal1	0
89	kr	g	pu239t	sp	fi		1.1808395	5.4	0.6830000	5.0000000%	89		pu239t	1.0000000	84sch1	36
89	kr	g	pu239t	cm	in		0.0000000	0.0	1.1980000	4.0000000%	0		1.0000000	88wah1	0
89	br	g	pu239t	rc	fc	x1	0.0000000	0.0	0.6300000	0.2500000	89		pu239t	1.0000000	71gri1	0
89	br	g	pu239t	cm	cu		0.0000000	0.0	0.2828000	32.1000000%	0		0.0000000	73net2	0
89	br	g	pu239t	es	fc		0.2645219	30.1	0.1530000	0.0000000	89		pu239t	1.0000000	74wol1	0
89	br	g	pu239t	rc	cu		0.3714100	5.4	0.3700000	0.0200000	0		0.0000000	77bri1	0
89	br	g	pu239t	rc	in		0.3613719	5.6	0.3600000	0.0200000	0		0.0000000	77bri1	0

89 br g pu239t sp fi 0.2645219 13.2 0.1530000 13.0000000% 89 pu239t 1.0000000 84sch1 36
89 br g pu239t cm in 0.0000000 0.0 0.3032000 16.0000000% 0 1.0000000 88wah1 0
89 se g pu239t sp fi 0.0051867 99.9 0.0030000 0.0200000 89 pu239t 1.0000000 84sch1 36
89 pu239f es cu cm 1.7839806 30.0 1.8000000 0.0000000 0 0.0000000 72sid1 0
89 pu239f cm cu 0.0000000 0.0 1.8000000 5.9000000% 0 0.0000000 77cro1 0
89 pu239f es cu 1.6615830 5.1 1.6690000 0.0850000 148 nd g pu239f 1.6540000 77mae1 0
89 pu239f es cu 1.6194579 5.3 1.6340000 0.0860000 0 0.0000000 77mae1 0
89 pu239f es cu 1.5229129 30.0 1.6000000 0.0000000 148 nd g pu239f 1.7300000 70lis1 0
89 pu239f es cu su 0.0000000 0.0 1.6700000 0.0900000 148 nd g pu239f 1.6500000 74mae1 0
89 pu239f es re 1.7587112 10.2 1.0300000 10.0000000% 89 pu239t 1.0000000 74mee4 0
89 sr g pu239f rc cu cm 1.9106708 15.1 1.8000000 0.0000000 140 ba g pu239f 4.9700000 65cro2 0
89 sr g pu239f rc cu 1.8676304 6.0 1.7600000 6.0000000% 137 cs g pu239f 6.1500000 67sch1 0
89 sr g pu239f rc cu 1.7913331 7.3 1.8200000 0.1300000 140 ba g pu239f 5.3600000 72cun2 0
89 sr g pu239f cm cu 0.0000000 0.0 1.7660000 5.0000000% 0 0.0000000 73net2 0
89 sr g pu239f rc cu 1.9398268 11.3 1.8000000 0.2000000 99 mo g pu239f 5.5000000 60pet1 0
89 sr g pu239f rc cu 1.6072342 5.0 0.3500000 1.8000000% 99 mo g u235t 0.0000000 76for1 7
89 sr g pu239f rc cu 1.7266287 5.0 0.3760000 2.4000000% 99 mo g u235t 0.0000000 76for1 7
89 sr g pu239f rc cu 1.6852999 5.0 0.3670000 2.4000000% 99 mo g u235t 0.0000000 76for1 7
89 sr g pu239f rc cu 1.7266287 5.0 0.3760000 1.8000000% 99 mo g u235t 0.0000000 76for1 7
89 sr g pu239f rc cu 1.8092865 5.0 0.3940000 2.4000000% 99 mo g u235t 0.0000000 76for1 7
89 rb g pu239f rc cu 1.8734147 10.2 1.6000000 0.1000000 138 cs g pu239f 5.0000000 69moo1 0
89 rb g pu239f cm cu 0.0000000 0.0 1.7600000 5.0000000% 0 0.0000000 73net2 0
89 kr g pu239f cm cu 0.0000000 0.0 1.5400000 8.1000000% 0 0.0000000 73net2 0
89 kr g pu239f rc cu 1.4767395 5.0 1.4900000 5.0000000% 0 0.0000000 74bal1 0
89 kr g pu239f rc cu 1.3790331 8.6 1.4800000 0.1200000 88 kr g pu239f 1.3700000 74bal1 0
89 kr g pu239f rc cu 1.4256220 8.3 1.5300000 0.1200000 88 kr g pu239f 1.3700000 74bal1 0
89 kr g pu239f rc cu 1.5362546 8.2 1.5000000 0.1200000 138 xe g pu239f 4.5600000 74bal1 0
89 kr g pu239f rc cu 1.4952878 7.8 1.4600000 0.1100000 138 xe g pu239f 4.5600000 74bal1 0
89 kr g pu239f rc cu 1.4952878 6.5 1.4600000 0.0900000 138 xe g pu239f 4.5600000 74bal1 0
89 br g pu239f cm cu x3 0.0000000 0.0 0.2643000 32.1000000% 0 0.0000000 73net2 0
89 pu241t cm cu x3 0.0000000 0.0 0.9000000 0.0000000 0 0.0000000 72sid1 0
89 pu241t es cu 1.1921809 20.0 1.2000000 0.2400000 0 0.0000000 73wal1 0
89 pu241t cm cu 0.0000000 0.0 1.2100000 5.0000000% 0 0.0000000 77cro1 0
89 pu241t cm cu 0.0000000 0.0 1.2000000 0.0000000 0 0.0000000 79wal1 0
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nuclide	material	tech.	type	value	err.	value		nuclide	material	value	no.	treatment
89	pu241t	es	cu	1.2438420	5.1	1.2520000	0.0640000	0		0.0000000	77mae1	0
89 sr g	pu241t	rc	cu	1.2021157	5.0	1.2100000	0.0040000	0		0.0000000	73sko2	0
89 sr g	pu241t	rc	cu	1.2689195	5.0	0.2900000	0.0100000	140 ba g	u235t	0.0000000	86chi1	7
89 sr g	pu241t	rc	cu	x4 0.0000000	0.0	0.2800000	0.0000000	0		0.0000000	63kir1	0
89 kr g	pu241t	ms	cu	1.1027673	5.4	1.1100000	0.0600000	0		0.0000000	76bri2	0
89 kr g	pu241t	ms	in	0.7013998	8.5	0.7060000	0.0600000	0		0.0000000	77bri1	0
89 kr g	pu241t	rc	cu	1.1579212	6.7	1.1100000	0.0600000	91 kr g	pu241t	0.9300000	77bri1	0
89 br g	pu241t	rc	cu	0.4073285	12.2	0.4100000	0.0500000	0		0.0000000	77bri1	0
89 br g	pu241t	rc	in	0.3874588	12.8	0.3900000	0.0500000	0		0.0000000	77bri1	0
89	u233t	cm	cu	0.0000000	0.0	6.2000000	0.0000000	0		0.0000000	72sid1	0
89	u233t	cm	cu	0.0000000	0.0	6.4100000	0.0000000	0		0.0000000	73lam1	0
89	u233t	cm	cu	0.0000000	0.0	6.3300000	0.1000000	0		0.0000000	73wal1	0
89 y g	u233t	ms	cu	su 0.0000000	0.0	1.1480000	0.0300000	90 sr g	u233t	1.0000000	59gor1	0
89	u233t	cm	cu	0.0000000	0.0	6.1200000	4.8000000%	0		0.0000000	77cro1	0
89 y g	u233t	ms	cu	6.3288188	4.4	6.3600000	0.2800000	0		0.0000000	61gor1	0
89	u233t	ms	cu	6.3706128	2.0	6.4020000	0.0450000	0		0.0000000	80weh1	0
89 y g	u233t	sp	fi	ul 0.0000000	0.0	0.0874000	0.0275000	89	u233t	100.0000000	83qua1	40
89 y g	u233t	sp	in	ul 0.0000000	0.0	0.0058900	0.0019000	0		0.0000000	88qua1	18
89 y m	u233t	sp	fi	ul 0.0000000	0.0	0.3726000	0.1175000	89	u233t	100.0000000	83qua1	40
89 y m	u233t	sp	in	ul 0.0000000	0.0	0.0251100	0.0081000	0		0.0000000	88qua1	18
89 sr g	u233t	rc	cu	6.2257368	60.1	6.5000000	0.0000000	99 mo g	u233t	5.1000000	47ste1	0
89 sr g	u233t	rc	cu	5.5971769	10.4	5.5000000	10.0000000%	99 mo g	u233t	4.8000000	67gan1	36
89 sr g	u233t	cm	cu	0.0000000	0.0	5.7570000	4.0000000%	0		0.0000000	73net2	0
89 sr g	u233t	rc	re	6.6839406	10.4	1.0500000	2.0000000%	140 ba g	u233t	1.0000000	59bar1	0
89 sr g	u233t	rc	cu	6.7932931	10.4	5.5600000	0.1500000	140 ba g	u233t	5.2100000	60san1	0
89 sr g	u233t	ms	cu	6.2399574	4.2	6.1500000	4.0000000%	88 sr g	u233t	5.3600000	61bid1	0
89 sr g	u233t	ms	in	0.0995097	14.0	0.1000000	0.0140000	0		0.0000000	80weh1	0
89 sr g	u233t	rc	cu	6.0290084	5.0	1.2400000	0.0300000	140 ba g	u235t	0.0000000	86chi1	7
89 sr g	u233t	sp	fi	ul 0.0000000	0.0	2.0500000	0.4150000	89	u233t	100.0000000	83qua1	0
89 sr g	u233t	ms	cu	6.3647231	2.9	6.3900000	0.1600000	88 sr g	u233t	5.4600000	86chi1	0
89 sr g	u233t	sp	in	0.1363283	20.4	0.1370000	0.0280000	0		0.0000000	88qua1	0
89 rb g	u233t	cm	cu	0.0000000	0.0	5.7380000	4.0000000%	0		0.0000000	73net2	0
89 rb g	u233t	ms	in	0.9742002	3.4	0.9790000	0.0330000	0		0.0000000	80weh1	0
89 rb g	u233t	sp	fi	1.0591629	5.7	16.7900000	0.9250000	89	u233t	100.0000000	83qua1	0

89 rb g u233t sp in 1.1135139 5.9 1.1190000 0.0660000 0 0.0000000 88qua1 0
89 kr g u233t rc fc 5.4314377 6.1 86.1000000 5.0000000 89 sr g u233t 100.0000000 65wol1 0
89 kr g u233t cm cu 0.0000000 0.0 5.0580000 7.0000000% 0 0.0000000 73net2 0
89 kr g u233t sp cu 5.6023977 5.0 5.6300000 0.1600000 0 0.0000000 75bri1 0
89 kr g u233t sp in 4.8660257 5.1 4.8900000 0.2500000 0 0.0000000 75bri1 0
89 kr g u233t ms in 4.6998445 2.0 4.7230000 0.0540000 0 0.0000000 80weh1 0
89 kr g u233t sp fi 4.5381882 5.2 71.9400000 1.8170000 89 u233t 100.0000000 83qua1 0
89 kr g u233t sp in 4.7734817 5.0 4.7970000 0.1550000 0 0.0000000 88qua1 0
89 br g u233t rc in x1 0.0000000 0.0 1.5000000 0.4000000 0 0.0000000 66sil1 0
89 br g u233t rc fc 1.1985763 47.4 0.1900000 0.0900000 89 u233t 1.0000000 71gri1 0
89 br g u233t cm cu 0.0000000 0.0 0.9062000 32.1000000% 0 0.0000000 73net2 0
89 br g u233t rc in 0.7654470 17.6 0.6000000 0.1000000 88 br g u233t 1.0000000 66sil1 0
89 br g u233t sp in 0.7164700 22.2 0.7200000 0.1600000 0 0.0000000 75bri1 0
89 br g u233t sp cu 0.7264210 21.9 0.7300000 0.1600000 0 0.0000000 75bri1 0
89 br g u233t ms in 0.5970584 5.8 0.6000000 0.0350000 0 0.0000000 80weh1 0
89 br g u233t sp fi 0.5355743 13.3 8.4900000 1.1220000 89 u233t 100.0000000 83qua1 0
89 br g u233t sp in 0.5632251 13.4 0.5660000 0.0760000 0 0.0000000 88qua1 0
89 se g u233t sp fi 0.0170324 61.5 0.2700000 0.1660000 89 u233t 100.0000000 83qua1 0
89 se g u233t sp in 0.0179118 61.1 0.0180000 0.0110000 0 0.0000000 88qua1 0
89 th232f cm cu es 0.0000000 0.0 7.2000000 0.0000000 0 0.0000000 65eng1 0
89 th232f cm cu 0.0000000 0.0 6.7700000 0.0000000 0 0.0000000 74lam1 0
89 th232f es cu 7.3604196 9.2 7.3700000 9.2000000% 0 0.0000000 77cro1 0
89 sr g th232f rc cu rp 8.1281426 31.7 6.7000000 0.0000000 no. relative values = 6 51tur1
89 sr g th232f rc cu rp 7.7323003 20.1 1.0000000 0.0000000 no. relative values = 4 57ale1
89 sr g th232f rc re 8.1795927 10.4 1.0400000 0.0600000 140 ba g th232f 1.0000000 63cro2 0
89 sr g th232f es cu cm 7.0807835 30.0 7.0900000 0.0000000 0 0.0000000 72sid1 0
89 sr g th232f rc re rp 7.5485906 44.7 1.0000000 0.0000000 no. relative values = 2 73dub1
89 sr g th232f es cu cm 6.7112645 30.0 6.7200000 0.0000000 0 0.0000000 73lam1 0
89 sr g th232f cm cu 0.0000000 0.0 7.7900000 8.0000000% 0 0.0000000 73net2 0
89 sr g th232f es cu cm 6.6912905 30.0 6.7000000 0.0000000 0 0.0000000 60kat1 0
89 sr g th232f es cu 7.5901206 5.0 7.6000000 5.0000000% 0 0.0000000 74mee0 0
89 sr g th232f rc cu rp 8.0642066 21.3 1.0000000 0.0000000 no. relative values = 4 76lis1
89 sr g th232f rc cu rp 7.4517737 23.9 6.0000000 0.0000000 no. relative values = 7 50nid1
89 sr g th232f rc re 7.2212213 5.0 3.1700000 0.1500000 99 mo g u235t 0.0000000 81ert1 7
89 sr g th232f cm cu 0.0000000 0.0 7.4900000 0.3400000 0 0.0000000 81ert1 0
89 rb g th232f cm cu 0.0000000 0.0 7.7900000 8.0000000% 0 0.0000000 73net2 0

89	rb	g	th232f	rc	cu		7.2432934	10.2	7.3400000	0.7200000	140	ba	g	th232f	7.9700000	85chu1	0		
89	kr	g	th232f	cm	cu		0.0000000	0.0	7.6840000	8.0000000%	0				0.0000000	73net2	0		
89	br	g	th232f	cm	cu		0.0000000	0.0	4.2400000	17.0000000%	0				0.0000000	73net2	0		
90			u235t	cm	cu		0.0000000	0.0	5.7200000	0.0000000	0				0.0000000	72sid1	0		
90			u235t	cm	cu		0.0000000	0.0	5.9100000	0.0000000	0				0.0000000	73lam1	0		
90			u235t	cm	cu		0.0000000	0.0	5.8200000	0.1100000	0				0.0000000	73wal1	0		
90			u235t	ms	cu		5.8842306	2.0	5.8800000	0.0450000	0				0.0000000	76dii1	0		
90			u235t	sp	cu		5.7765260	5.0	5.9000000	0.1100000	0				1.0221100	76woh2	0		
90			u235t	cm	cu		0.0000000	0.0	5.8500000	1.7000000%	0				0.0000000	77cro1	0		
90	y	g	u235t	rc	in	x1	0.0000000	0.0	0.0014000	0.0014000	0				0.0000000	55coo1	0		
90	y	g	u235t	rc	in	x1	0.0000000	0.0	0.0013000	0.0000000	90	sr	g	u235t	4.0200000	55ree1	0		
90	y	g	u235t	rc	in	x1	0.0000000	0.0	0.0040000	0.0040000	0				0.0000000	69isa1	0		
90	y	g	u235t	rc	fi	ul	0.0000000	0.0	0.0000400	0.0000400	90			u235t	1.0000000	57gru1	0		
90	sr	g	u235t	rc	cu		5.7944875	10.0	5.6100000	0.2200000	90	sr	g		28.0000000	57bay1	16		
90	sr	g	u235t	ms	cu		5.8041730	6.0	5.8000000	0.0000000	0				0.0000000	55gle1	0		
90	sr	g	u235t	ms	cu		5.7441299	6.0	5.7400000	0.0000000	0				0.0000000	55pet2	0		
90	sr	g	u235t	ms	cu	rp	5.8173654	15.8	5.7400000	0.0000000	no. relative values =				1	55pet2			
90	sr	g	u235t	ms	re	rp	5.7247315	3.7	1.0000000	0.0000000	no. relative values =				3	62far2			
90	sr	g	u235t	cm	cu		0.0000000	0.0	5.8600000	5.0000000%	0				0.0000000	73net2	0		
90	sr	g	u235t	sp	fi		0.0752248	30.8	1.3000000	0.4000000	90			u235t	100.0000000	78str1	0		
90	sr	g	u235t	ms	in		0.0510367	39.2	0.0510000	0.0200000	0				0.0000000	79cle1	0		
90	sr	g	u235t	ms	cu		5.9042450	4.0	5.9000000	4.0000000%	0				0.0000000	70lis1	36		
90	sr	g	u235t	ms	cu		5.7521356	2.0	5.7480000	0.0420000	0				0.0000000	78mae1	0		
90	sr	g	u235t	ms	cu		5.7031004	2.0	5.6990000	0.0420000	0				0.0000000	78mae1	0		
90	sr	g	u235t	ms	cu		5.6990975	2.0	5.6950000	0.0420000	0				0.0000000	78mae1	0		
90	sr	g	u235t	ms	cu	cm	5.7181112	6.0	5.7140000	0.0000000	0				0.0000000	80mae3	0		
90	sr	g	u235t	ms	fi	ul	0.0000000	0.0	0.6000000	0.5000000	90			u235t	100.0000000	76wol1	0		
90	sr	g	u235t	sp	fi		0.0520787	33.3	0.9000000	0.3000000	90			u235t	100.0000000	80lan1	0		
90	sr	g	u235t	ms	cu		5.8624184	2.0	5.8500000	0.1100000	88	sr	g	u235t	3.5700000	86chi1	0		
90	sr	g	u235t	sp	fi		0.0752248	5.1	1.3000000	0.3000000%	90			u235t	100.0000000	79str1	0		
90	sr	g	u235t	rc	cu		5.8422909	10.0	4.0200000	0.1100000	90	sr	g		19.9000000	55ree1	16		
90	rb	g	u235t	cm	cu		0.0000000	0.0	4.6280000	11.0000000%	0				0.0000000	73net2	0		
90	rb	g	u235t	ms	in		0.1248898	9.0	0.1248000	0.0112000	0				0.0000000	72bal1	18		
90	rb	g	u235t	ms	in		0.1200863	10.7	0.1200000	0.0128000	0				0.0000000	72cha1	18		
90	rb	g	u235t	ms	fi	su	0.0000000	0.0	1.7600000	0.2880000	90			u235t	100.0000000	75cle1	40		
90	rb	g	u235t	ms	fi		0.1305440	5.1	2.2560000	0.1120000	90			u235t	100.0000000	76sie1	40		

90 rb g u235t sp re 4.6322228 5.1 0.8300000 0.0200000 91 rb g u235t 1.0000000 75ree1 0
90 rb g u235t sp in x1 0.0000000 0.0 0.2926000 0.0293000 0 0.0000000 75ree1 0
90 rb g u235t sp fi su 0.0000000 0.0 0.0227000 0.0016000 90 u235t 1.0000000 74sie1 40
90 rb g u235t sp fi su 0.0000000 0.0 0.0238400 0.0022400 90 u235t 1.0000000 74sie2 40
90 rb g u235t sp fi 0.1323957 7.8 2.2880000 0.1760000 90 u235t 100.0000000 78str1 40
90 rb g u235t sp fi 0.1363768 16.2 2.3568000 0.3800000 90 u235t 100.0000000 79bal1 40
90 rb g u235t ms fi su 0.0000000 0.0 2.6880000 0.4800000 90 u235t 100.0000000 75cle2 40
90 rb g u235t ms in x4 0.0000000 0.0 0.1940000 0.0145000 0 0.0000000 79cle1 18
90 rb g u235t ms cu 4.4031658 10.0 4.4000000 0.4400000 0 0.0000000 79shm1 0
90 rb g u235t ms fi su 0.0000000 0.0 1.9840000 0.1280000 90 u235t 100.0000000 76wol1 40
90 rb g u235t sp fi x4 0.0000000 0.0 3.2680000 0.2090000 90 u235t 100.0000000 80lan1 40
90 rb g u235t sp in x4 0.0000000 0.0 0.4300000 0.0700000 0 0.0000000 90rud1 0
90 rb g u235t ms in x4 0.0000000 0.0 0.0864000 0.0084000 0 0.0000000 85ree1 18
90 rb g u235t cm in 0.0000000 0.0 0.1552000 3.0000000% 0 1.0000000 88wah1 18
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0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

90 rb g u235t sp fi 0.1620226 5.1 2.8000000 0.1000000% 90 u235t 100.0000000 79str1 40
90 rb g u235t sp cu x4 0.0000000 0.0 5.4900000 0.4800000 0 0.0000000 90rud1 0
90 rb m u235t ms in 0.6556714 9.0 0.6552000 0.0588000 0 0.0000000 72bal1 18
90 rb m u235t ms in 0.6304533 10.7 0.6300000 0.0672000 0 0.0000000 72cha1 18
90 rb m u235t ms fi su 0.0000000 0.0 9.2400000 1.5120000 90 u235t 100.0000000 75cle1 40
90 rb m u235t ms fi 0.6853558 5.1 11.8440000 0.5880000 90 u235t 100.0000000 76sie1 40
90 rb m u235t sp fi su 0.0000000 0.0 0.1193000 0.0084000 90 u235t 1.0000000 74sie1 40
90 rb m u235t sp fi su 0.0000000 0.0 0.1251600 0.0117600 90 u235t 1.0000000 74sie2 40
90 rb m u235t sp fi 0.6950772 7.8 12.0120000 0.9240000 90 u235t 100.0000000 78str1 40
90 rb m u235t sp fi 0.7159781 5.1 12.3732000 0.3800000 90 u235t 100.0000000 79bal1 40
90 rb m u235t ms fi su 0.0000000 0.0 14.1120000 2.5200000 90 u235t 100.0000000 75cle2 40
90 rb m u235t ms in 0.8275950 7.4 0.8270000 0.0615000 0 0.0000000 79cle1 18
90 rb m u235t ms fi su 0.0000000 0.0 10.4160000 0.6720000 90 u235t 100.0000000 76wol1 40
90 rb m u235t sp fi 0.8061784 6.5 13.9320000 0.8910000 90 u235t 100.0000000 80lan1 40
90 rb m u235t sp in 0.5904245 11.9 0.5900000 0.0700000 0 0.0000000 90rud1 0
90 rb m u235t cm cu 0.0000000 0.0 1.1980000 32.1000000% 0 0.0000000 73net2 0
90 rb m u235t ms in 0.7533416 17.8 0.7528000 0.1342000 0 0.0000000 85ree1 18
90 rb m u235t cm in 0.0000000 0.0 0.6615000 3.0000000% 0 1.0000000 88wah1 18

90	rb	m	u235t	sp	fi		0.6885963	5.1	11.9000000	0.6000000%	90		u235t	100.0000000	79str1	40
90	kr	g	u235t	rc	fc		4.9764022	10.0	0.8600000	0.0200000	90	sr g	u235t	1.0000000	58wah1	0
90	kr	g	u235t	sp	in	su	0.0000000	0.0	2.5500000	0.3000000	91	kr g	u235t	1.0000000	69ehr1	14
90	kr	g	u235t	rc	in		3.7026621	13.0	3.7000000	0.4800000	0			0.0000000	72ehr1	0
90	kr	g	u235t	cm	fi		0.0000000	0.0	0.6330000	0.0820000	90		u235t	1.0000000	73ami1	0
90	kr	g	u235t	cm	cu		0.0000000	0.0	4.9140000	9.0000000%	0			0.0000000	73net2	0
90	kr	g	u235t	ms	fi	su	0.0000000	0.0	86.3000000	2.6000000	90		u235t	100.0000000	75cle1	0
90	kr	g	u235t	ms	fi		4.3919711	1.7	75.9000000	1.0000000	90		u235t	100.0000000	76sie1	0
90	kr	g	u235t	sp	fi	su	0.0000000	0.0	0.7530000	0.0200000	90		u235t	1.0000000	74sie1	0
90	kr	g	u235t	sp	fi	su	0.0000000	0.0	0.7660000	0.0200000	90		u235t	1.0000000	74sie2	0
90	kr	g	u235t	sp	cu		4.8835111	5.0	4.8800000	0.1800000	0			0.0000000	75bri1	0
90	kr	g	u235t	sp	in		4.2330434	6.6	4.2300000	0.2800000	0			0.0000000	75bri1	0
90	kr	g	u235t	sp	fi		4.6060725	5.1	79.6000000	1.0000000	90		u235t	100.0000000	78str1	0
90	kr	g	u235t	ms	fi	su	0.0000000	0.0	79.1000000	3.0000000	90		u235t	100.0000000	75cle2	0
90	kr	g	u235t	ms	in		4.4932305	2.7	4.4900000	0.1200000	0			0.0000000	79cle1	0
90	kr	g	u235t	ms	fi	su	0.0000000	0.0	77.1000000	1.0000000	90		u235t	100.0000000	76wol1	0
90	kr	g	u235t	sp	fi		4.3746115	5.1	75.6000000	1.4000000	90		u235t	100.0000000	80lan1	0
90	kr	g	u235t	rc	cu		5.2037413	5.0	5.2000000	0.2100000	0			0.0000000	81mar1	0
90	kr	g	u235t	rc	cu		5.0436262	12.5	5.0400000	0.6300000	0			0.0000000	84chu1	0
90	kr	g	u235t	rc	cu		5.0436262	12.5	5.0400000	0.6300000	0			0.0000000	85has1	0
90	kr	g	u235t	cm	in		0.0000000	0.0	4.5130000	3.0000000%	0			1.0000000	88wah1	0
90	kr	g	u235t	sp	fi		4.5366342	5.1	78.4000000	0.8000000%	90		u235t	100.0000000	79str1	0
90	kr	g	u235t	sp	in		4.4031658	5.0	4.4000000	0.1300000	0			0.0000000	90rud1	0
90	kr	g	u235t	sp	cu		4.7334032	9.3	4.7300000	0.4400000	0			0.0000000	90rud1	0
90	br	g	u235t	cm	in	x3	0.0000000	0.0	1.2900000	0.0500000	0			0.0000000	69bra2	0
90	br	g	u235t	rc	in	x4	0.0000000	0.0	1.1000000	0.2800000	0			0.0000000	69bra2	0
90	br	g	u235t	es	fc	x1	0.0000000	0.0	0.2400000	0.0000000	90		u235t	1.0000000	71gri1	0
90	br	g	u235t	cm	fi	x3	0.0000000	0.0	0.6250000	0.0260000	90		u235t	1.0000000	73ami1	0
90	br	g	u235t	rc	fi	su	0.0000000	0.0	0.2400000	0.0600000	90		u235t	1.0000000	73kra3	0
90	br	g	u235t	sp	fi	su	0.0000000	0.0	0.1060000	0.0100000	90		u235t	1.0000000	74sie1	0
90	br	g	u235t	sp	fi		0.4918545	11.8	0.0850000	0.0100000	90		u235t	1.0000000	74sie2	0
90	br	g	u235t	sp	in		0.6304533	15.9	0.6300000	0.1000000	0			0.0000000	75bri1	0
90	br	g	u235t	ms	fi	su	0.0000000	0.0	2.7000000	0.6000000	90		u235t	100.0000000	75cle1	0
90	br	g	u235t	ms	fi	su	0.0000000	0.0	4.1000000	0.9000000	90		u235t	100.0000000	75cle2	0
90	br	g	u235t	sp	re	x4	0.0000000	0.0	0.4500000	0.2000000	88	br g	u235t	1.0000000	75ree1	0
90	br	g	u235t	ms	fi		0.5786523	7.1	10.0000000	0.7000000	90		u235t	100.0000000	76sie1	0

90	br	g	u235t	ms	fi		0.5497197	8.5	9.5000000	0.8000000	90		u235t	100.0000000	76wol1	0
90	br	g	u235t	rc	fi	su	0.0000000	0.0	0.1160000	0.0140000	90		u235t	1.0000000	77kra1	0
90	br	g	u235t	rc	fi		0.6712367	12.1	11.6000000	1.4000000	90		u235t	100.0000000	78kra1	0
90	br	g	u235t	sp	fi	x4	0.0000000	0.0	4.8000000	0.4000000	90		u235t	100.0000000	78str1	0
90	br	g	u235t	sp	fi	x4	0.0000000	0.0	5.6000000	0.5000000%	90		u235t	100.0000000	79str1	0
90	br	g	u235t	ms	in		0.3752698	17.6	0.3750000	0.0660000	0			0.0000000	79cle1	0
90	br	g	u235t	sp	fi		0.3645510	15.9	6.3000000	1.0000000	90		u235t	100.0000000	80lan1	0
90	br	g	u235t	rc	in	x4	0.0000000	0.0	0.6600000	0.1200000	88	br	g	u235t	1.5600000	83eng1	0
90	br	g	u235t	rc	fi		0.6538771	18.2	0.1130000	18.2000000%	90		u235t	1.0000000	83mei1	0
90	br	g	u235t	es	in		0.5209746	15.0	0.5206000	15.0000000%	0			1.0000000	88wah1	0
90	br	g	u235t	sp	in		0.4102950	19.5	0.4100000	0.0800000	0			0.0000000	90rud1	0
90	br	g	u235t	sp	cu		0.6504677	15.4	0.6500000	0.1000000	0			0.0000000	75bri1	0
90	br	g	u235t	es	cu		0.6925980	32.1	0.6921000	32.1000000%	0			0.0000000	73net2	0
90	br	g	u235t	es	cu		0.5874223	10.0	0.5870000	10.0000000%	0			0.0000000	89rid1	0
90	br	g	u235t	sp	cu		0.3602590	30.0	0.3600000	0.1080000	0			0.0000000	90rud1	36
90	se	g	u235t	ms	fi	ul	0.0000000	0.0	0.4000000	0.4000000	90		u235t	100.0000000	76wol1	0
90			u235f	cm	cu		0.0000000	0.0	5.2400000	2.9000000%	0			0.0000000	77cro1	0
90	zr	g	u235f	ms	cu		5.3310142	2.0	5.3610000	0.0770000	0			0.0000000	80mae1	0
90	sr	g	u235f	rc	cu		5.1523762	10.0	5.0200000	0.2000000	90	sr	g	28.0000000	57bay1	16
90	sr	g	u235f	rc	cu		5.2707564	5.0	5.5100000	3.0000000%	148	nd	g	u235f	1.7500000	69dav1	0
90	sr	g	u235f	rc	cu		4.9913954	5.7	4.8300000	0.2700000	140	ba	g	u235f	5.7500000	70bow1	0
90	sr	g	u235f	rc	cu		4.7819577	6.4	4.7400000	0.3000000	140	ba	g	u235f	5.8900000	72cun2	0
90	sr	g	u235f	es	cu	cm	5.3200757	30.0	5.3500000	0.0000000	0			0.0000000	72sid1	0
90	sr	g	u235f	cm	cu		0.0000000	0.0	5.4600000	5.0000000%	0			0.0000000	73net2	0
90	sr	g	u235f	es	cu		4.9100772	30.0	5.0000000	0.0000000	137	cs	g	u235f	6.3000000	60kat1	0
90	sr	g	u235f	rc	cu		5.1179469	5.0	0.9150000	1.5000000%	99	mo	g	u235t	0.0000000	76for1	7
90	sr	g	u235f	ms	cu		5.2420590	3.0	5.4800000	0.1600000	148	nd	g	u235f	1.7500000	70lis1	0
90	sr	g	u235f	ms	cu	cm	5.3976395	6.0	5.4280000	0.0000000	0			0.0000000	80mae3	0
90	sr	g	u235f	ms	cu		5.5706662	2.0	5.6020000	0.0300000	0			0.0000000	81mae1	0
90	sr	g	u235f	ms	cu		5.5637054	2.0	5.5950000	0.0320000	0			0.0000000	81mae1	0
90	sr	g	u235f	ms	cu		5.5656942	2.0	5.5970000	0.0310000	0			0.0000000	81mae1	0
90	sr	g	u235f	cm	cu		0.0000000	0.0	5.5980000	0.0290000	0			0.0000000	81mae1	0
90	sr	g	u235f	ms	cu		5.5003356	0.9	5.5200000	0.0400000	148	nd	g	u235f	1.6800000	74mae1	0
90	sr	g	u235f	rc	in		0.0298322	33.3	0.0300000	0.0100000	0			0.0000000	81mar1	0
90	rb	g	u235f	cm	cu		0.0000000	0.0	4.2460000	11.0000000%	0			0.0000000	73net2	0
90	rb	g	u235f	rc	in	sm	0.0000000	0.0	1.3200000	0.2000000	0			0.0000000	81mar1	0

```
 90 rb m   u235f    cm    cu    x3   0.0000000  0.0   1.1720000 32.1000000%    0                    0.0000000   73net2      0
 90 kr g   u235f    cm    cu         0.0000000  0.0   4.4640000  9.0000000%    0                    0.0000000   73net2      0
 90 kr g   u235f    rc    cu         4.0770674  5.0   4.1000000  0.0500000     0                    0.0000000   81mar1      0
 90 kr g   u235f    rc    in         3.4406471  5.0   3.4600000  0.1500000     0                    0.0000000   81mar1      0
 90 br g   u235f    cm    cu    x3   0.0000000  0.0   0.5616000 32.1000000%    0                    0.0000000   73net2      0
 90 br g   u235f    rc    cu         0.6463643 15.4   0.6500000  0.1000000     0                    0.0000000   81mar1      0
 90 br g   u235f    rc    in         0.6314482  6.3   0.6350000  0.0400000     0                    0.0000000   81mar1      0
 90        u235he   es    cu         4.3241273 30.0   4.3460000  0.0000000     0                    0.0000000   63wea1      0
 90        u235he   es    cu         4.6265973  6.5   4.6500000  0.3000000     0                    0.0000000   72boc1      0
 90        u235he   ms    cu    rp   4.3962982 13.2   4.6500000  0.0000000  no. relative values =    4            72boc1
 90        u235he   cm    cu         0.0000000  0.0   4.4000000  5.0000000%    0                    0.0000000   77cro1      0
 90        u235he   es    cu         4.6464966 10.0   4.6700000 10.0000000%    0                    0.0000000   74mee8      0
 90        u235he   ms    cu    rp   4.3670690 41.8   4.6500000  0.0000000  no. relative values =    1            72boc1
 90 y  g   u235he   rc    fi         0.0010057 15.3   0.0002200 15.0000000%   90          u235he      1.0000000   65net1      0
 90 y  g   u235he   cm    fi         0.0000000  0.0   0.0000572  0.0000104    90          u235he      1.0000000   72net2     40
 90 y  m   u235he   cm    fi    x6   0.0000000  0.0   0.0001628  0.0000296    90          u235he      1.0000000   72net2     40
 90 sr g   u235he   rc    cu         4.5185723 10.0   4.4000000  0.1700000    90 sr g                 28.0000000   57bay1     16
 90 sr g   u235he   cm    cu         0.0000000  0.0   4.5000000  0.0000000     0                    0.0000000   69gun2      0
 90 sr g   u235he   cm    cu         0.0000000  0.0   4.3200000  4.1000000%    0                    0.0000000   73net2      0
 90 sr g   u235he   rc    cu         4.6972194  5.0   0.9710000  1.5000000%   99 mo g      u235t       0.0000000   76for1      7
 90 sr g   u235he   rc    cu         4.5182317  5.0   0.9340000  1.5000000%   99 mo g      u235t       0.0000000   76for1      7
 90 rb g   u235he   cm    cu         0.0000000  0.0   3.0700000 10.0000000%    0                    0.0000000   73net2      0
 90 rb m   u235he   cm    cu    x3   0.0000000  0.0   1.1560000 32.1000000%    0                    0.0000000   73net2      0
 90 kr g   u235he   es    in         2.4376695 17.1   2.4500000  0.4200000     0                    0.0000000   72boc1      0
 90 kr g   u235he   cm    cu         0.0000000  0.0   3.0400000 10.0000000%    0                    0.0000000   73net2      0
 90 br g   u235he   cm    cu    x3   0.0000000  0.0   0.2273000 45.0000000%    0                    0.0000000   73net2      0
 90        u238f    cm    cu    es   0.0000000  0.0   3.4000000  0.0000000     0                    0.0000000   64wal1      0
 90        u238f    es    cu    cm   3.1893647 30.0   3.2000000  0.0000000     0                    0.0000000   72sid1      0
 90        u238f    cm    cu         0.0000000  0.0   3.1900000  4.5000000%    0                    0.0000000   77cro1      0
 90 sr g   u238f    rc    cu         3.2301572 10.0   3.1400000  0.1300000    90 sr g                 28.0000000   57bay1     16
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type          value   err.     value                nuclide     material       value       no.   treatment

 90 sr g   u238f    cm    cu         0.0000000  0.0   3.5100000  5.0000000%    0                    0.0000000   73net2      0
 90 sr g   u238f    cm    cu         0.0000000  0.0   3.2000000  0.0000000     0                    0.0000000   60kat1      0
```

90 sr g u238f rc cu 3.3637489 5.0 0.5780000 1.5000000% 99 mo g u235t 0.0000000 76for1 7
90 sr g u238f rc cu 3.6832755 11.7 3.8600000 0.4500000 140 ba g u238f 6.0700000 77har1 0
90 sr g u238f ms cu 3.2312251 2.0 3.2420000 0.0320000 0 0.0000000 81mae1 0
90 sr g u238f ms cu 3.2342151 2.6 3.2450000 0.0830000 0 0.0000000 81mae1 0
90 sr g u238f cm cu 0.0000000 0.0 3.2440000 0.0490000 0 0.0000000 81mae1 0
90 sr g u238f ms cu 3.2492781 1.7 3.2100000 0.0500000 148 nd g u238f 2.0800000 74mae1 0
90 rb g u238f cm cu 0.0000000 0.0 2.9840000 8.1000000% 0 0.0000000 73net2 0
90 rb m u238f cm cu 0.0000000 0.0 0.5240000 32.1000000% 0 0.0000000 73net2 0
90 kr g u238f cm cu 0.0000000 0.0 3.3190000 7.0000000% 0 0.0000000 73net2 0
90 kr g u238f rc cu 2.7707606 11.0 2.7800000 11.0000000% 0 0.0000000 87chu1 0
90 br g u238f cm cu 0.0000000 0.0 1.0190000 32.1000000% 0 0.0000000 73net2 0
90 u238he es cu 2.8524285 9.1 2.8600000 0.2600000 0 0.0000000 72boc1 0
90 u238he ms cu rp 3.1307847 12.1 2.8600000 0.0000000 no. relative values = 6 72boc1
90 u238he cm cu su 0.0000000 0.0 2.9700000 0.1400000 0 0.0000000 73dar1 0
90 u238he es cu 3.3391365 15.0 3.3480000 15.0000000% 0 0.0000000 74mee9 0
90 u238he cm cu 0.0000000 0.0 3.1600000 8.4000000% 0 0.0000000 77cro1 0
90 u238he rc cu 3.0562380 5.4 2.8600000 0.1100000 91 u238he 3.6100000 77feu1 0
90 sr g u238he rc cu 3.1499957 10.0 3.0600000 0.1200000 90 sr g 28.0000000 57bay1 16
90 sr g u238he rc cu 3.6320666 10.1 3.4000000 0.3000000 140 ba g u238he 4.3000000 62bro1 0
90 sr g u238he cm cu 0.0000000 0.0 3.2500000 0.0000000 0 0.0000000 69gun2 0
90 sr g u238he cm cu 0.0000000 0.0 3.3400000 6.1000000% 0 0.0000000 73net2 0
90 sr g u238he cm cu 0.0000000 0.0 3.1000000 0.0000000 0 0.0000000 60kat1 0
90 sr g u238he rc cu 3.1723775 5.0 0.5890000 1.5000000% 99 mo g u235t 0.0000000 76for1 7
90 sr g u238he rc cu 3.2962564 5.0 0.6120000 1.5000000% 99 mo g u235t 0.0000000 76for1 7
90 rb g u238he cm cu 0.0000000 0.0 2.7490000 9.0000000% 0 0.0000000 73net2 0
90 rb m u238he cm cu x3 0.0000000 0.0 0.5835000 32.1000000% 0 0.0000000 73net2 0
90 kr g u238he rc cu 2.8723755 5.0 2.8800000 0.1100000 0 0.0000000 71bri1 0
90 kr g u238he es in 1.8750229 11.7 1.8800000 0.2200000 0 0.0000000 72boc1 0
90 kr g u238he cm cu 0.0000000 0.0 2.9960000 8.1000000% 0 0.0000000 73net2 0
90 br g u238he cm cu x3 0.0000000 0.0 0.6091000 32.1000000% 0 0.0000000 73net2 0
90 pu239t cm cu 0.0000000 0.0 2.1600000 0.0000000 0 0.0000000 72sid1 0
90 pu239t cm cu 0.0000000 0.0 2.1300000 0.0000000 0 0.0000000 73lam1 0
90 pu239t cm cu 0.0000000 0.0 2.1100000 0.0300000 0 0.0000000 73wal1 0
90 pu239t cm cu 0.0000000 0.0 2.1200000 6.0000000% 0 0.0000000 77cro1 0
90 sr g pu239t ms cu x4 0.0000000 0.0 2.2800000 0.0000000 0 0.0000000 58kri1 0
90 sr g pu239t rc cu 2.0578121 5.0 2.0500000 0.0400000 0 0.0000000 65mar1 0

90 sr g pu239t cm cu 0.0000000 0.0 2.1210000 2.0000000% 0 0.0000000 73net2 0
90 sr g pu239t rc cu 1.9526985 5.0 0.3310000 1.5000000% 99 mo g u235t 0.0000000 76for1 7
90 sr g pu239t ms cu x4 0.0000000 0.0 2.3100000 0.0500000 0 0.0000000 59ani1 0
90 sr g pu239t ms cu 1.9905568 2.0 1.9830000 0.0220000 0 0.0000000 79mae2 0
90 sr g pu239t ms cu 2.0982119 1.9 2.0900000 0.0400000 85 rb g pu239t 0.5740000 70lis1 0
90 sr g pu239t ms cu 2.2047807 1.6 2.1600000 0.0000000 133 cs g pu239t 6.9000000 59fic1 0
90 sr g pu239t ms cu rp 2.0441908 3.6 1.0000000 0.0000000 no. relative values = 1 59fic1
90 sr g pu239t ms cu 2.1102512 2.1 2.1500000 0.0400000 88 sr g pu239t 1.3600000 86chi1 0
90 sr g pu239t cm cu x3 0.0000000 0.0 1.9800000 1.0000000% 0 0.0000000 81mae2 0
90 sr g pu239t cm re x3 0.0000000 0.0 0.6073000 1.0000000% 88 sr g pu239t 0.3925000 81mae2 36
90 sr g pu239t sp fi 0.1013917 42.0 0.0480000 42.0000000% 90 pu239t 1.0000000 84sch1 36
90 sr g pu239t cm in 0.0000000 0.0 0.1027000 42.0000000% 0 1.0000000 88wah1 0
90 rb g pu239t cm cu 0.0000000 0.0 1.5150000 10.0000000% 0 0.0000000 73net2 0
90 rb g pu239t sp fi 0.1478629 5.4 0.0700000 5.0000000% 90 pu239t 1.0000000 84sch1 36
90 rb g pu239t cm in 0.0000000 0.0 0.1423000 4.0000000% 0 1.0000000 88wah1 0
90 rb m pu239t cm cu 0.0000000 0.0 0.5620000 32.1000000% 0 0.0000000 73net2 0
90 rb m pu239t sp fi 0.6315860 5.4 0.2990000 5.0000000% 90 pu239t 1.0000000 84sch1 36
90 rb m pu239t cm in 0.0000000 0.0 0.6066000 4.0000000% 0 1.0000000 88wah1 0
90 kr g pu239t rc fc 1.3517655 5.4 64.0000000 1.0000000 90 sr g pu239t 100.0000000 65wol1 0
90 kr g pu239t cm cu x3 0.0000000 0.0 1.5050000 10.0000000% 0 0.0000000 73net2 0
90 kr g pu239t ms cu 1.3149921 3.1 1.3100000 0.0400000 0 0.0000000 76bri2 0
90 kr g pu239t ms in 1.0841156 6.5 1.0800000 0.0700000 0 0.0000000 77bri1 0
90 kr g pu239t rc cu 1.3209548 5.4 1.3100000 0.0400000 91 kr g pu239t 0.7110000 77bri1 0
90 kr g pu239t sp fi 1.1723418 5.4 0.5550000 5.0000000% 90 pu239t 1.0000000 84sch1 36
90 kr g pu239t cm in 0.0000000 0.0 1.1810000 4.0000000% 0 1.0000000 88wah1 0
90 kr g pu239t rc cu x4 0.0000000 0.0 1.9200000 0.1800000 0 0.0000000 81dic1 0
90 br g pu239t cm cu x3 0.0000000 0.0 0.1153000 45.0000000% 0 0.0000000 73net2 0
90 br g pu239t es fc 0.0821695 30.1 0.0389000 0.0000000 90 pu239t 1.0000000 74wol1 0
90 br g pu239t rc cu 0.2308765 21.7 0.2300000 0.0500000 0 0.0000000 77bri1 0
90 br g pu239t rc in 0.2308765 8.7 0.2300000 0.0200000 0 0.0000000 77bri1 0
90 br g pu239t rc fc 0.2154574 41.2 0.1020000 0.0420000 90 pu239t 1.0000000 71gri1 0
90 br g pu239t sp fi 0.0591452 71.0 0.0280000 71.0000000% 90 pu239t 1.0000000 84sch1 36
90 br g pu239t cm in 0.0000000 0.0 0.1311000 44.0000000% 0 1.0000000 88wah1 0
90 se g pu239t es cu 0.0012728 30.0 0.0012680 0.0000000 0 0.0000000 74mee2 0
90 pu239f es cu cm 2.1432350 30.0 2.1500000 0.0000000 0 0.0000000 72sid1 0
90 pu239f cm cu 0.0000000 0.0 2.0000000 10.8000000% 0 0.0000000 77cro1 0

90	zr g	pu239f	ms	cu	su	0.0000000	0.0	2.0200000	0.0200000	148 nd g	pu239f	1.6500000	74mae1	0
90		pu239f	es	re		2.1501183	10.2	1.0250000	10.0000000%	90	pu239t	1.0000000	74mee4	0
90	sr g	pu239f	rc	cu		2.1812579	10.0	2.1200000	0.0900000	90 sr g		28.0000000	57bay1	16
90	sr g	pu239f	rc	cu	cm	2.4128789	15.1	2.2600000	0.0000000	140 ba g	pu239f	4.9700000	65cro2	0
90	sr g	pu239f	rc	cu		2.2413582	6.0	2.1000000	6.0000000%	137 cs g	pu239f	6.1500000	67sch1	0
90	sr g	pu239f	rc	cu		1.9698097	5.0	2.0100000	3.0000000%	148 nd g	pu239f	1.6900000	69dav1	0
90	sr g	pu239f	rc	cu	x4	0.0000000	0.0	3.3400000	0.3900000	140 ba g	pu239f	5.3600000	72cun2	0
90	sr g	pu239f	cm	cu		0.0000000	0.0	2.3090000	5.0000000%	0		0.0000000	73net2	0
90	sr g	pu239f	es	cu		2.1236398	30.0	2.2000000	0.0000000	137 cs g	pu239f	6.8000000	60kat1	0
90	sr g	pu239f	rc	cu		2.1555026	5.0	0.3820000	1.5000000%	99 mo g	u235t	0.0000000	76for1	7
90	sr g	pu239f	ms	cu		2.0236981	1.0	2.0210000	0.0180000	148 nd g	pu239f	1.6540000	77mae1	0
90	sr g	pu239f	ms	cu		1.9767605	2.0	1.9830000	0.0290000	0		0.0000000	77mae1	0
90	sr g	pu239f	ms	cu		2.1444544	2.3	2.2400000	0.0500000	148 nd g	pu239f	1.7300000	70lis1	0
90	sr g	pu239f	ms	cu		2.0490462	0.9	0.6072000	0.0011000	88 sr g	pu239f	0.3928000	80mae4	0
90	sr g	pu239f	es	cu	cm	2.0634867	1.0	2.0700000	1.0000000%	0		0.0000000	81mae2	0
90	sr g	pu239f	es	re		2.0469916	1.2	0.6069000	1.0000000%	88 sr g	pu239f	0.3930000	81mae2	36
90	rb g	pu239f	cm	cu		0.0000000	0.0	1.6070000	13.0000000%	0		0.0000000	73net2	0
90	rb m	pu239f	rc	cu	x1	0.0000000	0.0	1.5000000	0.1000000	0		0.0000000	69moo1	0
90	rb m	pu239f	cm	cu		0.0000000	0.0	0.6420000	32.1000000%	0		0.0000000	73net2	0
90	kr g	pu239f	cm	cu	x3	0.0000000	0.0	1.5690000	13.0000000%	0		0.0000000	73net2	0
90	br g	pu239f	cm	cu	x3	0.0000000	0.0	0.1063000	45.0000000%	0		0.0000000	73net2	0
90		pu241t	cm	cu		0.0000000	0.0	1.5300000	0.0000000	0		0.0000000	72sid1	0
90		pu241t	cm	cu		0.0000000	0.0	1.5500000	0.0200000	0		0.0000000	73wal1	0
90		pu241t	es	cu	cm	1.5307433	10.1	1.0000000	0.1000000	90 sr g	pu241t	1.0000000	74mee1	0
90		pu241t	cm	cu		0.0000000	0.0	1.4900000	3.5000000%	0		0.0000000	77cro1	0
90		pu241t	cm	cu		0.0000000	0.0	1.5000000	0.0000000	0		0.0000000	79wal1	0
90	sr g	pu241t	rc	cu		1.4552434	5.0	1.4600000	0.0400000	0		0.0000000	73sko2	0
90	sr g	pu241t	ms	cu		1.5309958	2.0	1.5360000	0.0090000	0		0.0000000	77mae1	0
90	sr g	pu241t	ms	cu		1.5827229	2.7	1.5300000	0.0400000	148 nd g	pu241t	1.8616500	70lis1	0
90	sr g	pu241t	ms	cu		1.5366498	2.1	1.5400000	0.0300000	148 nd g	pu241t	1.9300000	86chi1	0
90	sr g	pu241t	ms	cu		1.5240116	2.4	1.5100000	0.0300000	88 sr g	pu241t	0.9780000	86chi1	0
90	sr g	pu241t	rc	cu	x4	0.0000000	0.0	0.5400000	0.0000000	0		0.0000000	63kir1	0
90	kr g	pu241t	ms	cu		1.1861230	5.0	1.1900000	0.0600000	0		0.0000000	76bri2	0
90	kr g	pu241t	ms	in		0.9309571	7.5	0.9340000	0.0700000	0		0.0000000	77bri1	0
90	kr g	pu241t	rc	cu		1.2454458	6.4	1.1900000	0.0600000	91 kr g	pu241t	0.9300000	77bri1	0
90	br g	pu241t	rc	cu		0.2491855	16.0	0.2500000	0.0400000	0		0.0000000	77bri1	0

90	br	g	pu241t	rc		in		0.2491855	16.0	0.2500000	0.0400000	0					0.0000000	77bri1	0
90	se	g	pu241t	es		cu		0.0093445	30.0	0.0093750	0.0000000	0					0.0000000	74mee2	0
90			u233t	cm		cu		0.0000000	0.0	6.2000000	0.0000000	0					0.0000000	72sid1	0
90			u233t	cm		cu		0.0000000	0.0	6.8800000	0.0000000	0					0.0000000	73lam1	0
90			u233t	cm		cu		0.0000000	0.0	6.8100000	0.1000000	0					0.0000000	73wal1	0
90			u233t	cm		cu		0.0000000	0.0	6.4600000	5.4000000%	0					0.0000000	77cro1	0
90			u233t	ms		cu		6.6800881	2.0	6.7130000	0.0460000	0					0.0000000	80weh1	0
90	y	g	u233t	sp	fi	ul		0.0000000	0.0	0.7700000	0.1990000	90	u233t				100.0000000	83qua1	0
90	y	g	u233t	rc	fi	ul		0.0000000	0.0	0.0000164	0.0000164	90	u233t				1.0000000	57gru1	40
90	y	g	u233t	sp	in	ul		0.0000000	0.0	0.0540000	0.0140000	0					0.0000000	88qua1	0

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0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

90	y	m	u233t	rc	fi	ul		0.0000000	0.0	0.0000236	0.0000236	90	u233t				1.0000000	57gru1	40
90	sr	g	u233t	ms		cu		7.2972041	3.7	4.4600000	0.1400000	89	sr	g	u233t		5.6000000	57ani1	21
90	sr	g	u233t	rc		cu		6.5130785	5.7	6.4000000	0.3000000	99	mo	g	u233t		4.8000000	67gan1	0
90	sr	g	u233t	cm		cu		0.0000000	0.0	6.4820000	2.0000000%	0					0.0000000	73net2	0
90	sr	g	u233t	ms		cu	su	0.0000000	0.0	1.0000000	3.1600000%	88	sr	g	u233t		0.9280000	59gor1	0
90	sr	g	u233t	ms		cu		6.8487338	4.2	6.7500000	4.0000000%	88	sr	g	u233t		5.3600000	61bid1	0
90	sr	g	u233t	rc		cu		7.5630367	10.4	6.1900000	0.0700000	140	ba	g	u233t		5.2100000	60san1	36
90	sr	g	u233t	ms		cu	x4	0.0000000	0.0	5.5800000	0.2000000	88	sr	g	u233t		5.1700000	61gor1	0
90	sr	g	u233t	ms		cu	x4	0.0000000	0.0	5.8000000	0.4000000	0					0.0000000	59ani1	0
90	sr	g	u233t	ms		in		0.3124605	7.6	0.3140000	0.0240000	0					0.0000000	80weh1	0
90	sr	g	u233t	ms		cu		6.9258771	2.0	6.9600000	0.0600000	0					0.0000000	70lis1	0
90	sr	g	u233t	sp	fi			0.3614391	12.2	5.3500000	0.6470000	90	u233t				100.0000000	83qua1	0
90	sr	g	u233t	ms		cu		6.6336551	2.2	6.6600000	0.1100000	88	sr	g	u233t		5.4600000	86chi1	0
90	sr	g	u233t	sp	in			0.3721664	12.3	0.3740000	0.0460000	0					0.0000000	88qua1	0
90	rb	g	u233t	cm		cu		0.0000000	0.0	4.5600000	10.0000000%	0					0.0000000	73net2	0
90	rb	g	u233t	ms		in		0.4418232	2.0	0.4440000	0.0080000	0					0.0000000	80weh1	18
90	rb	g	u233t	sp	fi			0.4398951	5.2	6.5113000	0.2276000	90	u233t				100.0000000	83qua1	40
90	rb	g	u233t	sp	in			0.4530081	5.0	0.4552400	0.0178600	0					0.0000000	88qua1	18
90	rb	m	u233t	cm		cu		0.0000000	0.0	1.7680000	32.1000000%	0					0.0000000	73net2	0
90	rb	m	u233t	ms		in		1.8817290	2.0	1.8910000	0.0330000	0					0.0000000	80weh1	18
90	rb	m	u233t	sp	fi			1.8753422	5.2	27.7587000	0.9704000	90	u233t				100.0000000	83qua1	40
90	rb	m	u233t	sp	in			1.9312450	5.0	1.9407600	0.0761400	0					0.0000000	88qua1	18

90	kr g	u233t	rc	fc		4.4925614	5.4	66.5000000	1.2000000	90	sr g	u233t	100.0000000	65wol1	0
90	kr g	u233t	cm	cu		0.0000000	0.0	4.4840000	12.0000000%	0			0.0000000	73net2	0
90	kr g	u233t	sp	cu		4.3386242	5.0	4.3600000	0.1500000	0			0.0000000	75bri1	0
90	kr g	u233t	sp	in		3.9803892	5.0	4.0000000	0.2000000	0			0.0000000	75bri1	0
90	kr g	u233t	ms	in		3.8788892	2.0	3.8980000	0.0480000	0			0.0000000	80weh1	0
90	kr g	u233t	sp	fi		3.9062450	5.2	57.8200000	1.6760000	90		u233t	100.0000000	83qua1	0
90	kr g	u233t	sp	in		4.0221832	5.0	4.0420000	0.1370000	0			0.0000000	88qua1	0
90	br g	u233t	cm	cu		0.0000000	0.0	0.3192000	45.0000000%	0			0.0000000	73net2	0
90	br g	u233t	rc	fc	x1	0.0000000	0.0	0.1030000	0.0330000	90		u233t	1.0000000	71gri1	0
90	br g	u233t	sp	in		0.3482841	25.7	0.3500000	0.0900000	0			0.0000000	75bri1	0
90	br g	u233t	sp	cu		0.3482841	25.7	0.3500000	0.0900000	0			0.0000000	75bri1	0
90	br g	u233t	ms	in		0.1651861	11.4	0.1660000	0.0190000	0			0.0000000	80weh1	0
90	br g	u233t	sp	fi	ul	0.0000000	0.0	1.4800000	0.3050000	90		u233t	100.0000000	83qua1	0
90	br g	u233t	sp	in	x4	0.0000000	0.0	0.1030000	0.0210000	0			0.0000000	88qua1	0
90	br g	u233t	es	in		0.2141449	39.0	0.2152000	39.0000000%	0			0.0000000	88wah1	0
90	br g	u233t	es	fi		0.1737678	22.7	0.0257210	22.7000000%	90		u233t	1.0000000	91jam2	0
90	br g	u233t	es	in		0.2507645	50.0	0.2520000	50.0000000%	0			0.0000000	89rid1	0
90	br g	u233t	es	fi		0.2296996	50.0	0.0340000	50.0000000%	90		u233t	1.0000000	89rid1	0
90	se g	u233t	sp	fi	ul	0.0000000	0.0	0.3200000	0.1960000	90		u233t	100.0000000	83qua1	0
90	se g	u233t	sp	in	ul	0.0000000	0.0	0.0220000	0.0140000	0			0.0000000	88qua1	0
90		th232f	cm	cu	es	0.0000000	0.0	7.3000000	0.0000000	0			0.0000000	65eng1	0
90		th232f	es	cu	cm	7.4462857	30.0	7.4600000	0.0000000	0			0.0000000	72sid1	0
90		th232f	es	cu	cm	7.3863960	30.0	7.4000000	0.0000000	0			0.0000000	73lam1	0
90		th232f	cm	cu		0.0000000	0.0	7.2500000	0.0000000	0			0.0000000	74lam1	0
90		th232f	cm	cu		0.0000000	0.0	7.7500000	4.2000000%	0			0.0000000	77cro1	0
90		th232f	es	cu		7.6658813	30.0	7.6800000	0.0000000	0			0.0000000	74mee0	0
90	sr g	th232f	rc	cu		7.3299260	60.1	5.9000000	0.0000000	89	sr g	th232f	6.0000000	50nid1	0
90	sr g	th232f	rc	cu		6.7866251	20.4	6.1000000	1.2000000	89	sr g	th232f	6.7000000	51tur1	0
90	sr g	th232f	rc	re		8.5682203	10.4	1.0900000	0.0600000	140	ba g	th232f	1.0000000	63cro2	0
90	sr g	th232f	rc	re		7.7881725	10.0	2.8000000	0.1000000	99	mo g	u235t	0.0000000	63iye1	7
90	sr g	th232f	cm	cu		0.0000000	0.0	7.8490000	4.0000000%	0			0.0000000	73net2	0
90	sr g	th232f	cm	cu		0.0000000	0.0	6.8000000	0.0000000	0			0.0000000	60kat1	0
90	sr g	th232f	rc	cu	su	0.0000000	0.0	6.9900000	0.0700000	99	mo g	th232f	2.7800000	64wyt1	0
90	sr g	th232f	rc	cu		7.3891007	5.4	6.9900000	0.0700000	99	mo g	th232f	2.7800000	65wyt1	0
90	sr g	th232f	rc	re		8.0663215	7.9	2.9000000	0.2300000	99	mo g	u235t	0.0000000	81ert1	7
90	sr g	th232f	cm	cu		0.0000000	0.0	8.0100000	0.4000000	0			0.0000000	81ert1	0

90 sr g th232f rc cu 7.9492045 20.0 0.8729000 19.7000000% 89 sr g u235t 0.0000000 51tur1 7
90 rb g th232f cm cu 0.0000000 0.0 6.6480000 8.1000000% 0 0.0000000 73net2 0
90 rb m th232f cm cu 0.0000000 0.0 1.1950000 32.1000000% 0 0.0000000 73net2 0
90 kr g th232f cm cu 0.0000000 0.0 7.3790000 6.0000000% 0 0.0000000 73net2 0
90 kr g th232f rc in 5.4799073 15.0 5.4900000 15.0000000% 0 0.0000000 77iza1 0
90 kr g th232f rc fc 8.0677665 7.5 1.0200000 0.0650000 90 th232f 1.0000000 78iza1 0
90 kr g th232f ms fi 6.0270962 15.5 0.7620000 0.1140000 90 th232f 1.0000000 77iza1 0
90 br g th232f cm cu x3 0.0000000 0.0 2.1420000 32.1000000% 0 0.0000000 73net2 0
91 zr g u235t ms re 5.8229334 1.6 0.9170000 1.4000000% 93 zr g u235t 1.0000000 62far2 0
91 u235t cm cu 0.0000000 0.0 5.8400000 0.0000000 0 0.0000000 72sid1 0
91 u235t cm cu 0.0000000 0.0 5.9300000 0.0000000 0 0.0000000 73lam1 0
91 u235t cm cu 0.0000000 0.0 5.9500000 0.1100000 0 0.0000000 73wal1 0
91 u235t ms cu 6.0130576 2.0 6.0100000 0.0410000 0 0.0000000 76dii1 0
91 u235t sp cu 5.9033537 5.0 5.9200000 0.1100000 0 1.0033300 76woh2 0
91 u235t cm cu 0.0000000 0.0 5.9100000 2.0000000% 0 0.0000000 77cro1 0
91 zr g u235t ms cu 5.8429711 6.0 5.8400000 0.0000000 0 0.0000000 55gle1 0
91 zr g u235t ms cu 5.7589284 4.1 5.7560000 0.2350000 0 0.0000000 78mae1 0
91 zr g u235t ms cu aj 5.8349671 4.1 5.8320000 0.2400000 0 0.0000000 78mae1 0
91 zr g u235t ms cu 6.0560795 4.1 6.0530000 0.2460000 0 0.0000000 78mae1 0
91 zr g u235t ms cu su 0.0000000 0.0 5.9000000 0.0300000 0 0.0000000 70lis1 0
91 u235t es re 5.9137864 2.1 1.0000000 2.0000000% 91 u235f 0.9700000 74mee4 0
91 zr g u235t ms cu cm 5.7669325 6.0 5.7640000 0.0000000 0 0.0000000 80mae3 0
91 zr g u235t ms cu 5.6610687 0.9 5.6700000 0.0300000 93 zr g u235t 6.3600000 86chi1 0
91 y g u235t rc cu 5.9966087 60.0 5.9000000 0.0000000 140 ba g u235t 6.1000000 51bal1 0
91 y g u235t rc cu 5.3001766 10.0 5.3500000 0.2100000 89 sr g u235t 4.7800000 55ree1 0
91 y g u235t rc fi x1 0.0000000 0.0 0.0125000 0.0075000 91 u235t 1.0000000 57gru1 0
91 y g u235t ms re 5.9667113 2.2 1.2600000 2.0000000% 89 y g u235t 1.0000000 62far2 0
91 y g u235t rc cu 5.7729355 5.0 5.7700000 0.2400000 0 0.0000000 71mcl1 0
91 y g u235t cm cu 0.0000000 0.0 5.9000000 5.0000000% 0 0.0000000 73net2 0
91 y g u235t rc in ul 0.0000000 0.0 0.0250000 0.0250000 89 sr g u235t 4.7800000 55ree1 0
91 y g u235t rc cu 5.7673336 20.0 0.0400000 0.0030000 140 ba g u235t 0.0430000 51gru1 0
91 y g u235t rc cu 6.1627573 10.1 6.1100000 10.0000000% 99 mo g u235t 6.0600000 65bun1 36
91 y m u235t rc cu x6 0.0000000 0.0 3.2700000 0.1000000 0 0.0000000 77gud1 0
91 sr g u235t rc cu 5.0025438 60.0 5.0000000 0.0000000 0 0.0000000 51cor2 0
91 sr g u235t rc cu 5.0525048 20.0 5.1000000 2.0000000% 89 sr g u235t 4.7800000 53ree1 0
91 sr g u235t rc re 5.4430861 10.0 1.0000000 0.0500000 89 sr g u235t 0.8700000 56her1 0

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 91 sr g   u235t    rc    cu        5.6014771 10.0   5.7100000  1.3000000%  140 ba g      u235t       6.3200000   57bae1      0
 91 sr g   u235t    ms    re        5.9935559  2.2   1.0360000  2.0000000%   90 sr g      u235t       1.0000000   62far2      0
 91 sr g   u235t    rc    cu        5.7028999 10.5   5.7000000  0.6000000     0                       0.0000000   70ohy1      0
 91 sr g   u235t    rc    cu        5.3127015  8.9   5.3100000  0.4700000     0                       0.0000000   71mcl1      0
 91 sr g   u235t    cm    cu        0.0000000  0.0   5.8990000  5.0000000%    0                       0.0000000   73net2      0
 91 sr g   u235t    ms    fi    su  0.0000000  0.0   2.1000000  1.2000000    91          u235t     100.0000000   75cle1      0
 91 sr g   u235t    ms    fi    su  0.0000000  0.0   2.5000000  0.6000000    91          u235t     100.0000000   75cle1      0
 91 sr g   u235t    rc    fi    su  0.0000000  0.0   0.0600000  0.0400000    91          u235t       1.0000000   59fer1      0
 91 sr g   u235t    ms    fi        0.2624069 11.1   4.5000000  0.5000000    91          u235t     100.0000000   76sie1      0
 91 sr g   u235t    sp    fi    su  0.0000000  0.0   0.0450000  0.0500000    91          u235t       1.0000000   74sie1      0
 91 sr g   u235t    sp    fi    su  0.0000000  0.0   0.0520000  0.0050000    91          u235t       1.0000000   74sie2      0
 91 sr g   u235t    sp    fi        0.2215880 13.2   3.8000000  0.5000000    91          u235t     100.0000000   78str1      0
 91 sr g   u235t    ms    fi    su  0.0000000  0.0   3.5000000  1.6000000    91          u235t     100.0000000   75cle2      0
 91 sr g   u235t    ms    in        0.3051552 15.1   0.3050000  0.0460000     0                       0.0000000   79cle1      0
 91 sr g   u235t    rc    cu        5.8329660  5.0   5.8300000  0.1700000     0                       0.0000000   74bla1      0
 91 sr g   u235t    ms    fi    su  0.0000000  0.0   4.3000000  0.5000000    91          u235t     100.0000000   76wol1      0
 91 sr g   u235t    rc    fi    ul  0.0000000  0.0   0.0600000  0.0000000    91          u235t       1.0000000   62wah1      0
 91 sr g   u235t    sp    fi        0.2973944 15.7   5.1000000  0.8000000    91          u235t     100.0000000   80lan1      0
 91 sr g   u235t    cm    in        0.0000000  0.0   0.2531000 27.0000000%    0                       1.0000000   88wah1      0
 91 sr g   u235t    sp    fi        0.2449131  5.0   4.2000000  0.4000000%   91          u235t     100.0000000   79str1      0
 91 sr g   u235t    rc    cu    x4  0.0000000  0.0   6.4700000  0.2300000     0                       0.0000000   76thi1      0
 91 sr g   u235t    rc    cu    x4  0.0000000  0.0   6.4000000 10.0000000%    0                       0.0000000   79ram1     36
 91 rb g   u235t    rc    fc        5.4230751 10.0   0.9300000  0.0500000    91          u235t       1.0000000   62wah1      0
 91 rb g   u235t    ms    in        2.3111752  6.5   2.3100000  0.1500000     0                       0.0000000   72bal1      0
 91 rb g   u235t    ms    in        2.3511956  3.8   2.3500000  0.0900000     0                       0.0000000   72cha1      0
 91 rb g   u235t    cm    cu        0.0000000  0.0   5.6740000  5.0000000%    0                       0.0000000   73net2      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value      no.   treatment

 91 rb g   u235t    ms    fi    su  0.0000000  0.0  35.9000000  2.5000000    91          u235t     100.0000000   75cle1      0
 91 rb g   u235t    ms    fi    su  0.0000000  0.0  31.9000000  1.0000000    91          u235t     100.0000000   75cle1      0
 91 rb g   u235t    rc    fi    su  0.0000000  0.0   0.3500000  0.0500000    91          u235t       1.0000000   59fer1      0
 91 rb g   u235t    ms    fi        2.1925551  2.8  37.6000000  1.0000000    91          u235t     100.0000000   76sie1      0
 91 rb g   u235t    ms    fi        2.2217114  5.0  38.1000000  1.9000000    91          u235t     100.0000000   76ris1      0
 91 rb g   u235t    sp    in    x4  0.0000000  0.0   1.4630000  0.0293000     0                       0.0000000   75ree1      0
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91 rb g   u235t   sp   re   rp   5.1298723  6.7   1.0000000  0.0000000  no. relative values =    6          75ree1
91 rb g   u235t   sp   fi   su   0.0000000  0.0   0.3730000  0.0100000    91          u235t      1.0000000   74sie1     0
91 rb g   u235t   sp   fi   su   0.0000000  0.0   0.3750000  0.0140000    91          u235t      1.0000000   74sie2     0
91 rb g   u235t   sp   fi        2.2683615  5.0  38.9000000  1.5000000    91          u235t    100.0000000   78str1     0
91 rb g   u235t   sp   fi        2.1639819  5.0  37.1100000  0.7600000    91          u235t    100.0000000   79bal1     0
91 rb g   u235t   ms   fi   su   0.0000000  0.0  41.8000000  3.2000000    91          u235t    100.0000000   75cle2     0
91 rb g   u235t   ms   in        2.3131762  4.1   2.3120000  0.0950000     0                     0.0000000   79cle1     0
91 rb g   u235t   ms   cu        5.6628796 10.1   5.6600000  0.5700000     0                     0.0000000   79shm1     0
91 rb g   u235t   ms   fi   su   0.0000000  0.0  36.9000000  1.0000000    91          u235t    100.0000000   76wol1     0
91 rb g   u235t   sp   fi        2.2683615  5.0  38.9000000  1.2000000    91          u235t    100.0000000   80lan1     0
91 rb g   u235t   cm   in        0.0000000  0.0   2.1210000  2.0000000%    0                     1.0000000   88wah1     0
91 rb g   u235t   sp   fi        2.2741928  5.0  39.0000000  0.9000000%   91          u235t    100.0000000   79str1     0
91 rb g   u235t   sp   in        2.2411396  5.0   2.2400000  0.0400000     0                     0.0000000   90rud1     0
91 rb g   u235t   sp   cu        5.2526710  5.0   5.2500000  0.2500000     0                     0.0000000   90rud1     0
91 kr g   u235t   rc   fc        3.4402508 10.0   0.5900000  0.0100000    91 sr g     u235t      1.0000000   58wah1     0
91 kr g   u235t   es   in        3.2316433  2.8   3.2300000  0.0900000     0                     0.0000000   72ehr1     0
91 kr g   u235t   es   fi   cm   3.1838699  2.8   0.5460000  0.0150000    91          u235t      1.0000000   73ami1     0
91 kr g   u235t   cm   cu        0.0000000  0.0   3.6640000 13.0000000%    0                     0.0000000   73net2     0
91 kr g   u235t   ms   fi   su   0.0000000  0.0  60.7000000  2.5000000    91          u235t    100.0000000   75cle1     0
91 kr g   u235t   ms   fi   su   0.0000000  0.0  63.2000000  2.0000000    91          u235t    100.0000000   75cle1     0
91 kr g   u235t   ms   fi        3.1430510  2.0  53.9000000  1.0000000    91          u235t    100.0000000   76sie1     0
91 kr g   u235t   ms   fi        3.1897011  2.7  54.7000000  1.4000000    91          u235t    100.0000000   76ris1     0
91 kr g   u235t   sp   fi   su   0.0000000  0.0   0.5420000  0.0100000    91          u235t      1.0000000   74sie1     0
91 kr g   u235t   sp   fi   su   0.0000000  0.0   0.5370000  0.0150000    91          u235t      1.0000000   74sie2     0
91 kr g   u235t   sp   cu        3.4017298  5.0   3.4000000  0.1000000     0                     0.0000000   75bri1     0
91 kr g   u235t   sp   in        3.1215873  5.0   3.1200000  0.1400000     0                     0.0000000   75bri1     0
91 kr g   u235t   sp   fi        3.2713388  5.0  56.1000000  1.7000000    91          u235t    100.0000000   78str1     0
91 kr g   u235t   ms   fi   su   0.0000000  0.0  54.3000000  2.3000000    91          u235t    100.0000000   75cle2     0
91 kr g   u235t   ms   in        3.2816687  3.0   3.2800000  0.1000000     0                     0.0000000   79cle1     0
91 kr g   u235t   ms   fi   su   0.0000000  0.0  54.7000000  1.0000000    91          u235t    100.0000000   76wol1     0
91 kr g   u235t   sp   fi        3.2130262  5.0  55.1000000  1.3000000    91          u235t    100.0000000   80lan1     0
91 kr g   u235t   cm   in        0.0000000  0.0   3.2790000  2.0000000%    0                     1.0000000   88wah1     0
91 kr g   u235t   sp   fi        3.1955324  5.0  54.8000000  0.9000000%   91          u235t    100.0000000   79str1     0
91 kr g   u235t   sp   in        2.9515008 11.9   2.9500000  0.3500000     0                     0.0000000   90rud1     0
91 kr g   u235t   sp   cu        3.0215364 11.6   3.0200000  0.3500000     0                     0.0000000   90rud1     0
91 br g   u235t   cm   cu        0.0000000  0.0   0.1982000 45.0000000%    0                     0.0000000   73net2     0
```

91	br g	u235t	cm	in		0.0000000	0.0	0.1892000	23.0000000%	0			1.0000000	88wah1	0
91	br g	u235t	ms	fi		0.2332505	12.5	4.0000000	0.5000000	91	u235t		100.0000000	76sie1	0
91	br g	u235t	ms	fi	su	0.0000000	0.0	1.3000000	0.7000000	91	u235t		100.0000000	75cle1	0
91	br g	u235t	ms	fi	su	0.0000000	0.0	2.4000000	0.6000000	91	u235t		100.0000000	75cle1	0
91	br g	u235t	ms	fi	su	0.0000000	0.0	4.1000000	0.5000000	91	u235t		100.0000000	76wol1	0
91	br g	u235t	ms	fi	su	0.0000000	0.0	4.2000000	0.2000000	91	u235t		100.0000000	76ris1	0
91	br g	u235t	ms	fi	ul	0.0000000	0.0	0.4000000	0.4000000	91	u235t		100.0000000	75cle2	0
91	br g	u235t	ms	in	x4	0.0000000	0.0	0.0550000	0.0210000	0			0.0000000	79cle1	0
91	br g	u235t	rc	fc	ul	0.0000000	0.0	0.0750000	0.0700000	91	u235t		1.0000000	73kra3	0
91	br g	u235t	rc	fi		0.2099255	27.8	3.6000000	1.0000000	91	u235t		100.0000000	78kra1	0
91	br g	u235t	rc	fi		0.1889329	26.3	0.0324000	26.3000000%	91	u235t		1.0000000	83mei1	0
91	br g	u235t	rc	fi	su	0.0000000	0.0	0.0360000	0.0100000	91	u235t		1.0000000	77kra1	0
91	br g	u235t	rc	in		0.2168731	26.5	0.1900000	0.0500000	88	br g	u235t	1.5600000	83eng1	0
91	br g	u235t	sp	cu		0.3401730	26.5	0.3400000	0.0900000	0			0.0000000	90rud1	0
91	br g	u235t	sp	fi		0.0524814	44.5	0.9000000	0.4000000	91	u235t		100.0000000	80lan1	0
91	br g	u235t	sp	fi	su	0.0000000	0.0	0.0370000	0.0060000	91	u235t		1.0000000	74sie2	0
91	br g	u235t	sp	fi	su	0.0000000	0.0	0.0400000	0.0050000	91	u235t		1.0000000	74sie1	0
91	br g	u235t	sp	fi	x4	0.0000000	0.0	1.2000000	0.3000000	91	u235t		100.0000000	78str1	0
91	br g	u235t	sp	fi	x4	0.0000000	0.0	2.0000000	0.3000000%	91	u235t		100.0000000	79str1	0
91	se g	u235t	es	in		0.0006729	99.0	0.0006726	99.0000000%	0			0.0000000	88wah1	0
91	se g	u235t	es	cu		0.0006729	99.0	0.0006726	99.0000000%	0			0.0000000	88wah1	0
91		u235f	es	cu	cm	5.1089834	30.0	5.5240000	0.0000000	148	nd g	u235f	1.8100000	63wea1	0
91		u235f	rc	cu		5.3300198	5.0	5.3600000	3.0000000%	0			0.0000000	72sch1	0
91		u235f	es	cu	cm	5.4692367	30.0	5.5000000	0.0000000	0			0.0000000	72sid1	0
91		u235f	es	re		5.6217763	10.0	0.9700000	10.0000000%	91	u235t		1.0000000	74mee4	0
91		u235f	cm	cu		0.0000000	0.0	5.7200000	3.5000000%	0			0.0000000	77cro1	0
91	zr g	u235f	ms	cu		5.4901193	2.0	5.5210000	0.1080000	0			0.0000000	80mae1	0
91	zr g	u235f	ms	cu	cm	5.5597277	6.0	5.5910000	0.0000000	0			0.0000000	80mae3	0
91		u235f	rc	cu		5.7415186	5.1	6.0100000	0.0500000	140	ba g	u235f	6.2200000	77bla1	0
91	zr g	u235f	ms	cu		5.6631460	2.0	5.6950000	0.0370000	0			0.0000000	81mae1	0
91	zr g	u235f	ms	cu		5.7108776	2.0	5.7430000	0.0410000	0			0.0000000	81mae1	0
91	zr g	u235f	es	cu		5.8013686	0.7	5.8340000	0.0420000	0			0.0000000	81mae1	0
91	zr g	u235f	cm	cu		0.0000000	0.0	5.7570000	0.0500000	0			0.0000000	81mae1	0
91	zr g	u235f	ms	cu	su	0.0000000	0.0	5.7000000	0.0500000	148	nd g	u235f	1.6800000	74mae1	0
91	y g	u235f	cm	cu		0.0000000	0.0	5.5220000	5.0000000%	0			0.0000000	73net2	0
91	y g	u235f	rc	cu		5.4742898	5.0	0.9710000	3.4000000%	99	mo g	u235t	0.0000000	76for1	7

91	y g	u235f	rc	cu		5.0401804	5.0	0.8940000	3.4000000%	99 mo g	u235t	0.0000000	76for1	7
91	y m	u235f	rc	cu	x6	0.0000000	0.0	1.0050000	0.1070000	91 y m	u235t	1.0000000	79yur1	36
91	y m	u235f	rc	cu	x6	0.0000000	0.0	3.1500000	0.2000000	140 ba g	u235f	5.8500000	78bya1	0
91	y m	u235f	rc	cu	x6	0.0000000	0.0	3.2700000	0.1000000	0		0.0000000	77gud1	0
91	sr g	u235f	rc	cu		5.3316438	5.1	5.2400000	3.0000000%	140 ba g	u235f	5.8400000	72sch1	0
91	sr g	u235f	cm	cu		0.0000000	0.0	5.5210000	5.0000000%	0		0.0000000	73net2	0
91	sr g	u235f	rc	re		5.3481700	5.0	0.9570000	0.0140000	140 ba g	u235t	0.0000000	75raj1	7
91	sr g	u235f	rc	cu		5.3432830	5.1	0.9220000	0.0100000	91 sr g	u235t	1.0000000	77deb1	0
91	sr g	u235f	rc	cu		5.5686774	5.0	5.6000000	0.2800000	0		0.0000000	81mar1	0
91	rb g	u235f	cm	cu		0.0000000	0.0	5.2620000	5.0000000%	0		0.0000000	73net2	0
91	rb g	u235f	rc	in	x4	0.0000000	0.0	0.2300000	0.0200000	0		0.0000000	81mar1	0
91	kr g	u235f	cm	cu		0.0000000	0.0	3.2390000	16.1000000%	0		0.0000000	73net2	0
91	kr g	u235f	rc	cu		2.5755133	5.0	2.5900000	0.1000000	0		0.0000000	81mar1	0
91	kr g	u235f	rc	in		2.4561845	5.0	2.4700000	0.1000000	0		0.0000000	81mar1	0
91	kr g	u235f	rc	fc	su	0.0000000	0.0	0.5200000	0.0250000	91	u235f	1.0000000	72wol1	0
91	kr g	u235f	rc	fc		2.9647212	5.0	0.5200000	0.0250000	91	u235f	1.0000000	75wol1	0
91	br g	u235f	cm	cu	x3	0.0000000	0.0	0.1543000	45.0000000%	0		0.0000000	73net2	0
91	br g	u235f	rc	in		0.1193288	33.3	0.1200000	0.0400000	0		0.0000000	81mar1	0
91		u235he	es	cu		4.6993128	30.0	4.7330000	0.0000000	0		0.0000000	63wea1	0
91		u235he	ms	cu		4.9048234	9.6	5.0000000	0.4600000	90	u235he	4.6500000	72boc1	0
91		u235he	cm	cu		0.0000000	0.0	4.7900000	5.3000000%	0		0.0000000	77cro1	0
91		u235he	es	cu		4.8651242	10.0	4.9000000	10.0000000%	0		0.0000000	74mee8	0
91	y g	u235he	rc	re		4.7683780	10.0	0.9800000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
91	y g	u235he	cm	cu		0.0000000	0.0	4.4900000	3.9000000%	0		0.0000000	73net2	0
91	sr g	u235he	rc	re		4.8962505	10.4	0.9600000	0.0700000	99 mo g	u235he	1.0000000	58pro1	0
91	sr g	u235he	cm	cu		0.0000000	0.0	4.7100000	0.0000000	0		0.0000000	69gun2	0
91	sr g	u235he	rc	re		4.7263355	8.9	1.0600000	0.0900000	140 ba g	u235he	1.0000000	73man1	0
91	sr g	u235he	cm	cu		0.0000000	0.0	4.4870000	3.9000000%	0		0.0000000	73net2	0
91	sr g	u235he	cm	cu		0.0000000	0.0	4.9000000	0.0000000	0		0.0000000	60kat1	0
91	sr g	u235he	rc	cu		4.8167625	5.0	0.9900000	2.5000000%	99 mo g	u235t	0.0000000	76for1	7
91	sr g	u235he	rc	re	su	0.0000000	0.0	0.9900000	0.0200000	99 mo g	u235t	0.0000000	56for1	7
91	rb g	u235he	cm	cu		0.0000000	0.0	4.0100000	7.0000000%	0		0.0000000	73net2	0
91	kr g	u235he	rc	fc		1.7209980	6.8	36.0000000	2.0000000	91 sr g	u235he	100.0000000	65wol1	0
91	kr g	u235he	ms	in		1.7474732	18.7	1.7600000	0.3300000	0		0.0000000	72boc1	0
91	kr g	u235he	cm	cu		0.0000000	0.0	1.9130000	22.0000000%	0		0.0000000	73net2	0
91	br g	u235he	cm	cu	x3	0.0000000	0.0	0.0512500	50.0000000%	0		0.0000000	73net2	0

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 91        u238f    cm    cu    es   0.0000000  0.0   4.4000000  0.0000000     0                    0.0000000   64wal1      0
 91        u238f    es    cu    cm   3.8319042 30.0   3.8500000  0.0000000     0                    0.0000000   72sid1      0
 91        u238f    cm    cu         0.0000000  0.0   4.4100000  5.0000000%    0                    0.0000000   77cro1      0
 91 zr g   u238f    es    fi         0.0000000 30.1   0.0000003  0.0000000    91          u238f    1000.0000000   74wol1      0
 91        u238f    rc    cu         4.0657671  5.0   4.3300000  0.0700000   140 ba g     u238f       6.1600000   77bla1      0
 91 zr g   u238f    ms    cu         4.4360512  5.9   4.4570000  0.2610000     0                    0.0000000   81mae1      0
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0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value      no.   treatment

 91 zr g   u238f    cm    cu         0.0000000  0.0   4.4570000  0.2610000     0                    0.0000000   81mae1      0
 91 zr g   u238f    ms    cu         4.4881207  6.1   4.4400000  0.2700000   148 nd g     u238f       2.0800000   74mae1      0
 91        u238f    rc    cu         4.1205412  5.0   4.1400000  0.1300000     0                    0.0000000   85li 1      0
 91        u238f    rc    cu         4.5186611  5.0   4.5400000  0.1600000     0                    0.0000000   85li 1      0
 91 y  g   u238f    rc    cu         3.9811992 15.0   4.0000000  0.0000000     0                    0.0000000   68bel1      0
 91 y  g   u238f    cm    cu         0.0000000  0.0   3.6400000 15.0000000%    0                    0.0000000   73net2      0
 91 y  g   u238f    rc    re         4.3347200 10.0   0.7400000  5.0000000%   99 mo g     u235t       0.0000000   61lev1      7
 91 y  g   u238f    rc    cu         4.4589431 15.0   4.4800000  0.0000000     0                    0.0000000   75fly4      0
 91 y  g   u238f    rc    cu         3.3096173  5.0   0.5650000  3.4000000%   99 mo g     u235t       0.0000000   76for1      7
 91 y  g   u238f    rc    cu         3.9214812  5.3   3.9400000  0.2100000     0                    0.0000000   78nag1      0
 91 y  m   u238f    rc    cu    x6   0.0000000  0.0   0.6930000  0.0490000    91 y  m     u235t       1.0000000   79yur1     36
 91 y  m   u238f    rc    cu    x6   0.0000000  0.0   2.4300000  0.0800000     0                    0.0000000   77gud1      0
 91 y  m   u238f    rc    cu    x6   0.0000000  0.0   3.4100000  9.7000000%    0                    0.0000000   87chu1      0
 91 y  m   u238f    rc    cu    x6   0.0000000  0.0   3.8200000 10.2000000%    0                    0.0000000   88afa1      0
 91 sr g   u238f    rc    re         3.5861380  5.0   0.6200000  0.0200000   140 ba g     u238f       1.0000000   73man1      0
 91 sr g   u238f    cm    cu         0.0000000  0.0   3.6400000 15.0000000%    0                    0.0000000   73net2      0
 91 sr g   u238f    rc    cu         4.6281441  9.7   4.6500000  0.4500000     0                    0.0000000   75har1      0
 91 sr g   u238f    rc    cu         3.9513402 15.0   3.9700000  0.0000000     0                    0.0000000   75fly4      0
 91 sr g   u238f    rc    cu         3.8592387  8.7   4.0500000  0.3500000   140 ba g     u238f       6.0700000   77har1      0
 91 sr g   u238f    rc    cu         3.9771618  5.0   4.1600000  0.1700000   140 ba g     u238f       6.0500000   78deb1      0
 91 sr g   u238f    rc    cu         3.8050731  5.0   3.9800000  0.1300000   140 ba g     u238f       6.0500000   78deb1      0
 91 sr g   u238f    es    cu         3.9015752  3.3   3.9200000  0.1300000     0                    0.0000000   78gin1      0
 91 sr g   u238f    rc    cu         3.4003850  5.2   3.5000000  0.0500000    99 mo g     u238f       6.3200000   70lyl1      0
 91 sr g   u238f    rc    cu         4.3096481  5.0   4.3300000  0.1700000     0                    0.0000000   85chi1      0
 91 sr g   u238f    rc    cu         2.9261814 13.9   2.9400000  0.4100000     0                    0.0000000   84gud1      0
 91 sr g   u238f    rc    cu    x4   0.0000000  0.0   5.1300000  7.6000000%    0                    0.0000000   87chu1      0
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91 sr g u238f rc cu 3.5532203 11.5 3.5700000 11.5000000% 0 0.0000000 88afa1 0
91 sr g u238f rc cu 4.2996951 11.1 4.3200000 11.1000000% 0 0.0000000 88afa1 0
91 sr g u238f rc cu 3.6129383 10.2 3.6300000 10.2000000% 0 0.0000000 88afa1 0
91 sr g u238f rc cu 3.9015752 10.2 3.9200000 10.2000000% 0 0.0000000 88afa1 0
91 rb g u238f cm cu 0.0000000 0.0 3.6160000 15.0000000% 0 0.0000000 73net2 0
91 rb g u238f ms in 0.9455348 31.6 0.9500000 0.3000000 0 0.0000000 74bal2 0
91 rb g u238f ms in su 0.0000000 0.0 0.3380000 0.0860000 93 rb g u238f 1.0000000 74bal2 0
91 rb g u238f cm fi 0.0000000 0.0 0.1730000 0.0620000 91 u238f 1.0000000 74wol1 0
91 rb g u238f rc in 0.7365219 35.1 0.7400000 0.2600000 0 0.0000000 74wol4 0
91 kr g u238f rc fc su 0.0000000 0.0 0.8400000 0.0150000 91 u238f 1.0000000 72wol1 0
91 kr g u238f rc fc 3.3776132 5.4 0.8400000 0.0150000 91 u238f 1.0000000 75wol1 0
91 kr g u238f cm cu 0.0000000 0.0 3.0230000 17.0000000% 0 0.0000000 73net2 0
91 br g u238f cm cu 0.0000000 0.0 0.4070000 35.0000000% 0 0.0000000 73net2 0
91 u238he cm cu es 0.0000000 0.0 3.5790000 0.0000000 0 0.0000000 63wea1 0
91 u238he ms cu 4.0073174 8.8 3.6000000 0.3000000 90 u238he 2.8600000 72boc1 0
91 u238he cm cu su 0.0000000 0.0 3.5500000 0.1200000 0 0.0000000 73dar1 0
91 u238he es cu 3.8757311 15.0 3.8830000 15.0000000% 0 0.0000000 74mee9 0
91 u238he cm cu 0.0000000 0.0 3.6500000 3.6000000% 0 0.0000000 77cro1 0
91 u238he rc cu rp 4.0672896 8.0 3.6100000 0.0000000 no. relative values = 4 77feu1
91 zr g u238he es fi 0.0000000 30.1 0.0000003 0.0000000 91 u238he 1000.0000000 74wol1 0
91 u238he rc cu rp 3.7237483 19.5 3.6100000 0.0000000 no. relative values = 1 77feu1
91 y g u238he rc cu 2.8372614 10.1 2.7800000 0.1400000 99 mo g u238he 5.5800000 57cun1 0
91 y g u238he rc re 3.7542138 6.5 0.6910000 0.0450000 99 mo g u235t 0.0000000 68gor1 7
91 y g u238he cm cu 0.0000000 0.0 2.8000000 0.0000000 0 0.0000000 69gun2 0
91 y g u238he cm cu 0.0000000 0.0 3.5900000 3.9000000% 0 0.0000000 73net2 0
91 y g u238he cm cu 0.0000000 0.0 2.8000000 0.0000000 0 0.0000000 60kat1 0
91 y g u238he rc cu 3.5977048 6.5 3.6000000 0.2300000 140 ba g u238he 4.6000000 75cav1 0
91 y g u238he rc cu su 0.0000000 0.0 3.6000000 0.2300000 140 ba g u238he 4.6000000 74bla1 0
91 y g u238he rc cu 3.3337476 5.4 3.3400000 0.1800000 0 0.0000000 75dar1 0
91 y g u238he rc cu 3.7529613 5.0 3.7600000 0.1200000 0 0.0000000 75dar1 0
91 y m u238he rc cu x6 0.0000000 0.0 3.6200000 0.2100000 140 ba g u238he 4.6000000 80zhe1 0
91 y m u238he rc cu x6 0.0000000 0.0 4.1600000 0.1300000 0 0.0000000 85liu1 0
91 sr g u238he rc re 3.7017076 10.1 0.6500000 0.0500000 99 mo g u238he 1.0000000 58pro1 0
91 sr g u238he rc cu x4 0.0000000 0.0 2.6000000 0.3000000 140 ba g u238he 4.3000000 62bro1 0
91 sr g u238he cm cu 0.0000000 0.0 3.3500000 0.0000000 0 0.0000000 69gun2 0
91 sr g u238he rc cu 3.6094657 7.9 3.6000000 0.2800000 99 mo g u238he 5.6800000 71bir2 0

91	sr g	u238he	rc	cu	su	0.0000000	0.0	3.4700000	0.9000000	0			0.0000000	73dar2	0
91	sr g	u238he	rc	cu	su	0.0000000	0.0	3.5300000	0.3800000	0			0.0000000	73dar4	0
91	sr g	u238he	rc	re		3.5857125	5.3	0.7800000	0.0400000	140	ba g	u238he	1.0000000	73man1	0
91	sr g	u238he	cm	cu		0.0000000	0.0	3.5900000	3.9000000%	0			0.0000000	73net2	0
91	sr g	u238he	rc	cu	su	0.0000000	0.0	3.5300000	0.3800000	140	ba g	u238he	4.4800000	74dar1	0
91	sr g	u238he	rc	cu		3.9725495	5.0	3.9800000	0.1600000	0			0.0000000	75dar1	0
91	sr g	u238he	rc	cu		3.5877112	5.7	3.5900000	0.2000000	140	ba g	u238he	4.6000000	76raj1	0
91	sr g	u238he	cm	cu		0.0000000	0.0	3.6000000	0.0000000	0			0.0000000	60kat1	0
91	sr g	u238he	rc	cu		4.2101839	9.0	4.1400000	0.3700000	99	mo g	u238he	5.6000000	75ada1	0
91	sr g	u238he	rc	cu		3.6376793	7.6	3.6400000	0.2700000	140	ba g	u238he	4.6000000	75cav1	0
91	sr g	u238he	rc	cu	su	0.0000000	0.0	3.6400000	0.2700000	140	ba g	u238he	4.6000000	74bla1	0
91	sr g	u238he	rc	cu		3.3537101	17.6	3.3600000	0.5900000	0			0.0000000	75dar1	0
91	sr g	u238he	rc	cu		3.6531485	10.9	3.6600000	0.4000000	0			0.0000000	75dar1	0
91	sr g	u238he	rc	cu		4.2121002	5.0	4.2200000	0.1500000	0			0.0000000	75dar1	0
91	sr g	u238he	rc	cu		4.3618194	5.3	4.3700000	0.2300000	0			0.0000000	75dar1	0
91	sr g	u238he	rc	cu		4.3718007	5.0	4.3800000	0.1500000	0			0.0000000	75dar1	0
91	sr g	u238he	rc	cu		4.3817820	7.7	4.3900000	0.3400000	0			0.0000000	75dar1	0
91	rb g	u238he	cm	cu	x3	0.0000000	0.0	3.5250000	3.9000000%	0			0.0000000	73net2	0
91	kr g	u238he	rc	fc		2.5092527	5.7	65.0000000	2.0000000	91	sr g	u238he	100.0000000	65wol1	0
91	kr g	u238he	rc	fc		2.5864605	13.6	67.0000000	8.9000000	91	sr g	u238he	100.0000000	66gra1	0
91	kr g	u238he	rc	cu	x4	0.0000000	0.0	3.6600000	0.0000000	0			0.0000000	71bri1	0
91	kr g	u238he	rc	cu	x4	0.0000000	0.0	4.0000000	0.6000000	0			0.0000000	71com1	0
91	kr g	u238he	ms	in		2.0361811	10.8	2.0400000	0.2200000	0			0.0000000	72boc1	0
91	kr g	u238he	cm	cu		0.0000000	0.0	2.6100000	10.0000000%	0			0.0000000	73net2	0
91	kr g	u238he	rc	fc		2.4824290	5.4	0.6430000	0.0070000	91		u238he	1.0000000	77feu1	0
91	kr g	u238he	rc	cu	su	0.0000000	0.0	3.6100000	0.2200000	0			0.0000000	71bla1	0
91	br g	u238he	cm	cu	x3	0.0000000	0.0	0.2151000	45.0000000%	0			0.0000000	73net2	0
91		pu239t	cm	cu		0.0000000	0.0	2.6000000	0.0000000	0			0.0000000	72sid1	0
91	zr g	pu239t	cm	cu		0.0000000	0.0	2.5300000	0.0000000	0			0.0000000	73lam1	0
91		pu239t	cm	cu		0.0000000	0.0	2.5400000	0.0500000	0			0.0000000	73wal1	0
91		pu239t	cm	cu		0.0000000	0.0	2.4400000	4.3000000%	0			0.0000000	77cro1	0
91	zr g	pu239t	es	fi		0.0000037	30.0	0.0001490	0.0000000	91		pu239t	100.0000000	74wol1	0
91	zr g	pu239t	ms	cu		2.4506606	2.0	2.4460000	0.0380000	0			0.0000000	79mae2	0
91	zr g	pu239t	ms	cu		2.5250993	1.6	2.5200000	0.0400000	85	rb g	pu239t	0.5740000	70lis1	0
91	zr g	pu239t	ms	cu		2.4959436	1.5	0.6560000	0.0090000	93	zr g	pu239t	1.0000000	59fic1	0
91	zr g	pu239t	ms	cu	x4	0.0000000	0.0	2.4000000	0.0200000	93	zr g	pu239t	3.9100000	86chi1	0

91 zr g pu239t cm cu x3 0.0000000 0.0 2.4400000 1.0000000% 0 0.0000000 81mae2 0
91 y g pu239t rc cu x4 0.0000000 0.0 2.8000000 0.0000000 140 ba g pu239t 5.3600000 51ste3 0
91 y g pu239t rc cu 2.4145920 5.0 2.4100000 0.1100000 0 0.0000000 65mar1 0
91 y g pu239t cm cu 0.0000000 0.0 2.5300000 0.0000000 0 0.0000000 73lam1 0
91 y g pu239t cm cu 0.0000000 0.0 2.4320000 2.0000000% 0 0.0000000 73net2 0
91 y g pu239t rc cu su 0.0000000 0.0 0.6390000 0.0050000 144 ce g pu239t 1.0000000 70sko1 0
91 y g pu239t rc cu 2.3939017 5.0 2.4600000 0.0800000 144 ce g pu239t 3.8500000 71sor1 0
91 y g pu239t ms cu 2.4855865 2.4 1.4400000 0.0200000 89 y g pu239t 1.0000000 59fic1 0
91 y g pu239t sp fi 0.0024912 99.9 0.0010000 0.0200000 91 pu239t 1.0000000 84sch1 0
91 y m pu239t rc cu x6 0.0000000 0.0 1.3900000 0.0500000 0 0.0000000 80dic1 0
91 y m pu239t rc cu x6 0.0000000 0.0 1.7100000 0.0600000 0 0.0000000 77gud1 0
91 sr g pu239t rc cu 2.3018072 60.0 2.3000000 0.0000000 140 ba g pu239t 5.3600000 51ste3 0
91 sr g pu239t rc cu 2.4187885 5.2 2.6400000 0.1000000 99 mo g pu239t 6.7900000 71ram1 0
91 sr g pu239t cm cu 0.0000000 0.0 2.4310000 2.0000000% 0 0.0000000 73net2 0
91 sr g pu239t rc re 2.3119752 10.1 0.4310000 2.0000000% 140 ba g pu239t 1.0000000 59bar1 0
91 sr g pu239t rc cu x4 0.0000000 0.0 3.1900000 20.0000000% 97 zr g pu239t 5.4600000 74jen1 0
91 sr g pu239t rc cu 2.6750874 5.2 2.6700000 0.1400000 0 0.0000000 77gud1 0
91 sr g pu239t rc cu 2.6350112 5.0 2.6300000 0.1100000 0 0.0000000 80dic1 0
91 sr g pu239t rc cu 2.5548587 5.0 2.5500000 0.0600000 0 0.0000000 79ram1 0
91 sr g pu239t rc cu 2.4125240 5.2 2.2900000 0.0700000 99 mo g u235t 5.8100000 71ram1 0
91 sr g pu239t rc cu 2.4145920 5.0 2.4100000 0.1000000 0 0.0000000 84jai1 0
91 sr g pu239t rc cu 2.3206749 5.0 0.4600000 0.0100000 140 ba g u235t 0.0000000 86chi1 7
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

91 sr g pu239t rc cu 2.5548587 5.0 2.5500000 0.1000000 0 0.0000000 84jai1 0
91 sr g pu239t rc cu 2.1941728 5.0 2.1900000 0.0600000 0 0.0000000 84jai1 0
91 sr g pu239t sp fi 0.3886247 13.0 0.1560000 13.0000000% 91 pu239t 1.0000000 84sch1 36
91 sr g pu239t cm in 0.0000000 0.0 0.3915000 13.0000000% 0 1.0000000 88wah1 0
91 rb g pu239t cm cu 0.0000000 0.0 2.1810000 6.0000000% 0 0.0000000 73net2 0
91 rb g pu239t rc in 1.3625913 15.4 1.3600000 0.2100000 0 0.0000000 75bal1 0
91 rb g pu239t sp fi 1.3850983 5.1 0.5560000 5.0000000% 91 pu239t 1.0000000 84sch1 36
91 rb g pu239t cm in 0.0000000 0.0 1.3660000 5.0000000% 0 1.0000000 88wah1 0
91 kr g pu239t rc fc 0.7714957 5.4 31.0000000 1.0000000 91 sr g pu239t 100.0000000 65wol1 0
91 kr g pu239t cm cu x3 0.0000000 0.0 1.0540000 21.0000000% 0 0.0000000 73net2 0

91 kr g pu239t ms cu 0.7123547 2.8 0.7110000 0.0200000 0 0.0000000 76bri2 0
91 kr g pu239t ms in 0.6893109 2.9 0.6880000 0.0200000 0 0.0000000 77bri1 0
91 kr g pu239t rc cu rp 0.7081201 7.1 0.7110000 0.0000000 no. relative values = 5 77bri1
91 kr g pu239t sp fi 0.6950403 7.1 0.2790000 7.0000000% 91 pu239t 1.0000000 84sch1 36
91 kr g pu239t cm in 0.0000000 0.0 0.7304000 4.0000000% 0 1.0000000 88wah1 0
91 br g pu239t cm cu 0.0000000 0.0 0.0290100 50.0000000% 0 0.0000000 73net2 0
91 br g pu239t es fc 0.0167657 30.0 0.0067300 0.0000000 91 pu239t 1.0000000 74wol1 0
91 br g pu239t sp fi 0.0199295 99.9 0.0080000 0.0200000 91 pu239t 1.0000000 84sch1 36
91 br g pu239t cm in 0.0000000 0.0 0.0232000 88.0000000% 0 1.0000000 88wah1 0
91 pu239f es cu cm 2.5884304 30.0 2.6000000 0.0000000 0 0.0000000 72sid1 0
91 pu239f cm cu 0.0000000 0.0 2.4500000 3.9000000% 0 0.0000000 77cro1 0
91 zr g pu239f ms cu 2.4810641 1.5 2.4810000 0.0350000 148 nd g pu239f 1.6540000 77mae1 0
91 zr g pu239f ms cu 2.4171958 2.0 2.4280000 0.0440000 0 0.0000000 77mae1 0
91 zr g pu239f ms cu 2.4667227 2.0 2.5800000 0.0500000 148 nd g pu239f 1.7300000 70lis1 0
91 zr g pu239f ms cu 2.5966213 0.9 0.1399000 0.0004000 96 zr g pu239f 0.2603000 80mae4 0
91 zr g pu239f ms cu su 0.0000000 0.0 2.4800000 0.0400000 148 nd g pu239f 1.6500000 74mae1 0
91 pu239f es re 2.5249448 10.0 1.0200000 10.0000000% 91 pu239t 1.0000000 74mee4 0
91 zr g pu239f es cu cm 2.4689644 1.0 2.4800000 1.0000000% 0 0.0000000 81mae2 0
91 y g pu239f cm cu 0.0000000 0.0 2.6200000 5.0000000% 0 0.0000000 73net2 0
91 y g pu239f rc cu 2.4026541 5.0 0.4230000 3.4000000% 99 mo g u235t 0.0000000 76for1 7
91 y g pu239f rc cu 2.4878546 5.0 0.4380000 3.4000000% 99 mo g u235t 0.0000000 76for1 7
91 y m pu239f rc cu x6 0.0000000 0.0 1.0810000 0.2220000 91 y m pu239t 1.0000000 79yur1 36
91 y m pu239f rc cu x6 0.0000000 0.0 1.7100000 0.0600000 0 0.0000000 77gud1 0
91 sr g pu239f cm cu 0.0000000 0.0 2.6180000 5.0000000% 0 0.0000000 73net2 0
91 sr g pu239f rc cu x4 0.0000000 0.0 3.0200000 25.0000000% 97 zr g pu239f 4.9000000 74jen1 0
91 sr g pu239f rc re 2.4769786 5.0 0.4970000 0.0070000 140 ba g u235t 0.0000000 75raj1 7
91 sr g pu239f rc cu 2.6581190 5.2 2.6700000 0.1400000 0 0.0000000 77gud1 0
91 rb g pu239f cm cu 0.0000000 0.0 2.3000000 8.1000000% 0 0.0000000 73net2 0
91 kr g pu239f cm cu x3 0.0000000 0.0 1.0390000 22.0000000% 0 0.0000000 73net2 0
91 br g pu239f cm cu 0.0000000 0.0 0.0250100 90.0000000% 0 0.0000000 73net2 0
91 pu241t cm cu 0.0000000 0.0 1.8200000 0.0000000 0 0.0000000 72sid1 0
91 pu241t cm cu 0.0000000 0.0 1.8400000 0.0300000 0 0.0000000 73wal1 0
91 pu241t cm cu 0.0000000 0.0 1.7900000 4.5000000% 0 0.0000000 77cro1 0
91 pu241t cm cu 0.0000000 0.0 1.8200000 0.0000000 0 0.0000000 79wal1 0
91 zr g pu241t ms cu 1.8968001 2.0 1.9030000 0.0210000 0 0.0000000 77mae1 0
91 zr g pu241t ms cu 1.8827161 2.8 1.8200000 0.0500000 148 nd g pu241t 1.8616500 70lis1 0

91 zr g pu241t ms cu 1.8625837 1.8 1.8700000 0.0200000 93 zr g pu241t 2.9800000 86chi1 0
91 y g pu241t rc cu 1.7149944 5.1 0.4070000 0.0070000 144 ce g pu241t 1.0000000 70sko1 0
91 y g pu241t rc cu 1.7247439 5.1 1.6700000 0.0600000 144 ce g pu241t 4.0800000 71sor1 0
91 y g pu241t rc cu x4 0.0000000 0.0 0.9600000 0.0000000 0 0.0000000 63kir1 0
91 y g pu241t rc cu x4 0.0000000 0.0 1.0400000 0.3600000 0 0.0000000 79dic1 36
91 sr g pu241t rc cu 1.8938099 5.3 1.9000000 0.1000000 0 0.0000000 79dic1 0
91 sr g pu241t rc cu 1.8918890 5.0 0.3500000 0.0100000 140 ba g u235t 0.0000000 86chi1 7
91 sr g pu241t rc fc 1.7928279 5.2 0.9650000 0.0320000 91 pu241t 1.0000000 86nai1 0
91 sr g pu241t rc cu x4 0.0000000 0.0 1.0000000 0.0000000 0 0.0000000 63kir1 0
91 sr g pu241t rc fc 1.7959862 5.2 0.9667000 0.0009000 91 pu241t 1.0000000 87nai2 0
91 kr g pu241t ms cu 0.9269701 4.3 0.9300000 0.0400000 0 0.0000000 76bri2 0
91 kr g pu241t ms in 0.8611851 5.8 0.8640000 0.0500000 0 0.0000000 77bri1 0
91 kr g pu241t rc cu rp 0.9561614 8.4 0.9300000 0.0000000 no. relative values = 6 77bri1
91 zr g u233t ms cu 6.4454204 5.2 6.5800000 5.0000000% 93 zr g u233t 7.1000000 54ste1 0
91 u233t cm cu 0.0000000 0.0 6.4500000 0.0000000 0 0.0000000 72sid1 0
91 zr g u233t cm cu 0.0000000 0.0 6.5200000 0.0000000 0 0.0000000 73lam1 0
91 u233t cm cu 0.0000000 0.0 6.4900000 0.0800000 0 0.0000000 73wal1 0
91 zr g u233t ms cu su 0.0000000 0.0 20.2000000 0.2000000 93 zr g u233t 21.2000000 59gor1 0
91 zr g u233t ms cu 6.5506240 4.5 6.4500000 4.0000000% 95 zr g u233t 6.2300000 61bid1 0
91 zr g u233t ms cu 6.6975577 3.5 6.4800000 0.2200000 96 zr g u233t 5.4700000 61gor1 0
91 u233t cm cu 0.0000000 0.0 6.4100000 10.3000000% 0 0.0000000 77cro1 0
91 u233t ms cu 6.5751265 2.0 6.5980000 0.0460000 0 0.0000000 80weh1 0
91 zr g u233t ms cu 6.5771195 2.0 6.6000000 0.0500000 0 0.0000000 70lis1 0
91 zr g u233t ms cu 6.2962257 2.0 6.3100000 0.0900000 93 zr g u233t 6.9700000 86chi1 0
91 y g u233t rc fi x1 0.0000000 0.0 0.0120000 0.0060000 91 u233t 1.0000000 57gru1 0
91 y g u233t rc cu x4 0.0000000 0.0 6.9400000 0.1500000 99 mo g u235t 5.8400000 65bun1 1
91 y g u233t rc cu x1 0.0000000 0.0 3.5500000 0.0600000 140 ba g u233t 5.2100000 60san1 0
91 y g u233t cm cu x3 0.0000000 0.0 6.5200000 0.0000000 0 0.0000000 73lam1 0
91 y g u233t es cu 6.3987401 2.0 6.4210000 2.0000000% 0 0.0000000 73net2 0
91 y g u233t sp fi ul 0.0000000 0.0 0.5600000 0.2080000 91 u233t 100.0000000 83qua1 0
91 y g u233t sp in ul 0.0000000 0.0 0.0360000 0.0130000 0 0.0000000 88qua1 0
91 y m u233t rc cu x6 0.0000000 0.0 4.2000000 0.3800000 0 0.0000000 77gud1 0
91 sr g u233t rc cu 6.4898805 5.0 6.4000000 0.2100000 99 mo g u235t 5.8100000 66gor1 24
91 sr g u233t rc re 6.2922068 9.8 5.3300000 0.5000000 140 ba g u233t 5.4000000 68lee1 0
91 sr g u233t cm cu 0.0000000 0.0 6.5000000 0.0000000 0 0.0000000 73lam1 0
91 sr g u233t cm cu 0.0000000 0.0 6.4160000 2.0000000% 0 0.0000000 73net2 0

91	sr g	u233t	rc	re		6.3748436	10.4	1.0000000	2.0000000%	140	ba g	u233t	1.0000000	59bar1	0
91	sr g	u233t	rc	cu	x4	0.0000000	0.0	4.8200000	0.2500000	140	ba g	u233t	5.2100000	60san1	0
91	sr g	u233t	ms	in		1.1629543	2.9	1.1670000	0.0340000	0			0.0000000	80weh1	0
91	sr g	u233t	rc	cu		6.6468769	5.0	6.6700000	4.0000000%	0			0.0000000	81ram1	0
91	sr g	u233t	sp	fi		1.0341264	7.6	16.0000000	1.2120000	91		u233t	100.0000000	83qua1	0
91	sr g	u233t	rc	cu		6.4151069	5.0	1.0700000	0.0300000	140	ba g	u235t	0.0000000	86chi1	7
91	sr g	u233t	rc	fc		6.3404873	5.1	0.9810000	0.0180000	91		u233t	1.0000000	86nai1	0
91	sr g	u233t	sp	in		1.0274258	7.8	1.0310000	0.0800000	0			0.0000000	88qua1	0
91	rb g	u233t	cm	cu		0.0000000	0.0	5.6860000	6.0000000%	0			0.0000000	73net2	0
91	rb g	u233t	ms	in		3.3981784	2.0	3.4100000	0.0470000	0			0.0000000	80weh1	0
91	rb g	u233t	sp	fi		3.5212003	5.1	54.4800000	2.2770000	91		u233t	100.0000000	83qua1	0
91	rb g	u233t	sp	in		3.5008213	5.0	3.5130000	0.1590000	0			0.0000000	88qua1	0
91	kr g	u233t	rc	fc		2.1319532	5.4	33.0000000	1.0000000	91	sr g	u233t	100.0000000	65wol1	0
91	kr g	u233t	cm	cu	x3	0.0000000	0.0	2.6410000	21.0000000%	0			0.0000000	73net2	0
91	kr g	u233t	sp	in		2.0229625	5.0	2.0300000	0.1000000	0			0.0000000	75bri1	0
91	kr g	u233t	sp	cu		2.0727892	5.0	2.0800000	0.1000000	0			0.0000000	75bri1	0
91	kr g	u233t	ms	in		1.9472260	2.1	1.9540000	0.0410000	0			0.0000000	80weh1	0
91	kr g	u233t	sp	fi		1.8439766	5.1	28.5300000	0.8980000	91		u233t	100.0000000	83qua1	0
91	kr g	u233t	sp	in		1.8336212	5.0	1.8400000	0.0660000	0			0.0000000	88qua1	0
91	br g	u233t	cm	cu		0.0000000	0.0	0.0670600	50.0000000%	0			0.0000000	73net2	0
91	br g	u233t	ms	in		0.0657712	18.2	0.0660000	0.0120000	0			0.0000000	80weh1	0
91	br g	u233t	sp	fi		0.0277921	27.7	0.4300000	0.1190000	91		u233t	100.0000000	83qua1	0
91	br g	u233t	sp	in		0.0279029	28.6	0.0280000	0.0080000	0			0.0000000	88qua1	0
91	br g	u233t	es	cu		0.0474350	99.0	0.0476000	99.0000000%	0			0.0000000	89rid1	0
91	br g	u233t	es	in		0.0470264	96.0	0.0471900	96.0000000%	0			0.0000000	88wah1	0
91		th232f	cm	cu	es	0.0000000	0.0	7.2000000	0.0000000	0			0.0000000	65eng1	0
91		th232f	es	cu	cm	7.1833911	30.0	7.1900000	0.0000000	0			0.0000000	72sid1	0
91		th232f	es	cu	cm	7.2533267	30.0	7.2600000	0.0000000	0			0.0000000	73lam1	0
91		th232f	es	cu	cm	7.3032808	30.0	7.3100000	0.0000000	0			0.0000000	74lam1	0
91		th232f	cm	cu		0.0000000	0.0	7.2200000	4.5000000%	0			0.0000000	77cro1	0
91		th232f	es	cu		7.3732164	5.0	7.3800000	5.0000000%	0			0.0000000	74mee0	0
91	y g	th232f	rc	re	x4	0.0000000	0.0	0.6400000	0.0400000	140	ba g	th232f	1.0000000	63cro2	0
91	y g	th232f	cm	cu		0.0000000	0.0	7.3310000	4.0000000%	0			0.0000000	73net2	0
91	y g	th232f	ms	re		7.4873372	3.7	2.6100000	0.0800000	132	te g	th232f	1.0000000	68har1	0
91	y g	th232f	rc	cu	x4	0.0000000	0.0	6.9000000	0.7000000	0			0.0000000	71swi3	0
91	y m	th232f	rc	cu	x6	0.0000000	0.0	4.3000000	0.3000000	0			0.0000000	77gud1	0

91 y m th232f rc cu x6 0.0000000 0.0 4.3100000 0.2600000 140 ba g th232f 7.9700000 85chu1 0
91 sr g th232f rc cu 7.0879751 60.1 5.7000000 0.0000000 89 sr g th232f 6.0000000 50nid1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

91 sr g th232f rc cu x4 0.0000000 0.0 6.4000000 0.7000000 89 sr g u235t 5.0000000 51tur1 22
91 sr g th232f rc re 7.1552823 10.0 2.5500000 0.2000000 99 mo g u235t 0.0000000 63iye1 7
91 sr g th232f rc re 7.4737029 6.4 1.0100000 6.4000000% 140 ba g u235t 0.0000000 73bra1 7
91 sr g th232f cm cu 0.0000000 0.0 7.3310000 4.0000000% 0 0.0000000 73net2 0
91 sr g th232f cm cu 0.0000000 0.0 7.2000000 0.0000000 0 0.0000000 60kat1 0
91 sr g th232f rc cu 7.2300462 5.7 6.8000000 0.3000000 140 ba g th232f 7.4000000 73cha1 0
91 sr g th232f rc re 7.3236418 5.0 2.6100000 0.0300000 99 mo g u235t 0.0000000 81ert1 7
91 sr g th232f cm cu 0.0000000 0.0 7.4300000 0.2200000 0 0.0000000 81ert1 0
91 sr g th232f rc cu 7.3332532 5.0 7.3400000 4.7000000% 0 0.0000000 81ram1 0
91 sr g th232f rc cu 7.3532348 5.0 7.3600000 4.0000000% 0 0.0000000 81ram1 0
91 sr g th232f rc cu 7.3332532 5.0 7.3400000 0.3000000 0 0.0000000 86ric1 0
91 sr g th232f rc cu x4 0.0000000 0.0 0.8836000 10.9000000% 89 sr g u235t 0.0000000 51tur1 7
91 sr g th232f rc cu x4 0.0000000 0.0 6.4000000 0.2000000 99 mo g th232f 3.1000000 64bro1 0
91 sr g th232f rc cu x4 0.0000000 0.0 6.6000000 1.0000000 140 ba g th232f 7.6400000 70kob1 0
91 rb g th232f cm cu 0.0000000 0.0 7.2760000 4.0000000% 0 0.0000000 73net2 0
91 rb g th232f rc in 1.1069815 40.4 1.1080000 40.4000000% 0 0.0000000 77iza1 0
91 rb g th232f ms fi 1.1990811 40.5 0.1630000 0.0660000 91 th232f 1.0000000 77iza1 0
91 kr g th232f cm cu 0.0000000 0.0 5.9940000 8.1000000% 0 0.0000000 73net2 0
91 kr g th232f rc in 5.0253765 8.6 5.0300000 8.6000000% 0 0.0000000 77iza1 0
91 kr g th232f rc fc 6.1866699 5.7 0.8410000 0.0450000 91 th232f 1.0000000 78iza1 0
91 kr g th232f ms fi 5.4436810 8.9 0.7400000 0.0640000 91 th232f 1.0000000 77iza1 0
91 kr g th232f rc cu 5.6847698 9.0 5.6900000 0.5100000 0 0.0000000 82ert1 0
91 kr g th232f rc fc 6.1793136 5.4 0.8400000 0.0200000 91 th232f 1.0000000 89sri1 0
91 br g th232f cm cu x3 0.0000000 0.0 0.7540000 32.1000000% 0 0.0000000 73net2 0
92 nb m u235t rc in ul 0.0000000 0.0 0.0000046 0.0000024 0 100.0000000 81jos1 0
92 zr g u235t ms re 5.8864332 1.7 0.9270000 1.5000000% 93 zr g u235t 1.0000000 62far2 0
92 u235t cm cu 0.0000000 0.0 6.0300000 0.0000000 0 0.0000000 72sid1 0
92 u235t cm cu 0.0000000 0.0 5.9800000 0.0000000 0 0.0000000 73lam1 0
92 u235t cm cu 0.0000000 0.0 5.9800000 0.0700000 0 0.0000000 73wal1 0
92 u235t ms cu 6.0130576 2.0 6.0100000 0.0430000 0 0.0000000 76dii1 0

92	zr g	u235t	ms	fi		0.0120495	99.9	0.2000000	0.2000000	92	u235t	100.0000000	76sie1	0
92		u235t	sp	cu		5.9626157	5.0	5.9100000	0.1100000	0		0.9916800	76woh2	0
92		u235t	cm	cu		0.0000000	0.0	5.9900000	3.1000000%	0		0.0000000	77cro1	0
92	zr g	u235t	ms	cu		6.0330678	6.0	6.0300000	0.0000000	0		0.0000000	55gle1	0
92	zr g	u235t	sp	fi	ul	0.0000000	0.0	0.9000000	0.7000000	92	u235t	100.0000000	75sie1	0
92	zr g	u235t	ms	fi	ul	0.0000000	0.0	0.2000000	0.2000000	92	u235t	100.0000000	76sie1	0
92	zr g	u235t	ms	cu		5.8729864	4.1	5.8700000	0.2380000	0		0.0000000	78mae1	0
92	zr g	u235t	ms	cu	aj	5.9350179	4.0	5.9320000	0.2400000	0		0.0000000	78mae1	0
92	zr g	u235t	ms	cu		6.0420724	4.1	6.0390000	0.2460000	0		0.0000000	78mae1	0
92	zr g	u235t	ms	cu	su	0.0000000	0.0	5.9500000	0.0300000	0		0.0000000	70lis1	0
92		u235t	es	re		6.0298452	2.1	1.0000000	2.0000000%	92	u235f	0.9700000	74mee4	0
92	zr g	u235t	ms	cu	cm	5.8309650	6.0	5.8280000	0.0000000	0		0.0000000	80mae3	0
92	zr g	u235t	ms	fi	su	0.0000000	0.0	0.2000000	0.2000000	92	u235t	100.0000000	76wol1	0
92	zr g	u235t	ms	cu		6.0704229	1.1	6.0800000	0.0500000	93	zr g	u235t	6.3600000	86chi1	0
92	y g	u235t	ms	fi		0.0542227	66.7	0.9000000	0.6000000	92	u235t	100.0000000	76sie1	0
92	y g	u235t	rc	fi	x1	0.0000000	0.0	0.0013000	0.0002000	92	u235t	1.0000000	66nor2	0
92	y g	u235t	sp	fi	ul	0.0000000	0.0	1.2000000	0.7000000	92	u235t	100.0000000	75sie1	0
92	y g	u235t	ms	fi	ul	0.0000000	0.0	0.9000000	0.6000000	92	u235t	100.0000000	76sie1	0
92	y g	u235t	sp	in	su	0.0000000	0.0	0.0230000	15.0000000%	92	u235t	1.0000000	77str1	36
92	y g	u235t	rc	cu		5.8829915	10.0	5.8800000	6.0000000%	0		0.0000000	56her1	0
92	y g	u235t	ms	fi	ul	0.0000000	0.0	1.4000000	1.0000000	92	u235t	100.0000000	75cle2	0
92	y g	u235t	ms	in		0.0780397	37.2	0.0780000	0.0290000	0		0.0000000	79cle1	0
92	y g	u235t	rc	cu		5.9030017	6.3	5.9000000	0.3700000	0		0.0000000	74bla1	0
92	y g	u235t	rc	cu	x4	0.0000000	0.0	6.2400000	0.2500000	0		0.0000000	76thi1	0
92	y g	u235t	ms	fi	su	0.0000000	0.0	0.9000000	0.6000000	92	u235t	100.0000000	76wol1	0
92	y g	u235t	sp	fi	ul	0.0000000	0.0	1.3000000	0.5000000	92	u235t	100.0000000	80lan1	0
92	y g	u235t	cm	in		0.0000000	0.0	0.0074630	15.0000000%	0		1.0000000	88wah1	0
92	sr g	u235t	rc	cu	x4	0.0000000	0.0	5.0000000	0.0000000	140	ba g	u235t	6.1000000	51hoa2	0
92	sr g	u235t	rc	cu		6.0030525	5.0	6.0000000	0.1700000	0		0.0000000	71mcl1	0
92	sr g	u235t	cm	cu		0.0000000	0.0	5.9840000	2.0000000%	0		0.0000000	73net2	0
92	sr g	u235t	ms	fi		0.9157608	9.2	15.2000000	1.4000000	92	u235t	100.0000000	76sie1	0
92	sr g	u235t	sp	fi	su	0.0000000	0.0	0.1900000	0.0200000	92	u235t	1.0000000	74sie2	0
92	sr g	u235t	sp	fi	su	0.0000000	0.0	16.4000000	1.5000000	92	u235t	100.0000000	75sie1	0
92	sr g	u235t	sp	in	su	0.0000000	0.0	0.1590000	15.0000000%	92	u235t	1.0000000	77str1	36
92	sr g	u235t	sp	fi		0.9699835	6.9	16.1000000	1.1000000	92	u235t	100.0000000	78str1	0
92	sr g	u235t	rc	cu		5.7229101	5.6	5.7200000	0.3200000	0		0.0000000	77gud1	0

92	sr	g	u235t	ms	fi		su	0.0000000	0.0	18.9000000	2.0000000	92		u235t	100.0000000	75cle2	0
92	sr	g	u235t	ms	in			1.1655927	4.9	1.1650000	0.0570000	0			0.0000000	79cle1	0
92	sr	g	u235t	rc	cu	x4		0.0000000	0.0	6.4900000	4.0000000%	0			0.0000000	80ram1	0
92	sr	g	u235t	ms	fi		su	0.0000000	0.0	15.2000000	1.4000000	92		u235t	100.0000000	76wol1	0
92	sr	g	u235t	sp	fi			1.1808495	5.0	19.6000000	0.9000000	92		u235t	100.0000000	80lan1	0
92	sr	g	u235t	cm	in			0.0000000	0.0	1.0800000	7.0000000%	0			1.0000000	88wah1	0
92	sr	g	u235t	sp	fi			1.0603547	5.0	17.6000000	0.7000000%	92		u235t	100.0000000	79str1	0
92	rb	g	u235t	rc	fi	x1		0.0000000	0.0	0.6200000	0.1600000	92	y g	u235t	1.0000000	66wah1	0
92	rb	g	u235t	ms	in			3.2916738	2.1	3.2900000	0.0700000	0			0.0000000	72cha1	0
92	rb	g	u235t	cm	fi	x3		0.0000000	0.0	0.4140000	0.0400000	92		u235t	1.0000000	72ree1	0
92	rb	g	u235t	es	fc			5.0547588	30.0	0.8390000	0.0000000	92		u235t	1.0000000	74wol1	0
92	rb	g	u235t	ms	fi			3.0364701	3.6	50.4000000	1.8000000	92		u235t	100.0000000	76sie1	0
92	rb	g	u235t	sp	re			5.0775906	5.1	0.9100000	0.0200000	91	rb g	u235t	1.0000000	75ree1	0
92	rb	g	u235t	sp	in			2.5765101	5.0	2.5752000	0.0293000	0			0.0000000	75ree1	0
92	rb	g	u235t	sp	fi		su	0.0000000	0.0	0.5280000	0.0250000	92		u235t	1.0000000	74sie2	0
92	rb	g	u235t	sp	fi		su	0.0000000	0.0	51.0000000	2.0000000	92		u235t	100.0000000	75sie1	0
92	rb	g	u235t	sp	in		su	0.0000000	0.0	0.5450000	15.0000000%	92		u235t	1.0000000	77str1	36
92	rb	g	u235t	sp	fi			3.3919299	5.0	56.3000000	0.7000000	92		u235t	100.0000000	78str1	0
92	rb	g	u235t	sp	fi			3.3196330	5.0	55.1000000	1.2000000	92		u235t	100.0000000	79bal1	0
92	rb	g	u235t	ms	in			2.9515008	6.8	2.9500000	0.2000000	0			0.0000000	74bal1	0
92	rb	g	u235t	ms	fi		su	0.0000000	0.0	51.7000000	2.0000000	92		u235t	100.0000000	75cle2	0
92	rb	g	u235t	ms	in			3.1245888	2.8	3.1230000	0.0860000	0			0.0000000	79cle1	0
92	rb	g	u235t	ms	in			3.2416484	8.6	3.2400000	0.2800000	0			0.0000000	79shm1	0
92	rb	g	u235t	ms	cu			4.9425133	9.9	4.9400000	0.4900000	0			0.0000000	79shm1	0
92	rb	g	u235t	ms	fi		su	0.0000000	0.0	50.4000000	1.8000000	92		u235t	100.0000000	76wol1	0
92	rb	g	u235t	sp	cu	x4		0.0000000	0.0	3.2400000	0.2800000	0			0.0000000	81shm1	0
92	rb	g	u235t	sp	fi			3.1690145	5.0	52.6000000	1.1000000	92		u235t	100.0000000	80lan1	0
92	rb	g	u235t	cm	in			0.0000000	0.0	2.9740000	2.0000000%	0			1.0000000	88wah1	0
92	rb	g	u235t	sp	fi			3.2172124	5.0	53.4000000	0.9000000%	92		u235t	100.0000000	79str1	0
92	rb	g	u235t	sp	in			2.7513991	10.5	2.7500000	0.2900000	0			0.0000000	90rud1	0
92	rb	g	u235t	sp	cu			4.7224013	8.5	4.7200000	0.4000000	0			0.0000000	90rud1	0
92	kr	g	u235t	rc	fc			1.8418070	10.1	0.3100000	0.0100000	92	sr g	u235t	1.0000000	58wah1	0
92	kr	g	u235t	sp	in		su	0.0000000	0.0	0.2600000	0.0300000	91	kr g	u235t	1.0000000	69ehr1	14
92	kr	g	u235t	rc	in			1.4807530	5.0	1.4800000	0.0700000	0			0.0000000	72ehr1	0
92	kr	g	u235t	es	fi		cm	1.5061856	4.9	0.2500000	0.0120000	92		u235t	1.0000000	73ami1	0
92	kr	g	u235t	es	fc			2.0062392	30.0	0.3330000	0.0000000	92		u235t	1.0000000	74wol1	0

92 kr g u235t ms fi 1.8977938 4.5 31.5000000 1.4000000 92 u235t 100.0000000 76sie1 0
92 kr g u235t sp fi su 0.0000000 0.0 0.2820000 0.0200000 92 u235t 1.0000000 74sie2 0
92 kr g u235t sp cu 1.7508903 5.0 1.7500000 0.0700000 0 0.0000000 75bri1 0
92 kr g u235t sp in 1.7008649 5.0 1.7000000 0.0700000 0 0.0000000 75bri1 0
92 kr g u235t sp fi su 0.0000000 0.0 28.7000000 1.5000000 92 u235t 100.0000000 75sie1 0
92 kr g u235t sp in su 0.0000000 0.0 0.2730000 15.0000000% 92 u235t 1.0000000 77str1 36
92 kr g u235t sp fi 1.6628289 5.0 27.6000000 1.3000000 92 u235t 100.0000000 78str1 0
92 kr g u235t ms fi su 0.0000000 0.0 28.0000000 2.3000000 92 u235t 100.0000000 75cle2 0
92 kr g u235t ms in 1.5738003 4.6 1.5730000 0.0720000 0 0.0000000 79cle1 0
92 kr g u235t ms fi su 0.0000000 0.0 31.5000000 1.4000000 92 u235t 100.0000000 76wol1 0
92 kr g u235t sp fi 1.5965567 5.0 26.5000000 1.0000000 92 u235t 100.0000000 80lan1 0
92 kr g u235t cm in 0.0000000 0.0 1.6880000 3.0000000% 0 1.0000000 88wah1 0
92 kr g u235t sp fi 1.7291011 5.0 28.7000000 0.8000000% 92 u235t 100.0000000 79str1 0
92 kr g u235t sp in 1.6508394 5.0 1.6500000 0.0700000 0 0.0000000 90rud1 0
92 kr g u235t sp cu 1.9910124 19.1 1.9900000 0.3800000 0 0.0000000 90rud1 0
92 br g u235t ms fi ul 0.0000000 0.0 1.8000000 0.8000000 92 u235t 100.0000000 76sie1 0
92 br g u235t cm fc es 0.0000000 0.0 0.0063200 0.0000000 92 u235t 1.0000000 74wol1 0
92 br g u235t sp fi ul 0.0000000 0.0 1.8000000 0.8000000 92 u235t 100.0000000 75sie1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

92 br g u235t sp fi ul 0.0000000 0.0 0.1000000 0.3000000 92 u235t 100.0000000 78str1 0
92 br g u235t rc fi su 0.0000000 0.0 0.0045000 0.0025000 92 u235t 1.0000000 77kra1 0
92 br g u235t rc fi 0.0271113 55.6 0.4500000 0.2500000 92 u235t 100.0000000 78kra1 0
92 br g u235t ms fi ul 0.0000000 0.0 1.8000000 0.8000000 92 u235t 100.0000000 76wol1 0
92 br g u235t rc fc ul 0.0000000 0.0 0.0030000 0.0030000 92 u235t 1.0000000 73kra3 0
92 br g u235t sp fi ul 0.0000000 0.0 0.2000000 0.2000000% 92 u235t 100.0000000 79str1 0
92 u235f es cu 5.3827450 30.0 5.8200000 0.0000000 148 nd g u235f 1.8100000 63wea1 0
92 u235f es cu cm 5.5885655 30.0 5.6200000 0.0000000 0 0.0000000 72sid1 0
92 u235f es re 5.8083531 10.0 0.9700000 10.0000000% 92 u235t 1.0000000 74mee4 0
92 u235f cm cu 0.0000000 0.0 5.8300000 3.5000000% 0 0.0000000 77cro1 0
92 zr g u235f ms cu 5.6382859 2.0 5.6700000 0.1100000 0 0.0000000 80mae1 0
92 zr g u235f ms cu cm 5.7138608 6.0 5.7460000 0.0000000 0 0.0000000 80mae3 0
92 zr g u235f ms cu 5.8182735 2.0 5.8510000 0.0310000 0 0.0000000 81mae1 0
92 zr g u235f ms cu 5.7954021 2.0 5.8280000 0.0340000 0 0.0000000 81mae1 0

92	zr g	u235f	es	cu		5.8998148	0.7	5.9330000	0.0420000	0			0.0000000	81mae1	0
92	zr g	u235f	cm	cu		0.0000000	0.0	5.8710000	0.0430000	0			0.0000000	81mae1	0
92	zr g	u235f	ms	cu	su	0.0000000	0.0	5.7900000	0.0500000	148	nd g	u235f	1.6800000	74mae1	0
92		u235f	rc	cu		5.2902435	5.0	5.3200000	0.1000000	0			0.0000000	77bla1	0
92	y g	u235f	rc	cu		5.7729707	5.1	0.9660000	0.0100000	92	y g	u235t	1.0000000	77deb1	0
92	sr g	u235f	rc	cu		5.1790204	5.1	5.0900000	3.0000000%	140	ba g	u235f	5.8400000	72sch1	0
92	sr g	u235f	cm	cu		0.0000000	0.0	5.6800000	16.0000000%	0			0.0000000	73net2	0
92	sr g	u235f	rc	re		5.5462596	5.0	0.9740000	0.0140000	140	ba g	u235t	0.0000000	75raj1	7
92	sr g	u235f	rc	cu		5.6450305	11.6	0.9500000	0.1100000	140	ba g	u235f	1.0000000	73man1	0
92	sr g	u235f	rc	cu		5.6880062	5.6	5.7200000	0.3200000	0			0.0000000	77gud1	0
92	sr g	u235f	rc	cu		5.8172791	5.0	5.8500000	0.2800000	0			0.0000000	81mar1	0
92	kr g	u235f	rc	fc	su	0.0000000	0.0	0.2100000	0.0250000	92		u235f	1.0000000	72wol1	0
92	kr g	u235f	rc	fc		1.2207882	11.9	0.2100000	0.0250000	92		u235f	1.0000000	75wol1	0
92	zr g	u235he	es	cu		4.7853425	30.0	4.8340000	0.0000000	0			0.0000000	63wea1	0
92		u235he	ms	cu		5.1836751	10.9	5.3000000	0.5600000	90		u235he	4.6500000	72boc1	0
92		u235he	cm	cu		0.0000000	0.0	4.9800000	20.0000000%	0			0.0000000	77cro1	0
92		u235he	es	cu		5.3040680	10.0	5.3580000	10.0000000%	0			0.0000000	74mee8	0
92	y g	u235he	cm	fi		0.0000000	0.0	0.0074000	0.0017000	92		u235he	1.0000000	72net2	0
92	y g	u235he	rc	fi		0.0369257	23.7	0.0074000	0.0017000	92		u235he	1.0000000	65net1	0
92	sr g	u235he	rc	re		4.8012129	10.6	1.0800000	0.1100000	140	ba g	u235he	1.0000000	73man1	0
92	sr g	u235he	cm	cu		0.0000000	0.0	4.8010000	4.1000000%	0			0.0000000	73net2	0
92	kr g	u235he	ms	in		0.8018468	17.3	0.8100000	0.1400000	0			0.0000000	72boc1	0
92	kr g	u235he	rc	fc		0.7784330	9.0	0.1560000	0.0110000	92		u235he	1.0000000	65wol1	0
92		u238f	es	cu	cm	4.4700881	30.0	4.5000000	0.0000000	0			0.0000000	64wal1	0
92		u238f	es	cu	cm	4.2912846	30.0	4.3200000	0.0000000	0			0.0000000	72sid1	0
92		u238f	cm	cu		0.0000000	0.0	4.9100000	5.0000000%	0			0.0000000	77cro1	0
92	zr g	u238f	es	fi		0.0000001	30.1	0.0000313	0.0000000	92		u238f	1000.0000000	74wol1	0
92		u238f	rc	cu		4.1140424	5.0	4.3900000	0.1200000	140	ba g	u238f	6.1600000	77bla1	0
92	zr g	u238f	ms	cu		4.9339839	5.8	4.9670000	0.2900000	0			0.0000000	81mae1	0
92	zr g	u238f	cm	cu		0.0000000	0.0	4.9670000	0.2900000	0			0.0000000	81mae1	0
92	zr g	u238f	ms	cu		4.9938606	5.9	4.9500000	0.2900000	148	nd g	u238f	2.0800000	74mae1	0
92		u238f	rc	cu		4.1720822	5.0	4.2000000	0.1300000	0			0.0000000	85li 1	0
92	y g	u238f	rc	cu		3.6754058	30.0	3.7000000	30.0000000%	0			0.0000000	68bel1	36
92	sr g	u238f	rc	re		4.2141289	8.2	0.7300000	0.0600000	140	ba g	u238f	1.0000000	73man1	0
92	sr g	u238f	cm	cu		0.0000000	0.0	3.9100000	16.0000000%	0			0.0000000	73net2	0
92	sr g	u238f	rc	cu		5.1753687	9.8	5.2100000	0.5100000	0			0.0000000	75har1	0

92	sr g	u238f	rc	cu		4.4655550	10.7	4.6800000	0.5000000	140	ba g	u238f	6.0500000	78deb1	0
92	sr g	u238f	rc	cu		4.1697597	5.0	4.3700000	0.1600000	140	ba g	u238f	6.0500000	78deb1	0
92	sr g	u238f	es	cu		4.0727469	3.4	4.1000000	0.1400000	0			0.0000000	78gin1	0
92	sr g	u238f	rc	cu		4.0727469	5.6	4.1000000	0.2300000	0			0.0000000	78nag1	0
92	sr g	u238f	rc	cu		4.5495563	9.8	4.5800000	0.4500000	0			0.0000000	85chi1	0
92	sr g	u238f	rc	cu		5.6621116	12.0	5.7000000	12.0000000%	0			0.0000000	87chu1	0
92	sr g	u238f	rc	cu		4.4204205	10.6	4.4500000	10.6000000%	0			0.0000000	88afa1	0
92	sr g	u238f	rc	cu		4.3508858	9.1	4.3800000	9.1000000%	0			0.0000000	88afa1	0
92	rb g	u238f	ms	in		1.1324223	28.1	1.1400000	0.3200000	0			0.0000000	74bal2	0
92	rb g	u238f	ms	in	su	0.0000000	0.0	0.4040000	0.0870000	93	rb g	u238f	1.0000000	74bal2	0
92	rb g	u238f	cm	fi		0.0000000	0.0	0.2000000	0.0820000	92		u238f	1.0000000	74wol1	0
92	rb g	u238f	rc	in		0.8840841	32.6	0.8900000	0.2900000	0			0.0000000	74wol4	0
92	kr g	u238f	rc	fc	su	0.0000000	0.0	0.5700000	0.0300000	92		u238f	1.0000000	72wol1	0
92	kr g	u238f	rc	fc		2.4422518	6.0	0.5700000	0.0300000	92		u238f	1.0000000	75wol1	0
92	zr g	u238he	es	cu		3.9725495	30.0	3.9800000	0.0000000	0			0.0000000	63wea1	0
92		u238he	cm	cu	su	0.0000000	0.0	4.0300000	0.2000000	0			0.0000000	73dar1	0
92	zr g	u238he	es	in		0.0000001	30.0	0.0000069	30.0000000%	0			100.0000000	74mee3	0
92		u238he	es	cu		4.0404222	15.0	4.0480000	15.0000000%	0			0.0000000	74mee9	0
92		u238he	cm	cu		0.0000000	0.0	3.8200000	3.5000000%	0			0.0000000	77cro1	0
92		u238he	rc	cu		4.1597757	5.4	3.8900000	0.1700000	91		u238he	3.6100000	77feu1	0
92		u238he	ms	cu	x4	0.0000000	0.0	3.9400000	0.4500000	90		u238he	2.8600000	72boc1	0
92	y g	u238he	es	cu		3.9725495	30.0	3.9800000	0.0000000	0			0.0000000	63wea1	0
92	y g	u238he	rc	cu		3.8475454	6.9	3.8500000	0.2600000	140	ba g	u238he	4.6000000	76raj1	0
92	y g	u238he	rc	cu		3.8175646	7.7	3.8200000	0.2900000	140	ba g	u238he	4.6000000	75cav1	0
92	y g	u238he	rc	cu	su	0.0000000	0.0	3.8200000	0.2900000	140	ba g	u238he	4.6000000	74bla1	0
92	sr g	u238he	es	cu		3.9725495	30.0	3.9800000	0.0000000	0			0.0000000	63wea1	0
92	sr g	u238he	rc	cu	su	0.0000000	0.0	4.0900000	0.5000000	0			0.0000000	71bla1	0
92	sr g	u238he	rc	cu	su	0.0000000	0.0	3.5600000	0.4000000	0			0.0000000	73dar2	0
92	sr g	u238he	rc	cu	su	0.0000000	0.0	4.3100000	0.3400000	0			0.0000000	73dar3	0
92	sr g	u238he	rc	cu	su	0.0000000	0.0	3.7100000	0.1500000	0			0.0000000	73dar4	0
92	sr g	u238he	rc	re		3.9994485	8.2	0.8700000	0.0700000	140	ba g	u238he	1.0000000	73man1	0
92	sr g	u238he	cm	cu		0.0000000	0.0	3.9980000	4.1000000%	0			0.0000000	73net2	0
92	sr g	u238he	rc	cu	su	0.0000000	0.0	3.7100000	0.1500000	140	ba g	u238he	4.4800000	74dar1	0
92	sr g	u238he	rc	cu		3.7729239	5.0	3.7800000	0.1000000	0			0.0000000	75dar1	0
92	sr g	u238he	rc	cu		3.8675327	6.9	3.8700000	0.2600000	140	ba g	u238he	4.6000000	76raj1	0
92	sr g	u238he	rc	cu		3.9966238	10.8	3.9300000	0.4200000	99	mo g	u238he	5.6000000	75ada1	0

92 sr g u238he rc cu 3.9474817 10.2 3.9500000 0.4000000 140 ba g u238he 4.6000000 75cav1 0
92 sr g u238he rc cu su 0.0000000 0.0 3.9500000 0.4000000 140 ba g u238he 4.6000000 74bla1 0
92 sr g u238he rc cu 3.7775901 6.0 3.7800000 0.2200000 140 ba g u238he 4.6000000 80zhe1 0
92 sr g u238he rc cu 4.0224559 5.0 4.0300000 0.1300000 0 0.0000000 85liu1 0
92 sr g u238he rc cu 3.5134106 5.4 3.5200000 0.1900000 0 0.0000000 75dar1 0
92 sr g u238he rc cu 3.8727367 5.0 3.8800000 0.1200000 0 0.0000000 75dar1 0
92 kr g u238he rc fc 1.7025029 5.7 44.0000000 2.0000000 92 sr g u238he 100.0000000 65wol1 0
92 kr g u238he rc fc 1.8665486 5.4 48.2000000 1.5000000 92 y g u238he 100.0000000 66gra1 0
92 kr g u238he ms in 1.6568925 12.0 1.6600000 0.2000000 0 0.0000000 72boc1 0
92 kr g u238he rc fc 1.7193933 5.4 0.4440000 0.0060000 92 u238he 1.0000000 77feu1 0
92 nb m pu239t rc in x6 0.0000000 0.0 0.0000110 0.0000060 0 100.0000000 81jos1 0
92 pu239t cm cu 0.0000000 0.0 3.1200000 0.0000000 0 0.0000000 72sid1 0
92 pu239t cm cu 0.0000000 0.0 3.0500000 0.0000000 0 0.0000000 73lam1 0
92 pu239t cm cu 0.0000000 0.0 3.0600000 0.0400000 0 0.0000000 73wal1 0
92 pu239t cm cu 0.0000000 0.0 3.0300000 4.4000000% 0 0.0000000 77cro1 0
92 zr g pu239t ms cu 2.9980339 2.0 2.9940000 0.0460000 0 0.0000000 79mae2 0
92 zr g pu239t ms cu 3.0244255 1.7 3.0200000 0.0500000 85 rb g pu239t 0.5740000 70lis1 0
92 zr g pu239t ms cu 3.0041115 2.6 0.7900000 0.0200000 93 zr g pu239t 1.0000000 59fic1 0
92 zr g pu239t es cu cm 3.0040419 1.0 3.0000000 1.0000000% 0 0.0000000 81mae2 0
92 zr g pu239t es re cm 3.0456210 1.4 0.1644000 1.0000000% 91 zr g pu239t 0.1344000 81mae2 36
92 zr g pu239t ms cu 2.9954558 1.0 3.0800000 0.0200000 93 zr g pu239t 3.9100000 86chi1 0
92 y g pu239t rc cu x4 0.0000000 0.0 2.7500000 20.0000000% 97 zr g pu239t 5.4600000 74jen1 0
92 y g pu239t sp fi 0.0451986 99.9 0.0150000 0.0200000 92 pu239t 1.0000000 84sch1 36
92 y g pu239t cm in 0.0000000 0.0 0.0267600 86.0000000% 0 1.0000000 88wah1 0
92 sr g pu239t cm cu 0.0000000 0.0 2.9100000 2.0000000% 0 0.0000000 73net2 0
92 sr g pu239t rc cu rp 3.0100599 12.8 3.1000000 0.0000000 no. relative values = 4 76ima1
92 sr g pu239t rc cu 2.9339476 5.1 2.9300000 0.1500000 0 0.0000000 77gud1 0
92 sr g pu239t rc cu 2.9439611 12.6 2.9400000 0.3700000 0 0.0000000 80dic1 0
92 sr g pu239t rc cu 2.8738668 7.7 2.8700000 7.7000000% 0 0.0000000 80ram1 0
92 sr g pu239t sp fi 1.0365536 6.0 0.3440000 6.0000000% 92 pu239t 1.0000000 84sch1 36
92 sr g pu239t cm in 0.0000000 0.0 1.0630000 6.0000000% 0 1.0000000 88wah1 0
92 rb g pu239t es fc 1.9857233 18.4 0.6590000 0.1210000 92 pu239t 1.0000000 74wol1 0
92 rb g pu239t rc in 1.6422096 17.1 1.6400000 0.2800000 0 0.0000000 75bal1 0
92 rb g pu239t sp fi 1.6060554 5.0 0.5330000 5.0000000% 92 pu239t 1.0000000 84sch1 36
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nuclide	material	tech.	type	value	err.	value	nuclide	material	value	no.	treatment
92 rb g	pu239t	cm	in	0.0000000	0.0	1.6160000	5.0000000%	0	1.0000000	88wah1	0
92 kr g	pu239t	rc	fc	0.3353843	5.7	11.3000000	0.5000000	92 sr g	pu239t	100.0000000	65wol1	0
92 kr g	pu239t	ms	cu	0.3054109	4.9	0.3050000	0.0150000	0	0.0000000	76bri2	0
92 kr g	pu239t	ms	in	0.3024069	5.0	0.3020000	0.0150000	0	0.0000000	77bri1	0
92 kr g	pu239t	rc	cu	0.3067914	5.4	0.3050000	0.0150000	91 kr g	pu239t	0.7110000	77bri1	0
92 kr g	pu239t	sp	fi	0.3254296	19.0	0.1080000	19.0000000%	92	pu239t	1.0000000	84sch1	36
92 kr g	pu239t	cm	in	0.0000000	0.0	0.3358000	5.0000000%	0	1.0000000	88wah1	0
92 br g	pu239t	sp	fi	ul	0.0000000	0.0	0.0010000	0.0200000	92	pu239t	1.0000000	84sch1	0
92	pu239f	cm	cu	x3	0.0000000	0.0	3.2000000	0.0000000	0	0.0000000	72sid1	0
92	pu239f	cm	cu		0.0000000	0.0	2.9900000	3.9000000%	0	0.0000000	77cro1	0
92 zr g	pu239f	ms	cu		3.0410545	1.4	3.0370000	0.0410000	148 nd g	pu239f	1.6540000	77mae1	0
92 zr g	pu239f	ms	cu		2.9855762	2.0	2.9950000	0.0530000	0	0.0000000	77mae1	0
92 zr g	pu239f	ms	cu		2.9964921	1.9	3.1300000	0.0600000	148 nd g	pu239f	1.7300000	70lis1	0
92 zr g	pu239f	ms	cu		3.0516326	0.9	0.1642000	0.0008000	96 zr g	pu239f	0.2603000	80mae4	0
92 zr g	pu239f	ms	cu	su	0.0000000	0.0	3.0200000	0.0400000	148 nd g	pu239f	1.6500000	74mae1	0
92	pu239f	es	re		3.0297056	10.0	1.0100000	10.0000000%	92	pu239t	1.0000000	74mee4	0
92 zr g	pu239f	es	cu	cm	3.0304346	1.0	3.0400000	1.0000000%	0	0.0000000	81mae2	0
92 zr g	pu239f	es	re	cm	3.0602883	1.4	0.1642000	1.0000000%	91 zr g	pu239f	0.1346000	81mae2	36
92 y g	pu239f	rc	cu	x1	0.0000000	0.0	3.4900000	25.0000000%	97 zr g	pu239f	4.9000000	74jen1	0
92 sr g	pu239f	cm	cu		0.0000000	0.0	2.9680000	4.0000000%	0	0.0000000	73net2	0
92 sr g	pu239f	rc	re		2.9950034	5.0	0.5890000	0.0080000	140 ba g	u235t	0.0000000	75raj1	7
92 sr g	pu239f	rc	cu		2.9207807	5.1	2.9300000	0.1500000	0	0.0000000	77gud1	0
92	pu241t	cm	cu		0.0000000	0.0	2.2300000	0.0000000	0	0.0000000	72sid1	0
92	pu241t	cm	cu		0.0000000	0.0	2.2600000	0.0300000	0	0.0000000	73wal1	0
92	pu241t	cm	cu		0.0000000	0.0	2.2300000	5.0000000%	0	0.0000000	77cro1	0
92	pu241t	cm	cu		0.0000000	0.0	2.2000000	0.0000000	0	0.0000000	79wal1	0
92 zr g	pu241t	ms	cu		2.3403503	2.0	2.3480000	0.0320000	0	0.0000000	77mae1	0
92 zr g	pu241t	ms	cu		2.3068445	2.8	2.2300000	0.0600000	148 nd g	pu241t	1.8616500	70lis1	0
92 zr g	pu241t	ms	cu		2.3008387	1.7	2.3100000	0.0200000	93 zr g	pu241t	2.9800000	86chi1	0
92 y g	pu241t	rc	cu		2.0333538	13.2	2.0400000	0.2700000	0	0.0000000	79dic1	0
92 sr g	pu241t	rc	fc		2.1375130	5.2	0.9290000	0.0360000	92	pu241t	1.0000000	86nai1	0
92 sr g	pu241t	rc	fc		2.1195661	5.2	0.9212000	0.0011000	92	pu241t	1.0000000	87nai2	0
92 kr g	pu241t	ms	cu		0.5731267	10.4	0.5750000	0.0600000	0	0.0000000	76bri2	0
92 kr g	pu241t	ms	in		0.5541886	10.8	0.5560000	0.0600000	0	0.0000000	77bri1	0

92 kr g pu241t rc cu 0.6015975 11.2 0.5750000 0.0600000 91 kr g pu241t 0.9300000 77bri1 0
92 nb m u233t rc in ul 0.0000000 0.0 0.0000022 0.0000011 0 100.0000000 81jos1 0
92 zr g u233t ms cu 6.5629661 5.2 6.7000000 5.0000000% 93 zr g u233t 7.1000000 54ste1 0
92 u233t cm cu 0.0000000 0.0 6.6000000 0.0000000 0 0.0000000 72sid1 0
92 u233t cm cu 0.0000000 0.0 6.6500000 0.0000000 0 0.0000000 73lam1 0
92 u233t cm cu 0.0000000 0.0 6.6700000 0.0900000 0 0.0000000 73wal1 0
92 zr g u233t ms cu 6.5283123 1.7 19.9000000 0.2000000 93 zr g u233t 21.2000000 59gor1 0
92 zr g u233t ms cu 6.8248361 4.5 6.7200000 4.0000000% 95 zr g u233t 6.2300000 61bid1 0
92 zr g u233t ms cu 6.4908430 4.1 6.2800000 0.2500000 96 zr g u233t 5.4700000 61gor1 0
92 u233t cm cu 0.0000000 0.0 6.6300000 4.1000000% 0 0.0000000 77cro1 0
92 u233t ms cu 6.5223102 2.0 6.5450000 0.0460000 0 0.0000000 80weh1 0
92 zr g u233t ms cu 6.6668075 2.0 6.6900000 0.0500000 0 0.0000000 70lis1 0
92 zr g u233t sp fi ul 0.0000000 0.0 0.7000000 0.2010000 92 u233t 100.0000000 83qua1 0
92 zr g u233t ms cu 6.4558764 1.9 6.4700000 0.0800000 93 zr g u233t 6.9700000 86chi1 0
92 zr g u233t sp in ul 0.0000000 0.0 0.0460000 0.0130000 0 0.0000000 88qua1 0
92 y g u233t ms in 0.1415077 12.7 0.1420000 0.0180000 0 0.0000000 80weh1 0
92 y g u233t rc cu 6.7764262 5.0 6.8000000 4.3000000% 0 0.0000000 81ram1 0
92 y g u233t sp fi 0.1802200 17.7 2.7600000 0.4880000 92 u233t 100.0000000 83qua1 0
92 y g u233t sp in 0.1803725 17.7 0.1810000 0.0320000 0 0.0000000 88qua1 0
92 y g u233t rc fi x4 0.0000000 0.0 0.0110000 0.0010000 92 u233t 1.0000000 81pal2 0
92 sr g u233t cm cu 0.0000000 0.0 6.3810000 2.0000000% 0 0.0000000 73net2 0
92 sr g u233t ms in 2.7195393 2.0 2.7290000 0.0440000 0 0.0000000 80weh1 0
92 sr g u233t rc cu 6.3877782 5.0 6.4100000 4.2000000% 0 0.0000000 81ram1 0
92 sr g u233t rc cu rp 6.4757477 19.6 6.6000000 0.0000000 no. relative values = 1 76ima1
92 sr g u233t rc cu x4 0.0000000 0.0 5.9000000 0.5100000 0 0.0000000 77gud1 0
92 sr g u233t rc fc 6.3534064 5.1 0.9730000 0.0130000 92 u233t 1.0000000 86nai1 0
92 sr g u233t rc re 6.7880280 9.1 5.7500000 0.5000000 140 ba g u233t 5.4000000 68lee1 0
92 sr g u233t sp fi 2.6151482 5.4 40.0500000 2.1160000 92 u233t 100.0000000 83qua1 0
92 sr g u233t sp in 2.6168963 5.6 2.6260000 0.1460000 0 0.0000000 88qua1 0
92 rb g u233t ms in 2.9337939 2.0 2.9440000 0.0460000 0 0.0000000 80weh1 0
92 rb g u233t sp fi 2.9997481 5.1 45.9400000 1.7390000 92 u233t 100.0000000 83qua1 0
92 rb g u233t sp in 3.0015582 5.0 3.0120000 0.1250000 0 0.0000000 88qua1 0
92 kr g u233t rc fc 0.8089964 5.7 12.7000000 0.5000000 92 sr g u233t 100.0000000 65wol1 0
92 kr g u233t sp in 0.7852682 5.0 0.7880000 0.0300000 0 0.0000000 75bri1 0
92 kr g u233t sp cu 0.7912474 5.0 0.7940000 0.0300000 0 0.0000000 75bri1 0
92 kr g u233t ms in 0.7274693 5.1 0.7300000 0.0370000 0 0.0000000 80weh1 0

92 kr g u233t sp fi 0.6732129 5.5 10.3100000 0.5610000 92 u233t 100.0000000 83qua1 0
92 kr g u233t sp in 0.6736565 5.8 0.6760000 0.0390000 0 0.0000000 88qua1 0
92 br g u233t sp fi ul 0.0000000 0.0 0.2500000 0.0840000 92 u233t 100.0000000 83qua1 0
92 br g u233t sp in ul 0.0000000 0.0 0.0160000 0.0060000 0 0.0000000 88qua1 0
92 th232f es cu cm 6.7911605 30.0 6.8000000 0.0000000 0 0.0000000 65eng1 0
92 th232f es cu cm 6.9809135 30.0 6.9900000 0.0000000 0 0.0000000 72sid1 0
92 th232f es cu cm 7.4802636 30.0 7.4900000 0.0000000 0 0.0000000 73lam1 0
92 th232f cm cu 0.0000000 0.0 7.0600000 4.1000000% 0 0.0000000 77cro1 0
92 th232f es cu 6.8211215 5.0 6.8300000 5.0000000% 0 0.0000000 74mee0 0
92 y g th232f rc cu 7.0147235 5.7 6.6000000 0.3000000 140 ba g th232f 7.4000000 73cha1 0
92 y g th232f rc cu 7.1606795 5.0 7.1700000 0.2900000 0 0.0000000 86ric1 0
92 sr g th232f rc re 7.0696795 7.1 0.9380000 7.1000000% 140 ba g u235t 0.0000000 73bra1 7
92 sr g th232f cm cu 0.0000000 0.0 6.9980000 16.0000000% 0 0.0000000 73net2 0
92 sr g th232f rc cu 6.2600191 10.2 6.6000000 0.2800000 99 mo g th232f 3.1000000 64bro1 0
92 sr g th232f rc re 6.7164051 5.0 2.3500000 0.0500000 99 mo g u235t 0.0000000 81ert1 7
92 sr g th232f cm cu 0.0000000 0.0 6.8800000 0.2100000 0 0.0000000 81ert1 0
92 sr g th232f rc cu 7.0008875 5.0 7.0100000 4.0000000% 0 0.0000000 81ram1 0
92 sr g th232f es in 0.1997400 30.0 0.2000000 0.0000000 0 0.0000000 89rid1 0
92 kr g th232f rc fc 4.0079286 5.9 0.5800000 0.0300000 92 th232f 1.0000000 89sri1 0
93 u235t cm cu 0.0000000 0.0 6.4500000 0.0000000 0 0.0000000 72sid1 0
93 u235t cm cu 0.0000000 0.0 6.3900000 0.0000000 0 0.0000000 73lam1 0
93 u235t cm cu 0.0000000 0.0 6.4100000 0.0700000 0 0.0000000 73wal1 0
93 u235t cm cu 0.0000000 0.0 6.3800000 1.9000000% 0 0.0000000 77cro1 0
93 u235t es re 6.4507174 2.1 1.0000000 2.0000000% 93 u235f 0.9700000 74mee4 0
93 zr g u235t ms re rp 6.4367098 2.1 1.0000000 0.0000000 no. relative values = 5 62far2
93 zr g u235t ms cu 6.4532815 6.0 6.4500000 0.0000000 0 0.0000000 55gle1 0
93 zr g u235t ms cu 6.2361711 4.0 6.2330000 0.2520000 0 0.0000000 78mae1 0
93 zr g u235t ms cu aj 6.3032052 4.0 6.3000000 0.2540000 0 0.0000000 78mae1 0
93 zr g u235t ms cu 6.4682891 4.1 6.4650000 0.2630000 0 0.0000000 78mae1 0
93 zr g u235t ms cu su 0.0000000 0.0 6.3400000 0.0400000 0 0.0000000 70lis1 0
93 zr g u235t ms cu 6.3432255 2.0 6.3400000 0.0500000 0 0.0000000 76dii1 0
93 zr g u235t sp cu 6.3026571 5.0 6.2100000 0.1200000 0 0.9858000 76woh2 0
93 zr g u235t ms cu cm 6.2101578 6.0 6.2070000 0.0000000 0 0.0000000 80mae3 0
93 zr g u235t ms cu rp 6.3400667 1.6 6.3600000 0.0000000 no. relative values = 4 86chi1
93 zr g u235t sp fi ul 0.0000000 0.0 1.1000000 0.7000000 93 u235t 100.0000000 75sie1 0
93 y g u235t cm cu 0.0000000 0.0 6.4130000 2.0000000% 0 0.0000000 73net2 0

93 y g u235t cm fi 0.0000000 0.0 0.0160000 13.0000000% 93 u235t 1.0000000 69wah1 0
93 y g u235t cm fi 0.0000000 0.0 0.0177000 9.9000000% 93 u235t 1.0000000 91jam2 0
93 y g u235t cm in 0.0000000 0.0 0.1020000 32.0000000% 0 0.0000000 74mee1 0
93 y g u235t cm in 0.0000000 0.0 0.0992100 12.0000000% 0 1.0000000 88wah1 0
93 y g u235t ms fi su 0.0000000 0.0 2.2000000 1.2000000 93 u235t 100.0000000 75cle2 0
93 y g u235t ms fi su 0.0000000 0.0 2.8000000 0.7000000 93 u235t 100.0000000 76wol1 0
93 y g u235t ms fi x4 0.0000000 0.0 2.6000000 0.7000000 93 u235t 100.0000000 76sie1 0
93 y g u235t ms in x4 0.0000000 0.0 0.2030000 0.0460000 0 0.0000000 79cle1 0
93 y g u235t rc cu 6.1131085 10.0 6.1100000 0.6000000 0 0.0000000 59kni1 0
93 y g u235t rc cu 6.4432764 5.0 6.4400000 0.2900000 0 0.0000000 76thi1 0
93 y g u235t rc cu x4 0.0000000 0.0 5.9000000 0.8900000 0 0.0000000 77gud1 0
93 y g u235t rc cu x4 0.0000000 0.0 6.8200000 0.6200000 0 0.0000000 71mcl1 0
93 y g u235t rc cu x4 0.0000000 0.0 6.8300000 0.0400000 141 ce g u235t 6.0000000 67bre1 0
93 y g u235t rc fi 0.1015997 12.5 0.0160000 0.0020000 93 u235t 1.0000000 66nor2 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

93 y g u235t sp fi 0.1142997 16.7 1.8000000 0.3000000 93 u235t 100.0000000 78str1 0
93 y g u235t sp fi 0.1079497 5.0 1.7000000 0.3000000% 93 u235t 100.0000000 79str1 0
93 y g u235t sp fi su 0.0000000 0.0 2.1000000 0.7000000 93 u235t 100.0000000 75sie1 0
93 y g u235t sp fi x4 0.0000000 0.0 3.3000000 0.7000000 93 u235t 100.0000000 80lan1 0
93 y g u235t sp in su 0.0000000 0.0 0.0270000 15.0000000% 93 u235t 1.0000000 77str1 36
93 sr g u235t ms fi 2.4066431 4.0 37.9000000 1.5000000 93 u235t 100.0000000 76sie1 0
93 sr g u235t ms fi 2.4574430 3.9 38.7000000 1.5000000 93 u235t 100.0000000 76ris1 0
93 sr g u235t sp fi su 0.0000000 0.0 0.3020000 0.0300000 93 u235t 1.0000000 74sie2 0
93 sr g u235t sp fi su 0.0000000 0.0 38.2000000 1.8000000 93 u235t 100.0000000 75sie1 0
93 sr g u235t sp in su 0.0000000 0.0 0.4050000 15.0000000% 93 u235t 1.0000000 77str1 36
93 sr g u235t sp fi 2.6098425 5.0 41.1000000 1.3000000 93 u235t 100.0000000 78str1 0
93 sr g u235t ms fi su 0.0000000 0.0 39.5000000 2.4000000 93 u235t 100.0000000 75cle2 0
93 sr g u235t ms in 2.5963202 3.7 2.5950000 0.0960000 0 0.0000000 79cle1 0
93 sr g u235t rc cu 6.3732408 5.0 6.3700000 4.0000000% 0 0.0000000 80ram1 0
93 sr g u235t ms fi su 0.0000000 0.0 37.2000000 1.6000000 93 u235t 100.0000000 76wol1 0
93 sr g u235t sp fi 2.6415924 5.0 41.6000000 1.2000000 93 u235t 100.0000000 80lan1 0
93 sr g u235t cm in 0.0000000 0.0 2.6210000 3.0000000% 0 1.0000000 88wah1 0
93 sr g u235t sp fi 2.6606424 5.0 41.9000000 0.9000000% 93 u235t 100.0000000 79str1 0

93	sr g	u235t	sp	in		1.9810073	21.2	1.9800000	0.4200000	0			0.0000000	90rud1	0
93	sr g	u235t	sp	cu	x4	0.0000000	0.0	5.4000000	0.9000000	0			0.0000000	90rud1	0
93	rb g	u235t	ms	in		3.1516026	6.0	3.1500000	0.1900000	0			0.0000000	72bal1	0
93	rb g	u235t	ms	in		2.9715110	2.4	2.9700000	0.0700000	0			0.0000000	72cha1	0
93	rb g	u235t	es	fi		3.1622910	6.1	0.4980000	0.0300000	93		u235t	1.0000000	72ree1	0
93	rb g	u235t	es	fc		3.6258396	30.0	0.5710000	0.0000000	93		u235t	1.0000000	74wol1	0
93	rb g	u235t	ms	fi		3.0987911	3.6	48.8000000	1.7000000	93		u235t	100.0000000	76sie1	0
93	rb g	u235t	ms	fi		2.9146417	2.5	45.9000000	1.1000000	93		u235t	100.0000000	76ris1	0
93	rb g	u235t	sp	re		3.9058389	5.1	0.7000000	0.0100000	91	rb g	u235t	1.0000000	75ree1	0
93	rb g	u235t	sp	in		2.9274886	5.0	2.9260000	0.0293000	0			0.0000000	75ree1	0
93	rb g	u235t	rc	fi	x1	0.0000000	0.0	0.5900000	0.0800000	93		u235t	1.0000000	66wah1	0
93	rb g	u235t	sp	fi	su	0.0000000	0.0	0.5740000	0.0400000	93		u235t	1.0000000	74sie2	0
93	rb g	u235t	sp	fi	su	0.0000000	0.0	47.1000000	2.0000000	93		u235t	100.0000000	75sie1	0
93	rb g	u235t	sp	in	su	0.0000000	0.0	0.4920000	15.0000000%	93		u235t	1.0000000	77str1	36
93	rb g	u235t	sp	fi		3.2194408	5.0	50.7000000	1.2000000	93		u235t	100.0000000	78str1	0
93	rb g	u235t	sp	fi		3.1368910	5.0	49.4000000	1.2000000	93		u235t	100.0000000	79bal1	0
93	rb g	u235t	ms	fi	su	0.0000000	0.0	50.9000000	2.0000000	93		u235t	100.0000000	75cle2	0
93	rb g	u235t	ms	in		2.9955232	3.3	2.9940000	0.0990000	0			0.0000000	79cle1	0
93	rb g	u235t	ms	in		3.1315924	10.9	3.1300000	0.3400000	0			0.0000000	79shm1	0
93	rb g	u235t	ms	cu		3.9620147	10.1	3.9600000	0.4000000	0			0.0000000	79shm1	0
93	rb g	u235t	sp	cu		3.1315924	10.9	3.1300000	0.3400000	0			0.0000000	81shm1	0
93	rb g	u235t	ms	fi	su	0.0000000	0.0	49.1000000	1.8000000	93		u235t	100.0000000	76wol1	0
93	rb g	u235t	sp	fi		3.0416413	5.0	47.9000000	1.2000000	93		u235t	100.0000000	80lan1	0
93	rb g	u235t	cm	in		0.0000000	0.0	2.9020000	2.0000000%	0			1.0000000	88wah1	0
93	rb g	u235t	sp	fi		3.1368910	5.0	49.4000000	0.9000000%	93		u235t	100.0000000	79str1	0
93	rb g	u235t	sp	in		2.9515008	8.5	2.9500000	0.2500000	0			0.0000000	90rud1	0
93	rb g	u235t	sp	cu		3.7218926	7.0	3.7200000	0.2600000	0			0.0000000	90rud1	0
93	kr g	u235t	rc	fc		0.4952986	10.3	0.0780000	0.0080000	93		u235t	1.0000000	62wah1	0
93	kr g	u235t	sp	in	su	0.0000000	0.0	0.0600000	0.0100000	91	kr g	u235t	1.0000000	69ehr1	14
93	kr g	u235t	rc	in		0.5302696	5.7	0.5300000	0.0300000	0			0.0000000	72ehr1	0
93	kr g	u235t	es	fi	cm	0.5270485	13.3	0.0830000	0.0110000	93		u235t	1.0000000	73ami1	0
93	kr g	u235t	es	fc		0.6667481	30.0	0.1050000	0.0000000	93		u235t	1.0000000	74wol1	0
93	kr g	u235t	ms	fi		0.6794481	11.2	10.7000000	1.2000000	93		u235t	100.0000000	76sie1	0
93	kr g	u235t	ms	fi	x4	0.0000000	0.0	13.4000000	0.6000000	93		u235t	100.0000000	76ris1	0
93	kr g	u235t	sp	fi	su	0.0000000	0.0	0.1060000	0.0200000	93		u235t	1.0000000	74sie2	0
93	kr g	u235t	sp	cu		0.4702391	6.4	0.4700000	0.0300000	0			0.0000000	75bri1	0

93	kr g	u235t	sp	in		0.4602340	6.5	0.4600000	0.0300000	0			0.0000000	75bri1	0
93	kr g	u235t	sp	fi	su	0.0000000	0.0	10.8000000	0.5000000	93	u235t		100.0000000	75sie1	0
93	kr g	u235t	sp	in	su	0.0000000	0.0	0.0760000	15.0000000%	93	u235t		1.0000000	77str1	36
93	kr g	u235t	sp	fi		0.4063988	6.3	6.4000000	0.4000000	93	u235t		100.0000000	78str1	0
93	kr g	u235t	ms	fi	su	0.0000000	0.0	7.4000000	1.6000000	93	u235t		100.0000000	75cle2	0
93	kr g	u235t	ms	in		0.4502289	10.4	0.4500000	0.0470000	0			0.0000000	79cle1	0
93	kr g	u235t	ms	fi	su	0.0000000	0.0	10.9000000	1.2000000	93	u235t		100.0000000	76wol1	0
93	kr g	u235t	sp	fi		0.4571987	11.1	7.2000000	0.8000000	93	u235t		100.0000000	80lan1	0
93	kr g	u235t	cm	in		0.0000000	0.0	0.5004000	4.0000000%	0			1.0000000	88wah1	0
93	kr g	u235t	sp	fi		0.4508487	5.0	7.1000000	0.5000000%	93	u235t		100.0000000	79str1	0
93	kr g	u235t	sp	cu		0.5502798	16.4	0.5500000	0.0900000	0			0.0000000	90rud1	0
93	br g	u235t	es	cu		0.0030582	30.0	0.0030650	0.0000000	93	u235t		6.3640000	74mee2	0
93	br g	u235t	sp	fi	su	0.0000000	0.0	0.0180000	0.0150000	93	u235t		1.0000000	74sie2	0
93	br g	u235t	sp	fi	ul	0.0000000	0.0	0.7000000	0.5000000	93	u235t		100.0000000	75sie1	0
93		u235f	cm	cu		0.0000000	0.0	6.0500000	3.7000000%	0			0.0000000	77cro1	0
93	zr g	u235f	ms	cu		6.0241157	2.0	6.0580000	0.1200000	0			0.0000000	80mae1	0
93	zr g	u235f	es	cu		5.6361594	30.0	6.0940000	0.0000000	148	nd g	u235f	1.8100000	63wea1	0
93	zr g	u235f	es	cu	cm	5.8968316	30.0	5.9300000	0.0000000	0			0.0000000	72sid1	0
93	zr g	u235f	ms	cu	cm	6.1603494	6.0	6.1950000	0.0000000	0			0.0000000	80mae3	0
93	zr g	u235f	ms	cu		6.2150417	2.0	6.2500000	0.0370000	0			0.0000000	81mae1	0
93	zr g	u235f	ms	cu		6.1971424	2.0	6.2320000	0.0350000	0			0.0000000	81mae1	0
93	zr g	u235f	es	cu		6.3095104	0.7	6.3450000	0.0450000	0			0.0000000	81mae1	0
93	zr g	u235f	cm	cu		0.0000000	0.0	6.2760000	0.0470000	0			0.0000000	81mae1	0
93	zr g	u235f	ms	cu	su	0.0000000	0.0	6.1800000	0.0600000	148	nd g	u235f	1.6800000	74mae1	0
93	y g	u235f	rc	re		5.7638732	5.1	0.9700000	0.0300000	140	ba g	u235f	1.0000000	73man1	0
93	y g	u235f	cm	cu		0.0000000	0.0	5.9590000	16.0000000%	0			0.0000000	73net2	0
93	y g	u235f	rc	re		5.9823948	5.0	0.9830000	0.0150000	140	ba g	u235t	0.0000000	75raj1	7
93	y g	u235f	rc	cu		5.9955516	5.1	0.9500000	0.0180000	93	y g	u235t	1.0000000	77deb1	0
93	y g	u235f	rc	cu		5.6841989	5.1	5.9500000	0.0800000	140	ba g	u235f	6.2200000	77bla1	0
93	y g	u235f	rc	cu		5.7675587	5.0	5.8000000	0.2800000	0			0.0000000	81mar1	0
93	y g	u235f	rc	cu		5.8669994	15.1	5.9000000	0.8900000	0			0.0000000	77gud1	0
93	y g	u235f	rc	in		0.2088254	95.2	0.2100000	0.2000000	0			0.0000000	81mar1	0
93	sr g	u235f	rc	cu		5.8868875	5.0	5.9200000	0.2000000	0			0.0000000	81mar1	0
93	sr g	u235f	rc	in		2.3169676	10.7	2.3300000	0.2500000	0			0.0000000	81mar1	0
93	rb g	u235f	es	re		6.1219061	10.0	0.9700000	10.0000000%	93	u235t		1.0000000	74mee4	0
93	rb g	u235f	rc	cu		3.5699200	5.0	3.5900000	0.1500000	0			0.0000000	81mar1	0

93 rb g u235f rc in 3.2616539 5.0 3.2800000 0.1400000 0 0.0000000 81mar1 0
93 kr g u235f rc in 0.3082661 6.5 0.3100000 0.0200000 0 0.0000000 81mar1 0
93 kr g u235f rc fc su 0.0000000 0.0 0.0600000 0.0200000 93 u235f 1.0000000 72wol1 0
93 kr g u235f rc fc 0.3731420 33.3 0.0600000 0.0200000 93 u235f 1.0000000 75wol1 0
93 u235he cm cu 0.0000000 0.0 5.4100000 10.0000000% 0 0.0000000 77cro1 0
93 u235he cm cu es 0.0000000 0.0 4.8720000 0.0000000 0 0.0000000 63wea1 0
93 y g u235he rc re 5.3456453 9.3 0.0540000 0.0050000 0 0.0100000 69net1 0
93 y g u235he rc re 4.8456686 10.5 1.0900000 0.1100000 140 ba g u235he 1.0000000 73man1 0
93 y g u235he cm cu 0.0000000 0.0 4.9990000 4.1000000% 0 0.0000000 73net2 0
93 y g u235he ms cu 5.3792855 13.4 5.5000000 0.7200000 90 u235he 4.6500000 72boc1 0
93 y g u235he es cu 5.2417022 10.0 5.2950000 10.0000000% 0 0.0000000 74mee8 0
93 kr g u235he rc fc 0.2004297 11.7 3.9000000 0.4000000 93 y g u235he 100.0000000 65wol1 0
93 kr g u235he ms in 0.2078862 19.0 0.2100000 0.0400000 0 0.0000000 72boc1 0
93 br g u235he es cu 0.0011382 30.5 0.0011530 0.0000000 93 u235he 5.2100000 74mee2 0
93 u238f cm cu 0.0000000 0.0 5.2200000 5.0000000% 0 0.0000000 77cro1 0
93 u238f rc cu 5.3845719 5.0 5.4100000 0.2200000 0 0.0000000 85li 1 0
93 zr g u238f es cu 4.8192416 30.0 4.8420000 0.0000000 0 0.0000000 63wea1 0
93 zr g u238f es cu cm 4.5783791 30.0 4.6000000 0.0000000 0 0.0000000 64wal1 0
93 zr g u238f es cu cm 4.7077681 30.0 4.7300000 0.0000000 0 0.0000000 72sid1 0
93 zr g u238f ms cu 5.2512017 5.8 5.2760000 0.3080000 0 0.0000000 81mae1 0
93 zr g u238f cm cu 0.0000000 0.0 5.2760000 0.3080000 0 0.0000000 81mae1 0
93 zr g u238f ms cu 5.3170079 5.9 5.2600000 0.3100000 148 nd g u238f 2.0800000 74mae1 0
93 y g u238f rc re x1 0.0000000 0.0 0.7100000 0.0200000 140 ba g u238f 1.0000000 73man1 0
93 y g u238f cm cu 0.0000000 0.0 4.8280000 16.0000000% 0 0.0000000 73net2 0
93 y g u238f rc cu 5.6931149 10.5 5.7200000 0.6000000 0 0.0000000 75har1 0
93 y g u238f rc cu 4.5584731 15.0 4.5800000 0.0000000 0 0.0000000 75fly4 0
93 y g u238f es cu 4.6679561 4.1 4.6900000 0.1900000 0 0.0000000 78gin1 0
93 y g u238f rc cu 4.7774390 6.5 4.8000000 0.3100000 0 0.0000000 78nag1 0
93 y g u238f rc cu 4.6342389 5.2 4.7700000 0.0500000 99 mo g u238f 6.3200000 70lyl1 0
93 y g u238f rc cu 4.7606095 5.0 5.0700000 0.0800000 140 ba g u238f 6.1600000 77bla1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

93 y g u238f rc cu 4.4688961 10.0 4.4900000 10.0000000% 0 0.0000000 81nic1 36
93 y g u238f rc cu 4.7644922 7.2 5.0000000 0.3600000 140 ba g u238f 6.0700000 77har1 0

93 y g u238f rc cu 4.5286141 10.3 4.5500000 10.3000000% 0 0.0000000 88afa1 0
93 y g u238f rc cu 5.1357470 10.5 5.1600000 10.5000000% 0 0.0000000 88afa1 0
93 sr g u238f rc cu 4.2001652 12.3 4.2200000 12.3000000% 0 0.0000000 87chu1 0
93 rb g u238f ms in 2.8067454 23.0 2.8200000 0.6500000 0 0.0000000 74bal2 0
93 rb g u238f ms in su 0.0000000 0.0 1.0000000 0.1500000 93 rb g u238f 1.0000000 74bal2 0
93 rb g u238f cm fi 0.0000000 0.0 0.4800000 0.1400000 93 u238f 1.0000000 74wol1 0
93 rb g u238f rc in 2.2792365 27.1 2.2900000 0.6200000 0 0.0000000 74wol4 0
93 kr g u238f rc fc su 0.0000000 0.0 0.2900000 0.0300000 93 u238f 1.0000000 72wol1 0
93 kr g u238f rc fc 1.4182885 10.5 0.2900000 0.0300000 93 u238f 1.0000000 75wol1 0
93 u238he cm cu es 0.0000000 0.0 4.4070000 0.0000000 0 0.0000000 63wea1 0
93 u238he ms cu 5.0608692 15.6 4.5500000 0.7000000 90 u238he 2.8600000 72boc1 0
93 u238he cm cu su 0.0000000 0.0 4.4100000 0.2600000 0 0.0000000 73dar1 0
93 u238he es cu 4.6227293 15.0 4.6350000 15.0000000% 0 0.0000000 74mee9 0
93 u238he cm cu 0.0000000 0.0 4.3500000 3.0000000% 0 0.0000000 77cro1 0
93 y g u238he rc cu 4.2075684 10.4 4.1100000 0.1400000 139 ba g u238he 4.9200000 64jam1 0
93 y g u238he cm cu 0.0000000 0.0 4.3000000 0.0000000 0 0.0000000 69gun2 0
93 y g u238he rc re 4.3883515 9.1 0.0440000 0.0040000 0 0.0100000 69net1 0
93 y g u238he rc cu su 0.0000000 0.0 4.4800000 0.4000000 0 0.0000000 71bla1 0
93 y g u238he rc cu 4.4382191 12.6 4.4500000 0.5600000 0 0.0000000 71com1 0
93 y g u238he rc re 4.4097562 7.4 0.9600000 0.0700000 140 ba g u238he 1.0000000 73man1 0
93 y g u238he cm cu 0.0000000 0.0 4.2600000 4.1000000% 0 0.0000000 73net2 0
93 y g u238he rc cu 4.0891457 9.8 4.1000000 0.4000000 0 0.0000000 75dar1 0
93 y g u238he rc cu 4.3538353 8.2 4.3600000 0.3500000 140 ba g u238he 4.6000000 76raj1 0
93 y g u238he cm cu 0.0000000 0.0 4.5000000 0.0000000 0 0.0000000 60kat1 0
93 y g u238he rc cu 4.7048329 5.4 4.6300000 0.2400000 99 mo g u238he 5.6000000 75ada1 0
93 y g u238he rc cu 4.4736657 8.8 4.4800000 0.3900000 140 ba g u238he 4.6000000 75cav1 0
93 y g u238he rc cu su 0.0000000 0.0 4.4800000 0.3900000 140 ba g u238he 4.6000000 74bla1 0
93 y g u238he rc cu 4.5180073 7.7 4.5300000 0.3500000 0 0.0000000 83li 2 0
93 y g u238he rc cu 4.4337222 6.2 4.4400000 0.2700000 140 ba g u238he 4.6000000 80zhe1 0
93 y g u238he rc cu 4.7673455 5.0 4.7800000 0.1600000 0 0.0000000 85liu1 0
93 sr g u238he rc cu x1 0.0000000 0.0 2.5100000 0.2300000 0 0.0000000 75dar1 0
93 kr g u238he rc fc 0.7408594 8.4 16.4000000 1.3000000 93 y g u238he 100.0000000 65wol1 0
93 kr g u238he rc fc 0.8537953 25.6 18.9000000 4.8000000 93 y g u238he 100.0000000 66gra1 0
93 kr g u238he ms in 0.7280674 12.3 0.7300000 0.0900000 0 0.0000000 72boc1 0
93 kr g u238he rc fc 0.7137686 13.0 0.1580000 0.0200000 93 u238he 1.0000000 77feu1 0
93 pu239t cm cu x3 0.0000000 0.0 3.9400000 0.0000000 0 0.0000000 72sid1 0

93 pu239t cm cu 0.0000000 0.0 3.9200000 0.0000000 0 0.0000000 73lam1 0
93 pu239t cm cu 0.0000000 0.0 3.9200000 0.0500000 0 0.0000000 73wal1 0
93 pu239t cm cu x3 0.0000000 0.0 3.9500000 4.5000000% 0 0.0000000 77cro1 0
93 zr g pu239t ms cu 3.7660672 2.0 3.7610000 0.0560000 0 0.0000000 79mae2 0
93 zr g pu239t ms cu rp 3.7910275 2.3 1.0000000 0.0000000 no. relative values = 5 59fic1
93 zr g pu239t es re cm 3.8199942 1.4 0.2062000 1.0000000% 91 zr g pu239t 0.1344000 81mae2 36
93 zr g pu239t es cu cm 3.7650659 1.0 3.7600000 1.0000000% 0 0.0000000 81mae2 0
93 zr g pu239t ms cu rp 3.8699407 1.8 3.9100000 0.0000000 no. relative values = 4 86chi1
93 zr g pu239t ms cu 3.8206354 1.8 3.9500000 0.0700000 148 nd g pu239t 1.7000000 70lis1 0
93 y g pu239t cm cu 0.0000000 0.0 3.7790000 2.0000000% 0 0.0000000 73net2 0
93 y g pu239t rc cu 3.7951063 8.4 3.7900000 0.3200000 0 0.0000000 80dic1 0
93 y g pu239t sp fi 0.1901337 40.0 0.0500000 40.0000000% 93 pu239t 1.0000000 84sch1 36
93 y g pu239t cm in 0.0000000 0.0 0.1861000 40.0000000% 0 1.0000000 88wah1 0
93 sr g pu239t rc cu 3.6348907 6.9 3.6300000 6.9000000% 0 0.0000000 80ram1 0
93 sr g pu239t rc cu x4 0.0000000 0.0 2.9400000 0.5100000 0 0.0000000 81dic1 0
93 sr g pu239t sp fi 2.2283665 5.0 0.5860000 5.0000000% 93 pu239t 1.0000000 84sch1 36
93 sr g pu239t cm in 0.0000000 0.0 2.2770000 5.0000000% 0 1.0000000 88wah1 0
93 rb g pu239t es fc 1.4678319 30.0 0.3860000 0.0000000 93 pu239t 1.0000000 74wol1 0
93 rb g pu239t rc in 1.9526273 15.4 1.9500000 0.3000000 0 0.0000000 75bal1 0
93 rb g pu239t sp fi 1.3005143 6.0 0.3420000 6.0000000% 93 pu239t 1.0000000 84sch1 36
93 rb g pu239t cm in 0.0000000 0.0 1.3400000 11.0000000% 0 1.0000000 88wah1 0
93 kr g pu239t rc fc 0.0779202 5.2 2.0500000 0.1000000 93 y g pu239t 100.0000000 65wol1 0
93 kr g pu239t ms cu 0.0650876 7.7 0.0650000 0.0050000 0 0.0000000 76bri2 0
93 kr g pu239t ms in 0.0650876 7.7 0.0650000 0.0050000 0 0.0000000 77bri1 0
93 kr g pu239t rc cu 0.0653818 7.9 0.0650000 0.0050000 91 kr g pu239t 0.7110000 77bri1 0
93 kr g pu239t sp fi 0.0836588 91.0 0.0220000 91.0000000% 93 pu239t 1.0000000 84sch1 36
93 kr g pu239t cm in 0.0000000 0.0 0.0716100 9.0000000% 0 1.0000000 88wah1 0
93 pu239f cm cu 0.0000000 0.0 3.6900000 4.0000000% 0 0.0000000 77cro1 0
93 zr g pu239f ms cu 3.8060744 1.4 3.8010000 0.0500000 148 nd g pu239f 1.6540000 77mae1 0
93 zr g pu239f ms cu 3.7441817 2.0 3.7560000 0.0650000 0 0.0000000 77mae1 0
93 zr g pu239f ms cu 3.7432218 1.8 3.9100000 0.0700000 148 nd g pu239f 1.7300000 70lis1 0
93 zr g pu239f es cu cm 3.7880433 30.0 3.8000000 0.0000000 0 0.0000000 72sid1 0
93 zr g pu239f ms cu 3.9176867 0.9 0.2108000 0.0006000 96 zr g pu239f 0.2603000 80mae4 0
93 zr g pu239f ms cu su 0.0000000 0.0 3.8000000 0.0500000 148 nd g pu239f 1.6500000 74mae1 0
93 zr g pu239f es re 3.7856264 10.0 1.0000000 10.0000000% 93 pu239t 1.0000000 74mee4 0
93 zr g pu239f es cu cm 3.7581377 1.0 3.7700000 1.0000000% 0 0.0000000 81mae2 0

93 zr g pu239f es re cm 3.8281560 1.4 0.2054000 1.0000000% 91 zr g pu239f 0.1346000 81mae2 36
93 y g pu239f cm cu 0.0000000 0.0 3.7340000 2.0000000% 0 0.0000000 73net2 0
93 y g pu239f rc re x4 0.0000000 0.0 0.6400000 0.0150000 140 ba g u235t 0.0000000 75raj1 7
93 y g pu239f es fc 3.8129170 5.0 0.9998000 5.0000000% 93 pu239f 1.0000000 89rid1 0
93 pu241t cm cu 0.0000000 0.0 2.9000000 0.0000000 0 0.0000000 72sid1 0
93 pu241t cm cu 0.0000000 0.0 2.9300000 0.0400000 0 0.0000000 73wal1 0
93 pu241t cm cu 0.0000000 0.0 2.9000000 5.0000000% 0 0.0000000 77cro1 0
93 pu241t cm cu 0.0000000 0.0 2.8800000 0.0000000 0 0.0000000 79wal1 0
93 zr g pu241t ms cu 2.9732815 2.0 2.9830000 0.0310000 0 0.0000000 77mae1 0
93 zr g pu241t ms cu 2.9999323 2.8 2.9000000 0.0800000 148 nd g pu241t 1.8616500 70lis1 0
93 zr g pu241t ms cu rp 2.9736265 1.9 2.9800000 0.0000000 no. relative values = 4 86chi1
93 y g pu241t rc cu 2.7609754 10.1 2.7700000 0.2800000 0 0.0000000 79dic1 0
93 y g pu241t rc cu x4 0.0000000 0.0 2.0000000 0.0000000 0 0.0000000 63kir1 0
93 kr g pu241t ms cu 0.1933680 7.7 0.1940000 0.0150000 0 0.0000000 76bri2 0
93 kr g pu241t ms in 0.1923712 10.4 0.1930000 0.0200000 0 0.0000000 77bri1 0
93 kr g pu241t rc cu 0.2029738 8.7 0.1940000 0.0150000 91 kr g pu241t 0.9300000 77bri1 0
93 u233t cm cu 0.0000000 0.0 6.9000000 0.0000000 0 0.0000000 72sid1 0
93 u233t cm cu 0.0000000 0.0 7.0400000 0.0000000 0 0.0000000 73lam1 0
93 u233t cm cu 0.0000000 0.0 7.0500000 0.0900000 0 0.0000000 73wal1 0
93 u233t cm cu 0.0000000 0.0 7.0200000 4.5000000% 0 0.0000000 77cro1 0
93 u233t ms cu 6.8621280 2.0 6.8860000 0.0470000 0 0.0000000 80weh1 0
93 zr g u233t ms cu rp 7.0371839 7.9 7.1000000 0.0000000 no. relative values = 4 54ste1
93 zr g u233t ms cu rp 7.0457364 2.3 21.2000000 0.0000000 no. relative values = 2 59gor1
93 zr g u233t ms cu 7.1193603 4.5 7.0100000 4.0000000% 95 zr g u233t 6.2300000 61bid1 0
93 zr g u233t ms cu 6.9766226 2.7 6.7500000 0.1700000 96 zr g u233t 5.4700000 61gor1 0
93 zr g u233t ms cu 7.0654208 2.0 7.0900000 0.0600000 0 0.0000000 70lis1 0
93 zr g u233t ms cu rp 6.9299501 1.8 6.9700000 0.0000000 no. relative values = 5 86chi1
93 zr g u233t sp fi ul 0.0000000 0.0 1.0200000 0.1880000 93 u233t 100.0000000 83qua1 0
93 zr g u233t sp in ul 0.0000000 0.0 0.0720000 0.0130000 0 0.0000000 88qua1 0
93 y g u233t rc re x4 0.0000000 0.0 5.4000000 0.5000000 140 ba g u233t 5.4000000 68lee1 0
93 y g u233t cm cu 0.0000000 0.0 6.8360000 2.0000000% 0 0.0000000 73net2 0
93 y g u233t ms in 0.5042458 6.1 0.5060000 0.0310000 0 0.0000000 80weh1 0
93 y g u233t sp fi 0.5737698 21.9 8.2500000 1.8030000 93 u233t 100.0000000 83qua1 0
93 y g u233t rc fi 0.4033775 19.0 0.0580000 0.0110000 93 u233t 1.0000000 81pal2 0
93 y g u233t sp in 0.0827123 41.0 0.0830000 0.0340000 0 0.0000000 88qua1 0
93 sr g u233t ms in 4.4295903 2.0 4.4450000 0.0530000 0 0.0000000 80weh1 0

93 sr g u233t sp fi 4.2076450 5.1 60.5000000 2.2220000 93 u233t 100.0000000 83qua1 0
93 sr g u233t sp in 4.2581866 5.0 4.2730000 0.1710000 0 0.0000000 88qua1 0
93 rb g u233t ms in 1.7568881 2.3 1.7630000 0.0410000 0 0.0000000 80weh1 0
93 rb g u233t sp fi 1.9563811 5.1 28.1300000 1.3940000 93 u233t 100.0000000 83qua1 0
93 rb g u233t sp in 1.9801116 5.2 1.9870000 0.1030000 0 0.0000000 88qua1 0
93 kr g u233t rc fc 0.1599323 32.4 2.3000000 0.1000000 93 y g u233t 100.0000000 65wol1 0
93 kr g u233t sp in 0.1464904 5.0 0.1470000 0.0070000 0 0.0000000 75bri1 0
93 kr g u233t sp cu 0.1474869 5.0 0.1480000 0.0070000 0 0.0000000 75bri1 0
93 kr g u233t ms in 0.1714037 11.0 0.1720000 0.0190000 0 0.0000000 80weh1 0
93 kr g u233t sp fi 0.1384002 13.7 1.9900000 0.2720000 93 u233t 100.0000000 83qua1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

93 kr g u233t sp in 0.1395147 13.6 0.1400000 0.0190000 0 0.0000000 88qua1 0
93 br g u233t sp fi 0.0083457 31.7 0.1200000 0.0380000 93 u233t 100.0000000 83qua1 0
93 br g u233t sp in 0.0079723 37.5 0.0080000 0.0030000 0 0.0000000 88qua1 0
93 th232f cm cu es 0.0000000 0.0 6.3000000 0.0000000 0 0.0000000 65eng1 0
93 th232f es cu cm 6.5379587 30.0 6.5500000 0.0000000 0 0.0000000 72sid1 0
93 th232f es cu cm 7.1967453 30.0 7.2100000 0.0000000 0 0.0000000 73lam1 0
93 th232f cm cu 0.0000000 0.0 7.4100000 0.0000000 0 0.0000000 74lam1 0
93 th232f cm cu 0.0000000 0.0 6.5700000 12.9000000% 0 0.0000000 77cro1 0
93 th232f es cu 6.7176278 5.0 6.7300000 5.0000000% 0 0.0000000 74mee0 0
93 y g th232f rc cu 7.7037375 10.4 7.2400000 10.0000000% 141 ce g th232f 7.0000000 67bre1 0
93 y g th232f cm cu 0.0000000 0.0 7.6590000 16.0000000% 0 0.0000000 73net2 0
93 y g th232f rc cu 7.3364880 5.0 7.3500000 0.0700000 0 0.0000000 71swi3 0
93 y g th232f rc cu 5.8743192 5.7 5.5300000 0.2400000 140 ba g th232f 7.4000000 73cha1 0
93 y g th232f rc re 6.5943026 5.0 2.1600000 0.0300000 99 mo g u235t 0.0000000 81ert1 7
93 y g th232f cm cu 0.0000000 0.0 6.8100000 0.4700000 0 0.0000000 81ert1 0
93 sr g th232f rc cu 6.1840551 12.3 6.2700000 0.7500000 140 ba g th232f 7.9700000 85chu1 0
93 kr g th232f rc fc 1.8050396 6.4 0.2700000 0.0100000 93 th232f 1.0000000 89sri1 0
94 zr g u235t ms cu 6.4032560 6.0 6.4000000 0.0000000 0 0.0000000 55gle1 0
94 zr g u235t ms re 6.3880716 1.7 1.0060000 1.5000000% 93 zr g u235t 1.0000000 62far2 0
94 u235t cm cu 0.0000000 0.0 6.5000000 0.0000000 0 0.0000000 72sid1 0
94 u235t cm cu 0.0000000 0.0 6.4500000 0.0000000 0 0.0000000 73lam1 0
94 u235t cm cu 0.0000000 0.0 6.4300000 0.0700000 0 0.0000000 73wal1 0

94		u235t	ms	cu		6.4332713	2.0	6.4300000	0.0490000	0				0.0000000	76dii1	0
94	zr g	u235t	ms	fi		0.0388558	83.3	0.6000000	0.5000000	94		u235t		100.0000000	76sie1	0
94		u235t	sp	cu		6.5513601	5.0	6.6600000	0.1200000	0				1.0171000	76woh2	0
94		u235t	cm	cu		0.0000000	0.0	6.4400000	2.1000000%	0				0.0000000	77cro1	0
94	zr g	u235t	sp	fi	ul	0.0000000	0.0	0.8000000	0.5000000	94		u235t		100.0000000	75sie1	0
94	zr g	u235t	ms	fi	ul	0.0000000	0.0	0.6000000	0.5000000	94		u235t		100.0000000	76sie1	0
94	zr g	u235t	ms	in		0.0040020	99.9	0.0040000	0.0040000	0				0.0000000	79cle1	0
94	zr g	u235t	ms	cu		6.2551807	4.1	6.2520000	0.2540000	0				0.0000000	78mae1	0
94	zr g	u235t	ms	cu	aj	6.3732408	4.1	6.3700000	0.2600000	0				0.0000000	78mae1	0
94	zr g	u235t	ms	cu		6.4272682	4.1	6.4240000	0.2610000	0				0.0000000	78mae1	0
94	zr g	u235t	ms	cu	su	0.0000000	0.0	6.4100000	0.0400000	0				0.0000000	70lis1	0
94		u235t	es	re		6.4983088	2.1	1.0000000	2.0000000%	94		u235f		0.9700000	74mee4	0
94	zr g	u235t	ms	cu	cm	6.2241650	6.0	6.2210000	0.0000000	0				0.0000000	80mae3	0
94	zr g	u235t	ms	fi	su	0.0000000	0.0	0.5000000	0.4000000	94		u235t		100.0000000	76wol1	0
94	zr g	u235t	sp	fi		0.0064760	99.9	0.1000000	0.1000000	94		u235t		100.0000000	80lan1	0
94	zr g	u235t	ms	cu		6.5995776	1.2	6.6100000	0.0600000	93	zr g	u235t		6.3600000	86chi1	0
94	y g	u235t	rc	cu	x4	0.0000000	0.0	5.0000000	1.0000000	93	y g	u235t		6.0000000	51dil1	0
94	y g	u235t	rc	fi		0.3885576	33.3	0.0600000	0.0200000	94		u235t		1.0000000	66nor2	0
94	y g	u235t	ms	fi	su	0.0000000	0.0	6.1000000	1.8000000	94		u235t		100.0000000	75cle1	0
94	y g	u235t	ms	fi		0.4079855	12.7	6.3000000	0.8000000	94		u235t		100.0000000	76sie1	0
94	y g	u235t	sp	fi	su	0.0000000	0.0	0.0550000	0.0200000	94		u235t		1.0000000	74sie2	0
94	y g	u235t	sp	fi	su	0.0000000	0.0	5.9000000	0.8000000	94		u235t		100.0000000	75sie1	0
94	y g	u235t	sp	in	su	0.0000000	0.0	0.1120000	15.0000000%	94		u235t		1.0000000	77str1	36
94	y g	u235t	sp	fi		0.3820816	8.5	5.9000000	0.5000000	94		u235t		100.0000000	78str1	0
94	y g	u235t	ms	fi	su	0.0000000	0.0	3.4000000	1.6000000	94		u235t		100.0000000	75cle2	0
94	y g	u235t	ms	in		0.3731898	16.4	0.3730000	0.0610000	0				0.0000000	79cle1	0
94	y g	u235t	rc	cu		6.3532306	5.0	6.3500000	0.3100000	0				0.0000000	76thi1	0
94	y g	u235t	ms	fi	su	0.0000000	0.0	5.7000000	0.9000000	94		u235t		100.0000000	76wol1	0
94	y g	u235t	sp	fi		0.3626538	16.1	5.6000000	0.9000000	94		u235t		100.0000000	80lan1	0
94	y g	u235t	cm	in		0.0000000	0.0	0.3451000	19.0000000%	0				1.0000000	88wah1	0
94	sr g	u235t	ms	fi	su	0.0000000	0.0	72.0000000	2.0000000	94		u235t		100.0000000	75cle1	0
94	sr g	u235t	ms	fi		4.2223260	2.8	65.2000000	1.8000000	94		u235t		100.0000000	76sie1	0
94	sr g	u235t	ms	fi		4.5525999	2.7	70.3000000	1.8000000	94		u235t		100.0000000	76ris1	0
94	sr g	u235t	sp	fi	su	0.0000000	0.0	0.6530000	0.0200000	94		u235t		1.0000000	74sie2	0
94	sr g	u235t	sp	fi	su	0.0000000	0.0	64.3000000	1.8000000	94		u235t		100.0000000	75sie1	0
94	sr g	u235t	sp	in	su	0.0000000	0.0	0.6570000	15.0000000%	94		u235t		1.0000000	77str1	36

94	sr g	u235t	sp	fi		4.4619365	5.0	68.9000000	0.7000000	94	u235t	100.0000000	78str1	0
94	sr g	u235t	ms	fi	su	0.0000000	0.0	71.9000000	2.9000000	94	u235t	100.0000000	75cle2	0
94	sr g	u235t	ms	in		4.5623199	2.9	4.5600000	0.1300000	0		0.0000000	79cle1	0
94	sr g	u235t	ms	in		5.7729355	27.7	5.7700000	1.6000000	0		0.0000000	79shm1	0
94	sr g	u235t	sp	cu		5.7729355	27.7	5.7700000	1.6000000	0		0.0000000	81shm1	0
94	sr g	u235t	ms	fi	su	0.0000000	0.0	66.6000000	1.8000000	94	u235t	100.0000000	76wol1	0
94	sr g	u235t	sp	fi		4.3971769	5.0	67.9000000	1.4000000	94	u235t	100.0000000	80lan1	0
94	sr g	u235t	cm	in		0.0000000	0.0	4.5900000	3.0000000%	0		1.0000000	88wah1	0
94	sr g	u235t	sp	in		4.7023911	14.9	4.7000000	0.7000000	0		0.0000000	90rud1	0
94	sr g	u235t	sp	cu		5.9030017	13.6	5.9000000	0.8000000	0		0.0000000	90rud1	0
94	rb g	u235t	es	cu	cm	1.6008140	10.0	1.6000000	10.0000000%	0		0.0000000	89rid1	0
94	rb g	u235t	ms	in		1.7308801	6.4	1.7300000	0.1100000	0		0.0000000	72bal1	0
94	rb g	u235t	ms	in		1.5207733	3.3	1.5200000	0.0500000	0		0.0000000	72cha1	0
94	rb g	u235t	es	fi		1.6967015	5.8	0.2620000	0.0150000	94	u235t	1.0000000	72ree1	0
94	rb g	u235t	es	fc		1.8909803	21.2	0.2920000	0.0620000	94	u235t	1.0000000	74wol1	0
94	rb g	u235t	ms	fi	su	0.0000000	0.0	21.9000000	1.0000000	94	u235t	100.0000000	75cle1	0
94	rb g	u235t	ms	fi		1.6060381	4.9	24.8000000	1.2000000	94	u235t	100.0000000	76sie1	0
94	rb g	u235t	ms	fi		1.4441391	2.4	22.3000000	0.5000000	94	u235t	100.0000000	76ris1	0
94	rb g	u235t	sp	re		1.9529194	10.0	0.3500000	0.0350000	91	rb g	u235t	1.0000000	75ree1	36
94	rb g	u235t	sp	fi	su	0.0000000	0.0	0.2650000	0.0150000	94	u235t	1.0000000	74sie2	0
94	rb g	u235t	sp	fi	su	0.0000000	0.0	25.9000000	1.2000000	94	u235t	100.0000000	75sie1	0
94	rb g	u235t	sp	in	su	0.0000000	0.0	0.2140000	15.0000000%	94	u235t	1.0000000	77str1	36
94	rb g	u235t	sp	fi		1.5412785	5.0	23.8000000	0.8000000	94	u235t	100.0000000	78str1	0
94	rb g	u235t	sp	fi		1.6882828	5.0	26.0700000	0.5500000	94	u235t	100.0000000	79bal1	0
94	rb g	u235t	ms	fi	su	0.0000000	0.0	23.2000000	2.0000000	94	u235t	100.0000000	75cle2	0
94	rb g	u235t	ms	in		1.6848567	5.4	1.6840000	0.0910000	0		0.0000000	79cle1	0
94	rb g	u235t	ms	in		2.2611498	15.0	2.2600000	0.3400000	0		0.0000000	79shm1	0
94	rb g	u235t	sp	cu	x4	0.0000000	0.0	2.2600000	0.3400000	0		0.0000000	81shm1	0
94	rb g	u235t	ms	fi	su	0.0000000	0.0	24.3000000	1.2000000	94	u235t	100.0000000	76wol1	0
94	rb g	u235t	sp	fi		1.6254660	5.0	25.1000000	1.2000000	94	u235t	100.0000000	80lan1	0
94	rb g	u235t	cm	in		0.0000000	0.0	1.5180000	2.0000000%	0		1.0000000	88wah1	0
94	rb g	u235t	sp	in		1.2406309	8.9	1.2400000	0.1100000	0		0.0000000	90rud1	0
94	rb g	u235t	sp	cu		1.3106665	9.2	1.3100000	0.1200000	0		0.0000000	90rud1	0
94	rb g	u235t	es	fc		1.6578458	10.0	0.2560000	10.0000000%	94	u235t	1.0000000	89rid1	0
94	rb g	u235t	es	fc		1.5995621	10.0	0.2470000	10.0000000%	94	u235t	1.0000000	88wah1	0
94	kr g	u235t	rc	fc		0.0971394	40.0	0.0150000	0.0060000	94	u235t	1.0000000	62wah1	0

94 kr g u235t ms fi 0.0841875 15.4 1.3000000 0.2000000 94 u235t 100.0000000 76ris1 0
94 kr g u235t cm fi es 0.0000000 0.0 0.0390000 0.0030000 94 u235t 1.0000000 73ami1 0
94 kr g u235t sp fi su 0.0000000 0.0 0.0270000 0.0060000 94 u235t 1.0000000 74sie2 0
94 kr g u235t sp fi su 0.0000000 0.0 3.1000000 0.8000000 94 u235t 100.0000000 75sie1 0
94 kr g u235t sp in su 0.0000000 0.0 0.0170000 15.0000000% 94 u235t 1.0000000 77str1 36
94 kr g u235t sp fi 0.0906634 21.4 1.4000000 0.3000000 94 u235t 100.0000000 78str1 0
94 kr g u235t ms fi ul 0.0000000 0.0 3.1000000 0.8000000 94 u235t 100.0000000 76sie1 0
94 kr g u235t rc in x4 0.0000000 0.0 0.2600000 0.0200000 0 0.0000000 72ehr1 0
94 kr g u235t ms fi ul 0.0000000 0.0 1.5000000 0.6000000 94 u235t 100.0000000 75cle2 0
94 kr g u235t ms in 0.0860438 22.1 0.0860000 0.0190000 0 0.0000000 79cle1 0
94 kr g u235t ms fi su 0.0000000 0.0 2.9000000 1.2000000 94 u235t 100.0000000 76wol1 0
94 kr g u235t sp fi 0.0841875 23.1 1.3000000 0.3000000 94 u235t 100.0000000 80lan1 0
94 kr g u235t cm in 0.0000000 0.0 0.1005000 38.0000000% 0 1.0000000 88wah1 0
94 kr g u235t sp cu 0.1100560 27.3 0.1100000 0.0300000 0 0.0000000 90rud1 0
94 br g u235t es cu 0.0001645 30.0 0.0001630 0.0000000 94 u235t 6.4180000 74mee2 0
94 u235f es cu 5.7295713 30.0 6.1950000 0.0000000 148 nd g u235f 1.8100000 63wea1 0
94 u235f es cu cm 5.9863282 30.0 6.0200000 0.0000000 0 0.0000000 72sid1 0
94 u235f es re 6.2433558 10.0 0.9700000 10.0000000% 94 u235t 1.0000000 74mee4 0
94 u235f cm cu 0.0000000 0.0 6.2200000 3.5000000% 0 0.0000000 77cro1 0
94 zr g u235f ms cu 6.0977018 2.0 6.1320000 0.1200000 0 0.0000000 80mae1 0
94 zr g u235f ms cu cm 6.2229970 6.0 6.2580000 0.0000000 0 0.0000000 80mae3 0
94 zr g u235f ms cu 6.3363594 2.0 6.3720000 0.0350000 0 0.0000000 81mae1 0
94 zr g u235f ms cu 6.2329411 2.0 6.2680000 0.0370000 0 0.0000000 81mae1 0
94 zr g u235f es cu 6.3343705 0.7 6.3700000 0.0450000 0 0.0000000 81mae1 0
94 zr g u235f cm cu 0.0000000 0.0 6.3370000 0.0460000 0 0.0000000 81mae1 0
94 zr g u235f ms cu su 0.0000000 0.0 6.2300000 0.0600000 148 nd g u235f 1.6800000 74mae1 0
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94 y g u235f rc re 5.9343186 5.0 0.9590000 0.0400000 140 ba g u235t 0.0000000 75raj1 7
94 y g u235f rc cu 6.3144824 5.4 6.3500000 0.3400000 0 0.0000000 81mar1 0
94 y g u235f rc in 0.4872593 30.6 0.4900000 0.1500000 0 0.0000000 81mar1 0
94 sr g u235f rc cu 5.6681181 5.0 5.7000000 0.1500000 0 0.0000000 81mar1 0
94 sr g u235f rc in 3.4704793 5.7 3.4900000 0.2000000 0 0.0000000 81mar1 0
94 rb g u235f rc cu 1.8993168 6.8 1.9100000 0.1300000 0 0.0000000 81mar1 0

94	rb g	u235f	rc	in		1.7998761	8.3	1.8100000	0.1500000	0				0.0000000	81mar1	0			
94	kr g	u235f	rc	in		0.0596644	16.7	0.0600000	0.0100000	0				0.0000000	81mar1	0			
94	zr g	u235he	es	cu	cm	4.7846984	30.0	4.8830000	0.0000000	0				0.0000000	63wea1	0			
94		u235he	cm	cu		0.0000000	0.0	5.0900000	20.0000000%	0				0.0000000	77cro1	0			
94		u235he	es	cu		5.1286323	10.0	5.2340000	10.0000000%	0				0.0000000	74mee8	0			
94		u238f	es	cu	cm	4.6687587	30.0	4.7000000	0.0000000	0				0.0000000	64wal1	0			
94		u238f	es	cu	cm	5.0859669	30.0	5.1200000	0.0000000	0				0.0000000	72sid1	0			
94		u238f	cm	cu		0.0000000	0.0	5.0000000	5.0000000%	0				0.0000000	77cro1	0			
94	zr g	u238f	ms	cu		5.0114654	5.9	5.0450000	0.2960000	0				0.0000000	81mae1	0			
94	zr g	u238f	cm	cu		0.0000000	0.0	5.0450000	0.2960000	0				0.0000000	81mae1	0			
94	zr g	u238f	ms	cu		5.0745694	6.0	5.0300000	0.3000000	148	nd g	u238f		2.0800000	74mae1	0			
94		u238f	rc	cu		4.2614840	5.0	4.2900000	0.1500000	0				0.0000000	85li 1	0			
94	y g	u238f	es	cu		5.2071560	30.0	5.2420000	0.0000000	0				0.0000000	63wea1	0			
94	y g	u238f	es	cu		4.6091575	5.4	4.6400000	0.2500000	0				0.0000000	78gin1	0			
94	y g	u238f	rc	cu		4.3707528	6.8	4.4000000	0.3000000	0				0.0000000	78nag1	0			
94	y g	u238f	rc	cu		4.3409522	12.1	4.3700000	12.1000000%	0				0.0000000	88afa1	0			
94	y g	u238f	rc	cu		4.3409522	12.1	4.3700000	12.1000000%	0				0.0000000	88afa1	0			
94	sr g	u238f	es	cu		4.6240578	20.0	4.6550000	20.0000000%	0				0.0000000	89rid1	0			
94	rb g	u238f	ms	in		2.5429835	25.8	2.5600000	0.6600000	0				0.0000000	74bal2	0			
94	rb g	u238f	ms	in	su	0.0000000	0.0	0.9100000	0.1700000	93	rb g	u238f		1.0000000	74bal2	0			
94	rb g	u238f	cm	fi		0.0000000	0.0	0.3600000	0.1200000	94		u238f		1.0000000	74wol1	0			
94	rb g	u238f	rc	in		1.7979688	29.8	1.8100000	0.5400000	0				0.0000000	74wol4	0			
94		u238he	es	cu		4.7994526	30.0	4.8250000	0.0000000	0				0.0000000	63wea1	0			
94		u238he	es	cu	su	0.0000000	0.0	4.7500000	0.0000000	0				0.0000000	73dar1	0			
94		u238he	es	cu		4.9387114	15.0	4.9650000	15.0000000%	0				0.0000000	74mee9	0			
94		u238he	es	cu		4.8740555	13.0	4.9000000	13.0000000%	0				0.0000000	77cro1	0			
94	y g	u238he	rc	cu		4.9051719	12.5	4.8400000	0.6000000	99	mo g	u238he		5.6000000	75ada1	0			
94	y g	u238he	rc	cu		4.5259087	6.8	4.5500000	0.3100000	0				0.0000000	85liu1	0			
94	kr g	u238he	rc	fc	x1	0.0000000	0.0	3.3000000	0.5000000	94	y g	u238he		100.0000000	66gra1	0			
94		pu239t	cm	cu		0.0000000	0.0	4.4500000	0.0000000	0				0.0000000	72sid1	0			
94		pu239t	cm	cu		0.0000000	0.0	4.4800000	0.0000000	0				0.0000000	73lam1	0			
94		pu239t	cm	cu		0.0000000	0.0	4.4500000	0.0600000	0				0.0000000	73wal1	0			
94		pu239t	cm	cu		0.0000000	0.0	4.4900000	4.5000000%	0				0.0000000	77cro1	0			
94	zr g	pu239t	ms	cu		4.2390617	2.0	4.2310000	0.0630000	0				0.0000000	79mae2	0			
94	zr g	pu239t	ms	cu		4.5091059	1.8	4.5000000	0.0800000	85	rb g	pu239t		0.5740000	70lis1	0			
94	zr g	pu239t	ms	cu		4.2956314	1.7	1.1290000	0.0170000	93	zr g	pu239t		1.0000000	59fic1	0			

94	zr	g	pu239t	es	cu	cm	4.2480788	1.0	4.2400000	1.0000000%	0				0.0000000	81mae2	0		
94	zr	g	pu239t	sp	fi		0.0303101	99.9	0.0070000	0.0200000	94		pu239t		1.0000000	84sch1	36		
94	zr	g	pu239t	es	re	cm	4.3022055	1.4	0.2321000	1.0000000%	91	zr	g	pu239t	0.1344000	81mae2	36		
94	zr	g	pu239t	ms	cu		4.3789383	1.0	4.5000000	0.0300000	93	zr	g	pu239t	3.9100000	86chi1	0		
94	y	g	pu239t	rc	cu		4.3482694	6.0	4.3400000	0.2600000	0				0.0000000	80dic1	0		
94	y	g	pu239t	sp	fi		0.6451722	14.0	0.1490000	14.0000000%	94		pu239t		1.0000000	84sch1	36		
94	y	g	pu239t	cm	in		0.0000000	0.0	0.6224000	14.0000000%	0				1.0000000	88wah1	0		
94	sr	g	pu239t	rc	cu		3.1860591	6.9	3.1800000	0.2200000	0				0.0000000	81dic1	0		
94	sr	g	pu239t	sp	fi		3.0829703	5.1	0.7120000	5.0000000%	94		pu239t		1.0000000	84sch1	36		
94	sr	g	pu239t	cm	in		0.0000000	0.0	3.1230000	5.0000000%	0				1.0000000	88wah1	0		
94	rb	g	pu239t	es	fc		0.7101224	30.0	0.1640000	0.0000000	94		pu239t		1.0000000	74wol1	0		
94	rb	g	pu239t	rc	in		0.9718482	20.6	0.9700000	0.2000000	0				0.0000000	75bal1	0		
94	rb	g	pu239t	sp	fi		0.5542418	16.0	0.1280000	16.0000000%	94		pu239t		1.0000000	84sch1	36		
94	rb	g	pu239t	cm	in		0.0000000	0.0	0.6134000	25.0000000%	0				1.0000000	88wah1	0		
94	kr	g	pu239t	es	cu		0.0243764	30.0	0.0243300	0.0000000	0				0.0000000	74mee2	0		
94	kr	g	pu239t	sp	fi		0.0216501	99.9	0.0050000	0.0200000	94		pu239t		1.0000000	84sch1	36		
94			pu239f	cm	cu		0.0000000	0.0	4.2600000	4.5000000%	0				0.0000000	77cro1	0		
94	zr	g	pu239f	ms	cu		4.2867152	1.4	4.2810000	0.0560000	148	nd	g	pu239f	1.6540000	77mae1	0		
94	zr	g	pu239f	ms	cu		4.2416116	2.0	4.2550000	0.0740000	0				0.0000000	77mae1	0		
94	zr	g	pu239f	ms	cu		4.2027478	1.9	4.3900000	0.0800000	148	nd	g	pu239f	1.7300000	70lis1	0		
94	zr	g	pu239f	ms	cu		4.1815916	0.9	0.2250000	0.0005000	96	zr	g	pu239f	0.2603000	80mae4	0		
94	zr	g	pu239f	ms	cu	su	0.0000000	0.0	4.2800000	0.0500000	148	nd	g	pu239f	1.6500000	74mae1	0		
94			pu239f	es	re		4.2651348	10.0	0.9900000	10.0000000%	94		pu239t		1.0000000	74mee4	0		
94	zr	g	pu239f	es	cu	cm	4.2366274	1.0	4.2500000	1.0000000%	0				0.0000000	81mae2	0		
94	zr	g	pu239f	es	re	cm	4.3183240	1.4	0.2317000	1.0000000%	91	zr	g	pu239f	0.1346000	81mae2	36		
94			pu239f	cm	cu	x3	0.0000000	0.0	4.5500000	0.0000000	0				0.0000000	72sid1	0		
94	y	g	pu239f	rc	cu	x1	0.0000000	0.0	4.4000000	0.2000000	138	cs	g	pu239f	5.0000000	69moo1	0		
94	sr	g	pu239f	rc	cu		3.4436120	8.2	2.6000000	0.2000000	137	xe	g	pu239f	4.2000000	69moo1	0		
94			pu241t	cm	cu		0.0000000	0.0	3.4300000	0.0000000	0				0.0000000	72sid1	0		
94			pu241t	cm	cu		0.0000000	0.0	3.3400000	5.0000000%	0				0.0000000	77cro1	0		
94			pu241t	cm	cu		0.0000000	0.0	3.3700000	0.0500000	0				0.0000000	73wal1	0		
94	zr	g	pu241t	ms	cu		3.4128447	2.0	3.4240000	0.0340000	0				0.0000000	77mae1	0		
94	zr	g	pu241t	ms	cu		3.4447499	2.8	3.3300000	0.0900000	148	nd	g	pu241t	1.8616500	70lis1	0		
94	zr	g	pu241t	ms	cu		3.3568303	1.7	3.3700000	0.0300000	93	zr	g	pu241t	2.9800000	86chi1	0		
94	nb	g	u233t	sp	fi	ul	0.0000000	0.0	0.2006000	0.0454000	94		u233t		100.0000000	83qua1	40		
94	nb	g	u233t	sp	in	ul	0.0000000	0.0	0.0135700	0.0029000	0				0.0000000	88qua1	18		

94	nb m	u233t	sp	fi	ul	0.0000000	0.0	0.1394000	0.0316000	94	u233t	100.0000000	83qua1	40
94	nb m	u233t	sp	in	ul	0.0000000	0.0	0.0094300	0.0021000	0		0.0000000	88qua1	18
94	zr g	u233t	ms	cu		6.6709008	5.2	6.8200000	5.0000000%	93	zr g	u233t	7.1000000	54ste1	0
94		u233t	cm	cu		0.0000000	0.0	6.7000000	0.0000000	0		0.0000000	72sid1	0
94		u233t	cm	cu		0.0000000	0.0	6.8100000	0.0000000	0		0.0000000	73lam1	0
94		u233t	cm	cu		0.0000000	0.0	6.7500000	0.0900000	0		0.0000000	73wal1	0
94	zr g	u233t	ms	cu	su	0.0000000	0.0	20.0000000	0.1000000	93	zr g	u233t	21.2000000	59gor1	0
94	zr g	u233t	ms	cu		6.7744363	4.5	6.6800000	4.0000000%	95	zr g	u233t	6.2300000	61bid1	0
94	zr g	u233t	ms	cu		6.6363026	4.0	6.4300000	0.2500000	96	zr g	u233t	5.4700000	61gor1	0
94		u233t	cm	cu		0.0000000	0.0	6.8000000	4.1000000%	0		0.0000000	77cro1	0
94		u233t	ms	cu		6.8124360	2.0	6.8460000	0.0470000	0		0.0000000	80weh1	0
94	zr g	u233t	ms	in		0.0895588	18.9	0.0900000	0.0170000	0		0.0000000	80weh1	0
94	zr g	u233t	ms	cu		6.8761223	2.0	6.9100000	0.0500000	0		0.0000000	70lis1	0
94	zr g	u233t	ms	cu		6.8750328	1.7	6.9000000	0.0700000	93	zr g	u233t	6.9700000	86chi1	0
94	zr g	u233t	sp	fi		0.1210006	21.9	1.7800000	0.3890000	94	u233t	100.0000000	83qua1	0
94	zr g	u233t	sp	in		0.1214019	22.1	0.1220000	0.0270000	0		0.0000000	88qua1	0
94	y g	u233t	ms	in		1.2916363	3.1	1.2980000	0.0400000	0		0.0000000	80weh1	0
94	y g	u233t	sp	fi		1.3269282	7.5	19.5200000	1.4410000	94	u233t	100.0000000	83qua1	0
94	y g	u233t	sp	in		1.3314402	7.5	1.3380000	0.1010000	0		0.0000000	88qua1	0
94	sr g	u233t	ms	in		4.8282120	2.0	4.8520000	0.0580000	0		0.0000000	80weh1	0
94	sr g	u233t	sp	fi		4.7312602	5.2	69.6000000	2.2780000	94	u233t	100.0000000	83qua1	0
94	sr g	u233t	sp	in		4.7476092	5.0	4.7710000	0.1730000	0		0.0000000	88qua1	0
94	rb g	u233t	ms	in		0.6020339	6.0	0.6050000	0.0360000	0		0.0000000	80weh1	0
94	rb g	u233t	sp	fi		0.5696546	8.1	8.3800000	0.6720000	94	u233t	100.0000000	83qua1	0
94	rb g	u233t	sp	in		0.5711858	8.2	0.5740000	0.0470000	0		0.0000000	88qua1	0
94	kr g	u233t	sp	fi		0.0258316	25.0	0.3800000	0.0950000	94	u233t	100.0000000	83qua1	0
94	kr g	u233t	sp	in		0.0258725	26.9	0.0260000	0.0070000	0		0.0000000	88qua1	0
94		th232f	es	cu	cm	5.6895213	30.0	5.7000000	0.0000000	0		0.0000000	65eng1	0
94		th232f	es	cu	x3	0.0000000	0.0	6.1000000	0.0000000	0		0.0000000	72sid1	0
94		th232f	es	cu	x3	0.0000000	0.0	6.2300000	0.0000000	0		0.0000000	73lam1	0
94		th232f	cm	cu		0.0000000	0.0	6.7000000	20.0000000%	0		0.0000000	77cro1	0
94		th232f	es	cu		5.6695580	5.0	5.6800000	5.0000000%	0		0.0000000	74mee0	0
94	y g	th232f	rc	cu		5.4799073	8.0	5.4900000	0.4400000	0		0.0000000	86ric1	0
94	sr g	th232f	rc	cu		5.4147468	5.7	5.4900000	0.2500000	140	ba g	th232f	7.9700000	85chu1	0
95		u235t	es	cu		6.4032560	30.0	6.4000000	0.0000000	0		0.0000000	72sid1	0
95		u235t	cm	cu		0.0000000	0.0	6.5400000	0.0000000	0		0.0000000	73lam1	0

```
 95        u235t    cm    cu        0.0000000  0.0   6.5300000  0.1000000     0                    0.0000000   73wal1      0
 95        u235t    ms    cu        6.6133629  2.0   6.6100000  0.0420000     0                    0.0000000   76dii1      0
 95        u235t    sp    cu        6.5338130  5.0   6.5700000  0.1200000     0                    1.0060500   76woh2      0
 95        u235t    cm    cu        0.0000000  0.0   6.5100000  1.6000000%    0                    0.0000000   77cro1      0
 95 mo g   u235t    ms    cu        6.5903512  2.0   6.5870000  0.0700000     0                    0.0000000   78mae1      0
 95 mo g   u235t    ms    cu        6.5133120  2.0   6.5100000  0.0700000     0                    0.0000000   78mae1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value      no.   treatment

 95 mo g   u235t    ms    cu        6.5103105  2.0   6.5070000  0.0730000     0                    0.0000000   78mae1      0
 95 mo g   u235t    ms    cu        6.4532815  2.0   6.4500000  0.0300000     0                    0.0000000   70lis1      0
 95 mo g   u235t    ms    cu    cm  6.5383247  6.0   6.5350000  0.0000000     0                    0.0000000   80mae3      0
 95 mo g   u235t    ms    cu    rp  6.4352646  1.9   6.5200000  0.0000000  no. relative values =    3            86chi1
 95 mo g   u235t    ms    cu    x4  0.0000000  0.0   6.2700000  0.0000000     0                    0.0000000   55gle1      0
 95 nb g   u235t    rc    fi        0.0001054 99.9   0.0000162  0.0000162    95          u235t       1.0000000   62wah1     40
 95 nb m   u235t    rc    fi        0.0000247 99.9   0.0000038  0.0000038    95          u235t       1.0000000   62wah1     40
 95 zr g   u235t    cm    cu    x3  0.0000000  0.0   6.0000000  0.3000000     0                    0.0000000   50cor1      0
 95 zr g   u235t    rc    cu        6.4032560 60.0   6.4000000  0.0000000     0                    0.0000000   51wat1      0
 95 zr g   u235t    rc    cu        6.6433781 10.0   6.6400000  0.1300000     0                    0.0000000   58rob1      0
 95 zr g   u235t    ms    re        6.3944215  1.7   1.0070000  1.5000000%   93 zr g      u235t       1.0000000   62far2      0
 95 zr g   u235t    rc    fi        0.0260261 50.0   0.0040000  0.0020000    95 zr g      u235t       1.0000000   70nie1      0
 95 zr g   u235t    rc    cu        6.4032560  5.0   6.4000000  0.1600000     0                    0.0000000   71mcl1      0
 95 zr g   u235t    rc    cu        6.7060196  5.0   6.5200000  0.0700000   144 ce g      u235t       5.3500000   72deb1      0
 95 zr g   u235t    es    fi    x3  0.0000000  0.0   0.0006000  0.0003000    95          u235t       1.0000000   73ami1      0
 95 zr g   u235t    cm    cu        0.0000000  0.0   6.5000000  5.0000000%    0                    0.0000000   73net2      0
 95 zr g   u235t    rc    cu        6.5333222  5.0   6.5300000  3.0000000%    0                    0.0000000   74lar1      0
 95 zr g   u235t    rc    cu        6.4451750 10.1   6.3900000  0.0500000    99 mo g      u235t       6.0600000   61mar1      0
 95 zr g   u235t    rc    cu        6.4653477 10.1   6.4100000  0.0700000    99 mo g      u235t       6.0600000   61mar1      0
 95 zr g   u235t    ms    fi        0.1041063 50.0   1.6000000  0.8000000    95          u235t     100.0000000   76sie1      0
 95 zr g   u235t    sp    fi    ul  0.0000000  0.0   1.6000000  0.8000000    95          u235t     100.0000000   75sie1      0
 95 zr g   u235t    bm    cu    su  0.0000000  0.0   6.5200000  2.6000000%    0                    0.0000000   76gil1      0
 95 zr g   u235t    bm    cu        6.5233171  2.6   6.5200000  2.6000000%    0                    0.0000000   77gil1      0
 95 zr g   u235t    sp    in    su  0.0000000  0.0   0.0250000 15.0000000%   95          u235t       1.0000000   77str1     36
 95 zr g   u235t    sp    fi        0.1301329 20.0   2.0000000  0.4000000    95          u235t     100.0000000   78str1      0
 95 zr g   u235t    ms    fi    su  0.0000000  0.0   1.9000000  1.3000000    95          u235t     100.0000000   75cle2      0
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95	zr	g	u235t	ms	in		0.1380702	22.5	0.1380000	0.0310000	0		0.0000000	79cle1	0
95	zr	g	u235t	rc	cu	rp	6.4417918	15.8	6.4500000	0.0000000	no. relative values =		1	73lar4	
95	zr	g	u235t	rc	cu		6.5533323	5.3	6.5500000	0.3500000	0		0.0000000	74bla1	0
95	zr	g	u235t	rc	cu		6.5933527	5.0	6.5900000	0.2100000	0		0.0000000	76thi1	0
95	zr	g	u235t	rc	cu		6.4832967	5.0	6.4800000	3.6000000%	0		0.0000000	81lau1	0
95	zr	g	u235t	ms	fi	su	0.0000000	0.0	0.9000000	0.7000000	95	u235t	100.0000000	76wol1	0
95	zr	g	u235t	sp	fi		0.1366395	23.8	2.1000000	0.5000000	95	u235t	100.0000000	80lan1	0
95	zr	g	u235t	cm	in		0.0000000	0.0	0.0287000	45.0000000%	0		1.0000000	88wah1	0
95	zr	g	u235t	rc	cu		6.3732408	5.0	6.3700000	0.2200000	0		0.0000000	80wan1	0
95	zr	g	u235t	rc	cu		6.3932509	5.0	6.3900000	0.2100000	0		0.0000000	80chi1	0
95	zr	g	u235t	rc	cu	x4	0.0000000	0.0	6.0000000	0.0000000	0		0.0000000	49sak1	0
95	y	g	u235t	es	in		1.1886044	10.0	1.1880000	10.0000000%	0		0.0000000	88wah1	0
95	y	g	u235t	rc	fi		0.8458636	46.2	0.1300000	0.0600000	95	u235t	1.0000000	66nor2	0
95	y	g	u235t	ms	fi		1.0020231	9.8	15.4000000	1.5000000	95	u235t	100.0000000	76sie1	0
95	y	g	u235t	ms	fi		0.6701843	25.3	10.3000000	2.6000000	95	u235t	100.0000000	76ris1	0
95	y	g	u235t	sp	fi	su	0.0000000	0.0	0.1160000	0.0150000	95	u235t	1.0000000	74sie2	0
95	y	g	u235t	sp	fi	su	0.0000000	0.0	14.8000000	1.5000000	95	u235t	100.0000000	75sie1	0
95	y	g	u235t	sp	in	su	0.0000000	0.0	0.1920000	15.0000000%	95	u235t	1.0000000	77str1	36
95	y	g	u235t	sp	fi		1.0996227	10.0	16.9000000	10.0000000%	95	u235t	100.0000000	78str1	36
95	y	g	u235t	ms	fi	su	0.0000000	0.0	19.2000000	2.3000000	95	u235t	100.0000000	75cle2	0
95	y	g	u235t	ms	in	su	0.0000000	0.0	1.5550000	0.0790000	0		0.0000000	79cle1	0
95	y	g	u235t	ms	fi	su	0.0000000	0.0	13.5000000	1.5000000	95	u235t	100.0000000	76wol1	0
95	y	g	u235t	sp	fi	x4	0.0000000	0.0	23.5000000	1.0000000	95	u235t	100.0000000	80lan1	0
95	y	g	u235t	cm	in		0.0000000	0.0	1.1880000	10.0000000%	0		1.0000000	88wah1	0
95	y	g	u235t	es	in		1.3006614	20.0	1.3000000	20.0000000%	0		0.0000000	89rid1	36
95	y	g	u235t	es	fi		1.0873252	20.0	0.1671100	20.0000000%	95	u235t	1.0000000	91jam2	36
95	y	g	u235t	es	fi		1.2948220	20.0	0.1990000	20.0000000%	95	u235t	1.0000000	90rid1	36
95	sr	g	u235t	ms	fi		4.4505441	3.0	68.4000000	2.0000000	95	u235t	100.0000000	76sie1	0
95	sr	g	u235t	ms	fi		4.9645689	2.1	76.3000000	1.5000000	95	u235t	100.0000000	76ris1	0
95	sr	g	u235t	sp	fi	su	0.0000000	0.0	0.7280000	0.0230000	95	u235t	1.0000000	74sie2	0
95	sr	g	u235t	sp	fi	su	0.0000000	0.0	69.8000000	2.0000000	95	u235t	100.0000000	75sie1	0
95	sr	g	u235t	sp	in	su	0.0000000	0.0	0.6700000	15.0000000%	95	u235t	1.0000000	77str1	36
95	sr	g	u235t	sp	fi		4.6522501	5.0	71.5000000	0.7000000	95	u235t	100.0000000	78str1	0
95	sr	g	u235t	ms	fi	su	0.0000000	0.0	69.9000000	2.9000000	95	u235t	100.0000000	75cle2	0
95	sr	g	u235t	ms	in		4.3822283	2.5	4.3800000	0.1100000	0		0.0000000	79cle1	0
95	sr	g	u235t	ms	in		4.4522640	2.9	4.4500000	0.1300000	0		0.0000000	79shm1	0

95	sr	g	u235t	sp	cu		4.4522640	5.0	4.4500000	0.1300000	0		0.0000000	81shm1	0
95	sr	g	u235t	ms	fi	su	0.0000000	0.0	71.6000000	2.0000000	95	u235t	100.0000000	76wol1	0
95	sr	g	u235t	sp	fi		4.3073979	5.0	66.2000000	1.1000000	95	u235t	100.0000000	80lan1	0
95	sr	g	u235t	rc	cu		5.4727829	5.0	5.4700000	0.2000000	0		0.0000000	81mar1	0
95	sr	g	u235t	cm	in		0.0000000	0.0	4.6910000	2.0000000%	0		1.0000000	88wah1	0
95	sr	g	u235t	sp	in		4.5122945	5.0	4.5100000	0.0900000	0		0.0000000	90rud1	0
95	sr	g	u235t	sp	cu		5.1926404	5.0	5.1900000	0.2500000	0		0.0000000	90rud1	0
95	sr	g	u235t	es	cu		5.0825845	2.0	5.0800000	2.0000000%	0		0.0000000	89rid1	0
95	rb	g	u235t	cm	in		0.0000000	0.0	0.6827000	6.0000000%	0		1.0000000	88wah1	0
95	rb	g	u235t	es	fi		0.7938105	10.0	0.1220000	10.0000000%	95	u235t	1.0000000	72ree1	36
95	rb	g	u235t	es	in		0.7653892	10.0	0.7650000	10.0000000%	0		0.0000000	89rid1	36
95	rb	g	u235t	ms	fi		0.8718902	10.0	13.4000000	10.0000000%	95	u235t	100.0000000	76ris1	36
95	rb	g	u235t	ms	fi		0.8914101	11.0	13.7000000	1.5000000	95	u235t	100.0000000	76sie1	0
95	rb	g	u235t	ms	fi	su	0.0000000	0.0	9.0000000	1.4000000	95	u235t	100.0000000	75cle2	0
95	rb	g	u235t	ms	fi	su	0.0000000	0.0	13.2000000	1.5000000	95	u235t	100.0000000	76wol1	0
95	rb	g	u235t	ms	in		0.6403256	10.0	0.6400000	10.0000000%	0		0.0000000	72cha1	36
95	rb	g	u235t	ms	in		0.5432763	10.0	0.5430000	10.0000000%	0		0.0000000	79cle1	36
95	rb	g	u235t	ms	in		0.8004070	10.0	0.8000000	10.0000000%	0		0.0000000	72bal1	36
95	rb	g	u235t	ms	in		0.8904528	11.2	0.8900000	0.1000000	0		0.0000000	79shm1	0
95	rb	g	u235t	sp	cu		0.7103612	7.0	0.7100000	0.0500000	0		0.0000000	90rud1	0
95	rb	g	u235t	sp	cu		0.8904528	11.2	0.8900000	0.1000000	0		0.0000000	81shm1	0
95	rb	g	u235t	sp	fi		0.5335448	10.0	8.2000000	10.0000000%	95	u235t	100.0000000	80lan1	36
95	rb	g	u235t	sp	fi		0.6246378	10.0	9.6000000	10.0000000%	95	u235t	100.0000000	78str1	36
95	rb	g	u235t	sp	fi		0.8894582	10.0	13.6700000	10.0000000%	95	u235t	100.0000000	79bal1	36
95	rb	g	u235t	sp	fi	su	0.0000000	0.0	0.1300000	0.0150000	95	u235t	1.0000000	74sie2	0
95	rb	g	u235t	sp	fi	su	0.0000000	0.0	12.9000000	1.5000000	95	u235t	100.0000000	75sie1	0
95	rb	g	u235t	sp	in		0.7103612	10.0	0.7100000	10.0000000%	0		0.0000000	90rud1	36
95	rb	g	u235t	sp	in		0.7905020	10.0	0.7901000	10.0000000%	0		0.0000000	75ree1	36
95	rb	g	u235t	sp	in	su	0.0000000	0.0	0.1130000	15.0000000%	95	u235t	1.0000000	77str1	36
95	rb	g	u235t	sp	re		0.8369655	6.7	0.1500000	0.0100000	91	rb g	u235t	1.0000000	75ree1	0
95	kr	g	u235t	ms	fi	ul	0.0000000	0.0	0.9000000	0.5000000	95	u235t	100.0000000	76sie1	0
95	kr	g	u235t	sp	fi	su	0.0000000	0.0	0.0260000	0.0080000	95	u235t	1.0000000	74sie2	0
95	kr	g	u235t	sp	fi	ul	0.0000000	0.0	0.9000000	0.5000000	95	u235t	100.0000000	75sie1	0
95	kr	g	u235t	ms	fi	ul	0.0000000	0.0	0.8000000	0.5000000	95	u235t	100.0000000	76wol1	0
95	kr	g	u235t	rc	fc		0.0071573	27.3	0.0011000	0.0003000	95	u235t	1.0000000	59wol1	0
95			u235f	cm	cu		0.0000000	0.0	6.3800000	0.0000000	0		0.0000000	73lar3	0

95 u235f es re 6.2832770 10.0 0.9700000 10.0000000% 95 u235t 1.0000000 74mee4 0
95 u235f cm cu 0.0000000 0.0 6.4300000 1.8000000% 0 0.0000000 77cro1 0
95 mo g u235f ms cu 6.3069565 2.0 6.3320000 0.0450000 0 0.0000000 80mae1 0
95 mo g u235f ms cu 6.1992696 2.1 6.4700000 0.1300000 148 nd g u235f 1.7500000 70lis1 0
95 mo g u235f ms cu 6.4742920 2.0 6.5000000 2.0000000% 0 0.0000000 72lar1 0
95 mo g u235f ms cu cm 6.3786717 6.0 6.4040000 0.0000000 0 0.0000000 80mae3 0
95 u235f rc cu 6.2389972 5.1 6.5200000 0.0700000 140 ba g u235f 6.2200000 77bla1 0
95 mo g u235f ms cu 6.4782762 2.0 6.5040000 0.0430000 0 0.0000000 81mae1 0
95 mo g u235f ms cu 6.4583553 2.0 6.4840000 0.0420000 0 0.0000000 81mae1 0
95 mo g u235f es cu 6.4882366 0.6 6.5140000 0.0390000 0 0.0000000 81mae1 0
95 mo g u235f cm cu 0.0000000 0.0 6.2380000 0.0520000 0 0.0000000 81mae1 0
95 mo g u235f ms cu 6.4076685 1.1 6.4200000 0.0600000 148 nd g u235f 1.6800000 74mae1 0
95 mo g u235f cm cu x3 0.0000000 0.0 6.2710000 0.0000000 148 nd g u235f 1.8100000 63wea1 0
95 u235f cm cu x3 0.0000000 0.0 6.2500000 0.0000000 148 nd g u235f 1.7500000 72sid1 0
95 nb g u235f rc cu 6.3086347 5.1 6.1900000 3.0000000% 140 ba g u235f 5.8400000 72sch1 0
95 nb g u235f rc cu 6.2832770 5.2 0.9700000 0.0400000 95 nb g u235t 1.0000000 79yur1 0
95 zr g u235f rc cu 6.4591345 5.1 6.2400000 0.2000000 140 ba g u235f 5.7500000 70bow1 0
95 zr g u235f rc cu 6.3864478 8.3 6.3200000 0.5200000 140 ba g u235f 5.8900000 72cun2 0
95 zr g u235f rc cu 6.4976043 12.5 6.4300000 0.8000000 140 ba g u235f 5.8900000 72cun2 0
95 zr g u235f rc cu su 0.0000000 0.0 6.3700000 0.2000000 0 0.0000000 73dud1 0
95 zr g u235f rc cu su 0.0000000 0.0 6.4000000 7.0000000% 0 0.0000000 73dud2 0
95 zr g u235f rc re 6.6066387 5.1 1.1100000 0.0500000 140 ba g u235f 1.0000000 73man1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

95 zr g u235f rc cu 6.2950039 5.0 6.3200000 0.2900000 0 0.0000000 73mce1 0
95 zr g u235f es cu cm 6.3547666 3.9 6.3800000 3.9000000% 0 0.0000000 73net2 0
95 zr g u235f rc cu 6.3846480 5.0 6.4100000 3.5000000% 0 0.0000000 74lar1 0
95 zr g u235f rc cu 6.4045689 5.0 6.4300000 2.1000000% 0 0.0000000 75dud1 0
95 zr g u235f rc cu rp 6.3719269 11.2 1.0000000 0.0000000 no. relative values = 2 75dud1
95 zr g u235f rc cu 6.4344502 6.3 6.4600000 6.3000000% 0 0.0000000 75dud2 0
95 zr g u235f rc cu 6.1690783 5.1 6.2500000 0.1700000 140 ba g u235f 6.0300000 75zim1 0
95 zr g u235f rc re 6.3087472 5.0 1.0100000 0.0250000 140 ba g u235t 0.0000000 75raj1 7
95 zr g u235f rc cu x4 0.0000000 0.0 7.7000000 0.6000000 99 mo g u235f 6.4000000 60pet1 0
95 zr g u235f rc cu su 0.0000000 0.0 0.9900000 0.0110000 95 zr g u235t 1.0000000 76deb1 0

95 zr g u235f rc cu 6.1687215 5.0 0.9790000 3.9000000% 99 mo g u235t 0.0000000 76for1 7
95 zr g u235f rc cu 6.0742058 5.0 0.9640000 3.9000000% 99 mo g u235t 0.0000000 76for1 7
95 zr g u235f rc cu 6.0679048 5.0 0.9630000 3.9000000% 99 mo g u235t 0.0000000 76for1 7
95 zr g u235f rc cu 6.0363996 5.0 0.9580000 3.9000000% 99 mo g u235t 0.0000000 76for1 7
95 zr g u235f rc cu 6.0237975 5.0 0.9560000 3.9000000% 99 mo g u235t 0.0000000 76for1 7
95 zr g u235f rc cu 6.2506351 5.0 0.9920000 3.9000000% 99 mo g u235t 0.0000000 76for1 7
95 zr g u235f bm cu su 0.0000000 0.0 6.4700000 2.2000000% 0 0.0000000 76gil1 0
95 zr g u235f rc cu 6.4127001 5.2 0.9900000 0.0100000 95 zr g u235t 1.0000000 77deb1 0
95 zr g u235f bm cu 6.4244898 2.2 6.4500000 2.2000000% 0 0.0000000 77gil1 0
95 zr g u235f rc re 6.4447652 5.0 1.0400000 3.8000000% 137 cs g u235f 1.0000000 77kel1 0
95 zr g u235f rc re x4 0.0000000 0.0 2.1420000 0.0210000 140 ba g u235f 1.7390000 72rid1 0
95 zr g u235f rc re x4 0.0000000 0.0 1.8310000 0.0180000 140 ba g u235f 1.4230000 72rid2 0
95 zr g u235f rc cu 6.2183759 5.4 0.9600000 0.0500000 95 zr g u235t 1.0000000 79yur1 0
95 zr g u235f rc cu rp 6.4638225 7.9 6.4100000 0.0000000 no. relative values = 4 73lar4
95 zr g u235f rc cu 6.2651226 5.0 6.2900000 4.0000000% 0 0.0000000 81lau1 0
95 zr g u235f rc cu 5.8691485 10.1 5.8500000 0.5500000 99 mo g u235f 5.9000000 60bon1 0
95 zr g u235f rc cu 6.2850435 5.0 6.3100000 0.2200000 0 0.0000000 80wan1 0
95 zr g u235f rc cu 6.3746875 5.0 6.4000000 0.2300000 0 0.0000000 82chi1 0
95 zr g u235f rc cu 6.3746875 5.0 6.4000000 0.2300000 0 0.0000000 82wan1 0
95 zr g u235f rc cu 6.5340547 5.0 6.5600000 0.2800000 0 0.0000000 80chi1 0
95 zr g u235f rc cu 6.5838570 5.0 6.6100000 3.2000000% 0 0.0000000 86dho1 0
95 zr g u235f rc cu 6.6834615 5.0 6.7100000 3.2000000% 0 0.0000000 82gar1 0
95 zr g u235f rc cu su 0.0000000 0.0 6.4100000 3.5000000% 0 0.0000000 72lar1 0
95 y g u235f rc cu 6.3746875 5.0 6.4000000 0.2800000 0 0.0000000 81mar1 0
95 sr g u235f rc cu 5.1794336 5.8 5.2000000 0.3000000 0 0.0000000 81mar1 0
95 u235he cm cu es 0.0000000 0.0 4.8380000 0.0000000 0 0.0000000 63wea1 0
95 u235he es cu 5.0235892 10.0 5.0490000 10.0000000% 0 0.0000000 74mee8 0
95 u235he cm cu x3 0.0000000 0.0 4.8400000 7.6000000% 0 0.0000000 77cro1 0
95 zr g u235he rc re 4.9576405 10.4 0.9700000 0.0400000 99 mo g u235he 1.0000000 58pro1 0
95 zr g u235he rc re 5.3317600 10.0 0.9800000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
95 zr g u235he es cu cm 4.7758424 30.0 4.8000000 0.0000000 0 0.0000000 69gun2 0
95 zr g u235he rc re 4.8703041 8.7 1.0900000 0.0900000 140 ba g u235he 1.0000000 73man1 0
95 zr g u235he cm cu 0.0000000 0.0 5.1000000 3.9000000% 0 0.0000000 73net2 0
95 zr g u235he cm cu 0.0000000 0.0 5.0000000 0.0000000 0 0.0000000 60kat1 0
95 zr g u235he rc cu 5.3031750 5.0 5.3300000 3.8000000% 0 0.0000000 81lau1 0
95 zr g u235he rc cu 5.2434769 5.0 5.2700000 0.2100000 0 0.0000000 84chi1 0

95 zr g u235he rc cu 5.0004377 10.4 4.3000000 0.4000000 97 zr g u235he 4.4000000 60bon1 0
95 u238f cm cu es 0.0000000 0.0 4.8000000 0.0000000 0 0.0000000 64wal1 0
95 u238f es cu 5.3873095 30.0 5.4000000 0.0000000 0 0.0000000 72sid1 0
95 u238f cm cu 0.0000000 0.0 5.4400000 0.0000000 0 0.0000000 73lar3 0
95 u238f cm cu 0.0000000 0.0 5.2800000 4.3000000% 0 0.0000000 77cro1 0
95 u238f rc cu 4.8942053 5.0 5.2000000 0.0600000 140 ba g u238f 6.1600000 77bla1 0
95 mo g u238f ms cu 4.8924751 2.1 4.9040000 0.1020000 0 0.0000000 81mae1 0
95 mo g u238f ms cu 4.9663012 9.8 4.9780000 0.4900000 0 0.0000000 81mae1 0
95 mo g u238f ms cu 5.0900098 2.0 5.1020000 0.0890000 0 0.0000000 81mae1 0
95 mo g u238f cm cu 0.0000000 0.0 4.9950000 0.0720000 0 0.0000000 81mae1 0
95 mo g u238f ms cu 5.0053305 1.8 4.9400000 0.0800000 148 nd g u238f 2.0800000 74mae1 0
95 u238f rc cu 5.4072625 5.0 5.4200000 0.1600000 0 0.0000000 85li 1 0
95 u238f rc cu 5.6666514 5.0 5.6800000 0.1600000 0 0.0000000 85li 1 0
95 nb g u238f rc cu 5.4332383 5.2 5.4600000 0.1600000 95 nb g u235t 6.5200000 74yur1 0
95 nb g u238f rc cu x4 0.0000000 0.0 8.5000000 15.3000000% 0 0.0000000 87chu1 0
95 zr g u238f rc cu x4 0.0000000 0.0 7.3000000 0.0000000 140 ba g u238f 6.1000000 51eng3 0
95 zr g u238f rc cu x4 0.0000000 0.0 6.6000000 0.0000000 140 ba g u238f 6.4000000 52eng1 0
95 zr g u238f rc cu 4.7806017 20.0 4.7000000 0.7000000 140 ba g u238f 5.7000000 54kel1 0
95 zr g u238f rc cu x4 0.0000000 0.0 7.2400000 1.3100000 140 ba g u238f 6.0300000 72cun2 0
95 zr g u238f rc cu su 0.0000000 0.0 5.2900000 0.1600000 0 0.0000000 73dud1 0
95 zr g u238f rc cu su 0.0000000 0.0 5.4100000 7.0000000% 0 0.0000000 73dud2 0
95 zr g u238f rc re 5.2759534 5.0 0.9100000 0.0200000 140 ba g u238f 1.0000000 73man1 0
95 zr g u238f rc cu 5.0082025 7.0 5.0200000 0.3500000 0 0.0000000 73mce1 0
95 zr g u238f cm cu 0.0000000 0.0 5.5790000 8.0000000% 0 0.0000000 73net2 0
95 zr g u238f rc cu 5.4272155 5.0 5.4400000 3.0000000% 0 0.0000000 74lar1 0
95 zr g u238f rc cu 5.1778030 5.0 5.1900000 2.5000000% 0 0.0000000 75dud1 0
95 zr g u238f rc cu 5.3972860 6.3 5.4100000 6.3000000% 0 0.0000000 75dud2 0
95 zr g u238f rc cu x4 0.0000000 0.0 6.6700000 0.8000000 0 0.0000000 75har1 0
95 zr g u238f cm cu 0.0000000 0.0 5.7000000 0.0000000 0 0.0000000 60kat1 0
95 zr g u238f rc cu x4 0.0000000 0.0 6.5000000 0.6000000 99 mo g u238f 6.6000000 60pet1 0
95 zr g u238f rc cu 5.0979910 15.0 5.1100000 0.0000000 0 0.0000000 75fly4 0
95 zr g u238f rc cu 4.9464035 5.0 0.7550000 3.9000000% 99 mo g u235t 0.0000000 76for1 7
95 zr g u238f rc cu 5.0381249 5.0 0.7690000 3.9000000% 99 mo g u235t 0.0000000 76for1 7
95 zr g u238f rc cu 5.2608769 5.0 0.8030000 3.9000000% 99 mo g u235t 0.0000000 76for1 7
95 zr g u238f rc cu 4.6253787 5.0 0.7060000 3.9000000% 99 mo g u235t 0.0000000 76for1 7
95 zr g u238f bm cu su 0.0000000 0.0 5.2100000 2.6000000% 0 0.0000000 76gil1 0

95	zr g	u238f	bm	cu		5.1778030	2.6	5.1900000	2.6000000%	0			0.0000000	77gil1	0
95	zr g	u238f	rc	re		5.1809592	5.1	0.8580000	3.1000000%	137	cs g	u238f	1.0000000	77kel1	0
95	zr g	u238f	rc	cu		5.0790215	5.0	5.3000000	0.0900000	140	ba g	u238f	6.0500000	78deb1	0
95	zr g	u238f	rc	cu		4.9448587	5.0	5.1600000	0.1300000	140	ba g	u238f	6.0500000	78deb1	0
95	zr g	u238f	es	cu		5.3673565	2.6	5.3800000	0.1400000	0			0.0000000	78gin1	0
95	zr g	u238f	rc	cu		5.1279205	5.0	5.1400000	0.1900000	0			0.0000000	78nag1	0
95	zr g	u238f	rc	re		5.2933139	5.0	3.2320000	0.0320000	140	ba g	u238f	3.5400000	72rid1	0
95	zr g	u238f	rc	re		5.3714457	5.0	2.8350000	0.0280000	140	ba g	u238f	3.0600000	72rid2	0
95	zr g	u238f	rc	cu		5.0680615	6.1	5.0800000	0.3100000	0			0.0000000	85chi1	0
95	zr g	u238f	rc	cu		5.2077325	6.3	5.2200000	0.3300000	0			0.0000000	84chi3	0
95	zr g	u238f	rc	cu		5.2775680	5.0	5.2900000	4.1000000%	0			0.0000000	82gar1	0
95	zr g	u238f	rc	cu	su	0.0000000	0.0	5.4700000	3.8000000%	0			0.0000000	72lar1	0
95	zr g	u238f	rc	cu		5.3174740	10.7	5.3300000	10.7000000%	0			0.0000000	88afa1	0
95	zr g	u238f	rc	cu		5.3573800	10.6	5.3700000	10.6000000%	0			0.0000000	88afa1	0
95	zr g	u238f	rc	cu	x4	0.0000000	0.0	5.0000000	0.5000000	99	mo g	u238f	7.0000000	60bon1	0
95	rb g	u238f	ms	in		1.6860283	25.4	1.6900000	0.4300000	0			0.0000000	74bal2	0
95	rb g	u238f	ms	in	su	0.0000000	0.0	0.6000000	0.1100000	93	rb g	u238f	1.0000000	74bal2	0
95	rb g	u238f	cm	fi		0.0000000	0.0	0.2480000	0.0770000	95		u238f	1.0000000	74wol1	0
95	rb g	u238f	rc	in		1.3468274	31.1	1.3500000	0.4200000	0			0.0000000	74wol4	0
95		u238he	es	cu		5.1633162	30.0	5.1730000	0.0000000	0			0.0000000	63wea1	0
95		u238he	cm	cu	su	0.0000000	0.0	5.1100000	0.1600000	0			0.0000000	73dar1	0
95		u238he	es	cu		5.1303780	15.0	5.1400000	15.0000000%	0			0.0000000	74mee9	0
95		u238he	cm	cu		0.0000000	0.0	4.9700000	4.0000000%	0			0.0000000	77cro1	0
95	nb g	u238he	rc	cu		5.0605090	9.7	5.0700000	0.4900000	0			0.0000000	75dar1	0
95	nb g	u238he	rc	cu		5.0605090	9.7	5.0700000	0.4900000	0			0.0000000	75dar1	0
95	zr g	u238he	rc	re		5.2962893	10.1	0.9300000	0.0400000	99	mo g	u238he	1.0000000	58pro1	0
95	zr g	u238he	cm	cu		0.0000000	0.0	5.1000000	0.0000000	0			0.0000000	69gun2	0
95	zr g	u238he	rc	cu	su	0.0000000	0.0	4.5800000	0.2000000	0			0.0000000	71bla1	0
95	zr g	u238he	rc	cu		5.3699287	17.1	5.3800000	0.9200000	0			0.0000000	71com1	0
95	zr g	u238he	rc	cu		4.8908273	5.0	4.9000000	0.2000000	0			0.0000000	72pri1	0
95	zr g	u238he	rc	cu	su	0.0000000	0.0	5.2900000	0.6100000	0			0.0000000	73dar2	0
95	zr g	u238he	rc	cu	su	0.0000000	0.0	5.4700000	0.3200000	0			0.0000000	73dar4	0
95	zr g	u238he	rc	re		5.1946860	5.2	1.1300000	0.0300000	140	ba g	u238he	1.0000000	73man1	0
95	zr g	u238he	cm	cu		0.0000000	0.0	4.9000000	3.9000000%	0			0.0000000	73net2	0
95	zr g	u238he	rc	cu	su	0.0000000	0.0	5.4700000	0.3200000	140	ba g	u238he	4.4800000	74dar1	0
95	zr g	u238he	rc	cu		4.6313140	5.0	4.6400000	0.0900000	0			0.0000000	75dar1	0

95 zr g u238he rc cu 4.7169908 5.9 4.7200000 0.2700000 140 ba g u238he 4.6000000 76raj1 0
95 zr g u238he cm cu 0.0000000 0.0 5.2000000 0.0000000 0 0.0000000 60kat1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

95 zr g u238he rc cu x4 0.0000000 0.0 6.1000000 0.6000000 99 mo g u238he 5.7000000 65mo 1 0
95 zr g u238he rc cu 5.2983232 5.4 5.2100000 0.2700000 99 mo g u238he 5.6000000 75ada1 0
95 zr g u238he rc cu 4.7169908 7.8 4.7200000 0.3600000 140 ba g u238he 4.6000000 75cav1 0
95 zr g u238he rc cu su 0.0000000 0.0 4.7200000 0.3600000 140 ba g u238he 4.6000000 74bla1 0
95 zr g u238he rc cu 4.9606962 5.0 4.9700000 4.2000000% 0 0.0000000 81lau1 0
95 zr g u238he rc cu x4 0.0000000 0.0 4.6000000 0.4000000 99 mo g u238he 6.5000000 60bon1 0
95 zr g u238he rc cu 4.9507149 5.0 4.9600000 0.2200000 0 0.0000000 80chi2 0
95 zr g u238he rc cu 4.6870099 5.2 4.6900000 0.1700000 140 ba g u238he 4.6000000 80zhe1 0
95 zr g u238he rc cu 5.0847632 11.1 5.0000000 0.5500000 99 mo g u238he 5.6000000 80li 1 0
95 zr g u238he rc cu 5.0405465 5.0 5.0500000 0.1900000 0 0.0000000 85liu1 0
95 zr g u238he rc cu 4.6013701 5.0 4.6100000 0.1300000 0 0.0000000 75dar1 0
95 zr g u238he rc cu 4.6213327 5.0 4.6300000 0.1300000 0 0.0000000 75dar1 0
95 kr g u238he rc fc 0.0732446 99.9 0.0150000 0.0200000 95 u238he 1.0000000 77feu1 0
95 pu239t es cu 5.2099080 30.0 5.2000000 0.0000000 0 0.0000000 72sid1 0
95 mo g pu239t cm cu 0.0000000 0.0 5.0700000 0.0000000 0 0.0000000 73lam1 0
95 pu239t cm cu 0.0000000 0.0 4.9800000 0.0800000 0 0.0000000 73wal1 0
95 pu239t cm cu 0.0000000 0.0 4.9800000 2.9000000% 0 0.0000000 77cro1 0
95 mo g pu239t ms cu 4.8255415 3.4 0.7110000 0.0220000 100 mo g pu239t 1.0000000 59fic1 0
95 mo g pu239t es cu cm 4.8191649 1.0 4.8100000 1.0000000% 0 0.0000000 81mae2 0
95 mo g pu239t ms cu rp 4.5331660 2.6 4.9500000 0.0000000 no. relative values = 3 86chi1
95 nb g pu239t rc fi 0.0005865 99.9 0.0001215 0.0001215 95 pu239t 1.0000000 59tro1 40
95 nb g pu239t cm fi 0.0000000 0.0 0.0001215 0.0001215 95 pu239t 1.0000000 62wah1 40
95 nb m pu239t rc fi 0.0001376 99.9 0.0000285 0.0000285 95 pu239t 1.0000000 59tro1 40
95 nb m pu239t cm fi 0.0000000 0.0 0.0000285 0.0000285 95 pu239t 1.0000000 62wah1 40
95 zr g pu239t rc cu x4 0.0000000 0.0 5.6000000 0.0000000 140 ba g pu239t 5.3600000 51ste3 0
95 zr g pu239t rc cu 5.0696413 6.5 5.0600000 0.3300000 0 0.0000000 65mar1 0
95 zr g pu239t rc cu 5.1841552 5.0 5.3500000 0.1800000 99 mo g u235t 6.2000000 71ram1 31
95 zr g pu239t cm cu 0.0000000 0.0 5.0700000 0.0000000 0 0.0000000 73lam1 0
95 zr g pu239t cm cu 0.0000000 0.0 4.8950000 2.0000000% 0 0.0000000 73net2 0
95 zr g pu239t rc cu 4.7440222 5.0 4.8300000 3.0000000% 137 cs g pu239t 6.7400000 74lar1 0

95 zr g pu239t rc cu 4.7089553 13.0 4.7000000 0.6100000 0 0.0000000 80dic1 0
95 zr g pu239t rc cu rp 4.9270002 7.9 4.8600000 0.0000000 no. relative values = 4 73lar4
95 zr g pu239t rc cu 4.8698344 5.0 4.8600000 0.1100000 85 rb g pu239t 0.5740000 70lis1 0
95 zr g pu239t ms cu 4.8168905 1.9 1.2660000 0.0220000 93 zr g pu239t 1.0000000 59fic1 0
95 zr g pu239t rc cu 4.8976677 5.0 0.8700000 0.0200000 140 ba g u235t 0.0000000 86chi1 7
95 zr g pu239t sp fi 0.1303403 74.0 0.0270000 74.0000000% 95 pu239t 1.0000000 84sch1 36
95 zr g pu239t rc cu 5.2199271 5.0 5.2100000 0.1600000 0 0.0000000 84jai1 0
95 zr g pu239t cm in 0.0000000 0.0 0.1324000 74.0000000% 0 1.0000000 88wah1 0
95 y g pu239t sp fi 1.7426984 6.1 0.3610000 6.0000000% 95 pu239t 1.0000000 84sch1 36
95 y g pu239t cm in 0.0000000 0.0 1.6800000 6.0000000% 0 1.0000000 88wah1 0
95 sr g pu239t sp fi 2.7130096 5.1 0.5620000 5.0000000% 95 pu239t 1.0000000 84sch1 36
95 sr g pu239t cm in 0.0000000 0.0 2.7470000 5.0000000% 0 1.0000000 88wah1 0
95 rb g pu239t es fc 0.2283369 30.0 0.0473000 0.0000000 95 pu239t 1.0000000 74wol1 0
95 rb g pu239t rc in 0.7514290 24.0 0.7500000 0.1800000 0 0.0000000 75bal1 0
95 rb g pu239t sp fi 0.2413710 40.0 0.0500000 40.0000000% 95 pu239t 1.0000000 84sch1 36
95 rb g pu239t cm in 0.0000000 0.0 0.3520000 61.0000000% 0 1.0000000 88wah1 0
95 kr g pu239t rc fc 0.0011584 25.0 0.0240000 0.0060000 95 zr g pu239t 100.0000000 65wol1 0
95 kr g pu239t cm in 0.0000000 0.0 0.0012470 27.0000000% 0 1.0000000 88wah1 0
95 pu239f es cu 4.5461993 30.0 4.7000000 0.0000000 148 nd g pu239f 1.7100000 72sid1 0
95 pu239f cm cu 0.0000000 0.0 4.7700000 0.0000000 0 0.0000000 73lar3 0
95 pu239f cm cu 0.0000000 0.0 4.7100000 3.3000000% 0 0.0000000 77cro1 0
95 mo g pu239f ms cu su 0.0000000 0.0 4.7240000 0.0460000 148 nd g pu239f 1.6540000 77mae1 0
95 mo g pu239f ms cu su 0.0000000 0.0 4.8360000 0.0640000 0 0.0000000 77mae1 0
95 mo g pu239f ms cu su 0.0000000 0.0 4.7800000 0.0900000 148 nd g pu239f 1.7300000 70lis1 0
95 mo g pu239f ms cu su 0.0000000 0.0 0.2034000 0.0001000 97 mo g pu239f 0.2412000 80mae4 0
95 mo g pu239f ms cu su 0.0000000 0.0 4.7100000 0.0600000 148 nd g pu239f 1.6500000 74mae1 0
95 pu239f es re 4.6531597 2.2 0.9700000 2.0000000% 95 pu239t 1.0000000 74mee4 0
95 mo g pu239f ms cu 4.7089523 2.0 4.7300000 1.0000000% 0 0.0000000 81mae2 0
95 pu239f es re 4.6506783 1.4 1.0000000 0.1000000% 95 zr g pu239f 0.9999600 89rid1 0
95 nb g pu239f rc cu 4.5572182 5.2 0.9500000 0.0300000 95 nb g pu239t 1.0000000 79yur1 36
95 zr g pu239f rc cu x4 0.0000000 0.0 5.6200000 0.3700000 140 ba g pu239f 5.3600000 72cun2 0
95 zr g pu239f rc cu x4 0.0000000 0.0 5.5400000 0.3500000 140 ba g pu239f 5.3600000 72cun2 0
95 zr g pu239f rc cu su 0.0000000 0.0 4.6600000 0.1700000 0 0.0000000 73dud1 0
95 zr g pu239f rc cu 4.5197978 5.7 4.5400000 0.2600000 0 0.0000000 73mce1 0
95 zr g pu239f es cu 4.5038690 5.0 4.5240000 5.0000000% 0 0.0000000 73net2 0
95 zr g pu239f rc cu 4.7487743 5.0 4.7700000 3.5000000% 0 0.0000000 74lar1 0

95 zr g pu239f rc cu 4.6193528 5.0 4.6400000 2.5000000% 0 0.0000000 75dud1 0
95 zr g pu239f rc cu 4.3306432 5.0 4.3500000 3.2000000% 0 0.0000000 75dud2 0
95 zr g pu239f rc re x4 0.0000000 0.0 1.0570000 0.0360000 140 ba g u235t 0.0000000 75raj1 7
95 zr g pu239f rc cu x4 0.0000000 0.0 5.3000000 0.5000000 99 mo g pu239f 5.5000000 60pet1 0
95 zr g pu239f rc cu 4.3921092 5.0 0.6930000 3.9000000% 99 mo g u235t 0.0000000 76for1 7
95 zr g pu239f rc cu 4.5695682 5.0 0.7210000 3.9000000% 99 mo g u235t 0.0000000 76for1 7
95 zr g pu239f rc cu 4.7470271 5.0 0.7490000 3.9000000% 99 mo g u235t 0.0000000 76for1 7
95 zr g pu239f rc cu 4.6139329 5.0 0.7280000 3.9000000% 99 mo g u235t 0.0000000 76for1 7
95 zr g pu239f bm cu su 0.0000000 0.0 4.8000000 2.3000000% 0 0.0000000 76gil1 0
95 zr g pu239f bm cu 4.7786408 5.0 4.8000000 5.0000000% 0 0.0000000 77gil1 36
95 zr g pu239f rc re 4.5625553 5.0 0.6960000 3.1000000% 137 cs g pu239f 1.0000000 77kel1 0
95 zr g pu239f rc re 5.1343239 5.2 0.9650000 0.0090000 140 ba g pu239f 0.9960000 72rid1 0
95 zr g pu239f rc re 5.2057120 5.2 0.9460000 0.0090000 140 ba g pu239f 0.9630000 72rid2 0
95 zr g pu239f rc cu 4.7004502 5.2 0.9800000 0.0300000 95 zr g pu239t 1.0000000 79yur1 0
95 zr g pu239f rc cu rp 4.6925159 9.2 4.7700000 0.0000000 no. relative values = 3 73lar4
95 zr g pu239f rc cu 4.4600648 5.0 4.4800000 3.5000000% 0 0.0000000 81lau1 0
95 zr g pu239f rc cu 5.0872614 5.0 5.1100000 4.2000000% 0 0.0000000 82gar1 0
95 zr g pu239f rc cu su 0.0000000 0.0 4.7700000 3.5000000% 140 ba g pu239f 5.2500000 72lar1 0
95 y g pu239f rc cu ge 5.1750214 12.1 4.4000000 0.4000000 138 cs g pu239f 5.0000000 69moo1 0
95 pu241t rc cu 4.0556263 15.1 4.3700000 0.0000000 131 pu241t 3.3300000 73chi1 0
95 pu241t cm cu 0.0000000 0.0 3.9800000 0.0900000 0 0.0000000 73wal1 0
95 pu241t cm cu 0.0000000 0.0 4.0200000 5.5000000% 0 0.0000000 77cro1 0
95 pu241t cm cu x3 0.0000000 0.0 4.4700000 0.0000000 0 0.0000000 72sid1 0
95 pu241t cm cu 0.0000000 0.0 3.9400000 0.0000000 0 0.0000000 79wal1 0
95 mo g pu241t ms cu 3.9161995 2.0 3.9290000 0.0300000 0 0.0000000 77mae1 0
95 mo g pu241t ms cu rp 3.7961358 3.7 3.9700000 0.0000000 no. relative values = 3 86chi1
95 zr g pu241t rc cu 3.8643975 5.0 4.1700000 0.1600000 137 cs g pu239t 5.2000000 69cro2 25
95 zr g pu241t rc cu 4.1065772 5.0 4.1200000 0.1000000 0 0.0000000 73sko2 0
95 zr g pu241t rc cu 4.0667075 5.0 4.0800000 0.1200000 0 0.0000000 73sko2 0
95 zr g pu241t rc cu 4.0550809 5.0 3.9200000 0.0900000 148 nd g pu241t 1.8616500 70lis1 0
95 zr g pu241t rc cu 3.9809354 5.0 0.6600000 0.0200000 140 ba g u235t 0.0000000 86chi1 7
95 zr g pu241t rc cu x4 0.0000000 0.0 2.4000000 0.0000000 0 0.0000000 63kir1 0
95 mo g u233t ms cu rp 6.1721998 9.1 6.1000000 0.0000000 no. relative values = 3 54ste1
95 u233t es cu 6.2283329 30.0 6.2500000 0.0000000 0 0.0000000 72sid1 0
95 mo g u233t cm cu 0.0000000 0.0 6.2100000 0.0000000 0 0.0000000 73lam1 0
95 u233t cm cu 0.0000000 0.0 6.1900000 0.1000000 0 0.0000000 73wal1 0

95 mo g u233t ms cu rp 6.2235906 7.3 6.2700000 0.0000000 no. relative values = 3 61bid1
95 u233t cm cu 0.0000000 0.0 6.2200000 5.5000000% 0 0.0000000 77cro1 0
95 u233t ms cu 6.3927609 2.0 6.4150000 0.0450000 0 0.0000000 80weh1 0
95 mo g u233t ms cu 6.3778129 2.0 6.4000000 0.0500000 0 0.0000000 70lis1 0
95 mo g u233t ms cu rp 6.2708713 2.0 6.3500000 0.0000000 no. relative values = 3 86chi1
95 nb g u233t rc cu 6.3136647 12.7 5.1600000 0.6400000 140 ba g u233t 5.2100000 60san1 0
95 nb g u233t sp fi ul 0.0000000 0.0 0.4050000 0.1296000 95 u233t 100.0000000 83qua1 40
95 nb g u233t sp in ul 0.0000000 0.0 0.0267300 0.0081000 0 0.0000000 88qua1 18
95 nb m u233t sp fi ul 0.0000000 0.0 0.0950000 0.0304000 95 u233t 100.0000000 83qua1 40
95 nb m u233t sp in ul 0.0000000 0.0 0.0062700 0.0019000 0 0.0000000 88qua1 18
95 zr g u233t rc cu x4 0.0000000 0.0 5.9000000 0.0000000 99 mo g u233t 5.1000000 47ste1 0
95 zr g u233t rc cu 6.4364062 5.0 6.0700000 0.1000000 99 mo g u235t 6.2000000 66gor1 24
95 zr g u233t rc cu 6.1352051 5.7 6.0200000 0.3000000 99 mo g u233t 4.8000000 67gan1 0
95 zr g u233t cm cu 0.0000000 0.0 6.2100000 0.0000000 0 0.0000000 73lam1 0
95 zr g u233t cm cu 0.0000000 0.0 6.1970000 2.0000000% 0 0.0000000 73net2 0
95 zr g u233t rc cu 6.1301280 11.5 5.0100000 0.5600000 140 ba g u233t 5.2100000 60san1 0
95 zr g u233t ms cu rp 6.2075880 5.7 6.2300000 0.0000000 no. relative values = 5 61bid1
95 zr g u233t ms in 0.3258664 8.0 0.3270000 0.0260000 0 0.0000000 80weh1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

95 zr g u233t rc cu 6.2887099 5.0 0.9400000 0.0200000 140 ba g u235t 0.0000000 86chi1 7
95 zr g u233t ms cu 6.4159786 1.8 6.4300000 0.0700000 93 zr g u233t 6.9700000 86chi1 0
95 zr g u233t sp fi 0.3739468 10.9 5.9100000 0.6420000 95 u233t 100.0000000 83qua1 0
95 zr g u233t rc fi 0.2151245 17.8 0.0340000 0.0060000 95 zr g u233t 1.0000000 70nie1 0
95 zr g u233t sp in 0.3826688 10.9 0.3840000 0.0420000 0 0.0000000 88qua1 0
95 y g u233t ms in 2.6149033 16.8 2.6240000 0.4400000 0 0.0000000 80weh1 0
95 y g u233t sp fi 2.4809566 5.3 39.2100000 2.0320000 95 u233t 100.0000000 83qua1 0
95 y g u233t sp in 2.5381702 5.4 2.5470000 0.1380000 0 0.0000000 88qua1 0
95 sr g u233t ms in 3.2257782 2.0 3.2370000 0.0470000 0 0.0000000 80weh1 0
95 sr g u233t sp fi 3.2326466 5.1 51.0900000 2.1440000 95 u233t 100.0000000 83qua1 0
95 sr g u233t sp in 3.3064974 5.0 3.3180000 0.1490000 0 0.0000000 88qua1 0
95 rb g u233t ms in 0.2272096 10.1 0.2280000 0.0230000 0 0.0000000 80weh1 0
95 rb g u233t sp fi 0.1993117 12.0 3.1500000 0.3770000 95 u233t 100.0000000 83qua1 0
95 rb g u233t sp in 0.2032928 12.3 0.2040000 0.0250000 0 0.0000000 88qua1 0

95	kr g	u233t	rc	fc		0.0003164	99.9	0.0050000	0.0050000	95	zr g	u233t	100.0000000	65wol1	0
95	kr g	u233t	sp	fi	ul	0.0000000	0.0	0.1400000	0.0390000	95		u233t	100.0000000	83qua1	0
95	kr g	u233t	sp	in	ul	0.0000000	0.0	0.0090000	0.0030000	0			0.0000000	88qua1	0
95		th232f	cm	cu	es	0.0000000	0.0	5.1500000	0.0000000	0			0.0000000	65eng1	0
95		th232f	es	cu		5.6348158	30.0	5.6400000	0.0000000	0			0.0000000	72sid1	0
95		th232f	es	cu	cm	5.2951283	30.0	5.3000000	0.0000000	0			0.0000000	73lam1	0
95		th232f	cm	cu		0.0000000	0.0	5.3300000	0.0000000	0			0.0000000	74lam1	0
95		th232f	es	cu		5.6348158	5.0	5.6400000	5.0000000%	0			0.0000000	74mee0	0
95		th232f	es	cu	cm	5.7247331	5.7	5.7300000	5.7000000%	0			0.0000000	77cro1	0
95	nb g	th232f	rc	cu		5.7047514	5.0	5.7100000	0.2300000	0			0.0000000	86ric1	0
95	zr g	th232f	rc	re		5.6673333	10.0	1.8100000	0.1100000	99	mo g	u235t	0.0000000	63iye1	7
95	zr g	th232f	rc	cu		5.1492090	10.4	5.0000000	0.5000000	140	ba g	th232f	7.6400000	70kob1	0
95	zr g	th232f	es	cu	cm	5.6338167	8.0	5.6390000	8.0000000%	0			0.0000000	73net2	0
95	zr g	th232f	es	cu	cm	5.6348158	30.0	5.6400000	0.0000000	0			0.0000000	79zij1	0
95	zr g	th232f	rc	cu		5.5423928	6.4	0.9500000	5.0000000%	137	cs g	th232f	1.0000000	79mar1	36
95	zr g	th232f	rc	cu		5.9507796	6.4	1.0200000	5.0000000%	137	cs g	th232f	1.0000000	73fud1	36
95	zr g	th232f	rc	cu		5.8053018	7.5	5.4600000	0.3800000	140	ba g	th232f	7.4000000	73cha1	0
95	zr g	th232f	rc	cu	x4	0.0000000	0.0	6.6300000	0.3700000	144	ce g	th232f	7.8000000	73fud1	0
95	zr g	th232f	rc	re		5.5107771	5.0	1.7600000	0.0200000	99	mo g	u235t	0.0000000	81ert1	7
95	zr g	th232f	cm	cu		0.0000000	0.0	5.6700000	0.1600000	0			0.0000000	81ert1	0
95	sr g	th232f	rc	cu	x1	0.0000000	0.0	3.0000000	0.3100000	140	ba g	th232f	7.9700000	85chu1	0
96	nb g	u235t	rc	in		0.0005704	30.0	0.0005700	0.0000000	0			0.0000000	55coo1	0
96	nb g	u235t	rc	fi		0.0006344	20.0	0.0001000	20.0000000%	96		u235t	1.0000000	62wah1	0
96	nb g	u235t	rc	fi	x4	0.0000000	0.0	0.0008000	0.0002000	96		u235t	1.0000000	69bla1	0
96	nb g	u235t	cm	cu		0.0000000	0.0	0.0006360	20.0000000%	0			0.0000000	73net2	0
96	nb g	u235t	rc	in		0.0005633	17.1	0.0005850	0.0001000	140	ba g	u235t	6.4400000	61cro1	0
96	nb g	u235t	ms	fi	ul	0.0000000	0.0	1.0000000	0.8000000	96		u235t	100.0000000	76sie1	0
96	nb g	u235t	sp	fi	ul	0.0000000	0.0	1.1000000	0.8000000	96		u235t	100.0000000	75sie1	37
96	nb g	u235t	rc	in		0.0005204	5.0	0.0005200	0.0000200	0			0.0000000	78kai1	0
96	nb g	u235t	ms	in	ul	0.0000000	0.0	0.0180000	0.0110000	0			0.0000000	79cle1	0
96	nb g	u235t	rc	fi		0.0006979	18.2	0.0110000	0.0020000	96		u235t	100.0000000	79wei1	0
96	nb g	u235t	ms	fi	ul	0.0000000	0.0	0.5000000	0.5000000	96		u235t	100.0000000	76wol1	0
96	nb g	u235t	rc	in		0.0006905	18.8	0.0006900	0.0001300	0			0.0000000	78den2	0
96	nb g	u235t	sp	fi	ul	0.0000000	0.0	0.3000000	0.2000000	96		u235t	100.0000000	80lan1	0
96	nb g	u235t	cm	in		0.0000000	0.0	0.0006524	20.0000000%	0			1.0000000	88wah1	0
96	nb m	u235t	sp	fi	x6	0.0000000	0.0	1.1000000	0.8000000	96		u235t	100.0000000	75sie1	37

96 zr g u235t ms cu 6.3345544 6.0 6.3300000 0.0000000 0 0.0000000 55gle1 0
96 zr g u235t ms re 6.2560396 1.7 0.9850000 1.5000000% 93 zr g u235t 1.0000000 62far2 0
96 u235t cm cu 0.0000000 0.0 6.3300000 0.0000000 0 0.0000000 72sid1 0
96 u235t cm cu 0.0000000 0.0 6.2900000 0.0000000 0 0.0000000 73lam1 0
96 u235t cm cu 0.0000000 0.0 6.3000000 0.0700000 0 0.0000000 73wal1 0
96 u235t ms cu 6.3545688 2.0 6.3500000 0.0400000 0 0.0000000 76dii1 0
96 zr g u235t ms fi 0.2220492 22.9 3.5000000 0.8000000 96 u235t 100.0000000 76sie1 0
96 u235t sp cu 6.4021411 5.0 6.3200000 0.1200000 0 0.9878800 76woh2 0
96 u235t cm cu 0.0000000 0.0 6.2700000 2.4000000% 0 0.0000000 77cro1 0
96 zr g u235t sp fi su 0.0000000 0.0 3.5000000 0.8000000 96 u235t 100.0000000 75sie1 0
96 zr g u235t sp fi 0.3045247 8.4 4.8000000 0.4000000 96 u235t 100.0000000 78str1 0
96 zr g u235t ms fi su 0.0000000 0.0 5.0000000 1.6000000 96 u235t 100.0000000 75cle2 0
96 zr g u235t ms in 0.3852770 10.9 0.3850000 0.0420000 0 0.0000000 79cle1 0
96 zr g u235t ms cu 6.0533522 4.1 6.0490000 0.2470000 0 0.0000000 78mae1 0
96 zr g u235t ms cu aj 6.2284781 4.2 6.2240000 0.2600000 0 0.0000000 78mae1 0
96 zr g u235t ms cu 6.1954544 4.1 6.1910000 0.2530000 0 0.0000000 78mae1 0
96 zr g u235t ms cu su 0.0000000 0.0 6.2300000 0.0400000 0 0.0000000 70lis1 0
96 u235t es re 6.3987986 2.1 1.0000000 2.0000000% 96 u235f 0.9700000 74mee4 0
96 zr g u235t ms cu cm 6.0343385 6.0 6.0300000 0.0000000 0 0.0000000 80mae3 0
96 zr g u235t ms fi su 0.0000000 0.0 3.9000000 0.8000000 96 u235t 100.0000000 76wol1 0
96 zr g u235t sp fi 0.3870001 11.5 6.1000000 0.7000000 96 u235t 100.0000000 80lan1 0
96 zr g u235t ms cu 6.4112272 1.2 6.4200000 0.0600000 93 zr g u235t 6.3600000 86chi1 0
96 zr g u235t cm in 0.0000000 0.0 0.3229000 23.0000000% 0 1.0000000 88wah1 0
96 y g u235t ms fi 0.2042853 7.8 3.2200000 0.2500000 96 u235t 100.0000000 76sie1 40
96 y g u235t sp fi su 0.0000000 0.0 0.0350000 0.0040000 96 u235t 1.0000000 74sie2 40
96 y g u235t sp fi su 0.0000000 0.0 3.1600000 0.2500000 96 u235t 100.0000000 75sie1 40
96 y g u235t sp fi 0.2220492 5.1 3.5000000 0.1100000 96 u235t 100.0000000 78str1 40
96 y g u235t ms fi su 0.0000000 0.0 4.3900000 0.2500000 96 u235t 100.0000000 75cle2 40
96 y g u235t ms in 0.2316666 3.9 0.2315000 0.0091000 0 0.0000000 79cle1 0
96 y g u235t ms fi su 0.0000000 0.0 3.2100000 0.2500000 96 u235t 100.0000000 76wol1 40
96 y g u235t sp fi 0.2315656 5.1 3.6500000 0.1100000 96 u235t 100.0000000 80lan1 40
96 y g u235t cm in 0.0000000 0.0 0.2220000 5.0000000% 0 1.0000000 88wah1 0
96 y m u235t ms fi 1.8385677 7.8 28.9800000 2.2500000 96 u235t 100.0000000 76sie1 40
96 y m u235t sp fi su 0.0000000 0.0 0.3150000 0.0360000 96 u235t 1.0000000 74sie2 40
96 y m u235t sp fi su 0.0000000 0.0 28.4400000 2.2500000 96 u235t 100.0000000 75sie1 40
96 y m u235t sp fi 1.9984432 5.1 31.5000000 0.9900000 96 u235t 100.0000000 78str1 40

96 y m u235t ms fi su 0.0000000 0.0 39.5100000 2.2500000 96 u235t 100.0000000 75cle2 40
96 y m u235t ms in 2.0849991 3.9 2.0835000 0.0819000 0 0.0000000 79cle1 0
96 y m u235t ms fi su 0.0000000 0.0 28.8900000 2.2500000 96 u235t 100.0000000 76wol1 40
96 y m u235t sp fi 2.0840908 5.1 32.8500000 0.9900000 96 u235t 100.0000000 80lan1 40
96 y m u235t cm in 0.0000000 0.0 1.9960000 5.0000000% 0 1.0000000 88wah1 0
96 sr g u235t ms fi 3.7050503 4.4 58.4000000 2.5000000 96 u235t 100.0000000 76sie1 0
96 sr g u235t sp fi su 0.0000000 0.0 0.5850000 0.0300000 96 u235t 1.0000000 74sie2 0
96 sr g u235t sp fi su 0.0000000 0.0 58.1000000 2.5000000 96 u235t 100.0000000 75sie1 0
96 sr g u235t sp fi 3.7050503 5.1 58.4000000 1.1000000 96 u235t 100.0000000 78str1 0
96 sr g u235t ms fi su 0.0000000 0.0 49.8000000 2.6000000 96 u235t 100.0000000 75cle2 0
96 sr g u235t ms in 3.5425470 3.1 3.5400000 0.1100000 0 0.0000000 79cle1 0
96 sr g u235t ms in 2.5618419 28.1 2.5600000 0.7200000 0 0.0000000 79shm1 0
96 sr g u235t sp cu 2.5618419 28.1 2.5600000 0.7200000 0 0.0000000 81shm1 0
96 sr g u235t ms fi su 0.0000000 0.0 58.0000000 2.5000000 96 u235t 100.0000000 76wol1 0
96 sr g u235t sp fi 3.5464437 5.1 55.9000000 1.2000000 96 u235t 100.0000000 80lan1 0
96 sr g u235t cm in 0.0000000 0.0 3.6340000 3.0000000% 0 1.0000000 88wah1 0
96 sr g u235t sp in 3.6326117 5.0 3.6300000 0.0600000 0 0.0000000 90rud1 0
96 sr g u235t sp cu 3.9028060 17.9 3.9000000 0.7000000 0 0.0000000 90rud1 0
96 rb g u235t cm in 0.0000000 0.0 0.1404000 8.0000000% 0 1.0000000 88wah1 0
96 rb g u235t es fi 0.1903279 15.0 0.0300000 0.0045000 96 u235t 1.0000000 72ree1 0
96 rb g u235t ms fi su 0.0000000 0.0 5.5000000 1.0000000 96 u235t 100.0000000 76wol1 0
96 rb g u235t ms fi ul 0.0000000 0.0 1.3000000 0.6000000 96 u235t 100.0000000 75cle2 0
96 rb g u235t ms fi x4 0.0000000 0.0 4.9000000 1.0000000 96 u235t 100.0000000 76sie1 0
96 rb g u235t ms in 0.1901367 15.8 0.1900000 0.0300000 0 0.0000000 72bal1 0
96 rb g u235t ms in 0.1310943 10.0 0.1310000 10.0000000% 0 0.0000000 72cha1 36
96 rb g u235t ms in ul 0.0000000 0.0 0.3500000 0.0600000 0 0.0000000 79shm1 0
96 rb g u235t ms in x4 0.0000000 0.0 0.0780000 0.0290000 0 0.0000000 79cle1 0
96 rb g u235t rc in 0.1701223 23.5 0.1700000 0.0400000 0 0.0000000 79peu1 0
96 rb g u235t rc in 0.2101511 14.3 0.2100000 0.0300000 0 0.0000000 77wun1 0
96 rb g u235t sp cu 0.2081497 12.5 0.2080000 0.0260000 0 0.0000000 90rud1 0
96 rb g u235t sp cu ul 0.0000000 0.0 0.3500000 0.0600000 0 0.0000000 81shm1 0
96 rb g u235t sp cu ul 0.0000000 0.0 0.3500000 0.0600000 0 0.0000000 81shm1 0
96 rb g u235t sp fi 0.1141968 16.7 1.8000000 0.3000000 96 u235t 100.0000000 78str1 0
96 rb g u235t sp fi 0.1865214 10.0 2.9400000 10.0000000% 96 u235t 100.0000000 79bal1 36
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special

nuclide	material	tech. type	value	err.	value		nuclide	material	value	no.	treatment
96 rb g	u235t	sp fi su	0.0000000	0.0	0.0340000	0.0150000	96	u235t	1.0000000	74sie2	0
96 rb g	u235t	sp fi su	0.0000000	0.0	5.7000000	1.0000000	96	u235t	100.0000000	75sie1	0
96 rb g	u235t	sp fi x4	0.0000000	0.0	1.2000000	0.5000000	96	u235t	100.0000000	80lan1	0
96 rb g	u235t	sp in	0.1757263	10.0	0.1756000	10.0000000%	0		0.0000000	75ree1	36
96 nb g	u235f	cm cu	0.0000000	0.0	0.0009901	90.0000000%	0		0.0000000	73net2	0
96	u235f	es cu	5.8803252	30.0	6.3580000	0.0000000	148 nd g	u235f	1.8100000	63wea1	0
96	u235f	es cu cm	6.1951536	30.0	6.2300000	0.0000000	0		0.0000000	72sid1	0
96	u235f	es re	6.1150993	10.0	0.9700000	10.0000000%	96	u235t	1.0000000	74mee4	0
96	u235f	cm cu	0.0000000	0.0	6.2400000	5.0000000%	0		0.0000000	77cro1	0
96 zr g	u235f	ms cu	6.0469870	2.0	6.0810000	0.1220000	0		0.0000000	80mae1	0
96 zr g	u235f	ms cu cm	6.1225619	6.0	6.1570000	0.0000000	0		0.0000000	80mae3	0
96 zr g	u235f	ms cu	6.2607845	2.0	6.2960000	0.0420000	0		0.0000000	81mae1	0
96 zr g	u235f	ms cu	6.1215675	2.0	6.1560000	0.0460000	0		0.0000000	81mae1	0
96 zr g	u235f	es cu	6.2269746	0.7	6.2620000	0.0450000	0		0.0000000	81mae1	0
96 zr g	u235f	cm cu	0.0000000	0.0	6.5000000	0.0360000	0		0.0000000	81mae1	0
96 zr g	u235f	ms cu su	0.0000000	0.0	6.1300000	0.0600000	148 nd g	u235f	1.6800000	74mae1	0
96 nb g	u235he	rc fi	0.0030268	12.8	0.0005900	0.0000200	96	u235he	1.0000000	56for1	0
96 nb g	u235he	rc re	0.0027042	16.7	6.0000000	1.0000000	99 mo g	u235t	0.0000000	56for1	7
96 nb g	u235he	rc in	0.0038445	5.1	0.0000390	0.0000020	0		0.0100000	72net2	0
96 nb g	u235he	rc fi	0.0037963	10.5	0.0007400	0.0000500	96	u235he	1.0000000	72net2	0
96 nb g	u235he	cm cu	0.0000000	0.0	0.0038500	3.9000000%	0		0.0000000	73net2	0
96 nb g	u235he	rc in	0.0031121	5.0	0.0031570	3.0000000%	0		0.0000000	76for1	0
96 nb g	u235he	cm cu	0.0000000	0.0	0.0030000	0.0000000	0		0.0000000	60kat1	0
96 nb g	u235he	rc fi	0.0042580	12.8	0.0008300	10.0000000%	96	u235he	1.0000000	65net1	0
96 zr g	u235he	es cu	4.8598213	30.0	4.9300000	0.0000000	0		0.0000000	63wea1	0
96	u235he	cm cu	0.0000000	0.0	5.3500000	20.0000000%	0		0.0000000	77cro1	0
96	u235he	es cu	5.2403265	10.0	5.3160000	10.0000000%	0		0.0000000	74mee8	0
96 nb g	u238f	cm cu	0.0000000	0.0	0.0000341	90.0000000%	0		0.0000000	73net2	0
96 zr g	u238f	es cu	5.7028819	30.0	5.7570000	0.0000000	0		0.0000000	63wea1	0
96	u238f	es cu cm	5.0520579	30.0	5.1000000	0.0000000	0		0.0000000	64wal1	0
96	u238f	es cu cm	5.6662297	30.0	5.7200000	0.0000000	0		0.0000000	72sid1	0
96	u238f	cm cu	0.0000000	0.0	6.0100000	5.0000000%	0		0.0000000	77cro1	0
96 zr g	u238f	ms cu	6.0129395	5.8	6.0700000	0.3540000	0		0.0000000	81mae1	0
96 zr g	u238f	cm cu	0.0000000	0.0	6.0700000	0.3540000	0		0.0000000	81mae1	0

96	zr	g	u238f	ms	cu		6.0866898	6.0	6.0500000	0.3600000	148	nd	g	u238f	2.0800000	74mae1	0		
96	nb	g	u238he	rc	fi		0.0001158	14.8	0.0000210	0.0000020	96			u238he	1.0000000	72net2	0		
96	nb	g	u238he	rc	in		0.0001059	8.4	0.0000011	0.0000001	0				0.0100000	72net2	0		
96	nb	g	u238he	cm	cu		0.0000000	0.0	0.0001070	8.9000000%	0				0.0000000	73net2	0		
96	zr	g	u238he	es	cu		5.4150432	30.0	5.4730000	0.0000000	0				0.0000000	63wea1	0		
96			u238he	es	cu	su	0.0000000	0.0	5.2300000	0.0000000	0				0.0000000	73dar1	0		
96			u238he	es	cu		5.6050100	15.0	5.6650000	15.0000000%	0				0.0000000	74mee9	0		
96			u238he	cm	cu		0.0000000	0.0	4.9300000	20.0000000%	0				0.0000000	77cro1	0		
96	nb	g	pu239t	rc	fi		0.0037725	13.0	0.0007700	0.0001000	96			pu239t	1.0000000	62wah1	0		
96	nb	g	pu239t	cm	cu		0.0000000	0.0	0.0031210	90.0000000%	0				0.0000000	73net2	0		
96	nb	g	pu239t	rc	in		0.0034484	16.7	0.0036000	0.0006000	140	ba	g	pu239t	5.6000000	61cro1	0		
96	nb	g	pu239t	rc	in		0.0036069	5.0	0.0036000	0.0001000	0				0.0000000	78kai1	0		
96	nb	g	pu239t	cm	in		0.0000000	0.0	0.0040300	10.0000000%	0				1.0000000	88wah1	0		
96			pu239t	cm	cu		0.0000000	0.0	5.1300000	0.0000000	0				0.0000000	72sid1	0		
96			pu239t	cm	cu		0.0000000	0.0	5.1200000	0.0000000	0				0.0000000	73lam1	0		
96			pu239t	cm	cu		0.0000000	0.0	5.1200000	0.0700000	0				0.0000000	73wal1	0		
96			pu239t	cm	cu		0.0000000	0.0	5.1200000	4.5000000%	0				0.0000000	77cro1	0		
96	zr	g	pu239t	ms	cu		4.7921135	2.0	4.7830000	0.0730000	0				0.0000000	79mae2	0		
96	zr	g	pu239t	ms	cu		5.1303605	1.8	5.1200000	0.0900000	85	rb	g	pu239t	0.5740000	70lis1	0		
96	zr	g	pu239t	ms	cu		4.9919118	1.5	1.3120000	0.0180000	93	zr	g	pu239t	1.0000000	59fic1	0		
96	zr	g	pu239t	ms	cu		4.9044108	1.7	5.0400000	0.0800000	93	zr	g	pu239t	3.9100000	86chi1	0		
96	zr	g	pu239t	sp	fi		0.5389343	18.0	0.1100000	18.0000000%	96			pu239t	1.0000000	84sch1	36		
96	zr	g	pu239t	es	cu	cm	4.7991268	1.0	4.7900000	1.0000000%	0				0.0000000	81mae2	0		
96	zr	g	pu239t	es	re	cm	4.8731143	1.4	0.2629000	1.0000000%	91	zr	g	pu239t	0.1344000	81mae2	36		
96	zr	g	pu239t	cm	in		0.0000000	0.0	0.5482000	18.0000000%	0				1.0000000	88wah1	0		
96	y	g	pu239t	sp	fi		0.2493796	5.1	0.0509000	5.0000000%	96			pu239t	1.0000000	84sch1	36		
96	y	g	pu239t	cm	in		0.0000000	0.0	0.2470000	5.0000000%	0				1.0000000	88wah1	0		
96	y	m	pu239t	sp	fi		2.2444164	5.1	0.4581000	5.0000000%	96			pu239t	1.0000000	84sch1	36		
96	y	m	pu239t	cm	in		0.0000000	0.0	2.2200000	5.0000000%	0				1.0000000	88wah1	0		
96	sr	g	pu239t	sp	fi		1.8274772	5.1	0.3730000	5.0000000%	96			pu239t	1.0000000	84sch1	36		
96	sr	g	pu239t	cm	in		0.0000000	0.0	1.8980000	5.0000000%	0				1.0000000	88wah1	0		
96	rb	g	pu239t	es	fc		0.0473772	30.0	0.0096700	0.0000000	96			pu239t	1.0000000	74wol1	0		
96	rb	g	pu239t	sp	fi		0.0391952	99.9	0.0080000	0.0200000	96			pu239t	1.0000000	84sch1	36		
96	rb	g	pu239t	cm	in		0.0000000	0.0	0.0523400	80.0000000%	0				1.0000000	88wah1	0		
96	nb	g	pu239f	cm	cu		0.0000000	0.0	0.0042500	90.0000000%	0				0.0000000	73net2	0		
96			pu239f	es	cu	cm	5.1238270	30.0	5.1400000	0.0000000	0				0.0000000	72sid1	0		

96 pu239f cm cu 0.0000000 0.0 4.8500000 4.5000000% 0 0.0000000 77cro1 0
96 zr g pu239f ms cu 4.8554735 1.4 4.8490000 0.0660000 148 nd g pu239f 1.6540000 77mae1 0
96 zr g pu239f ms cu 4.8377300 2.0 4.8530000 0.0860000 0 0.0000000 77mae1 0
96 zr g pu239f ms cu 4.8920367 2.0 5.1100000 0.1000000 148 nd g pu239f 1.7300000 70lis1 0
96 zr g pu239f ms cu rp 4.7659020 1.6 0.2603000 0.0000000 no. relative values = 4 80mae4
96 zr g pu239f ms cu su 0.0000000 0.0 4.8400000 0.0700000 148 nd g pu239f 1.6500000 74mae1 0
96 pu239f es re 4.7285128 10.0 0.9700000 10.0000000% 96 pu239t 1.0000000 74mee4 0
96 zr g pu239f es cu cm 4.8447080 1.0 4.8600000 1.0000000% 0 0.0000000 81mae2 0
96 zr g pu239f es re cm 4.9221811 1.4 0.2641000 1.0000000% 91 zr g pu239f 0.1346000 81mae2 36
96 nb g pu241t rc in 0.0123604 8.3 0.0024000 0.0002000 137 cs g pu239t 0.0007000 69cro2 25
96 pu241t cm cu 0.0000000 0.0 4.3300000 0.0000000 0 0.0000000 72sid1 0
96 pu241t cm cu 0.0000000 0.0 4.3900000 0.0600000 0 0.0000000 73wal1 0
96 pu241t cm cu 0.0000000 0.0 4.3400000 5.0000000% 0 0.0000000 77cro1 0
96 zr g pu241t ms cu 4.3866617 2.0 4.4010000 0.0610000 0 0.0000000 77mae1 0
96 zr g pu241t ms cu 4.4792093 2.9 4.3300000 0.1200000 148 nd g pu241t 1.8616500 70lis1 0
96 zr g pu241t ms cu 4.3628833 2.0 4.3800000 0.0600000 93 zr g pu241t 2.9800000 86chi1 0
96 mo g u233t sp fi ul 0.0000000 0.0 0.4800000 0.0930000 96 u233t 100.0000000 83qua1 0
96 mo g u233t sp in ul 0.0000000 0.0 0.0270000 0.0050000 0 0.0000000 88qua1 0
96 nb g u233t rc fi 0.0073497 15.4 0.0013000 0.0002000 96 u233t 1.0000000 62wah1 0
96 nb g u233t cm cu 0.0000000 0.0 0.0042470 90.0000000% 0 0.0000000 73net2 0
96 nb g u233t rc in 0.0060561 17.8 0.0057000 0.0010000 140 ba g u233t 6.0000000 61cro1 0
96 nb g u233t rc in 0.0052816 5.7 0.0053000 0.0003000 0 0.0000000 78kai1 0
96 nb g u233t sp fi ul 0.0000000 0.0 1.3500000 0.2620000 96 u233t 100.0000000 83qua1 0
96 nb g u233t sp in ul 0.0000000 0.0 0.0770000 0.0150000 0 0.0000000 88qua1 0
96 zr g u233t ms cu 5.4854769 5.2 5.6000000 5.0000000% 93 zr g u233t 7.1000000 54ste1 0
96 u233t cm cu 0.0000000 0.0 5.6400000 0.0000000 0 0.0000000 72sid1 0
96 u233t cm cu 0.0000000 0.0 5.7300000 0.0000000 0 0.0000000 73lam1 0
96 u233t cm cu 0.0000000 0.0 5.6600000 0.0900000 0 0.0000000 73wal1 0
96 zr g u233t ms cu 5.5113518 1.5 16.8000000 0.1000000 93 zr g u233t 21.2000000 59gor1 0
96 zr g u233t ms cu 5.7586696 4.5 5.6700000 4.0000000% 95 zr g u233t 6.2300000 61bid1 0
96 zr g u233t ms cu rp 5.6302337 5.2 5.4700000 0.0000000 no. relative values = 4 61gor1
96 u233t cm cu 0.0000000 0.0 5.7700000 4.1000000% 0 0.0000000 77cro1 0
96 u233t ms cu 5.7011668 2.0 5.7210000 0.0430000 0 0.0000000 80weh1 0
96 zr g u233t ms in 1.0652941 3.1 1.0690000 0.0330000 0 0.0000000 80weh1 0
96 zr g u233t ms cu 5.8197542 2.0 5.8400000 0.0500000 0 0.0000000 70lis1 0
96 zr g u233t ms cu 5.7973306 2.0 5.8100000 0.0800000 93 zr g u233t 6.9700000 86chi1 0

96 zr g u233t sp fi 1.0894580 7.2 19.2700000 1.3720000 96 u233t 100.0000000 83qua1 0
96 zr g u233t sp in 1.0892109 7.3 1.0930000 0.0800000 0 0.0000000 88qua1 0
96 y g u233t ms in 0.2800258 2.0 0.2810000 0.0040000 0 0.0000000 80weh1 18
96 y g u233t sp fi 0.2629512 5.1 4.6510000 0.1674000 96 u233t 100.0000000 83qua1 40
96 y g u233t sp in 0.2627858 5.0 0.2637000 0.0105000 0 0.0000000 88qua1 18
96 y m u233t ms in 2.5242187 2.0 2.5330000 0.0390000 0 0.0000000 80weh1 18
96 y m u233t sp fi 2.3665606 5.1 41.8590000 1.5066000 96 u233t 100.0000000 83qua1 40
96 y m u233t sp in 2.3650724 5.0 2.3733000 0.0945000 0 0.0000000 88qua1 18
96 sr g u233t ms in 1.7917668 2.1 1.7980000 0.0370000 0 0.0000000 80weh1 0
96 sr g u233t sp fi 1.8023831 5.1 31.8800000 1.0930000 96 u233t 100.0000000 83qua1 0
96 sr g u233t sp in 1.8007356 5.0 1.8070000 0.0690000 0 0.0000000 88qua1 0
96 rb g u233t ms in 0.0398613 25.0 0.0400000 0.0100000 0 0.0000000 80weh1 0
96 rb g u233t sp fi 0.0282682 21.6 0.5000000 0.1080000 96 u233t 100.0000000 83qua1 0
96 rb g u233t sp in 0.0279029 21.4 0.0280000 0.0060000 0 0.0000000 88qua1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

96 nb g th232f cm cu 0.0000000 0.0 0.0000390 90.0000000% 0 0.0000000 73net2 0
96 nb g th232f rc in ul 0.0000000 0.0 0.0000420 99.0000000% 0 0.0000000 82ert1 0
96 nb g th232f rc in 0.0001787 61.1 0.0001800 0.0001100 0 0.0000000 82li 1 0
96 th232f cm cu x3 0.0000000 0.0 4.8000000 0.0000000 0 0.0000000 65eng1 0
96 th232f cm cu x3 0.0000000 0.0 5.5300000 0.0000000 0 0.0000000 72sid1 0
96 th232f es cu 4.7647032 30.0 4.8000000 0.0000000 0 0.0000000 73lam1 0
96 th232f cm cu 0.0000000 0.0 5.8300000 20.0000000% 0 0.0000000 77cro1 0
97 mo g u235t ms cu 6.0930983 6.0 6.0900000 0.0000000 0 0.0000000 55gle1 0
97 mo g u235t ms re 6.0504429 2.2 0.9610000 0.0200000 100 mo g u235t 1.0000000 62far2 0
97 u235t cm cu 0.0000000 0.0 6.1200000 0.0000000 0 0.0000000 72sid1 0
97 u235t cm cu 0.0000000 0.0 6.0000000 0.0000000 0 0.0000000 73lam1 0
97 u235t cm cu 0.0000000 0.0 6.0700000 0.1000000 0 0.0000000 73wal1 0
97 u235t ms cu 6.0130576 2.0 6.0100000 0.0980000 0 0.0000000 76dii1 0
97 u235t sp cu 5.7183780 5.0 5.7900000 0.1100000 0 1.0130400 76woh2 0
97 u235t cm cu 0.0000000 0.0 6.0300000 2.6000000% 0 0.0000000 77cro1 0
97 mo g u235t ms cu 5.8629813 2.0 5.8600000 0.0800000 0 0.0000000 70lis1 36
97 mo g u235t ms cu 5.9890454 2.0 5.9860000 0.0600000 0 0.0000000 78mae1 0
97 mo g u235t ms cu 5.9010006 2.0 5.8980000 0.0590000 0 0.0000000 78mae1 0

97 mo g u235t ms cu 5.9320164 2.0 5.9290000 0.0600000 0 0.0000000 78mae1 0
97 mo g u235t ms cu cm 5.9400205 6.0 5.9370000 0.0000000 0 0.0000000 80mae3 0
97 mo g u235t ms cu 6.0775163 1.1 6.0900000 0.0500000 95 mo g u235t 6.5200000 86chi1 0
97 nb g u235t rc in 0.0105354 15.4 0.0105300 0.0016200 0 0.0000000 69bla1 0
97 nb g u235t rc cu 6.1531288 5.0 6.1500000 0.1100000 0 0.0000000 71mcl1 0
97 nb g u235t ms fi ul 0.0000000 0.0 0.8910000 0.4860000 97 u235t 100.0000000 76sie1 40
97 nb g u235t rc in 0.0121562 99.9 0.0121500 0.0121500 0 0.0000000 74lar1 18
97 nb g u235t rc fi 0.0082624 47.1 0.0013770 0.0006480 97 u235t 1.0000000 62wah1 40
97 nb g u235t sp fi ul 0.0000000 0.0 1.0530000 0.4980000 97 u235t 100.0000000 75sie1 40
97 nb g u235t rc cu 5.9530271 5.0 5.9500000 0.1800000 0 0.0000000 77gud1 0
97 nb g u235t rc cu 6.1831441 7.0 6.1800000 0.4300000 0 0.0000000 74bla1 0
97 nb g u235t rc fi ge 0.0120006 15.0 0.2000000 0.0000000 97 u235t 100.0000000 79wei1 0
97 nb g u235t ms fi ul 0.0000000 0.0 0.4860000 0.4050000 97 u235t 100.0000000 76wol1 40
97 nb g u235t ms in 0.0332269 70.7 0.0332100 0.0234900 0 0.0000000 79cle1 18
97 nb g u235t rc fi 0.0097205 10.0 0.1620000 0.0162000 97 u235t 100.0000000 78den2 40
97 nb g u235t sp fi 0.0340216 71.4 0.5670000 0.4050000 97 u235t 100.0000000 80lan1 0
97 nb g u235t cm in 0.0000000 0.0 0.0084700 47.0000000% 0 1.0000000 88wah1 0
97 nb m u235t rc in 0.0024713 15.4 0.0024700 0.0003800 0 0.0000000 69bla1 0
97 nb m u235t ms fi ul 0.0000000 0.0 0.2090000 0.1140000 97 u235t 100.0000000 76sie1 40
97 nb m u235t rc in 0.0028514 99.9 0.0028500 0.0028500 0 0.0000000 74lar1 18
97 nb m u235t rc fi 0.0019381 47.1 0.0003230 0.0001520 97 u235t 1.0000000 62wah1 40
97 nb m u235t sp fi ul 0.0000000 0.0 0.2470000 0.1020000 97 u235t 100.0000000 75sie1 40
97 nb m u235t rc cu 5.5228083 5.0 5.5200000 0.1700000 0 0.0000000 77gud1 0
97 nb m u235t ms fi ul 0.0000000 0.0 0.1140000 0.0950000 97 u235t 100.0000000 76wol1 40
97 nb m u235t ms in 0.0077940 70.7 0.0077900 0.0055100 0 0.0000000 79cle1 18
97 nb m u235t rc fi 0.0022801 10.0 0.0380000 0.0038000 97 u235t 100.0000000 78den2 40
97 nb m u235t rc fi ul 0.0000000 0.0 0.0090000 0.0000000 97 u235t 100.0000000 79wei1 0
97 nb m u235t sp fi 0.0079804 71.4 0.1330000 0.0950000 97 u235t 100.0000000 80lan1 0
97 nb m u235t cm in 0.0000000 0.0 0.0019900 47.0000000% 0 1.0000000 88wah1 0
97 zr g u235t rc cu 6.2031543 60.0 6.2000000 0.0000000 0 0.0000000 49sak1 0
97 zr g u235t cm cu 0.0000000 0.0 6.2000000 0.3000000 0 0.0000000 50cor1 0
97 zr g u235t rc cu x4 0.0000000 0.0 5.5000000 3.5000000% 89 sr g u235t 4.7800000 53ree1 0
97 zr g u235t rc cu 6.1731390 5.0 6.1700000 0.1100000 0 0.0000000 71mcl1 0
97 zr g u235t cm cu 0.0000000 0.0 5.8600000 5.0000000% 0 0.0000000 73net2 0
97 zr g u235t rc cu x4 0.0000000 0.0 5.2800000 3.0000000% 137 cs g u235t 6.2800000 74lar1 0
97 zr g u235t rc cu 6.0030525 30.0 6.0000000 0.0000000 0 0.0000000 59tro1 0

97	zr	g	u235t	rc	re		5.9534051	10.1	0.9740000	0.0050000	99	mo	g	u235t	1.0000000	61cun1	0		
97	zr	g	u235t	rc	cu	x4	0.0000000	0.0	4.7000000	0.0500000	0				0.0000000	70ohy1	0		
97	zr	g	u235t	sp	fi	su	0.0000000	0.0	0.0480000	0.0200000	97			u235t	1.0000000	74sie2	0		
97	zr	g	u235t	sp	fi	su	0.0000000	0.0	11.4000000	1.5000000	97			u235t	100.0000000	75sie1	0		
97	zr	g	u235t	rc	cu	su	0.0000000	0.0	5.9900000	10.0000000%	0				0.0000000	76gil4	0		
97	zr	g	u235t	bm	cu		5.9230118	4.1	5.9200000	4.1000000%	0				0.0000000	77gil1	0		
97	zr	g	u235t	ms	fi	su	0.0000000	0.0	13.3000000	2.8000000	97			u235t	100.0000000	75cle2	0		
97	zr	g	u235t	ms	in		1.0825505	7.3	1.0820000	0.0790000	0				0.0000000	79cle1	0		
97	zr	g	u235t	rc	cu		6.1331187	5.0	6.1300000	0.0400000	0				0.0000000	79ram1	0		
97	zr	g	u235t	rc	cu	x4	0.0000000	0.0	5.2100000	3.0000000%	95	zr	g	u235t	6.4500000	73lar4	0		
97	zr	g	u235t	rc	cu		6.1131085	5.7	6.1100000	0.3500000	0				0.0000000	74bla1	0		
97	zr	g	u235t	ms	fi	x1	0.0000000	0.0	10.6000000	1.5000000	97			u235t	100.0000000	76sie1	0		
97	zr	g	u235t	rc	cu		5.7429203	5.0	5.7400000	0.1900000	0				0.0000000	76thi1	0		
97	zr	g	u235t	sp	fi	x1	0.0000000	0.0	14.3000000	0.7000000	97			u235t	100.0000000	78str1	0		
97	zr	g	u235t	rc	cu		5.9030017	5.0	5.9000000	3.9000000%	0				0.0000000	81lau1	0		
97	zr	g	u235t	ms	fi	su	0.0000000	0.0	10.8000000	1.5000000	97			u235t	100.0000000	76wol1	0		
97	zr	g	u235t	sp	fi		1.1220525	6.5	18.7000000	1.2000000	97			u235t	100.0000000	80lan1	0		
97	zr	g	u235t	cm	in		0.0000000	0.0	0.8897000	11.0000000%	0				1.0000000	88wah1	0		
97	zr	g	u235t	rc	cu	x4	0.0000000	0.0	5.4600000	0.3900000	0				0.0000000	77gud1	0		
97	y	g	u235t	sp	fi	su	0.0000000	0.0	0.5650000	0.0200000	97			u235t	1.0000000	74sie2	37		
97	y	g	u235t	sp	fi	su	0.0000000	0.0	50.3000000	2.0000000	97			u235t	100.0000000	75sie1	37		
97	y	g	u235t	ms	fi	su	0.0000000	0.0	59.6000000	3.5000000	97			u235t	100.0000000	75cle2	37		
97	y	g	u235t	ms	in		3.0615568	3.6	3.0600000	0.1100000	0				0.0000000	79cle1	0		
97	y	g	u235t	ms	fi	su	0.0000000	0.0	52.6000000	2.0000000	97			u235t	100.0000000	76wol1	37		
97	y	g	u235t	sp	fi		3.1621481	5.0	52.7000000	1.5000000	97			u235t	100.0000000	80lan1	0		
97	y	g	u235t	ms	fi		3.2461520	3.8	54.1000000	2.0000000	97			u235t	100.0000000	76sie1	0		
97	y	g	u235t	sp	fi		3.2881540	5.0	54.8000000	0.9000000	97			u235t	100.0000000	78str1	0		
97	y	g	u235t	cm	in		0.0000000	0.0	3.1010000	3.0000000%	0				1.0000000	88wah1	0		
97	y	m	u235t	ms	fi	x6	0.0000000	0.0	59.6000000	3.5000000	97			u235t	100.0000000	75cle2	37		
97	y	m	u235t	ms	fi	x6	0.0000000	0.0	54.1000000	2.0000000	97			u235t	100.0000000	76sie1	37		
97	y	m	u235t	sp	fi	x6	0.0000000	0.0	0.5650000	0.0200000	97			u235t	1.0000000	74sie2	37		
97	y	m	u235t	sp	fi	x6	0.0000000	0.0	50.3000000	2.0000000	97			u235t	100.0000000	75sie1	37		
97	y	m	u235t	sp	fi	x6	0.0000000	0.0	54.8000000	0.9000000	97			u235t	100.0000000	78str1	37		
97	y	m	u235t	ms	fi	x6	0.0000000	0.0	52.6000000	2.0000000	97			u235t	100.0000000	76wol1	37		
97	sr	g	u235t	es	fc		1.9980936	30.0	0.3330000	0.0000000	97			u235t	1.0000000	74wol1	0		
97	sr	g	u235t	ms	fi		1.8420863	6.6	30.7000000	2.0000000	97			u235t	100.0000000	76sie1	0		

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 97 sr g   u235t    sp    fi    su   0.0000000  0.0   0.3870000  0.0200000    97          u235t       1.0000000   74sie2      0
 97 sr g   u235t    sp    fi    su   0.0000000  0.0  33.5000000  2.0000000    97          u235t     100.0000000   75sie1      0
 97 sr g   u235t    sp    fi         1.8180851  5.0  30.3000000  1.2000000    97          u235t     100.0000000   78str1      0
 97 sr g   u235t    ms    fi    su   0.0000000  0.0  27.1000000  3.1000000    97          u235t     100.0000000   75cle2      0
 97 sr g   u235t    ms    in         1.6208242  6.2   1.6200000  0.1000000     0                       0.0000000   79cle1      0
 97 sr g   u235t    ms    in         1.6308293 28.2   1.6300000  0.4600000     0                       0.0000000   79shm1      0
 97 sr g   u235t    sp    cu         1.6308293 28.2   1.6300000  0.4600000     0                       0.0000000   81shm1      0
 97 sr g   u235t    ms    fi    su   0.0000000  0.0  32.6000000  2.0000000    97          u235t     100.0000000   76wol1      0
 97 sr g   u235t    sp    fi         1.6740784  5.4  27.9000000  1.5000000    97          u235t     100.0000000   80lan1      0
 97 sr g   u235t    cm    in         0.0000000  0.0   1.7910000  4.0000000%    0                       1.0000000   88wah1      0
 97 sr g   u235t    sp    in    x4   0.0000000  0.0   2.5800000  0.5400000     0                       0.0000000   90rud1      0
 97 sr g   u235t    sp    cu    x4   0.0000000  0.0   2.6300000  0.5200000     0                       0.0000000   90rud1      0
 97 rb g   u235t    ms    in         0.0350178 11.4   0.0350000  0.0040000     0                       0.0000000   72cha1      0
 97 rb g   u235t    cm    fi    x3   0.0000000  0.0   0.0160000  0.0060000    97          u235t       1.0000000   72ree1      0
 97 rb g   u235t    es    fc         0.0377418 30.0   0.0062900  0.0000000    97          u235t       1.0000000   74wol1      0
 97 rb g   u235t    sp    fi    su   0.0000000  0.0   3.5000000  1.0000000    97          u235t     100.0000000   75sie1      0
 97 rb g   u235t    ms    fi    x4   0.0000000  0.0   3.5000000  1.0000000    97          u235t     100.0000000   76sie1      0
 97 rb g   u235t    sp    fi         0.0360017 50.0   0.6000000  0.3000000    97          u235t     100.0000000   78str1      0
 97 rb g   u235t    sp    fi         0.0371417 11.2   0.6190000  0.0690000    97          u235t     100.0000000   79bal1      0
 97 rb g   u235t    rc    in         0.0500254 20.0   0.0500000  0.0100000     0                       0.0000000   77wun1      0
 97 rb g   u235t    rc    in         0.0460234 32.6   0.0460000  0.0150000     0                       0.0000000   79peu1      0
 97 rb g   u235t    sp    cu    ul   0.0000000  0.0   0.1000000  0.0200000     0                       0.0000000   81shm1      0
 97 rb g   u235t    ms    in    ul   0.0000000  0.0   0.1000000  0.0400000     0                       0.0000000   72bal1      0
 97 rb g   u235t    ms    fi    su   0.0000000  0.0   3.4000000  1.0000000    97          u235t     100.0000000   76wol1      0
 97 rb g   u235t    ms    in    ul   0.0000000  0.0   0.1000000  0.0200000     0                       0.0000000   79shm1      0
 97 rb g   u235t    sp    cu    ul   0.0000000  0.0   0.1000000  0.0200000     0                       0.0000000   81shm1      0
 97 rb g   u235t    ms    in    ul   0.0000000  0.0   0.1000000  0.0400000     0                       0.0000000   72bal1      0
 97 rb g   u235t    cm    in         0.0000000  0.0   0.0325000  8.0000000%    0                       1.0000000   88wah1      0
 97 rb g   u235t    sp    cu         0.0620315 12.9   0.0620000  0.0080000     0                       0.0000000   90rud1      0
 97 kr g   u235t    rc    fc         0.0000300 99.9   0.0000050  0.0000050    97          u235t       1.0000000   62wah1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value       no.   treatment

 97        u235f    es    cu    cm   6.1057554 30.0   6.1300000  0.0000000     0                       0.0000000   72sid1      0
 97        u235f    es    re         5.7942982 10.0   0.9700000 10.0000000%   97          u235t       1.0000000   74mee4      0
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97 u235f cm cu 0.0000000 0.0 5.8800000 1.8000000% 0 0.0000000 77cro1 0
97 mo g u235f ms cu 5.8607283 2.0 5.8840000 0.0340000 0 0.0000000 80mae1 0
97 mo g u235f ms cu 5.8734965 2.0 6.1300000 0.1200000 148 nd g u235f 1.7500000 70lis1 0
97 mo g u235f ms cu 6.1057554 2.0 6.1300000 2.0000000% 0 0.0000000 72lar1 0
97 mo g u235f ms cu cm 5.9722854 6.0 5.9960000 0.0000000 0 0.0000000 80mae3 0
97 u235f rc cu 6.0571859 5.1 6.3300000 0.0900000 140 ba g u235f 6.2200000 77bla1 0
97 mo g u235f ms cu 6.0609334 2.0 6.0850000 0.0400000 0 0.0000000 81mae1 0
97 mo g u235f ms cu 6.0380243 2.0 6.0620000 0.0390000 0 0.0000000 81mae1 0
97 mo g u235f es cu 6.0449967 0.6 6.0690000 0.0340000 0 0.0000000 81mae1 0
97 mo g u235f cm cu 0.0000000 0.0 6.0720000 0.0330000 0 0.0000000 81mae1 0
97 mo g u235f ms cu 5.9784944 1.0 5.9900000 0.0500000 148 nd g u235f 1.6800000 74mae1 0
97 u235f cm cu x3 0.0000000 0.0 5.5000000 0.0000000 0 0.0000000 73lar3 0
97 u235f rc cu 5.9264673 5.0 5.9500000 3.0000000% 0 0.0000000 86dho1 0
97 nb g u235f rc cu 6.1659516 5.1 6.0500000 3.0000000% 140 ba g u235f 5.8400000 72sch1 0
97 nb g u235f rc cu 6.4155398 14.6 1.0740000 0.1560000 97 nb g u235t 1.0000000 79yur1 36
97 nb g u235f rc cu 5.9264673 5.0 5.9500000 0.1800000 0 0.0000000 77gud1 0
97 nb m u235f rc cu 5.4981680 5.0 5.5200000 0.1700000 0 0.0000000 77gud1 0
97 zr g u235f rc cu 6.1382480 5.1 5.9300000 0.1400000 140 ba g u235f 5.7500000 70bow1 0
97 zr g u235f rc cu 5.6083521 10.5 5.5500000 0.5800000 140 ba g u235f 5.8900000 72cun2 0
97 zr g u235f rc cu 5.8805852 5.1 5.7700000 3.0000000% 140 ba g u235f 5.8400000 72sch1 0
97 zr g u235f rc cu su 0.0000000 0.0 5.5800000 0.2500000 0 0.0000000 73dud1 0
97 zr g u235f rc cu su 0.0000000 0.0 5.5400000 7.0000000% 0 0.0000000 73dud2 0
97 zr g u235f cm cu 0.0000000 0.0 5.8700000 3.9000000% 0 0.0000000 73net2 0
97 zr g u235f rc cu 5.5081284 5.0 5.5300000 3.0000000% 0 0.0000000 74lar1 0
97 zr g u235f rc cu 5.6575352 5.0 5.6800000 3.4000000% 0 0.0000000 75dud1 0
97 zr g u235f rc cu 5.5678911 6.7 5.5900000 6.7000000% 0 0.0000000 75dud2 0
97 zr g u235f rc re 5.8568216 5.0 1.0190000 0.0140000 140 ba g u235t 0.0000000 75raj1 7
97 zr g u235f rc cu su 0.0000000 0.0 1.0250000 0.0070000 97 zr g u235t 1.0000000 76deb1 0
97 zr g u235f rc cu 5.6182661 5.0 0.9690000 1.4000000% 99 mo g u235t 0.0000000 76for1 7
97 zr g u235f rc cu 5.7110342 5.0 0.9850000 1.4000000% 99 mo g u235t 0.0000000 76for1 7
97 zr g u235f rc cu 5.6414582 5.0 0.9730000 1.4000000% 99 mo g u235t 0.0000000 76for1 7
97 zr g u235f rc cu 5.9139644 5.0 1.0200000 1.4000000% 99 mo g u235t 0.0000000 76for1 7
97 zr g u235f rc cu 5.9719444 5.0 1.0300000 1.4000000% 99 mo g u235t 0.0000000 76for1 7
97 zr g u235f rc cu su 0.0000000 0.0 5.9880000 2.2000000% 0 0.0000000 76gil2 0
97 zr g u235f rc cu su 0.0000000 0.0 6.0500000 2.3000000% 0 0.0000000 76gil3 0
97 zr g u235f rc cu 6.0557161 5.4 1.0160000 0.0070000 97 zr g u235t 1.0000000 77deb1 0

97 zr g u235f bm cu 6.0061509 2.4 6.0300000 2.4000000% 0 0.0000000 77gil1 0
97 zr g u235f rc cu 6.2822094 11.0 1.0540000 0.1140000 97 zr g u235t 1.0000000 79yur1 36
97 zr g u235f rc cu 5.5270580 5.1 5.5300000 3.0000000% 95 zr g u235f 6.4100000 73lar4 0
97 zr g u235f rc cu 5.8567442 5.0 5.8800000 3.3000000% 0 0.0000000 81lau1 0
97 zr g u235f rc cu 6.5714398 10.8 6.5500000 0.7000000 99 mo g u235f 5.9000000 60bon1 0
97 zr g u235f rc cu 5.4384053 7.1 5.4600000 0.3900000 0 0.0000000 77gud1 0
97 zr g u235f rc cu 5.9563487 5.0 5.9800000 0.2400000 0 0.0000000 81mar1 0
97 zr g u235f rc cu su 0.0000000 0.0 5.5300000 3.0000000% 0 0.0000000 72lar1 0
97 u235he cm cu es 0.0000000 0.0 5.4090000 0.0000000 0 0.0000000 63wea1 0
97 u235he cm re x3 0.0000000 0.0 1.2300000 0.0300000 99 mo g u235he 1.0000000 68kri1 0
97 u235he cm cu 0.0000000 0.0 5.7700000 8.8000000% 0 0.0000000 77cro1 0
97 u235he es cu 5.5525416 10.0 5.6090000 10.0000000% 0 0.0000000 74mee8 0
97 nb g u235he cm fi x3 0.0000000 0.0 0.0614100 0.0133500 97 u235he 1.0000000 72net2 40
97 nb g u235he rc fi 0.3356239 22.5 0.0614100 0.0133500 97 u235he 1.0000000 60kri2 40
97 nb m u235he cm fi x3 0.0000000 0.0 0.0075900 0.0016500 97 u235he 1.0000000 72net2 40
97 nb m u235he rc fi 0.0414816 22.5 0.0075900 0.0016500 97 u235he 1.0000000 60kri2 40
97 zr g u235he rc re 5.2299497 10.0 1.0500000 0.0100000 99 mo g u235t 0.0000000 56for1 7
97 zr g u235he rc re x4 0.0000000 0.0 1.1600000 0.0500000 99 mo g u235he 1.0000000 58pro1 0
97 zr g u235he rc re x1 0.0000000 0.0 1.1600000 0.0200000 99 mo g u235he 1.0000000 68kri1 0
97 zr g u235he cm cu 0.0000000 0.0 5.2900000 0.0000000 0 0.0000000 69gun2 0
97 zr g u235he rc re 5.4235924 9.4 1.2200000 0.1100000 140 ba g u235he 1.0000000 73man1 0
97 zr g u235he cm cu 0.0000000 0.0 5.0200000 3.9000000% 0 0.0000000 73net2 0
97 zr g u235he cm cu 0.0000000 0.0 5.6000000 0.0000000 0 0.0000000 60kat1 0
97 zr g u235he rc cu 5.2299497 5.0 1.0500000 1.4000000% 99 mo g u235t 0.0000000 76for1 7
97 zr g u235he rc re 5.0307135 10.0 1.0100000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
97 zr g u235he rc cu 4.9793696 5.0 5.0300000 5.0000000% 0 0.0000000 81lau1 0
97 zr g u235he rc cu 5.0684637 5.0 5.1200000 0.2300000 0 0.0000000 84chi1 0
97 zr g u235he rc cu 5.2411502 10.4 4.4000000 0.4000000 95 zr g u235he 4.3000000 60bon1 0
97 u238f es cu cm 5.4908603 30.0 5.5000000 0.0000000 0 0.0000000 64wal1 0
97 u238f es cu cm 5.6705611 30.0 5.6800000 0.0000000 0 0.0000000 72sid1 0
97 u238f cm cu 0.0000000 0.0 5.9000000 0.0000000 0 0.0000000 73lar3 0
97 u238f cm cu 0.0000000 0.0 5.5500000 2.6000000% 0 0.0000000 77cro1 0
97 u238f rc cu 5.3590850 5.0 5.6900000 0.1300000 140 ba g u238f 6.1600000 77bla1 0
97 mo g u238f ms cu 5.4678985 2.1 5.4770000 0.1140000 0 0.0000000 81mae1 0
97 mo g u238f ms cu 5.5198121 2.0 5.5290000 0.0540000 0 0.0000000 81mae1 0
97 mo g u238f ms cu 5.5637390 2.0 5.5730000 0.0950000 0 0.0000000 81mae1 0

97 mo g u238f cm cu 0.0000000 0.0 5.5270000 0.0650000 0 0.0000000 81mae1 0
97 mo g u238f ms cu 5.5461636 1.3 5.4700000 0.0600000 148 nd g u238f 2.0800000 74mae1 0
97 u238f rc cu 5.7204781 5.0 5.7300000 0.1800000 0 0.0000000 85li 1 0
97 u238f rc cu 6.0000128 5.0 6.0100000 0.2100000 0 0.0000000 85li 1 0
97 nb g u238f rc cu x4 0.0000000 0.0 6.4000000 0.0000000 0 0.0000000 68bel1 0
97 nb g u238f rc cu x4 0.0000000 0.0 6.0600000 2.4000000% 97 nb g u235t 6.0500000 74yur1 0
97 nb g u238f rc cu 5.7504282 5.0 5.7600000 0.2000000 0 0.0000000 77gud1 0
97 nb g u238f rc cu 5.9273817 10.9 0.9900000 0.1070000 97 nb g u235t 1.0000000 79yur1 36
97 nb g u238f rc cu 5.4708935 11.5 5.4800000 11.5000000% 0 0.0000000 88afa1 0
97 nb g u238f rc cu x4 0.0000000 0.0 6.4800000 0.9300000 0 0.0000000 87chu1 36
97 nb m u238f rc cu 5.1713920 5.0 5.1800000 0.2000000 0 0.0000000 77gud1 0
97 nb m u238f rc cu 5.2113256 10.9 5.2200000 10.9000000% 0 0.0000000 88afa1 0
97 zr g u238f rc cu x4 0.0000000 0.0 5.2000000 0.6000000 99 mo g u238f 7.0000000 60bon1 0
97 zr g u238f rc re 5.7277474 5.2 0.9300000 0.0300000 99 mo g u238f 1.0000000 69lyl1 0
97 zr g u238f rc cu 5.9001789 5.9 5.9100000 0.3500000 0 0.0000000 71cro3 0
97 zr g u238f rc cu 5.7728867 6.2 6.0000000 0.3700000 140 ba g u238f 6.0300000 72cun2 0
97 zr g u238f rc cu su 0.0000000 0.0 5.5300000 0.2500000 0 0.0000000 73dud1 0
97 zr g u238f rc cu su 0.0000000 0.0 5.4600000 7.0000000% 0 0.0000000 73dud2 0
97 zr g u238f rc re 5.9758036 5.0 1.0300000 0.0300000 140 ba g u238f 1.0000000 73man1 0
97 zr g u238f cm cu 0.0000000 0.0 5.9000000 6.1000000% 0 0.0000000 73net2 0
97 zr g u238f rc cu 5.3111594 5.0 5.3200000 3.0000000% 0 0.0000000 74lar1 0
97 zr g u238f rc cu 5.4010098 5.0 5.4100000 3.6000000% 0 0.0000000 75dud1 0
97 zr g u238f rc cu 5.4509267 6.7 5.4600000 6.7000000% 0 0.0000000 75dud2 0
97 zr g u238f rc cu x4 0.0000000 0.0 6.9200000 25.0000000% 0 0.0000000 75har1 36
97 zr g u238f rc cu 5.7803784 15.0 5.7900000 0.0000000 0 0.0000000 75fly4 0
97 zr g u238f rc cu 5.4655817 5.0 0.9060000 1.4000000% 99 mo g u235t 0.0000000 76for1 7
97 zr g u238f rc cu 5.5017776 5.0 0.9120000 1.4000000% 99 mo g u235t 0.0000000 76for1 7
97 zr g u238f rc cu 5.6805445 5.0 5.6900000 2.6000000% 0 0.0000000 76gil2 0
97 zr g u238f rc cu 5.7252865 5.0 5.9900000 0.2100000 140 ba g u238f 6.0700000 77har1 0
97 zr g u238f bm cu 5.6705611 3.0 5.6800000 3.0000000% 0 0.0000000 77gil1 0
97 zr g u238f rc cu 5.5715990 5.0 5.8100000 0.1300000 140 ba g u238f 6.0500000 78deb1 0
97 zr g u238f rc cu 5.4757023 5.0 5.7100000 0.1800000 140 ba g u238f 6.0500000 78deb1 0
97 zr g u238f es cu 5.5208104 2.0 5.5300000 0.1100000 0 0.0000000 78gin1 0
97 zr g u238f rc cu 5.5707273 5.0 5.5800000 0.1500000 0 0.0000000 78nag1 0
97 zr g u238f rc cu 5.6454996 5.4 0.9450000 0.0270000 97 zr g u235t 1.0000000 79yur1 0
97 zr g u238f rc cu x4 0.0000000 0.0 6.0000000 1.6000000 0 0.0000000 84gud1 0

97 zr g u238f rc cu 5.5407772 5.0 5.5500000 0.2600000 0 0.0000000 84chi3 0
97 zr g u238f rc cu 5.4708935 5.0 5.4800000 0.1700000 0 0.0000000 85chi1 0
97 zr g u238f rc cu 5.5307938 16.6 5.5400000 0.9200000 0 0.0000000 87chu1 0
97 rb g u238f ms in 0.0928455 26.9 0.0930000 0.0250000 0 0.0000000 74bal2 0
97 rb g u238f ms in su 0.0000000 0.0 0.0331000 0.0066000 93 rb g u238f 1.0000000 74bal2 0
97 rb g u238f cm fi 0.0000000 0.0 0.0130000 0.0040000 97 u238f 1.0000000 74wol1 0
97 rb g u238f rc in 0.0718804 30.6 0.0720000 0.0220000 0 0.0000000 74wol4 0
97 u238he cm cu es 0.0000000 0.0 5.6880000 0.0000000 0 0.0000000 63wea1 0
97 u238he cm cu su 0.0000000 0.0 5.3600000 0.1500000 0 0.0000000 73dar1 0
97 u238he cm cu 0.0000000 0.0 5.1800000 2.5000000% 0 0.0000000 77cro1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

97 nb g u238he rc cu 4.7895757 9.3 4.7900000 0.4400000 140 ba g u238he 4.6000000 75cav1 0
97 nb g u238he rc cu su 0.0000000 0.0 4.7900000 0.4400000 140 ba g u238he 4.6000000 74bla1 0
97 zr g u238he rc re 5.2464120 10.0 0.9400000 0.0100000 99 mo g u235t 0.0000000 56for1 7
97 zr g u238he rc re 5.8120244 10.1 1.0200000 0.0500000 99 mo g u238he 1.0000000 58pro1 0
97 zr g u238he rc cu 6.1198350 10.4 5.9700000 0.3300000 139 ba g u238he 4.9200000 64jam1 0
97 zr g u238he rc cu 4.6984029 10.7 4.7000000 0.5000000 99 mo g u238he 5.7000000 65mo 1 0
97 zr g u238he rc re 5.3245500 6.5 0.9540000 0.0620000 99 mo g u235t 0.0000000 68gor1 7
97 zr g u238he rc re rp 5.4623276 15.9 0.8110000 0.0000000 no. relative values = 1 68gor1
97 zr g u238he cm cu 0.0000000 0.0 5.3800000 0.0000000 0 0.0000000 69gun2 0
97 zr g u238he rc re 5.4131599 5.2 0.9500000 0.0200000 99 mo g u238he 1.0000000 69lyl1 0
97 zr g u238he rc cu su 0.0000000 0.0 4.6000000 0.5000000 0 0.0000000 71bla1 0
97 zr g u238he rc cu 5.3928520 17.2 5.4000000 0.9300000 0 0.0000000 71com1 0
97 zr g u238he rc cu 5.0932492 5.0 5.1000000 0.2000000 0 0.0000000 72pri1 0
97 zr g u238he rc cu su 0.0000000 0.0 4.8200000 0.5200000 0 0.0000000 73dar2 0
97 zr g u238he rc cu su 0.0000000 0.0 5.0100000 0.1300000 0 0.0000000 73dar4 0
97 zr g u238he rc re 5.7034947 5.8 1.2400000 0.0700000 140 ba g u238he 1.0000000 73man1 0
97 zr g u238he cm cu 0.0000000 0.0 5.0600000 3.9000000% 0 0.0000000 73net2 0
97 zr g u238he rc cu su 0.0000000 0.0 5.0100000 0.1300000 140 ba g u238he 4.4800000 74dar1 0
97 zr g u238he rc cu 5.1132227 5.0 5.1200000 0.0900000 0 0.0000000 75dar1 0
97 zr g u238he rc cu 4.9395624 6.6 4.9400000 0.3200000 140 ba g u238he 4.6000000 76raj1 0
97 zr g u238he cm cu 0.0000000 0.0 5.8000000 0.0000000 0 0.0000000 60kat1 0
97 zr g u238he rc cu 6.0521785 8.0 1.2000000 0.0900000 139 ba g u238he 1.0000000 66bro1 0

97	zr g	u238he	rc	cu		5.5982652	6.1	1.1100000	0.0600000	139 ba g	u238he	1.0000000	66bro1	0
97	zr g	u238he	es	cu		5.4927197	15.0	5.5000000	15.0000000%	0		0.0000000	74mee9	0
97	zr g	u238he	rc	cu		5.2464120	5.0	0.9400000	1.4000000%	99 mo g	u235t	0.0000000	76for1	7
97	zr g	u238he	rc	cu		5.6471875	10.5	5.5500000	0.5800000	99 mo g	u238he	5.6000000	75ada1	0
97	zr g	u238he	rc	cu		5.0495527	9.6	5.0500000	0.4800000	140 ba g	u238he	4.6000000	75cav1	0
97	zr g	u238he	rc	cu	su	0.0000000	0.0	5.0500000	0.4800000	140 ba g	u238he	4.6000000	74bla1	0
97	zr g	u238he	rc	cu		5.2230771	5.0	5.2300000	4.8000000%	0		0.0000000	81lau1	0
97	zr g	u238he	rc	cu		5.0366808	8.2	4.9500000	0.4000000	99 mo g	u238he	5.6000000	80li 1	0
97	zr g	u238he	rc	cu		5.0295544	5.2	5.0300000	0.1600000	140 ba g	u238he	4.6000000	80zhe1	0
97	zr g	u238he	rc	cu		5.6425211	5.0	5.6500000	0.1800000	0		0.0000000	85liu1	0
97	zr g	u238he	rc	cu		5.0133550	5.0	5.0200000	0.2500000	0		0.0000000	75dar1	0
97	zr g	u238he	rc	cu		5.0533021	5.0	5.0600000	0.1600000	0		0.0000000	75dar1	0
97	zr g	u238he	rc	cu		5.0832624	5.0	5.0900000	0.1400000	0		0.0000000	75dar1	0
97	zr g	u238he	rc	cu		5.2829977	5.0	5.2900000	0.2600000	0		0.0000000	75dar1	0
97	zr g	u238he	rc	cu		5.4028388	5.4	5.4100000	0.2900000	0		0.0000000	75dar1	0
97	zr g	u238he	rc	cu	x4	0.0000000	0.0	4.9000000	16.0000000%	99 mo g	u238he	6.5000000	60bon1	36
97		pu239t	cm	cu		0.0000000	0.0	5.6500000	0.0000000	0		0.0000000	72sid1	0
97	mo g	pu239t	cm	cu		0.0000000	0.0	5.7000000	0.0000000	0		0.0000000	73lam1	0
97		pu239t	cm	cu		0.0000000	0.0	5.5800000	0.1000000	0		0.0000000	73wal1	0
97		pu239t	cm	cu		0.0000000	0.0	5.5400000	4.6000000%	0		0.0000000	77cro1	0
97	mo g	pu239t	ms	cu		5.4024346	2.4	0.7960000	0.0150000	100 mo g	pu239t	1.0000000	59fic1	0
97	mo g	pu239t	es	cu	cm	5.4102891	1.0	5.4000000	1.0000000%	0		0.0000000	81mae2	0
97	mo g	pu239t	es	re	cm	5.3161437	1.4	0.2340000	1.0000000%	95 mo g	pu239t	0.2125000	81mae2	36
97	mo g	pu239t	ms	cu		5.5981751	1.3	5.7400000	0.0500000	95 mo g	pu239t	4.9500000	86chi1	0
97	nb g	pu239t	rc	fi		0.0659028	26.4	0.0121500	0.0032000	97	pu239t	1.0000000	62wah1	40
97	nb g	pu239t	rc	cu		5.4572118	5.4	4.8000000	0.0900000	97 zr g	pu239t	4.7000000	77gud1	0
97	nb g	pu239t	rc	cu		5.3100986	5.0	5.3000000	0.1400000	0		0.0000000	80dic1	0
97	nb g	pu239t	sp	fi		0.0659028	99.9	0.0121500	0.0200000	97	pu239t	1.0000000	84sch1	36
97	nb g	pu239t	cm	in		0.0000000	0.0	0.0693000	26.0000000%	0		1.0000000	88wah1	0
97	nb m	pu239t	rc	fi		0.0154587	28.1	0.0028500	0.0008000	97	pu239t	1.0000000	62wah1	40
97	nb m	pu239t	rc	cu		5.0365518	5.4	4.4300000	0.1000000	97 zr g	pu239t	4.7000000	77gud1	0
97	nb m	pu239t	sp	fi		0.0154587	99.9	0.0028500	0.0200000	97	pu239t	1.0000000	84sch1	36
97	nb m	pu239t	cm	in		0.0000000	0.0	0.0162600	26.0000000%	0		1.0000000	88wah1	0
97	zr g	pu239t	rc	cu		5.3041644	60.0	5.3000000	0.0000000	140 ba g	pu239t	5.3600000	51ste3	0
97	zr g	pu239t	cm	cu		0.0000000	0.0	5.6100000	0.0000000	0		0.0000000	73lam1	0
97	zr g	pu239t	cm	cu		0.0000000	0.0	5.5480000	4.0000000%	0		0.0000000	73net2	0

97 zr g pu239t rc cu x4 0.0000000 0.0 4.9800000 3.0000000% 137 cs g pu239t 6.7400000 74lar1 0
97 zr g pu239t rc cu rp 5.4665423 33.2 5.4600000 0.0000000 no. relative values = 4 74jen1
97 zr g pu239t rc cu 5.2404608 5.0 0.8600000 1.4000000% 99 mo g u235t 0.0000000 76for1 7
97 zr g pu239t rc cu rp 5.3280643 11.2 4.7000000 0.0000000 no. relative values = 2 77gud1
97 zr g pu239t rc cu 5.1197365 5.0 5.1100000 0.1300000 0 0.0000000 80dic1 0
97 zr g pu239t rc cu 5.4503653 5.5 5.4400000 0.3000000 0 0.0000000 79ram1 0
97 zr g pu239t rc cu 4.9461811 5.2 4.9800000 3.0000000% 95 zr g pu239t 4.8600000 73lar4 0
97 zr g pu239t rc cu 5.6514127 5.0 5.6400000 0.1600000 85 rb g pu239t 0.5740000 70lis1 0
97 zr g pu239t rc cu 5.1124393 10.1 5.5800000 10.0000000% 99 mo g pu239t 6.7900000 71ram1 36
97 zr g pu239t sp fi 1.6109579 7.1 0.2970000 7.0000000% 97 pu239t 1.0000000 84sch1 36
97 zr g pu239t rc cu 5.0996984 5.0 5.0900000 0.1300000 0 0.0000000 84jai1 0
97 zr g pu239t rc cu 5.2836775 5.0 1.0200000 0.0300000 140 ba g u235t 0.0000000 86chi1 7
97 zr g pu239t rc cu 5.3702129 5.0 5.3600000 0.1300000 0 0.0000000 84jai1 0
97 zr g pu239t cm in 0.0000000 0.0 1.5650000 7.0000000% 0 1.0000000 88wah1 0
97 y g pu239t es fc 3.8673837 15.0 0.7130000 0.1070000 97 pu239t 1.0000000 74wol1 0
97 y g pu239t sp fi 2.9941035 5.1 0.5520000 5.0000000% 97 pu239t 1.0000000 84sch1 36
97 y g pu239t cm in 0.0000000 0.0 2.8280000 5.0000000% 0 1.0000000 88wah1 0
97 sr g pu239t sp fi 0.7322536 15.0 0.1350000 15.0000000% 97 pu239t 1.0000000 84sch1 36
97 sr g pu239t cm in 0.0000000 0.0 0.7260000 15.0000000% 0 1.0000000 88wah1 0
97 rb g pu239t es fc 0.0070513 30.0 0.0013000 0.0000000 97 pu239t 1.0000000 74wol1 0
97 rb g pu239t rc in ul 0.0000000 0.0 0.0570000 0.0780000 0 0.0000000 75bal1 0
97 rb g pu239t sp fi 0.0054241 99.9 0.0010000 0.0200000 97 pu239t 1.0000000 84sch1 0
97 pu239f es cu cm 5.4179187 30.0 5.4300000 0.0000000 0 0.0000000 72sid1 0
97 pu239f cm cu 0.0000000 0.0 4.9000000 0.0000000 0 0.0000000 73lar3 0
97 pu239f cm cu 0.0000000 0.0 5.2100000 2.6000000% 0 0.0000000 77cro1 0
97 mo g pu239f ms cu 5.3771289 0.9 5.3650000 0.0470000 148 nd g pu239f 1.6540000 77mae1 0
97 mo g pu239f ms cu 5.3151479 2.0 5.3270000 0.0660000 0 0.0000000 77mae1 0
97 mo g pu239f ms cu 5.2415225 1.9 5.4700000 0.1000000 148 nd g pu239f 1.7300000 70lis1 0
97 mo g pu239f ms cu rp 5.3901150 1.9 0.2412000 0.0000000 no. relative values = 3 80mae4
97 mo g pu239f ms cu su 0.0000000 0.0 5.3300000 0.0600000 148 nd g pu239f 1.6500000 74mae1 0
97 pu239f es re 5.2400057 1.4 0.9700000 1.0000000% 97 pu239t 1.0000000 74mee4 0
97 mo g pu239f es re cm 5.1984256 1.4 0.2370000 1.0000000% 95 mo g pu239f 0.2125000 81mae2 36
97 mo g pu239f es cu cm 5.2882080 1.0 5.3000000 1.0000000% 0 0.0000000 81mae2 0
97 nb g pu239f rc cu 5.6558563 13.4 1.0470000 0.1390000 97 nb g pu239t 1.0000000 79yur1 36
97 nb g pu239f rc cu 4.7893204 5.0 4.8000000 0.0900000 0 0.0000000 77gud1 0
97 nb m pu239f rc cu 4.4201436 5.0 4.4300000 0.1000000 0 0.0000000 77gud1 0

97 zr g pu239f rc cu 5.5235480 60.0 5.2000000 0.0000000 140 ba g pu239f 5.0000000 51ste3 0
97 zr g pu239f rc cu cm 5.1828679 15.1 4.8500000 0.0000000 140 ba g pu239f 4.9700000 65cro2 0
97 zr g pu239f rc cu 5.9239235 15.1 5.8000000 0.0000000 140 ba g pu239f 5.2000000 71cun1 0
97 zr g pu239f rc cu 5.8673814 5.4 5.8800000 0.0330000 99 mo g pu239f 5.9800000 72cun1 0
97 zr g pu239f rc cu 5.6083671 6.3 5.6600000 0.3500000 140 ba g pu239f 5.3600000 72cun2 0
97 zr g pu239f rc cu su 0.0000000 0.0 5.1400000 0.2300000 0 0.0000000 73dud1 0
97 zr g pu239f rc cu su 0.0000000 0.0 5.1000000 6.0000000% 0 0.0000000 73dud2 0
97 zr g pu239f cm cu 0.0000000 0.0 4.8230000 5.0000000% 0 0.0000000 73net2 0
97 zr g pu239f rc cu 4.8491869 5.0 4.8600000 3.0000000% 0 0.0000000 74lar1 0
97 zr g pu239f rc cu 5.1086084 5.0 5.1200000 3.5000000% 0 0.0000000 75dud1 0
97 zr g pu239f rc cu 5.1385417 5.0 5.1500000 5.0000000% 0 0.0000000 75dud2 0
97 zr g pu239f rc re 5.4775490 5.0 1.0680000 0.0170000 140 ba g u235t 0.0000000 75raj1 7
97 zr g pu239f es cu 5.0241528 30.0 5.2000000 0.0000000 137 cs g pu239f 6.8000000 60kat1 0
97 zr g pu239f rc cu 5.0967337 5.0 0.8720000 1.4000000% 99 mo g u235t 0.0000000 76for1 7
97 zr g pu239f rc cu 5.0382850 5.0 0.8620000 1.4000000% 99 mo g u235t 0.0000000 76for1 7
97 zr g pu239f rc cu 5.0850440 5.0 0.8700000 1.4000000% 99 mo g u235t 0.0000000 76for1 7
97 zr g pu239f rc cu 5.2545454 5.0 0.8990000 1.4000000% 99 mo g u235t 0.0000000 76for1 7
97 zr g pu239f rc cu su 0.0000000 0.0 5.4050000 2.3000000% 0 0.0000000 76gil2 0
97 zr g pu239f rc cu su 0.0000000 0.0 5.4590000 2.4000000% 0 0.0000000 76gil3 0
97 zr g pu239f bm cu 5.4278965 2.5 5.4400000 2.5000000% 0 0.0000000 77gil1 0
97 zr g pu239f rc cu rp 5.2571491 35.4 4.9000000 0.0000000 no. relative values = 5 74jen1
97 zr g pu239f rc cu rp 5.1050074 31.8 4.8200000 0.0000000 no. relative values = 4 74bal1
97 zr g pu239f rc cu 5.5719404 13.4 1.0470000 0.1390000 97 zr g pu239t 1.0000000 79yur1 36
97 zr g pu239f rc cu 5.0088309 5.0 5.0200000 3.7000000% 0 0.0000000 81lau1 0
97 zr g pu239f rc cu 4.6895429 7.9 4.7000000 0.3700000 0 0.0000000 77gud1 0
97 zr g pu239f rc cu su 0.0000000 0.0 4.8600000 3.0000000% 140 ba g pu239f 5.2500000 72lar1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

97 pu241t cm cu 0.0000000 0.0 4.6900000 0.0000000 0 0.0000000 72sid1 0
97 pu241t cm cu 0.0000000 0.0 4.7300000 0.1200000 0 0.0000000 73wal1 0
97 pu241t cm cu 0.0000000 0.0 4.8500000 9.2000000% 0 0.0000000 77cro1 0
97 pu241t cm cu 0.0000000 0.0 4.6800000 0.0000000 0 0.0000000 79wal1 0
97 mo g pu241t ms cu 4.6498016 2.0 4.6650000 0.0310000 0 0.0000000 77mae1 0
97 mo g pu241t ms cu 4.9674033 2.1 5.0400000 0.0800000 95 mo g pu241t 3.9700000 86chi1 0

97 zr g pu241t rc cu 4.4600113 5.0 4.6900000 0.2000000 137 cs g pu239t 5.6100000 69cro2 25
97 zr g pu241t rc cu 4.9737428 5.0 4.9900000 0.2200000 0 0.0000000 73sko2 0
97 zr g pu241t rc cu 4.7345247 5.0 4.7500000 0.2000000 0 0.0000000 79dic1 0
97 zr g pu241t rc cu 4.9240268 5.0 4.7600000 0.1400000 148 nd g pu241t 1.8616500 70lis1 0
97 zr g pu241t rc cu 4.9396623 5.0 0.8900000 0.0200000 140 ba g u235t 0.0000000 86chi1 7
97 zr g pu241t rc cu x4 0.0000000 0.0 3.8000000 0.0000000 0 0.0000000 63kir1 0
97 mo g u233t ms cu 5.5496095 5.1 5.3500000 5.0000000% 95 mo g u233t 6.1000000 54ste1 0
97 u233t cm cu 0.0000000 0.0 5.4600000 0.0000000 0 0.0000000 72sid1 0
97 u233t cm cu 0.0000000 0.0 5.3900000 0.0000000 0 0.0000000 73lam1 0
97 u233t cm cu 0.0000000 0.0 5.3600000 0.0900000 0 0.0000000 73wal1 0
97 mo g u233t ms cu 5.5606112 4.1 5.5100000 4.0000000% 95 mo g u233t 6.2700000 61bid1 0
97 u233t cm cu 0.0000000 0.0 5.5700000 3.8000000% 0 0.0000000 77cro1 0
97 u233t ms cu 5.5028567 2.0 5.5220000 0.0420000 0 0.0000000 80weh1 0
97 mo g u233t ms cu 5.5008636 2.0 5.5200000 0.0500000 0 0.0000000 70lis1 0
97 mo g u233t sp fi ul 0.0000000 0.0 0.5600000 0.0640000 97 u233t 100.0000000 83qua1 0
97 mo g u233t ms cu 5.5005210 1.5 5.5200000 0.0600000 95 mo g u233t 6.3500000 86chi1 0
97 mo g u233t sp in ul 0.0000000 0.0 0.0300000 0.0040000 0 0.0000000 88qua1 0
97 nb g u233t rc cu 5.7043605 15.0 5.7300000 0.0000000 99 mo g u235t 6.0900000 66gor1 24
97 nb g u233t rc fi 0.0489722 36.4 0.0089100 0.0032400 97 u233t 1.0000000 62wah1 40
97 nb g u233t ms in 0.0919800 17.6 0.0923000 0.0162000 0 0.0000000 80weh1 18
97 nb g u233t sp fi ul 0.0000000 0.0 3.0780000 0.5792000 97 u233t 100.0000000 83qua1 40
97 nb g u233t es in 0.0564735 45.0 0.0566700 45.0000000% 0 0.0000000 74mee1 18
97 nb g u233t sp in x4 0.0000000 0.0 0.1660500 0.0355000 0 0.0000000 88qua1 18
97 nb g u233t es in 0.0552079 31.0 0.0554000 31.0000000% 0 0.0000000 88wah1 18
97 nb g u233t es fi 0.0739035 28.5 0.0134460 28.5000000% 97 u233t 1.0000000 91jam2 40
97 nb m u233t rc fi 0.0114873 36.4 0.0020900 0.0007600 97 u233t 1.0000000 62wah1 40
97 nb m u233t ms in 0.0216248 17.5 0.0217000 0.0038000 0 0.0000000 80weh1 18
97 nb m u233t sp fi ul 0.0000000 0.0 0.7220000 0.1358000 97 u233t 100.0000000 83qua1 40
97 nb m u233t sp in x4 0.0000000 0.0 0.0389500 0.0074000 0 0.0000000 88qua1 18
97 nb m u233t es in 0.0251625 64.0 0.0252500 64.0000000% 0 0.0000000 74mee1 18
97 nb m u233t es in 0.0129549 31.0 0.0130000 31.0000000% 0 0.0000000 88wah1 18
97 nb m u233t es fi 0.0173354 28.5 0.0031540 28.5000000% 97 u233t 1.0000000 91jam2 40
97 zr g u233t rc cu 5.8545915 15.0 5.7100000 0.0000000 99 mo g u235t 5.9000000 66gor1 24
97 zr g u233t cm cu 0.0000000 0.0 5.4110000 2.0000000% 0 0.0000000 73net2 0
97 zr g u233t ms in 2.1953628 2.0 2.2030000 0.0420000 0 0.0000000 80weh1 0
97 zr g u233t rc cu 5.5506903 5.0 5.5700000 4.3000000% 0 0.0000000 81ram1 0

97	zr g	u233t	sp	fi		2.1562064	6.5	39.2300000	2.5230000	97		u233t	100.0000000	83qua1	0
97	zr g	u233t	rc	cu		5.8482155	5.0	0.9500000	0.0200000	140	ba g	u235t	0.0000000	86chi1	7
97	zr g	u233t	sp	in		2.1046782	6.7	2.1120000	0.1410000	0			0.0000000	88qua1	0
97	y g	u233t	ms	in		2.5600939	2.0	2.5690000	0.0440000	0			0.0000000	80weh1	0
97	y g	u233t	sp	fi		2.5096198	5.1	45.6600000	1.7380000	97		u233t	100.0000000	83qua1	0
97	y g	u233t	sp	in		2.4494788	5.0	2.4580000	0.1030000	0			0.0000000	88qua1	0
97	y g	u233t	sp	fi	x4	0.0000000	0.0	0.8000000	6.0000000%	97		u233t	1.0000000	86lei1	0
97	sr g	u233t	ms	in		0.6337952	4.9	0.6360000	0.0310000	0			0.0000000	80weh1	0
97	sr g	u233t	sp	fi		0.5820603	5.4	10.5900000	0.5670000	97		u233t	100.0000000	83qua1	0
97	sr g	u233t	sp	fc		1.0992641	10.0	0.2000000	10.0000000%	97		u233t	1.0000000	86lei1	0
97	sr g	u233t	sp	in		0.5680240	5.6	0.5700000	0.0320000	0			0.0000000	88qua1	0
97	rb g	u233t	sp	fi		0.0082445	16.0	0.1500000	0.0240000	97		u233t	100.0000000	83qua1	0
97	rb g	u233t	sp	in		0.0079723	12.5	0.0080000	0.0010000	0			0.0000000	88qua1	0
97		th232f	cm	cu	es	0.0000000	0.0	4.5300000	0.0000000	0			0.0000000	65eng1	0
97		th232f	es	cu	cm	5.4449904	30.0	5.4500000	0.0000000	0			0.0000000	72sid1	0
97		th232f	es	cu	cm	3.9563600	30.0	3.9600000	0.0000000	0			0.0000000	73lam1	0
97		th232f	cm	cu		0.0000000	0.0	4.1000000	0.0000000	0			0.0000000	74lam1	0
97		th232f	cm	cu		0.0000000	0.0	4.7500000	5.2000000%	0			0.0000000	77cro1	0
97		th232f	es	cu		4.4459096	30.0	4.4500000	0.0000000	0			0.0000000	74mee0	0
97	nb g	th232f	rc	cu		4.0962313	7.3	4.1000000	0.3000000	0			0.0000000	77gud1	0
97	nb g	th232f	ms	re		4.2571680	2.3	1.4840000	0.0160000	132	te g	th232f	1.0000000	68har1	0
97	nb g	th232f	rc	cu		4.3959556	5.0	4.4000000	0.1800000	0			0.0000000	86ric1	0
97	zr g	th232f	rc	cu		4.8954960	60.0	4.9000000	0.0000000	0			0.0000000	50nid1	0
97	zr g	th232f	rc	cu		5.7331702	20.0	5.4000000	0.8000000	89	sr g	u235t	6.1000000	51tur1	22
97	zr g	th232f	rc	re		4.4945978	10.0	1.5600000	0.0200000	99	mo g	u235t	0.0000000	63iye1	7
97	zr g	th232f	rc	re		4.8239500	5.4	1.6400000	0.0300000	99	mo g	th232f	1.0000000	69lyl1	0
97	zr g	th232f	rc	re		4.7183017	6.9	0.6210000	6.9000000%	140	ba g	u235t	0.0000000	73bra1	7
97	zr g	th232f	cm	cu		0.0000000	0.0	4.3790000	4.0000000%	0			0.0000000	73net2	0
97	zr g	th232f	cm	cu		0.0000000	0.0	5.2000000	0.0000000	0			0.0000000	60kat1	0
97	zr g	th232f	rc	cu		4.5657993	6.0	4.5700000	6.0000000%	0			0.0000000	69lyl1	0
97	zr g	th232f	rc	cu		5.2480242	15.1	4.9600000	0.0000000	99	mo g	th232f	2.7800000	68lyl1	0
97	zr g	th232f	cm	cu		0.0000000	0.0	4.3500000	0.0000000	0			0.0000000	79zij1	0
97	zr g	th232f	rc	cu		4.6144706	5.7	4.3400000	0.1400000	140	ba g	th232f	7.4000000	73cha1	0
97	zr g	th232f	rc	re		4.4657863	5.2	1.5500000	0.0800000	99	mo g	u235t	0.0000000	81ert1	7
97	zr g	th232f	cm	cu		0.0000000	0.0	4.5200000	0.1900000	0			0.0000000	81ert1	0
97	zr g	th232f	rc	cu		4.3260199	5.0	4.3300000	4.5000000%	0			0.0000000	81ram1	0

97 zr g th232f rc cu x4 0.0000000 0.0 0.6078000 14.8000000% 89 sr g u235t 0.0000000 51tur1 7
97 sr g th232f rc cu x1 0.0000000 0.0 5.6000000 0.6600000 140 ba g th232f 7.9700000 85chu1 0
98 tc g u235t rc fi cm 0.0000009 13.4 0.0000002 0.0000000 98 u235t 1.0000000 66goe1 0
98 mo g u235t ms cu 5.7829406 6.0 5.7800000 0.0000000 0 0.0000000 55gle1 0
98 mo g u235t ms re 5.6726837 2.6 0.9010000 0.0230000 100 mo g u235t 1.0000000 62far2 0
98 u235t cm cu 0.0000000 0.0 5.9000000 0.0000000 0 0.0000000 72sid1 0
98 u235t cm cu 0.0000000 0.0 5.8100000 0.0000000 0 0.0000000 73lam1 0
98 u235t cm cu 0.0000000 0.0 5.8100000 0.1000000 0 0.0000000 73wal1 0
98 u235t ms cu 5.6028490 2.0 5.6000000 0.0970000 0 0.0000000 76dii1 0
98 u235t sp cu 5.7441058 5.0 5.7200000 0.1400000 0 0.9963100 76woh2 0
98 u235t cm cu 0.0000000 0.0 5.8100000 2.4000000% 0 0.0000000 77cro1 0
98 mo g u235t ms cu 5.8759879 2.0 5.8730000 0.0590000 0 0.0000000 78mae1 0
98 mo g u235t ms cu 5.7839411 2.0 5.7810000 0.0580000 0 0.0000000 78mae1 0
98 mo g u235t ms cu 5.8309650 2.0 5.8280000 0.0600000 0 0.0000000 78mae1 0
98 mo g u235t ms cu 5.7729355 2.0 5.7700000 0.0300000 0 0.0000000 70lis1 0
98 mo g u235t ms cu cm 5.8299645 6.0 5.8270000 0.0000000 0 0.0000000 80mae3 0
98 mo g u235t ms cu 5.8280288 1.0 5.8400000 0.0400000 95 mo g u235t 6.5200000 86chi1 0
98 nb g u235t sp fi 0.0912438 19.1 1.5750000 0.3000000 98 u235t 100.0000000 78str1 40
98 nb g u235t sp fi su 0.0000000 0.0 2.2500000 1.1250000 98 u235t 100.0000000 75sie1 40
98 nb g u235t rc fi x4 0.0000000 0.0 0.0060750 0.0003000 98 u235t 1.0000000 69bla1 40
98 nb g u235t ms fi 0.1303482 50.0 2.2500000 1.1250000 98 u235t 100.0000000 76sie1 40
98 nb g u235t ms fi su 0.0000000 0.0 1.5750000 0.9000000 98 u235t 100.0000000 75cle2 40
98 nb g u235t ms in 0.1328175 29.4 0.1327500 0.0390000 0 0.0000000 79cle1 18
98 nb g u235t rc in x4 0.0000000 0.0 0.0620000 0.0080000 0 0.0000000 78den2 0
98 nb g u235t rc in x4 0.0000000 0.0 0.0255000 0.0112000 0 0.0000000 78kai1 18
98 nb g u235t rc in x4 0.0000000 0.0 0.0620000 0.0080000 0 0.0000000 78wei1 0
98 nb g u235t ms fi 0.1216583 50.0 2.1000000 1.0500000 98 u235t 100.0000000 76wol1 40
98 nb g u235t sp fi 0.1346932 29.0 2.3250000 0.6750000 98 u235t 100.0000000 80lan1 40
98 nb g u235t es in 0.1153587 46.0 0.1153000 46.0000000% 0 1.0000000 88wah1 18
98 nb g u235t rc in x4 0.0000000 0.0 0.0480000 0.0090000 97 zr g u235t 6.0000000 59tro1 40
98 nb m u235t sp fi su 0.0000000 0.0 0.7500000 0.3750000 98 u235t 100.0000000 75sie1 40
98 nb m u235t rc fi x4 0.0000000 0.0 0.0020250 0.0001000 98 u235t 1.0000000 69bla1 40
98 nb m u235t ms fi 0.0434494 50.0 0.7500000 0.3750000 98 u235t 100.0000000 76sie1 40
98 nb m u235t rc in x4 0.0000000 0.0 0.0085000 0.0038000 0 0.0000000 78kai1 18
98 nb m u235t sp fi 0.0304146 19.1 0.5250000 0.1000000 98 u235t 100.0000000 78str1 40
98 nb m u235t ms fi su 0.0000000 0.0 0.5250000 0.3000000 98 u235t 100.0000000 75cle2 40

98 nb m u235t ms in 0.0442725 29.4 0.0442500 0.0130000 0 0.0000000 79cle1 18
98 nb m u235t rc fi x4 0.0000000 0.0 1.0800000 0.1100000 98 u235t 100.0000000 79wei1 0
98 nb m u235t ms fi 0.0405528 50.0 0.7000000 0.3500000 98 u235t 100.0000000 76wol1 40
98 nb m u235t sp fi 0.0448977 29.0 0.7750000 0.2250000 98 u235t 100.0000000 80lan1 40
98 nb m u235t es in 0.0385196 46.0 0.0385000 46.0000000% 0 1.0000000 88wah1 18
98 nb m u235t rc in x4 0.0000000 0.0 0.0160000 0.0030000 97 zr g u235t 6.0000000 59tro1 40
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

98 zr g u235t ms fi 2.5142725 6.9 43.4000000 3.0000000 98 u235t 100.0000000 76sie1 0
98 zr g u235t sp fi su 0.0000000 0.0 0.4970000 0.0650000 98 u235t 1.0000000 74sie2 0
98 zr g u235t sp fi su 0.0000000 0.0 43.4000000 3.0000000 98 u235t 100.0000000 75sie1 0
98 zr g u235t sp fi 2.1492974 5.0 37.1000000 1.2000000 98 u235t 100.0000000 78str1 0
98 zr g u235t ms fi su 0.0000000 0.0 45.3000000 3.6000000 98 u235t 100.0000000 75cle2 0
98 zr g u235t ms in 2.6713584 4.1 2.6700000 0.1100000 0 0.0000000 79cle1 0
98 zr g u235t ms fi su 0.0000000 0.0 45.1000000 3.0000000 98 u235t 100.0000000 76wol1 0
98 zr g u235t sp fi 2.6996566 5.0 46.6000000 1.6000000 98 u235t 100.0000000 80lan1 0
98 zr g u235t es in cm 2.4572495 6.0 2.4560000 6.0000000% 0 1.0000000 88wah1 0
98 zr g u235t es in cm 2.3031712 23.0 2.3020000 23.0000000% 0 0.0000000 74mee1 0
98 zr g u235t es fi cm 2.5200657 6.1 0.4350000 6.1000000% 98 u235t 1.0000000 91jam2 0
98 y g u235t sp fi su 0.0000000 0.0 0.3800000 0.0720000 98 u235t 1.0000000 74sie2 37
98 y g u235t sp fi su 0.0000000 0.0 37.7000000 3.0000000 98 u235t 100.0000000 75sie1 37
98 y g u235t ms fi 1.0920285 8.0 37.7000000 3.0000000 98 u235t 100.0000000 76sie1 37
98 y g u235t sp fi x4 0.0000000 0.0 46.5000000 0.7000000 98 u235t 100.0000000 78str1 37
98 y g u235t ms fi su 0.0000000 0.0 39.4000000 2.4000000 98 u235t 100.0000000 75cle2 37
98 y g u235t ms in 1.0755469 5.1 2.1500000 0.1100000 0 0.0000000 79cle1 37
98 y g u235t ms fi su 0.0000000 0.0 37.4000000 2.8000000 98 u235t 100.0000000 76wol1 37
98 y g u235t sp fi 1.0833386 5.0 37.4000000 1.5000000 98 u235t 100.0000000 80lan1 37
98 y g u235t rc fc sm 0.0000000 0.0 0.5360000 0.0300000 98 y g u235t 1.0000000 83ven1 0
98 y g u235t cm in 0.0000000 0.0 1.1340000 6.0000000% 0 1.0000000 88wah1 0
98 y m u235t sp fi su 0.0000000 0.0 0.3800000 0.0720000 98 u235t 1.0000000 74sie2 37
98 y m u235t sp fi su 0.0000000 0.0 37.7000000 3.0000000 98 u235t 100.0000000 75sie1 37
98 y m u235t ms fi 1.0920285 8.0 37.7000000 3.0000000 98 u235t 100.0000000 76sie1 37
98 y m u235t sp fi x4 0.0000000 0.0 46.5000000 0.7000000 98 u235t 100.0000000 78str1 37
98 y m u235t ms fi su 0.0000000 0.0 39.4000000 2.4000000 98 u235t 100.0000000 75cle2 37

98 y m u235t ms in 1.0755469 5.1 2.1500000 0.1100000 0 0.0000000 79cle1 37
98 y m u235t ms fi su 0.0000000 0.0 37.4000000 2.8000000 98 u235t 100.0000000 76wol1 37
98 y m u235t sp fi 1.0833386 5.0 37.4000000 1.5000000 98 u235t 100.0000000 80lan1 37
98 y m u235t cm in 0.0000000 0.0 1.1340000 6.0000000% 0 1.0000000 88wah1 0
98 sr g u235t ms fi 0.8689882 14.7 15.0000000 2.2000000 98 u235t 100.0000000 76sie1 0
98 sr g u235t sp fi su 0.0000000 0.0 0.1200000 0.1000000 98 u235t 1.0000000 74sie2 0
98 sr g u235t sp fi su 0.0000000 0.0 15.0000000 2.2000000 98 u235t 100.0000000 75sie1 0
98 sr g u235t sp fi 0.8284354 5.6 14.3000000 0.8000000 98 u235t 100.0000000 78str1 0
98 sr g u235t ms fi su 0.0000000 0.0 13.2000000 1.5000000 98 u235t 100.0000000 75cle2 0
98 sr g u235t ms in 0.7423775 11.2 0.7420000 0.0830000 0 0.0000000 79cle1 0
98 sr g u235t ms in 0.4902493 28.6 0.4900000 0.1400000 0 0.0000000 79shm1 0
98 sr g u235t sp cu 0.4902493 28.6 0.4900000 0.1400000 0 0.0000000 81shm1 0
98 sr g u235t ms fi su 0.0000000 0.0 14.2000000 2.1000000 98 u235t 100.0000000 76wol1 0
98 sr g u235t sp fi 0.7473298 10.9 12.9000000 1.4000000 98 u235t 100.0000000 80lan1 0
98 sr g u235t cm in 0.0000000 0.0 0.8211000 9.0000000% 0 1.0000000 88wah1 0
98 sr g u235t sp in x4 0.0000000 0.0 3.7000000 0.9000000 0 0.0000000 90rud1 0
98 sr g u235t sp cu x4 0.0000000 0.0 3.8000000 0.8000000 0 0.0000000 90rud1 0
98 rb g u235t ms fi ul 0.0000000 0.0 0.9000000 0.6000000 98 u235t 100.0000000 76sie1 0
98 rb g u235t sp in 0.0029315 99.9 0.0029300 0.0058500 0 0.0000000 75ree1 0
98 rb g u235t sp fi ul 0.0000000 0.0 0.9000000 0.6000000 98 u235t 100.0000000 75sie1 0
98 rb g u235t rc in ul 0.0000000 0.0 0.0040000 0.0010000 0 0.0000000 77wun1 0
98 rb g u235t rc in 0.0022011 40.9 0.0022000 0.0009000 0 0.0000000 79peu1 0
98 rb g u235t ms fi ul 0.0000000 0.0 0.5000000 0.4000000 98 u235t 100.0000000 76wol1 0
98 rb g u235t ms cu su 0.0000000 0.0 0.0360000 0.0090000 0 0.0000000 79shm1 0
98 rb g u235t sp cu x1 0.0000000 0.0 0.0360000 0.0090000 0 0.0000000 81shm1 0
98 rb g u235t sp cu x1 0.0000000 0.0 0.0970000 0.0190000 89 rb g u235t 4.7700000 85rud1 0
98 rb g u235t sp cu 0.0039020 15.4 0.0039000 0.0006000 0 0.0000000 90rud1 0
98 u235f es cu cm 5.8965860 30.0 5.9200000 0.0000000 0 0.0000000 72sid1 0
98 u235f cm cu 0.0000000 0.0 6.1800000 7.1000000% 0 0.0000000 77cro1 0
98 u235f es re 5.6520497 10.0 0.9800000 10.0000000% 98 u235t 1.0000000 74mee4 0
98 mo g u235f ms cu 5.7780566 2.0 5.8010000 0.0350000 0 0.0000000 80mae1 0
98 mo g u235f ms cu 5.7872625 2.0 6.0400000 0.1200000 148 nd g u235f 1.7500000 70lis1 0
98 mo g u235f ms cu 5.9563487 2.0 5.9800000 2.0000000% 0 0.0000000 72lar1 0
98 mo g u235f ms cu cm 5.8856295 6.0 5.9090000 0.0000000 0 0.0000000 80mae3 0
98 mo g u235f ms cu 5.9832419 2.0 6.0070000 0.0390000 0 0.0000000 81mae1 0
98 mo g u235f ms cu 5.9563487 2.0 5.9800000 0.0380000 0 0.0000000 81mae1 0

98	mo g	u235f	es	cu		5.9443961	0.6	5.9680000	0.0330000	0			0.0000000	81mae1	0		
98	mo g	u235f	cm	cu		0.0000000	0.0	5.9850000	0.0320000	0			0.0000000	81mae1	0		
98	mo g	u235f	ms	cu		5.8986481	1.0	5.9100000	0.0500000	148	nd g	u235f	1.6800000	74mae1	0		
98	mo g	u235he	cm	cu	x3	0.0000000	0.0	4.7820000	0.0000000	0			0.0000000	63wea1	0		
98		u235he	es	cu		5.4284721	20.0	5.5400000	20.0000000%	0			0.0000000	77cro1	0		
98	mo g	u238f	es	cu		5.9938806	30.0	6.0080000	0.0000000	0			0.0000000	63wea1	0		
98		u238f	es	cu	cm	5.8861344	30.0	5.9000000	0.0000000	0			0.0000000	64wal1	0		
98		u238f	es	cu	cm	5.9060874	30.0	5.9200000	0.0000000	0			0.0000000	72sid1	0		
98		u238f	cm	cu		0.0000000	0.0	5.7900000	5.0000000%	0			0.0000000	77cro1	0		
98	mo g	u238f	ms	cu		5.8252778	2.1	5.8390000	0.1210000	0			0.0000000	81mae1	0		
98	mo g	u238f	ms	cu		5.8432355	2.0	5.8570000	0.0570000	0			0.0000000	81mae1	0		
98	mo g	u238f	ms	cu		5.9529770	2.0	5.9670000	0.1010000	0			0.0000000	81mae1	0		
98	mo g	u238f	cm	cu		0.0000000	0.0	5.8880000	0.0700000	0			0.0000000	81mae1	0		
98	mo g	u238f	ms	cu		5.8969683	1.4	5.8200000	0.0700000	148	nd g	u238f	2.0800000	74mae1	0		
98	nb m	u238f	rc	cu		5.5269805	10.5	5.5400000	10.5000000%	0			0.0000000	88afa1	0		
98	mo g	u238he	es	cu		5.5901689	30.0	5.6500000	0.0000000	0			0.0000000	63wea1	0		
98		u238he	es	cu	su	0.0000000	0.0	5.5200000	0.0000000	0			0.0000000	73dar1	0		
98		u238he	es	cu		5.4120750	15.0	5.4700000	15.0000000%	0			0.0000000	74mee9	0		
98		u238he	cm	cu		0.0000000	0.0	5.3600000	20.0000000%	0			0.0000000	77cro1	0		
98		pu239t	cm	cu		0.0000000	0.0	5.8800000	0.0000000	0			0.0000000	72sid1	0		
98		pu239t	cm	cu		0.0000000	0.0	5.9300000	0.0000000	0			0.0000000	73lam1	0		
98		pu239t	cm	cu		0.0000000	0.0	5.8100000	0.1000000	0			0.0000000	73wal1	0		
98		pu239t	cm	cu		0.0000000	0.0	5.8700000	10.0000000%	0			0.0000000	77cro1	0		
98	mo g	pu239t	ms	cu		5.9497587	1.6	5.8400000	0.0000000	133	cs g	pu239t	6.9000000	59fic1	0		
98	mo g	pu239t	ms	cu		5.6264049	2.4	0.8290000	0.0160000	100	mo g	pu239t	1.0000000	59fic1	0		
98	mo g	pu239t	es	re	cm	5.8068646	1.4	0.2556000	1.0000000%	95	mo g	pu239t	0.2125000	81mae2	36		
98	mo g	pu239t	es	cu	cm	5.8310894	1.0	5.8200000	1.0000000%	0			0.0000000	81mae2	0		
98	mo g	pu239t	ms	cu	x4	0.0000000	0.0	6.6300000	9.0000000%	95	mo g	pu239t	4.9500000	86chi1	36		
98	nb g	pu239t	rc	fi		0.1445876	30.3	0.0247500	0.0075000	98		pu239t	1.0000000	59tro1	40		
98	nb g	pu239t	rc	in		0.1202286	18.7	0.1200000	0.0225000	0			0.0000000	78kai1	18		
98	nb g	pu239t	es	in		0.1373612	20.0	0.1371000	20.0000000%	0			0.0000000	89rid1	18		
98	nb g	pu239t	sp	fi	x4	0.0000000	0.0	0.0412500	36.0000000%	98		pu239t	1.0000000	84sch1	36		
98	nb m	pu239t	rc	fi		0.0481959	30.3	0.0082500	0.0025000	98		pu239t	1.0000000	59tro1	40		
98	nb m	pu239t	rc	in		0.0400762	18.7	0.0400000	0.0075000	0			0.0000000	78kai1	18		
98	nb m	pu239t	es	in		0.0457871	20.0	0.0457000	20.0000000%	0			0.0000000	89rid1	18		
98	nb m	pu239t	sp	fi	x4	0.0000000	0.0	0.0137500	36.0000000%	98		pu239t	1.0000000	84sch1	36		

98 zr g pu239t sp fi 2.8683841 5.1 0.4910000 5.0000000% 98 pu239t 1.0000000 84sch1 36
98 zr g pu239t cm in 0.0000000 0.0 2.8500000 5.0000000% 0 1.0000000 88wah1 0
98 y g pu239t sp fi 1.1654636 5.1 0.3990000 5.0000000% 98 pu239t 1.0000000 84sch1 37
98 y g pu239t cm in 0.0000000 0.0 1.1260000 5.0000000% 0 1.0000000 88wah1 0
98 y g pu239t es fc sm 0.0000000 0.0 0.4540000 0.0000000 98 pu239t 1.0000000 74wol1 0
98 y m pu239t sp fi 1.1654636 5.1 0.3990000 5.0000000% 98 pu239t 1.0000000 84sch1 37
98 y m pu239t cm in 0.0000000 0.0 1.1260000 5.0000000% 0 1.0000000 88wah1 0
98 sr g pu239t sp fi 0.3213058 36.0 0.0550000 36.0000000% 98 pu239t 1.0000000 84sch1 36
98 sr g pu239t cm in 0.0000000 0.0 0.3259000 36.0000000% 0 1.0000000 88wah1 0
98 rb g pu239t es fc 0.0006660 30.0 0.0001140 0.0000000 98 pu239t 1.0000000 74wol1 0
98 pu239f es cu cm 5.4328516 30.0 5.4500000 0.0000000 0 0.0000000 72sid1 0
98 pu239f cm cu 0.0000000 0.0 5.6400000 4.5000000% 0 0.0000000 77cro1 0
98 mo g pu239f ms cu 5.6965949 0.9 5.6890000 0.0500000 148 nd g pu239f 1.6540000 77mae1 0
98 mo g pu239f ms cu 5.9183192 2.0 5.9370000 0.0730000 0 0.0000000 77mae1 0
98 mo g pu239f ms cu 5.5621787 1.9 5.8100000 0.1100000 148 nd g pu239f 1.7300000 70lis1 0
98 mo g pu239f ms cu 5.5849237 0.7 0.2551000 0.0001000 97 mo g pu239f 0.2412000 80mae4 0
98 mo g pu239f ms cu su 0.0000000 0.0 5.6600000 0.0700000 148 nd g pu239f 1.6500000 74mae1 0
98 pu239f es re 5.6381679 10.0 0.9700000 10.0000000% 98 pu239t 1.0000000 74mee4 0
98 mo g pu239f es cu cm 5.6322223 1.0 5.6500000 1.0000000% 0 0.0000000 81mae2 0
98 mo g pu239f es re cm 5.5815023 1.4 0.2547000 1.0000000% 95 mo g pu239f 0.2125000 81mae2 36
98 pu241t cm cu 0.0000000 0.0 6.0000000 0.0000000 0 0.0000000 72sid1 0
98 pu241t es cu 5.1760412 9.6 5.2000000 0.5000000 0 0.0000000 73wal1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

98 pu241t cm cu 0.0000000 0.0 5.6600000 20.0000000% 0 0.0000000 77cro1 0
98 mo g pu241t ms cu 4.9540687 2.0 4.9770000 0.0320000 0 0.0000000 77mae1 0
98 mo g pu241t ms cu 5.1181598 2.1 5.2000000 0.0800000 95 mo g pu241t 3.9700000 86chi1 0
98 mo g u233t ms cu 5.3732667 5.1 5.1800000 5.0000000% 95 mo g u233t 6.1000000 54ste1 0
98 u233t cm cu 0.0000000 0.0 5.2600000 0.0000000 0 0.0000000 72sid1 0
98 u233t cm cu 0.0000000 0.0 5.1400000 0.0000000 0 0.0000000 73lam1 0
98 u233t cm cu 0.0000000 0.0 5.1000000 0.0800000 0 0.0000000 73wal1 0
98 mo g u233t ms cu 5.2679475 4.1 5.2200000 4.0000000% 95 mo g u233t 6.2700000 61bid1 0
98 u233t cm cu 0.0000000 0.0 5.2000000 4.5000000% 0 0.0000000 77cro1 0
98 u233t ms cu 5.1251706 2.0 5.1430000 0.0410000 0 0.0000000 80weh1 0

98	mo	g	u233t	ms	cu		5.2019036	2.0	5.2200000	0.0400000	0			0.0000000	70lis1	0			
98	mo	g	u233t	sp	fi	ul	0.0000000	0.0	1.0000000	0.2110000	98	u233t		100.0000000	83qua1	0			
98	mo	g	u233t	ms	cu		5.1916149	1.4	5.2100000	0.0500000	95	mo	g	u233t	6.3500000	86chi1	0		
98	mo	g	u233t	sp	in	ul	0.0000000	0.0	0.0510000	0.0110000	0			0.0000000	88qua1	0			
98	nb	g	u233t	rc	in		0.0971620	23.1	0.0975000	0.0225000	0			0.0000000	78kai1	18			
98	nb	g	u233t	rc	fi		0.1551353	27.5	0.0300000	0.0082500	98	u233t		1.0000000	59tro1	40			
98	nb	g	u233t	ms	in		0.1704072	10.5	0.1710000	0.0180000	0			0.0000000	80weh1	18			
98	nb	g	u233t	es	in		0.1096187	18.2	0.1100000	0.0200000	0			0.0000000	89rid1	18			
98	nb	g	u233t	sp	fi	ul	0.0000000	0.0	6.5100000	0.6892000	98	u233t		100.0000000	83qua1	40			
98	nb	g	u233t	sp	in	x4	0.0000000	0.0	0.3330000	0.0360000	0			0.0000000	88qua1	18			
98	nb	m	u233t	rc	in		0.0323873	23.1	0.0325000	0.0075000	0			0.0000000	78kai1	18			
98	nb	m	u233t	rc	fi		0.0517118	27.5	0.0100000	0.0027500	98	u233t		1.0000000	59tro1	40			
98	nb	m	u233t	ms	in		0.0568024	10.5	0.0570000	0.0060000	0			0.0000000	80weh1	18			
98	nb	m	u233t	es	in		0.0365728	18.3	0.0367000	0.0067000	0			0.0000000	89rid1	18			
98	nb	m	u233t	sp	fi	ul	0.0000000	0.0	2.1700000	0.2298000	98	u233t		100.0000000	83qua1	40			
98	nb	m	u233t	sp	in	x4	0.0000000	0.0	0.1110000	0.0120000	0			0.0000000	88qua1	18			
98	zr	g	u233t	ms	in		3.3742616	2.0	3.3860000	0.0460000	0			0.0000000	80weh1	0			
98	zr	g	u233t	sp	fi		3.3261008	5.1	64.3200000	2.0650000	98	u233t		100.0000000	83qua1	0			
98	zr	g	u233t	sp	in		3.2746083	5.0	3.2860000	0.1220000	0			0.0000000	88qua1	0			
98	y	g	u233t	ms	in		0.6442588	2.6	1.2930000	0.0340000	0			0.0000000	80weh1	37			
98	y	g	u233t	sp	fi	su	0.0000000	0.0	21.6700000	0.8090000	98	u233t		100.0000000	83qua1	37			
98	y	g	u233t	sp	in		0.5515812	5.0	1.1070000	0.0460000	0			0.0000000	88qua1	37			
98	y	g	u233t	es	in		0.6133662	7.0	1.2310000	7.0000000%	0			0.0000000	88wah1	37			
98	y	g	u233t	es	in		0.6098784	10.0	1.2240000	10.0000000%	0			0.0000000	89rid1	37			
98	y	g	u233t	es	fi		0.6489827	2.7	0.2510000	2.5000000%	98	u233t		1.0000000	91jam2	37			
98	y	m	u233t	ms	in		0.6442588	2.6	1.2930000	0.0340000	0			0.0000000	80weh1	37			
98	y	m	u233t	sp	fi	su	0.0000000	0.0	21.6700000	0.8090000	98	u233t		100.0000000	83qua1	37			
98	y	m	u233t	sp	in		0.5515812	5.0	1.1070000	0.0460000	0			0.0000000	88qua1	37			
98	y	m	u233t	es	in		0.6133662	7.0	1.2310000	7.0000000%	0			0.0000000	88wah1	37			
98	y	m	u233t	es	in		0.6098784	10.0	1.2240000	10.0000000%	0			0.0000000	89wah1	37			
98	y	m	u233t	es	fi		0.6489827	2.7	0.2510000	2.5000000%	98	u233t		1.0000000	91jam2	37			
98	sr	g	u233t	ms	in		0.2351818	8.5	0.2360000	0.0200000	0			0.0000000	80weh1	0			
98	sr	g	u233t	sp	fi		0.2058128	8.8	3.9800000	0.3490000	98	u233t		100.0000000	83qua1	0			
98	sr	g	u233t	sp	in		0.2012997	8.9	0.2020000	0.0180000	0			0.0000000	88qua1	0			
98	rb	g	u233t	sp	fi	ul	0.0000000	0.0	0.3800000	0.1310000	98	u233t		100.0000000	83qua1	0			
98	rb	g	u233t	sp	in		0.0189341	36.8	0.0190000	0.0070000	0			0.0000000	88qua1	0			

98 th232f es cu cm 3.5906405 30.0 3.6000000 0.0000000 0 0.0000000 65eng1 0
98 th232f es cu x3 0.0000000 0.0 4.8600000 0.0000000 0 0.0000000 72sid1 0
98 th232f es cu cm 3.3911605 30.0 3.4000000 0.0000000 0 0.0000000 73lam1 0
98 th232f cm cu 0.0000000 0.0 3.8900000 20.0000000% 0 0.0000000 77cro1 0
98 th232f es cu 3.6903805 5.0 3.7000000 5.0000000% 0 0.0000000 74mee0 0
98 nb m th232f rc in x1 0.0000000 0.0 0.0024800 0.0005300 0 0.0000000 82ert1 0
99 u235t cm cu 0.0000000 0.0 6.1400000 0.0900000 0 0.0000000 73wal1 0
99 u235t cm cu 0.0000000 0.0 6.1400000 1.1000000% 0 0.0000000 77cro1 0
99 u235t cm cu x3 0.0000000 0.0 6.1100000 0.0000000 0 0.0000000 73lam1 0
99 tc g u235t ms cu 6.0343385 2.0 6.0300000 0.0800000 0 0.0000000 66lar1 0
99 tc g u235t sp cu 6.0743673 15.0 6.0700000 0.0000000 0 0.0000000 69lar1 0
99 tc g u235t rc cu 6.1444177 5.0 6.1400000 0.1700000 0 0.0000000 71mcl1 0
99 tc g u235t es cu 6.1644321 30.0 6.1600000 0.0000000 0 0.0000000 72sid1 0
99 tc g u235t ms cu 6.0443457 2.0 6.0400000 0.0380000 0 0.0000000 76dii1 0
99 tc g u235t sp cu 6.3034478 5.0 6.3500000 0.1200000 0 1.0081100 76woh2 0
99 mo g u235t rc cu 6.3028483 60.0 6.2000000 0.0000000 140 ba g u235t 6.1000000 51fin1 0
99 mo g u235t rc cu 5.9255574 20.0 5.9800000 3.0000000% 89 sr g u235t 4.7800000 53ree1 0
99 mo g u235t rc cu 6.1444177 20.0 6.1400000 0.1600000 0 0.0000000 53ter1 0
99 mo g u235t rc cu 6.2544968 10.0 6.2500000 0.1900000 0 0.0000000 56for1 0
99 mo g u235t rc cu 6.1644321 5.0 6.1600000 0.0800000 0 0.0000000 67gun2 0
99 mo g u235t rc cu 6.1744392 5.0 6.1700000 0.1600000 0 0.0000000 71jai1 0
99 mo g u235t cm cu 0.0000000 0.0 6.1500000 5.0000000% 0 0.0000000 73net2 0
99 mo g u235t ms fi 0.0794770 61.5 1.3000000 0.8000000 99 u235t 100.0000000 76sie1 0
99 mo g u235t rc fi ul 0.0000000 0.0 0.0600000 0.1100000 99 u235t 1.0000000 63tro1 0
99 mo g u235t sp fi su 0.0000000 0.0 1.3000000 0.6000000 99 u235t 100.0000000 75sie1 0
99 mo g u235t ms in 0.0150108 73.3 0.0150000 0.0110000 0 0.0000000 79cle1 0
99 mo g u235t rc cu 6.1744392 5.0 6.1700000 0.0400000 0 0.0000000 79ram1 0
99 mo g u235t ms cu 6.1444177 2.0 6.1400000 0.1000000 0 0.0000000 70lis1 0
99 mo g u235t rc cu 6.0243313 9.0 6.0200000 0.5400000 0 0.0000000 74bla1 0
99 mo g u235t rc cu 6.3245472 5.0 6.3200000 0.2200000 0 0.0000000 76thi1 0
99 mo g u235t rc fi su 0.0000000 0.0 0.7000000 0.0000000 99 u235t 100.0000000 79wei1 0
99 mo g u235t rc cu 6.1444177 5.0 6.1400000 3.5000000% 0 0.0000000 81lau1 0
99 mo g u235t ms fi su 0.0000000 0.0 0.6000000 0.5000000 99 u235t 100.0000000 76wol1 0
99 mo g u235t rc cu 5.9011319 20.0 5.9000000 0.2000000 140 ba g u235t 6.2000000 54wil1 0
99 mo g u235t rc fi lt 0.0427953 15.0 0.7000000 0.0000000 99 u235t 100.0000000 81wei1 0
99 mo g u235t sp fi 0.0122272 99.9 0.2000000 0.2000000 99 u235t 100.0000000 80lan1 0

99	mo	g	u235t	rc	cu	rp	6.2044570	9.2	6.0600000	0.0000000	no. relative values =	3	65bun1	
99	mo	g	u235t	rc	cu	rp	6.4924341	31.6	6.0600000	0.0000000	no. relative values =	1	60sat1	
99	mo	g	u235t	rc	cu	rp	6.1621587	22.4	6.0600000	0.0000000	no. relative values =	2	61mar1	
99	mo	g	u235t	rc	re	rp	6.1481757	31.7	1.0000000	0.0000000	no. relative values =	1	61cun1	
99	mo	g	u235t	rc	cu		6.0843745	5.0	6.0800000	0.1600000	0	0.0000000	80chi1	0
99	mo	g	u235t	rc	cu	su	0.0000000	0.0	6.0700000	3.4000000%	0	0.0000000	76gil4	0
99	nb	g	u235t	rc	fi	sm	0.0000000	0.0	11.7000000	2.8000000	99 mo g	u235t	100.0000000	76wei2 0
99	nb	g	u235t	ms	fi		0.0216422	26.0	0.3540000	0.0920000	99	u235t	100.0000000	76sie1 40
99	nb	g	u235t	ms	fi	su	0.0000000	0.0	0.6923000	0.2000000	99	u235t	100.0000000	75cle1 40
99	nb	g	u235t	ms	fi	su	0.0000000	0.0	0.1460000	0.0620000	99	u235t	100.0000000	75cle1 40
99	nb	g	u235t	ms	fi	su	0.0000000	0.0	0.3620000	0.0924000	99	u235t	100.0000000	75cle1 40
99	nb	g	u235t	ms	fi	su	0.0000000	0.0	0.6000000	0.0770000	99	u235t	100.0000000	75cle1 40
99	nb	g	u235t	rc	fc	ge	3.7293039	18.1	0.6100000	0.1100000	99 mo g	u235t	1.0000000	63tro1 0
99	nb	g	u235t	sp	fi	su	0.0000000	0.0	0.0046200	0.0015000	99	u235t	1.0000000	74sie2 40
99	nb	g	u235t	sp	fi	su	0.0000000	0.0	0.3620000	0.0920000	99	u235t	100.0000000	75sie1 40
99	nb	g	u235t	sp	fi		0.0235374	8.1	0.3850000	0.0310000	99	u235t	100.0000000	78str1 40
99	nb	g	u235t	ms	fi	su	0.0000000	0.0	0.6770000	0.1380000	99	u235t	100.0000000	75cle2 40
99	nb	g	u235t	ms	in		0.0362661	10.6	0.0362400	0.0038400	0	0.0000000	79cle1	18
99	nb	g	u235t	rc	fc	su	0.0000000	0.0	63.6000000	4.5000000	99 mo g	u235t	100.0000000	76wei1 0
99	nb	g	u235t	rc	fi	su	0.0000000	0.0	0.9000000	0.5000000	99 mo g	u235t	100.0000000	76wei2 0
99	nb	g	u235t	rc	fi	su	0.0000000	0.0	0.7000000	1.6000000	99	u235t	100.0000000	79wei1 0
99	nb	g	u235t	rc	fc		3.8821443	5.1	63.5000000	2.0000000	99	u235t	100.0000000	81wei1 0
99	nb	g	u235t	rc	fi	sm	0.0000000	0.0	11.7000000	2.8000000	99	u235t	100.0000000	81wei1 0
99	nb	g	u235t	rc	fi		0.0427953	99.9	0.7000000	1.4000000	99	u235t	100.0000000	81wei1 0
99	nb	g	u235t	ms	fi	su	0.0000000	0.0	0.3620000	0.0690000	99	u235t	100.0000000	76wol1 40
99	nb	g	u235t	sp	fi		0.0347253	11.3	0.5680000	0.0640000	99	u235t	100.0000000	80lan1 40
99	nb	g	u235t	es	in		0.0357257	16.0	0.0357000	16.0000000%	0	1.0000000	88wah1	0
99	nb	m	u235t	rc	fc	le	2.0174923	10.1	0.3300000	0.0300000	99 mo g	u235t	1.0000000	63tro1 0
99	nb	m	u235t	sp	fi		0.3993412	11.3	6.5320000	0.7360000	99	u235t	100.0000000	80lan1 40
99	nb	m	u235t	es	in		0.4108954	16.0	0.4106000	16.0000000%	0	1.0000000	88wah1	18
99	nb	m	u235t	rc	fc		1.8340839	15.0	0.3000000	0.0000000	99	u235t	1.0000000	69bla1 0
99	nb	m	u235t	rc	fc		1.8952200	6.6	0.3100000	0.0200000	99 mo g	u235t	1.0000000	71har1 0
99	nb	m	u235t	ms	fi	x4	0.0000000	0.0	4.2460000	1.1080000	99	u235t	100.0000000	76sie1 40
99	nb	m	u235t	ms	fi	su	0.0000000	0.0	8.3077000	2.4000000	99	u235t	100.0000000	75cle1 40
99	nb	m	u235t	ms	fi	su	0.0000000	0.0	1.7540000	0.7380000	99	u235t	100.0000000	75cle1 40
99	nb	m	u235t	ms	fi	su	0.0000000	0.0	4.3380000	1.1076000	99	u235t	100.0000000	75cle1 40

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 99 nb m   u235t    ms    fi    su   0.0000000  0.0   7.2000000  0.9230000    99          u235t     100.0000000   75cle1     40
 99 nb m   u235t    sp    fi    su   0.0000000  0.0   0.0553800  0.0185000    99          u235t       1.0000000   74sie2     40
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value      no.   treatment

 99 nb m   u235t    sp    fi    su   0.0000000  0.0   4.3380000  1.0980000    99          u235t     100.0000000   75sie1     40
 99 nb m   u235t    sp    fi    x4   0.0000000  0.0   4.6150000  0.3690000    99          u235t     100.0000000   78str1     40
 99 nb m   u235t    ms    fi    su   0.0000000  0.0   8.1230000  1.6610000    99          u235t     100.0000000   75cle2     40
 99 nb m   u235t    ms    in         0.4170599 10.6   0.4167600  0.0441600     0                      0.0000000   79cle1     18
 99 nb m   u235t    rc    fc    su   0.0000000  0.0   0.3670000  0.0450000    99          u235t       1.0000000   75wei1      0
 99 nb m   u235t    rc    fc    su   0.0000000  0.0  36.4000000  4.5000000    99 mo g     u235t     100.0000000   76wei1      0
 99 nb m   u235t    rc    fi    su   0.0000000  0.0  10.8000000  2.9000000    99 mo g     u235t     100.0000000   76wei2      0
 99 nb m   u235t    rc    cu         2.2416117  5.8   2.2400000  0.1300000     0                      0.0000000   78den2      0
 99 nb m   u235t    rc    fi    su   0.0000000  0.0  11.1000000  2.2000000    99          u235t     100.0000000   79wei1      0
 99 nb m   u235t    rc    fc         2.2314688  5.6  36.5000000  2.0000000    99          u235t     100.0000000   81wei1      0
 99 nb m   u235t    rc    fi    x4   0.0000000  0.0  11.1000000  2.2000000    99          u235t     100.0000000   81wei1      0
 99 nb m   u235t    ms    fi    su   0.0000000  0.0   4.3380000  0.8310000    99          u235t     100.0000000   76wol1     40
 99 zr g   u235t    rc    fc    x1   0.0000000  0.0   0.0190000 50.0000000%   99 mo g     u235t       1.0000000   63tro1      0
 99 zr g   u235t    ms    fi    su   0.0000000  0.0  67.3000000  4.0000000    99          u235t     100.0000000   75cle1      0
 99 zr g   u235t    ms    fi    su   0.0000000  0.0  53.9000000  2.3000000    99          u235t     100.0000000   75cle1      0
 99 zr g   u235t    ms    fi    su   0.0000000  0.0  53.0000000  2.0000000    99          u235t     100.0000000   75cle1      0
 99 zr g   u235t    ms    fi    su   0.0000000  0.0  49.3000000  2.0000000    99          u235t     100.0000000   75cle1      0
 99 zr g   u235t    ms    fi         3.2768966  4.8  53.6000000  2.5000000    99          u235t     100.0000000   76sie1      0
 99 zr g   u235t    rc    fc    x1   0.0000000  0.0  88.3000000  2.8000000    99 mo g     u235t     100.0000000   76wei1      0
 99 zr g   u235t    sp    fi    su   0.0000000  0.0   0.5260000  0.0300000    99          u235t       1.0000000   74sie2      0
 99 zr g   u235t    sp    fi    su   0.0000000  0.0  52.3000000  2.5000000    99          u235t     100.0000000   75sie1      0
 99 zr g   u235t    sp    fi         3.4297370  5.1  56.1000000  0.8000000    99          u235t     100.0000000   78str1      0
 99 zr g   u235t    ms    fi    su   0.0000000  0.0  59.0000000  2.7000000    99          u235t     100.0000000   75cle2      0
 99 zr g   u235t    ms    in         3.9228204  3.1   3.9200000  0.1200000     0                      0.0000000   79cle1      0
 99 zr g   u235t    rc    fc    su   0.0000000  0.0   0.8540000  0.0950000    99          u235t       1.0000000   75wei1      0
 99 zr g   u235t    rc    fi    su   0.0000000  0.0  56.9000000  4.3000000    99 mo g     u235t     100.0000000   76wei1      0
 99 zr g   u235t    rc    fi    su   0.0000000  0.0  56.9000000  4.9000000    99          u235t     100.0000000   79wei1      0
 99 zr g   u235t    rc    fi         3.4786459  7.6  56.9000000  4.3000000    99          u235t     100.0000000   81wei1      0
 99 zr g   u235t    ms    fi    su   0.0000000  0.0  56.3000000  2.7000000    99          u235t     100.0000000   76wol1      0
 99 zr g   u235t    sp    fi         3.7598721  5.1  61.5000000  1.3000000    99          u235t     100.0000000   80lan1      0
```

99	zr	g	u235t	cm	in		0.0000000	0.0	3.5690000	3.0000000%	0			1.0000000	88wah1	0
99	y	g	u235t	ms	fi	su	0.0000000	0.0	23.1000000	3.0000000	99		u235t	100.0000000	75cle1	0
99	y	g	u235t	ms	fi	su	0.0000000	0.0	36.5000000	1.7000000	99		u235t	100.0000000	75cle1	0
99	y	g	u235t	ms	fi	su	0.0000000	0.0	40.5000000	1.5000000	99		u235t	100.0000000	75cle1	0
99	y	g	u235t	ms	fi	su	0.0000000	0.0	47.0000000	1.6000000	99		u235t	100.0000000	75cle1	0
99	y	g	u235t	ms	fi		2.0969693	7.4	34.3000000	2.5000000	99		u235t	100.0000000	76sie1	0
99	y	g	u235t	sp	fi	su	0.0000000	0.0	0.3500000	0.0300000	99		u235t	1.0000000	74sie2	0
99	y	g	u235t	sp	fi	su	0.0000000	0.0	35.5000000	2.5000000	99		u235t	100.0000000	75sie1	0
99	y	g	u235t	sp	fi		2.2192416	5.1	36.3000000	0.7000000	99		u235t	100.0000000	78str1	0
99	y	g	u235t	ms	fi	su	0.0000000	0.0	31.5000000	2.4000000	99		u235t	100.0000000	75cle2	0
99	y	g	u235t	ms	in		1.8853555	4.9	1.8840000	0.0930000	0			0.0000000	79cle1	0
99	y	g	u235t	rc	fc	su	0.0000000	0.0	31.4000000	3.9000000	99	mo g	u235t	100.0000000	76wei1	0
99	y	g	u235t	rc	fc	su	0.0000000	0.0	31.4000000	3.9000000	99		u235t	100.0000000	79wei1	0
99	y	g	u235t	rc	fc		1.9196745	12.5	31.4000000	3.9000000	99		u235t	100.0000000	81wei1	0
99	y	g	u235t	ms	fi	su	0.0000000	0.0	33.1000000	2.5000000	99		u235t	100.0000000	76wol1	0
99	y	g	u235t	sp	fi		1.8096295	5.1	29.6000000	1.2000000	99		u235t	100.0000000	80lan1	0
99	y	g	u235t	cm	in		0.0000000	0.0	1.9220000	4.0000000%	0			1.0000000	88wah1	0
99	sr	g	u235t	ms	fi	su	0.0000000	0.0	0.6000000	0.6000000	99		u235t	100.0000000	75cle1	0
99	sr	g	u235t	ms	fi	su	0.0000000	0.0	1.8000000	1.0000000	99		u235t	100.0000000	75cle1	0
99	sr	g	u235t	ms	fi	su	0.0000000	0.0	1.8000000	0.6000000	99		u235t	100.0000000	75cle1	0
99	sr	g	u235t	ms	fi	su	0.0000000	0.0	1.8000000	0.5000000	99		u235t	100.0000000	75cle1	0
99	sr	g	u235t	sp	fi	su	0.0000000	0.0	0.0640000	0.0200000	99		u235t	1.0000000	74sie2	0
99	sr	g	u235t	sp	fi	su	0.0000000	0.0	6.2000000	1.2000000	99		u235t	100.0000000	75sie1	0
99	sr	g	u235t	ms	fi	x1	0.0000000	0.0	6.2000000	1.2000000	99		u235t	100.0000000	76sie1	0
99	sr	g	u235t	sp	fi		0.1589539	15.4	2.6000000	0.4000000	99		u235t	100.0000000	78str1	0
99	sr	g	u235t	ms	fi	su	0.0000000	0.0	0.7000000	0.4000000	99		u235t	100.0000000	75cle2	0
99	sr	g	u235t	ms	in		0.0980705	22.4	0.0980000	0.0220000	0			0.0000000	79cle1	0
99	sr	g	u235t	ms	in		0.1801295	33.3	0.1800000	0.0600000	0			0.0000000	79shm1	0
99	sr	g	u235t	sp	cu		0.1801295	33.3	0.1800000	0.0600000	0			0.0000000	81shm1	0
99	sr	g	u235t	ms	fi	su	0.0000000	0.0	5.3000000	1.2000000	99		u235t	100.0000000	76wol1	0
99	sr	g	u235t	sp	fi		0.0978178	25.0	1.6000000	0.4000000	99		u235t	100.0000000	80lan1	0
99	sr	g	u235t	cm	in		0.0000000	0.0	0.1173000	69.0000000%	0			1.0000000	88wah1	0
99	sr	g	u235t	sp	cu		0.1090784	22.0	0.1090000	0.0240000	0			0.0000000	90rud1	0
99	rb	g	u235t	rc	in	x6	0.0000000	0.0	0.0002500	0.0001300	0			0.0000000	79peu1	0
99	rb	g	u235t	sp	cu	x6	0.0000000	0.0	0.0064000	0.0018000	0			0.0000000	81shm1	0
99	rb	g	u235t	ms	in	x6	0.0000000	0.0	0.0064000	0.0018000	0			0.0000000	79shm1	0

99		u235f	cm	cu		0.0000000	0.0	5.6700000	0.0000000	0			0.0000000	73lar3	0
99		u235f	cm	cu		0.0000000	0.0	5.7100000	2.0000000%	0			0.0000000	77cro1	0
99		u235f	es	cu		6.2065141	5.0	6.2560000	0.3140000	0			0.0000000	81mae1	0
99		u235f	es	cu		6.1737751	5.0	6.2230000	0.3130000	0			0.0000000	81mae1	0
99		u235f	es	cu		6.1598859	5.0	6.2090000	0.3120000	0			0.0000000	81mae1	0
99		u235f	cm	cu		0.0000000	0.0	6.2290000	0.3130000	0			0.0000000	81mae1	0
99		u235f	es	cu		6.1138137	5.1	6.1500000	0.3100000	148 nd g	u235f		1.6800000	74mae1	0
99	tc g	u235f	sp	cu		5.7541211	5.0	5.8000000	2.0000000%	0			0.0000000	72lar1	0
99	tc g	u235f	es	cu		5.8597176	30.0	6.1400000	0.0000000	148 nd g	u235f		1.7500000	72sid1	0
99	tc g	u235f	sp	re		5.8985469	5.0	0.9373000	0.0030000	139 la g	u235f		1.0000000	67vil1	0
99	tc g	u235f	sp	re		5.7402233	5.0	0.9300000	1.0000000%	137 cs g	u235f		1.0000000	67vil1	0
99	mo g	u235f	rc	cu		6.0517481	20.0	6.1000000	0.1600000	0			0.0000000	53ter1	0
99	mo g	u235f	rc	cu		5.6293008	5.1	5.4600000	0.1800000	140 ba g	u235f		5.7500000	70bow1	0
99	mo g	u235f	rc	cu		6.0727302	15.0	6.1000000	0.0000000	137 cs g	u235f		6.2000000	70mce1	0
99	mo g	u235f	rc	cu	su	0.0000000	0.0	5.3600000	7.0000000%	0			0.0000000	73dud2	0
99	mo g	u235f	cm	cu		0.0000000	0.0	6.1250000	5.0000000%	0			0.0000000	73net2	0
99	mo g	u235f	rc	cu		5.6549121	5.0	5.7000000	3.0000000%	0			0.0000000	74lar1	0
99	mo g	u235f	rc	cu		5.3672061	7.8	5.4100000	7.8000000%	0			0.0000000	75dud2	0
99	mo g	u235f	rc	re		5.9672548	5.0	1.0210000	0.0140000	140 ba g	u235t		0.0000000	75raj1	7
99	mo g	u235f	es	cu		5.9763376	30.0	6.1000000	0.0000000	137 cs g	u235f		6.3000000	60kat1	0
99	mo g	u235f	rc	cu	su	0.0000000	0.0	1.0140000	0.0250000	99 mo g	u235t		1.0000000	76deb1	0
99	mo g	u235f	rc	cu		5.5755449	6.2	5.6200000	0.3500000	0			0.0000000	74cun1	0
99	mo g	u235f	rc	cu		5.2539371	5.1	5.2200000	0.2200000	140 ba g	u235f		5.8900000	72cun2	0
99	mo g	u235f	rc	cu		6.1396310	5.2	1.0130000	0.0160000	99 mo g	u235t		1.0000000	77deb1	0
99	mo g	u235f	rc	cu		5.5060987	5.9	5.5500000	0.3300000	0			0.0000000	73cun2	0
99	mo g	u235f	rc	cu		6.3275171	20.2	1.0440000	0.2100000	99 mo g	u235t		1.0000000	79yur1	36
99	mo g	u235f	rc	cu		5.6743461	5.1	5.7000000	3.0000000%	95 zr g	u235f		6.4100000	73lar4	0
99	mo g	u235f	rc	cu		6.1807198	5.0	6.2300000	2.9000000%	0			0.0000000	81lau1	0
99	mo g	u235f	rc	cu		5.7948587	5.1	6.0800000	0.0800000	140 ba g	u235f		6.2200000	77bla1	0
99	mo g	u235f	rc	cu	rp	6.1316349	47.4	6.1000000	0.0000000	no. relative values =			1	59bun2	
99	mo g	u235f	rc	cu	rp	5.3038135	31.6	6.4000000	0.0000000	no. relative values =			1	60pet1	
99	mo g	u235f	rc	cu	rp	5.5183201	12.6	5.9000000	0.0000000	no. relative values =			7	60bon1	
99	mo g	u235f	rc	re		6.1443773	5.0	1.0250000	1.7000000%	95 zr g	u235t		0.0000000	85wan1	7
99	mo g	u235f	rc	cu		6.3295332	5.0	6.3800000	0.1800000	0			0.0000000	80chi1	0
99	mo g	u235f	rc	cu		6.3692168	5.0	6.4200000	0.1900000	0			0.0000000	82chi1	0
99	mo g	u235f	rc	cu		6.3692168	5.0	6.4200000	0.1900000	0			0.0000000	82wan1	0

99 mo g u235f rc cu 6.0418272 5.0 6.0900000 3.2000000% 0 0.0000000 86dho1 0
99 mo g u235f rc cu 6.1013526 5.2 6.1500000 0.3200000 0 0.0000000 81mar1 0
99 mo g u235f rc cu su 0.0000000 0.0 5.7000000 3.0000000% 0 0.0000000 72lar1 0
99 u235he cm cu es 0.0000000 0.0 4.9950000 0.0000000 0 0.0000000 63wea1 0
99 u235he cm cu 0.0000000 0.0 5.1800000 4.1000000% 0 0.0000000 77cro1 0
99 tc g u235he es cu 5.0594080 10.0 5.0850000 10.0000000% 0 0.0000000 74mee8 0
99 mo g u235he cm cu 0.0000000 0.0 5.2500000 0.0000000 0 0.0000000 69gun2 0
99 mo g u235he cm cu 0.0000000 0.0 5.0900000 3.9000000% 0 0.0000000 73net2 0
99 mo g u235he es cu cm 5.0743325 9.8 5.1000000 0.5000000 0 0.0000000 72net2 0
99 mo g u235he es cu cm 5.1439802 30.0 5.1700000 0.0000000 0 0.0000000 60kat1 0
99 mo g u235he rc cu 4.9597516 10.1 5.0100000 0.1500000 99 mo g u235t 6.1400000 60ste1 0
99 mo g u235he rc cu 5.0245842 5.0 5.0500000 3.8000000% 0 0.0000000 81lau1 0
99 mo g u235he rc cu 5.1439802 10.0 5.1700000 10.0000000% 0 0.0000000 56for1 0
99 mo g u235he rc cu 5.1738292 10.0 5.2000000 0.5000000 0 0.0000000 61val1 0
99 mo g u235he rc cu 5.3330240 5.0 5.3600000 0.2300000 0 0.0000000 84chi1 0
99 mo g u235he rc cu rp 6.8185438 63.5 5.1700000 0.0000000 no. relative values = 1 61val1
99 mo g u235he rc cu rp 5.4013709 13.0 5.6500000 0.0000000 no. relative values = 6 60bon1
99 mo g u235he rc re 5.0043492 9.4 1.1200000 0.1000000 140 ba g u235he 1.0000000 73man1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

99 mo g u235he rc re rp 4.9326752 12.1 1.0000000 0.0000000 no. relative values = 7 58pro1
99 u238f cm cu es 0.0000000 0.0 6.3000000 0.0000000 0 0.0000000 64wal1 0
99 u238f cm cu 0.0000000 0.0 6.0000000 0.0000000 0 0.0000000 73lar3 0
99 u238f cm cu 0.0000000 0.0 6.2000000 2.8000000% 0 0.0000000 77cro1 0
99 u238f cm cu 0.0000000 0.0 6.2940000 0.4420000 0 0.0000000 81mae1 0
99 u238f rc cu 6.1993276 5.0 6.2200000 0.1900000 0 0.0000000 85li 1 0
99 u238f rc cu 6.2092943 5.0 6.2300000 0.2000000 0 0.0000000 85li 1 0
99 tc g u238f es cu 6.3388623 30.0 6.3600000 0.0000000 0 0.0000000 72sid1 0
99 tc g u238f es cu 6.3062312 5.2 6.2300000 0.3200000 148 nd g u238f 2.0800000 74mae1 0
99 tc m u238f rc cu x1 0.0000000 0.0 7.8000000 0.0000000 0 0.0000000 68bel1 0
99 mo g u238f rc cu x4 0.0000000 0.0 5.9000000 0.0000000 140 ba g u238f 6.1000000 51eng3 0
99 mo g u238f rc cu x4 0.0000000 0.0 5.9000000 0.0000000 140 ba g u238f 6.4000000 52eng1 0
99 mo g u238f rc cu x4 0.0000000 0.0 1.1680000 0.3340000 99 mo g u235t 1.0000000 79yur1 36
99 mo g u238f rc cu 6.1694273 20.0 6.1900000 0.1500000 0 0.0000000 53ter1 0

99 mo g u238f rc cu 6.5034036 20.0 6.4000000 0.7000000 140 ba g u238f 5.7000000 54kel1 0
99 mo g u238f rc cu 6.2790617 15.0 6.3000000 0.0000000 0 0.0000000 70mce1 0
99 mo g u238f rc cu 5.7632775 13.2 6.0000000 0.7900000 140 ba g u238f 6.0300000 72cun2 0
99 mo g u238f rc re 6.2554614 5.0 1.0800000 0.0400000 140 ba g u238f 1.0000000 73man1 0
99 mo g u238f cm cu 0.0000000 0.0 6.3280000 5.0000000% 0 0.0000000 73net2 0
99 mo g u238f rc cu 6.0099590 5.0 6.0300000 2.0000000% 0 0.0000000 74lar1 0
99 mo g u238f rc cu 6.7275661 10.5 6.7500000 0.7100000 0 0.0000000 75har1 0
99 mo g u238f rc cu 6.1486165 15.0 6.2000000 15.0000000% 99 mo g u235t 6.1400000 59bun2 13
99 mo g u238f cm cu 0.0000000 0.0 6.3000000 0.0000000 0 0.0000000 60kat1 0
99 mo g u238f rc cu 6.5780646 10.0 6.6000000 0.4000000 0 0.0000000 60pet1 0
99 mo g u238f rc cu 6.5979982 15.0 6.6200000 0.0000000 0 0.0000000 75fly4 0
99 mo g u238f rc cu 6.3569427 5.0 6.6400000 0.1000000 140 ba g u238f 6.0500000 78deb1 0
99 mo g u238f rc cu 6.2133371 5.0 6.4900000 0.1700000 140 ba g u238f 6.0500000 78deb1 0
99 mo g u238f es cu 6.0498261 2.5 6.0700000 0.1500000 0 0.0000000 78gin1 0
99 mo g u238f rc cu 6.2491614 5.0 6.2700000 5.0000000% 0 0.0000000 78mar1 0
99 mo g u238f rc cu 6.0996599 5.0 6.1200000 0.2000000 0 0.0000000 78nag1 0
99 mo g u238f rc cu 6.9767352 10.0 7.0000000 0.7000000 0 0.0000000 60bon1 0
99 mo g u238f rc cu 5.8203021 5.0 6.1900000 0.1000000 140 ba g u238f 6.1600000 77bla1 0
99 mo g u238f rc re rp 5.9610131 15.9 1.0000000 0.0000000 no. relative values = 1 69lyl1
99 mo g u238f rc cu rp 6.2875621 7.1 6.3200000 0.0000000 no. relative values = 6 70lyl1
99 mo g u238f rc cu rp 6.9163150 16.5 7.0000000 0.0000000 no. relative values = 4 60bon1
99 mo g u238f rc cu 6.3587958 5.5 6.3800000 0.3500000 0 0.0000000 84chi3 0
99 mo g u238f rc cu 5.9800587 5.2 6.0000000 5.2000000% 0 0.0000000 87chu1 0
99 mo g u238f rc cu 6.1195935 5.0 6.1400000 0.2700000 0 0.0000000 85chi1 0
99 mo g u238f rc cu su 0.0000000 0.0 6.1400000 2.0000000% 140 ba g u238f 5.9600000 72lar1 0
99 nb m u238f rc fc 1.8445849 10.1 0.3000000 0.0300000 99 mo g u238f 1.0000000 71har1 0
99 y m u238f rc cu x6 0.0000000 0.0 3.3400000 12.0000000% 0 0.0000000 88afa1 0
99 u238he cm cu es 0.0000000 0.0 5.6200000 0.0000000 0 0.0000000 63wea1 0
99 u238he cm cu su 0.0000000 0.0 5.6900000 0.1000000 0 0.0000000 73dar1 0
99 u238he cm cu 0.0000000 0.0 5.6700000 3.2000000% 0 0.0000000 77cro1 0
99 tc g u238he es cu 5.5767753 15.0 5.5820000 15.0000000% 0 0.0000000 74mee9 0
99 mo g u238he cm cu 0.0000000 0.0 5.6000000 0.5000000 0 0.0000000 71swi2 0
99 mo g u238he cm cu 0.0000000 0.0 5.7000000 0.0000000 0 0.0000000 60kat1 0
99 mo g u238he cm cu 0.0000000 0.0 5.9200000 0.0000000 0 0.0000000 69gun2 0
99 mo g u238he cm cu 0.0000000 0.0 5.7900000 3.9000000% 0 0.0000000 73net2 0
99 mo g u238he es cu cm 5.7945712 5.2 5.8000000 0.3000000 0 0.0000000 72net2 0

99 mo g	u238he	rc	cu		5.4349082	5.0	5.4400000	0.2000000	0			0.0000000	80chi2	0
99 mo g	u238he	rc	cu		5.4948520	12.0	5.5000000	0.6600000	0			0.0000000	71com1	0
99 mo g	u238he	rc	cu		5.5516628	5.8	5.5500000	0.3100000	140 ba g	u238he		4.6000000	76raj1	0
99 mo g	u238he	rc	cu		5.5947584	5.0	5.6000000	0.1400000	0			0.0000000	70gev1	0
99 mo g	u238he	rc	cu		5.5947584	5.0	5.6000000	0.2800000	0			0.0000000	68gan1	0
99 mo g	u238he	rc	cu		5.6746836	20.0	5.6800000	0.1400000	0			0.0000000	53ter1	0
99 mo g	u238he	rc	cu		5.6946648	8.8	5.7000000	0.5000000	0			0.0000000	65mo 1	0
99 mo g	u238he	rc	cu		5.7446180	5.0	5.7500000	3.9000000%	0			0.0000000	81lau1	0
99 mo g	u238he	rc	cu		5.7546087	5.0	5.7600000	0.1200000	0			0.0000000	75dar1	0
99 mo g	u238he	rc	cu		5.8345338	5.0	5.8400000	0.2900000	0			0.0000000	87ram1	0
99 mo g	u238he	rc	cu		5.8251133	10.1	5.8600000	0.1600000	99 mo g	u235t		6.1400000	60ste1	0
99 mo g	u238he	rc	cu		6.6349588	10.4	6.4700000	0.2300000	139 ba g	u238he		4.9200000	64jam1	0
99 mo g	u238he	rc	cu		4.9614860	10.2	4.9600000	0.5000000	140 ba g	u238he		4.6000000	75cav1	0
99 mo g	u238he	rc	cu		5.6347210	5.0	5.6400000	0.1700000	0			0.0000000	75dar1	0
99 mo g	u238he	rc	cu		5.6716987	5.2	5.6700000	0.1700000	140 ba g	u238he		4.6000000	80zhe1	0
99 mo g	u238he	rc	cu		5.7046555	5.0	5.7100000	0.1800000	0			0.0000000	85liu1	0
99 mo g	u238he	rc	cu		5.7945712	7.8	5.8000000	7.8000000%	0			0.0000000	75dar1	0
99 mo g	u238he	rc	cu		5.8145525	5.0	5.8200000	4.5000000%	0			0.0000000	75dar1	0
99 mo g	u238he	rc	cu		5.9044683	20.6	5.9100000	20.6000000%	0			0.0000000	75dar1	0
99 mo g	u238he	rc	cu		6.0643185	5.4	6.0700000	5.4000000%	0			0.0000000	75dar1	0
99 mo g	u238he	rc	cu		6.4939160	10.0	6.5000000	0.5000000	0			0.0000000	60bon1	0
99 mo g	u238he	rc	cu	rp	6.7495895	11.2	5.5800000	0.0000000	no. relative values =		8		57cun1	
99 mo g	u238he	rc	cu	rp	5.8856649	11.1	5.6000000	0.0000000	no. relative values =		3		70gev1	
99 mo g	u238he	rc	cu	rp	5.8933801	7.0	5.6800000	0.0000000	no. relative values =		7		71bir2	
99 mo g	u238he	rc	cu	rp	6.3926445	33.6	5.7000000	0.0000000	no. relative values =		1		65mo 1	
99 mo g	u238he	rc	cu	rp	5.5365341	4.2	5.6000000	0.0000000	no. relative values =		39		75ada1	
99 mo g	u238he	rc	cu	rp	6.1214265	11.8	6.5000000	0.0000000	no. relative values =		8		60bon1	
99 mo g	u238he	rc	cu	su	0.0000000	0.0	4.9600000	0.5000000	140 ba g	u238he		4.6000000	74bla1	0
99 mo g	u238he	rc	cu	su	0.0000000	0.0	4.9700000	0.5500000	0			0.0000000	71bla1	0
99 mo g	u238he	rc	cu	su	0.0000000	0.0	5.6000000	0.2800000	0			0.0000000	66gan3	0
99 mo g	u238he	rc	cu	su	0.0000000	0.0	5.6100000	0.7900000	0			0.0000000	73dar2	0
99 mo g	u238he	rc	cu	su	0.0000000	0.0	5.8200000	0.3800000	0			0.0000000	73dar4	0
99 mo g	u238he	rc	cu	su	0.0000000	0.0	5.8200000	0.3800000	140 ba g	u238he		4.4800000	74dar1	0
99 mo g	u238he	rc	re		5.4986119	5.2	0.8460000	0.0320000	97 zr g	u238he		0.8110000	68gor1	0
99 mo g	u238he	rc	re		5.6596951	5.2	1.2300000	0.0400000	140 ba g	u238he		1.0000000	73man1	0
99 mo g	u238he	rc	re	rp	5.3096914	10.0	1.0000000	0.0000000	no. relative values =		10		58pro1	

99 mo g u238he rc re rp 5.4355282 7.3 1.0000000 0.0000000 no. relative values = 6 69lyl1
99 mo g u238he rc re rp 6.0145533 44.8 1.0000000 0.0000000 no. relative values = 2 67bor1
99 pu239t cm cu 0.0000000 0.0 6.3300000 0.0000000 0 0.0000000 73lam1 0
99 pu239t cm cu 0.0000000 0.0 6.1000000 0.3600000 0 0.0000000 73wal1 0
99 pu239t cm cu 0.0000000 0.0 6.1900000 2.4000000% 0 0.0000000 77cro1 0
99 mo g pu239t rc cu 6.1164372 60.0 6.1000000 0.0000000 0 0.0000000 51ste3 0
99 mo g pu239t rc cu 6.0362217 10.0 6.0200000 0.1800000 0 0.0000000 56for1 0
99 mo g pu239t rc cu 6.1164372 30.0 6.1000000 0.0000000 0 0.0000000 63kir1 0
99 mo g pu239t cm cu x3 0.0000000 0.0 5.8600000 0.1800000 0 0.0000000 65cro2 0
99 mo g pu239t rc cu x4 0.0000000 0.0 5.6100000 0.3300000 137 cs g pu239t 5.4000000 65mar1 0
99 mo g pu239t rc cu 6.2367606 5.0 6.2200000 0.0700000 0 0.0000000 71jai1 0
99 mo g pu239t rc cu 6.2404184 5.0 6.7900000 0.1500000 0 1.0910000 71ram1 0
99 mo g pu239t rc cu 6.1209406 5.0 6.6600000 0.0700000 0 1.0910000 71ram1 0
99 mo g pu239t rc cu 6.2367606 5.0 6.2200000 0.1400000 0 0.0000000 74egg1 0
99 mo g pu239t rc cu 6.2679902 5.0 6.8200000 0.1500000 0 1.0910000 73jai1 0
99 mo g pu239t cm cu 0.0000000 0.0 6.0200000 0.0000000 0 0.0000000 61her1 0
99 mo g pu239t es cu 5.9459791 30.0 5.9300000 0.0000000 0 0.0000000 72sid1 0
99 mo g pu239t rc cu 6.1866258 5.0 6.1700000 0.1900000 0 0.0000000 71sor1 0
99 mo g pu239t rc cu 6.2467875 5.0 6.2300000 0.1600000 0 0.0000000 80dic1 0
99 mo g pu239t rc cu 6.2467875 5.0 6.2300000 0.0900000 0 0.0000000 79ram1 0
99 mo g pu239t rc cu 6.1966528 5.0 6.1800000 0.1900000 0 0.0000000 84jai1 0
99 mo g pu239t rc cu 6.2367606 5.0 6.2200000 0.1500000 0 0.0000000 84jai1 0
99 mo g pu239t rc cu 6.2467875 5.0 6.2300000 0.0700000 0 0.0000000 84jai1 0
99 mo g pu239t sp fi 0.0373558 99.9 0.0060000 0.0200000 99 pu239t 1.0000000 84sch1 36
99 mo g pu239t rc cu 6.2452390 5.0 1.1800000 0.0300000 140 ba g u235t 0.0000000 86chi1 7
99 mo g pu239t rc cu 6.0864617 5.0 1.1500000 0.0300000 140 ba g u235t 0.0000000 86chi1 7
99 mo g pu239t rc cu rp 6.2820234 10.3 6.7900000 0.0000000 no. relative values = 3 71ram1
99 mo g pu239t cm cu x3 0.0000000 0.0 6.4330000 2.0000000% 0 0.0000000 73net2 0
99 nb g pu239t rc cu 3.7188811 16.5 3.7000000 0.6000000 139 xe g pu239t 3.0780000 82gol1 0
99 nb g pu239t sp fi 0.0747116 13.1 0.0120000 13.0000000% 99 pu239t 1.0000000 84sch1 36
99 nb g pu239t cm in 0.0000000 0.0 0.0812000 13.0000000% 0 1.0000000 88wah1 18
99 nb m pu239t sp fi 0.8778612 13.1 0.1410000 13.0000000% 99 pu239t 1.0000000 84sch1 36
99 nb m pu239t cm in 0.0000000 0.0 0.9338000 13.0000000% 0 1.0000000 88wah1 18
99 zr g pu239t sp fi 3.7480316 5.2 0.6020000 5.0000000% 99 pu239t 1.0000000 84sch1 36
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special

nuclide	material	tech.	type	value	err.	value		nuclide	material	value	no.	treatment
99 zr g	pu239t	cm	in	0.0000000	0.0	3.6860000	5.0000000%	0		1.0000000	88wah1	0
99 y g	pu239t	es	fc	1.2763230	30.0	0.2050000	0.0000000	99	pu239t	1.0000000	74wol1	0
99 y g	pu239t	sp	fi	1.4568761	9.1	0.2340000	9.0000000%	99	pu239t	1.0000000	84sch1	36
99 y g	pu239t	cm	in	0.0000000	0.0	1.3930000	9.0000000%	0		1.0000000	88wah1	0
99 sr g	pu239t	sp	fi	0.0373558	99.9	0.0060000	0.0200000	99	pu239t	1.0000000	84sch1	36
99	pu239f	cm	cu	0.0000000	0.0	6.0000000	0.0000000	0		0.0000000	73lar3	0
99	pu239f	cm	cu	0.0000000	0.0	5.7700000	2.9000000%	0		0.0000000	77cro1	0
99	pu239f	es	cu su	0.0000000	0.0	6.0900000	0.3300000	148 nd g	pu239f	1.6500000	74mae1	0
99 tc g	pu239f	es	cu	4.9875399	30.0	5.2400000	0.0000000	148 nd g	pu239f	1.7300000	70lis1	0
99 tc g	pu239f	es	cu	5.7584589	30.0	5.9800000	0.0000000	148 nd g	pu239f	1.7100000	72sid1	0
99 tc g	pu239f	es	cu	6.1565183	5.1	6.1840000	0.3160000	148 nd g	pu239f	1.6540000	77mae1	0
99 tc g	pu239f	es	cu	6.2260923	5.2	6.2820000	0.3290000	0		0.0000000	77mae1	0
99 tc g	pu239f	es	re	5.9718152	5.2	0.9700000	5.0000000%	99	pu239t	1.0000000	74mee4	0
99 mo g	pu239f	rc	cu	6.2251779	60.0	5.9000000	0.0000000	140 ba g	pu239f	5.0000000	51ste3	0
99 mo g	pu239f	rc	cu cm	6.2202950	15.1	5.8600000	0.0000000	140 ba g	pu239f	4.9700000	65cro2	0
99 mo g	pu239f	rc	cu	6.4836487	6.0	6.1100000	6.0000000%	137 cs g	pu239f	6.1500000	67sch1	0
99 mo g	pu239f	rc	cu	6.1196664	5.2	5.8000000	0.0735000	140 ba g	pu239f	5.0000000	70arm1	33
99 mo g	pu239f	rc	cu	5.6791165	5.4	5.7700000	0.3000000	140 ba g	pu239f	5.3600000	72cun2	0
99 mo g	pu239f	cm	cu	0.0000000	0.0	5.9410000	5.0000000%	0		0.0000000	73net2	0
99 mo g	pu239f	rc	re	6.0799982	5.0	1.1690000	0.0230000	140 ba g	u235t	0.0000000	75raj1	7
99 mo g	pu239f	es	cu	5.7583189	30.0	6.0000000	0.0000000	137 cs g	pu239f	6.8000000	60kat1	0
99 mo g	pu239f	rc	cu	5.7640536	10.3	5.9000000	0.6000000	140 ba g	pu239f	5.4000000	61bon1	0
99 mo g	pu239f	rc	cu	6.3473472	18.8	1.0310000	0.1930000	99 mo g	pu239t	1.0000000	79yur1	36
99 mo g	pu239f	rc	cu	5.9107797	5.2	6.0900000	3.0000000%	95 zr g	pu239f	4.7700000	73lar4	0
99 mo g	pu239f	rc	cu	5.8871360	5.0	5.9400000	3.0000000%	0		0.0000000	81lau1	0
99 mo g	pu239f	rc	cu rp	5.3729916	11.1	5.9800000	0.0000000	no. relative values =	5		72cun1	
99 mo g	pu239f	rc	cu rp	5.8441742	39.0	5.5000000	0.0000000	no. relative values =	2		59bak1	
99 mo g	pu239f	rc	cu rp	4.9924442	23.5	5.5000000	0.0000000	no. relative values =	2		60pet1	
99 mo g	pu239f	rc	cu	5.4312298	7.7	5.4800000	0.4200000	0		0.0000000	77cun1	0
99	pu241t	cm	cu	0.0000000	0.0	6.2000000	0.1200000	0		0.0000000	73wal1	0
99	pu241t	cm	cu	0.0000000	0.0	6.1700000	2.8000000%	0		0.0000000	77cro1	0
99	pu241t	cm	cu	0.0000000	0.0	5.7200000	0.0000000	0		0.0000000	79wal1	0
99 tc g	pu241t	es	cu	5.9723552	30.0	6.0000000	0.0000000	0		0.0000000	72sid1	0
99 tc g	pu241t	es	cu	5.6060508	6.1	5.6320000	0.3420000	0		0.0000000	77mae1	0

99 mo g pu241t rc cu 6.3099463 5.0 6.0000000 0.2400000 137 cs g pu239t 5.9000000 69cro2 25
99 mo g pu241t rc cu 6.1216641 5.0 6.1500000 0.1600000 0 0.0000000 73sko2 0
99 mo g pu241t rc cu 5.7334610 5.0 5.7600000 0.2700000 0 0.0000000 79dic1 0
99 mo g pu241t rc cu 6.1216641 5.0 6.1500000 0.1600000 0 0.0000000 71sor1 0
99 mo g pu241t rc cu 6.3739731 5.0 6.1700000 0.1600000 148 nd g pu241t 1.8616500 70lis1 0
99 mo g pu241t rc cu 5.7183833 15.1 6.1700000 0.0000000 131 pu241t 3.3300000 73chi1 0
99 mo g pu241t rc cu 5.7717563 5.0 1.0200000 0.0300000 140 ba g u235t 0.0000000 86chi1 7
99 mo g pu241t rc cu 5.5454129 5.0 0.9800000 0.0200000 140 ba g u235t 0.0000000 86chi1 7
99 mo g pu241t rc cu 5.1760412 30.0 5.2000000 0.0000000 0 0.0000000 63kir1 0
99 u233t cm cu 0.0000000 0.0 4.8900000 0.0000000 0 0.0000000 73lam1 0
99 u233t cm cu 0.0000000 0.0 5.0100000 0.1000000 0 0.0000000 73wal1 0
99 u233t cm cu 0.0000000 0.0 5.1000000 4.3000000% 0 0.0000000 77cro1 0
99 tc g u233t es cu 4.9754864 30.0 5.0000000 0.0000000 0 0.0000000 72sid1 0
99 tc g u233t ms cu 4.9227463 2.0 4.9470000 0.0400000 0 0.0000000 80weh1 0
99 tc g u233t sp fi ul 0.0000000 0.0 0.4293000 0.1272000 99 u233t 100.0000000 83qua1 40
99 tc g u233t sp in ul 0.0000000 0.0 0.0194400 0.0057000 0 0.0000000 88qua1 18
99 tc m u233t sp fi ul 0.0000000 0.0 0.1007000 0.0288000 99 u233t 100.0000000 83qua1 40
99 tc m u233t sp in ul 0.0000000 0.0 0.0045600 0.0013000 0 0.0000000 88qua1 18
99 mo g u233t rc cu 4.8848089 60.1 5.1000000 0.0000000 99 mo g u233t 5.1000000 47ste1 0
99 mo g u233t rc cu 4.9356826 10.0 4.9600000 0.1500000 0 0.0000000 56for1 0
99 mo g u233t rc re 4.8759767 10.2 4.9000000 0.5000000 0 0.0000000 68lee1 0
99 mo g u233t cm cu 0.0000000 0.0 5.0240000 2.0000000% 0 0.0000000 73net2 0
99 mo g u233t rc cu 4.7267121 5.0 4.7500000 0.1100000 0 0.0000000 74egg1 0
99 mo g u233t ms cu 5.1347020 60.0 5.1600000 60.0000000% 0 0.0000000 70lis1 36
99 mo g u233t rc cu 4.8859277 5.0 4.9100000 4.2000000% 0 0.0000000 81ram1 0
99 mo g u233t sp fi 0.1064889 25.4 2.1800000 0.5530000 99 u233t 100.0000000 83qua1 0
99 mo g u233t rc cu 5.0205633 5.0 0.8000000 0.0200000 140 ba g u235t 0.0000000 86chi1 7
99 mo g u233t rc cu 4.8950492 5.0 0.7800000 0.0200000 140 ba g u235t 0.0000000 86chi1 7
99 mo g u233t rc cu rp 5.0326247 7.3 4.8000000 0.0000000 no. relative values = 6 67gan1
99 mo g u233t rc cu rp 4.9407854 36.5 5.1000000 0.0000000 no. relative values = 3 47ste1
99 mo g u233t sp in 0.0975195 25.5 0.0980000 0.0250000 0 0.0000000 88qua1 0
99 nb g u233t ms in 0.0557254 5.4 0.0560000 0.0030000 0 0.0000000 80weh1 18
99 nb g u233t sp fi 0.0732722 99.9 1.5000000 1.5000000 99 u233t 100.0000000 83qua1 40
99 nb g u233t sp fi ul 0.0000000 0.0 0.0154000126.0000000% 99 u233t 1.0000000 86lei1 40
99 nb g u233t es in 0.0646813 0.2 0.0650000 0.0090000% 0 0.0000000 88wah1 18
99 nb g u233t sp in 0.0666715 9.0 0.0670000 0.0060000 0 0.0000000 88qua1 18

99	nb m	u233t	rc	fc		1.4165946	7.5	0.2900000	0.0200000	99	mo g	u233t	1.0000000	71har1	0
99	nb m	u233t	rc	cu		2.1494101	9.3	2.1600000	0.2000000	0			0.0000000	81gud1	0
99	nb m	u233t	ms	in		0.6398476	4.5	0.6430000	0.0290000	0			0.0000000	80weh1	18
99	nb m	u233t	sp	fi		0.8416533	99.9	17.2300000	17.2300000	99		u233t	100.0000000	83qua1	40
99	nb m	u233t	sp	fi	ul	0.0000000	0.0	0.0036000	126.0000000%	99		u233t	1.0000000	86lei1	40
99	nb m	u233t	es	in		0.7433377	0.2	0.7470000	0.1050000%	0			0.0000000	88wah1	18
99	nb m	u233t	sp	in		0.7712004	8.1	0.7750000	0.0630000	0			0.0000000	88qua1	18
99	zr g	u233t	es	in		3.2330711	5.0	3.2490000	5.0000000%	0			0.0000000	88wah1	0
99	zr g	u233t	ms	in		3.4997572	2.0	3.5170000	0.0480000	0			0.0000000	80weh1	0
99	zr g	u233t	sp	fi		3.6489553	5.2	0.7470000	4.0000000%	99		u233t	1.0000000	86lei1	0
99	zr g	u233t	sp	fi		3.1399578	5.2	64.2800000	1.9190000	99		u233t	100.0000000	83qua1	0
99	zr g	u233t	sp	in		2.8758312	5.0	2.8900000	0.1050000	0			0.0000000	88qua1	0
99	zr g	u233t	es	in		3.2738701	10.0	3.2900000	10.0000000%	0			0.0000000	89rid1	0
99	y g	u233t	ms	in		0.6617397	4.8	0.6650000	0.0320000	0			0.0000000	80weh1	0
99	y g	u233t	sp	fi		0.6697079	7.2	13.7100000	0.9680000	99		u233t	100.0000000	83qua1	0
99	y g	u233t	sp	fc		1.1430462	6.2	0.2340000	6.0000000%	99		u233t	1.0000000	86lei1	0
99	y g	u233t	sp	in		0.6129799	7.3	0.6160000	0.0450000	0			0.0000000	88qua1	0
99	y g	u233t	es	in		0.6785568	11.0	0.6819000	11.0000000%	0			0.0000000	88wah1	0
99	sr g	u233t	sp	fi		0.0273550	23.8	0.5600000	0.1330000	99		u233t	100.0000000	83qua1	0
99	sr g	u233t	sp	in		0.0248774	24.0	0.0250000	0.0060000	0			0.0000000	88qua1	0
99	sr g	u233t	ms	in	x4	0.0000000	0.0	0.0660000	0.0110000	0			0.0000000	80weh1	0
99	sr g	u233t	es	in		0.0166977	99.0	0.0167800	99.0000000%	0			0.0000000	88wah1	0
99		th232f	cm	cu	es	0.0000000	0.0	2.7400000	0.0000000	0			0.0000000	65eng1	0
99		th232f	cm	cu		0.0000000	0.0	2.7500000	0.0000000	0			0.0000000	74lam1	0
99		th232f	cm	cu		0.0000000	0.0	2.9800000	6.1000000%	0			0.0000000	77cro1	0
99	tc g	th232f	es	cu		2.9173160	30.0	2.9200000	0.0000000	0			0.0000000	72sid1	0
99	tc g	th232f	es	cu	cm	2.7574630	30.0	2.7600000	0.0000000	0			0.0000000	73lam1	0
99	tc g	th232f	es	cu		2.8773527	5.0	2.8800000	5.0000000%	0			0.0000000	74mee0	0
99	mo g	th232f	rc	cu		3.2952867	60.1	2.6500000	0.0000000	89	sr g	th232f	6.0000000	50nid1	0
99	mo g	th232f	rc	cu		3.0926172	20.0	2.9000000	0.3000000	89	sr g	u235t	6.2000000	51tur1	22
99	mo g	th232f	rc	re		3.1471966	10.4	0.4000000	0.0300000	140	ba g	th232f	1.0000000	63cro2	0
99	mo g	th232f	rc	re		2.7605798	15.5	0.3700000	0.0000000	89	sr g	th232f	1.0000000	73dub1	0
99	mo g	th232f	cm	cu		0.0000000	0.0	2.8550000	4.0000000%	0			0.0000000	73net2	0
99	mo g	th232f	es	cu	cm	2.6975182	30.0	2.7000000	0.0000000	0			0.0000000	60kat1	0
99	mo g	th232f	es	cu		2.7774447	30.0	2.7800000	0.0000000	0			0.0000000	69lyl1	0
99	mo g	th232f	rc	cu		3.0971505	10.0	3.1000000	0.1100000	0			0.0000000	64bro1	0

99 mo g th232f rc cu 2.9972424 5.0 3.0000000 0.0500000 0 0.0000000 71swi3 0
99 mo g th232f rc cu 2.5367490 10.8 0.3400000 10.0000000% 89 sr g th232f 1.0000000 76lis1 0
99 mo g th232f rc re 2.8351900 30.3 0.3800000 30.0000000% 89 sr g th232f 1.0000000 76lis1 0
99 mo g th232f rc cu 2.6474728 13.2 2.4900000 0.3200000 140 ba g th232f 7.4000000 73cha1 0
99 mo g th232f rc cu 2.9772608 5.0 2.9800000 0.1500000 0 0.0000000 81ert1 0
99 mo g th232f cm cu 0.0000000 0.0 2.9500000 0.0800000 0 0.0000000 81ert1 0
99 mo g th232f rc cu 2.8873436 5.0 2.8900000 4.5000000% 0 0.0000000 81ram1 0
99 mo g th232f rc cu 2.3100502 12.3 2.3400000 0.2800000 140 ba g th232f 7.9700000 85chu1 0
99 mo g th232f rc cu 3.0571873 5.0 3.0600000 0.1200000 0 0.0000000 86ric1 0
99 mo g th232f rc re rp 2.6959189 16.1 1.0000000 0.0000000 no. relative values = 1 69lyl1
99 mo g th232f rc cu rp 2.8109828 7.2 2.7800000 0.0000000 no. relative values = 5 65wyt1
99 mo g th232f rc cu rp 3.5394200 13.5 3.1000000 0.0000000 no. relative values = 6 64bro1
99 mo g th232f rc cu rp 3.1420199 7.7 2.7800000 0.0000000 no. relative values = 6 68lyl1
99 mo g th232f rc cu 3.0922681 20.0 0.3211000 10.3000000% 89 sr g u235t 0.0000000 51tur1 7
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

100 mo g u235t ms cu 6.3032052 2.0 6.3000000 2.0000000% 0 0.0000000 55gle1 36
100 mo g u235t ms re rp 6.3182242 5.1 1.0000000 0.0000000 no. relative values = 2 62far2
100 u235t cm cu 0.0000000 0.0 6.5000000 0.0000000 0 0.0000000 72sid1 0
100 u235t cm cu 0.0000000 0.0 6.3200000 0.0000000 0 0.0000000 73lam1 0
100 u235t cm cu 0.0000000 0.0 6.3100000 0.1100000 0 0.0000000 73wal1 0
100 u235t ms cu 6.1731390 2.0 6.1700000 0.0380000 0 0.0000000 76dii1 0
100 mo g u235t ms fi 0.0566639 66.7 0.9000000 0.6000000 100 u235t 100.0000000 76sie1 0
100 u235t sp cu 6.1231136 5.0 6.1200000 0.1200000 0 1.0000000 76woh2 0
100 u235t cm cu 0.0000000 0.0 6.3400000 3.7000000% 0 0.0000000 77cro1 0
100 mo g u235t sp fi ul 0.0000000 0.0 0.9000000 0.5000000 100 u235t 100.0000000 75sie1 0
100 mo g u235t ms in 0.0730371 41.1 0.0730000 0.0300000 0 0.0000000 79cle1 0
100 mo g u235t ms cu 6.2431746 3.4 6.2400000 0.2100000 0 0.0000000 70lis1 36
100 mo g u235t ms cu 6.3002036 2.0 6.2970000 0.0680000 0 0.0000000 78mae1 0
100 mo g u235t ms cu 6.1801426 2.0 6.1770000 0.0660000 0 0.0000000 78mae1 0
100 mo g u235t ms cu 6.2771919 2.0 6.2740000 0.0700000 0 0.0000000 78mae1 0
100 u235t es re 6.3016016 3.2 1.0000000 3.0000000% 100 u235f 1.0000000 74mee4 0
100 mo g u235t ms cu cm 6.2521792 6.0 6.2490000 0.0000000 0 0.0000000 80mae3 0
100 mo g u235t ms fi su 0.0000000 0.0 0.8000000 0.6000000 100 u235t 100.0000000 76wol1 0

100	mo	g	u235t	ms	cu		6.3868808	1.2	6.4000000	0.0600000	95	mo	g	u235t	6.5200000	86chi1	0
100	mo	g	u235t	sp	fi		0.0755518	41.7	1.2000000	0.5000000	100			u235t	100.0000000	80lan1	0
100	mo	g	u235t	cm	in		0.0000000	0.0	0.0893100	85.0000000%	0				1.0000000	88wah1	0
100	nb	g	u235t	es	in		0.3736900	25.0	0.7470000	25.0000000%	0				0.0000000	88wah1	37
100	nb	g	u235t	es	in		0.3801933	25.0	0.7600000	25.0000000%	0				0.0000000	89rid1	37
100	nb	g	u235t	ms	fi		0.2046196	13.9	6.5000000	0.9000000	100			u235t	100.0000000	76sie1	37
100	nb	g	u235t	ms	fi		0.3147993	20.0	10.0000000	2.0000000	100			u235t	100.0000000	75cle1	37
100	nb	g	u235t	ms	fi		0.4721990	18.7	15.0000000	2.8000000	100			u235t	100.0000000	75cle2	37
100	nb	g	u235t	ms	fi	x4	0.0000000	0.0	3.3000000	2.0000000	100			u235t	100.0000000	75cle1	37
100	nb	g	u235t	ms	fi	x4	0.0000000	0.0	5.8000000	0.9000000	100			u235t	100.0000000	76wol1	37
100	nb	g	u235t	ms	in	x4	0.0000000	0.0	1.1800000	0.2000000	0				0.0000000	79cle1	37
100	nb	g	u235t	rc	fi	x1	0.0000000	0.0	0.0030000	0.0010000	100			u235t	1.0000000	69bla1	37
100	nb	g	u235t	sp	fi		0.2675794	20.0	8.5000000	20.0000000%	100			u235t	100.0000000	78str1	37
100	nb	g	u235t	sp	fi	x4	0.0000000	0.0	5.7000000	0.9000000	100			u235t	100.0000000	75sie1	37
100	nb	g	u235t	sp	fi	x4	0.0000000	0.0	19.2000000	2.8000000	100			u235t	100.0000000	80lan1	37
100	nb	m	u235t	es	in		0.3736900	25.0	0.7470000	25.0000000%	0				0.0000000	88wah1	37
100	nb	m	u235t	es	in		0.3801933	25.0	0.7600000	25.0000000%	0				0.0000000	89rid1	37
100	nb	m	u235t	ms	fi		0.2046196	13.9	6.5000000	0.9000000	100			u235t	100.0000000	76sie1	37
100	nb	m	u235t	ms	fi		0.3147993	20.0	10.0000000	2.0000000	100			u235t	100.0000000	75cle1	37
100	nb	m	u235t	ms	fi		0.4721990	18.7	15.0000000	2.8000000	100			u235t	100.0000000	75cle2	37
100	nb	m	u235t	ms	fi	x4	0.0000000	0.0	3.3000000	2.0000000	100			u235t	100.0000000	75cle1	37
100	nb	m	u235t	ms	fi	x4	0.0000000	0.0	5.8000000	0.9000000	100			u235t	100.0000000	76wol1	37
100	nb	m	u235t	ms	in	x4	0.0000000	0.0	1.1800000	0.2000000	0				0.0000000	79cle1	37
100	nb	m	u235t	rc	fi	x1	0.0000000	0.0	0.0030000	0.0010000	100			u235t	1.0000000	69bla1	37
100	nb	m	u235t	sp	fi		0.2675794	20.0	8.5000000	20.0000000%	100			u235t	100.0000000	78str1	37
100	nb	m	u235t	sp	fi	x4	0.0000000	0.0	5.7000000	0.9000000	100			u235t	100.0000000	75sie1	37
100	nb	m	u235t	sp	fi	x4	0.0000000	0.0	19.2000000	2.8000000	100			u235t	100.0000000	80lan1	37
100	zr	g	u235t	ms	fi	su	0.0000000	0.0	80.9000000	2.6000000	100			u235t	100.0000000	75cle1	0
100	zr	g	u235t	ms	fi	su	0.0000000	0.0	90.7000000	3.8000000	100			u235t	100.0000000	75cle1	0
100	zr	g	u235t	ms	fi		5.2193727	3.7	82.9000000	3.0000000	100			u235t	100.0000000	76sie1	0
100	zr	g	u235t	sp	fi	su	0.0000000	0.0	84.6000000	3.0000000	100			u235t	100.0000000	75sie1	0
100	zr	g	u235t	sp	fi		4.7849497	5.0	76.0000000	1.1000000	100			u235t	100.0000000	78str1	0
100	zr	g	u235t	ms	fi	su	0.0000000	0.0	80.2000000	1.7000000	100			u235t	100.0000000	75cle2	0
100	zr	g	u235t	ms	in		4.5623199	4.6	4.5600000	0.2100000	0				0.0000000	79cle1	0
100	zr	g	u235t	ms	fi	su	0.0000000	0.0	83.5000000	2.8000000	100			u235t	100.0000000	76wol1	0
100	zr	g	u235t	sp	fi		4.6842139	5.0	74.4000000	2.7000000	100			u235t	100.0000000	80lan1	0

100	zr	g	u235t	cm		in		0.0000000	0.0	4.8330000	3.0000000%	0				1.0000000	88wah1	0	
100	y	g	u235t	ms		fi	su	0.0000000	0.0	8.6000000	1.2000000	100		u235t		100.0000000	75cle1	0	
100	y	g	u235t	ms		fi	su	0.0000000	0.0	6.0000000	2.0000000	100		u235t		100.0000000	75cle1	0	
100	y	g	u235t	ms		fi		0.5540468	13.7	8.8000000	1.2000000	100		u235t		100.0000000	76sie1	0	
100	y	g	u235t	sp		fi	su	0.0000000	0.0	7.9000000	1.2000000	100		u235t		100.0000000	75sie1	0	
100	y	g	u235t	sp		fi		0.8499582	16.0	13.5000000	16.0000000%	100		u235t		100.0000000	78str1	36	
100	y	g	u235t	ms		fi	su	0.0000000	0.0	4.8000000	1.6000000	100		u235t		100.0000000	75cle2	0	
100	y	g	u235t	ms		in	su	0.0000000	0.0	0.3100000	0.0480000	0				0.0000000	79cle1	0	
100	y	g	u235t	ms		fi	su	0.0000000	0.0	9.1000000	1.2000000	100		u235t		100.0000000	76wol1	0	
100	y	g	u235t	sp		fi		0.3210953	15.7	5.1000000	0.8000000	100		u235t		100.0000000	80lan1	0	
100	y	g	u235t	es		in		0.5216653	26.0	0.5214000	26.0000000%	0				1.0000000	88wah1	0	
100	y	g	u235t	es		fi		0.4905833	23.1	0.0779200	23.1000000%	100		u235t		1.0000000	91jam2	0	
100	y	g	u235t	es		in		0.5452773	25.0	0.5450000	25.0000000%	0				0.0000000	89rid1	0	
100	sr	g	u235t	ms		fi	su	0.0000000	0.0	0.5000000	0.5000000	100		u235t		100.0000000	75cle1	0	
100	sr	g	u235t	ms		fi	ul	0.0000000	0.0	0.9000000	0.6000000	100		u235t		100.0000000	76sie1	0	
100	sr	g	u235t	sp		fi	ul	0.0000000	0.0	0.9000000	0.5000000	100		u235t		100.0000000	75sie1	0	
100	sr	g	u235t	ms		in		0.0090046	77.8	0.0090000	0.0070000	0				0.0000000	79cle1	0	
100	sr	g	u235t	sp		cu	ul	0.0000000	0.0	0.0570000	0.0250000	0				0.0000000	81shm1	0	
100	sr	g	u235t	ms		fi	ul	0.0000000	0.0	0.8000000	0.6000000	100		u235t		100.0000000	76wol1	0	
100	sr	g	u235t	sp		fi		0.0062960	99.9	0.1000000	0.1000000	100		u235t		100.0000000	80lan1	0	
100	sr	g	u235t	ms		in	ul	0.0000000	0.0	0.0570000	0.0250000	0				0.0000000	79shm1	0	
100	sr	g	u235t	sp		cu	ul	0.0000000	0.0	0.0570000	0.0250000	0				0.0000000	81shm1	0	
100	sr	g	u235t	sp		cu		0.0420214	21.4	0.0420000	0.0090000	0				0.0000000	90rud1	0	
100			u235f	cm		cu	x3	0.0000000	0.0	5.3300000	0.0000000	0				0.0000000	72sid1	0	
100			u235f	cm		cu		0.0000000	0.0	6.4800000	4.5000000%	0				0.0000000	77cro1	0	
100			u235f	es		re		6.2429982	10.0	1.0000000	10.0000000%	100		u235t		1.0000000	74mee4	0	
100	mo	g	u235f	ms		cu		6.0596848	2.0	6.1080000	0.0430000	0				0.0000000	80mae1	0	
100	mo	g	u235f	ms		cu		6.0601314	2.1	6.3500000	0.1300000	148	nd	g	u235f	1.7500000	70lis1	0	
100	mo	g	u235f	ms		cu		6.1906406	2.0	6.2400000	2.0000000%	0				0.0000000	72lar1	0	
100	mo	g	u235f	ms		cu		6.4535445	2.0	6.5050000	0.0430000	0				0.0000000	81mae1	0	
100	mo	g	u235f	ms		cu		6.4148530	2.0	6.4660000	0.0420000	0				0.0000000	81mae1	0	
100	mo	g	u235f	ms		cu		6.3989795	2.0	6.4500000	0.0390000	0				0.0000000	81mae1	0	
100	mo	g	u235f	cm		cu		0.0000000	0.0	6.4740000	0.0360000	0				0.0000000	81mae1	0	
100	mo	g	u235f	ms		cu		6.3524016	1.1	6.3900000	0.0600000	148	nd	g	u235f	1.6800000	74mae1	0	
100	mo	g	u235he	es		cu		4.4848586	30.0	4.5770000	0.0000000	0				0.0000000	63wea1	0	
100			u235he	cm		cu		0.0000000	0.0	4.7300000	20.0000000%	0				0.0000000	77cro1	0	

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 100        u235he   es    cu         3.8900784 10.0   3.9700000 10.0000000%    0                    0.0000000   74mee8      0
 100 mo g   u238f    es    cu         6.2742202 30.0   6.2890000  0.0000000     0                    0.0000000   63wea1      0
 100        u238f    es    cu    cm   6.2851944 30.0   6.3000000  0.0000000     0                    0.0000000   64wal1      0
 100        u238f    es    cu    cm   6.2053824 30.0   6.2200000  0.0000000     0                    0.0000000   72sid1      0
 100        u238f    cm    cu         0.0000000  0.0   6.6000000  5.0000000%    0                    0.0000000   77cro1      0
 100 mo g   u238f    ms    cu         6.6533272  2.1   6.6690000  0.1390000     0                    0.0000000   81mae1      0
 100 mo g   u238f    ms    cu         6.6712849  2.0   6.6870000  0.0650000     0                    0.0000000   81mae1      0
 100 mo g   u238f    ms    cu         6.7281509  2.0   6.7440000  0.1160000     0                    0.0000000   81mae1      0
 100 mo g   u238f    cm    cu         0.0000000  0.0   6.7000000  0.0800000     0                    0.0000000   81mae1      0
 100 mo g   u238f    ms    cu         6.7176804  1.4   6.6300000  0.0800000   148 nd g      u238f       2.0800000   74mae1      0
 100 mo g   u238he   es    cu         5.4714396 30.0   5.5300000  0.0000000     0                    0.0000000   63wea1      0
 100        u238he   es    cu    su   0.0000000  0.0   5.7900000  0.0000000     0                    0.0000000   73dar1      0
 100        u238he   es    cu         4.8797722 15.0   4.9320000 15.0000000%    0                    0.0000000   74mee9      0
 100        u238he   cm    cu         0.0000000  0.0   5.6300000  5.9000000%    0                    0.0000000   77cro1      0
 100        pu239t   cm    cu         0.0000000  0.0   7.1000000  0.0000000     0                    0.0000000   72sid1      0
 100        pu239t   cm    cu         0.0000000  0.0   7.1600000  0.0000000     0                    0.0000000   73lam1      0
 100        pu239t   cm    cu         0.0000000  0.0   7.0000000  0.1200000     0                    0.0000000   73wal1      0
 100        pu239t   cm    cu         0.0000000  0.0   7.0800000 10.0000000%    0                    0.0000000   77cro1      0
 100 mo g   pu239t   ms    cu    rp   6.9112107  4.0   1.0000000  0.0000000  no. relative values =    3            59fic1
 100 mo g   pu239t   es    cu    cm   6.7381079  2.0   6.7200000  2.0000000%    0                    0.0000000   81mae2     36
 100 mo g   pu239t   sp    fi         0.1426388 95.0   0.0210000 95.0000000%  100          pu239t      1.0000000   84sch1     36
 100 mo g   pu239t   es    re    cm   6.7731911  2.2   0.2979000  2.0000000%   95 mo g      pu239t      0.2125000   81mae2     36
 100 mo g   pu239t   ms    cu    x4   0.0000000  0.0   7.8200000  0.1000000    95 mo g      pu239t      4.9500000   86chi1      0
 100 mo g   pu239t   cm    in         0.0000000  0.0   0.1386000 95.0000000%    0                    1.0000000   88wah1      0
 100 nb g   pu239t   sp    fi         0.7539480  9.1   0.2220000  9.0000000%  100          pu239t      1.0000000   84sch1     37
 100 nb g   pu239t   cm    in         0.0000000  0.0   0.8100000  9.0000000%    0                    1.0000000   88wah1      0
 100 nb m   pu239t   sp    fi         0.7539480  9.1   0.2220000  9.0000000%  100          pu239t      1.0000000   84sch1     37
 100 nb m   pu239t   cm    in         0.0000000  0.0   0.8100000  9.0000000%    0                    1.0000000   88wah1      0
 100 zr g   pu239t   rc    cu         5.5280664 25.6   5.5000000  1.4000000   139 xe g      pu239t      3.0780000   82gol1      0
 100 zr g   pu239t   sp    fi         4.7953811  5.2   0.7060000  5.0000000%  100          pu239t      1.0000000   84sch1     36
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type          value   err.     value                nuclide     material       value       no.   treatment

 100 zr g   pu239t   cm    in         0.0000000  0.0   4.7560000  5.0000000%    0                    1.0000000   88wah1      0
 100 y  g   pu239t   sp    fi         0.3464085 39.0   0.0510000 39.0000000%  100          pu239t      1.0000000   84sch1     36
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100	y	g	pu239t	cm	in		0.0000000	0.0	0.3341000	39.0000000%	0			1.0000000	88wah1	0			
100	sr	g	pu239t	sp	fi		0.0067923	99.9	0.0010000	0.0200000	100		pu239t	1.0000000	84sch1	0			
100			pu239f	cm	cu		0.0000000	0.0	6.5900000	4.5000000%	0			0.0000000	77cro1	0			
100	mo	g	pu239f	ms	cu		6.6869153	1.0	6.6780000	0.0620000	148	nd	g	pu239f	1.6540000	77mae1	0		
100	mo	g	pu239f	ms	cu		6.6051513	2.0	6.6260000	0.0850000	0			0.0000000	77mae1	0			
100	mo	g	pu239f	ms	cu		6.4716572	2.0	6.7600000	0.1300000	148	nd	g	pu239f	1.7300000	70lis1	0		
100	mo	g	pu239f	ms	cu		6.4628361	0.7	0.2952000	0.0004000	97	mo	g	pu239f	0.2412000	80mae4	0		
100	mo	g	pu239f	ms	cu	su	0.0000000	0.0	6.6400000	0.0500000	148	nd	g	pu239f	1.6500000	74mae1	0		
100			pu239f	es	re		6.5504080	10.1	0.9700000	10.0000000%	100		pu239t	1.0000000	74mee4	0			
100	mo	g	pu239f	es	re	cm	6.5172312	1.4	0.2974000	1.0000000%	95	mo	g	pu239f	0.2125000	81mae2	36		
100	mo	g	pu239f	es	cu	cm	6.5792331	1.0	6.6000000	1.0000000%	0			0.0000000	81mae2	0			
100			pu239f	cm	cu	x3	0.0000000	0.0	6.0000000	0.0000000	0			0.0000000	72sid1	0			
100			pu241t	cm	cu		0.0000000	0.0	6.3000000	0.0000000	0			0.0000000	72sid1	0			
100			pu241t	cm	cu		0.0000000	0.0	6.3200000	20.0000000%	0			0.0000000	77cro1	0			
100			pu241t	es	cu		6.1714337	9.7	6.2000000	0.6000000	0			0.0000000	73wal1	0			
100	mo	g	pu241t	ms	cu		6.2580329	2.0	6.2870000	0.0460000	0			0.0000000	77mae1	0			
100	mo	g	pu241t	ms	cu	x4	0.0000000	0.0	7.0700000	10.0000000%	95	mo	g	pu241t	3.9700000	86chi1	36		
100	tc	g	u233t	sp	fi	ul	0.0000000	0.0	0.8600000	0.1940000	100		u233t	100.0000000	83qua1	0			
100	tc	g	u233t	sp	in	ul	0.0000000	0.0	0.0370000	0.0080000	0			0.0000000	88qua1	0			
100	mo	g	u233t	ms	cu		4.5575880	5.1	4.4000000	5.0000000%	95	mo	g	u233t	6.1000000	54ste1	0		
100			u233t	cm	cu		0.0000000	0.0	4.4500000	0.0000000	0			0.0000000	72sid1	0			
100			u233t	cm	cu		0.0000000	0.0	4.3800000	0.0000000	0			0.0000000	73lam1	0			
100			u233t	cm	cu		0.0000000	0.0	4.3600000	0.0800000	0			0.0000000	73wal1	0			
100	mo	g	u233t	ms	cu		4.5247128	4.1	4.4900000	4.0000000%	95	mo	g	u233t	6.2700000	61bid1	0		
100			u233t	cm	cu		0.0000000	0.0	4.4600000	4.5000000%	0			0.0000000	77cro1	0			
100			u233t	ms	cu		4.2689674	2.0	4.2900000	0.0370000	0			0.0000000	80weh1	0			
100	mo	g	u233t	ms	in		0.2129508	10.7	0.2140000	0.0230000	0			0.0000000	80weh1	0			
100	mo	g	u233t	ms	cu		4.4381339	2.0	4.4600000	0.0400000	0			0.0000000	70lis1	0			
100	mo	g	u233t	sp	fi		0.3057062	13.1	6.8900000	0.8980000	100		u233t	100.0000000	83qua1	0			
100	mo	g	u233t	ms	cu		4.5373610	1.3	4.5600000	0.0400000	95	mo	g	u233t	6.3500000	86chi1	0		
100	mo	g	u233t	sp	in		0.2925586	13.3	0.2940000	0.0390000	0			0.0000000	88qua1	0			
100	nb	g	u233t	ms	in		0.4229163	3.6	0.8500000	0.0310000	0			0.0000000	80weh1	37			
100	nb	g	u233t	sp	fi		0.5027070	6.6	22.6600000	1.4670000	100		u233t	100.0000000	83qua1	37			
100	nb	g	u233t	sp	in		0.4806320	6.8	0.9660000	0.0660000	0			0.0000000	88qua1	37			
100	nb	m	u233t	ms	in		0.4229163	3.6	0.8500000	0.0310000	0			0.0000000	80weh1	37			
100	nb	m	u233t	sp	fi		0.5027070	6.6	22.6600000	1.4670000	100		u233t	100.0000000	83qua1	37			

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100 nb m   u233t   sp   in       0.4806320  6.8   0.9660000  0.0660000    0                  0.0000000   88qua1    37
100 zr g   u233t   ms   in       3.0539536  2.0   3.0690000  0.0440000    0                  0.0000000   80weh1    0
100 zr g   u233t   rc   cu       4.2689674  8.9   4.2900000  0.3800000    0                  0.0000000   81gud1    0
100 zr g   u233t   sp   fi       2.9687665  5.2  66.9100000  2.3760000   100        u233t   100.0000000   83qua1    0
100 zr g   u233t   sp   in       2.8400077  5.0   2.8540000  0.1190000    0                  0.0000000   88qua1    0
100 y  g   u233t   ms   in       0.1562303 11.5   0.1570000  0.0180000    0                  0.0000000   80weh1    0
100 y  g   u233t   sp   fi       0.1153608 11.8   2.6000000  0.3040000   100        u233t   100.0000000   83qua1    0
100 y  g   u233t   sp   in       0.1104558 11.7   0.1110000  0.0130000    0                  0.0000000   88qua1    0
100 sr g   u233t   sp   fi       0.0035496 90.0   0.0800000  0.0720000   100        u233t   100.0000000   83qua1    0
100 sr g   u233t   sp   in       0.0029853 99.9   0.0030000  0.0030000    0                  0.0000000   88qua1    0
100        th232f  es   cu   cm  1.0372962 30.0   1.0400000  0.0000000    0                  0.0000000   65eng1    0
100        th232f  es   cu   cm  1.4961002 30.0   1.5000000  0.0000000    0                  0.0000000   72sid1    0
100        th232f  es   cu   x3  0.0000000  0.0   1.9000000  0.0000000    0                  0.0000000   73lam1    0
100        th232f  cm   cu       0.0000000  0.0   1.3300000 20.0000000%    0                  0.0000000   77cro1    0
100        th232f  es   cu       1.3764122  5.0   1.3800000  5.0000000%    0                  0.0000000   74mee0    0
101 rh g   u235t   rc   in       0.0000000 25.0   0.0000032 25.0000000%    0                100000.0000000   81aum1    0
101 ru g   u235t   ms   cu       5.0035974  6.0   5.0000000  0.0000000    0                  0.0000000   55gle1    0
101        u235t   cm   cu       0.0000000  0.0   5.2000000  0.0000000    0                  0.0000000   72sid1    0
101        u235t   cm   cu       0.0000000  0.0   5.0500000  0.0000000    0                  0.0000000   73lam1    0
101        u235t   cm   cu       0.0000000  0.0   5.0700000  0.0700000    0                  0.0000000   73wal1    0
101        u235t   ms   cu       5.1436982  2.0   5.1400000  0.0350000    0                  0.0000000   76dii1    0
101        u235t   sp   cu       4.9935902  5.0   4.9900000  0.1000000    0                  1.0000000   76woh2    0
101        u235t   cm   cu       0.0000000  0.0   5.1200000  4.5000000%    0                  0.0000000   77cro1    0
101 ru g   u235t   ms   cu   rp  4.9759138  3.2   5.0400000  0.0000000  no. relative values =    4          78shi1
101 ru g   u235t   ms   cu       5.0336190  4.0   5.0300000  4.0000000%    0                  0.0000000   70lis1    36
101 ru g   u235t   ms   cu       5.3248284  2.0   5.3210000  0.0780000    0                  0.0000000   78mae1    0
101 ru g   u235t   ms   cu       5.2147493  2.0   5.2110000  0.0780000    0                  0.0000000   78mae1    0
101 ru g   u235t   ms   cu       5.2027406  2.0   5.1990000  0.0760000    0                  0.0000000   78mae1    0
101        u235t   es   re       5.0519711  3.3   1.0000000  3.0000000%  101        u235f     1.0150000   74mee4    0
101 ru g   u235t   ms   cu   rp  5.2586705  3.1   5.1800000  0.0000000  no. relative values =    2          86chi1
101 tc g   u235t   rc   cu       5.5039572  5.0   5.5000000  0.2000000    0                  0.0000000   76thi1    0
101 mo g   u235t   cm   cu       0.0000000  0.0   5.1010000  2.0000000%    0                  0.0000000   73net2    0
101 mo g   u235t   ms   fi   su  0.0000000  0.0   4.7000000  1.7000000   101        u235t   100.0000000   75cle1    0
101 mo g   u235t   ms   fi   su  0.0000000  0.0   1.8000000  0.9000000   101        u235t   100.0000000   75cle1    0
101 mo g   u235t   sp   fi       0.1863600 16.7   3.6000000  0.6000000   101        u235t   100.0000000   78str1    0
101 mo g   u235t   ms   fi   su  0.0000000  0.0   1.9000000  1.8000000   101        u235t   100.0000000   75cle2    0
```

101	mo	g	u235t	ms	in		0.2571849	38.5	0.2570000	0.0990000	0				0.0000000	79cle1	0	
101	mo	g	u235t	rc	fi	su	0.0000000	0.0	1.4000000	3.5000000	101	tc	g	u235t	100.0000000	77wei1	0	
101	mo	g	u235t	ms	fi		0.1708300	30.3	3.3000000	1.0000000	101			u235t	100.0000000	76wol1	0	
101	mo	g	u235t	rc	cu		5.4010360	20.0	5.4000000	0.2000000	140	ba	g	u235t	6.2000000	54wil1	0	
101	mo	g	u235t	rc	fi		0.0724733	99.9	1.4000000	2.8000000	101			u235t	100.0000000	79wei1	0	
101	mo	g	u235t	sp	fi		0.2691866	36.6	5.2000000	1.9000000	101			u235t	100.0000000	80lan1	0	
101	mo	g	u235t	cm	in		0.0000000	0.0	0.1771000	31.0000000%	0				1.0000000	88wah1	0	
101	mo	g	u235t	sp	fi		0.1087100	23.8	2.1000000	0.5000000	101			u235t	100.0000000	78str1	0	
101	nb	g	u235t	ms	fi	su	0.0000000	0.0	37.7000000	3.0000000	101			u235t	100.0000000	75cle1	0	
101	nb	g	u235t	ms	fi	su	0.0000000	0.0	36.4000000	2.5000000	101			u235t	100.0000000	75cle1	0	
101	nb	g	u235t	ms	fi	su	0.0000000	0.0	29.5000000	1.5000000	101			u235t	100.0000000	75cle1	0	
101	nb	g	u235t	sp	fi		1.5737063	5.1	30.4000000	1.2000000	101			u235t	100.0000000	78str1	0	
101	nb	g	u235t	ms	fi	su	0.0000000	0.0	39.4000000	3.5000000	101			u235t	100.0000000	75cle2	0	
101	nb	g	u235t	ms	in		1.9293872	4.7	1.9280000	0.0910000	0				0.0000000	79cle1	0	
101	nb	g	u235t	rc	fi	su	0.0000000	0.0	45.2000000	2.5000000	101	tc	g	u235t	100.0000000	77wei1	0	
101	nb	g	u235t	rc	fc	su	0.0000000	0.0	98.6000000	3.5000000	101	tc	g	u235t	100.0000000	77wei1	0	
101	nb	g	u235t	rc	fi	x4	0.0000000	0.0	45.2000000	2.5000000	101			u235t	100.0000000	79wei1	0	
101	nb	g	u235t	rc	fc		5.1041920	5.1	98.6000000	3.5000000	101			u235t	100.0000000	79wei1	0	
101	nb	g	u235t	ms	fi	x4	0.0000000	0.0	29.4000000	1.8000000	101			u235t	100.0000000	76wol1	0	
101	nb	g	u235t	sp	fi		2.0137228	5.1	38.9000000	1.6000000	101			u235t	100.0000000	80lan1	0	
101	nb	g	u235t	es	in		1.8673426	7.0	1.8660000	7.0000000%	0				0.0000000	88wah1	0	
101	nb	g	u235t	es	fi		1.9738107	8.4	0.3812900	8.3000000%	101			u235t	1.0000000	91jam2	0	
101	nb	g	u235t	es	in		1.6011512	32.0	1.6000000	32.0000000%	0				0.0000000	74mee1	0	
101	nb	g	u235t	es	in		1.5811368	45.0	1.5800000	45.0000000%	0				0.0000000	89rid1	0	
101	zr	g	u235t	ms	fi	su	0.0000000	0.0	56.5000000	4.0000000	101			u235t	100.0000000	75cle1	0	
101	zr	g	u235t	ms	fi	su	0.0000000	0.0	60.3000000	3.0000000	101			u235t	100.0000000	75cle1	0	
101	zr	g	u235t	ms	fi	su	0.0000000	0.0	69.4000000	3.5000000	101			u235t	100.0000000	75cle1	0	
101	zr	g	u235t	sp	fi		3.1215292	5.1	60.3000000	1.6000000	101			u235t	100.0000000	78str1	0	
101	zr	g	u235t	ms	fi	su	0.0000000	0.0	55.7000000	3.9000000	101			u235t	100.0000000	75cle2	0	
101	zr	g	u235t	ms	in		2.6418995	3.8	2.6400000	0.1000000	0				0.0000000	79cle1	0	
101	zr	g	u235t	rc	fc	su	0.0000000	0.0	53.4000000	2.5000000	101	tc	g	u235t	100.0000000	77wei1	0	
101	zr	g	u235t	rc	fc		2.7643393	5.1	53.4000000	2.5000000	101			u235t	100.0000000	79wei1	0	
101	zr	g	u235t	ms	fi		2.9765826	4.1	57.5000000	2.3000000	101			u235t	100.0000000	76wol1	0	
101	zr	g	u235t	sp	fi		2.7591626	5.1	53.3000000	1.8000000	101			u235t	100.0000000	80lan1	0	
101	zr	g	u235t	cm	in		0.0000000	0.0	2.9160000	3.0000000%	0				1.0000000	88wah1	0	
101	y	g	u235t	ms	fi	su	0.0000000	0.0	1.1000000	1.0000000	101			u235t	100.0000000	75cle1	0	

101 y g u235t ms fi su 0.0000000 0.0 1.5000000 0.5000000 101 u235t 100.0000000 75cle1 0
101 y g u235t ms fi su 0.0000000 0.0 1.1000000 0.6000000 101 u235t 100.0000000 75cle1 0
101 y g u235t sp fi 0.2950699 7.1 5.7000000 0.4000000 101 u235t 100.0000000 78str1 0
101 y g u235t ms fi su 0.0000000 0.0 3.0000000 0.9000000 101 u235t 100.0000000 75cle2 0
101 y g u235t ms in 0.1310943 18.3 0.1310000 0.0240000 0 0.0000000 79cle1 0
101 y g u235t rc fc le 0.3105999 15.0 6.0000000 0.0000000 101 u235t 100.0000000 79wei1 0
101 y g u235t ms fi x4 0.0000000 0.0 9.2000000 1.2000000 101 u235t 100.0000000 76wol1 0
101 y g u235t sp fi 0.1345933 19.3 2.6000000 0.5000000 101 u235t 100.0000000 80lan1 0
101 y g u235t es in 0.2382713 28.0 0.2381000 28.0000000% 0 0.0000000 88wah1 0
101 y g u235t es fi 0.2265050 35.4 0.0437550 35.4000000% 101 u235t 1.0000000 91jam2 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

101 y g u235t es in 0.2311662 64.0 0.2310000 64.0000000% 0 0.0000000 74mee1 0
101 y g u235t es in 0.2972137 23.0 0.2970000 23.0000000% 0 0.0000000 89rid1 0
101 sr g u235t ms fi ul 0.0000000 0.0 0.6000000 0.6000000 101 u235t 100.0000000 76wol1 0
101 sr g u235t sp cu su 0.0000000 0.0 0.0044000 0.0016000 0 0.0000000 90rud1 0
101 sr g u235t rc cu 0.0044032 36.4 0.0044000 0.0016000 0 0.0000000 90rud2 0
101 u235f es cu cm 5.2209345 30.0 5.2800000 0.0000000 0 0.0000000 72sid1 0
101 u235f cm cu 0.0000000 0.0 5.4100000 4.5000000% 0 0.0000000 77cro1 0
101 u235f es re 5.1917766 10.0 1.0150000 10.0000000% 101 u235t 1.0000000 74mee4 0
101 ru g u235f ms cu 5.1935495 2.1 5.4600000 0.1100000 148 nd g u235f 1.7500000 70lis1 0
101 ru g u235f ms cu rp 4.9916959 3.3 0.4430000 0.0000000 no. relative values = 2 80mae3
101 ru g u235f ms re rp 5.0961195 1.9 0.4259000 0.0000000 no. relative values = 3 81mae1
101 ru g u235f ms cu 5.1919642 4.6 5.2400000 0.2400000 148 nd g u235f 1.6800000 74mae1 0
101 ru g u235f ms cu x4 0.0000000 0.0 5.5900000 6.6000000% 0 0.0000000 72lar1 36
101 tc g u235f rc re 5.2235039 5.0 1.0590000 0.0180000 140 ba g u235t 0.0000000 75raj1 7
101 mo g u235f cm cu 0.0000000 0.0 5.2840000 4.0000000% 0 0.0000000 73net2 0
101 mo g u235f rc cu 4.9935074 5.0 5.0500000 0.2500000 0 0.0000000 81mar1 0
101 mo g u235f cm cu x3 0.0000000 0.0 6.2490000 15.0000000% 0 0.0000000 80mae3 36
101 ru g u235he es cu 3.9253537 30.0 4.0060000 0.0000000 0 0.0000000 63wea1 0
101 u235he cm cu 0.0000000 0.0 4.2600000 20.0000000% 0 0.0000000 77cro1 0
101 u235he es cu 3.4001441 10.0 3.4700000 10.0000000% 0 0.0000000 74mee8 0
101 mo g u235he cm cu 0.0000000 0.0 4.5580000 6.0000000% 0 0.0000000 73net2 0
101 u238f es cu cm 6.2790617 30.0 6.3000000 0.0000000 0 0.0000000 64wal1 0

101 u238f es cu cm 6.2092943 30.0 6.2300000 0.0000000 0 0.0000000 72sid1 0
101 u238f cm cu 0.0000000 0.0 6.0500000 20.0000000% 0 0.0000000 77cro1 0
101 ru g u238f ms cu rp 6.1694894 1.9 0.3067000 0.0000000 no. relative values = 3 81mae1
101 ru g u238f ms cu rp 6.1495960 1.9 0.3066000 0.0000000 no. relative values = 3 81mae1
101 ru g u238f ms cu rp 6.2662026 2.1 0.3097000 0.0000000 no. relative values = 3 81mae1
101 ru g u238f ms cu 6.2151300 5.9 6.1400000 0.3600000 148 nd g u238f 2.0800000 74mae1 0
101 u238f rc cu 6.1096267 5.0 6.1300000 0.2000000 0 0.0000000 85li 1 0
101 tc g u238f es cu 6.6577987 5.2 6.6800000 0.3500000 0 0.0000000 78gin1 0
101 tc g u238f rc cu 6.4285632 7.6 6.4500000 0.4900000 0 0.0000000 78nag1 0
101 tc g u238f rc cu 6.6777323 5.8 6.7000000 0.3900000 0 0.0000000 85chi1 0
101 tc g u238f rc cu 6.9667684 11.0 6.9900000 11.0000000% 0 0.0000000 88afa1 0
101 tc g u238f rc cu x4 0.0000000 0.0 7.8300000 11.9000000% 0 0.0000000 88afa1 0
101 mo g u238f cm cu 0.0000000 0.0 6.3770000 16.0000000% 0 0.0000000 73net2 0
101 u238he cm cu es 0.0000000 0.0 5.3950000 0.0000000 0 0.0000000 63wea1 0
101 u238he cm cu su 0.0000000 0.0 5.9000000 0.1800000 0 0.0000000 73dar1 0
101 u238he es cu 5.4126326 15.0 5.4270000 15.0000000% 0 0.0000000 74mee9 0
101 u238he cm cu x3 0.0000000 0.0 4.4200000 20.0000000% 0 0.0000000 77cro1 0
101 tc g u238he rc cu 5.7447510 5.0 5.7600000 0.2200000 0 0.0000000 75dar1 0
101 tc g u238he rc in ul 0.0000000 0.0 0.2680000 0.5770000 0 0.0000000 75dar1 0
101 tc g u238he rc cu 4.8930718 7.3 4.9000000 0.3500000 140 ba g u238he 4.6000000 76raj1 0
101 tc g u238he rc cu 5.9841156 6.0 6.0000000 0.3600000 0 0.0000000 85liu1 0
101 mo g u238he rc re 5.6333728 10.1 0.9900000 0.0400000 99 mo g u238he 1.0000000 58pro1 0
101 mo g u238he rc cu x4 0.0000000 0.0 6.3500000 0.3000000 99 mo g u238he 5.6000000 68gan1 0
101 mo g u238he cm cu 0.0000000 0.0 5.9000000 0.0000000 0 0.0000000 69gun2 0
101 mo g u238he cm cu 0.0000000 0.0 6.0200000 6.1000000% 0 0.0000000 73net2 0
101 mo g u238he rc cu 5.7447510 5.0 5.7600000 0.2200000 0 0.0000000 75dar1 0
101 mo g u238he cm cu 0.0000000 0.0 5.5000000 0.0000000 0 0.0000000 60kat1 0
101 mo g u238he rc cu su 0.0000000 0.0 6.3500000 0.3000000 99 mo g u238he 5.6000000 66gan3 0
101 mo g u238he rc cu 5.9341445 7.8 5.8400000 0.4500000 99 mo g u238he 5.6000000 75ada1 0
101 mo g u238he rc cu 5.4654923 13.3 5.4800000 0.7300000 0 0.0000000 75dar1 0
101 mo g u238he rc cu 5.6948834 5.0 5.7100000 0.2700000 0 0.0000000 75dar1 0
101 pu239t cm cu 0.0000000 0.0 5.9200000 0.0000000 0 0.0000000 72sid1 0
101 pu239t cm cu 0.0000000 0.0 6.0100000 0.0000000 0 0.0000000 73lam1 0
101 pu239t cm cu 0.0000000 0.0 6.0400000 0.1900000 0 0.0000000 73wal1 0
101 pu239t cm cu 0.0000000 0.0 6.1000000 4.5000000% 0 0.0000000 77cro1 0
101 ru g pu239t ms cu 6.2303891 4.7 6.5000000 0.2800000 106 ru g pu239t 4.5500000 70lis1 0

101 ru g pu239t ms cu 5.9748375 1.6 5.8600000 0.0000000 133 cs g pu239t 6.9000000 59fic1 0
101 ru g pu239t ms cu rp 6.0788272 3.2 1.0000000 0.0000000 no. relative values = 2 59fic1
101 ru g pu239t ms cu rp 6.0341132 2.4 5.9500000 0.0000000 no. relative values = 2 86chi1
101 tc g pu239t rc in 0.0140377 64.3 0.0140000 0.0090000 0 0.0000000 86sri1 0
101 tc g pu239t cm in 0.0000000 0.0 0.0144400 65.0000000% 0 1.0000000 88wah1 0
101 tc g pu239t rc fi 0.0108640 66.7 0.0018000 0.0012000 101 pu239t 1.0000000 87sri1 0
101 tc g pu239t rc cu x4 0.0000000 0.0 6.7700000 0.8800000 0 0.0000000 81dic1 36
101 mo g pu239t cm cu 0.0000000 0.0 6.0370000 4.0000000% 0 0.0000000 73net2 0
101 mo g pu239t rc cu 6.0161678 28.3 6.0000000 1.7000000 0 0.0000000 81dic1 0
101 mo g pu239t sp fi 0.1388175 87.0 0.0230000 87.0000000% 101 pu239t 1.0000000 84sch1 36
101 mo g pu239t cm in 0.0000000 0.0 0.1320000 87.0000000% 0 1.0000000 88wah1 0
101 mo g pu239t rc cu su 0.0000000 0.0 6.5700000 0.3700000 0 0.0000000 80dic1 0
101 nb g pu239t rc cu 6.3321488 17.7 6.3000000 1.1000000 139 xe g pu239t 3.0780000 82gol1 0
101 nb g pu239t sp fi 3.4644009 6.2 0.5740000 6.0000000% 101 pu239t 1.0000000 84sch1 36
101 nb g pu239t cm in 0.0000000 0.0 3.6410000 6.0000000% 0 1.0000000 88wah1 0
101 zr g pu239t sp fi 2.3417901 6.2 0.3880000 6.0000000% 101 pu239t 1.0000000 84sch1 36
101 zr g pu239t cm in 0.0000000 0.0 2.2730000 6.0000000% 0 1.0000000 88wah1 0
101 y g pu239t sp fi 0.0844976 99.9 0.0140000 0.0200000 101 pu239t 1.0000000 84sch1 36
101 y g pu239t cm in 0.0000000 0.0 0.0909700 66.0000000% 0 1.0000000 88wah1 0
101 pu239f es cu cm 5.8737460 30.0 5.9000000 0.0000000 0 0.0000000 72sid1 0
101 pu239f cm cu 0.0000000 0.0 6.8400000 5.7000000% 0 0.0000000 77cro1 0
101 ru g pu239f ms cu 6.6741724 1.6 6.6740000 0.1050000 148 nd g pu239f 1.6540000 77mae1 0
101 ru g pu239f ms cu 6.5935288 2.1 6.6230000 0.1400000 0 0.0000000 77mae1 0
101 ru g pu239f ms cu 6.5779272 1.9 6.8800000 0.1300000 148 nd g pu239f 1.7300000 70lis1 0
101 ru g pu239f ms cu 6.7318193 1.1 0.3374000 0.0002000 102 ru g pu239f 0.3359000 80mae4 0
101 ru g pu239f ms cu su 0.0000000 0.0 6.5400000 0.1100000 148 nd g pu239f 1.6500000 74mae1 0
101 pu239f es re 5.8126152 10.1 0.9700000 10.0000000% 101 pu239t 1.0000000 74mee4 0
101 tc g pu239f rc cu rp 7.0121887 30.1 5.6000000 0.0000000 no. relative values = 1 69moo1
101 tc g pu239f rc re aj 7.2903014 18.8 1.6480000 0.3100000 140 ba g u235t 0.0000000 75raj1 7
101 mo g pu239f cm cu 0.0000000 0.0 6.5780000 4.0000000% 0 0.0000000 73net2 0
101 mo g pu239f rc cu 6.2844914 9.6 5.3000000 0.5000000 101 tc g pu239f 5.6000000 69moo1 0
101 pu241t cm cu 0.0000000 0.0 5.9400000 0.0000000 0 0.0000000 72sid1 0
101 pu241t cm cu 0.0000000 0.0 5.9600000 5.0000000% 0 0.0000000 77cro1 0
101 pu241t cm cu 0.0000000 0.0 5.9100000 0.3200000 0 0.0000000 73wal1 0
101 ru g pu241t ms cu 6.3227334 2.0 6.3520000 0.0410000 0 0.0000000 77mae1 0
101 ru g pu241t ms cu 5.9355910 4.8 5.9400000 0.2600000 106 ru g pu241t 6.0800000 70lis1 0

101 ru g pu241t ms cu rp 6.0617127 4.1 6.2800000 0.0000000 no. relative values = 2 86chi1
101 ru g u233t ms cu 3.0265904 5.1 3.0000000 5.0000000% 102 ru g u233t 2.3700000 54ste1 0
101 u233t cm cu 0.0000000 0.0 2.9000000 0.0000000 0 0.0000000 72sid1 0
101 u233t cm cu 0.0000000 0.0 3.1900000 0.0000000 0 0.0000000 73lam1 0
101 u233t cm cu 0.0000000 0.0 3.2100000 0.0800000 0 0.0000000 73wal1 0
101 u233t cm cu 0.0000000 0.0 3.1600000 6.5000000% 0 0.0000000 77cro1 0
101 ru g u233t ms cu rp 3.1807186 2.6 3.2200000 0.0000000 no. relative values = 4 78shi1
101 ru g u233t ms cu 3.2677088 4.1 2.8700000 4.0000000% 102 ru g u233t 2.1000000 61bid1 0
101 u233t ms cu 3.0917673 2.0 3.1070000 0.0320000 0 0.0000000 80weh1 0
101 ru g u233t ms cu 3.2539681 2.0 3.2700000 0.0200000 0 0.0000000 70lis1 0
101 ru g u233t ms cu rp 3.1489029 3.1 3.1800000 0.0000000 no. relative values = 2 86chi1
101 tc g u233t sp fi ul 0.0000000 0.0 0.9800000 0.2730000 101 u233t 100.0000000 83qua1 0
101 tc g u233t sp in ul 0.0000000 0.0 0.0300000 0.0080000 0 0.0000000 88qua1 0
101 mo g u233t cm cu 0.0000000 0.0 3.1880000 2.0000000% 0 0.0000000 73net2 0
101 mo g u233t ms in 0.2388233 8.3 0.2400000 0.0200000 0 0.0000000 80weh1 0
101 mo g u233t sp fi 0.2944264 29.8 9.3300000 2.7800000 101 u233t 100.0000000 83qua1 0
101 mo g u233t sp in 0.2845978 30.1 0.2860000 0.0860000 0 0.0000000 88qua1 0
101 nb g u233t ms in 1.4060725 2.1 1.4130000 0.0300000 0 0.0000000 80weh1 0
101 nb g u233t rc cu 1.2637736 8.7 1.2700000 0.1100000 0 0.0000000 81gud1 0
101 nb g u233t sp fi 1.5936262 5.2 50.5000000 2.2000000 101 u233t 100.0000000 83qua1 0
101 nb g u233t sp in 1.5404106 5.0 1.5480000 0.0780000 0 0.0000000 88qua1 0
101 zr g u233t sp fi su 0.0000000 0.0 38.3000000 1.1520000 101 u233t 100.0000000 83qua1 0
101 zr g u233t es in 1.2697441 7.0 1.2760000 7.0000000% 0 0.0000000 88wah1 0
101 zr g u233t ms in 1.3732343 5.0 1.3800000 5.0000000% 0 0.0000000 80weh1 36
101 zr g u233t sp in 1.1682442 5.0 1.1740000 0.0460000 0 0.0000000 88qua1 0
101 zr g u233t es in 1.1642638 32.0 1.1700000 32.0000000% 0 0.0000000 74mee1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

101 zr g u233t es in 1.2637736 32.0 1.2700000 32.0000000% 0 0.0000000 89rid1 0
101 zr g u233t es fi 1.4011288 32.0 0.4440000 32.0000000% 101 u233t 1.0000000 91jam2 36
101 y g u233t sp fi su 0.0000000 0.0 0.8900000 0.1810000 101 u233t 100.0000000 83qua1 0
101 y g u233t es in 0.0528297 86.0 0.0530900 86.0000000% 0 0.0000000 88wah1 0
101 y g u233t ms in 0.0736372 22.0 0.0740000 22.0000000% 0 0.0000000 80weh1 36
101 y g u233t sp in 0.0268676 22.2 0.0270000 0.0060000 0 0.0000000 88qua1 0

101	y	g	u233t	es	in		0.0298529	99.0	0.0300000	99.0000000%	0		0.0000000	74mee1	36
101	y	g	u233t	es	fi		0.0754211	99.0	0.0239000	99.0000000%	101	u233t	1.0000000	91jam2	36
101	y	g	u233t	es	in		0.0517451	99.0	0.0520000	99.0000000%	0		0.0000000	89rid1	36
101			th232f	es	cu	cm	0.6167762	30.0	0.6200000	0.0000000	0		0.0000000	65eng1	0
101			th232f	es	cu	cm	0.6963602	30.0	0.7000000	0.0000000	0		0.0000000	72sid1	0
101			th232f	es	cu	x3	0.0000000	0.0	1.1400000	0.0000000	0		0.0000000	73lam1	0
101			th232f	cm	cu		0.0000000	0.0	0.6270000	20.0000000%	0		0.0000000	77cro1	0
101			th232f	es	cu		0.7262042	10.0	0.7300000	10.0000000%	0		0.0000000	74mee0	0
101	mo	g	th232f	cm	cu		0.0000000	0.0	0.6381000	32.0000000%	0		0.0000000	73net2	0
102	rh	g	u235t	rc	in	ul	0.0000000	0.0	0.0000002	0.0000002	0		0.0000000	51swa1	37
102	rh	g	u235t	rc	in		0.0000000	26.0	0.0000065	26.0000000%	0		10000.0000000	81aum1	0
102	rh	m	u235t	rc	in	ul	0.0000000	0.0	0.0000002	0.0000002	0		0.0000000	51swa1	37
102	rh	m	u235t	rc	in		0.0000000	48.0	0.0000052	48.0000000%	0		10000.0000000	81aum1	0
102	ru	g	u235t	ms	cu		4.1029499	6.0	4.1000000	0.0000000	0		0.0000000	55gle1	0
102			u235t	cm	cu		0.0000000	0.0	4.0800000	0.0000000	0		0.0000000	72sid1	0
102			u235t	cm	cu		0.0000000	0.0	4.1900000	0.0000000	0		0.0000000	73lam1	0
102			u235t	cm	cu		0.0000000	0.0	4.1900000	0.0600000	0		0.0000000	73wal1	0
102			u235t	ms	cu		4.2630650	2.0	4.2600000	0.0320000	0		0.0000000	76dii1	0
102			u235t	sp	cu		4.5632809	5.0	4.5600000	0.0900000	0		1.0000000	76woh2	0
102			u235t	cm	cu		0.0000000	0.0	4.2000000	1.9000000%	0		0.0000000	77cro1	0
102	ru	g	u235t	ms	cu		4.3344092	2.1	4.2200000	0.0800000	101	ru g u235t	5.0400000	78shi1	0
102	ru	g	u235t	ms	cu		4.1930147	4.0	4.1900000	4.0000000%	0		0.0000000	70lis1	36
102	ru	g	u235t	ms	cu		4.4381909	2.0	4.4350000	0.0640000	0		0.0000000	78mae1	0
102	ru	g	u235t	ms	cu		4.3331154	2.0	4.3300000	0.0650000	0		0.0000000	78mae1	0
102	ru	g	u235t	ms	cu		4.3251096	2.0	4.3220000	0.0630000	0		0.0000000	78mae1	0
102			u235t	es	re		4.1230635	3.2	1.0000000	3.0000000%	102	u235f	1.0580000	74mee4	0
102	ru	g	u235t	ms	cu		4.2272565	1.5	4.2300000	0.0500000	101	ru g u235t	5.1800000	86chi1	0
102	tc	g	u235t	ms	in		0.0105076	52.4	0.0210000	0.0110000	0		0.0000000	79cle1	37
102	tc	g	u235t	sp	fi	ul	0.0000000	0.0	0.5000000	0.3000000	102	u235t	100.0000000	80lan1	37
102	tc	m	u235t	ms	in		0.0105076	52.4	0.0210000	0.0110000	0		0.0000000	79cle1	37
102	tc	m	u235t	sp	fi	ul	0.0000000	0.0	0.5000000	0.3000000	102	u235t	100.0000000	80lan1	37
102	mo	g	u235t	sp	fi		0.6624905	12.4	15.4000000	1.9000000	102	u235t	100.0000000	78str1	0
102	mo	g	u235t	ms	fi	su	0.0000000	0.0	9.5000000	1.7000000	102	u235t	100.0000000	75cle2	0
102	mo	g	u235t	ms	in		0.7555432	6.2	0.7550000	0.0470000	0		0.0000000	79cle1	0
102	mo	g	u235t	rc	fi		0.2839245	86.4	6.6000000	5.7000000	102	u235t	100.0000000	79wei1	0
102	mo	g	u235t	ms	fi		0.2064905	25.0	4.8000000	1.2000000	102	u235t	100.0000000	76wol1	0

102 mo g u235t rc cu 4.1007866 20.0 4.1000000 0.2000000 140 ba g u235t 6.2000000 54wil1 0
102 mo g u235t sp fi 0.7227169 6.0 16.8000000 1.0000000 102 u235t 100.0000000 80lan1 0
102 mo g u235t cm in 0.0000000 0.0 0.5391000 19.0000000% 0 1.0000000 88wah1 0
102 nb g u235t sp fi 1.6132074 5.1 37.5000000 1.0000000 102 u235t 100.0000000 78str1 0
102 nb g u235t ms fi su 0.0000000 0.0 39.7000000 2.5000000 102 u235t 100.0000000 75cle2 0
102 nb g u235t ms in 1.8373210 3.7 1.8360000 0.0680000 0 0.0000000 79cle1 0
102 nb g u235t rc fi su 0.0000000 0.0 41.0000000 3.0000000 102 mo g u235t 100.0000000 77wei1 0
102 nb g u235t rc fi 1.7637734 7.4 41.0000000 3.0000000 102 u235t 100.0000000 79wei1 0
102 nb g u235t ms fi 1.5830942 6.1 36.8000000 2.2000000 102 u235t 100.0000000 76wol1 0
102 nb g u235t sp fi 1.7637734 5.1 41.0000000 1.2000000 102 u235t 100.0000000 80lan1 0
102 nb g u235t cm in 0.0000000 0.0 1.7210000 3.0000000% 0 1.0000000 88wah1 0
102 nb m u235t rc fc su 0.0000000 0.0 3.0000000 0.0000000 102 mo g u235t 100.0000000 77wei1 0
102 zr g u235t sp fi 1.9530565 5.1 45.4000000 1.7000000 102 u235t 100.0000000 78str1 0
102 zr g u235t ms fi su 0.0000000 0.0 50.8000000 3.0000000 102 u235t 100.0000000 75cle2 0
102 zr g u235t ms in 1.8713454 3.8 1.8700000 0.0710000 0 0.0000000 79cle1 0
102 zr g u235t rc fc su 0.0000000 0.0 52.4000000 4.9000000 102 mo g u235t 100.0000000 77wei1 0
102 zr g u235t rc fc 2.2541885 9.4 52.4000000 4.9000000 102 u235t 100.0000000 79wei1 0
102 zr g u235t ms fi 2.2412828 4.5 52.1000000 2.3000000 102 u235t 100.0000000 76wol1 0
102 zr g u235t sp fi 1.7938867 5.1 41.7000000 1.2000000 102 u235t 100.0000000 80lan1 0
102 zr g u235t es in cm 1.9313886 5.0 1.9300000 5.0000000% 0 1.0000000 88wah1 0
102 y g u235t sp fi ul 0.0000000 0.0 1.7000000 0.4000000 102 u235t 100.0000000 78str1 0
102 y g u235t ms fi x1 0.0000000 0.0 6.3000000 1.2000000 102 u235t 100.0000000 76wol1 0
102 y g u235t cm in 0.0000000 0.0 0.1281000 70.0000000% 0 1.0000000 88wah1 0
102 sr g u235t sp cu 0.0001901 36.8 0.0001900 0.0000700 0 0.0000000 90rud1 0
102 u235f es cu cm 4.4445625 30.0 4.4800000 0.0000000 0 0.0000000 72sid1 0
102 u235f cm cu 0.0000000 0.0 4.9000000 10.0000000% 0 0.0000000 77cro1 0
102 u235f es re 4.5121307 10.0 1.0580000 10.0000000% 102 u235t 1.0000000 74mee4 0
102 ru g u235f ms cu 4.4377340 2.2 4.6500000 0.1000000 148 nd g u235f 1.7500000 70lis1 0
102 ru g u235f ms cu 4.6628223 2.0 4.7000000 2.0000000% 0 0.0000000 72lar1 0
102 ru g u235f ms cu 4.3034056 5.5 0.3750000 0.0200000 101 ru g u235f 0.4430000 80mae3 0
102 ru g u235f ms re 4.2780426 1.5 0.3584000 0.0002000 101 ru g u235f 0.4259000 81mae1 0
102 ru g u235f ms re 4.2878422 1.1 0.3581000 0.0006000 101 ru g u235t 0.4286000 81mae1 0
102 ru g u235f ms re 4.3589335 1.1 0.3603000 0.0002000 101 ru g u235t 0.4242000 81mae1 0
102 ru g u235f ms cu 4.3840518 4.6 4.4100000 0.2000000 148 nd g u235f 1.6800000 74mae1 0
102 tc m u235f rc cu 4.3651953 5.0 4.4000000 0.2200000 0 0.0000000 81mar1 0
102 ru g u235he es cu 3.7107624 30.0 3.7870000 0.0000000 0 0.0000000 63wea1 0

102		u235he	cm	cu		0.0000000	0.0	3.7500000	20.0000000%	0				0.0000000	77cro1	0			
102		u235he	es	cu		3.2031905	10.0	3.2690000	10.0000000%	0				0.0000000	74mee8	0			
102		u238f	es	cu	cm	6.2851944	30.0	6.3000000	0.0000000	0				0.0000000	64wal1	0			
102		u238f	es	cu	cm	6.3151239	30.0	6.3300000	0.0000000	0				0.0000000	72sid1	0			
102		u238f	cm	cu		0.0000000	0.0	6.0200000	20.0000000%	0				0.0000000	77cro1	0			
102	ru g	u238f	ms	cu		6.4630351	1.5	0.3200000	0.0001000	101	ru g	u238f		0.3067000	81mae1	0			
102	ru g	u238f	ms	cu		6.4469599	1.5	0.3191000	0.0001000	101	ru g	u238f		0.3066000	81mae1	0			
102	ru g	u238f	ms	cu		6.4304310	1.5	0.3215000	0.0003000	101	ru g	u238f		0.3097000	81mae1	0			
102	ru g	u238f	ms	cu		6.4846387	6.0	6.4000000	0.3800000	148	nd g	u238f		2.0800000	74mae1	0			
102		u238he	es	cu		4.8732341	30.0	4.9100000	0.0000000	0				0.0000000	63wea1	0			
102		u238he	es	cu	su	0.0000000	0.0	5.1200000	0.0000000	0				0.0000000	73dar1	0			
102		u238he	es	cu		4.4424839	15.0	4.4760000	15.0000000%	0				0.0000000	74mee9	0			
102		u238he	cm	cu		0.0000000	0.0	3.7600000	13.5000000%	0				0.0000000	77cro1	0			
102	mo g	u238he	rc	re	x4	0.0000000	0.0	0.7100000	0.0800000	99	mo g	u238he		1.0000000	58pro1	0			
102	mo g	u238he	rc	cu	su	0.0000000	0.0	2.8500000	0.3000000	99	mo g	u238he		5.6000000	66gan3	0			
102	mo g	u238he	rc	cu	x1	0.0000000	0.0	2.8500000	0.3000000	99	mo g	u238he		5.6000000	68gan1	0			
102	mo g	u238he	cm	cu		0.0000000	0.0	3.6500000	0.0000000	0				0.0000000	69gun2	0			
102	mo g	u238he	cm	cu		0.0000000	0.0	3.9000000	0.0000000	0				0.0000000	60kat1	0			
102	mo g	u238he	rc	cu		4.6615812	11.2	4.6100000	0.5100000	99	mo g	u238he		5.6000000	75ada1	0			
102		pu239t	cm	cu		0.0000000	0.0	6.0300000	0.0000000	0				0.0000000	72sid1	0			
102		pu239t	cm	cu		0.0000000	0.0	6.0900000	0.0000000	0				0.0000000	73lam1	0			
102		pu239t	cm	cu		0.0000000	0.0	6.1500000	0.1900000	0				0.0000000	73wal1	0			
102		pu239t	cm	cu		0.0000000	0.0	6.2300000	4.5000000%	0				0.0000000	77cro1	0			
102	ru g	pu239t	ms	cu		6.3741673	4.8	6.6500000	0.2900000	106	ru g	pu239t		4.5500000	70lis1	0			
102	ru g	pu239t	ms	cu		6.1138505	2.0	1.0130000	0.0140000	101	ru g	pu239t		1.0000000	59fic1	0			
102	ru g	pu239t	ms	cu		6.0962516	1.7	6.0100000	0.0600000	101	ru g	pu239t		5.9500000	86chi1	0			
102	ru g	pu239t	es	re	cm	6.1337342	1.7	0.3368000	1.0000000%	101	ru g	pu239t		0.3314000	81mae2	36			
102	tc g	pu239t	sp	fi		0.0337863	99.9	0.0110000	0.0200000	102		pu239t		1.0000000	84sch1	37			
102	tc g	pu239t	rc	fi	sm	0.0000000	0.0	0.0081000	0.0035000	102		pu239t		1.0000000	87sri1	0			
102	tc m	pu239t	sp	fi		0.0337863	99.9	0.0110000	0.0200000	102		pu239t		1.0000000	84sch1	37			
102	mo g	pu239t	sp	fi		1.7630307	7.1	0.2870000	7.0000000%	102		pu239t		1.0000000	84sch1	36			
102	mo g	pu239t	cm	in		0.0000000	0.0	1.6780000	7.0000000%	0				1.0000000	88wah1	0			
102	mo g	pu239t	rc	cu	x1	0.0000000	0.0	5.0000000	0.8000000	0				0.0000000	81dic1	0			
102	nb g	pu239t	sp	fi		3.0899109	6.2	0.5030000	6.0000000%	102		pu239t		1.0000000	84sch1	36			
102	nb g	pu239t	rc	cu	x1	0.0000000	0.0	1.9000000	1.3000000	139	xe g	pu239t		3.0780000	82gol1	0			
102	nb g	pu239t	cm	in		0.0000000	0.0	3.2510000	6.0000000%	0				1.0000000	88wah1	0			

102 zr g pu239t sp fi 1.2224499 10.1 0.1990000 10.0000000% 102 pu239t 1.0000000 84sch1 36
102 zr g pu239t cm in 0.0000000 0.0 1.1870000 10.0000000% 0 1.0000000 88wah1 0
102 y g pu239t sp fi 0.0061430 99.9 0.0010000 0.0200000 102 pu239t 1.0000000 84sch1 0
102 pu239f cm cu x3 0.0000000 0.0 6.0000000 0.0000000 0 0.0000000 72sid1 0
102 pu239f cm cu 0.0000000 0.0 6.6500000 10.0000000% 0 0.0000000 77cro1 0
102 ru g pu239f ms cu 6.7781751 1.5 6.7780000 0.0960000 148 nd g pu239f 1.6540000 77mae1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

102 ru g pu239f ms cu 6.7319103 2.0 6.7620000 0.1070000 0 0.0000000 77mae1 0
102 ru g pu239f ms cu 6.6639756 1.9 6.9700000 0.1300000 148 nd g pu239f 1.7300000 70lis1 0
102 ru g pu239f ms cu rp 6.6778917 2.3 0.3359000 0.0000000 no. relative values = 2 80mae4
102 ru g pu239f ms cu su 0.0000000 0.0 6.6400000 0.1000000 148 nd g pu239f 1.6500000 74mae1 0
102 pu239f es re x4 0.0000000 0.0 0.9700000 10.0000000% 102 pu239t 1.0000000 74mee4 0
102 ru g pu239f es re cm 6.7462422 1.4 0.3372000 1.0000000% 101 ru g pu239f 0.3319000 81mae2 36
102 ru g pu241t ms cu 6.6910287 2.0 6.7220000 0.0430000 0 0.0000000 77mae1 0
102 ru g pu241t ms cu 6.3153089 4.9 6.3200000 0.2800000 106 ru g pu241t 6.0800000 70lis1 0
102 pu241t cm cu x3 0.0000000 0.0 6.3200000 0.0000000 0 0.0000000 72sid1 0
102 pu241t cm cu x3 0.0000000 0.0 6.2900000 0.3400000 0 0.0000000 73wal1 0
102 pu241t cm cu x3 0.0000000 0.0 6.3400000 5.0000000% 0 0.0000000 77cro1 0
102 ru g pu241t ms cu 6.6971165 2.8 6.7800000 0.1300000 101 ru g pu241t 6.2800000 86chi1 0
102 ru g u233t ms cu rp 2.4886395 15.1 2.3700000 0.0000000 no. relative values = 2 54ste1
102 u233t cm cu 0.0000000 0.0 2.2200000 0.0000000 0 0.0000000 72sid1 0
102 u233t cm cu 0.0000000 0.0 2.4200000 0.0000000 0 0.0000000 73lam1 0
102 u233t cm cu 0.0000000 0.0 2.4400000 0.0800000 0 0.0000000 73wal1 0
102 ru g u233t sp cu x4 0.0000000 0.0 2.1000000 4.0000000% 95 mo g u233t 6.2700000 61bid1 0
102 u233t cm cu 0.0000000 0.0 2.3700000 8.3000000% 0 0.0000000 77cro1 0
102 ru g u233t ms cu 2.3554647 1.9 2.4000000 0.0300000 101 ru g u233t 3.2200000 78shi1 0
102 ru g u233t ms cu rp 2.3271391 9.0 2.1000000 0.0000000 no. relative values = 2 61bid1
102 u233t ms cu 2.4126070 2.0 2.4210000 0.0280000 0 0.0000000 80weh1 0
102 ru g u233t ms cu 2.4714025 2.0 2.4800000 0.0200000 0 0.0000000 70lis1 0
102 ru g u233t ms cu 2.3751553 2.2 2.3900000 0.0400000 101 ru g u233t 3.1800000 86chi1 0
102 tc g u233t ms in ul 0.0000000 0.0 0.0720000 0.0170000 0 0.0000000 80weh1 37
102 tc g u233t sp fi ul 0.0000000 0.0 2.6000000 0.4300000 102 u233t 100.0000000 83qua1 37
102 tc g u233t sp in ul 0.0000000 0.0 0.0640000 0.0110000 0 0.0000000 88qua1 37

102	tc m	u233t	ms	in	ul	0.0000000	0.0	0.0720000	0.0170000	0			0.0000000	80weh1	37
102	tc m	u233t	sp	fi	ul	0.0000000	0.0	2.6000000	0.4300000	102	u233t		100.0000000	83qua1	37
102	tc m	u233t	sp	in	ul	0.0000000	0.0	0.0640000	0.0110000	0			0.0000000	88qua1	37
102	mo g	u233t	ms	in		0.6876080	5.6	0.6900000	5.6000000%	0			0.0000000	80weh1	36
102	mo g	u233t	sp	in		0.8879111	5.6	0.8910000	0.0500000	0			0.0000000	88qua1	0
102	mo g	u233t	sp	fi	su	0.0000000	0.0	36.1200000	1.8030000	102	u233t		100.0000000	83qua1	0
102	mo g	u233t	es	in	cm	0.8173566	12.0	0.8202000	12.0000000%	0			0.0000000	88wah1	0
102	mo g	u233t	es	in		0.8460567	32.0	0.8490000	32.0000000%	0			0.0000000	74mee1	36
102	mo g	u233t	es	in		0.7583618	64.0	0.7610000	64.0000000%	0			0.0000000	89rid1	36
102	mo g	u233t	es	fi		0.6824202	64.0	0.2850000	64.0000000%	102	u233t		1.0000000	91jam2	36
102	nb g	u233t	ms	in		1.0025125	2.8	1.0060000	0.0280000	0			0.0000000	80weh1	0
102	nb g	u233t	sp	in		0.9696269	5.3	0.9730000	0.0520000	0			0.0000000	88qua1	0
102	nb g	u233t	sp	fi	su	0.0000000	0.0	39.4400000	1.8100000	102	u233t		100.0000000	83qua1	0
102	nb g	u233t	es	in	cm	0.9814856	4.0	0.9849000	4.0000000%	0			0.0000000	88wah1	0
102	zr g	u233t	ms	in		0.6507362	3.4	0.6530000	0.0220000	0			0.0000000	80weh1	0
102	zr g	u233t	sp	in		0.5371314	7.6	0.5390000	0.0410000	0			0.0000000	88qua1	0
102	zr g	u233t	sp	fi	su	0.0000000	0.0	21.8500000	1.5710000	102	u233t		100.0000000	83qua1	0
102	zr g	u233t	es	in	cm	0.5785872	4.0	0.5806000	4.0000000%	0			0.0000000	88wah1	0
102		th232f	es	cu	cm	0.3581281	30.0	0.3600000	0.0000000	0			0.0000000	65eng1	0
102		th232f	es	cu	cm	0.3481801	30.0	0.3500000	0.0000000	0			0.0000000	72sid1	0
102		th232f	cm	cu	x3	0.0000000	0.0	0.5000000	0.0000000	0			0.0000000	73lam1	0
102		th232f	cm	cu		0.0000000	0.0	0.3120000	20.0000000%	0			0.0000000	77cro1	0
102		th232f	es	cu		0.3710605	10.0	0.3730000	10.0000000%	0			0.0000000	74mee0	0
103		u235t	es	cu		2.9020865	30.0	2.9000000	0.0000000	0			0.0000000	72sid1	0
103		u235t	cm	cu		0.0000000	0.0	2.9500000	0.0000000	0			0.0000000	73lam1	0
103		u235t	cm	cu		0.0000000	0.0	3.0500000	0.2000000	0			0.0000000	73wal1	0
103		u235t	ms	cu		2.9421153	2.0	2.9400000	0.0270000	0			0.0000000	76dii1	0
103		u235t	sp	cu		3.0822160	5.0	3.0800000	0.0700000	0			1.0000000	76woh2	0
103		u235t	cm	cu		0.0000000	0.0	3.1500000	6.4000000%	0			0.0000000	77cro1	0
103		u235t	es	re		2.9976631	3.3	1.0000000	3.0000000%	103	u235f		1.0830000	74mee4	0
103	ru g	u235t	rc	cu	x4	0.0000000	0.0	3.7000000	0.0000000	106	ru g	u235t	0.5200000	51gle2	0
103	ru g	u235t	rc	cu		2.8505468	20.0	2.8500000	0.1600000	140	ba g	u235t	6.2000000	53har1	0
103	ru g	u235t	rc	cu		2.9003989	6.1	2.9700000	6.0000000%	140	ba g	u235t	6.3500000	65bal1	0
103	ru g	u235t	rc	cu		3.1022304	5.0	3.1000000	0.1300000	0			0.0000000	70gev1	0
103	ru g	u235t	rc	cu		3.2223168	5.0	3.2200000	0.0900000	0			0.0000000	71mcl1	0
103	ru g	u235t	rc	cu		3.1479666	5.0	3.0600000	0.0400000	144	ce g	u235t	5.3500000	72deb1	0

103 ru g u235t es cu cm 3.0021585 5.0 3.0000000 5.0000000% 0 0.0000000 73net2 0
103 ru g u235t rc cu 3.2083082 5.1 2.9500000 3.0000000% 131 i g u235t 2.6600000 74lar1 0
103 ru g u235t rc cu 2.9621297 5.0 2.9600000 2.0000000% 0 0.0000000 74mce1 0
103 ru g u235t es cu 2.9804429 30.0 2.9783000 0.0000000 0 0.0000000 63wea1 0
103 ru g u235t bm cu su 0.0000000 0.0 3.0200000 2.6000000% 0 0.0000000 76gil1 0
103 ru g u235t bm cu 3.0221729 2.6 3.0200000 2.6000000% 0 0.0000000 77gil1 0
103 ru g u235t ms cu 3.1635024 6.9 3.0800000 0.2100000 101 ru g u235t 5.0400000 78shi1 0
103 ru g u235t rc cu rp 2.8594144 63.2 3.7000000 0.0000000 no. relative values = 1 51gle2
103 ru g u235t rc cu 2.9821441 5.0 2.9800000 0.0600000 0 0.0000000 79ram1 0
103 ru g u235t rc cu su 0.0000000 0.0 2.9100000 3.0000000% 95 zr g u235t 6.4500000 73lar4 0
103 ru g u235t rc cu x4 0.0000000 0.0 3.4200000 0.1800000 0 0.0000000 74bla1 0
103 ru g u235t rc cu 3.3431264 7.5 3.4300000 0.1100000 105 ru g u235t 0.9900000 75fet1 0
103 ru g u235t rc cu 3.1022304 5.2 3.1000000 0.1600000 0 0.0000000 76thi1 0
103 ru g u235t rc cu 3.0321801 5.0 3.0300000 3.7000000% 0 0.0000000 81lau1 0
103 ru g u235t rc cu x4 0.0000000 0.0 1.4000000 0.0000000 140 ba g u235t 6.2000000 54wil1 0
103 ru g u235t rc cu 3.0822160 6.2 3.0800000 0.1900000 0 0.0000000 80wan1 0
103 ru g u235t rc cu su 0.0000000 0.0 0.5120000 3.0000000% 140 ba g u235t 1.0000000 72lar1 0
103 tc g u235t sp fi 0.0910059 23.4 3.0000000 0.7000000 103 u235t 100.0000000 78str1 0
103 tc g u235t ms in 0.0770554 33.8 0.0770000 0.0260000 0 0.0000000 79cle1 0
103 tc g u235t ms fi 0.0758382 48.0 2.5000000 1.2000000 103 u235t 100.0000000 76wol1 0
103 tc g u235t sp fi ul 0.0000000 0.0 2.6000000 0.9000000 103 u235t 100.0000000 80lan1 0
103 tc g u235t cm in 0.0000000 0.0 0.0196400 91.0000000% 0 1.0000000 88wah1 0
103 mo g u235t es in cm 0.9286677 11.0 0.9280000 11.0000000% 0 1.0000000 88wah1 0
103 mo g u235t rc fc 3.0547644 5.2 1.0070000 0.0140000 103 ru g u235t 1.0000000 69has1 0
103 mo g u235t sp fi 0.9221930 6.7 30.4000000 2.0000000 103 u235t 100.0000000 78str1 0
103 mo g u235t ms fi su 0.0000000 0.0 25.1000000 3.2000000 103 u235t 100.0000000 75cle2 0
103 mo g u235t ms in 1.1618353 4.5 1.1610000 0.0520000 0 0.0000000 79cle1 0
103 mo g u235t ms fi 0.7189465 10.2 23.7000000 2.4000000 103 u235t 100.0000000 76wol1 0
103 mo g u235t sp fi 1.1709425 5.1 38.6000000 1.4000000 103 u235t 100.0000000 80lan1 0
103 mo g u235t es in 0.9967166 32.0 0.9960000 32.0000000% 0 0.0000000 74mee1 0
103 mo g u235t es in 1.0352443 32.0 1.0345000 32.0000000% 0 0.0000000 89rid1 36
103 mo g u235t es fi 1.0588839 11.5 0.3490600 11.5000000% 103 u235t 1.0000000 91jam2 0
103 nb g u235t es in cm 1.5451109 5.0 1.5440000 5.0000000% 0 1.0000000 88wah1 0
103 nb g u235t sp fi 1.4318260 5.1 47.2000000 1.7000000 103 u235t 100.0000000 78str1 0
103 nb g u235t ms fi su 0.0000000 0.0 54.0000000 3.2000000 103 u235t 100.0000000 75cle2 0
103 nb g u235t ms in 1.3369612 4.1 1.3360000 0.0550000 0 0.0000000 79cle1 0

103 nb g u235t ms fi 1.6866425 4.6 55.6000000 2.5000000 103 u235t 100.0000000 76wol1 0
103 nb g u235t sp fi 1.3499207 5.1 44.5000000 1.4000000 103 u235t 100.0000000 80lan1 0
103 nb g u235t es in 1.6481850 32.0 1.6470000 32.0000000% 0 0.0000000 74mee1 0
103 nb g u235t es fi 1.3941799 23.0 0.4595900 23.0000000% 103 u235t 1.0000000 91jam2 36
103 nb g u235t es in 1.4110145 23.0 1.4100000 23.0000000% 0 0.0000000 89rid1 0
103 zr g u235t sp fi 0.5885048 5.3 19.4000000 1.0000000 103 u235t 100.0000000 78str1 0
103 zr g u235t ms fi su 0.0000000 0.0 20.9000000 2.9000000 103 u235t 100.0000000 75cle2 0
103 zr g u235t ms in 0.4283079 8.4 0.4280000 0.0360000 0 0.0000000 79cle1 0
103 zr g u235t ms fi 0.4701971 14.2 15.5000000 2.2000000 103 u235t 100.0000000 76wol1 0
103 zr g u235t sp fi 0.4337948 7.8 14.3000000 1.1000000 103 u235t 100.0000000 80lan1 0
103 zr g u235t es in cm 0.5336837 9.0 0.5333000 9.0000000% 0 1.0000000 88wah1 0
103 y g u235t ms fi x1 0.0000000 0.0 2.7000000 1.2000000 103 u235t 100.0000000 76wol1 0
103 u235f es cu 3.1389585 30.0 3.3000000 0.0000000 148 nd g u235f 1.7500000 72sid1 0
103 u235f cm cu 0.0000000 0.0 3.2900000 0.0000000 0 0.0000000 73lar3 0
103 u235f cm cu 0.0000000 0.0 3.2900000 2.6000000% 0 0.0000000 77cro1 0
103 u235f es re 3.2460120 10.0 1.0830000 10.0000000% 103 u235t 1.0000000 74mee4 0
103 u235f rc cu 3.0683515 5.1 3.2300000 0.0400000 140 ba g u235f 6.2200000 77bla1 0
103 u235f es cu 3.2202068 6.8 3.2500000 0.2200000 148 nd g u235f 1.6800000 74mae1 0
103 ru g u235f bm cu 3.2927485 2.3 3.3300000 2.3000000% 0 0.0000000 77gil1 0
103 ru g u235f bm cu su 0.0000000 0.0 3.3500000 2.0000000% 0 0.0000000 76gil1 0
103 ru g u235f es cu cm 3.1820014 4.0 3.2180000 4.0000000% 0 0.0000000 73net2 0
103 ru g u235f rc cu 3.0871582 9.8 1.0300000 0.1000000 103 ru g u235t 1.0000000 79yur1 36
1
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nuclide material tech. type value err. value nuclide material value no. treatment

103 ru g u235f rc cu 3.2939678 5.2 1.0990000 0.0070000 103 ru g u235t 1.0000000 77deb1 0
103 ru g u235f rc cu 3.1465926 5.1 3.1100000 3.0000000% 140 ba g u235f 5.8400000 72sch1 0
103 ru g u235f rc cu 3.1345383 5.0 3.1700000 3.2000000% 0 0.0000000 82gar1 0
103 ru g u235f rc cu 3.1642027 18.7 3.2000000 0.6000000 0 0.0000000 59bak1 0
103 ru g u235f rc cu 3.1642027 7.1 3.2000000 7.1000000% 0 0.0000000 75dud2 0
103 ru g u235f rc cu 3.2136434 5.0 3.2500000 3.6000000% 0 0.0000000 81lau1 0
103 ru g u235f rc cu 3.2136434 5.0 3.2500000 4.2000000% 0 0.0000000 75dud1 0
103 ru g u235f rc cu 3.2643760 5.1 3.2900000 3.0000000% 95 zr g u235f 6.4100000 73lar4 0
103 ru g u235f rc cu 3.2531959 5.0 3.2900000 3.1000000% 0 0.0000000 74lar1 0
103 ru g u235f rc cu 3.2828603 5.0 3.3200000 3.0000000% 0 0.0000000 86dho1 0

103	ru g	u235f	rc	cu		3.3224129	5.4	3.3600000	0.1800000	0		0.0000000	80chi1	0
103	ru g	u235f	rc	cu	x4	0.0000000	0.0	3.6600000	0.2200000	0		0.0000000	80wan1	0
103	ru g	u235f	rc	cu	x4	0.0000000	0.0	3.7500000	0.5500000	99 mo g	u235f	5.9000000	60bon1	0
103	ru g	u235f	rc	cu		3.2118384	5.1	0.5050000	0.5000000%	95 zr g	u235f	1.0000000	75dud1	0
103	ru g	u235f	rc	cu		3.1847969	5.1	0.5390000	0.8000000%	140 ba g	u235f	1.0000000	75dud1	0
103	ru g	u235f	rc	cu		3.4410705	5.2	3.4800000	0.1800000	0		0.0000000	81mar1	0
103	ru g	u235f	rc	cu	su	0.0000000	0.0	1.1020000	0.0090000	103 ru g	u235t	1.0000000	76deb1	0
103	ru g	u235f	rc	cu	su	0.0000000	0.0	3.1400000	7.0000000%	0		0.0000000	73dud2	0
103	ru g	u235f	rc	cu	su	0.0000000	0.0	3.2000000	0.1500000	0		0.0000000	73dud1	0
103	ru g	u235f	rc	cu	su	0.0000000	0.0	3.2900000	3.1000000%	0		0.0000000	72lar1	0
103	ru g	u235f	rc	re		3.3343289	5.0	0.5420000	4.9000000%	137 cs g	u235f	1.0000000	77kel1	0
103	ru g	u235f	rc	re		3.1308295	10.3	0.7540000	0.0770000	140 ba g	u235f	1.4230000	72rid2	0
103	ru g	u235f	rc	re		3.3705833	7.6	0.9920000	0.0750000	140 ba g	u235f	1.7390000	72rid1	0
103	ru g	u235f	rc	re	x4	0.0000000	0.0	1.0280000	0.0230000	140 ba g	u235t	0.0000000	75raj1	7
103		u235he	cm	cu	es	0.0000000	0.0	3.3850000	0.0000000	0		0.0000000	63wea1	0
103		u235he	es	cu		3.2280808	21.5	3.2100000	20.0000000%	113	u235he	1.0800000	74mee6	0
103		u235he	cm	cu		0.0000000	0.0	3.4800000	5.7000000%	0		0.0000000	77cro1	0
103		u235he	es	cu		3.2008094	10.0	3.2170000	10.0000000%	0		0.0000000	74mee8	0
103	rh g	u235he	es	fi		0.0000000	30.1	0.0000043	0.0000000	103	u235he	1000.0000000	74wol1	40
103	rh m	u235he	es	fi		0.0000002	30.1	0.0000495	0.0000000	103	u235he	1000.0000000	74wol1	40
103	ru g	u235he	rc	re		3.4990816	10.0	1.3800000	0.0100000	99 mo g	u235t	0.0000000	56for1	7
103	ru g	u235he	cm	cu		0.0000000	0.0	3.3500000	0.0000000	0		0.0000000	69gun2	0
103	ru g	u235he	rc	re		3.3958084	8.4	0.7600000	0.0600000	140 ba g	u235he	1.0000000	73man1	0
103	ru g	u235he	es	cu	cm	3.0048008	3.9	3.0200000	3.9000000%	0		0.0000000	73net2	0
103	ru g	u235he	es	cu	cm	3.4823851	30.0	3.5000000	0.0000000	0		0.0000000	60kat1	0
103	ru g	u235he	rc	cu		3.4990816	5.0	1.3800000	3.0000000%	99 mo g	u235t	0.0000000	76for1	7
103	ru g	u235he	rc	cu		3.0644989	5.0	3.0800000	4.1000000%	0		0.0000000	81lau1	0
103	ru g	u235he	rc	cu		2.9395739	10.4	3.2500000	0.3000000	99 mo g	u235he	5.6500000	60bon1	0
103	ru g	u235he	rc	cu		3.2933413	5.0	3.3100000	0.1300000	0		0.0000000	84chi1	0
103		u238f	cm	cu	es	0.0000000	0.0	6.2000000	0.0000000	0		0.0000000	64wal1	0
103		u238f	es	cu		5.7807235	30.0	5.8000000	0.0000000	0		0.0000000	72sid1	0
103		u238f	cm	cu		0.0000000	0.0	6.2900000	0.0000000	0		0.0000000	73lar3	0
103		u238f	cm	cu		0.0000000	0.0	6.3800000	6.4000000%	0		0.0000000	77cro1	0
103		u238f	rc	cu		5.8767186	5.0	6.2500000	0.0400000	140 ba g	u238f	6.1600000	77bla1	0
103		u238f	es	cu		5.7697461	6.7	5.7000000	0.3800000	148 nd g	u238f	2.0800000	74mae1	0
103		u238f	rc	cu		5.9900255	5.0	6.0100000	0.1800000	0		0.0000000	85li 1	0

103		u238f	rc	cu	x4	0.0000000	0.0	5.1900000	0.3400000	0			0.0000000	85li 1	0
103	ru g	u238f	rc	cu		6.7876100	60.0	7.5000000	0.0000000	140 ba g	u238f		6.4000000	52eng1	0
103	ru g	u238f	rc	cu		6.4017880	20.0	6.3000000	1.0000000	140 ba g	u238f		5.7000000	54kel1	0
103	ru g	u238f	rc	cu		6.6777323	15.0	6.7000000	0.0000000	0			0.0000000	68bel1	0
103	ru g	u238f	rc	cu	su	0.0000000	0.0	6.4900000	0.2900000	0			0.0000000	73dud1	0
103	ru g	u238f	rc	cu	su	0.0000000	0.0	6.5300000	7.0000000%	0			0.0000000	73dud2	0
103	ru g	u238f	rc	re		5.7920939	5.0	1.0000000	0.0400000	140 ba g	u238f		1.0000000	73man1	0
103	ru g	u238f	es	cu	cm	6.3737460	8.0	6.3950000	8.0000000%	0			0.0000000	73net2	0
103	ru g	u238f	rc	cu		6.2690949	5.0	6.2900000	3.5000000%	0			0.0000000	74lar1	0
103	ru g	u238f	rc	cu		6.2965568	5.7	5.9400000	0.3300000	103 ru g	u235t		2.8500000	74yur1	0
103	ru g	u238f	rc	cu		6.2989952	5.0	6.3200000	4.3000000%	0			0.0000000	75dud1	0
103	ru g	u238f	rc	cu		6.5082973	7.0	6.5300000	7.0000000%	0			0.0000000	75dud2	0
103	ru g	u238f	cm	cu		0.0000000	0.0	6.6000000	0.0000000	0			0.0000000	60kat1	0
103	ru g	u238f	rc	cu		6.8272337	15.0	6.8500000	0.0000000	0			0.0000000	75fly4	0
103	ru g	u238f	rc	cu		6.0401901	8.7	6.3300000	0.5500000	140 ba g	u238f		6.0700000	77har1	0
103	ru g	u238f	bm	cu	su	0.0000000	0.0	6.3500000	2.5000000%	0			0.0000000	76gil1	0
103	ru g	u238f	bm	cu		6.3189287	2.5	6.3400000	2.5000000%	0			0.0000000	77gil1	0
103	ru g	u238f	rc	re		6.6960996	5.1	1.1100000	3.4000000%	137 cs g	u238f		1.0000000	77kel1	0
103	ru g	u238f	rc	cu		5.9835680	5.0	6.2500000	0.0900000	140 ba g	u238f		6.0500000	78deb1	0
103	ru g	u238f	rc	cu		6.0314366	6.9	6.3000000	0.4300000	140 ba g	u238f		6.0500000	78deb1	0
103	ru g	u238f	es	cu		6.5680979	2.9	6.5900000	0.1900000	0			0.0000000	78gin1	0
103	ru g	u238f	rc	re		5.9360781	7.2	3.6280000	0.2610000	140 ba g	u238f		3.5400000	72rid1	0
103	ru g	u238f	rc	re		6.0419489	7.2	3.1920000	0.2300000	140 ba g	u238f		3.0600000	72rid2	0
103	ru g	u238f	rc	cu	x4	0.0000000	0.0	7.4000000	0.0000000	140 ba g	u238f		6.1000000	51eng3	0
103	ru g	u238f	rc	cu	x4	0.0000000	0.0	5.2400000	0.8500000	0			0.0000000	75har1	0
103	ru g	u238f	rc	cu		7.0066355	5.0	7.0300000	0.2200000	0			0.0000000	78nag1	0
103	ru g	u238f	rc	cu	x4	0.0000000	0.0	3.9000000	0.5000000	99 mo g	u238f		7.0000000	60bon1	0
103	ru g	u238f	rc	cu		5.9401917	6.2	5.9600000	0.3700000	0			0.0000000	85chi1	0
103	ru g	u238f	rc	cu		5.7109561	7.3	5.7300000	0.4200000	0			0.0000000	84chi3	0
103	ru g	u238f	rc	cu		5.7707567	5.0	5.7900000	3.7000000%	0			0.0000000	82gar1	0
103	ru g	u238f	rc	cu		7.1162699	6.1	7.1400000	6.1000000%	0			0.0000000	87chu1	0
103	ru g	u238f	rc	cu	su	0.0000000	0.0	6.2600000	3.1000000%	140 ba g	u238f		5.9600000	72lar1	0
103	ru g	u238f	rc	cu		6.4584634	10.3	6.4800000	10.3000000%	0			0.0000000	88afa1	0
103	ru g	u238f	rc	cu		6.6577987	10.5	6.6800000	10.5000000%	0			0.0000000	88afa1	0
103		u238he	cm	cu	es	0.0000000	0.0	4.4280000	0.0000000	0			0.0000000	63wea1	0
103		u238he	cm	cu	su	0.0000000	0.0	4.4300000	0.1200000	0			0.0000000	73dar1	0

103		u238he	es	cu		4.5155311	15.0	4.5240000	15.0000000%	0			0.0000000	74mee9	0
103		u238he	cm	cu		0.0000000	0.0	4.8000000	7.1000000%	0			0.0000000	77cro1	0
103	ru g	u238he	rc	re	x4	0.0000000	0.0	1.8900000	0.2400000	99 mo g	u235t		0.0000000	68gor1	7
103	ru g	u238he	cm	cu	x3	0.0000000	0.0	3.0000000	0.0000000	0			0.0000000	69gun2	0
103	ru g	u238he	rc	cu		4.5150832	5.2	4.4400000	0.1500000	99 mo g	u238he		5.6000000	70gev1	0
103	ru g	u238he	rc	cu	su	0.0000000	0.0	4.5000000	0.4000000	0			0.0000000	71bla1	0
103	ru g	u238he	rc	cu	su	0.0000000	0.0	4.1400000	0.4700000	0			0.0000000	73dar2	0
103	ru g	u238he	rc	cu	su	0.0000000	0.0	4.3200000	0.1700000	0			0.0000000	73dar4	0
103	ru g	u238he	rc	re		4.4591552	5.2	0.9700000	0.0400000	140 ba g	u238he		1.0000000	73man1	0
103	ru g	u238he	es	cu	cm	4.6612578	3.9	4.6700000	3.9000000%	0			0.0000000	73net2	0
103	ru g	u238he	rc	cu	su	0.0000000	0.0	4.3200000	0.1700000	140 ba g	u238he		4.4800000	74dar1	0
103	ru g	u238he	rc	cu		4.5215199	5.0	4.5300000	0.1200000	0			0.0000000	75dar1	0
103	ru g	u238he	rc	cu		4.6870099	5.9	4.6900000	0.2700000	140 ba g	u238he		4.6000000	76raj1	0
103	ru g	u238he	rc	cu		4.5371055	7.6	4.5400000	0.3400000	140 ba g	u238he		4.6000000	75cav1	0
103	ru g	u238he	rc	cu	su	0.0000000	0.0	4.5400000	0.3400000	140 ba g	u238he		4.6000000	74bla1	0
103	ru g	u238he	rc	cu		4.7311268	5.0	4.7400000	4.0000000%	0			0.0000000	81lau1	0
103	ru g	u238he	rc	cu	x4	0.0000000	0.0	3.0000000	0.3000000	99 mo g	u238he		6.5000000	60bon1	0
103	ru g	u238he	rc	cu		4.7411081	5.0	4.7500000	0.2300000	0			0.0000000	80chi2	0
103	ru g	u238he	rc	cu		4.6712391	5.0	4.6800000	0.1500000	0			0.0000000	85liu1	0
103	ru g	u238he	rc	cu		4.6870099	5.2	4.6900000	0.2000000	140 ba g	u238he		4.6000000	80zhe1	0
103	ru g	u238he	rc	cu		4.5015573	5.0	4.5100000	0.1300000	0			0.0000000	75dar1	0
103	ru g	u238he	rc	cu		4.6213327	5.6	4.6300000	0.2600000	0			0.0000000	75dar1	0
103	ru g	u238he	rc	cu	x4	0.0000000	0.0	5.0400000	0.2800000	99 mo g	u238he		5.6000000	75ada1	0
103	mo m	u238he	rc	re	x6	0.0000000	0.0	0.0100000	0.0020000	99 mo g	u238he		1.0000000	66gan2	0
103		pu239t	cm	cu		0.0000000	0.0	6.7900000	4.3000000%	0			0.0000000	77cro1	0
103		pu239t	cm	cu	x3	0.0000000	0.0	5.7300000	0.0000000	0			0.0000000	72sid1	0
103	ru g	pu239t	rc	cu	x4	0.0000000	0.0	5.5000000	0.0000000	140 ba g	pu239t		5.3600000	51ste3	0
103	ru g	pu239t	rc	cu		7.1116345	6.4	5.7900000	0.3700000	137 cs g	pu239t		5.4000000	65mar1	0
103	ru g	pu239t	rc	cu		6.9884796	5.2	7.6100000	0.0800000	99 mo g	pu239t		6.7900000	71ram1	0
103	ru g	pu239t	rc	cu		7.0168838	6.8	7.5000000	0.5100000	99 mo g	u235t		3.0000000	71ram1	31
103	ru g	pu239t	es	cu	cm	6.9995726	4.0	6.9730000	4.0000000%	0			0.0000000	73net2	0
103	ru g	pu239t	es	cu	cm	6.9764849	4.2	6.9500000	0.2900000	0			0.0000000	73wal3	0
103	ru g	pu239t	rc	cu		6.9278326	5.0	7.0400000	3.0000000%	137 cs g	pu239t		6.7400000	74lar1	0
103	ru g	pu239t	rc	cu		6.9262944	5.0	6.9000000	0.2300000	0			0.0000000	80dic1	0
103	ru g	pu239t	rc	cu		6.9965611	5.0	6.9700000	0.1000000	0			0.0000000	79ram1	0
103	ru g	pu239t	rc	cu		7.0552441	5.2	7.0900000	3.0000000%	95 zr g	pu239t		4.8600000	73lar4	0

103 ru g pu239t ms cu x4 0.0000000 0.0 1.3370000 0.0000000 106 ru g pu239t 1.0000000 59fic1 0
103 ru g pu239t rc cu 6.9865230 5.0 6.9600000 0.0800000 0 0.0000000 84jai1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

103 ru g pu239t rc cu 7.0367136 6.1 7.0100000 0.4300000 0 0.0000000 84jai1 0
103 ru g pu239t rc cu x4 0.0000000 0.0 2.8000000 0.0800000 140 ba g u235t 0.0000000 86chi1 7
103 tc g pu239t sp fi 0.2457367 57.0 0.0350000 57.0000000% 103 pu239t 1.0000000 84sch1 36
103 tc g pu239t rc in 0.2419184 40.2 0.2410000 0.0970000 0 0.0000000 86sri1 0
103 tc g pu239t cm in 0.0000000 0.0 0.2556000 34.0000000% 0 1.0000000 88wah1 0
103 tc g pu239t rc fi 0.2682041 35.7 0.0382000 0.0136000 103 pu239t 1.0000000 87sri1 0
103 mo g pu239t sp fi 3.8334928 5.4 0.5460000 5.0000000% 103 pu239t 1.0000000 84sch1 36
103 mo g pu239t cm in 0.0000000 0.0 3.6740000 5.0000000% 0 1.0000000 88wah1 0
103 nb g pu239t sp fi 2.7171460 5.4 0.3870000 5.0000000% 103 pu239t 1.0000000 84sch1 36
103 nb g pu239t cm in 0.0000000 0.0 2.8780000 5.0000000% 0 1.0000000 88wah1 0
103 zr g pu239t sp fi 0.2246736 62.0 0.0320000 62.0000000% 103 pu239t 1.0000000 84sch1 36
103 zr g pu239t cm in 0.0000000 0.0 0.2197000 62.0000000% 0 1.0000000 88wah1 0
103 pu239f cm cu 0.0000000 0.0 7.0500000 0.0000000 0 0.0000000 73lar3 0
103 pu239f cm cu 0.0000000 0.0 6.6100000 6.4000000% 0 0.0000000 77cro1 0
103 pu239f cm cu x3 0.0000000 0.0 5.8500000 0.0000000 148 nd g pu239f 1.7100000 72sid1 0
103 pu239f es cu 6.7107263 7.1 6.7230000 0.4790000 148 nd g pu239f 1.6540000 77mae1 0
103 pu239f es cu 6.6796984 7.2 6.7220000 0.4850000 0 0.0000000 77mae1 0
103 pu239f es re 6.3433669 30.0 6.0100000 0.0000000 106 pu239f 4.1100000 70lis1 0
103 pu239f es cu su 0.0000000 0.0 6.0500000 0.9200000 148 nd g pu239f 1.6500000 74mae1 0
103 pu239f es re 6.7423501 10.2 0.9700000 10.0000000% 103 pu239t 1.0000000 74mee4 0
103 ru g pu239f rc cu cm 6.3856534 15.1 6.0000000 0.0000000 140 ba g pu239f 4.9700000 65cro2 0
103 ru g pu239f rc cu su 0.0000000 0.0 6.6900000 0.3100000 0 0.0000000 73dud1 0
103 ru g pu239f rc cu su 0.0000000 0.0 6.9500000 6.0000000% 0 0.0000000 73dud2 0
103 ru g pu239f es cu cm 6.4918878 4.0 6.5330000 4.0000000% 0 0.0000000 73net2 0
103 ru g pu239f rc cu 7.0056343 5.0 7.0500000 3.1000000% 0 0.0000000 74lar1 0
103 ru g pu239f rc cu 6.6180885 5.0 6.6600000 4.1000000% 0 0.0000000 75dud1 0
103 ru g pu239f rc cu 6.9658860 5.3 7.0100000 5.3000000% 0 0.0000000 75dud2 0
103 ru g pu239f rc re 6.3855797 5.0 2.4680000 0.0530000 140 ba g u235t 0.0000000 75raj1 7
103 ru g pu239f rc cu x4 0.0000000 0.0 6.0000000 0.7000000 140 ba g pu239f 5.4000000 61bon1 0
103 ru g pu239f rc cu 6.1611523 17.7 5.7000000 1.0000000 99 mo g pu239f 5.5000000 59bak1 0

103	ru g	pu239f	bm	cu	su	0.0000000	0.0	7.0800000	2.3000000%	0				0.0000000	76gil1	0
103	ru g	pu239f	bm	cu		7.0354455	2.3	7.0800000	2.3000000%	0				0.0000000	77gil1	0
103	ru g	pu239f	rc	re		7.0012869	5.0	1.0700000	3.6000000%	137	cs g	pu239f		1.0000000	77kel1	0
103	ru g	pu239f	rc	re		6.7498899	7.4	1.2710000	0.0920000	140	ba g	pu239f		0.9960000	72rid1	0
103	ru g	pu239f	rc	re		6.9757019	7.3	1.2700000	0.0910000	140	ba g	pu239f		0.9630000	72rid2	0
103	ru g	pu239f	rc	cu		6.7423498	5.4	0.9700000	0.0300000	103	ru g	pu239t		1.0000000	79yur1	0
103	ru g	pu239f	rc	cu		6.8605245	5.2	7.0500000	3.0000000%	95	zr g	pu239f		4.7700000	73lar4	0
103	ru g	pu239f	rc	cu		6.5385920	5.0	6.5800000	3.2000000%	0				0.0000000	81lau1	0
103	ru g	pu239f	rc	cu		7.1348162	5.0	7.1800000	4.0000000%	0				0.0000000	82gar1	0
103	ru g	pu239f	rc	cu	su	0.0000000	0.0	7.0500000	3.1000000%	140	ba g	pu239f		5.2500000	72lar1	0
103		pu241t	es	cu		6.1596012	30.0	6.2000000	0.0000000	0				0.0000000	72sid1	0
103		pu241t	rc	cu		7.0857103	15.1	7.6600000	0.0000000	131		pu241t		3.3300000	73chi1	0
103		pu241t	es	cu		6.6066690	10.5	6.6500000	0.7000000	0				0.0000000	73wal1	0
103		pu241t	cm	cu		0.0000000	0.0	6.8700000	10.4000000%	0				0.0000000	77cro1	0
103		pu241t	cm	cu		0.0000000	0.0	7.0500000	0.0000000	0				0.0000000	79wal1	0
103		pu241t	es	cu		6.8947794	5.1	6.9400000	0.3510000	0				0.0000000	77mae1	0
103	ru g	pu241t	rc	cu		6.0602528	30.0	6.1000000	0.0000000	0				0.0000000	63kir1	0
103	ru g	pu241t	rc	cu		6.0105786	5.0	6.0500000	0.1900000	0				0.0000000	73sko2	0
103	ru g	pu241t	rc	cu		7.0537369	5.0	7.1000000	0.3500000	0				0.0000000	79dic1	0
103	ru g	pu241t	rc	cu		7.0895778	5.0	2.5300000	0.0600000	140	ba g	u235t		0.0000000	86chi1	7
103		u233t	es	cu		1.5889064	30.0	1.6000000	0.0000000	0				0.0000000	72sid1	0
103		u233t	cm	cu		0.0000000	0.0	1.6000000	0.0000000	0				0.0000000	73lam1	0
103		u233t	cm	cu	x3	0.0000000	0.0	1.8000000	0.3000000	0				0.0000000	73wal1	0
103		u233t	cm	cu		0.0000000	0.0	1.7100000	14.9000000%	0				0.0000000	77cro1	0
103		u233t	ms	cu		1.5025096	2.0	1.5130000	0.0220000	0				0.0000000	80weh1	0
103	ru g	u233t	rc	cu		1.5300123	60.1	1.6000000	0.0000000	99	mo g	u233t		5.1000000	47ste1	0
103	ru g	u233t	rc	cu		1.6469877	6.6	1.4000000	6.0000000%	140	ba g	u233t		5.4000000	65bal1	0
103	ru g	u233t	rc	cu		1.5783833	5.0	1.5500000	0.0300000	99	mo g	u235t		3.0000000	66gor1	24
103	ru g	u233t	rc	cu		1.7780416	6.4	1.7500000	0.1000000	99	mo g	u233t		4.8000000	67gan1	0
103	ru g	u233t	cm	cu		0.0000000	0.0	1.7960000	4.0000000%	0				0.0000000	73net2	0
103	ru g	u233t	rc	cu		1.9069703	10.2	2.0200000	0.0800000	106	ru g	u233t		0.2590000	60san1	0
103	ru g	u233t	ms	cu		1.7506726	3.1	1.7900000	0.0500000	101	ru g	u233t		3.2200000	78shi1	0
103	ru g	u233t	rc	cu		1.4915644	6.2	0.4800000	0.0300000	140	ba g	u235t		0.0000000	86chi1	7
103	ru g	u233t	sp	fi	ul	0.0000000	0.0	1.2500000	0.2620000	103		u233t		100.0000000	83qua1	0
103	ru g	u233t	sp	in	ul	0.0000000	0.0	0.0190000	0.0040000	0				0.0000000	88qua1	0
103	tc g	u233t	ms	in		0.0456811	28.3	0.0460000	0.0130000	0				0.0000000	80weh1	0

103	tc g	u233t	sp	fi		0.0466878	31.2	2.9900000	0.9300000	103	u233t	100.0000000	83qua1	0
103	tc g	u233t	rc	cu		1.5591144	13.4	1.5700000	0.2100000	0		0.0000000	81gud1	0
103	tc g	u233t	sp	in		0.0446880	31.1	0.0450000	0.0140000	0		0.0000000	88qua1	0
103	mo g	u233t	ms	in		0.7626751	2.9	0.7680000	0.0220000	0		0.0000000	80weh1	0
103	mo g	u233t	sp	fi		0.7148389	6.7	45.7800000	2.9430000	103	u233t	100.0000000	83qua1	0
103	mo g	u233t	sp	in		0.6862090	7.2	0.6910000	0.0500000	0		0.0000000	88qua1	0
103	nb g	u233t	ms	in		0.5432074	3.7	0.5470000	0.0200000	0		0.0000000	80weh1	0
103	nb g	u233t	sp	in		0.6415210	7.6	0.6460000	0.0490000	0		0.0000000	88qua1	0
103	nb g	u233t	sp	fi	su	0.0000000	0.0	42.7600000	2.9240000	103	u233t	100.0000000	83qua1	0
103	zr g	u233t	ms	in		0.1509461	7.9	0.1520000	0.0120000	0		0.0000000	80weh1	0
103	zr g	u233t	sp	fi		0.1128940	13.5	7.2300000	0.9630000	103	u233t	100.0000000	83qua1	0
103	zr g	u233t	sp	in		0.1082443	13.8	0.1090000	0.0150000	0		0.0000000	88qua1	0
103		th232f	es	cu	cm	0.1597059	30.0	0.1600000	0.0000000	0		0.0000000	65eng1	0
103		th232f	es	cu		0.1696875	30.0	0.1700000	0.0000000	0		0.0000000	72sid1	0
103		th232f	es	cu	cm	0.1457316	30.0	0.1460000	0.0000000	0		0.0000000	73lam1	0
103		th232f	cm	cu		0.0000000	0.0	0.1550000	0.0000000	0		0.0000000	74lam1	0
103		th232f	cm	cu		0.0000000	0.0	0.1670000	20.0000000%	0		0.0000000	77cro1	0
103		th232f	es	cu		0.1527187	10.0	0.1530000	10.0000000%	0		0.0000000	74mee0	0
103	ru g	th232f	rc	re		0.1603858	10.0	0.1100000	0.0050000	99	mo g	u235t	0.0000000	63iye1	7
103	ru g	th232f	cm	cu		0.0000000	0.0	0.1645000	4.0000000%	0		0.0000000	73net2	0
103	ru g	th232f	cm	cu		0.0000000	0.0	0.1600000	0.0000000	0		0.0000000	60kat1	0
103	ru g	th232f	rc	cu		0.1585602	5.4	0.1500000	5.0000000%	99	mo g	th232f	2.7800000	65wyt1	0
103	ru g	th232f	rc	cu		0.1771634	35.0	0.2000000	0.0700000	89	sr g	u235t	3.7000000	51tur1	22
103	ru g	th232f	cm	cu		0.0000000	0.0	0.1610000	0.0000000	0		0.0000000	79zij1	0
103	ru g	th232f	cm	cu		0.0000000	0.0	0.1610000	0.0050000	0		0.0000000	81ert1	0
103	ru g	th232f	rc	cu		0.1772505	35.0	0.0371300	35.0000000%	89	sr g	u235t	0.0000000	51tur1	7
103	ru g	th232f	rc	cu	x4	0.0000000	0.0	0.1800000	0.0000000	89	sr g	th232f	6.0000000	50nid1	0
103	ru g	th232f	rc	cu	x4	0.0000000	0.0	0.1100000	0.0280000	140	ba g	th232f	7.4000000	73cha1	36
103	mo g	th232f	rc	re		0.1503625	5.0	0.1060000	0.0020000	99	mo g	u235t	0.0000000	81ert1	7
104	ru g	u235t	ms	cu		1.8012951	6.0	1.8000000	0.0000000	0		0.0000000	55gle1	0
104		u235t	cm	cu		0.0000000	0.0	1.8000000	0.0000000	0		0.0000000	72sid1	0
104		u235t	cm	cu		0.0000000	0.0	1.8300000	0.0000000	0		0.0000000	73lam1	0
104		u235t	cm	cu		0.0000000	0.0	1.8300000	0.0300000	0		0.0000000	73wal1	0
104		u235t	ms	cu		1.8713454	2.0	1.8700000	0.0210000	0		0.0000000	76dii1	0
104		u235t	sp	cu		1.9013670	5.0	1.9000000	0.0500000	0		1.0000000	76woh2	0
104		u235t	cm	cu		0.0000000	0.0	1.8300000	5.2000000%	0		0.0000000	77cro1	0

104 ru g u235t ms cu 1.8213095 4.0 1.8200000 4.0000000% 0 0.0000000 70lis1 36
104 ru g u235t ms cu 1.9373929 2.0 1.9360000 0.0290000 0 0.0000000 78mae1 0
104 ru g u235t ms cu 1.8873570 2.0 1.8860000 0.0290000 0 0.0000000 78mae1 0
104 ru g u235t ms cu 1.8813526 2.0 1.8800000 0.0280000 0 0.0000000 78mae1 0
104 u235t es re 1.8271820 3.2 1.0000000 3.0000000% 104 u235f 1.1350000 74mee4 0
104 ru g u235t ms cu 1.8587936 1.9 1.8600000 0.0300000 101 ru g u235t 5.1800000 86chi1 0
104 ru g u235t ms cu 2.0542224 7.1 2.0000000 0.1400000 101 ru g u235t 5.0400000 78shi1 36
104 tc g u235t sp fi 0.1129310 16.7 6.0000000 1.0000000 104 u235t 100.0000000 78str1 0
104 tc g u235t ms fi su 0.0000000 0.0 3.0000000 2.3000000 104 u235t 100.0000000 75cle2 0
104 tc g u235t ms in 0.0610439 37.7 0.0610000 0.0230000 0 0.0000000 79cle1 0
104 tc g u235t rc cu 1.8012951 5.0 1.8000000 0.0900000 0 0.0000000 76thi1 0
104 tc g u235t rc in x1 0.0000000 0.0 0.0018000 0.0017000 104 tc g u235t 1.0000000 78fas1 0
104 tc g u235t rc fi le 0.0188218 99.9 0.0100000 0.0220000 104 u235t 1.0000000 81vin1 0
104 tc g u235t sp fi 0.0602299 37.5 3.2000000 1.2000000 104 u235t 100.0000000 80lan1 0
104 tc g u235t cm in 0.0000000 0.0 0.0299400 85.0000000% 0 1.0000000 88wah1 0
104 tc g u235t rc fi su 0.0000000 0.0 0.0200000 0.0200000 104 u235t 1.0000000 76vin1 0
104 tc g u235t rc cu x4 0.0000000 0.0 1.6400000 14.0000000% 0 0.0000000 80ram1 0
104 mo g u235t rc cu 2.0014390 15.0 2.0000000 0.3000000 0 0.0000000 64ter1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

104 mo g u235t ms fi su 0.0000000 0.0 71.1000000 5.0000000 104 u235t 100.0000000 75cle1 0
104 mo g u235t ms fi su 0.0000000 0.0 64.7000000 5.0000000 104 u235t 100.0000000 75cle1 0
104 mo g u235t sp fi 1.0502586 5.1 55.8000000 1.7000000 104 u235t 100.0000000 78str1 0
104 mo g u235t ms fi su 0.0000000 0.0 56.1000000 3.5000000 104 u235t 100.0000000 75cle2 0
104 mo g u235t ms in 1.2298843 3.7 1.2290000 0.0450000 0 0.0000000 79cle1 0
104 mo g u235t rc fi ge 0.9881466 15.0 52.5000000 0.0000000 104 u235t 100.0000000 79wei1 0
104 mo g u235t sp fi 1.2290661 5.1 65.3000000 1.6000000 104 u235t 100.0000000 80lan1 0
104 mo g u235t cm in 0.0000000 0.0 1.1150000 5.0000000% 0 1.0000000 88wah1 0
104 nb g u235t ms fi su 0.0000000 0.0 26.1000000 4.0000000 104 u235t 100.0000000 75cle1 0
104 nb g u235t ms fi su 0.0000000 0.0 31.0000000 4.0000000 104 u235t 100.0000000 75cle1 0
104 nb g u235t sp fi 0.5684195 7.7 30.2000000 2.3000000 104 u235t 100.0000000 78str1 0
104 nb g u235t ms fi su 0.0000000 0.0 34.7000000 2.6000000 104 u235t 100.0000000 75cle2 0
104 nb g u235t ms in 0.5073648 6.1 0.5070000 0.0310000 0 0.0000000 79cle1 0
104 nb g u235t rc fc su 0.0000000 0.0 42.5000000 3.0000000 104 tc g u235t 100.0000000 77wei1 0

104	nb	g	u235t	rc	fi	ge	0.7058190	15.0	37.5000000	0.0000000	104	u235t	100.0000000	79wei1	0
104	nb	g	u235t	sp	fi		0.5063075	5.3	26.9000000	1.4000000	104	u235t	100.0000000	80lan1	0
104	nb	g	u235t	cm	in		0.0000000	0.0	0.5999000	7.0000000%	0		1.0000000	88wah1	0
104	nb	m	u235t	rc	fc	su	0.0000000	0.0	5.0000000	5.0000000	104	tc g	u235t	100.0000000	77wei1	0
104	nb	m	u235t	rc	fi	ul	0.0000000	0.0	5.0000000	0.0000000	104	u235t	100.0000000	79wei1	0
104	zr	g	u235t	ms	fi	su	0.0000000	0.0	2.8000000	1.5000000	104	u235t	100.0000000	75cle1	0
104	zr	g	u235t	ms	fi	su	0.0000000	0.0	4.3000000	1.5000000	104	u235t	100.0000000	75cle1	0
104	zr	g	u235t	ms	fi	su	0.0000000	0.0	6.2000000	1.6000000	104	u235t	100.0000000	75cle2	0
104	zr	g	u235t	ms	in		0.0860619	17.4	0.0860000	0.0150000	0		0.0000000	79cle1	0
104	zr	g	u235t	rc	fc	le	0.0941092	15.0	5.0000000	0.0000000	104	u235t	100.0000000	79wei1	0
104	zr	g	u235t	sp	fi		0.0865805	17.4	4.6000000	0.8000000	104	u235t	100.0000000	80lan1	0
104	zr	g	u235t	cm	in		0.0000000	0.0	0.1234000	20.0000000%	0		1.0000000	88wah1	0
104	zr	g	u235t	sp	fi	x4	0.0000000	0.0	8.0000000	0.5000000	104	u235t	100.0000000	78str1	0
104	y	g	u235t	es	cu		0.0003032	99.0	0.0003030	99.0000000%	0		0.0000000	75mee1	0
104	sr	g	u235t	es	cu		0.0000001	99.0	0.0000001	99.0000000%	0		0.0000000	75mee1	0
104			u235f	cm	cu		0.0000000	0.0	2.0100000	11.4000000%	0		0.0000000	77cro1	0
104			u235f	cm	cu	x3	0.0000000	0.0	2.3000000	0.0000000	0		0.0000000	72sid1	0
104			u235f	es	re		2.1178501	10.0	1.1350000	10.0000000%	104	u235t	1.0000000	74mee4	0
104	ru	g	u235f	cm	cu	x3	0.0000000	0.0	2.3160000	25.0000000%	0		0.0000000	74mee1	36
104	ru	g	u235f	es	cu		2.0536260	2.0	2.0700000	2.0000000%	0		0.0000000	89rid1	0
104	ru	g	u235f	es	cu		2.1964869	9.8	2.2140000	9.8000000%	0		0.0000000	91jam2	0
104	ru	g	u235f	ms	cu	su	0.0000000	0.0	0.1820000	0.0005000	101	ru g	u235f	0.4430000	80mae3	0
104	ru	g	u235f	ms	cu	su	0.0000000	0.0	2.0900000	0.1000000	148	nd g	u235f	1.6800000	74mae1	0
104	ru	g	u235f	ms	cu	su	0.0000000	0.0	2.3500000	0.0500000	148	nd g	u235f	1.7500000	70lis1	0
104	ru	g	u235f	ms	cu	x4	0.0000000	0.0	2.3800000	2.0000000%	0		0.0000000	72lar1	0
104	ru	g	u235f	ms	re		2.0772381	1.1	0.1717000	0.0003000	101	ru g	u235t	0.4242000	81mae1	0
104	ru	g	u235f	ms	re	su	0.0000000	0.0	0.1693000	0.0003000	101	ru g	u235t	0.4286000	81mae1	0
104	ru	g	u235f	ms	re	su	0.0000000	0.0	0.1702000	0.0008000	101	ru g	u235f	0.4259000	81mae1	0
104	tc	g	u235f	rc	re		1.8566049	5.5	1.0320000	0.0570000	140	ba g	u235t	0.0000000	75raj1	7
104	tc	g	u235f	rc	cu		2.1329932	5.0	2.1500000	0.1000000	0		0.0000000	81mar1	0
104	ru	g	u235he	cm	cu	x3	0.0000000	0.0	2.4300000	0.0000000	0		0.0000000	63wea1	0
104			u235he	es	cu		2.4774013	20.0	2.5500000	20.0000000%	0		0.0000000	77cro1	0
104			u238f	es	cu	cm	4.7887195	30.0	4.8000000	0.0000000	0		0.0000000	64wal1	0
104			u238f	cm	cu		0.0000000	0.0	4.7500000	20.0000000%	0		0.0000000	77cro1	0
104	ru	g	u238f	ms	cu		5.0674235	1.5	0.2509000	0.0004000	101	ru g	u238f	0.3067000	81mae1	0
104	ru	g	u238f	ms	cu		5.0508930	1.5	0.2500000	0.0001000	101	ru g	u238f	0.3066000	81mae1	0

104	ru g	u238f	ms	cu		5.0003352	1.5	0.2500000	0.0002000	101	ru g	u238f	0.3097000	81mae1	0
104	ru g	u238f	ms	cu		5.0863885	6.0	5.0200000	0.3000000	148	nd g	u238f	2.0800000	74mae1	0
104		u238f	rc	cu	x4	0.0000000	0.0	3.7400000	0.1300000	0			0.0000000	85li 1	0
104		u238f	cm	cu	x3	0.0000000	0.0	5.8200000	0.0000000	0			0.0000000	72sid1	0
104	tc g	u238f	rc	cu	x4	0.0000000	0.0	4.4000000	0.0000000	0			0.0000000	68bel1	0
104	tc g	u238f	es	cu		4.8386020	3.9	4.8500000	0.1900000	0			0.0000000	78gin1	0
104	tc g	u238f	rc	cu		4.8685315	6.4	4.8800000	0.3100000	0			0.0000000	78nag1	0
104	tc g	u238f	rc	cu		4.7188840	11.4	4.7300000	11.4000000%	0			0.0000000	88afa1	0
104	tc g	u238f	rc	cu		4.8086725	10.8	4.8200000	10.8000000%	0			0.0000000	88afa1	0
104	ru g	u238he	es	cu		3.8674659	30.0	3.8820000	0.0000000	0			0.0000000	63wea1	0
104		u238he	es	cu	su	0.0000000	0.0	3.6200000	0.0000000	0			0.0000000	73dar1	0
104		u238he	es	cu		3.4141694	15.0	3.4270000	15.0000000%	0			0.0000000	74mee9	0
104		u238he	es	cu		4.0447994	20.0	4.0600000	20.0000000%	0			0.0000000	77cro1	0
104	tc g	u238he	es	cu		3.9621102	8.0	3.9770000	8.0000000%	0			0.0000000	89rid1	0
104	tc g	u238he	rc	cu		3.5765591	5.0	3.5900000	0.1500000	0			0.0000000	75dar1	0
104	tc g	u238he	rc	cu		4.2241255	5.2	4.2400000	0.2200000	0			0.0000000	85liu1	0
104	tc g	u238he	rc	cu		4.5984203	5.2	4.6100000	0.2000000	140	ba g	u238he	4.6000000	80zhe1	0
104	tc g	u238he	es	cu		4.4831521	16.0	4.5000000	16.0000000%	0			0.0000000	74mee1	0
104	tc g	u238he	es	cu		3.5765591	10.0	3.5900000	10.0000000%	0			0.0000000	91jam2	36
104	tc g	u238he	es	fc		4.0111224	10.8	0.9999800	10.0000000%	104		u238he	1.0000000	89rid1	36
104		pu239t	cm	cu		0.0000000	0.0	5.9300000	0.0000000	0			0.0000000	72sid1	0
104		pu239t	cm	cu		0.0000000	0.0	6.0300000	0.0000000	0			0.0000000	73lam1	0
104		pu239t	cm	cu		0.0000000	0.0	6.1000000	0.1900000	0			0.0000000	73wal1	0
104		pu239t	cm	cu		0.0000000	0.0	6.1800000	4.5000000%	0			0.0000000	77cro1	0
104	ru g	pu239t	ms	cu		6.3308394	4.8	6.6100000	0.2900000	106	ru g	pu239t	4.5500000	70lis1	0
104	ru g	pu239t	ms	cu		6.0487318	2.0	1.0030000	0.0140000	101	ru g	pu239t	1.0000000	59fic1	0
104	ru g	pu239t	sp	fi		0.0244262	99.9	0.0040000	0.0200000	104		pu239t	1.0000000	84sch1	36
104	ru g	pu239t	ms	cu		6.1522663	1.7	6.0700000	0.0600000	101	ru g	pu239t	5.9500000	86chi1	0
104	ru g	pu239t	es	re	cm	6.0379189	1.7	0.3318000	1.0000000%	101	ru g	pu239t	0.3314000	81mae2	36
104	tc g	pu239t	rc	cu		6.3019849	6.5	6.2900000	0.4100000	0			0.0000000	80dic1	0
104	tc g	pu239t	rc	in		0.4926507	7.5	0.0810000	0.0040000	104	tc g	pu239t	1.0000000	78fas1	0
104	tc g	pu239t	rc	cu		5.7008417	5.0	5.6900000	4.9000000%	0			0.0000000	80ram1	0
104	tc g	pu239t	rc	cu		6.6326137	6.8	6.6200000	0.4500000	0			0.0000000	81dic1	0
104	tc g	pu239t	rc	fi		0.4702053	15.6	0.0770000	0.0120000	104		pu239t	1.0000000	81vin1	0
104	tc g	pu239t	rc	in		0.5370213	15.5	0.5360000	0.0830000	0			0.0000000	86sri1	0
104	tc g	pu239t	sp	fi		0.7816400	16.0	0.1280000	16.0000000%	104		pu239t	1.0000000	84sch1	36

104 tc g pu239t cm in 0.0000000 0.0 0.5581000 9.0000000% 0 1.0000000 88wah1 0
104 tc g pu239t rc fi 0.6424104 19.4 0.1052000 0.0204000 104 pu239t 1.0000000 87sri1 0
104 tc g pu239t rc fi su 0.0000000 0.0 0.0850000 0.0300000 104 pu239t 1.0000000 76vin1 0
104 tc g pu239t rc cu x4 0.0000000 0.0 5.2000000 0.6500000 0 0.0000000 77gud1 0
104 mo g pu239t sp fi 4.1585689 5.1 0.6810000 5.0000000% 104 pu239t 1.0000000 84sch1 36
104 mo g pu239t cm in 0.0000000 0.0 4.1230000 5.0000000% 0 1.0000000 88wah1 0
104 nb g pu239t sp fi 1.0747550 11.0 0.1760000 11.0000000% 104 pu239t 1.0000000 84sch1 36
104 nb g pu239t cm in 0.0000000 0.0 1.1780000 11.0000000% 0 1.0000000 88wah1 0
104 zr g pu239t sp fi 0.0610656 99.9 0.0100000 0.0200000 104 pu239t 1.0000000 84sch1 36
104 zr g pu239t cm in 0.0000000 0.0 0.0568800 97.0000000% 0 1.0000000 88wah1 0
104 pu239f es cu cm 5.5823796 30.0 5.6000000 0.0000000 0 0.0000000 72sid1 0
104 pu239f cm cu 0.0000000 0.0 6.5000000 10.0000000% 0 0.0000000 77cro1 0
104 ru g pu239f ms cu 6.6769019 1.4 6.6680000 0.0910000 148 nd g pu239f 1.6540000 77mae1 0
104 ru g pu239f ms cu 6.6609751 2.0 6.6820000 0.1070000 0 0.0000000 77mae1 0
104 ru g pu239f ms cu 6.4812306 1.8 6.7700000 0.1200000 148 nd g pu239f 1.7300000 70lis1 0
104 ru g pu239f ms cu 6.5249041 1.1 0.3266000 0.0004000 102 ru g pu239f 0.3359000 80mae4 0
104 ru g pu239f ms cu su 0.0000000 0.0 6.5300000 0.0900000 148 nd g pu239f 1.6500000 74mae1 0
104 pu239f es re 5.8933756 10.0 0.9700000 10.0000000% 104 pu239t 1.0000000 74mee4 0
104 ru g pu239f es re cm 6.6288672 1.4 0.3309000 1.0000000% 101 ru g pu239f 0.3319000 81mae2 36
104 tc g pu239f rc cu ge 7.5371582 11.2 6.4000000 0.5000000 138 cs g pu239f 5.0000000 69moo1 0
104 tc g pu239f rc cu 5.1836382 12.5 5.2000000 0.6500000 0 0.0000000 77gud1 0
104 pu241t cm cu 0.0000000 0.0 6.2900000 0.0000000 0 0.0000000 72sid1 0
104 pu241t cm cu 0.0000000 0.0 6.8300000 5.0000000% 0 0.0000000 77cro1 0
104 pu241t cm cu 0.0000000 0.0 6.7700000 0.3700000 0 0.0000000 73wal1 0
104 ru g pu241t ms cu 7.1240244 2.0 7.1570000 0.0460000 0 0.0000000 77mae1 0
104 ru g pu241t ms cu 6.7949526 4.8 6.8000000 0.3000000 106 ru g pu241t 6.0800000 70lis1 0
104 ru g pu241t ms cu 7.3786814 2.6 7.4700000 0.1200000 101 ru g pu241t 6.2800000 86chi1 0
104 ru g u233t ms cu 0.9665393 15.7 0.9600000 0.1500000 102 ru g u233t 2.3700000 54ste1 0
104 u233t cm cu 0.0000000 0.0 0.9500000 0.0000000 0 0.0000000 72sid1 0
104 u233t cm cu 0.0000000 0.0 1.0200000 0.0000000 0 0.0000000 73lam1 0
104 u233t cm cu 0.0000000 0.0 1.0300000 0.0330000 0 0.0000000 73wal1 0
104 ru g u233t ms cu 1.0680835 6.5 0.9400000 0.0600000 102 ru g u233t 2.1000000 61bid1 36
104 u233t cm cu 0.0000000 0.0 1.0200000 5.1000000% 0 0.0000000 77cro1 0
104 ru g u233t ms cu 0.9486885 1.8 0.9700000 0.0100000 101 ru g u233t 3.2200000 78shi1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special

nuclide	material	tech.	type	value	err.	value		nuclide	material	value	no.	treatment
104	u233t	ms	cu	0.9602953	2.0	0.9670000	0.0180000	0		0.0000000	80weh1	0
104 ru g	u233t	ms	cu	1.0327892	2.0	1.0400000	0.0100000	0		0.0000000	70lis1	0
104 ru g	u233t	ms	cu	0.9804283	1.7	0.9900000	0.0100000	101 ru g	u233t	3.1800000	86chi1	0
104 ru g	u233t	sp	fi ul	0.0000000	0.0	2.3400000	0.3990000	104	u233t	100.0000000	83qua1	0
104 ru g	u233t	sp	in ul	0.0000000	0.0	0.0230000	0.0040000	0		0.0000000	88qua1	0
104 tc g	u233t	rc	cu x4	0.0000000	0.0	1.6800000	0.1700000	0		0.0000000	77gud1	0
104 tc g	u233t	ms	in	0.0436949	20.5	0.0440000	0.0090000	0		0.0000000	80weh1	0
104 tc g	u233t	sp	fi	0.0630752	27.9	6.4800000	1.8020000	104	u233t	100.0000000	83qua1	0
104 tc g	u233t	sp	in	0.0645493	27.7	0.0650000	0.0180000	0		0.0000000	88qua1	0
104 mo g	u233t	ms	in	0.6762783	2.9	0.6810000	0.0200000	0		0.0000000	80weh1	0
104 mo g	u233t	sp	fi	0.7423990	5.4	76.2700000	3.6780000	104	u233t	100.0000000	83qua1	0
104 mo g	u233t	sp	in	0.7587028	6.3	0.7640000	0.0480000	0		0.0000000	88qua1	0
104 nb g	u233t	ms	in	0.1718005	8.1	0.1730000	0.0140000	0		0.0000000	80weh1	0
104 nb g	u233t	sp	fi	0.1286812	10.3	13.2200000	1.3310000	104	u233t	100.0000000	83qua1	0
104 nb g	u233t	sp	in	0.1310848	10.6	0.1320000	0.0140000	0		0.0000000	88qua1	0
104 zr g	u233t	ms	in ul	0.0000000	0.0	0.0690000	0.0080000	0		0.0000000	80weh1	0
104 zr g	u233t	sp	fi	0.0164502	25.1	1.6900000	0.4230000	104	u233t	100.0000000	83qua1	0
104 zr g	u233t	sp	in	0.0168821	23.5	0.0170000	0.0040000	0		0.0000000	88qua1	0
104	th232f	es	cu cm	0.0835632	30.0	0.0840000	0.0000000	0		0.0000000	65eng1	0
104	th232f	es	cu cm	0.1094280	30.0	0.1100000	0.0000000	0		0.0000000	72sid1	0
104	th232f	es	cu cm	0.0795840	30.0	0.0800000	0.0000000	0		0.0000000	73lam1	0
104	th232f	cm	cu	0.0000000	0.0	0.0791000	20.0000000%	0		0.0000000	77cro1	0
104	th232f	es	cu	0.0901289	10.0	0.0906000	10.0000000%	0		0.0000000	74mee0	0
105	u235t	cm	cu	0.0000000	0.0	0.8300000	0.0000000	0		0.0000000	72sid1	0
105	u235t	cm	cu	0.0000000	0.0	0.9000000	0.0000000	0		0.0000000	73lam1	0
105	u235t	cm	cu	0.0000000	0.0	0.9500000	0.2000000	0		0.0000000	73wal1	0
105	u235t	ms	cu	0.9579738	2.0	0.9570000	0.0150000	0		0.0000000	76dii1	0
105	u235t	sp	cu	0.9729890	5.0	0.9720000	0.0360000	0		1.0000000	76woh2	0
105	u235t	cm	cu	0.0000000	0.0	0.9830000	3.9000000%	0		0.0000000	77cro1	0
105 pd g	u235t	ms	cu	0.9667995	2.1	0.9410000	0.0170000	101 ru g	u235t	5.0400000	78shi1	0
105 rh g	u235t	rc	cu x4	0.0000000	0.0	1.4000000	0.0000000	99 mo g	u235t	6.2000000	56che1	0
105 rh g	u235t	rc	cu x4	0.0000000	0.0	1.6500000	0.0500000	111 ag g	u235t	0.0160000	56che1	0
105 rh g	u235t	cm	cu	0.0000000	0.0	0.9473000	4.0000000%	0		0.0000000	73net2	0
105 rh g	u235t	rc	cu	1.0210379	5.0	1.0200000	0.0500000	0		0.0000000	74bla1	0

105 rh g u235t rc cu 0.9369524 5.0 0.9360000 0.0380000 0 0.0000000 76thi1 0
105 rh g u235t rc cu 0.9309463 5.0 0.9300000 5.0000000% 0 0.0000000 81lau1 0
105 ru g u235t rc cu 0.9152021 60.0 0.9000000 0.0000000 140 ba g u235t 6.1000000 51sul1 0
105 ru g u235t rc cu 0.9509666 20.0 0.9500000 0.1900000 0 0.0000000 70gev1 36
105 ru g u235t rc cu x4 0.0000000 0.0 1.4200000 0.1300000 0 0.0000000 77gud1 0
105 ru g u235t rc cu rp 0.8757701 15.9 0.9900000 0.0000000 no. relative values = 1 75fet1
105 ru g u235t rc cu x4 0.0000000 0.0 0.8300000 0.2000000 140 ba g u235t 6.2000000 54wil1 0
105 tc g u235t sp fi 0.0579128 25.0 6.0000000 1.5000000 105 u235t 100.0000000 78str1 0
105 tc g u235t ms fi su 0.0000000 0.0 3.3000000 2.3000000 105 u235t 100.0000000 75cle2 0
105 tc g u235t ms in 0.0500509 34.0 0.0500000 0.0170000 0 0.0000000 79cle1 0
105 tc g u235t rc in x1 0.0000000 0.0 0.0027000 0.0065000 105 tc g u235t 1.0000000 78fas1 0
105 tc g u235t rc fi le 0.0289564 99.9 0.0300000 0.0320000 105 u235t 1.0000000 81vin1 0
105 tc g u235t sp fi 0.0511563 32.1 5.3000000 1.7000000 105 u235t 100.0000000 80lan1 0
105 tc g u235t rc fc x1 0.0000000 0.0 76.0000000 40.0000000% 105 rh g u235t 100.0000000 66bae1 36
105 tc g u235t cm in 0.0000000 0.0 0.0226000 61.0000000% 0 1.0000000 88wah1 0
105 tc g u235t rc fi su 0.0000000 0.0 0.0250000 0.0250000 105 u235t 1.0000000 76vin1 0
105 mo g u235t sp fi 0.7190837 5.2 74.5000000 1.4000000 105 u235t 100.0000000 78str1 0
105 mo g u235t ms fi su 0.0000000 0.0 77.7000000 3.8000000 105 u235t 100.0000000 75cle2 0
105 mo g u235t ms in 0.7537662 5.8 0.7530000 0.0440000 0 0.0000000 79cle1 0
105 mo g u235t rc fi 0.6756491 10.1 70.0000000 7.0000000 105 u235t 100.0000000 79wei1 0
105 mo g u235t sp fi 0.7576922 5.2 78.5000000 2.4000000 105 u235t 100.0000000 80lan1 0
105 mo g u235t cm in 0.0000000 0.0 0.7350000 3.0000000% 0 1.0000000 88wah1 0
105 mo g u235t rc fc 0.9488044 11.2 0.9830000 0.0950000 105 ru g u235t 1.0000000 69has1 36
105 nb g u235t sp fi 0.1467124 11.3 15.2000000 1.7000000 105 u235t 100.0000000 78str1 0
105 nb g u235t ms fi su 0.0000000 0.0 19.0000000 2.1000000 105 u235t 100.0000000 75cle2 0
105 nb g u235t ms in 0.1561587 13.5 0.1560000 0.0210000 0 0.0000000 79cle1 0
105 nb g u235t rc fc su 0.0000000 0.0 29.0000000 6.0000000 105 tc g u235t 100.0000000 77wei1 0
105 nb g u235t rc fc 0.2799118 20.7 29.0000000 6.0000000 105 u235t 100.0000000 79wei1 0
105 nb g u235t sp fi 0.1563645 12.4 16.2000000 2.0000000 105 u235t 100.0000000 80lan1 0
105 nb g u235t cm in 0.0000000 0.0 0.1756000 9.0000000% 0 1.0000000 88wah1 0
105 zr g u235t rc fc ul 0.0000000 0.0 2.0000000 0.0000000 105 u235t 100.0000000 79wei1 0
105 zr g u235t sp fi ul 0.0000000 0.0 4.3000000 0.6000000 105 u235t 100.0000000 78str1 0
105 zr g u235t rc fc ul 0.0000000 0.0 2.0000000 0.0000000 105 u235t 100.0000000 79wei1 0
105 zr g u235t cm in 0.0000000 0.0 0.0004512 85.0000000% 0 10.0000000 88wah1 0
105 u235f es cu cm 1.4175587 30.0 1.4500000 0.0000000 0 0.0000000 72sid1 0
105 u235f cm cu 0.0000000 0.0 1.3000000 18.4000000% 0 0.0000000 77cro1 0

105 u235f es re 1.1500389 10.1 1.2200000 10.0000000% 105 u235t 1.0000000 74mee4 0
105 u235f rc cu 1.2491453 5.1 1.3300000 0.0600000 140 ba g u235f 6.2200000 77bla1 0
105 u235f es cu 1.2931028 6.1 1.3200000 0.0800000 148 nd g u235f 1.6800000 74mae1 0
105 rh g u235f rc re 1.1099548 5.4 0.1900000 0.0100000 140 ba g u235f 1.0000000 73man1 0
105 rh g u235f es fi 0.0000001 30.1 0.0000518 0.0000000 105 u235f 1000.0000000 74wol1 40
105 rh g u235f cm cu x3 0.0000000 0.0 1.4000000 16.0000000% 0 0.0000000 73net2 0
105 rh g u235f rc cu 1.4279347 10.4 1.4500000 0.1500000 99 mo g u235f 5.9000000 60bon1 0
105 rh m u235f es fi 0.0000000 30.1 0.0000071 0.0000000 105 u235f 1000.0000000 74wol1 40
105 ru g u235f rc cu 0.9703102 5.1 0.9700000 3.0000000% 140 ba g u235f 5.8400000 72sch1 0
105 ru g u235f rc re 1.0799040 5.0 1.1880000 0.0320000 140 ba g u235t 0.0000000 75raj1 7
105 ru g u235f rc cu 1.1915157 7.5 1.2640000 0.0210000 105 ru g u235t 1.0000000 77deb1 0
105 ru g u235f rc cu 1.2220334 5.0 1.2500000 0.0600000 0 0.0000000 81mar1 0
105 ru g u235f rc cu 1.3882299 9.2 1.4200000 0.1300000 0 0.0000000 77gud1 0
105 ru g u235f es cu 0.9424321 99.9 0.9640000 6.0000000 0 0.0000000 89rid1 0
105 u235he cm cu es 0.0000000 0.0 1.6440000 0.0000000 0 0.0000000 63wea1 0
105 u235he es cu 1.7963109 21.5 1.7900000 20.0000000% 113 u235he 1.0800000 74mee6 0
105 u235he cm cu 0.0000000 0.0 1.7000000 20.7000000% 0 0.0000000 77cro1 0
105 u235he es cu 1.8765479 10.0 1.8900000 10.0000000% 0 0.0000000 74mee8 0
105 rh g u235he cm cu 0.0000000 0.0 2.0900000 0.0000000 0 0.0000000 69gun2 0
105 rh g u235he rc re 1.6497586 11.2 0.3700000 0.0400000 140 ba g u235he 1.0000000 73man1 0
105 rh g u235he cm cu 0.0000000 0.0 1.6700000 6.0000000% 0 0.0000000 73net2 0
105 rh g u235he es cu cm 1.6879002 30.0 1.7000000 0.0000000 0 0.0000000 60kat1 0
105 rh g u235he es fi 0.0000034 30.3 0.0000018 0.0000000 105 u235he 1.0000000 74wol1 40
105 rh g u235he rc cu 1.9397843 5.0 2.4100000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
105 rh g u235he rc re su 0.0000000 0.0 2.4100000 0.1400000 99 mo g u235t 0.0000000 56for1 7
105 rh g u235he rc cu x4 0.0000000 0.0 2.9500000 0.3000000 99 mo g u235he 5.6500000 60bon1 0
105 rh m u235he es fi 0.0000003 30.3 0.0000002 0.0000000 105 u235he 1.0000000 74wol1 40
105 ru g u235he rc re 1.4278961 30.1 0.2800000 0.0000000 99 mo g u235he 1.0000000 58pro1 36
105 ru g u235he cm cu 0.0000000 0.0 1.4700000 0.0000000 0 0.0000000 69gun2 0
105 u238f es cu cm 3.6877029 30.0 3.7000000 0.0000000 0 0.0000000 64wal1 0
105 u238f es cu cm 3.2890323 30.0 3.3000000 0.0000000 0 0.0000000 72sid1 0
105 pd g u238f es fi 0.0000003 30.0 0.0000825 0.0000000 105 u238f 1000.0000000 74wol1 0
105 u238f cm cu 0.0000000 0.0 3.4800000 11.0000000% 0 0.0000000 77cro1 0
105 u238f rc cu 3.9021412 5.0 4.1500000 0.0700000 140 ba g u238f 6.1600000 77bla1 0
105 u238f es cu 3.7958856 7.8 3.7500000 0.2900000 148 nd g u238f 2.0800000 74mae1 0
105 u238f rc cu 3.6976697 5.0 3.7100000 0.1200000 0 0.0000000 85li 1 0

105 rh g u238f rc re 4.4019913 5.0 0.7600000 0.0300000 140 ba g u238f 1.0000000 73man1 0
105 rh g u238f cm cu 0.0000000 0.0 3.2300000 16.0000000% 0 0.0000000 73net2 0
105 rh g u238f rc cu x4 0.0000000 0.0 2.1600000 0.3100000 0 0.0000000 75har1 0
105 rh g u238f rc cu 3.9599983 6.8 4.1500000 0.2800000 140 ba g u238f 6.0700000 77har1 0
105 rh g u238f rc cu 3.4883676 11.4 3.5000000 0.4000000 0 0.0000000 60bon1 0
105 ru g u238f rc cu x4 0.0000000 0.0 2.4000000 0.0000000 0 0.0000000 68bel1 0
105 ru g u238f rc cu 4.4252435 15.0 4.4400000 0.0000000 0 0.0000000 75fly4 0
105 ru g u238f rc cu 4.4950108 15.0 4.5100000 0.0000000 0 0.0000000 75fly4 0
105 ru g u238f rc cu 3.7050253 5.0 3.8700000 0.1000000 140 ba g u238f 6.0500000 78deb1 0
105 ru g u238f rc cu 3.8869258 5.0 4.0600000 0.1900000 140 ba g u238f 6.0500000 78deb1 0
105 ru g u238f es cu 4.3156091 2.8 4.3300000 0.1200000 0 0.0000000 78gin1 0
105 ru g u238f rc cu 2.7906941 32.0 2.8000000 32.0000000% 0 0.0000000 77gud1 36
105 ru g u238f rc cu 4.5049776 5.3 4.5200000 0.2400000 0 0.0000000 78nag1 0
105 ru g u238f rc cu 3.7061352 5.7 3.8100000 0.2100000 99 mo g u238f 6.3200000 70lyl1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

105 ru g u238f rc cu 4.3355426 8.3 4.3500000 0.3600000 0 0.0000000 85chi1 0
105 ru g u238f rc cu 3.0597967 27.0 3.0700000 0.8300000 0 0.0000000 84gud1 0
105 ru g u238f rc cu 4.4451770 9.4 4.4600000 9.4000000% 0 0.0000000 87chu1 0
105 ru g u238f rc cu 3.3089658 11.4 3.3200000 11.4000000% 0 0.0000000 88afa1 0
105 ru g u238f rc cu 4.4352102 10.6 4.4500000 10.6000000% 0 0.0000000 88afa1 0
105 ru g u238f rc cu 3.6378691 11.2 3.6500000 11.2000000% 0 0.0000000 88afa1 0
105 ru g u238f rc cu 4.3554761 9.4 4.3700000 9.4000000% 0 0.0000000 88afa1 0
105 tc g u238f rc cu 3.1793979 11.3 3.1900000 11.3000000% 0 0.0000000 87chu1 0
105 u238he es cu 3.3765246 30.0 3.3810000 0.0000000 0 0.0000000 63wea1 0
105 u238he cm cu su 0.0000000 0.0 2.9700000 0.0700000 0 0.0000000 73dar1 0
105 u238he es cu 3.1418357 15.0 3.1460000 15.0000000% 0 0.0000000 74mee9 0
105 u238he es cu 2.9960289 4.3 3.0000000 4.3000000% 0 0.0000000 77cro1 0
105 rh g u238he rc re 3.5792351 10.0 3.9800000 0.0800000 99 mo g u235t 0.0000000 56for1 7
105 rh g u238he cm cu 0.0000000 0.0 3.2300000 0.0000000 0 0.0000000 69gun2 0
105 rh g u238he rc cu su 0.0000000 0.0 3.8500000 0.1800000 0 0.0000000 73dar4 0
105 rh g u238he rc re 3.4036985 5.2 0.7400000 0.0300000 140 ba g u238he 1.0000000 73man1 0
105 rh g u238he cm cu 0.0000000 0.0 2.8000000 6.1000000% 0 0.0000000 73net2 0
105 rh g u238he rc cu 3.1158701 5.0 3.1200000 0.0800000 0 0.0000000 75dar1 0

105	rh g	u238he	cm	cu		0.0000000	0.0	3.4000000	0.0000000	0			0.0000000	60kat1	0
105	rh g	u238he	rc	cu		3.5792351	5.0	3.9800000	3.0000000%	99 mo g	u235t		0.0000000	76for1	7
105	rh g	u238he	es	fi		0.0000007	30.0	0.0000231	0.0000000	105	u238he		100.0000000	74wol1	40
105	rh g	u238he	rc	cu		2.9506608	13.2	2.9000000	0.3800000	99 mo g	u238he		5.6000000	75ada1	0
105	rh g	u238he	rc	cu		3.2097157	11.9	3.2100000	0.3800000	140 ba g	u238he		4.6000000	75cav1	0
105	rh g	u238he	rc	cu	su	0.0000000	0.0	3.2100000	0.3800000	140 ba g	u238he		4.6000000	74bla1	0
105	rh g	u238he	rc	cu		3.3954994	6.0	3.4000000	6.0000000%	0			0.0000000	81lau1	0
105	rh g	u238he	rc	cu		2.8927433	10.1	3.3000000	0.3000000	99 mo g	u238he		6.5000000	60bon1	0
105	rh g	u238he	rc	cu		3.1258568	5.0	3.1300000	0.1000000	0			0.0000000	85liu1	0
105	rh g	u238he	rc	cu		3.4596935	6.0	3.4600000	0.2000000	140 ba g	u238he		4.6000000	80zhe1	0
105	rh g	u238he	rc	cu		2.9860422	6.4	2.9900000	0.1900000	0			0.0000000	75dar1	0
105	rh g	u238he	rc	cu		3.1458304	5.0	3.1500000	0.1400000	0			0.0000000	75dar1	0
105	rh m	u238he	es	fi		0.0000001	30.0	0.0000035	0.0000000	105	u238he		100.0000000	74wol1	40
105	ru g	u238he	rc	re	x4	0.0000000	0.0	0.3900000	0.0300000	99 mo g	u238he		1.0000000	58pro1	0
105	ru g	u238he	rc	cu	x4	0.0000000	0.0	2.6500000	0.1600000	139 ba g	u238he		4.9200000	64jam1	0
105	ru g	u238he	rc	cu		3.0524077	5.2	3.0000000	0.1000000	99 mo g	u238he		5.6000000	70gev1	0
105	ru g	u238he	rc	cu		3.7116132	11.4	3.7000000	0.4200000	99 mo g	u238he		5.6800000	71bir2	0
105	ru g	u238he	rc	cu	su	0.0000000	0.0	3.7900000	0.4000000	0			0.0000000	71bla1	0
105	ru g	u238he	rc	cu	su	0.0000000	0.0	3.6200000	0.4000000	0			0.0000000	73dar2	0
105	ru g	u238he	rc	cu	su	0.0000000	0.0	3.7800000	0.1500000	0			0.0000000	73dar4	0
105	ru g	u238he	rc	cu	su	0.0000000	0.0	3.8100000	0.1200000	140 ba g	u238he		4.4800000	74dar1	0
105	ru g	u238he	rc	cu		3.1158701	5.0	3.1200000	0.0800000	0			0.0000000	75dar1	0
105	ru g	u238he	rc	cu		3.4296962	17.3	3.4300000	0.5900000	140 ba g	u238he		4.6000000	76raj1	0
105	ru g	u238he	cm	cu	x3	0.0000000	0.0	2.3000000	0.0000000	0			0.0000000	60kat1	0
105	ru g	u238he	rc	cu		3.5696838	9.1	3.5700000	0.3200000	140 ba g	u238he		4.6000000	75cav1	0
105	ru g	u238he	rc	cu	su	0.0000000	0.0	3.5700000	0.3200000	140 ba g	u238he		4.6000000	74bla1	0
105	ru g	u238he	rc	cu		3.0060157	5.0	3.0100000	0.1300000	0			0.0000000	75dar1	0
105	ru g	u238he	rc	cu		3.4454333	5.5	3.4500000	0.1900000	0			0.0000000	75dar1	0
105	ru g	u238he	rc	re	x4	0.0000000	0.0	0.4200000	0.0300000	97 zr g	u238he		1.0000000	66bro1	0
105	ru g	u238he	cm	cu	x3	0.0000000	0.0	2.3000000	0.0000000	0			0.0000000	69gun2	0
105		pu239t	cm	cu	x3	0.0000000	0.0	5.5100000	0.0000000	0			0.0000000	72sid1	0
105		pu239t	cm	cu	x3	0.0000000	0.0	5.4700000	0.0000000	0			0.0000000	73lam1	0
105		pu239t	cm	cu		0.0000000	0.0	5.4700000	0.1600000	0			0.0000000	73wal1	0
105		pu239t	cm	cu		0.0000000	0.0	5.5400000	27.8000000%	0			0.0000000	77cro1	0
105	pd g	pu239t	ms	cu		5.8453057	4.5	5.7300000	0.2300000	106 ru g	pu239t		4.2800000	78shi1	0
105	rh g	pu239t	rc	cu	x4	0.0000000	0.0	3.7000000	0.0000000	140 ba g	pu239t		5.3600000	51ste3	0

105 rh g pu239t rc cu 5.4908450 5.0 5.4700000 0.0600000 0 0.0000000 65mar1 0
105 rh g pu239t cm cu x3 0.0000000 0.0 5.3900000 4.0000000% 0 0.0000000 73net2 0
105 rh g pu239t rc cu 5.7518358 5.0 5.7300000 0.2200000 0 0.0000000 80dic1 0
105 ru g pu239t rc cu 5.3932310 20.1 5.5000000 20.0000000% 97 zr g pu239t 5.4600000 74jen1 0
105 ru g pu239t rc cu 5.3201971 5.0 5.3000000 0.1100000 0 0.0000000 77gud1 0
105 ru g pu239t rc cu 5.9425598 5.0 5.9200000 0.2900000 0 0.0000000 80dic1 0
105 ru g pu239t rc cu 5.4406544 6.3 5.4200000 6.3000000% 0 0.0000000 80ram1 0
105 ru g pu239t sp fi 0.0453228 99.9 0.0080000 0.0200000 105 pu239t 1.0000000 84sch1 36
105 ru g pu239t cm in 0.0000000 0.0 0.0688600 81.0000000% 0 1.0000000 88wah1 0
105 ru g pu239t rc cu x4 0.0000000 0.0 2.7400000 0.0000000 0 0.0000000 63kir1 0
105 tc g pu239t rc fc x1 0.0000000 0.0 72.0000000 8.0000000% 105 rh g pu239t 100.0000000 66bae1 0
105 tc g pu239t rc in 0.9103712 14.2 0.1620000 0.0140000 105 tc g pu239t 1.0000000 78fas1 0
105 tc g pu239t rc cu 5.7518358 11.0 5.7300000 0.6300000 0 0.0000000 81dic1 0
105 tc g pu239t rc fi 1.4956536 8.2 0.2640000 0.0210000 105 pu239t 1.0000000 81vin1 0
105 tc g pu239t sp fi 1.8525710 6.3 0.3270000 6.0000000% 105 pu239t 1.0000000 84sch1 36
105 tc g pu239t rc in 1.0901385 23.1 1.0860000 0.2510000 0 0.0000000 86sri1 0
105 tc g pu239t cm in 0.0000000 0.0 1.5080000 18.0000000% 0 1.0000000 88wah1 0
105 tc g pu239t rc fi su 0.0000000 0.0 0.2800000 0.0300000 105 pu239t 1.0000000 76vin1 0
105 tc g pu239t rc fi 1.3653505 18.3 0.2410000 0.0439000 105 pu239t 1.0000000 87sri1 0
105 tc g pu239t es in cm 1.2658054 32.0 1.2610000 32.0000000% 0 0.0000000 74mee1 0
105 tc g pu239t es in cm 1.5137467 18.0 1.5080000 18.0000000% 0 0.0000000 88wah1 0
105 tc g pu239t es in cm 1.5990706 11.0 1.5930000 11.0000000% 0 0.0000000 89rid1 0
105 tc g pu239t es fi cm 1.6072611 8.1 0.2837000 7.8000000% 105 pu239t 1.0000000 91jam2 0
105 mo g pu239t sp fi 3.2689096 5.4 0.5770000 5.0000000% 105 pu239t 1.0000000 84sch1 36
105 mo g pu239t cm in 0.0000000 0.0 3.4810000 5.0000000% 0 1.0000000 88wah1 0
105 nb g pu239t sp fi 0.4928859 23.1 0.0870000 23.0000000% 105 pu239t 1.0000000 84sch1 36
105 nb g pu239t cm in 0.0000000 0.0 0.5164000 23.0000000% 0 1.0000000 88wah1 0
105 pu239f es cu 5.2332940 10.0 5.3000000 10.0000000% 0 0.0000000 65and1 36
105 pu239f es cu cm 5.1345526 30.0 5.2000000 0.0000000 0 0.0000000 72sid1 0
105 pu239f cm cu 0.0000000 0.0 5.5100000 7.0000000% 0 0.0000000 77cro1 0
105 pu239f es cu 5.4889148 7.1 5.5340000 0.3950000 148 nd g pu239f 1.6540000 77mae1 0
105 pu239f es cu 5.4465755 7.3 5.5160000 0.4000000 0 0.0000000 77mae1 0
105 pu239f es re 4.8453847 30.0 4.6200000 0.0000000 106 pu239f 4.1100000 70lis1 0
105 pu239f es cu su 0.0000000 0.0 5.4300000 0.3900000 148 nd g pu239f 1.6500000 74mae1 0
105 rh g pu239f cm cu 0.0000000 0.0 5.1250000 16.0000000% 0 0.0000000 73net2 0
105 rh g pu239f rc cu 5.1543009 5.0 5.2200000 4.9000000% 0 0.0000000 81lau1 0

105 ru g pu239f rc cu 6.0273859 25.0 5.6800000 25.0000000% 97 zr g pu239f 4.9000000 74jen1 0
105 ru g pu239f rc re 5.5596773 5.0 6.7980000 0.1440000 140 ba g u235t 0.0000000 75raj1 7
105 ru g pu239f rc cu 5.2332940 5.0 5.3000000 0.1100000 0 0.0000000 77gud1 0
105 pu241t cm cu 0.0000000 0.0 5.8000000 0.0000000 0 0.0000000 72sid1 0
105 pu241t es cu 6.7060174 10.4 6.7500000 0.7000000 0 0.0000000 73wal1 0
105 pu241t cm cu 0.0000000 0.0 6.1600000 5.0000000% 0 0.0000000 77cro1 0
105 pu241t cm cu 0.0000000 0.0 5.8200000 0.0000000 0 0.0000000 79wal1 0
105 pu241t es cu 6.5947472 5.0 6.6380000 0.3350000 0 0.0000000 77mae1 0
105 rh g pu241t rc cu 6.0403831 5.0 6.0800000 0.1600000 0 0.0000000 73sko2 0
105 rh g pu241t rc cu 5.9112302 5.0 5.9500000 0.2900000 0 0.0000000 79dic1 0
105 ru g pu241t rc cu 5.9609044 30.0 6.0000000 0.0000000 0 0.0000000 63kir1 0
105 tc g pu241t rc fc 5.6059231 5.7 0.9290000 0.0340000 105 pu241t 1.0000000 87gos1 0
105 mo g pu241t rc fc x1 0.0000000 0.0 0.4990000 0.0110000 105 pu241t 1.0000000 87gos1 0
105 u233t cm cu 0.0000000 0.0 0.5400000 0.0000000 0 0.0000000 73lam1 0
105 u233t es cu 0.5248031 18.9 0.5300000 0.1000000 0 0.0000000 73wal1 0
105 u233t cm cu 0.0000000 0.0 0.5490000 20.0000000% 0 0.0000000 77cro1 0
105 u233t cm cu x3 0.0000000 0.0 0.3500000 0.0000000 0 0.0000000 72sid1 0
105 pd g u233t ms cu 0.5080797 3.4 0.5210000 0.0160000 101 ru g u233t 3.2200000 78shi1 0
105 u233t ms cu 0.4871757 2.6 0.4920000 0.0130000 0 0.0000000 80weh1 0
105 u233t es cu 0.5010385 8.0 0.5060000 8.0000000% 0 0.0000000 74mee6 0
105 rh g u233t cm cu 0.0000000 0.0 0.4142000 32.0000000% 0 0.0000000 73net2 0
105 rh g u233t rc cu x1 0.0000000 0.0 0.1460000 0.0370000 0 0.0000000 60san1 0
105 ru g u233t ms in ul 0.0000000 0.0 0.0140000 0.0110000 0 0.0000000 80weh1 0
105 ru g u233t sp fi ul 0.0000000 0.0 2.2800000 0.4000000 105 u233t 100.0000000 83qua1 0
105 ru g u233t sp in 0.0118823 16.7 0.0120000 0.0020000 0 0.0000000 88qua1 0
105 tc g u233t ms in 0.0485195 28.6 0.0490000 0.0140000 0 0.0000000 80weh1 0
105 tc g u233t sp fi 0.0603362 15.3 12.2900000 1.8420000 105 u233t 100.0000000 83qua1 0
105 tc g u233t sp in 0.0643626 16.9 0.0650000 0.0110000 0 0.0000000 88qua1 0
105 mo g u233t ms in 0.3525093 5.1 0.3560000 0.0180000 0 0.0000000 80weh1 0
105 mo g u233t sp fi 0.3665337 5.9 74.6600000 3.8970000 105 u233t 100.0000000 83qua1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

105 mo g u233t sp in 0.3901367 8.6 0.3940000 0.0340000 0 0.0000000 88qua1 0
105 nb g u233t ms in 0.0722842 12.3 0.0730000 0.0090000 0 0.0000000 80weh1 0

105	nb	g	u233t	sp	fi		0.0512048	22.9	10.4300000	2.3710000	105		u233t	100.0000000	83qua1	0
105	nb	g	u233t	sp	in		0.0544607	23.6	0.0550000	0.0130000	0			0.0000000	88qua1	0
105	zr	g	u233t	sp	fi		0.0016692	12.4	0.3400000	0.0410000	105		u233t	100.0000000	83qua1	0
105	zr	g	u233t	sp	in		0.0019804	10.0	0.0020000	0.0002000	0			0.0000000	88qua1	0
105			th232f	cm	cu		0.0000000	0.0	0.0500000	0.0000000	0			0.0000000	65eng1	0
105			th232f	cm	cu		0.0000000	0.0	0.0700000	0.0000000	0			0.0000000	72sid1	0
105			th232f	cm	cu		0.0000000	0.0	0.0500000	0.0000000	0			0.0000000	73lam1	0
105			th232f	cm	cu		0.0000000	0.0	0.0700000	0.0000000	0			0.0000000	74lam1	0
105			th232f	cm	cu		0.0000000	0.0	0.0385000	19.2000000%	0			0.0000000	77cro1	0
105			th232f	es	cu		0.0460401	10.0	0.0461000	10.0000000%	0			0.0000000	74mee0	0
105	rh	g	th232f	rc	cu	x4	0.0000000	0.0	0.0700000	0.0000000	89	sr g	th232f	6.0000000	50nid1	0
105	rh	g	th232f	rc	cu	x4	0.0000000	0.0	0.0700000	0.0200000	89	sr g	u235t	0.9000000	51tur1	22
105	rh	g	th232f	rc	re		0.0334128	10.0	0.0720000	0.0030000	99	mo g	u235t	0.0000000	63iye1	7
105	rh	g	th232f	cm	cu		0.0000000	0.0	0.0363700	8.0000000%	0			0.0000000	73net2	0
105	rh	g	th232f	cm	cu		0.0000000	0.0	0.0700000	0.0000000	0			0.0000000	60kat1	0
105	rh	m	th232f	rc	cu		0.0218655	28.6	0.0533000	28.6000000%	89	sr g	u235t	0.0000000	51tur1	7
105	ru	g	th232f	rc	cu		0.0520790	5.7	0.0490000	0.0010000	140	ba g	th232f	7.4000000	73cha1	0
105	ru	g	th232f	rc	re		0.0547598	5.0	0.1180000	0.0020000	99	mo g	u235t	0.0000000	81ert1	7
105	ru	g	th232f	cm	cu		0.0000000	0.0	0.0509000	0.0047000	0			0.0000000	81ert1	0
106			u235t	es	cu		0.3802734	30.0	0.3800000	0.0000000	0			0.0000000	72sid1	0
106			u235t	cm	cu		0.0000000	0.0	0.3870000	0.0000000	0			0.0000000	73lam1	0
106			u235t	cm	cu		0.0000000	0.0	0.3900000	0.0060000	0			0.0000000	73wal1	0
106			u235t	ms	cu		0.4363137	2.3	0.4360000	0.0100000	0			0.0000000	76dii1	0
106			u235t	sp	cu		0.4393159	5.0	0.4390000	0.0220000	0			1.0000000	76woh2	0
106			u235t	cm	cu		0.0000000	0.0	0.3940000	6.6000000%	0			0.0000000	77cro1	0
106	rh	g	u235t	rc	cu		0.3562561	16.9	0.3560000	0.0600000	0			0.0000000	76thi1	0
106	ru	g	u235t	rc	cu		0.3750719	20.0	0.3750000	10.0000000%	140	ba g	u235t	6.2000000	53har1	0
106	ru	g	u235t	rc	cu		0.3877178	20.0	0.3850000	10.0000000%	137	cs g	u235t	6.1500000	53har1	0
106	ru	g	u235t	ms	cu		0.3802734	6.0	0.3800000	0.0000000	0			0.0000000	55gle1	0
106	ru	g	u235t	rc	cu		0.4012885	5.0	0.4010000	0.0190000	0			0.0000000	71mcl1	0
106	ru	g	u235t	rc	cu		0.4104702	5.0	0.3990000	0.0060000	144	ce g	u235t	5.3500000	72deb1	0
106	ru	g	u235t	cm	cu		0.0000000	0.0	0.3910000	2.0000000%	0			0.0000000	73net2	0
106	ru	g	u235t	ms	cu		0.3861938	1.3	0.3760000	0.0030000	101	ru g	u235t	5.0400000	78shi1	0
106	ru	g	u235t	sp	fi	ul	0.0000000	0.0	0.4000000	4.5000000	106		u235t	100.0000000	78str1	0
106	ru	g	u235t	rc	cu		0.4263059	60.0	0.5200000	0.0000000	103	ru g	u235t	3.7000000	51gle2	0
106	ru	g	u235t	ms	cu		0.3892799	4.0	0.3890000	4.0000000%	0			0.0000000	70lis1	36

106	ru	g	u235t	ms	cu		0.4603310	8.7	0.4600000	0.0400000	0						0.0000000	78mae1	0
106	ru	g	u235t	ms	cu		0.4473216	9.8	0.4470000	0.0440000	0						0.0000000	78mae1	0
106	ru	g	u235t	ms	cu		0.4733403	16.5	0.4730000	0.0780000	0						0.0000000	78mae1	0
106	tc	g	u235t	ms	fi	su	0.0000000	0.0	5.8000000	3.4000000	106						u235t	100.0000000	75cle2	0
106	tc	g	u235t	ms	in		0.0290209	44.8	0.0290000	0.0130000	0						0.0000000	79cle1	0
106	tc	g	u235t	rc	in	x1	0.0000000	0.0	0.0530000	0.0080000	106	tc	g				u235t	1.0000000	78fas1	0
106	tc	g	u235t	sp	fi		0.0269249	40.3	6.7000000	2.7000000	106						u235t	100.0000000	80lan1	0
106	tc	g	u235t	sp	fi	x4	0.0000000	0.0	20.0000000	4.0000000	106						u235t	100.0000000	78str1	0
106	tc	g	u235t	cm	in		0.0000000	0.0	0.0239900	14.0000000%	0						1.0000000	88wah1	0
106	mo	g	u235t	ms	fi	su	0.0000000	0.0	90.5000000	5.3000000	106						u235t	100.0000000	75cle2	0
106	mo	g	u235t	ms	in		0.3862777	7.8	0.3860000	0.0300000	0						0.0000000	79cle1	0
106	mo	g	u235t	sp	fi		0.3592661	5.1	89.4000000	3.1000000	106						u235t	100.0000000	80lan1	0
106	mo	g	u235t	sp	fi	x4	0.0000000	0.0	69.5000000	4.3000000	106						u235t	100.0000000	78str1	0
106	mo	g	u235t	cm	in		0.0000000	0.0	0.3444000	4.0000000%	0						1.0000000	88wah1	0
106	mo	g	u235t	rc	fc		0.4279848	8.8	1.0650000	0.0930000	106	ru	g				u235t	1.0000000	69has1	0
106	nb	g	u235t	ms	fi	su	0.0000000	0.0	3.7000000	1.9000000	106						u235t	100.0000000	75cle2	0
106	nb	g	u235t	ms	in		0.0170122	41.2	0.0170000	0.0070000	0						0.0000000	79cle1	0
106	nb	g	u235t	sp	fi		0.0156727	43.6	3.9000000	1.7000000	106						u235t	100.0000000	80lan1	0
106	nb	g	u235t	sp	fi	ul	0.0000000	0.0	10.0000000	1.7000000	106						u235t	100.0000000	78str1	0
106	nb	g	u235t	cm	in		0.0000000	0.0	0.0160500	43.0000000%	0						1.0000000	88wah1	0
106			u235f	es	cu		0.5821544	30.0	0.6100000	0.0000000	148	nd	g				u235f	1.7500000	72sid1	0
106			u235f	cm	cu		0.0000000	0.0	0.4500000	27.4000000%	0						0.0000000	77cro1	0
106			u235f	es	re		0.6095513	10.0	1.5300000	10.0000000%	106						u235t	1.0000000	74mee4	0
106			u235f	rc	cu		0.5432680	5.4	0.5700000	0.0300000	140	ba	g				u235f	6.2200000	77bla1	0
106	ru	g	u235f	rc	cu	x4	0.0000000	0.0	0.4250000	5.0000000%	0						0.0000000	73cro3	0
106	ru	g	u235f	cm	cu	x3	0.0000000	0.0	0.9737000	16.0000000%	0						0.0000000	73net2	0
106	ru	g	u235f	rc	cu	nr	0.6541068	17.0	0.7100000	0.1200000	99	mo	g				u235f	6.4000000	59bak1	0
106	ru	g	u235f	rc	re		0.5488529	10.0	0.1610000	0.0160000	140	ba	g				u235f	1.7390000	72rid1	0
106	ru	g	u235f	rc	cu	x4	0.0000000	0.0	1.1900000	0.1400000	99	mo	g				u235f	5.9000000	60bon1	0
106	ru	g	u235f	ms	re		0.5311744	1.5	0.0445000	0.0001000	101	ru	g				u235f	0.4259000	81mae1	0
106	ru	g	u235f	ms	re		0.5268502	1.2	0.0440000	0.0003000	101	ru	g				u235t	0.4286000	81mae1	0
106	ru	g	u235f	ms	re		0.5311051	1.4	0.0439000	0.0004000	101	ru	g				u235t	0.4242000	81mae1	0
106	ru	g	u235f	ms	cu		0.5437815	4.6	0.5470000	0.0250000	148	nd	g				u235f	1.6800000	74mae1	0
106	ru	g	u235f	rc	cu		0.5476336	10.0	0.5520000	10.0000000%	0						0.0000000	81lau1	0
106	ru	g	u235f	rc	cu		0.6329533	7.1	0.6380000	0.0450000	0						0.0000000	80chi1	0
106			u235he	cm	cu	es	0.0000000	0.0	1.5270000	0.0000000	0						0.0000000	63wea1	0

106		u235he	es	cu		1.6457820	21.5	1.6400000	20.0000000%	113		u235he	1.0800000	74mee6	0
106		u235he	cm	cu		0.0000000	0.0	1.7300000	17.6000000%	0			0.0000000	77cro1	0
106		u235he	es	cu		1.5588255	10.0	1.5700000	10.0000000%	0			0.0000000	74mee8	0
106	rh g	u235he	es	cu	cm	1.5687543	30.0	1.5800000	0.0000000	0			0.0000000	60kat1	0
106	ru g	u235he	rc	re		1.6291490	10.0	4.8600000	0.0400000	99 mo g		u235t	0.0000000	56for1	7
106	ru g	u235he	cm	cu		0.0000000	0.0	1.7600000	0.0000000	0			0.0000000	69gun2	0
106	ru g	u235he	es	cu	cm	1.4694661	6.0	1.4800000	6.0000000%	0			0.0000000	73net2	0
106	ru g	u235he	rc	cu		1.6291490	5.0	4.8600000	3.0000000%	99 mo g		u235t	0.0000000	76for1	7
106	ru g	u235he	rc	cu	x4	0.0000000	0.0	2.3000000	0.2000000	99 mo g		u235he	5.6500000	60bon1	0
106	ru g	u235he	rc	cu		1.8269038	7.6	1.8400000	0.1400000	0			0.0000000	84chi1	0
106		u238f	cm	cu	es	0.0000000	0.0	2.9000000	0.0000000	0			0.0000000	64wal1	0
106		u238f	es	cu		2.7906941	30.0	2.8000000	0.0000000	0			0.0000000	72sid1	0
106		u238f	cm	cu		0.0000000	0.0	2.8600000	7.7000000%	0			0.0000000	77cro1	0
106		u238f	rc	cu		2.4447149	5.0	2.6000000	0.0400000	140 ba g		u238f	6.1600000	77bla1	0
106		u238f	rc	cu		2.6710929	6.7	2.6800000	0.1800000	0			0.0000000	85li 1	0
106	ru g	u238f	rc	cu		2.5637137	60.0	2.7000000	0.0000000	140 ba g		u238f	6.1000000	51eng3	0
106	ru g	u238f	rc	cu		2.9468548	20.0	2.9000000	0.3000000	140 ba g		u238f	5.7000000	54kel1	0
106	ru g	u238f	cm	cu		0.0000000	0.0	2.8350000	8.0000000%	0			0.0000000	73net2	0
106	ru g	u238f	cm	cu		0.0000000	0.0	2.7000000	0.0000000	0			0.0000000	60kat1	0
106	ru g	u238f	rc	cu		1.9656859	12.6	2.0600000	0.2600000	140 ba g		u238f	6.0700000	77har1	0
106	ru g	u238f	es	cu		2.9601291	7.1	2.9700000	0.2100000	0			0.0000000	78gin1	0
106	ru g	u238f	rc	cu		2.8704282	10.1	2.8800000	0.2900000	0			0.0000000	78nag1	0
106	ru g	u238f	rc	re		2.8616871	10.0	1.7490000	0.1750000	140 ba g		u238f	3.5400000	72rid1	0
106	ru g	u238f	rc	cu		2.5029962	10.6	2.8500000	0.3000000	99 mo g		u238f	7.0000000	60bon1	0
106	ru g	u238f	ms	cu		2.4696988	1.5	0.1224000	0.0004000	101 ru g		u238f	0.3067000	81mae1	0
106	ru g	u238f	ms	cu		2.5108720	1.5	0.1244000	0.0005000	101 ru g		u238f	0.3066000	81mae1	0
106	ru g	u238f	ms	cu		2.3738408	1.9	0.1188000	0.0015000	101 ru g		u238f	0.3097000	81mae1	0
106	ru g	u238f	ms	cu		2.5103457	6.5	2.4800000	0.1600000	148 nd g		u238f	2.0800000	74mae1	0
106	ru g	u238f	rc	cu		2.6910264	7.4	2.7000000	0.2000000	0			0.0000000	85chi1	0
106	ru g	u238f	rc	cu		2.6710929	5.0	2.6800000	0.1100000	0			0.0000000	84chi3	0
106		u238he	cm	cu	es	0.0000000	0.0	2.4750000	0.0000000	0			0.0000000	63wea1	0
106		u238he	cm	cu	su	0.0000000	0.0	2.1400000	0.2600000	0			0.0000000	73dar1	0
106		u238he	es	cu		2.3527548	15.0	2.3590000	15.0000000%	0			0.0000000	74mee9	0
106		u238he	cm	cu		0.0000000	0.0	2.4100000	13.1000000%	0			0.0000000	77cro1	0
106	ru g	u238he	cm	cu		0.0000000	0.0	2.4000000	0.0000000	0			0.0000000	69gun2	0
106	ru g	u238he	es	cu	cm	2.4335404	3.9	2.4400000	3.9000000%	0			0.0000000	73net2	0

106 ru g u238he rc cu 2.5332756 5.9 2.5400000 0.1500000 0 0.0000000 75dar1 0
106 ru g u238he rc cu 2.1010248 12.6 2.4000000 0.3000000 99 mo g u238he 6.5000000 60bon1 0
106 ru g u238he rc cu 2.5033550 5.2 2.5100000 0.1300000 0 0.0000000 80chi2 0
106 pu239t es cu 4.4669580 30.0 4.4500000 0.0000000 0 0.0000000 72sid1 0
106 pu239t cm cu x3 0.0000000 0.0 4.6400000 0.0000000 0 0.0000000 73lam1 0
106 pu239t cm cu 0.0000000 0.0 4.4500000 0.2200000 0 0.0000000 73wal1 0
106 pu239t cm cu 0.0000000 0.0 4.2900000 3.8000000% 0 0.0000000 77cro1 0
106 rh g pu239t rc in lt 0.0002224 30.0 0.0004700 0.0000000 140 ba g pu239t 5.6800000 61cro2 37
106 rh g pu239t sp fi ul 0.0000000 0.0 0.0010000 0.0200000 106 pu239t 1.0000000 84sch1 37
106 rh m pu239t rc in lt 0.0002224 30.0 0.0004700 0.0000000 140 ba g pu239t 5.6800000 61cro2 37
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

106 rh m pu239t sp fi ul 0.0000000 0.0 0.0010000 0.0200000 106 pu239t 1.0000000 84sch1 37
106 ru g pu239t rc cu 4.7126383 60.0 4.7000000 0.0000000 140 ba g pu239t 5.3600000 51ste3 0
106 ru g pu239t rc cu 4.0553955 5.4 4.0400000 0.2200000 0 0.0000000 65mar1 0
106 ru g pu239t rc cu 4.1275059 5.0 4.4400000 0.1000000 99 mo g u235t 0.4000000 71ram1 31
106 ru g pu239t cm cu 0.0000000 0.0 4.2550000 4.0000000% 0 0.0000000 73net2 0
106 ru g pu239t ms cu rp 4.3529980 6.8 4.2800000 0.0000000 no. relative values = 4 78shi1
106 ru g pu239t rc cu 5.1194350 17.6 5.1000000 0.9000000 0 0.0000000 80dic1 0
106 ru g pu239t rc cu 4.4775054 5.0 4.5500000 0.1900000 137 cs g pu239t 6.7400000 70lis1 0
106 ru g pu239t ms cu rp 4.2162926 8.0 4.5500000 0.0000000 no. relative values = 3 70lis1
106 ru g pu239t ms cu 4.6705501 3.8 0.7730000 0.0270000 101 ru g pu239t 1.0000000 59fic1 0
106 ru g pu239t rc cu 4.1457385 5.0 4.1300000 0.0900000 0 0.0000000 84jai1 0
106 ru g pu239t sp fi 0.3143933 28.1 0.0720000 28.0000000% 106 pu239t 1.0000000 84sch1 36
106 ru g pu239t cm in 0.0000000 0.0 0.2943000 28.0000000% 0 1.0000000 88wah1 0
106 tc g pu239t rc fc 3.4929017 10.2 80.0000000 10.0000000% 106 ru g pu239t 100.0000000 66bae1 0
106 tc g pu239t rc in 1.8062804 8.8 0.4470000 0.0300000 106 tc g pu239t 1.0000000 78fas1 0
106 tc g pu239t sp fi 1.8383274 5.4 0.4210000 5.0000000% 106 pu239t 1.0000000 84sch1 36
106 tc g pu239t cm in 0.0000000 0.0 1.8980000 5.0000000% 0 1.0000000 88wah1 0
106 mo g pu239t sp fi 2.1701870 5.4 0.4970000 5.0000000% 106 pu239t 1.0000000 84sch1 36
106 mo g pu239t cm in 0.0000000 0.0 2.0490000 5.0000000% 0 1.0000000 88wah1 0
106 nb g pu239t sp fi 0.0349326 99.9 0.0080000 0.0200000 106 pu239t 1.0000000 84sch1 36
106 nb g pu239t cm in 0.0000000 0.0 0.0915700 55.0000000% 0 1.0000000 88wah1 0
106 pu239f es cu 4.7308795 30.0 4.9000000 0.0000000 148 nd g pu239f 1.7100000 72sid1 0

106 pu239f es re 4.2796098 10.2 0.9900000 10.0000000% 106 pu239t 1.0000000 74mee4 0
106 pu239f cm cu 0.0000000 0.0 4.6600000 10.3000000% 0 0.0000000 77cro1 0
106 ru g pu239f rc cu cm 5.2149503 15.1 4.9000000 0.0000000 140 ba g pu239f 4.9700000 65cro2 0
106 ru g pu239f cm cu 0.0000000 0.0 4.5210000 16.0000000% 0 0.0000000 73net2 0
106 ru g pu239f rc cu 4.9721580 17.5 4.6000000 0.8000000 99 mo g pu239f 5.5000000 59bak1 0
106 ru g pu239f rc cu 4.7017329 12.6 4.8000000 0.6000000 140 ba g pu239f 5.4000000 61bon1 0
106 ru g pu239f ms cu 4.3909690 1.8 4.3990000 0.0790000 148 nd g pu239f 1.6540000 77mae1 0
106 ru g pu239f ms cu 4.3216317 2.0 4.3490000 0.0780000 0 0.0000000 77mae1 0
106 ru g pu239f rc re 4.8645942 10.1 0.9160000 0.0920000 140 ba g pu239f 0.9960000 72rid1 0
106 ru g pu239f ms cu su 0.0000000 0.0 4.3200000 0.0900000 148 nd g pu239f 1.6500000 74mae1 0
106 ru g pu239f rc cu 3.9350797 6.5 3.9600000 6.5000000% 0 0.0000000 81lau1 0
106 pu241t es cu 6.0519866 30.0 6.0800000 0.0000000 0 0.0000000 72sid1 0
106 pu241t cm cu 0.0000000 0.0 6.1000000 5.0000000% 0 0.0000000 77cro1 0
106 pu241t cm cu 0.0000000 0.0 6.0500000 0.3300000 0 0.0000000 73wal1 0
106 ru g pu241t ms cu 6.0888162 2.0 6.1170000 0.0560000 0 0.0000000 77mae1 0
106 ru g pu241t rc cu 6.0984143 5.0 6.0800000 0.2500000 137 cs g pu241t 6.6000000 70lis1 0
106 ru g pu241t ms cu rp 6.3706268 8.1 6.0800000 0.0000000 no. relative values = 3 70lis1
106 u233t es cu 0.2383360 30.0 0.2400000 0.0000000 0 0.0000000 72sid1 0
106 u233t cm cu 0.0000000 0.0 0.2550000 0.0000000 0 0.0000000 73lam1 0
106 u233t cm cu 0.0000000 0.0 0.2530000 0.0060000 0 0.0000000 73wal1 0
106 u233t cm cu 0.0000000 0.0 0.2450000 7.1000000% 0 0.0000000 77cro1 0
106 u233t es cu 0.2542250 8.0 0.2560000 8.0000000% 0 0.0000000 74mee6 0
106 rh g u233t rc in lt 0.0000127 30.1 0.0000240 0.0000000 140 ba g u233t 6.0000000 61cro2 37
106 rh g u233t sp fi ul 0.0000000 0.0 1.1000000 0.2720000 106 u233t 100.0000000 83qua1 37
106 rh g u233t sp in ul 0.0000000 0.0 0.0030000 0.0010000 0 0.0000000 88qua1 37
106 rh m u233t rc in lt 0.0000127 30.1 0.0000240 0.0000000 140 ba g u233t 6.0000000 61cro2 37
106 rh m u233t sp fi ul 0.0000000 0.0 1.1000000 0.2720000 106 u233t 100.0000000 83qua1 37
106 rh m u233t sp in ul 0.0000000 0.0 0.0030000 0.0010000 0 0.0000000 88qua1 37
106 ru g u233t rc cu 0.2677522 60.1 0.2800000 0.0000000 99 mo g u233t 5.1000000 47ste1 0
106 ru g u233t rc cu x4 0.0000000 0.0 0.1570000 6.0000000% 140 ba g u233t 5.4000000 65bal1 0
106 ru g u233t rc cu 0.2336855 9.1 0.2300000 0.0200000 99 mo g u233t 4.8000000 67gan1 0
106 ru g u233t cm cu 0.0000000 0.0 0.2563000 4.0000000% 0 0.0000000 73net2 0
106 ru g u233t rc cu 0.2572042 11.6 0.2590000 0.0300000 0 0.0000000 60san1 0
106 ru g u233t rc cu rp 0.2003146 31.7 0.2590000 0.0000000 no. relative values = 1 60san1
106 ru g u233t ms cu 0.2499770 4.1 0.2200000 4.0000000% 102 ru g u233t 2.1000000 61bid1 0
106 ru g u233t ms cu 0.2357051 1.6 0.2410000 0.0020000 101 ru g u233t 3.2200000 78shi1 0

106	ru	g	u233t	ms	cu		0.2601834	2.0	0.2620000	0.0020000	0			0.0000000	70lis1	0
106	ru	g	u233t	sp	fi		0.0054775	24.2	2.2400000	0.5410000	106	u233t		100.0000000	83qua1	0
106	ru	g	u233t	sp	in		0.0059584	33.3	0.0060000	0.0020000	0			0.0000000	88qua1	0
106	tc	g	u233t	sp	fi		0.0302487	22.8	12.3700000	2.8100000	106	u233t		100.0000000	83qua1	0
106	tc	g	u233t	sp	in		0.0337643	23.5	0.0340000	0.0080000	0			0.0000000	88qua1	0
106	mo	g	u233t	sp	fi		0.2023262	6.9	82.7400000	5.4380000	106	u233t		100.0000000	83qua1	0
106	mo	g	u233t	sp	in		0.2234400	11.1	0.2250000	0.0250000	0			0.0000000	88qua1	0
106	nb	g	u233t	sp	fi		0.0037903	53.0	1.5500000	0.8210000	106	u233t		100.0000000	83qua1	0
106	nb	g	u233t	sp	in		0.0039723	50.0	0.0040000	0.0020000	0			0.0000000	88qua1	0
106			th232f	es	cu	cm	0.0408493	30.0	0.0410000	0.0000000	0			0.0000000	65eng1	0
106			th232f	cm	cu	x3	0.0000000	0.0	0.0600000	0.0000000	0			0.0000000	72sid1	0
106			th232f	cm	cu	x3	0.0000000	0.0	0.0410000	0.0000000	0			0.0000000	73lam1	0
106			th232f	cm	cu		0.0000000	0.0	0.0500000	0.0000000	0			0.0000000	74lam1	0
106			th232f	es	cu		0.0531638	10.0	0.0533600	10.0000000%	0			0.0000000	74mee0	0
106			th232f	cm	cu		0.0000000	0.0	0.0483000	9.4000000%	0			0.0000000	77cro1	0
106	ru	g	th232f	rc	cu	x4	0.0000000	0.0	0.0520000	0.0000000	89	sr	g	th232f	6.0000000	50nid1	0
106	ru	g	th232f	rc	cu		0.0502763	20.0	0.0580000	0.0060000	89	sr	g	u235t	0.5000000	51tur1	22
106	ru	g	th232f	rc	cu		0.0501363	20.0	0.0794200	10.3000000%	89	sr	g	u235t	0.0000000	51tur1	7
106	ru	g	th232f	cm	cu		0.0000000	0.0	0.0420000	0.0000000	0			0.0000000	60kat1	0
106	ru	g	th232f	rc	re		0.0443467	10.0	0.2300000	0.0120000	99	mo	g	u235t	0.0000000	63iye1	7
106	ru	g	th232f	rc	cu	x4	0.0000000	0.0	0.0620000	20.0000000%	99	mo	g	th232f	2.7800000	65wyt1	36
106	ru	g	th232f	cm	cu	x3	0.0000000	0.0	0.0526300	4.0000000%	0			0.0000000	73net2	0
106	ru	g	th232f	rc	re		0.0476245	16.2	0.2470000	0.0400000	99	mo	g	u235t	0.0000000	81ert1	7
106	ru	g	th232f	cm	cu		0.0000000	0.0	0.0499000	0.0044000	0			0.0000000	81ert1	0
106	ru	g	th232f	cm	cu		0.0000000	0.0	0.0463900	7.9000000%	0			0.0000000	89mil1	0
107			u235t	cm	cu		0.0000000	0.0	0.1900000	0.0000000	0			0.0000000	72sid1	0
107			u235t	cm	cu		0.0000000	0.0	0.1700000	0.0000000	0			0.0000000	73lam1	0
107			u235t	cm	cu		0.0000000	0.0	0.1600000	0.0400000	0			0.0000000	73wal1	0
107			u235t	cm	cu		0.0000000	0.0	0.1060000	20.0000000%	0			0.0000000	77cro1	0
107			u235t	es	cu		0.1424894	20.0	0.1422000	20.0000000%	0			0.0000000	87wah1	36
107	pd	g	u235t	ms	cu		0.1491269	2.3	0.1450000	0.0030000	101	ru	g	u235t	5.0400000	78shi1	0
107	pd	g	u235t	ms	cu		0.1392829	4.3	0.1390000	0.0060000	0			0.0000000	76dii1	0
107	pd	g	u235t	sp	cu		0.1102239	14.5	0.1100000	0.0160000	0			1.0000000	76woh2	0
107	pd	g	u235t	es	cu		0.1698835	20.2	0.1424000	20.0000000%	115	u235t		0.0105700	74mee6	0
107	rh	g	u235t	rc	cu		0.1903867	30.0	0.1900000	0.0000000	0			0.0000000	55cor1	0
107	ru	g	u235t	rc	cu		0.1268734	9.5	0.1300000	0.0100000	105	ru	g	u235t	0.9900000	75fet1	0

107 ru g u235t rc cu 0.1452951 22.1 0.1450000 0.0320000 0 0.0000000 85nai1 0
107 ru g u235t cm in 0.0000000 0.0 0.0004534 92.0000000% 0 100.0000000 88wah1 0
107 tc g u235t rc fc x1 0.0000000 0.0 33.0000000 5.0000000% 107 rh g u235t 100.0000000 66bae1 0
107 tc g u235t ms fi su 0.0000000 0.0 14.5000000 2.6000000 107 u235t 100.0000000 75cle2 0
107 tc g u235t ms in 0.0160326 37.5 0.0160000 0.0060000 0 0.0000000 79cle1 0
107 tc g u235t rc in 0.0336940 67.6 0.2300000 0.0500000 107 tc g u235t 1.0000000 78fas1 0
107 tc g u235t sp fi 0.0225611 31.9 15.4000000 4.9000000 107 u235t 100.0000000 80lan1 0
107 tc g u235t cm in 0.0000000 0.0 0.0258700 15.0000000% 0 1.0000000 88wah1 0
107 mo g u235t ms fi su 0.0000000 0.0 83.8000000 3.4000000 107 u235t 100.0000000 75cle2 0
107 mo g u235t ms in 0.0891811 14.6 0.0890000 0.0130000 0 0.0000000 79cle1 0
107 mo g u235t sp fi 0.1214491 6.7 82.9000000 5.0000000 107 u235t 100.0000000 80lan1 0
107 mo g u235t cm in 0.0000000 0.0 0.1136000 5.0000000% 0 1.0000000 88wah1 0
107 nb g u235t ms fi su 0.0000000 0.0 1.7000000 0.8000000 107 u235t 100.0000000 75cle2 0
107 nb g u235t ms in 0.0020041 50.0 0.0020000 0.0010000 0 0.0000000 79cle1 0
107 nb g u235t sp fi 0.0024905 58.9 1.7000000 1.0000000 107 u235t 100.0000000 80lan1 0
107 nb g u235t cm in 0.0000000 0.0 0.0030780 22.0000000% 0 1.0000000 88wah1 0
107 u235f cm cu 0.0000000 0.0 0.2420000 20.0000000% 0 0.0000000 77cro1 0
107 u235f es cu x3 0.0000000 0.0 0.1700000 0.0400000 148 nd g u235f 1.6800000 74mae1 0
107 pd g u235f es cu 0.3014740 30.0 0.3560000 0.0000000 148 nd g u235f 1.8100000 63wea1 0
107 pd g u235f es cu cm 0.3368875 30.0 0.3700000 0.0000000 0 0.0000000 72sid1 0
107 pd g u235f es re 0.2795478 10.4 2.1000000 10.0000000% 107 u235t 1.0000000 74mee4 0
107 pd g u235f es cu 0.3731117 20.2 0.3520000 20.0000000% 115 u235f 0.0291000 74mee6 0
107 u235he cm cu 0.0000000 0.0 1.6000000 20.0000000% 0 0.0000000 77cro1 0
107 pd g u235he es cu 1.3737758 30.0 1.4020000 0.0000000 0 0.0000000 63wea1 0
107 pd g u235he es cu 1.3667137 21.5 1.3800000 20.0000000% 113 u235he 1.0800000 74mee6 0
107 pd g u235he es cu 1.2581513 10.0 1.2840000 10.0000000% 0 0.0000000 74mee8 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

107 u238f cm cu es 0.0000000 0.0 1.3000000 0.0000000 0 0.0000000 64wal1 0
107 u238f cm cu 0.0000000 0.0 0.8980000 20.0000000% 0 0.0000000 77cro1 0
107 u238f rc cu x4 0.0000000 0.0 1.8300000 0.0700000 0 0.0000000 85li 1 0
107 pd g u238f es cu 1.2637845 30.0 1.2880000 0.0000000 0 0.0000000 63wea1 0
107 pd g u238f es cu cm 1.2755589 30.0 1.3000000 0.0000000 0 0.0000000 72sid1 0
107 pd g u238f es cu 1.2456466 24.8 1.2500000 0.3100000 148 nd g u238f 2.0800000 74mae1 0

107 rh g u238f es cu 0.7849593 28.7 0.8000000 0.2300000 0 0.0000000 78gin1 0
107 rh g u238f rc cu 1.0302591 25.7 1.0500000 0.2700000 0 0.0000000 78nag1 0
107 rh g u238f rc cu 1.3023814 9.7 1.3600000 0.1300000 99 mo g u238f 6.3200000 70lyl1 0
107 rh g u238f rc cu 1.7563465 6.7 1.7900000 0.1200000 0 0.0000000 85chi1 0
107 rh g u238f rc cu 0.8045833 28.1 0.8200000 28.1000000% 0 0.0000000 88afa1 0
107 rh g u238f rc cu 0.6574035 31.3 0.6700000 31.3000000% 0 0.0000000 88afa1 0
107 u238he cm cu su 0.0000000 0.0 1.7400000 0.0500000 0 0.0000000 73dar1 0
107 u238he cm cu 0.0000000 0.0 1.7600000 8.0000000% 0 0.0000000 77cro1 0
107 pd g u238he es cu 1.7924588 30.0 1.8020000 0.0000000 0 0.0000000 63wea1 0
107 pd g u238he es cu 1.6780677 15.0 1.6870000 15.0000000% 0 0.0000000 74mee9 0
107 rh g u238he rc cu 1.7385207 5.2 1.7400000 0.0500000 99 mo g u238he 5.6800000 71bir2 0
107 rh g u238he rc cu 1.6014754 7.5 1.6100000 0.1200000 0 0.0000000 85liu1 0
107 pu239t cm cu 0.0000000 0.0 3.4000000 0.0000000 0 0.0000000 72sid1 0
107 pu239t cm cu 0.0000000 0.0 3.3000000 0.0000000 0 0.0000000 73lam1 0
107 pu239t cm cu 0.0000000 0.0 2.9100000 20.0000000% 0 0.0000000 77cro1 0
107 pu239t es cu 3.3049987 20.0 3.2800000 20.0000000% 0 0.0000000 87wah1 36
107 pd g pu239t ms cu 3.3179125 4.5 3.2400000 0.1300000 106 ru g pu239t 4.2800000 78shi1 0
107 pd g pu239t es cu 3.5266755 20.0 3.5000000 0.7000000 0 0.0000000 73wal1 0
107 rh g pu239t rc cu 3.5669803 11.9 3.5400000 0.4200000 0 0.0000000 80dic1 0
107 rh g pu239t sp fi 0.0771721 87.1 0.0230000 87.0000000% 107 pu239t 1.0000000 84sch1 36
107 rh g pu239t cm in 0.0000000 0.0 0.0652300 87.0000000% 0 1.0000000 88wah1 0
107 ru g pu239t sp fi 0.8488927 11.7 0.2530000 11.0000000% 107 pu239t 1.0000000 84sch1 36
107 ru g pu239t rc cu 3.0913830 9.3 3.0680000 0.2840000 0 0.0000000 85nai1 0
107 ru g pu239t cm in 0.0000000 0.0 0.7848000 11.0000000% 0 1.0000000 88wah1 0
107 tc g pu239t rc fc x1 0.0000000 0.0 41.0000000 5.0000000% 107 rh g pu239t 100.0000000 66bae1 0
107 tc g pu239t rc in 2.1182319 32.9 0.8700000 0.0660000 107 tc g pu239t 1.0000000 78fas1 0
107 tc g pu239t sp fi 1.8286425 8.1 0.5450000 7.0000000% 107 pu239t 1.0000000 84sch1 36
107 tc g pu239t cm in 0.0000000 0.0 1.8650000 7.0000000% 0 1.0000000 88wah1 0
107 mo g pu239t sp fi 0.5938894 11.7 0.1770000 11.0000000% 107 pu239t 1.0000000 84sch1 36
107 mo g pu239t cm in 0.0000000 0.0 0.5538000 11.0000000% 0 1.0000000 88wah1 0
107 nb g pu239t sp fi ul 0.0000000 0.0 0.0010000 0.0200000 107 pu239t 1.0000000 84sch1 36
107 pu239f cm cu 0.0000000 0.0 3.2600000 20.0000000% 0 0.0000000 77cro1 0
107 pu239f es cu su 0.0000000 0.0 3.4100000 0.4300000 148 nd g pu239f 1.6500000 74mae1 0
107 pu239f es re 3.4929463 10.8 1.0760000 10.0000000% 107 pu239t 1.0000000 74mee4 36
107 pd g pu239f es cu 3.4243268 30.0 3.7000000 0.0000000 148 nd g pu239f 1.7500000 65and1 0
107 pd g pu239f es cu 2.6868742 30.0 2.8700000 0.0000000 148 nd g pu239f 1.7300000 70lis1 0

107 pd g pu239f es cu cm 3.5093805 30.0 3.6000000 0.0000000 0 0.0000000 72sid1 0
107 pd g pu239f es re 3.2462326 10.8 1.0000000 10.0000000% 107 pu239t 1.0000000 74mee4 0
107 pd g pu239f es cu 2.9439803 14.9 3.0200000 0.4500000 0 0.0000000 77mae1 0
107 pd g pu239f es cu 2.9376313 14.3 3.0000000 0.4300000 148 nd g pu239f 1.6540000 77mae1 0
107 pu241t cm cu 0.0000000 0.0 5.0000000 0.0000000 0 0.0000000 72sid1 0
107 pu241t cm cu 0.0000000 0.0 4.8900000 20.0000000% 0 0.0000000 77cro1 0
107 pd g pu241t es cu 5.2023217 15.1 5.3000000 0.8000000 0 0.0000000 73wal1 0
107 pd g pu241t es cu 4.9667449 17.8 5.0600000 0.9000000 0 0.0000000 77mae1 0
107 ru g pu241t rc cu 4.7900623 8.4 4.8800000 0.4100000 0 0.0000000 87nai1 0
107 u233t cm cu 0.0000000 0.0 0.1700000 0.0000000 0 0.0000000 72sid1 0
107 u233t cm cu 0.0000000 0.0 0.1200000 0.0000000 0 0.0000000 73lam1 0
107 u233t cm cu 0.0000000 0.0 0.1450000 20.0000000% 0 0.0000000 77cro1 0
107 pd g u233t ms cu 0.1126593 3.7 0.1160000 0.0040000 101 ru g u233t 3.2200000 78shi1 0
107 pd g u233t es cu 0.1281973 20.0 0.1300000 0.0260000 0 0.0000000 73wal1 0
107 pd g u233t es cu 0.1352142 9.8 0.1145000 8.0000000% 115 u233t 0.0125000 74mee6 0
107 ru g u233t rc cu 0.1094608 10.8 0.1110000 0.0120000 0 0.0000000 85nai1 0
107 ru g u233t rc cu 0.1084746 9.1 0.1100000 0.0100000 0 0.0000000 87nai1 0
107 th232f cm cu 0.0000000 0.0 0.0530000 20.0000000% 0 0.0000000 77cro1 0
107 pd g th232f es cu cm 0.0487452 30.0 0.0490000 0.0000000 0 0.0000000 65eng1 0
107 pd g th232f es cu cm 0.0596880 30.0 0.0600000 0.0000000 0 0.0000000 72sid1 0
107 pd g th232f es cu cm 0.0397920 30.0 0.0400000 0.0000000 0 0.0000000 73lam1 0
107 pd g th232f es cu 0.0516301 10.0 0.0519000 10.0000000% 0 0.0000000 74mee0 0
108 u235t cm cu 0.0000000 0.0 0.0800000 0.0000000 0 0.0000000 72sid1 0
108 u235t cm cu 0.0000000 0.0 0.0570000 0.0000000 0 0.0000000 73lam1 0
108 pd g u235t es cu cm 0.0702015 20.0 0.0700000 0.0140000 0 0.0000000 73wal1 0
108 u235t ms cu 0.0671928 6.0 0.0670000 0.0040000 0 0.0000000 76dii1 0
108 u235t sp cu 0.0571640 12.3 0.0570000 0.0070000 0 1.0000000 76woh2 0
108 u235t cm cu 0.0000000 0.0 0.0633000 20.0000000% 0 0.0000000 77cro1 0
108 pd g u235t ms cu 0.0538338 2.7 0.0523000 0.0013000 101 ru g u235t 5.0400000 78shi1 0
108 u235t es cu 0.0525809 20.0 0.0524300 20.0000000% 0 0.0000000 87wah1 36
108 ru g u235t rc cu 0.0410244 7.5 0.0420000 0.0020000 105 ru g u235t 0.9900000 75fet1 0
108 ru g u235t rc cu 0.0671928 25.4 0.0670000 0.0170000 0 0.0000000 85nai1 0
108 ru g u235t cm in 0.0000000 0.0 0.0001573 56.0000000% 0 10.0000000 88wah1 0
108 tc g u235t rc in 0.0265787 32.6 0.4900000 0.1500000 108 tc g u235t 1.0000000 78fas1 0
108 tc g u235t cm in 0.0000000 0.0 0.0239500 34.0000000% 0 1.0000000 88wah1 0
108 mo g u235t cm in 0.0000000 0.0 0.0281700 11.0000000% 0 1.0000000 88wah1 0

108 nb g u235t cm in 0.0000000 0.0 0.0001916 32.0000000% 0 1.0000000 88wah1 0
108 u235f es cu 0.1982158 30.0 0.2440000 0.0000000 148 nd g u235f 1.8100000 63wea1 0
108 u235f es cu cm 0.2096249 30.0 0.2400000 0.0000000 0 0.0000000 72sid1 0
108 u235f es cu 0.1850615 20.2 0.1820000 20.0000000% 115 u235f 0.0291000 74mee6 0
108 u235f cm cu 0.0000000 0.0 0.1510000 20.0000000% 0 0.0000000 77cro1 0
108 u235f es re 0.1120490 10.8 2.3700000 10.0000000% 108 u235t 1.0000000 74mee4 0
108 u235f es cu 0.0700177 25.0 0.0800000 0.0200000 148 nd g u235f 1.6800000 74mae1 0
108 u235f es cu 0.1214951 16.0 0.1391000 16.0000000% 0 0.0000000 89rid1 0
108 pd g u235he cm cu 0.0000000 0.0 1.3530000 0.0000000 0 0.0000000 63wea1 0
108 u235he es cu 1.1884467 21.5 1.2000000 20.0000000% 113 u235he 1.0800000 74mee6 0
108 u235he cm cu 0.0000000 0.0 1.4400000 20.0000000% 0 0.0000000 77cro1 0
108 u235he es cu 1.1758423 10.0 1.2000000 10.0000000% 0 0.0000000 74mee8 0
108 pd g u238f es cu 0.6034238 30.0 0.6270000 0.0000000 0 0.0000000 63wea1 0
108 u238f es cu cm 0.6159349 30.0 0.6400000 0.0000000 0 0.0000000 64wal1 0
108 u238f es cu cm 0.6063110 30.0 0.6300000 0.0000000 0 0.0000000 72sid1 0
108 u238f cm cu x3 0.0000000 0.0 0.2900000 20.0000000% 0 0.0000000 77cro1 0
108 u238f es cu 0.5864537 25.0 0.6000000 0.1500000 148 nd g u238f 2.0800000 74mae1 0
108 pd g u238he es cu 1.3524380 30.0 1.3730000 0.0000000 0 0.0000000 63wea1 0
108 u238he es cu su 0.0000000 0.0 1.5300000 0.0000000 0 0.0000000 73dar1 0
108 u238he es cu 1.1899091 15.0 1.2080000 15.0000000% 0 0.0000000 74mee9 0
108 u238he cm cu 0.0000000 0.0 1.5300000 20.0000000% 0 0.0000000 77cro1 0
108 pu239t cm cu 0.0000000 0.0 2.6000000 0.0000000 0 0.0000000 72sid1 0
108 pu239t cm cu 0.0000000 0.0 2.0000000 0.0000000 0 0.0000000 73lam1 0
108 pu239t es cu 2.3175296 21.7 2.3000000 0.5000000 0 0.0000000 73wal1 0
108 pu239t cm cu 0.0000000 0.0 1.9000000 20.0000000% 0 0.0000000 77cro1 0
108 pd g pu239t ms cu 2.1709798 4.3 2.1200000 0.0800000 106 ru g pu239t 4.2800000 78shi1 0
108 pu239t es cu 2.0676394 20.0 2.0520000 20.0000000% 0 0.0000000 87wah1 36
108 rh g pu239t sp fi 0.0207129 99.9 0.0190000 0.0200000 108 pu239t 1.0000000 84sch1 37
108 rh g pu239t cm in 0.0000000 0.0 0.0202700 52.0000000% 0 1.0000000 88wah1 0
108 rh m pu239t sp fi 0.0207129 99.9 0.0190000 0.0200000 108 pu239t 1.0000000 84sch1 37
108 rh m pu239t cm in 0.0000000 0.0 0.0202700 52.0000000% 0 1.0000000 88wah1 0
108 ru g pu239t rc cu 1.9044048 28.0 1.8900000 0.5300000 0 0.0000000 81dic1 0
108 ru g pu239t sp fi 1.3496116 6.4 0.6190000 5.0000000% 108 pu239t 1.0000000 84sch1 36
108 ru g pu239t rc cu 2.0202812 8.2 2.0050000 0.1650000 0 0.0000000 85nai1 0
108 ru g pu239t cm in 0.0000000 0.0 1.2410000 5.0000000% 0 1.0000000 88wah1 0
108 tc g pu239t rc in ge 0.8313529 35.3 0.9800000 15.0000000% 108 tc g pu239t 1.0000000 78fas1 0

108 tc g pu239t sp fi 0.5647002 8.9 0.2590000 8.0000000% 108 pu239t 1.0000000 84sch1 36
108 tc g pu239t cm in 0.0000000 0.0 0.5728000 8.0000000% 0 1.0000000 88wah1 0
108 mo g pu239t sp fi 0.2245719 19.4 0.1030000 19.0000000% 108 pu239t 1.0000000 84sch1 36
108 mo g pu239t cm in 0.0000000 0.0 0.2083000 19.0000000% 0 1.0000000 88wah1 0
108 pu239f es cu 2.4721059 30.0 2.7000000 0.0000000 148 nd g pu239f 1.7500000 65and1 0
108 pu239f es cu cm 2.6038835 30.0 2.7000000 0.0000000 0 0.0000000 72sid1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

108 pu239f cm cu 0.0000000 0.0 2.3900000 20.0000000% 0 0.0000000 77cro1 0
108 pu239f es re 2.0869217 10.8 1.0000000 10.0000000% 108 pu239t 1.0000000 74mee4 0
108 pu239f es cu 1.7921633 14.1 1.8500000 0.2600000 148 nd g pu239f 1.6540000 77mae1 0
108 pu239f es cu 1.8323625 14.7 1.9000000 0.2800000 0 0.0000000 77mae1 0
108 pu239f es cu 1.9449774 30.0 2.1000000 0.0000000 148 nd g pu239f 1.7300000 70lis1 0
108 pu239f es cu su 0.0000000 0.0 2.4000000 0.3100000 148 nd g pu239f 1.6500000 74mae1 0
108 pu241t cm cu 0.0000000 0.0 4.0000000 0.0000000 0 0.0000000 72sid1 0
108 pu241t es cu 3.9262805 20.0 4.0000000 0.8000000 0 0.0000000 73wal1 0
108 pu241t cm cu 0.0000000 0.0 3.6000000 20.0000000% 0 0.0000000 77cro1 0
108 pu241t es cu 3.2882600 17.6 3.3500000 0.5900000 0 0.0000000 77mae1 0
108 ru g pu241t rc cu 3.8183078 8.0 3.8900000 0.3100000 0 0.0000000 87nai1 0
108 u233t cm cu 0.0000000 0.0 0.0830000 0.0000000 0 0.0000000 72sid1 0
108 u233t cm cu 0.0000000 0.0 0.0650000 0.0000000 0 0.0000000 73lam1 0
108 u233t es cu 0.0690293 20.0 0.0700000 0.0140000 0 0.0000000 73wal1 0
108 u233t cm cu 0.0000000 0.0 0.0840000 20.0000000% 0 0.0000000 77cro1 0
108 pd g u233t ms cu 0.0757537 4.1 0.0780000 0.0030000 101 ru g u233t 3.2200000 78shi1 0
108 ru g u233t rc cu 0.0759322 6.5 0.0770000 0.0050000 0 0.0000000 85nai1 0
108 ru g u233t rc cu 0.0788906 12.5 0.0800000 0.0100000 0 0.0000000 87nai1 0
108 th232f cm cu 0.0000000 0.0 0.0530000 0.0000000 0 0.0000000 65eng1 0
108 th232f cm cu 0.0000000 0.0 0.0400000 0.0000000 0 0.0000000 73lam1 0
108 th232f es cu 0.0595588 30.0 0.0600000 0.0000000 0 0.0000000 72sid1 0
108 th232f cm cu 0.0000000 0.0 0.0500000 20.0000000% 0 0.0000000 77cro1 0
108 th232f es cu 0.0621397 20.0 0.0626000 20.0000000% 0 0.0000000 74mee0 0
109 u235t rc cu 0.0240977 12.5 0.0240000 0.0030000 0 0.0000000 65for3 0
109 u235t cm cu 0.0000000 0.0 0.0300000 0.0000000 0 0.0000000 72sid1 0
109 u235t cm cu 0.0000000 0.0 0.0240000 0.0000000 0 0.0000000 73lam1 0

109		u235t	es	cu		0.0301221	20.0	0.0300000	0.0060000	0				0.0000000	73wal1	0
109		u235t	ms	cu		0.0381547	7.9	0.0380000	0.0030000	0				0.0000000	76dii1	0
109		u235t	cm	cu		0.0000000	0.0	0.0296000	34.0000000%	0				0.0000000	77cro1	0
109		u235t	es	cu		0.0313270	20.0	0.0312000	20.0000000%	0				0.0000000	87wah1	36
109	pd g	u235t	rc	cu		0.0285598	60.0	0.0280000	0.0000000	140	ba g	u235t		6.1000000	51eng2	0
109	pd g	u235t	rc	cu	x4	0.0000000	0.0	0.0170000	0.0050000	140	ba g	u235t		6.1000000	51sei1	0
109	pd g	u235t	rc	cu		0.0252767	60.0	0.0260000	0.0000000	140	ba g	u235t		6.4000000	52eng1	0
109	pd g	u235t	cm	cu		0.0000000	0.0	0.0240000	5.0000000%	0				0.0000000	73net2	0
109	ru g	u235t	rc	cu		0.0264042	12.5	0.0270000	0.0030000	105	ru g	u235t		0.9900000	75fet1	0
109	ru g	u235t	rc	cu		0.0341384	11.8	0.0340000	0.0040000	0				0.0000000	85nai1	0
109	ru g	u235t	cm	in		0.0000000	0.0	0.0013270	34.0000000%	0				1.0000000	88wah1	0
109	tc g	u235t	cm	in		0.0000000	0.0	0.0177400	11.0000000%	0				1.0000000	88wah1	0
109	mo g	u235t	cm	in		0.0000000	0.0	0.0115000	11.0000000%	0				1.0000000	88wah1	0
109	nb g	u235t	cm	in		0.0000000	0.0	0.0005829	54.0000000%	0				1.0000000	88wah1	0
109		u235f	cm	cu	x3	0.0000000	0.0	0.1300000	0.0000000	0				0.0000000	72sid1	0
109		u235f	cm	cu		0.0000000	0.0	0.0863000	20.0000000%	0				0.0000000	77cro1	0
109		u235f	es	re		0.0764937	11.5	2.5300000	10.0000000%	109		u235t		1.0000000	74mee4	0
109		u235f	es	cu		0.0835694	20.0	0.0863000	20.0000000%	0				0.0000000	77cro1	0
109		u235f	es	re		0.0764937	11.5	2.5300000	10.0000000%	109		u235t		1.0000000	74mee4	0
109	pd g	u235f	es	cu		0.0878302	16.0	0.0907000	16.0000000%	0				0.0000000	89rid1	0
109	pd g	u235f	cm	cu	x3	0.0000000	0.0	0.0513600	15.0000000%	0				0.0000000	73net2	0
109	pd g	u235f	cm	cu	x3	0.0000000	0.0	0.1460000	0.0000000	137	cs g	u235f		6.3000000	60kat1	0
109	pd g	u235f	rc	cu	su	0.0000000	0.0	0.1150000	3.0000000%	99	mo g	u235t		0.0240000	56for1	7
109	pd g	u235f	rc	cu		0.0829453	5.0	2.8200000	1.4000000%	99	mo g	u235t		0.0000000	76for1	7
109	pd g	u235f	rc	cu	x4	0.0000000	0.0	4.7950000	1.4000000%	99	mo g	u235t		0.0000000	76for1	7
109		u235he	cm	cu	x3	0.0000000	0.0	1.2660000	0.0000000	0				0.0000000	63wea1	0
109		u235he	es	cu		1.1606332	21.5	1.1600000	20.0000000%	113		u235he		1.0800000	74mee6	0
109		u235he	cm	cu	x3	0.0000000	0.0	1.3000000	20.0000000%	0				0.0000000	77cro1	0
109		u235he	es	cu		1.1483238	10.0	1.1600000	10.0000000%	0				0.0000000	74mee8	0
109	pd g	u235he	rc	re	x4	0.0000000	0.0	51.0000000	0.4000000	99	mo g	u235t		0.0000000	56for1	7
109	pd g	u235he	rc	re	x4	0.0000000	0.0	53.0000000	5.0000000%	99	mo g	u235t		0.0000000	62hic1	7
109	pd g	u235he	rc	cu		1.2077199	15.0	1.2200000	0.0000000	0				0.0000000	65for2	36
109	pd g	u235he	es	cu		1.1582231	30.0	1.1700000	0.0000000	0				0.0000000	69gun2	0
109	pd g	u235he	es	cu		1.1780218	6.0	1.1900000	6.0000000%	0				0.0000000	73net2	0
109	pd g	u235he	cm	cu	x3	0.0000000	0.0	1.3100000	0.0000000	0				0.0000000	60kat1	0
109	pd g	u235he	rc	cu	x4	0.0000000	0.0	51.0000000	1.4000000%	99	mo g	u235t		0.0000000	76for1	7

109		u238f	es	cu	cm	0.2960117	30.0	0.3000000	0.0000000	0			0.0000000	64wal1	0
109		u238f	es	cu	cm	0.1973412	30.0	0.2000000	0.0000000	0			0.0000000	72sid1	0
109		u238f	cm	cu		0.0000000	0.0	0.1300000	15.0000000%	0			0.0000000	77cro1	0
109		u238f	es	cu		0.2802245	30.0	0.2840000	0.0000000	0			0.0000000	74mae1	0
109		u238f	rc	cu	x4	0.0000000	0.0	0.5230000	0.0280000	0			0.0000000	85li 1	0
109	pd g	u238f	rc	cu	x4	0.0000000	0.0	0.1290000	0.0190000	0			0.0000000	85chi1	0
109	pd g	u238f	es	cu		0.2377961	11.0	0.2410000	11.0000000%	0			0.0000000	89rid1	0
109	pd g	u238f	cm	cu		0.0000000	0.0	0.2703000	16.0000000%	0			0.0000000	73net2	0
109	pd g	u238f	cm	cu		0.0000000	0.0	0.3200000	0.0000000	0			0.0000000	60kat1	0
109	pd g	u238f	rc	re		0.2941003	10.0	9.4550000	5.0000000%	99	mo g	u235t	0.0000000	61lev1	7
109	pd g	u238f	rc	cu	x4	0.0000000	0.0	0.1020000	0.0100000	0			0.0000000	75har1	0
109	pd g	u238f	rc	cu		0.3173032	10.0	0.2520000	3.0000000%	99	mo g	u235t	0.0240000	56for1	8
109	pd g	u238f	rc	cu		0.2224026	5.0	7.1500000	1.4000000%	99	mo g	u235t	0.0000000	76for1	7
109	pd g	u238f	rc	cu	x4	0.0000000	0.0	0.1400000	0.0300000	140	ba g	u238f	6.0700000	77har1	0
109	pd g	u238f	es	cu	x4	0.0000000	0.0	0.1220000	0.0310000	0			0.0000000	78gin1	0
109	pd g	u238f	rc	cu	x4	0.0000000	0.0	0.1300000	0.0000000	99	mo g	u238f	7.0000000	60bon1	0
109	pd g	u238f	es	cu		0.2877234	11.0	0.2916000	11.0000000%	0			0.0000000	74mee1	0
109	pd g	u238f	es	cu		0.2456897	11.0	0.2490000	11.0000000%	0			0.0000000	89rid1	0
109	pd g	u238f	es	fc		0.2488167	7.5	1.0000000	5.0000000%	109		u238f	1.0000000	89rid1	0
109	rh g	u238f	rc	cu	x1	0.0000000	0.0	0.0880000	19.3000000%	0			0.0000000	87chu1	0
109		u238he	cm	cu	su	0.0000000	0.0	1.3400000	0.0000000	0			0.0000000	73dar1	0
109		u238he	es	cu		1.3167726	23.0	1.2400000	20.0000000%	119		u238he	0.6800000	74mee6	0
109		u238he	es	cu		1.1777310	15.0	1.1840000	15.0000000%	0			0.0000000	74mee9	0
109		u238he	cm	cu		0.0000000	0.0	1.3300000	7.0000000%	0			0.0000000	77cro1	0
109	pd g	u238he	rc	cu		1.2252262	16.9	1.2000000	0.2000000	139	ba g	u238he	4.9200000	64jam1	0
109	pd g	u238he	rc	cu		1.1936463	15.0	1.2000000	0.0000000	0			0.0000000	65for1	0
109	pd g	u238he	cm	cu		0.0000000	0.0	1.2000000	0.0000000	0			0.0000000	69gun2	0
109	pd g	u238he	rc	cu	x4	0.0000000	0.0	1.5400000	0.1500000	99	mo g	u238he	5.6000000	70gev1	0
109	pd g	u238he	rc	cu	x4	0.0000000	0.0	1.5600000	0.1200000	99	mo g	u238he	5.6800000	71bir2	0
109	pd g	u238he	rc	cu		1.1836992	24.4	1.1900000	0.2900000	0			0.0000000	71com1	0
109	pd g	u238he	cm	cu	su	0.0000000	0.0	1.3400000	0.0700000	0			0.0000000	73dar1	0
109	pd g	u238he	cm	cu		0.0000000	0.0	1.2100000	6.1000000%	0			0.0000000	73net2	0
109	pd g	u238he	cm	cu		0.0000000	0.0	1.2000000	0.0000000	0			0.0000000	60kat1	0
109	pd g	u238he	rc	cu		1.2667793	16.1	1.2500000	0.2000000	99	mo g	u238he	5.6000000	75ada1	0
109	pd g	u238he	rc	cu		1.0742816	5.0	1.0800000	0.0300000	0			0.0000000	65for2	0
109		pu239t	cm	cu		0.0000000	0.0	1.2000000	0.0000000	0			0.0000000	72sid1	0

109 pu239t cm cu 0.0000000 0.0 1.1300000 0.0000000 0 0.0000000 73lam1 0
109 pu239t cm cu 0.0000000 0.0 1.3000000 0.2000000 0 0.0000000 73wal1 0
109 pu239t cm cu 0.0000000 0.0 1.1000000 22.2000000% 0 0.0000000 77cro1 0
109 pu239t es cu 1.6323469 20.0 1.6200000 20.0000000% 0 0.0000000 87wah1 36
109 pd g pu239t rc cu su 0.0000000 0.0 1.5600000 3.0000000% 99 mo g u235t 0.0240000 56for1 7
109 pd g pu239t es cu 1.4479522 12.0 1.4370000 12.0000000% 0 0.0000000 74mee1 36
109 pd g pu239t es cu 1.7582996 11.0 1.7450000 11.0000000% 0 0.0000000 89rid1 0
109 pd g pu239t es cu 1.7089262 12.4 1.6960000 12.4000000% 0 0.0000000 91jam2 0
109 pd g pu239t rc cu x4 0.0000000 0.0 1.0000000 0.0000000 140 ba g pu239t 5.3600000 51ste3 0
109 pd g pu239t rc cu nr 1.3932046 5.3 1.1300000 0.0600000 137 cs g pu239t 5.4000000 65mar1 0
109 pd g pu239t es cu 1.3905178 8.0 1.3800000 8.0000000% 0 0.0000000 73net2 0
109 pd g pu239t rc cu x4 0.0000000 0.0 67.1600000 1.4000000% 99 mo g u235t 0.0000000 76for1 7
109 pd g pu239t rc cu 1.6121945 30.0 1.6000000 0.0000000 0 0.0000000 63kir1 0
109 pd g pu239t es cu 1.6454460 30.0 1.6330000 0.0000000 0 0.0000000 88wah1 0
109 rh g pu239t rc cu 1.2696032 46.0 1.2600000 0.5800000 0 0.0000000 81dic1 0
109 rh g pu239t sp fi 0.0364837 45.2 0.0490000 45.0000000% 109 pu239t 1.0000000 84sch1 37
109 rh g pu239t cm in 0.0000000 0.0 0.0358500 45.0000000% 0 1.0000000 88wah1 0
109 rh m pu239t sp fi 0.0364837 45.2 0.0490000 45.0000000% 109 pu239t 1.0000000 84sch1 37
109 rh m pu239t cm in 0.0000000 0.0 0.0358600 45.0000000% 0 1.0000000 88wah1 0
109 ru g pu239t rc cu 1.0962923 90.1 1.0880000 0.9800000 0 0.0000000 85nai1 0
109 ru g pu239t sp fi 1.0036740 8.1 0.6740000 7.0000000% 109 pu239t 1.0000000 84sch1 36
109 ru g pu239t cm in 0.0000000 0.0 1.0790000 7.0000000% 0 1.0000000 88wah1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

109 tc g pu239t sp fi 0.4065326 10.8 0.2730000 10.0000000% 109 pu239t 1.0000000 84sch1 36
109 tc g pu239t cm in 0.0000000 0.0 0.4820000 10.0000000% 0 1.0000000 88wah1 0
109 mo g pu239t sp fi 0.0059565 99.9 0.0040000 0.0200000 109 pu239t 1.0000000 84sch1 36
109 mo g pu239t cm in 0.0000000 0.0 0.0003484 73.0000000% 0 1.0000000 88wah1 0
109 pu239f cm cu x3 0.0000000 0.0 1.6000000 0.0000000 0 0.0000000 72sid1 0
109 pu239f cm cu x3 0.0000000 0.0 1.7700000 15.0000000% 0 0.0000000 77cro1 0
109 pu239f cm re x3 0.0000000 0.0 1.0400000 10.0000000% 109 pu239t 1.0000000 74mee4 0
109 pu239f es cu 1.0493177 14.5 1.1000000 0.1600000 148 nd g pu239f 1.6540000 77mae1 0
109 pu239f es cu 1.0636145 15.2 1.1200000 0.1700000 0 0.0000000 77mae1 0
109 pu239f es cu su 0.0000000 0.0 1.5100000 0.0000000 148 nd g pu239f 1.7300000 70lis1 0

109 pu239f es cu su 0.0000000 0.0 1.5100000 0.1900000 148 nd g pu239f 1.6500000 74mae1 0
109 pd g pu239f rc cu x1 0.0000000 0.0 1.7000000 0.0000000 140 ba g pu239f 5.0000000 51ste3 0
109 pd g pu239f rc cu x1 0.0000000 0.0 1.6500000 0.0000000 140 ba g pu239f 4.9700000 65cro2 0
109 pd g pu239f cm cu x3 0.0000000 0.0 0.6024000 15.0000000% 0 0.0000000 73net2 0
109 pd g pu239f cm cu x3 0.0000000 0.0 2.0000000 0.0000000 137 cs g pu239f 6.8000000 60kat1 0
109 pd g pu239f rc cu x1 0.0000000 0.0 1.6000000 3.0000000% 99 mo g u235t 0.0240000 56for1 7
109 pd g pu239f rc cu x1 0.0000000 0.0 63.6800000 1.4000000% 99 mo g u235t 0.0000000 76for1 7
109 pd g pu239f rc cu x1 0.0000000 0.0 45.6000000 1.4000000% 99 mo g u235t 0.0000000 76for1 7
109 pd g pu239f rc cu x1 0.0000000 0.0 69.0800000 1.4000000% 99 mo g u235t 0.0000000 76for1 7
109 pd g pu239f es fc 0.9840458 18.8 1.0000000 15.0000000% 109 pu239f 1.0000000 89rid1 0
109 pu241t cm cu 0.0000000 0.0 3.1000000 0.0000000 0 0.0000000 72sid1 0
109 pu241t es cu 2.4769627 20.0 2.5000000 0.5000000 0 0.0000000 73wal1 0
109 pu241t cm cu 0.0000000 0.0 2.4800000 10.0000000% 0 0.0000000 77cro1 0
109 pu241t cm cu 0.0000000 0.0 1.7000000 0.0000000 0 0.0000000 79wal1 0
109 pu241t es cu 2.1995429 17.6 2.2200000 0.3900000 0 0.0000000 77mae1 0
109 pd g pu241t rc cu x4 0.0000000 0.0 3.9000000 0.0000000 0 0.0000000 63kir1 0
109 pd g pu241t rc cu 2.2391743 5.3 2.2600000 0.1200000 0 0.0000000 73sko2 0
109 ru g pu241t rc cu 2.7048433 5.0 2.7300000 0.0100000 0 0.0000000 87nai1 0
109 u233t cm cu 0.0000000 0.0 0.0470000 0.0000000 0 0.0000000 72sid1 0
109 u233t cm cu 0.0000000 0.0 0.0400000 0.0000000 0 0.0000000 73lam1 0
109 u233t cm cu 0.0000000 0.0 0.0470000 0.0050000 0 0.0000000 73wal1 0
109 u233t cm cu 0.0000000 0.0 0.0504000 15.0000000% 0 0.0000000 77cro1 0
109 u233t es cu 0.0402654 20.0 0.0426300 20.0000000% 0 0.0000000 87wah1 36
109 pd g u233t rc cu 0.0363809 60.1 0.0400000 0.0000000 99 mo g u233t 5.1000000 47ste1 0
109 pd g u233t cm cu 0.0000000 0.0 0.0392100 16.0000000% 0 0.0000000 73net2 0
109 th232f cm cu 0.0000000 0.0 0.0550000 0.0000000 0 0.0000000 65eng1 0
109 th232f cm cu x3 0.0000000 0.0 0.0520000 0.0000000 0 0.0000000 72sid1 0
109 th232f cm cu x3 0.0000000 0.0 0.0410000 0.0000000 0 0.0000000 73lam1 0
109 th232f cm cu x3 0.0000000 0.0 0.0400000 0.0000000 0 0.0000000 74lam1 0
109 th232f cm cu x3 0.0000000 0.0 0.0525000 7.6000000% 0 0.0000000 77cro1 0
109 th232f es cu 0.0676754 5.0 0.0678000 5.0000000% 0 0.0000000 74mee0 0
109 pd g th232f rc cu 0.0583909 60.1 0.0470000 0.0000000 89 sr g th232f 6.0000000 50nid1 0
109 pd g th232f rc re 0.0557197 10.0 3.7100000 0.2800000 99 mo g u235t 0.0000000 63iye1 7
109 pd g th232f cm cu x3 0.0000000 0.0 0.0517300 8.0000000% 0 0.0000000 73net2 0
109 pd g th232f cm cu x3 0.0000000 0.0 0.0550000 0.0000000 0 0.0000000 60kat1 0
109 pd g th232f rc cu 0.0639036 20.0 0.0530000 0.0100000 89 sr g u235t 0.0280000 51tur1 22

109	pd g	th232f	rc	re	x1	0.0000000	0.0	3.4800000	0.0800000	99	mo g	u235t	0.0000000	81ert1	7
109	pd g	th232f	cm	cu	x3	0.0000000	0.0	0.0558000	0.0055000	0			0.0000000	81ert1	0
109	pd g	th232f	es	cu		0.0676754	5.0	0.0678000	5.0000000%	0			0.0000000	87rid1	0
109	pd g	th232f	rc	cu		0.0638753	20.0	1.2990000	18.9000000%	89	sr g	u235t	0.0000000	51tur1	7
110		u235t	cm	cu		0.0000000	0.0	0.0200000	0.0000000	0			0.0000000	72sid1	0
110		u235t	cm	cu		0.0000000	0.0	0.0170000	0.0000000	0			0.0000000	73lam1	0
110	pd g	u235t	es	cu	cm	0.0220633	18.2	0.0220000	0.0040000	0			0.0000000	73wal1	0
110		u235t	ms	cu		0.0330950	9.1	0.0330000	0.0030000	0			0.0000000	76dii1	0
110		u235t	sp	cu		0.0240691	20.8	0.0240000	0.0050000	0			1.0000000	76woh2	0
110		u235t	cm	cu		0.0000000	0.0	0.0235000	20.0000000%	0			0.0000000	77cro1	0
110	pd g	u235t	ms	cu		0.0250126	2.3	0.0243000	0.0005000	101	ru g	u235t	5.0400000	78shi1	0
110		u235t	es	cu		0.0268270	20.0	0.0267500	20.0000000%	0			0.0000000	87wah1	36
110	rh g	u235t	cm	in		0.0000000	0.0	0.0000778	93.0000000%	0			1.0000000	88wah1	0
110	rh m	u235t	cm	in		0.0000000	0.0	0.0000778	93.0000000%	0			1.0000000	88wah1	0
110	ru g	u235t	cm	in		0.0000000	0.0	0.0064020	13.0000000%	0			1.0000000	88wah1	0
110	tc g	u235t	cm	in		0.0000000	0.0	0.0174900	11.0000000%	0			1.0000000	88wah1	0
110	mo g	u235t	cm	in		0.0000000	0.0	0.0024120	22.0000000%	0			1.0000000	88wah1	0
110		u235f	es	cu		0.0891971	30.0	0.1098000	0.0000000	148	nd g	u235f	1.8100000	63wea1	0
110		u235f	es	cu	cm	0.0873437	30.0	0.1000000	0.0000000	0			0.0000000	72sid1	0
110		u235f	cm	cu		0.0000000	0.0	0.0521000	20.0000000%	0			0.0000000	77cro1	0
110		u235f	es	re		0.0588953	10.8	2.6500000	10.0000000%	110		u235t	1.0000000	74mee4	0
110	pd g	u235he	es	cu		1.1748625	30.0	1.1990000	0.0000000	0			0.0000000	63wea1	0
110		u235he	es	cu		1.1092169	21.5	1.1200000	20.0000000%	113		u235he	1.0800000	74mee6	0
110		u235he	cm	cu		0.0000000	0.0	1.1800000	20.0000000%	0			0.0000000	77cro1	0
110		u235he	es	cu		1.0680568	10.0	1.0900000	10.0000000%	0			0.0000000	74mee8	0
110		u238f	cm	cu		0.0000000	0.0	0.1400000	0.0000000	0			0.0000000	64wal1	0
110		u238f	es	cu	cm	0.1347358	30.0	0.1400000	0.0000000	0			0.0000000	72sid1	0
110		u238f	es	cu		0.1530804	23.0	0.1400000	20.0000000%	118		u238f	0.0380000	74mee6	0
110		u238f	cm	cu	x3	0.0000000	0.0	0.0960000	20.0000000%	0			0.0000000	77cro1	0
110		u238f	es	cu		0.1257855	30.0	0.1307000	0.0000000	0			0.0000000	74mae1	0
110	pd g	u238he	es	cu		1.0032622	30.0	1.0140000	0.0000000	0			0.0000000	63wea1	0
110		u238he	es	cu	su	0.0000000	0.0	1.1200000	0.0000000	0			0.0000000	73dar1	0
110		u238he	es	cu		1.1587181	23.0	1.0970000	20.0000000%	119		u238he	0.6800000	74mee6	0
110		u238he	es	cu		0.9775375	15.0	0.9880000	15.0000000%	0			0.0000000	74mee9	0
110		u238he	cm	cu		0.0000000	0.0	1.0400000	20.0000000%	0			0.0000000	77cro1	0
110		pu239t	cm	cu		0.0000000	0.0	0.7500000	0.0000000	0			0.0000000	72sid1	0

110		pu239t	cm	cu		0.0000000	0.0	0.5700000	0.0000000	0			0.0000000	73lam1	0
110		pu239t	es	cu		0.6570060	20.0	0.6500000	0.1300000	0			0.0000000	73wal1	0
110		pu239t	cm	cu		0.0000000	0.0	0.5400000	20.0000000%	0			0.0000000	77cro1	0
110	pd g	pu239t	ms	cu		0.6471710	5.2	0.6300000	0.0300000	106	ru g	pu239t	4.2800000	78shi1	0
110		pu239t	es	cu		0.6027272	20.0	0.5963000	20.0000000%	0			0.0000000	87wah1	36
110	rh g	pu239t	cm	in		0.0000000	0.0	0.0165000	17.0000000%	0			1.0000000	88wah1	0
110	rh m	pu239t	cm	in		0.0000000	0.0	0.0165000	17.0000000%	0			1.0000000	88wah1	0
110	ru g	pu239t	cm	in		0.0000000	0.0	0.5042000	11.0000000%	0			1.0000000	88wah1	0
110	tc g	pu239t	cm	in		0.0000000	0.0	0.0631500	15.0000000%	0			1.0000000	88wah1	0
110		pu239f	es	cu		0.7507877	30.0	0.8200000	0.0000000	148	nd g	pu239f	1.7500000	65and1	0
110		pu239f	es	cu	cm	0.7908091	30.0	0.8200000	0.0000000	0			0.0000000	72sid1	0
110		pu239f	cm	cu		0.0000000	0.0	0.7710000	20.0000000%	0			0.0000000	77cro1	0
110		pu239f	es	re		0.6968256	11.5	1.1200000	10.0000000%	110		pu239t	1.0000000	74mee4	0
110		pu239f	es	cu		0.5812422	15.0	0.6000000	0.0900000	148	nd g	pu239f	1.6540000	77mae1	0
110		pu239f	es	cu		0.5786408	15.0	0.6000000	0.0900000	0			0.0000000	77mae1	0
110		pu239f	es	cu		0.6020168	30.0	0.6500000	0.0000000	148	nd g	pu239f	1.7300000	70lis1	0
110		pu239f	es	cu	su	0.0000000	0.0	0.5800000	0.0000000	0			0.0000000	74mae1	0
110		pu241t	es	cu		1.1778842	20.0	1.2000000	0.2400000	0			0.0000000	73wal1	0
110		pu241t	cm	cu		0.0000000	0.0	1.2100000	20.0000000%	0			0.0000000	77cro1	0
110		pu241t	es	cu		1.3447511	7.3	1.3700000	0.1000000	0			0.0000000	77mae1	0
110		pu241t	cm	cu	x3	0.0000000	0.0	1.8000000	0.0000000	0			0.0000000	72sid1	0
110	pd g	u233t	ms	cu		0.0387509	3.6	0.0399000	0.0013000	101	ru g	u233t	3.2200000	78shi1	0
110		u233t	cm	cu	x3	0.0000000	0.0	0.0340000	0.0000000	0			0.0000000	72sid1	0
110		u233t	cm	cu	x3	0.0000000	0.0	0.0300000	0.0000000	0			0.0000000	73lam1	0
110		u233t	cm	cu	x3	0.0000000	0.0	0.0290000	0.0060000	0			0.0000000	73wal1	0
110		u233t	cm	cu	x3	0.0000000	0.0	0.0310000	20.0000000%	0			0.0000000	77cro1	0
110		u233t	es	cu		0.0359150	20.0	0.0364200	20.0000000%	0			0.0000000	87wah1	36
110		th232f	cm	cu		0.0000000	0.0	0.0610000	0.0000000	0			0.0000000	65eng1	0
110		th232f	cm	cu		0.0000000	0.0	0.0600000	0.0000000	0			0.0000000	72sid1	0
110		th232f	cm	cu		0.0000000	0.0	0.0450000	0.0000000	0			0.0000000	73lam1	0
110		th232f	es	cu		0.0694853	30.0	0.0700000	0.0000000	0			0.0000000	61new1	0
110		th232f	cm	cu		0.0000000	0.0	0.0480000	20.0000000%	0			0.0000000	77cro1	0
110		th232f	es	cu		0.0716691	20.0	0.0722000	20.0000000%	0			0.0000000	74mee0	0
111		u235t	es	cu		0.0180366	30.0	0.0180000	0.0000000	0			0.0000000	72sid1	0
111		u235t	cm	cu	x3	0.0000000	0.0	0.0140000	0.0000000	0			0.0000000	73lam1	0
111		u235t	cm	cu		0.0000000	0.0	0.0180000	0.0030000	0			0.0000000	73wal1	0

111 cd g u235t ms re 0.0160640 8.4 1.2100000 0.0900000 116 cd g u235t 1.0000000 75lae1 0
111 u235t cm cu 0.0000000 0.0 0.0193000 5.1000000% 0 0.0000000 77cro1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

111 cd g u235t ms cu rp 0.0173334 7.3 0.0180000 0.0000000 no. relative values = 2 77mat1
111 cd g u235t ms cu rp 0.0152112 7.6 1.0000000 0.0000000 no. relative values = 2 77mat1
111 u235t rc cu 0.0140285 14.3 0.0140000 0.0020000 0 0.0000000 65for3 0
111 cd g u235t ms re 0.0165951 8.2 1.2500000 0.0900000 116 cd g u235t 1.0000000 70lum1 0
111 u235t es cu 0.0194094 20.0 0.0193700 20.0000000% 0 0.0000000 87wah1 36
111 ag g u235t rc cu 0.0183226 60.0 0.0180000 0.0000000 140 ba g u235t 6.1000000 51eng2 0
111 ag g u235t rc cu 0.0183226 60.0 0.0180000 0.0000000 140 ba g u235t 6.1000000 51ste2 0
111 ag g u235t rc cu 0.0174638 60.0 0.0180000 0.0000000 140 ba g u235t 6.4000000 52eng1 0
111 ag g u235t rc cu 0.0177852 30.0 0.0180000 0.0000000 89 sr g u235t 4.8000000 57nas1 0
111 ag g u235t cm cu 0.0000000 0.0 0.0183000 5.0000000% 0 0.0000000 73net2 0
111 ag g u235t rc cu 0.0200407 5.0 0.0200000 0.0010000 0 0.0000000 74rao1 0
111 ag g u235t rc cu 0.0183144 60.1 0.0160000 0.0000000 140 ba g u233t 5.6000000 48gru1 0
111 ag g u235t rc cu 0.0231045 20.0 0.0001600 0.0000100 140 ba g u235t 0.0430000 51gru1 0
111 pd m u235t rc re 0.0001675 24.7 0.0096000 10.0000000% 111 pd g u235t 1.0000000 69aum1 0
111 rh g u235t cm in 0.0000000 0.0 0.0013000 27.0000000% 0 1.0000000 88wah1 0
111 ru g u235t rc cu 0.0165911 35.7 0.0170000 0.0060000 105 ru g u235t 0.9900000 75fet1 0
111 ru g u235t cm in 0.0000000 0.0 0.0109800 11.0000000% 0 1.0000000 88wah1 0
111 tc g u235t cm in 0.0000000 0.0 0.0072360 12.0000000% 0 1.0000000 88wah1 0
111 mo g u235t cm in 0.0000000 0.0 0.0002104 69.0000000% 0 1.0000000 88wah1 0
111 u235f es cu 0.0520708 30.0 0.0550000 0.0000000 148 nd g u235f 1.7500000 72sid1 0
111 u235f es cu 0.0556831 20.2 0.0486000 20.0000000% 115 u235f 0.0291000 74mee6 0
111 u235f cm cu 0.0000000 0.0 0.0407000 7.5000000% 0 0.0000000 77cro1 0
111 u235f es re 0.0476951 10.4 2.7800000 10.0000000% 111 u235t 1.0000000 74mee4 0
111 cd g u235f ms cu 0.0431714 2.0 0.0456000 0.0009000 148 nd g u235f 1.7500000 70lis1 0
111 u235f rc cu 0.0283651 33.3 0.0300000 0.0100000 140 ba g u235f 6.2200000 77bla1 0
111 u235f cm cu 0.0000000 0.0 0.0333000 3.6000000% 0 0.0000000 91jam3 0
111 ag g u235f cm cu x3 0.0000000 0.0 0.0472000 5.0000000% 0 0.0000000 73net2 0
111 ag g u235f cm cu x4 0.0000000 0.0 0.0710000 10.0000000% 137 cs g u235f 6.3000000 60kat1 0
111 ag g u235f es cu 0.0412371 10.0 0.0419000 10.0000000% 0 0.0000000 89rid1 36
111 ag g u235f es cu su 0.0000000 0.0 0.0443000 10.0000000% 0 0.0000000 74mee1 36

111	ag g	u235f	es	fc		0.0417773	10.2	0.9970000	10.0000000%	111		u235f	1.0000000	89rid1	0
111	ag g	u235f	rc	cu		0.0309528	10.0	0.0310000	10.0000000%	140	ba g	u235f	5.8900000	72cun2	36
111	ag g	u235f	rc	cu		0.0322178	10.0	0.0315000	10.0000000%	140	ba g	u235f	5.7500000	70bow1	36
111	ag g	u235f	rc	cu		0.0344463	15.7	0.0350000	15.7000000%	0			0.0000000	74cun1	36
111	ag g	u235f	rc	cu		0.0433039	5.0	0.0440000	0.0010000	0			0.0000000	74cun1	0
111	ag g	u235f	rc	cu		0.0433039	5.0	0.0440000	0.0020000	0			0.0000000	73cun2	0
111	ag g	u235f	rc	cu		0.0374083	5.0	2.2480000	2.9000000%	99	mo g	u235t	0.0000000	76for1	7
111	ag g	u235f	rc	cu		0.0346984	20.0	0.0350000	0.0070000	99	mo g	u235f	5.9000000	60bon1	0
111	ag g	u235f	rc	cu		0.0326823	5.0	1.9640000	2.9000000%	99	mo g	u235t	0.0000000	76for1	7
111	ag g	u235f	rc	cu		0.0339470	5.0	2.0400000	2.9000000%	99	mo g	u235t	0.0000000	76for1	7
111	ag g	u235f	rc	cu	x4	0.0000000	0.0	0.0530000	10.0000000%	99	mo g	u235t	0.0143000	56for1	7
111	ag g	u235f	rc	cu	x4	0.0000000	0.0	0.0310000	0.0020000	140	ba g	u235f	6.0000000	60pet1	0
111	ag g	u235f	rc	re	x4	0.0000000	0.0	3.0900000	0.7900000%	99	mo g	u235t	0.0000000	64cow1	7
111		u235he	cm	cu	es	0.0000000	0.0	1.1600000	0.0000000	0			0.0000000	63wea1	0
111		u235he	es	cu		1.0961396	21.5	1.0900000	20.0000000%	113		u235he	1.0800000	74mee6	0
111	cd g	u235he	rc	cu		1.1126196	5.0	76.3000000	2.9000000%	99	mo g	u235t	0.0000000	76for1	7
111		u235he	cm	cu		0.0000000	0.0	1.0400000	3.9000000%	0			0.0000000	77cro1	0
111		u235he	es	cu		1.0845142	10.0	1.0900000	10.0000000%	0			0.0000000	74mee8	0
111	ag g	u235he	rc	re		1.1093061	10.0	76.3000000	0.8000000	99	mo g	u235t	0.0000000	56for1	7
111	ag g	u235he	rc	re		1.1242739	10.4	0.2200000	0.0100000	99	mo g	u235he	1.0000000	58pro1	0
111	ag g	u235he	rc	re		1.1776382	10.0	81.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
111	ag g	u235he	rc	cu		1.0088967	5.0	1.0140000	0.0150000	0			0.0000000	65for2	0
111	ag g	u235he	cm	cu		0.0000000	0.0	1.1100000	0.0000000	0			0.0000000	69gun2	0
111	ag g	u235he	cm	cu		0.0000000	0.0	1.1000000	6.0000000%	0			0.0000000	73net2	0
111	ag g	u235he	cm	cu		0.0000000	0.0	1.2000000	0.0000000	0			0.0000000	60kat1	0
111	ag g	u235he	rc	cu		1.1181661	10.0	0.9200000	5.0000000%	99	mo g	u235t	0.0143000	56for1	6
111	ag g	u235he	rc	re	su	0.0000000	0.0	74.4000000	0.6600000%	99	mo g	u235t	0.0000000	64cow1	7
111	ag g	u235he	rc	cu		1.0816825	5.0	74.4000000	2.9000000%	99	mo g	u235t	0.0000000	76for1	7
111	ag g	u235he	rc	cu		0.9497085	10.4	1.0500000	0.1000000	99	mo g	u235he	5.6500000	60bon1	0
111		u238f	cm	cu	es	0.0000000	0.0	0.0700000	0.0000000	0			0.0000000	64wal1	0
111		u238f	es	cu		0.0776334	30.0	0.0780000	0.0000000	0			0.0000000	72sid1	0
111	cd g	u238f	ms	re		0.0743589	12.7	1.9000000	0.1100000	116	cd g	u238f	1.0000000	75lae1	0
111		u238f	es	cu		0.0904650	23.0	0.0800000	20.0000000%	118		u238f	0.0380000	74mee6	0
111		u238f	cm	cu		0.0000000	0.0	0.0780000	8.0000000%	0			0.0000000	77cro1	0
111		u238f	rc	cu		0.0657283	14.3	0.0700000	0.0100000	140	ba g	u238f	6.1600000	77bla1	0
111		u238f	es	cu		0.0808183	30.0	0.0812000	0.0000000	0			0.0000000	74mae1	0

111 u238f rc cu x4 0.0000000 0.0 0.3460000 0.0300000 0 0.0000000 85li 1 0
111 ag g u238f rc cu 0.0682713 60.0 0.0720000 0.0000000 140 ba g u238f 6.1000000 51eng3 0
111 ag g u238f rc cu 0.0650711 60.0 0.0720000 0.0000000 140 ba g u238f 6.4000000 52eng1 0
111 ag g u238f rc cu 0.0649442 20.0 0.0640000 0.0060000 140 ba g u238f 5.7000000 54kel1 0
111 ag g u238f rc re 0.0847212 15.1 0.0138000 0.0000000 99 mo g u238f 1.0000000 68bor2 0
111 ag g u238f rc cu 0.0556347 19.0 0.0580000 0.0110000 140 ba g u238f 6.0300000 72cun2 0
111 ag g u238f rc cu x4 0.0000000 0.0 0.0485000 0.0024000 0 0.0000000 74rao1 0
111 ag g u238f rc cu 0.0766381 10.4 0.0770000 0.0080000 0 0.0000000 75har1 0
111 ag g u238f cm cu 0.0000000 0.0 0.0760000 0.0000000 0 0.0000000 60kat1 0
111 ag g u238f rc cu 0.0874374 10.1 0.0940000 0.0080000 99 mo g u238f 6.6000000 60pet1 0
111 ag g u238f rc re x4 0.0000000 0.0 6.3800000 5.0000000% 99 mo g u235t 0.0000000 61lev1 7
111 ag g u238f rc cu 0.0700096 10.0 0.0590000 3.0000000% 99 mo g u235t 0.0143000 56for1 8
111 ag g u238f rc re su 0.0000000 0.0 4.3400000 0.6300000% 99 mo g u235t 0.0000000 64cow1 7
111 ag g u238f rc cu 0.0698635 5.0 4.0000000 2.7000000% 99 mo g u235t 0.0000000 76for1 7
111 ag g u238f rc cu 0.0699159 5.0 4.0030000 2.9000000% 99 mo g u235t 0.0000000 76for1 7
111 ag g u238f rc cu 0.0705971 5.0 4.0420000 2.9000000% 99 mo g u235t 0.0000000 76for1 7
111 ag g u238f rc cu 0.0691649 5.0 3.9600000 2.9000000% 99 mo g u235t 0.0000000 76for1 7
111 ag g u238f rc cu 0.0667029 17.2 0.0700000 0.0120000 140 ba g u238f 6.0700000 77har1 0
111 ag g u238f cm cu x3 0.0000000 0.0 0.1029000 16.0000000% 0 0.0000000 73net2 0
111 ag g u238f rc cu 0.0662132 5.0 3.7910000 2.9000000% 99 mo g u235t 0.0000000 76for1 7
111 ag g u238f rc cu 0.0726581 5.0 4.1600000 2.9000000% 99 mo g u235t 0.0000000 76for1 7
111 ag g u238f es cu 0.0706663 12.7 0.0710000 0.0090000 0 0.0000000 78gin1 0
111 ag g u238f rc cu x4 0.0000000 0.0 0.0460000 5.0000000% 0 0.0000000 78mar1 0
111 ag g u238f rc cu 0.0824409 12.8 0.0940000 0.0120000 99 mo g u238f 7.0000000 60bon1 0
111 ag g u238f rc cu x4 0.0000000 0.0 0.0513000 0.0103000 0 0.0000000 67bor4 0
111 ag g u238f rc cu x4 0.0000000 0.0 0.0500000 0.0150000 0 0.0000000 85chi1 36
111 pd m u238f rc re 0.0003399 24.7 0.0048000 10.0000000% 111 pd g u238f 1.0000000 69aum1 0
111 u238he es cu 0.9529704 30.0 0.9555000 0.0000000 0 0.0000000 63wea1 0
111 u238he rc cu rp 0.9956756 16.1 1.1100000 0.0000000 no. relative values = 1 70gev1
111 cd g u238he rc cu 0.9674320 11.3 0.9700000 0.1100000 0 0.0000000 71com1 0
111 u238he cm cu su 0.0000000 0.0 0.9530000 0.0240000 0 0.0000000 73dar1 0
111 u238he es cu 1.0434448 23.0 0.9800000 20.0000000% 119 u238he 0.6800000 74mee6 0
111 u238he es cu 1.0063288 15.0 1.0090000 15.0000000% 0 0.0000000 74mee9 0
111 cd g u238he rc cu 1.0683951 5.0 65.8000000 2.9000000% 99 mo g u235t 0.0000000 76for1 7
111 u238he cm cu 0.0000000 0.0 0.9050000 4.8000000% 0 0.0000000 77cro1 0
111 ag g u238he rc re 1.0652133 10.0 65.8000000 0.9000000 99 mo g u235t 0.0000000 56for1 7

111 ag g u238he rc cu 0.8260077 10.1 0.8100000 0.0400000 99 mo g u238he 5.5800000 57cun1 0
111 ag g u238he rc re 1.0242496 10.1 0.1800000 0.0100000 99 mo g u238he 1.0000000 58pro1 0
111 ag g u238he rc cu x4 0.0000000 0.0 0.6000000 0.1000000 140 ba g u238he 4.3000000 62bro1 0
111 ag g u238he rc cu 1.0032645 16.6 0.9800000 0.1600000 139 ba g u238he 4.9200000 64jam1 0
111 ag g u238he rc cu 1.0771408 15.0 1.0800000 0.0000000 0 0.0000000 65for1 0
111 ag g u238he rc re 0.8763024 15.1 0.1540000 0.0000000 99 mo g u238he 1.0000000 67bor1 0
111 ag g u238he cm cu 0.0000000 0.0 0.8900000 0.0000000 0 0.0000000 69gun2 0
111 ag g u238he rc cu 0.9807369 5.7 1.1000000 0.0500000 111 u238he 1.1100000 70gev1 0
111 ag g u238he rc cu 0.9674320 11.3 0.9700000 0.1100000 0 0.0000000 71com1 0
111 ag g u238he cm cu 0.0000000 0.0 0.9600000 6.1000000% 0 0.0000000 73net2 0
111 ag g u238he rc cu 0.9586426 15.7 0.9600000 0.1500000 140 ba g u238he 4.6000000 76raj1 0
111 ag g u238he cm cu 0.0000000 0.0 0.9600000 0.0000000 0 0.0000000 60kat1 0
111 ag g u238he rc re su 0.0000000 0.0 62.0000000 0.5700000% 99 mo g u235t 0.0000000 64cow1 7
111 ag g u238he rc cu 1.0036965 5.0 62.0000000 2.9000000% 99 mo g u235t 0.0000000 76for1 7
111 ag g u238he rc cu 0.9279526 11.4 1.0600000 0.1200000 99 mo g u238he 6.5000000 60bon1 0
111 ag g u238he rc cu 0.8208212 5.0 0.8230000 0.0370000 0 0.0000000 85liu1 0
111 ag g u238he rc cu 1.0671673 5.0 1.0700000 0.0300000 0 0.0000000 65for2 0
111 pd g u238he rc cu x1 0.0000000 0.0 0.6500000 0.0800000 139 ba g u238he 4.9200000 64jam1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

111 pd g u238he rc cu 0.9856370 18.6 0.9700000 0.1800000 99 mo g u238he 5.6000000 75ada1 0
111 pu239t es cu 0.2810670 30.0 0.2800000 0.0000000 0 0.0000000 72sid1 0
111 pu239t cm cu x3 0.0000000 0.0 0.2700000 0.0000000 0 0.0000000 73lam1 0
111 pu239t cm cu 0.0000000 0.0 0.2800000 0.0100000 0 0.0000000 73wal1 0
111 pu239t cm cu 0.0000000 0.0 0.2670000 8.5000000% 0 0.0000000 77cro1 0
111 cd g pu239t ms cu rp 0.2976917 4.9 0.2800000 0.0000000 no. relative values = 2 77mat1
111 cd g pu239t ms cu rp 0.2770454 6.6 1.0000000 0.0000000 no. relative values = 2 77mat1
111 pu239t es cu 0.2806655 20.0 0.2796000 20.0000000% 0 0.0000000 87wah1 36
111 ag g pu239t rc cu 0.2707260 60.0 0.2700000 0.0000000 140 ba g pu239t 5.3600000 51ste3 0
111 ag g pu239t rc cu 0.2810670 14.3 0.2800000 0.0400000 0 0.0000000 65mar1 0
111 ag g pu239t cm cu 0.0000000 0.0 0.2718000 16.0000000% 0 0.0000000 73net2 0
111 ag g pu239t rc cu 0.2481071 10.0 0.2000000 3.0000000% 99 mo g u235t 0.0143000 56for1 7
111 ag g pu239t rc cu 0.2909304 5.0 16.4000000 2.9000000% 99 mo g u235t 0.0000000 76for1 7
111 ag g pu239t rc cu 0.2927043 5.0 16.5000000 2.9000000% 99 mo g u235t 0.0000000 76for1 7

111 ag g pu239t rc cu 0.3122317 15.1 0.3400000 0.0000000 99 mo g pu239t 6.7900000 71ram1 0
111 ag g pu239t rc cu 0.2818832 5.0 18.7000000 0.9000000 140 ba g u235t 0.0000000 86chi1 7
111 ag g pu239t rc cu 0.3212194 5.0 0.3200000 0.0100000 0 0.0000000 84jai1 0
111 ag g pu239t rc cu 0.3111813 5.0 0.3100000 0.0100000 0 0.0000000 84jai1 0
111 ag g pu239t rc cu x4 0.0000000 0.0 0.2120000 0.0000000 0 0.0000000 63kir1 0
111 pd g pu239t cm in 0.0000000 0.0 0.0000660 96.0000000% 0 10.0000000 88wah1 0
111 pd m pu239t rc re x1 0.0000000 0.0 0.0186000 10.0000000% 111 pd g pu239t 1.0000000 69aum1 0
111 pd m pu239t cm in 0.0000000 0.0 0.0001227 96.0000000% 0 10.0000000 88wah1 0
111 rh g pu239t cm in 0.0000000 0.0 0.0432100 13.0000000% 0 1.0000000 88wah1 0
111 ru g pu239t cm in 0.0000000 0.0 0.2285000 11.0000000% 0 1.0000000 88wah1 0
111 tc g pu239t cm in 0.0000000 0.0 0.0092380 21.0000000% 0 1.0000000 88wah1 0
111 pu239f es cu 0.3668845 30.0 0.3800000 0.0000000 148 nd g pu239f 1.7100000 72sid1 0
111 pu239f cm cu 0.0000000 0.0 0.3980000 11.0000000% 0 0.0000000 77cro1 0
111 pu239f es re 0.3676629 10.2 1.2500000 10.0000000% 111 pu239t 1.0000000 74mee4 0
111 pu239f es cu 0.2994523 13.3 0.3000000 0.0400000 148 nd g pu239f 1.6540000 77mae1 0
111 pu239f es cu 0.2881750 13.8 0.2900000 0.0400000 0 0.0000000 77mae1 0
111 cd g pu239f ms cu 0.3588258 1.9 0.3760000 0.0070000 148 nd g pu239f 1.7300000 70lis1 0
111 pu239f es cu su 0.0000000 0.0 0.3290000 0.0000000 0 0.0000000 74mae1 0
111 ag g pu239f es cu 0.3497849 10.0 0.3520000 10.0000000% 0 0.0000000 89rid1 36
111 ag g pu239f es cu 0.3502817 10.0 0.3525000 10.0000000% 0 0.0000000 74mee1 36
111 ag g pu239f rc cu x4 0.0000000 0.0 0.4200000 0.0400000 140 ba g pu239f 5.2000000 71cun1 0
111 ag g pu239f cm cu 0.0000000 0.0 0.4080000 5.0000000% 0 0.0000000 73net2 0
111 ag g pu239f es fc 0.3536911 10.1 0.9970000 10.0000000% 111 pu239f 1.0000000 89rid1 0
111 ag g pu239f rc cu 0.3532879 5.2 0.3580000 0.0180000 140 ba g pu239f 5.3600000 72cun2 0
111 ag g pu239f rc cu 0.3577345 5.6 0.3600000 0.0200000 0 0.0000000 77cun1 0
111 ag g pu239f rc cu 0.3517957 5.0 20.8000000 2.9000000% 99 mo g u235t 0.0000000 76for1 7
111 ag g pu239f rc cu 0.3568697 5.0 21.1000000 2.9000000% 99 mo g u235t 0.0000000 76for1 7
111 ag g pu239f rc cu 0.3753051 6.9 22.1900000 6.9000000% 99 mo g u235t 0.0000000 76for1 7
111 ag g pu239f rc cu x4 0.0000000 0.0 0.4360000 0.0220000 99 mo g pu239f 5.9800000 72cun1 0
111 ag g pu239f rc cu x4 0.0000000 0.0 0.5500000 0.0600000 140 ba g pu239f 5.4000000 61bon1 0
111 ag g pu239f rc cu x4 0.0000000 0.0 0.4500000 0.0300000 140 ba g pu239f 4.9000000 60pet1 0
111 ag g pu239f rc cu x4 0.0000000 0.0 17.0000000 2.7000000% 99 mo g u235t 0.0000000 76for1 7
111 ag g pu239f rc cu x4 0.0000000 0.0 17.4000000 2.9000000% 99 mo g u235t 0.0000000 76for1 7
111 ag g pu239f rc re su 0.0000000 0.0 0.0430000 12.0000000% 99 mo g pu239f 1.0000000 66cun1 0
111 pu241t es cu 0.5166117 30.0 0.5200000 0.0000000 0 0.0000000 72sid1 0
111 pu241t cm cu 0.0000000 0.0 0.5500000 0.0400000 0 0.0000000 73wal1 0

111 pu241t es cu 0.4967420 20.0 0.5000000 0.1000000 0 0.0000000 67rid2 0
111 pu241t cm cu 0.0000000 0.0 0.5630000 4.8000000% 0 0.0000000 77cro1 0
111 pu241t cm cu 0.0000000 0.0 0.6000000 0.0000000 0 0.0000000 79wal1 0
111 pu241t es cu 0.5662859 17.5 0.5700000 0.1000000 0 0.0000000 77mae1 0
111 ag g pu241t rc cu 0.5666341 15.0 0.5200000 0.0000000 137 cs g pu239t 0.2700000 69cro2 25
111 ag g pu241t rc cu 0.5563511 5.0 0.5600000 0.0200000 0 0.0000000 73sko2 0
111 ag g pu241t rc cu 0.5861556 5.0 0.5900000 0.0200000 0 0.0000000 73sko2 0
111 ag g pu241t rc cu 0.6202104 5.0 38.6000000 0.8000000 140 ba g u235t 0.0000000 86chi1 7
111 ag g pu241t rc cu x4 0.0000000 0.0 1.7000000 0.0000000 0 0.0000000 63kir1 0
111 u233t es cu 0.0204176 30.0 0.0210000 0.0000000 0 0.0000000 72sid1 0
111 u233t cm cu 0.0000000 0.0 0.0210000 0.0000000 0 0.0000000 73lam1 0
111 u233t cm cu 0.0000000 0.0 0.0230000 0.0040000 0 0.0000000 73wal1 0
111 u233t cm cu 0.0000000 0.0 0.0198000 11.6000000% 0 0.0000000 77cro1 0
111 u233t es cu 0.0193773 20.0 0.0199300 20.0000000% 0 0.0000000 87wah1 36
111 cd g u233t ms re 0.0114205 43.1 0.8900000 40.0000000% 116 cd g u233t 1.0000000 75lae1 36
111 ag g u233t rc cu 0.0234057 60.1 0.0250000 0.0000000 99 mo g u233t 5.1000000 47ste1 0
111 ag g u233t rc cu 0.0198948 10.4 0.0200000 0.0020000 99 mo g u233t 4.8000000 67gan1 0
111 ag g u233t cm cu 0.0000000 0.0 0.0180900 4.0000000% 0 0.0000000 73net2 0
111 ag g u233t rc re 0.0235396 10.4 0.0049300 0.0001400 99 mo g u233t 1.0000000 59reg1 0
111 ag g u233t rc re 0.0151837 10.4 0.0031800 0.0000400 99 mo g u233t 1.0000000 59reg1 0
111 ag g u233t rc cu 0.0223237 10.4 0.0187000 0.0002000 140 ba g u233t 5.2100000 60san1 0
111 ag g u233t rc cu 0.0139245 60.1 0.0150000 0.0000000 140 ba g u233t 6.7000000 48gru1 0
111 ag g u233t rc cu 0.0179412 20.2 0.0001500 0.0000100 140 ba g u233t 0.0520000 51gru1 0
111 ag g u233t rc cu 0.0258179 6.8 1.4800000 0.1000000 140 ba g u235t 0.0000000 86chi1 7
111 pd m u233t rc re 0.0004373 46.3 0.0209000 10.0000000% 111 pd g u233t 1.0000000 69aum1 0
111 th232f cm cu es 0.0000000 0.0 0.0640000 0.0000000 0 0.0000000 65eng1 0
111 th232f es cu 0.0698180 30.0 0.0700000 0.0000000 0 0.0000000 72sid1 0
111 th232f cm cu 0.0000000 0.0 0.0450000 0.0000000 0 0.0000000 73lam1 0
111 th232f cm cu 0.0000000 0.0 0.0600000 0.0000000 0 0.0000000 74lam1 0
111 th232f cm cu 0.0000000 0.0 0.0511000 13.5000000% 0 0.0000000 77cro1 0
111 th232f es cu 0.0711146 20.0 0.0713000 20.0000000% 0 0.0000000 74mee0 0
111 ag g th232f rc cu 0.0546222 60.1 0.0440000 0.0000000 89 sr g th232f 6.0000000 50nid1 0
111 ag g th232f rc cu 0.0578091 30.3 0.0520000 30.0000000% 89 sr g th232f 6.7000000 51tur1 36
111 ag g th232f rc re 0.0643257 10.0 7.7000000 0.7000000 99 mo g u235t 0.0000000 63iye1 7
111 ag g th232f cm cu 0.0000000 0.0 0.0700000 8.0000000% 0 0.0000000 73net2 0
111 ag g th232f cm cu 0.0000000 0.0 0.0520000 0.0000000 0 0.0000000 60kat1 0

111 ag g th232f rc cu 0.0866135 5.4 0.0820000 5.0000000% 99 mo g th232f 2.7800000 65wyt1 0
111 ag g th232f rc cu 0.0458804 30.0 0.0460000 0.0000000 0 0.0000000 57ale1 0
111 ag g th232f rc re 0.0626549 5.0 7.5000000 0.1500000 99 mo g u235t 0.0000000 81ert1 7
111 ag g th232f cm cu 0.0000000 0.0 0.0689000 0.0082000 0 0.0000000 81ert1 0
111 ag g th232f rc cu 0.0542930 20.0 1.9850000 19.2000000% 89 sr g u235t 0.0000000 51tur1 7
111 ag g th232f es cu cm 0.0718128 16.0 0.0720000 16.0000000% 0 0.0000000 89rid1 0
111 pd m th232f rc re 0.0003068 46.3 0.0043000 10.0000000% 111 pd g th232f 1.0000000 69aum1 0
112 cd g u235t ms re x4 0.0000000 0.0 0.7100000 0.1600000 116 cd g u235t 1.0000000 70lum1 0
112 u235t cm cu 0.0000000 0.0 0.0120000 0.0000000 0 0.0000000 72sid1 0
112 u235t cm cu 0.0000000 0.0 0.0100000 0.0000000 0 0.0000000 73lam1 0
112 u235t es cu 0.0140403 21.4 0.0140000 0.0030000 0 0.0000000 73wal1 0
112 cd g u235t es fi 0.0000000 30.3 0.0000744 0.0000000 112 u235t 1000.0000000 74wol1 0
112 u235t cm cu 0.0000000 0.0 0.0095800 7.1000000% 0 0.0000000 77cro1 0
112 cd g u235t ms cu 0.0160839 6.1 0.9200000 0.0500000 111 cd g u235t 1.0000000 77mat1 0
112 cd g u235t ms re nr 0.0140845 9.4 1.0600000 0.0900000 116 cd g u235t 1.0000000 75lae1 0
112 u235t rc cu 0.0120345 8.3 0.0120000 0.0010000 0 0.0000000 65for3 0
112 u235t es cu 0.0127767 20.0 0.0127400 20.0000000% 0 0.0000000 87wah1 36
112 ag g u235t rc fi x1 0.0000000 0.0 0.0022000 50.0000000% 112 ag g u235t 1.0000000 64kim1 0
112 ag g u235t rc fi 0.0000008 50.3 0.0000600 0.0000300 112 ag g u235t 1.0000000 68roc1 0
112 ag g u235t rc fi lt 0.0000007 99.9 0.0000500 0.0000500 112 u235t 1.0000000 71roc1 0
112 pd g u235t rc cu 0.0084559 60.0 0.0083000 0.0000000 140 ba g u235t 6.1000000 51eng2 0
112 pd g u235t rc cu 0.0112066 20.0 0.0110000 0.0010000 140 ba g u235t 6.1000000 51sei1 0
112 pd g u235t rc cu 0.0081566 60.0 0.0084000 0.0000000 140 ba g u235t 6.4000000 52eng1 0
112 pd g u235t rc cu 0.0120345 5.0 0.0120000 0.0006000 0 0.0000000 70gev1 0
112 pd g u235t cm cu 0.0000000 0.0 0.0120000 5.0000000% 0 0.0000000 73net2 0
112 pd g u235t cm in 0.0000000 0.0 0.0001022 83.0000000% 0 1.0000000 88wah1 0
112 rh g u235t cm in 0.0000000 0.0 0.0037220 13.0000000% 0 1.0000000 88wah1 0
112 ru g u235t cm in 0.0000000 0.0 0.0077030 11.0000000% 0 1.0000000 88wah1 0
112 tc g u235t cm in 0.0000000 0.0 0.0012580 23.0000000% 0 1.0000000 88wah1 0
112 u235f es cu cm 0.0403514 30.0 0.0410000 0.0000000 0 0.0000000 72sid1 0
112 u235f es cu 0.0449132 20.2 0.0392000 20.0000000% 115 u235f 0.0291000 74mee6 0
112 u235f cm cu 0.0000000 0.0 0.0392000 10.0000000% 0 0.0000000 77cro1 0
112 u235f es re 0.0376104 10.8 2.9300000 10.0000000% 112 u235t 1.0000000 74mee4 0
112 cd g u235f ms cu 0.0370176 2.1 0.0391000 0.0008000 148 nd g u235f 1.7500000 70lis1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special

nuclide	material	tech.	type	value	err.	value		nuclide	material	value	no.	treatment
112 pd g	u235f	cm	cu	0.0000000	0.0	0.0319200	10.0000000%	0		0.0000000	73net2	0
112 pd g	u235f	es	cu	0.0398486	30.0	0.0410000	0.0000000	137 cs g	u235f	6.3000000	60kat1	0
112 pd g	u235f	rc	cu	0.0394582	5.0	3.1600000	1.3000000%	99 mo g	u235t	0.0000000	76for1	7
112 pd g	u235f	rc	cu	0.0414561	5.0	3.3200000	1.3000000%	99 mo g	u235t	0.0000000	76for1	7
112 pd g	u235f	rc	cu	0.0529292	22.2	0.0090000	0.0020000	140 ba g	u235f	1.0000000	73man1	0
112 pd g	u235f	rc	cu	ae	0.0511269	35.0	0.0520000	35.0000000%	99 mo g	u235t	0.0127000	56for1 7
112	u235he	cm	cu	es	0.0000000	0.0	1.0830000	0.0000000	0		0.0000000	63wea1 0
112	u235he	es	cu		1.0860017	9.4	1.0900000	5.0000000%	113	u235he	1.0800000	74mee6 0
112	u235he	es	cu		1.0646262	10.0	1.0800000	10.0000000%	0		0.0000000	74mee8 0
112 cd g	u235he	es	fi		0.0000001	31.0	0.0000103	0.0000000	112	u235he	100.0000000	74wol1 0
112	u235he	cm	cu	x3	0.0000000	0.0	0.7480000	7.0000000%	0		0.0000000	77cro1 0
112 ag g	u235he	cm	fi	x3	0.0000000	0.0	0.0510000	0.0060000	112	u235he	1.0000000	72net2 0
112 ag g	u235he	rc	fi	x1	0.0000000	0.0	0.0510000	0.0060000	112	u235he	1.0000000	60kri2 0
112 pd g	u235he	rc	re		1.0235765	10.0	94.7000000	0.8000000	99 mo g	u235t	0.0000000	56for1 7
112 pd g	u235he	rc	re		0.9295415	10.0	86.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1 7
112 pd g	u235he	rc	cu		0.9404198	5.0	0.9540000	0.0190000	0		0.0000000	65for2 0
112 pd g	u235he	cm	cu		0.0000000	0.0	0.9300000	0.0000000	0		0.0000000	69gun2 0
112 pd g	u235he	rc	re		1.0624425	8.8	0.2400000	0.0200000	140 ba g	u235he	1.0000000	73man1 0
112 pd g	u235he	cm	cu		0.0000000	0.0	1.0670000	6.0000000%	0		0.0000000	73net2 0
112 pd g	u235he	cm	cu		0.0000000	0.0	0.8100000	0.0000000	0		0.0000000	60kat1 0
112 pd g	u235he	rc	cu		1.0235765	5.0	94.7000000	1.3000000%	99 mo g	u235t	0.0000000	76for1 7
112	u238f	es	cu	cm	0.0594360	30.0	0.0600000	0.0000000	0		0.0000000	64wal1 0
112	u238f	es	cu	cm	0.0693420	30.0	0.0700000	0.0000000	0		0.0000000	72sid1 0
112 cd g	u238f	ms	re		0.0584271	13.5	1.5000000	0.1100000	116 cd g	u238f	1.0000000	75lae1 0
112	u238f	es	cu		0.0675283	23.0	0.0600000	20.0000000%	118	u238f	0.0380000	74mee6 0
112	u238f	cm	cu		0.0000000	0.0	0.0700000	15.0000000%	0		0.0000000	77cro1 0
112	u238f	es	cu		0.0507187	30.0	0.0512000	0.0000000	0		0.0000000	74mae1 0
112	u238f	rc	cu	x4	0.0000000	0.0	0.2570000	0.0110000	0		0.0000000	85li 1 0
112 pd g	u238f	rc	re		0.0460542	8.8	0.0080000	0.0007000	140 ba g	u238f	1.0000000	73man1 0
112 pd g	u238f	cm	cu		0.0000000	0.0	0.0886300	16.0000000%	0		0.0000000	73net2 0
112 pd g	u238f	rc	cu		0.0683514	13.0	0.0690000	0.0090000	0		0.0000000	75har1 0
112 pd g	u238f	cm	cu		0.0000000	0.0	0.0460000	0.0000000	0		0.0000000	60kat1 0
112 pd g	u238f	rc	cu		0.0578747	10.0	0.0580000	3.0000000%	99 mo g	u235t	0.0127000	56for1 8
112 pd g	u238f	rc	cu		0.0600028	5.0	4.6000000	1.3000000%	99 mo g	u235t	0.0000000	76for1 7

112	pd g	u238f	rc	cu		0.0508719	5.0	3.9000000	1.3000000%	99 mo g	u235t	0.0000000	76for1	7
112	pd g	u238f	rc	cu		0.0521619	18.2	0.0550000	0.0100000	140 ba g	u238f	6.0700000	77har1	0
112	pd g	u238f	es	cu		0.0574548	37.9	0.0580000	0.0220000	0		0.0000000	78gin1	0
112	pd g	u238f	rc	re	x4	0.0000000	0.0	7.4700000	5.0000000%	99 mo g	u235t	0.0000000	61lev1	7
112	pd g	u238f	rc	cu		0.0611023	30.0	0.0700000	0.0000000	99 mo g	u238f	7.0000000	60bon1	0
112	pd g	u238f	rc	cu		0.0534924	29.6	0.0540000	0.0160000	0		0.0000000	85chi1	0
112		u238he	es	cu		0.6845828	30.0	0.6864000	0.0000000	0		0.0000000	63wea1	0
112		u238he	rc	cu	x4	0.0000000	0.0	1.2500000	0.0600000	99 mo g	u238he	5.6000000	70gev1	0
112		u238he	cm	cu	su	0.0000000	0.0	0.9850000	0.0330000	0		0.0000000	73dar1	0
112		u238he	es	cu		0.9369709	23.0	0.8800000	20.0000000%	119	u238he	0.6800000	74mee6	0
112		u238he	es	cu		0.9764082	15.0	0.9790000	15.0000000%	0		0.0000000	74mee9	0
112		u238he	cm	cu		0.0000000	0.0	1.0300000	7.1000000%	0		0.0000000	77cro1	0
112	ag g	u238he	rc	cu		0.9886002	15.2	0.9900000	0.1500000	140 ba g	u238he	4.6000000	76raj1	0
112	ag g	u238he	rc	cu		1.0285437	7.9	1.0300000	0.0800000	140 ba g	u238he	4.6000000	75cav1	0
112	ag g	u238he	rc	cu	su	0.0000000	0.0	1.0300000	0.0800000	140 ba g	u238he	4.6000000	74bla1	0
112	ag g	u238he	rc	cu		1.0372467	5.0	1.0400000	0.0400000	0		0.0000000	85liu1	0
112	pd g	u238he	rc	cu	nr	0.8087540	10.5	0.7900000	0.0800000	139 ba g	u238he	4.9200000	64jam1	0
112	pd g	u238he	rc	cu		1.1170349	15.0	1.1200000	0.0000000	0		0.0000000	65for1	0
112	pd g	u238he	cm	cu		0.0000000	0.0	0.7000000	0.0000000	0		0.0000000	69gun2	0
112	pd g	u238he	rc	cu	x4	0.0000000	0.0	1.2400000	0.0500000	99 mo g	u238he	5.6000000	70gev1	0
112	pd g	u238he	rc	cu	su	0.0000000	0.0	1.0000000	0.1000000	0		0.0000000	71bla1	0
112	pd g	u238he	rc	cu	su	0.0000000	0.0	0.9900000	0.0700000	0		0.0000000	73dar4	0
112	pd g	u238he	rc	re	x4	0.0000000	0.0	0.1500000	0.0060000	140 ba g	u238he	1.0000000	73man1	0
112	pd g	u238he	cm	cu		0.0000000	0.0	0.8998000	6.1000000%	0		0.0000000	73net2	0
112	pd g	u238he	rc	cu	su	0.0000000	0.0	0.9900000	0.0700000	140 ba g	u238he	4.4800000	74dar1	0
112	pd g	u238he	rc	cu		1.0741488	5.0	1.0770000	0.0520000	0		0.0000000	75dar1	0
112	pd g	u238he	cm	cu		0.0000000	0.0	0.6900000	0.0000000	0		0.0000000	60kat1	0
112	pd g	u238he	rc	cu		0.9449922	17.3	0.9300000	0.1600000	99 mo g	u238he	5.6000000	75ada1	0
112	pd g	u238he	rc	cu	nr	0.6127989	30.0	0.7000000	0.0000000	99 mo g	u238he	6.5000000	60bon1	0
112	pd g	u238he	rc	cu		1.0871143	5.0	1.0900000	0.0400000	0		0.0000000	65for2	0
112		pu239t	cm	cu	x3	0.0000000	0.0	0.1000000	0.0000000	0		0.0000000	72sid1	0
112		pu239t	cm	cu		0.0000000	0.0	0.1100000	0.0000000	0		0.0000000	73lam1	0
112		pu239t	cm	cu		0.0000000	0.0	0.1100000	0.0200000	0		0.0000000	73wal1	0
112		pu239t	cm	cu		0.0000000	0.0	0.1040000	8.7000000%	0		0.0000000	77cro1	0
112	cd g	pu239t	ms	cu		0.1396469	2.9	0.4700000	0.0100000	111 cd g	pu239t	1.0000000	77mat1	0
112		pu239t	es	cu		0.1148360	20.0	0.1144000	20.0000000%	0		0.0000000	87wah1	36

112	ag g	pu239t	es	cu		0.1003811	10.0	0.1000000	0.0100000	0		0.0000000	67rid1	0
112	ag g	pu239t	es	cu		0.1074078	10.0	0.1070000	10.0000000%	0		0.0000000	74mee1	36
112	ag g	pu239t	es	cu		0.1154382	30.0	0.1150000	0.0000000	0		0.0000000	88wah1	0
112	ag g	pu239t	es	cu		0.1294916	10.0	0.1290000	10.0000000%	0		0.0000000	89rid1	36
112	ag g	pu239t	es	cu		0.1283874	5.6	0.1279000	5.6000000%	0		0.0000000	91jam2	0
112	ag g	pu239t	rc	cu		0.0964245	5.2	0.1050000	0.0050000	99 mo g	pu239t	6.7900000	71ram1	0
112	ag g	pu239t	cm	cu		0.0000000	0.0	0.1168000	8.0000000%	0		0.0000000	73net2	0
112	ag g	pu239t	rc	cu		0.1097251	7.2	9.7000000	0.7000000	140 ba g	u235t	0.0000000	86chi1	7
112	ag g	pu239t	rc	cu		0.0963658	5.2	0.0960000	0.0050000	0		0.0000000	84jai1	0
112	ag g	pu239t	rc	cu		0.1204573	5.0	0.1200000	0.0050000	0		0.0000000	84jai1	0
112	ag g	pu239t	es	fc		0.1289644	10.2	1.0000000	10.0000000%	112	pu239t	1.0000000	89rid1	0
112	pd g	pu239t	rc	cu		0.1002689	60.0	0.1000000	0.0000000	140 ba g	pu239t	5.3600000	51ste3	0
112	pd g	pu239t	rc	cu		0.1257771	10.0	0.1200000	3.0000000%	99 mo g	u235t	0.0127000	56for1	7
112	pd g	pu239t	rc	cu		0.1142283	5.0	0.0930000	0.0030000	137 cs g	pu239t	5.4000000	65mar1	0
112	pd g	pu239t	rc	cu		0.1312505	5.0	9.8600000	1.3000000%	99 mo g	u235t	0.0000000	76for1	7
112	pd g	pu239t	cm	in		0.0000000	0.0	0.0006784	59.0000000%	0		10.0000000	88wah1	0
112	pd g	pu239t	rc	cu		0.1104192	30.0	0.1100000	0.0000000	0		0.0000000	63kir1	0
112	rh g	pu239t	cm	in		0.0000000	0.0	0.0372300	11.0000000%	0		1.0000000	88wah1	0
112	ru g	pu239t	cm	in		0.0000000	0.0	0.0767600	11.0000000%	0		1.0000000	88wah1	0
112	tc g	pu239t	cm	in		0.0000000	0.0	0.0009143	31.0000000%	0		1.0000000	88wah1	0
112		pu239f	es	cu	cm	0.1982201	30.0	0.2000000	0.0000000	0		0.0000000	72sid1	0
112		pu239f	cm	cu		0.0000000	0.0	0.2070000	10.0000000%	0		0.0000000	77cro1	0
112		pu239f	es	re		0.1795837	10.2	1.4100000	10.0000000%	112	pu239t	1.0000000	74mee4	0
112		pu239f	es	cu		0.1493334	13.3	0.1500000	0.0200000	148 nd g	pu239f	1.6540000	77mae1	0
112		pu239f	es	cu		0.1585761	12.5	0.1600000	0.0200000	0		0.0000000	77mae1	0
112	cd g	pu239f	ms	cu		0.1970269	2.0	0.2070000	0.0040000	148 nd g	pu239f	1.7300000	70lis1	0
112		pu239f	es	cu	su	0.0000000	0.0	0.1760000	0.0000000	0		0.0000000	74mae1	0
112	pd g	pu239f	es	cu		0.1907868	10.0	0.1925000	10.0000000%	0		0.0000000	74mee1	36
112	pd g	pu239f	es	cu		0.1887055	10.0	0.1904000	10.0000000%	0		0.0000000	89rid1	36
112	pd g	pu239f	es	cu		0.1982201	10.0	0.2000000	10.0000000%	0		0.0000000	91jam2	36
112	pd g	pu239f	es	cu		0.1343608	30.0	0.1400000	0.0000000	137 cs g	pu239f	6.8000000	60kat1	0
112	pd g	pu239f	rc	cu		0.1764147	10.0	0.1770000	3.0000000%	99 mo g	u235t	0.0127000	56for1	7
112	pd g	pu239f	rc	cu	x4	0.0000000	0.0	10.3000000	1.3000000%	99 mo g	u235t	0.0000000	76for1	7
112	pd g	pu239f	rc	cu		0.1645541	5.0	13.0000000	1.3000000%	99 mo g	u235t	0.0000000	76for1	7
112	pd g	pu239f	rc	cu		0.1822753	5.0	14.4000000	1.3000000%	99 mo g	u235t	0.0000000	76for1	7
112	pd g	pu239f	cm	cu	x3	0.0000000	0.0	0.2258000	10.0000000%	0		0.0000000	73net2	0

112 pd g pu239f es fc 0.1864829 10.2 0.9960000 10.0000000% 112 pu239f 1.0000000 89rid1 36
112 pu241t es cu 0.2980452 30.0 0.3000000 0.0000000 0 0.0000000 72sid1 0
112 pu241t es cu 0.2781755 17.9 0.2800000 0.0500000 0 0.0000000 73wal1 0
112 pu241t cm cu 0.0000000 0.0 0.2130000 7.1000000% 0 0.0000000 77cro1 0
112 pu241t cm cu 0.0000000 0.0 0.2500000 0.0000000 0 0.0000000 79wal1 0
112 pu241t es cu 0.2881104 17.2 0.2900000 0.0500000 0 0.0000000 77mae1 0
112 ag g pu241t rc cu 0.2781755 14.3 0.2800000 0.0400000 0 0.0000000 79dic1 0
112 ag g pu241t rc cu 0.1856859 5.0 15.4000000 0.6000000 140 ba g u235t 0.0000000 86chi1 7
112 pd g pu241t rc cu 0.2314818 5.2 0.2330000 0.0120000 0 0.0000000 73sko2 0
112 pd g pu241t rc cu 0.2215469 5.0 0.2230000 0.0070000 0 0.0000000 73sko2 0
112 pd g pu241t rc cu x4 0.0000000 0.0 0.9600000 0.0000000 0 0.0000000 63kir1 0
112 u233t cm cu 0.0000000 0.0 0.0140000 0.0000000 0 0.0000000 72sid1 0
112 u233t cm cu 0.0000000 0.0 0.0150000 0.0000000 0 0.0000000 73lam1 0
112 u233t cm cu 0.0000000 0.0 0.0150000 0.0010000 0 0.0000000 73wal1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

112 cd g u233t ms re 0.0121904 17.6 0.9500000 0.0700000 116 cd g u233t 1.0000000 75lae1 0
112 u233t cm cu 0.0000000 0.0 0.0131000 9.1000000% 0 0.0000000 77cro1 0
112 u233t es cu 0.0141173 20.0 0.0145200 20.0000000% 0 0.0000000 87wah1 36
112 ag g u233t rc fi su 0.0000000 0.0 0.0002700 0.0000000 112 u233t 1.0000000 67roc1 0
112 ag g u233t rc fi su 0.0000000 0.0 0.0002700 0.0000400 112 ag g u233t 1.0000000 68roc1 0
112 ag g u233t rc fi 0.0000039 34.3 0.0003000 0.0001000 112 u233t 1.0000000 71roc1 0
112 ag g u233t rc cu 0.0119126 11.0 0.9100000 0.1000000 140 ba g u235t 0.0000000 86chi1 7
112 pd g u233t rc cu 0.0149797 60.1 0.0160000 0.0000000 99 mo g u233t 5.1000000 47ste1 0
112 pd g u233t cm cu 0.0000000 0.0 0.0126400 8.0000000% 0 0.0000000 73net2 0
112 pd g u233t rc cu 0.0149223 10.4 0.0125000 0.0004000 140 ba g u233t 5.2100000 60san1 0
112 th232f es cu cm 0.0673245 30.0 0.0675000 0.0000000 0 0.0000000 65eng1 0
112 th232f es cu cm 0.0698180 30.0 0.0700000 0.0000000 0 0.0000000 72sid1 0
112 th232f es cu cm 0.0618388 30.0 0.0620000 0.0000000 0 0.0000000 73lam1 0
112 th232f cm cu 0.0000000 0.0 0.0700000 0.0000000 0 0.0000000 74lam1 0
112 th232f es cu 0.0847790 30.0 0.0850000 0.0000000 0 0.0000000 61new1 0
112 th232f es cu 0.0690201 12.1 0.0692000 12.1000000% 0 0.0000000 77cro1 0
112 th232f es cu 0.0859759 20.0 0.0862000 20.0000000% 0 0.0000000 74mee0 0
112 ag g th232f rc cu 0.1061453 10.4 0.1000000 0.0100000 140 ba g th232f 7.4000000 73cha1 0

112 ag g th232f rc cu 0.0508674 30.0 0.0510000 0.0000000 0 0.0000000 57ale1 0
112 ag g th232f rc in x1 0.0000000 0.0 0.0050000 0.0020000 0 0.0000000 82li 1 0
112 ag g th232f rc cu 0.0833122 20.0 4.0590000 15.4000000% 89 sr g u235t 0.0000000 51tur1 7
112 pd g th232f rc cu 0.0720019 60.1 0.0580000 0.0000000 89 sr g th232f 6.0000000 50nid1 0
112 pd g th232f cm cu 0.0000000 0.0 0.0880000 8.0000000% 0 0.0000000 73net2 0
112 pd g th232f es cu cm 0.0568518 30.0 0.0570000 0.0000000 0 0.0000000 60kat1 0
112 pd g th232f rc cu 0.0950635 30.1 0.0900000 30.0000000% 99 mo g th232f 2.7800000 65wyt1 36
112 pd g th232f rc cu 0.0457985 20.0 0.0650000 0.0100000 89 sr g u235t 6.7000000 51tur1 0
112 pd g th232f rc re 0.0883877 10.0 14.1000000 1.3000000 99 mo g u235t 0.0000000 63iye1 7
112 pd g th232f rc re 0.0760385 5.0 12.1300000 0.1900000 99 mo g u235t 0.0000000 81ert1 7
112 pd g th232f cm cu 0.0000000 0.0 0.0788000 0.0053000 0 0.0000000 81ert1 0
113 u235t cm cu 0.0000000 0.0 0.0120000 0.0000000 0 0.0000000 72sid1 0
113 u235t cm cu x3 0.0000000 0.0 0.0040000 0.0000000 0 0.0000000 73lam1 0
113 u235t cm cu 0.0000000 0.0 0.0098100 20.0000000% 0 0.0000000 77cro1 0
113 u235t es cu 0.0148225 20.0 0.0147800 20.0000000% 0 0.0000000 87wah1 36
113 cd g u235t ms re x1 0.0000000 0.0 0.3600000 0.1900000 116 cd g u235t 1.0000000 70lum1 0
113 cd g u235t ms re 0.0119585 10.8 0.9000000 10.0000000% 116 cd g u235t 1.0000000 75lae1 36
113 cd g u235t ms cu 0.0145687 4.1 0.0150000 3.0000000% 111 cd g u235t 0.0180000 77mat1 0
113 cd g u235t es cu 0.0120345 16.7 0.0120000 0.0020000 0 0.0000000 73wal1 0
113 cd g u235t es cu 0.0174325 20.2 0.0146000 20.0000000% 115 u235t 0.0105700 74mee6 0
113 cd m u235t rc cu x1 0.0000000 0.0 0.2700000 0.0300000 115 cd m u235t 1.0000000 59wah1 0
113 cd m u235t rc cu rp 0.0002721 35.5 0.2700000 0.0000000 no. relative values = 1 59wah1
113 cd m u235t rc cu su 0.0000000 0.0 0.0000500 0.0000000 0 0.0000000 52wah1 0
113 ag g u235t cm cu 0.0000000 0.0 0.0115200 17.0000000% 0 0.0000000 73net2 0
113 ag g u235t rc re 0.0111193 10.1 1.0000000 2.0000000% 99 mo g u235t 551.0000000 61cun1 0
113 ag g u235t sp cu 0.0013037 38.5 0.0013000 0.0005000 0 0.0000000 90rud1 0
113 ag m u235t sp in su 0.0000000 0.0 0.0013000 0.0004000 0 0.0000000 90rud1 0
113 ag m u235t rc cu 0.0050144 32.0 0.0050000 0.0016000 0 0.0000000 90rud2 0
113 pd g u235t cm in 0.0000000 0.0 0.0010020 27.0000000% 0 1.0000000 88wah1 0
113 pd g u235t sp cu 0.0148426 7.4 0.0148000 0.0011000 0 0.0000000 90rud1 0
113 rh g u235t cm in 0.0000000 0.0 0.0086700 11.0000000% 0 1.0000000 88wah1 0
113 ru g u235t cm in 0.0000000 0.0 0.0049230 12.0000000% 0 1.0000000 88wah1 0
113 tc g u235t cm in 0.0000000 0.0 0.0001942 68.0000000% 0 1.0000000 88wah1 0
113 u235f cm cu 0.0000000 0.0 0.0342000 10.0000000% 0 0.0000000 77cro1 0
113 u235f cm re x3 0.0000000 0.0 2.9900000 10.0000000% 113 u235t 1.0000000 74mee4 0
113 cd g u235f ms cu 0.0321630 2.1 0.0342000 0.0007000 148 nd g u235f 1.7500000 70lis1 0

113 cd g u235f es cu cm 0.0332393 30.0 0.0340000 0.0000000 0 0.0000000 72sid1 0
113 cd g u235f es cu 0.0382407 20.2 0.0336000 20.0000000% 115 u235f 0.0291000 74mee6 0
113 cd m u235f es cu 0.0003813 30.0 0.0003900 0.0000000 0 0.0000000 75mee1 0
113 ag g u235f cm cu 0.0000000 0.0 0.0296200 10.0000000% 0 0.0000000 73net2 0
113 u235he cm cu 0.0000000 0.0 1.0100000 11.5000000% 0 0.0000000 77cro1 0
113 u235he es cu 1.0854258 30.0 1.1011000 0.0000000 0 0.0000000 75mee1 0
113 cd g u235he es cu 1.0478682 30.0 1.0630000 0.0000000 0 0.0000000 63wea1 0
113 cd g u235he es cu 1.0646262 10.0 1.0800000 10.0000000% 0 0.0000000 74mee8 0
113 cd m u235he es cu 0.0126178 30.0 0.0128000 0.0000000 0 0.0000000 75mee1 0
113 ag g u235he rc re 1.1138758 10.4 0.2200000 0.0200000 99 mo g u235he 1.0000000 58pro1 0
113 ag g u235he rc cu 0.7373522 15.0 0.7480000 0.0000000 0 0.0000000 65for2 0
113 ag g u235he cm cu 0.0000000 0.0 1.1500000 0.0000000 0 0.0000000 69gun2 0
113 ag g u235he cm cu 0.0000000 0.0 0.9540000 8.1000000% 0 0.0000000 73net2 0
113 ag g u235he cm cu 0.0000000 0.0 1.1000000 0.0000000 0 0.0000000 60kat1 0
113 ag g u235he rc re x4 0.0000000 0.0 1.0000000 10.9000000% 99 mo g u235he 4.4100000 61cun1 0
113 u238f cm cu 0.0000000 0.0 0.0500000 0.0000000 0 0.0000000 64wal1 0
113 u238f cm cu 0.0000000 0.0 0.0560000 20.0000000% 0 0.0000000 77cro1 0
113 u238f rc cu x4 0.0000000 0.0 0.2500000 0.0100000 0 0.0000000 85li 1 0
113 cd g u238f ms re 0.0344480 16.7 0.9000000 0.1100000 116 cd g u238f 1.0000000 75lae1 0
113 cd g u238f es cu 0.0479892 30.0 0.0493000 0.0000000 0 0.0000000 63wea1 0
113 cd g u238f es cu cm 0.0476972 30.0 0.0490000 0.0000000 0 0.0000000 72sid1 0
113 cd g u238f es cu 0.0552972 23.0 0.0500000 20.0000000% 118 u238f 0.0380000 74mee6 0
113 cd g u238f es cu 0.0457503 30.0 0.0470000 0.0000000 0 0.0000000 74mae1 0
113 cd m u238f es cu 0.0005909 30.0 0.0006070 0.0000000 0 0.0000000 75mee1 0
113 ag g u238f cm cu 0.0000000 0.0 0.0491800 33.0000000% 0 0.0000000 73net2 0
113 ag g u238f rc cu 0.0574313 11.9 0.0590000 0.0070000 0 0.0000000 75har1 0
113 ag g u238f es cu 0.0321226 36.4 0.0330000 0.0120000 0 0.0000000 78gin1 0
113 ag g u238f rc cu 0.0223885 21.7 0.0230000 0.0050000 0 0.0000000 85chi1 0
113 ag g u238f es cu 0.0394037 23.0 0.0404800 23.0000000% 0 0.0000000 89rid1 0
113 u238he cm cu su 0.0000000 0.0 0.8770000 0.0290000 0 0.0000000 73dar1 0
113 u238he cm cu 0.0000000 0.0 0.9140000 8.1000000% 0 0.0000000 77cro1 0
113 cd g u238he es cu 0.8813881 23.0 0.8300000 20.0000000% 119 u238he 0.6800000 74mee6 0
113 cd g u238he es cu 0.8982188 15.0 0.9030000 15.0000000% 0 0.0000000 74mee9 0
113 cd g u238he cm cu x3 0.0000000 0.0 0.8456000 0.0000000 0 0.0000000 63wea1 0
113 cd m u238he es cu 0.0108423 30.0 0.0109000 0.0000000 0 0.0000000 75mee1 0
113 ag g u238he rc re 0.9080274 10.1 0.1600000 0.0100000 99 mo g u238he 1.0000000 58pro1 0

113 ag g u238he rc cu 0.6392516 16.7 0.6000000 0.1000000 140 ba g u238he 4.3000000 62bro1 0
113 ag g u238he rc cu 0.8882890 10.4 0.8700000 0.0600000 139 ba g u238he 4.9200000 64jam1 0
113 ag g u238he rc cu 0.6565054 7.0 0.6600000 7.0000000% 0 0.0000000 65for1 36
113 ag g u238he es cu 0.8057112 30.0 0.8100000 0.0000000 0 0.0000000 69gun2 0
113 ag g u238he rc cu 0.8918126 15.1 0.8800000 0.0000000 99 mo g u238he 5.6000000 70gev1 0
113 ag g u238he cm cu 0.0000000 0.0 0.7740000 8.1000000% 0 0.0000000 73net2 0
113 ag g u238he rc cu 1.1552851 15.6 1.1600000 0.1800000 140 ba g u238he 4.6000000 76raj1 0
113 ag g u238he es cu 0.8454994 30.0 0.8500000 0.0000000 0 0.0000000 60kat1 0
113 ag g u238he rc cu 0.9042169 16.9 0.1800000 0.0300000 139 ba g u238he 1.0000000 66bro1 0
113 ag g u238he rc cu 1.1046315 16.6 1.0900000 0.1800000 99 mo g u238he 5.6000000 75ada1 0
113 ag g u238he rc cu 0.9660574 10.4 0.9700000 0.1000000 140 ba g u238he 4.6000000 75cav1 0
113 ag g u238he rc cu su 0.0000000 0.0 0.9700000 0.1000000 140 ba g u238he 4.6000000 74bla1 0
113 ag g u238he rc cu nr 0.7032798 28.7 0.1400000 0.0400000 139 ba g u238he 1.0000000 66bro1 0
113 ag g u238he rc cu 0.8714435 8.6 0.8750000 0.0740000 140 ba g u238he 4.6000000 80zhe1 0
113 ag g u238he rc cu 0.9797846 5.9 0.9850000 0.0580000 0 0.0000000 85liu1 0
113 ag g u238he rc cu 0.6624737 5.0 0.6660000 0.0180000 0 0.0000000 65for2 0
113 pu239t cm cu x3 0.0000000 0.0 0.0700000 0.0000000 0 0.0000000 72sid1 0
113 pu239t cm cu 0.0000000 0.0 0.0760000 0.0060000 0 0.0000000 73wal1 0
113 pu239t cm cu 0.0000000 0.0 0.0770000 10.0000000% 0 0.0000000 77cro1 0
113 pu239t es cu 0.0737855 20.0 0.0733900 20.0000000% 0 0.0000000 87wah1 36
113 cd g pu239t ms cu 0.0807739 2.8 0.0760000 2.0000000% 111 cd g pu239t 0.2800000 77mat1 0
113 cd g pu239t es cu 0.0653503 30.0 0.0650000 0.0000000 0 0.0000000 73lam1 0
113 cd m pu239t es cu 0.0008345 30.0 0.0008300 0.0000000 0 0.0000000 75mee1 0
113 ag g pu239t rc cu 0.0712538 10.0 0.0650000 10.0000000% 137 cs g pu239t 6.0600000 64cro1 36
113 ag g pu239t rc cu 0.0735818 5.2 0.0800000 0.0040000 99 mo g pu239t 6.7900000 71ram1 0
113 ag g pu239t cm cu 0.0000000 0.0 0.0755400 17.0000000% 0 0.0000000 73net2 0
113 ag g pu239t rc cu 0.0788271 12.7 7.1000000 0.9000000 140 ba g u235t 0.0000000 86chi1 7
113 ag g pu239t rc cu 0.0733934 5.5 0.0730000 0.0040000 0 0.0000000 84jai1 0
113 ag g pu239t rc cu 0.1005389 22.0 0.1000000 0.0220000 0 0.0000000 84jai1 36
113 pd g pu239t cm in 0.0000000 0.0 0.0002736 37.0000000% 0 1.0000000 88wah1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

113 rh g pu239t cm in 0.0000000 0.0 0.0393300 11.0000000% 0 1.0000000 88wah1 0
113 ru g pu239t cm in 0.0000000 0.0 0.0334300 11.0000000% 0 1.0000000 88wah1 0

113 tc g pu239t cm in 0.0000000 0.0 0.0001081 48.0000000% 0 1.0000000 88wah1 0
113 pu239f cm cu 0.0000000 0.0 0.1330000 10.0000000% 0 0.0000000 77cro1 0
113 cd g pu239f ms cu 0.1265921 1.5 0.1330000 0.0020000 148 nd g pu239f 1.7300000 70lis1 0
113 cd g pu239f es cu cm 0.0891990 30.0 0.0900000 0.0000000 0 0.0000000 72sid1 0
113 cd g pu239f es re 0.1278801 10.4 1.5800000 10.0000000% 113 pu239t 1.0000000 74mee4 0
113 cd g pu239f es cu 0.1169498 30.0 0.1180000 0.0000000 0 0.0000000 74mae1 0
113 cd m pu239f es cu 0.0014371 30.0 0.0014500 0.0000000 0 0.0000000 75mee1 0
113 ag g pu239f rc re 0.0836042 13.2 0.0141000 13.0000000% 99 mo g pu239f 1.0000000 66cun1 0
113 ag g pu239f cm cu 0.0000000 0.0 0.1143000 7.0000000% 0 0.0000000 73net2 0
113 pu241t cm cu es 0.0000000 0.0 0.1420000 0.0000000 137 cs g pu241t 6.6200000 65cro2 0
113 pu241t cm cu 0.0000000 0.0 0.1400000 0.0000000 0 0.0000000 72sid1 0
113 pu241t cm cu 0.0000000 0.0 0.1530000 0.0080000 0 0.0000000 73wal1 0
113 pu241t es cu 0.1515901 5.2 0.1530000 0.0080000 0 0.0000000 74mee1 0
113 pu241t cm cu 0.0000000 0.0 0.1550000 10.0000000% 0 0.0000000 77cro1 0
113 cd m pu241t es cu 0.0017933 30.0 0.0018100 0.0000000 0 0.0000000 75mee1 0
113 ag g pu241t rc cu 0.1482370 5.6 0.1420000 0.0080000 137 cs g pu239t 0.0700000 69cro2 25
113 ag g pu241t rc cu 0.0895553 11.8 7.6000000 0.9000000 140 ba g u235t 0.0000000 86chi1 7
113 u233t cm cu 0.0000000 0.0 0.0160000 0.0000000 0 0.0000000 72sid1 0
113 u233t cm cu 0.0000000 0.0 0.0150000 0.0000000 0 0.0000000 73lam1 0
113 u233t cm cu 0.0000000 0.0 0.0130000 20.0000000% 0 0.0000000 77cro1 0
113 u233t es cu 0.0133740 20.0 0.0139200 20.0000000% 0 0.0000000 87wah1 36
113 cd g u233t ms re 0.0126804 18.9 1.0000000 10.0000000% 116 cd g u233t 1.0000000 75lae1 36
113 cd g u233t es cu 0.0144117 20.0 0.0150000 0.0030000 0 0.0000000 73wal1 0
113 cd m u233t es cu 0.0001566 30.0 0.0001630 0.0000000 0 0.0000000 75mee1 0
113 ag g u233t cm cu x3 0.0000000 0.0 0.0176400 33.0000000% 0 0.0000000 73net2 0
113 ag g u233t rc cu x1 0.0000000 0.0 1.3700000 0.1000000 140 ba g u235t 0.0000000 86chi1 7
113 th232f cm cu es 0.0000000 0.0 0.0675000 0.0000000 0 0.0000000 65eng1 0
113 th232f cm cu 0.0000000 0.0 0.0450000 0.0000000 0 0.0000000 72sid1 0
113 th232f cm cu 0.0000000 0.0 0.0600000 0.0000000 0 0.0000000 73lam1 0
113 th232f cm cu 0.0000000 0.0 0.0600000 0.0000000 0 0.0000000 74lam1 0
113 th232f cm cu 0.0000000 0.0 0.0460000 10.0000000% 0 0.0000000 77cro1 0
113 th232f es cu 0.0805516 30.0 0.0807000 0.0000000 0 0.0000000 75mee1 0
113 th232f rc re cm 0.0798072 5.0 11.6800000 0.3500000 99 mo g u235t 0.0000000 81ert1 7
113 th232f cm cu 0.0000000 0.0 0.0699000 0.0079000 0 0.0000000 81ert1 0
113 cd g th232f es cu 0.0861413 20.0 0.0863000 20.0000000% 0 0.0000000 74mee0 0
113 cd m th232f es cu 0.0009552 30.0 0.0009570 0.0000000 0 0.0000000 75mee1 0

113	ag g	th232f	rc	re	0.0716240	10.0	11.6500000	0.8500000	99	mo g	u235t	0.0000000	63iye1	7
113	ag g	th232f	cm	cu	0.0000000	0.0	0.0653800	10.0000000%	0			0.0000000	73net2	0
113	ag g	th232f	rc	cu	0.0445537	19.3	0.0470000	0.0090000	99	mo g	th232f	3.1000000	64bro1	0
113	ag g	th232f	rc	cu	0.0668768	30.0	0.0670000	0.0000000	0			0.0000000	57ale1	0
113	ag g	th232f	rc	re	0.0657047	5.0	10.6872000	0.3203000	99	mo g	u235t	0.0000000	81ert1	7
114	cd g	u235t	ms	re	0.0142173	20.0	1.0700000	0.2100000	116	cd g	u235t	1.0000000	70lum1	0
114		u235t	cm	cu	0.0000000	0.0	0.0100000	0.0000000	0			0.0000000	72sid1	0
114		u235t	cm	cu	0.0000000	0.0	0.0120000	0.0000000	0			0.0000000	73lam1	0
114		u235t	cm	cu	0.0000000	0.0	0.0110000	0.0020000	0			0.0000000	73wal1	0
114	cd g	u235t	ms	re	0.0119585	10.8	0.9000000	10.0000000%	116	cd g	u235t	1.0000000	75lae1	36
114		u235t	cm	cu	0.0000000	0.0	0.0101000	20.0000000%	0			0.0000000	77cro1	0
114	cd g	u235t	ms	cu	0.0116550	4.1	0.0120000	3.0000000%	111	cd g	u235t	0.0180000	77mat1	0
114		u235t	es	cu	0.0130274	20.0	0.0129900	20.0000000%	0			0.0000000	87wah1	36
114	ag g	u235t	cm	in	0.0000000	0.0	0.0007849	95.0000000%	0			10.0000000	88wah1	0
114	ag g	u235t	sp	in	0.0011032	99.0	0.0011000	99.0000000%	0			0.0000000	90rud1	36
114	ag g	u235t	sp	cu	0.0134386	24.6	0.0134000	0.0033000	0			0.0000000	90rud1	0
114	pd g	u235t	cm	in	0.0000000	0.0	0.0033710	13.0000000%	0			1.0000000	88wah1	0
114	pd g	u235t	sp	cu	0.0131377	38.9	0.0131000	0.0051000	0			0.0000000	90rud1	0
114	rh g	u235t	cm	in	0.0000000	0.0	0.0081690	11.0000000%	0			1.0000000	88wah1	0
114	ru g	u235t	cm	in	0.0000000	0.0	0.0013240	21.0000000%	0			1.0000000	88wah1	0
114		u235f	es	cu	cm	0.0332393	30.0	0.0340000	0.0000000	0			0.0000000	72sid1	0
114		u235f	es	cu	0.0350539	20.2	0.0308000	20.0000000%	115		u235f	0.0291000	74mee6	0
114		u235f	cm	cu	0.0000000	0.0	0.0342000	10.0000000%	0			0.0000000	77cro1	0
114		u235f	es	re	0.0348191	10.8	3.0100000	10.0000000%	114		u235t	1.0000000	74mee4	0
114	cd g	u235f	ms	cu	0.0321630	2.1	0.0342000	0.0007000	148	nd g	u235f	1.7500000	70lis1	0
114	cd g	u235he	es	cu	1.0229828	30.0	1.0440000	0.0000000	0			0.0000000	63wea1	0
114		u235he	es	cu	1.0694360	21.5	1.0800000	20.0000000%	113		u235he	1.0800000	74mee6	0
114		u235he	cm	cu	0.0000000	0.0	1.0500000	20.0000000%	0			0.0000000	77cro1	0
114		u235he	es	cu	1.0582581	10.0	1.0800000	10.0000000%	0			0.0000000	74mee8	0
114		u238f	cm	cu	x3	0.0000000	0.0	0.0450000	0.0000000	0			0.0000000	64wal1	0
114		u238f	cm	cu	es	0.0000000	0.0	0.0380000	0.0000000	0			0.0000000	72sid1	0
114	cd g	u238f	ms	re	0.0340583	16.7	0.9000000	0.1100000	116	cd g	u238f	1.0000000	75lae1	0
114		u238f	es	cu	0.0492044	23.0	0.0450000	20.0000000%	118		u238f	0.0380000	74mee6	0
114		u238f	cm	cu	0.0000000	0.0	0.0500000	20.0000000%	0			0.0000000	77cro1	0
114		u238f	es	cu	0.0391696	30.0	0.0407000	0.0000000	0			0.0000000	74mae1	0
114	cd g	u238he	es	cu	0.6886297	30.0	0.6960000	0.0000000	0			0.0000000	63wea1	0

114		u238he	es	cu	su	0.0000000	0.0	0.8500000	0.0000000	0				0.0000000	73dar1	0
114		u238he	es	cu		0.8238834	23.0	0.7800000	20.0000000%	119		u238he		0.6800000	74mee6	0
114		u238he	es	cu		0.6817038	15.0	0.6890000	15.0000000%	0				0.0000000	74mee9	0
114		u238he	cm	cu		0.0000000	0.0	0.9350000	20.0000000%	0				0.0000000	77cro1	0
114		pu239t	cm	cu		0.0000000	0.0	0.0550000	0.0000000	0				0.0000000	72sid1	0
114		pu239t	cm	cu		0.0000000	0.0	0.0410000	0.0000000	0				0.0000000	73lam1	0
114		pu239t	es	cu		0.0492641	20.4	0.0490000	0.0100000	0				0.0000000	73wal1	0
114		pu239t	cm	cu		0.0000000	0.0	0.0540000	20.0000000%	0				0.0000000	77cro1	0
114	cd g	pu239t	ms	cu		0.0605805	2.8	0.0570000	2.0000000%	111	cd g	pu239t		0.2800000	77mat1	0
114		pu239t	es	cu		0.0544921	20.0	0.0542000	20.0000000%	0				0.0000000	87wah1	36
114	pd g	pu239t	cm	in		0.0000000	0.0	0.0088640	18.0000000%	0				1.0000000	88wah1	0
114	rh g	pu239t	cm	in		0.0000000	0.0	0.0321300	11.0000000%	0				1.0000000	88wah1	0
114	ru g	pu239t	cm	in		0.0000000	0.0	0.0122700	15.0000000%	0				1.0000000	88wah1	0
114		pu239f	es	cu	cm	0.1090210	30.0	0.1100000	0.0000000	0				0.0000000	72sid1	0
114		pu239f	cm	cu		0.0000000	0.0	0.0987000	10.0000000%	0				0.0000000	77cro1	0
114		pu239f	es	re		0.1027146	10.4	1.7200000	10.0000000%	114		pu239t		1.0000000	74mee4	0
114	cd g	pu239f	ms	cu		0.0939447	2.0	0.0987000	0.0019000	148	nd g	pu239f		1.7300000	70lis1	0
114		pu239f	es	cu		0.0842435	30.0	0.0850000	0.0000000	0				0.0000000	74mae1	0
114		pu241t	es	cu		0.0710904	20.0	0.0750000	0.0150000	0				0.0000000	73wal1	0
114		pu241t	cm	cu		0.0000000	0.0	0.0861000	20.0000000%	0				0.0000000	77cro1	0
114		pu241t	cm	cu	x3	0.0000000	0.0	0.1500000	0.0000000	0				0.0000000	72sid1	0
114		u233t	cm	cu		0.0000000	0.0	0.0150000	0.0000000	0				0.0000000	72sid1	0
114		u233t	es	cu		0.0134509	21.4	0.0140000	0.0030000	0				0.0000000	73wal1	0
114	cd g	u233t	ms	re		0.0126804	18.9	1.0000000	10.0000000%	116	cd g	u233t		1.0000000	75lae1	36
114		u233t	cm	cu		0.0000000	0.0	0.0132000	20.0000000%	0				0.0000000	77cro1	0
114		u233t	cm	cu	x3	0.0000000	0.0	0.0200000	0.0000000	0				0.0000000	73lam1	0
114		u233t	es	cu		0.0125478	20.0	0.0130600	20.0000000%	0				0.0000000	87wah1	36
114		th232f	es	cu	cm	0.0675000	30.0	0.0680000	0.0000000	0				0.0000000	65eng1	0
114		th232f	cm	cu		0.0000000	0.0	0.0400000	0.0000000	0				0.0000000	72sid1	0
114		th232f	es	cu	cm	0.0595588	30.0	0.0600000	0.0000000	0				0.0000000	73lam1	0
114		th232f	es	cu		0.0893382	30.0	0.0900000	0.0000000	0				0.0000000	61new1	0
114		th232f	cm	cu		0.0000000	0.0	0.0480000	20.0000000%	0				0.0000000	77cro1	0
114		th232f	es	cu		0.0751433	20.0	0.0757000	20.0000000%	0				0.0000000	74mee0	0
115		u235t	cm	cu	x3	0.0000000	0.0	0.0110000	0.0000000	0				0.0000000	73lam1	0
115		u235t	cm	cu		0.0000000	0.0	0.0103000	30.5000000%	0				0.0000000	77cro1	0
115		u235t	cm	cu	x3	0.0000000	0.0	0.0090000	0.0000000	0				0.0000000	72sid1	0

115 u235t es cu 0.0105915 20.0 0.0105700 20.0000000% 0 0.0000000 87wah1 36
115 u235t es cu 0.0130265 3.0 0.0130000 3.0000000% 0 0.0000000 87rid1 0
115 in g u235t es cu 0.0104212 20.2 0.0104000 0.0021000 0 0.0000000 73wal1 0
115 in m u235t rc cu 0.0130265 38.5 0.0130000 0.0050000 0 0.0000000 76thi1 0
115 cd g u235t rc cu x4 0.0000000 0.0 0.0200000 0.0000000 140 ba g u235t 6.1000000 51eng2 0
115 cd g u235t rc cu 0.0111972 60.0 0.0110000 0.0000000 140 ba g u235t 6.1000000 51met2 0
115 cd g u235t rc cu x4 0.0000000 0.0 0.0190000 0.0000000 140 ba g u235t 6.4000000 52eng1 0
115 cd g u235t rc in x1 0.0000000 0.0 0.0027000 10.0000000% 0 0.0000000 52wah1 0
115 cd g u235t rc cu 0.0098199 20.0 0.0098000 10.0000000% 0 0.0000000 52wah1 0
115 cd g u235t rc cu 0.0108687 30.0 0.0110000 0.0000000 89 sr g u235t 4.8000000 57nas1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

115 cd g u235t rc cu 0.0100204 15.0 0.0100000 0.0000000 0 0.0000000 70gev1 0
115 cd g u235t cm cu 0.0000000 0.0 0.0116000 5.0000000% 0 0.0000000 73net2 0
115 cd g u235t es fi 0.0000009 30.1 0.0000731 0.0000000 115 u235t 1.0000000 74wol1 0
115 cd g u235t rc re 0.0095939 10.2 1.0000000 1.3000000% 97 zr g u235t 625.0000000 61cun1 0
115 cd m u235t rc cu 0.0008143 60.0 0.0008000 0.0000000 140 ba g u235t 6.1000000 51met1 0
115 cd m u235t rc cu 0.0007114 20.0 0.0007100 10.0000000% 0 0.0000000 52wah1 0
115 cd m u235t rc in su 0.0000000 0.0 0.0000100 0.0000100 0 0.0000000 52wah1 0
115 cd m u235t cm cu 0.0000000 0.0 0.0007890 5.0000000% 0 0.0000000 73net2 0
115 cd m u235t es fi 0.0000057 30.1 0.0004489 0.0000000 115 u235t 1.0000000 74wol1 0
115 cd m u235t rc cu 0.0006166 13.7 1.0000000 11.1000000% 113 cd m u235t 0.2700000 59wah1 0
115 ag g u235t rc cu 0.0078159 20.0 0.0078000 10.0000000% 0 0.0000000 52wah1 0
115 ag g u235t cm in 0.0000000 0.0 0.0005220 40.0000000% 0 1.0000000 88wah1 0
115 ag g u235t sp cu 0.0070142 28.6 0.0070000 0.0020000 0 0.0000000 90rud1 0
115 ag m u235t cm in 0.0000000 0.0 0.0005220 40.0000000% 0 1.0000000 88wah1 0
115 ag m u235t sp in 0.0014028 64.3 0.0014000 0.0009000 0 0.0000000 90rud1 0
115 ag m u235t sp cu 0.0033067 21.2 0.0033000 0.0007000 0 0.0000000 90rud1 0
115 pd g u235t rc fc 0.0114121 8.4 0.9050000 0.0720000 115 u235t 1.0000000 66wei1 0
115 pd g u235t rc fc 0.0112229 5.7 0.8900000 0.0100000 115 u235t 1.0000000 68roc1 0
115 pd g u235t cm in 0.0000000 0.0 0.0053250 11.0000000% 0 1.0000000 88wah1 0
115 pd g u235t sp cu sm 0.0000000 0.0 0.0121000 0.0018000 0 0.0000000 90rud1 0
115 pd m u235t sp in x6 0.0000000 0.0 0.0037000 0.0011000 0 0.0000000 90rud1 0
115 rh g u235t cm in 0.0000000 0.0 0.0040280 11.0000000% 0 1.0000000 88wah1 0

115 ru g u235t cm in 0.0000000 0.0 0.0001846 53.0000000% 0 1.0000000 88wah1 0
115 u235f rc cu x4 0.0000000 0.0 0.0600000 0.0100000 140 ba g u235f 6.2200000 77bla1 0
115 u235f cm cu x3 0.0000000 0.0 0.0220000 9.0000000% 0 0.0000000 77cro1 0
115 in g u235f es cu cm 0.0322617 30.0 0.0330000 0.0000000 0 0.0000000 72sid1 0
115 in g u235f es re 0.0370314 10.4 3.0100000 10.0000000% 115 u235t 1.0000000 74mee4 0
115 in g u235f es cu 0.0284489 20.0 0.0291000 20.0000000% 0 0.0000000 74mee6 0
115 cd g u235f es cu 0.0316751 10.0 0.0324000 10.0000000% 0 0.0000000 73net2 0
115 cd g u235f es cu 0.0366869 30.0 0.0380000 0.0000000 137 cs g u235f 6.3000000 60kat1 0
115 cd g u235f rc cu x4 0.0000000 0.0 0.0220000 0.0020000 140 ba g u235f 6.0000000 60pet1 0
115 cd g u235f rc cu x4 0.0000000 0.0 0.0450000 3.0000000% 99 mo g u235t 0.0104000 56for1 7
115 cd g u235f rc re su 0.0000000 0.0 3.5300000 0.4400000% 99 mo g u235t 0.0000000 64cow1 7
115 cd g u235f rc cu 0.0309458 5.0 2.8100000 1.9000000% 99 mo g u235t 0.0000000 76for1 7
115 cd g u235f rc cu 0.0319590 5.0 2.9020000 1.9000000% 99 mo g u235t 0.0000000 76for1 7
115 cd g u235f rc cu x4 0.0000000 0.0 0.0190000 20.0000000% 140 ba g u235f 5.8900000 72cun2 36
115 cd g u235f rc cu 0.0299374 19.8 0.0304000 0.0060000 99 mo g u235f 5.9000000 60bon1 0
115 cd g u235f es cu 0.0333371 8.0 0.0341000 8.0000000% 0 0.0000000 89rid1 0
115 cd g u235f es fc 0.0303703 10.4 0.9170000 10.0000000% 115 u235f 1.0000000 89rid1 0
115 cd g u235f es cu 0.0260440 10.7 0.0266400 10.7000000% 0 0.0000000 91jam2 0
115 cd g u235f es cu 0.0256138 10.0 0.0262000 10.0000000% 0 0.0000000 74mee1 36
115 cd m u235f rc cu 0.0049591 60.0 0.0050000 0.0030000 140 ba g u235f 5.8900000 72cun2 0
115 cd m u235f cm cu 0.0000000 0.0 0.0022740 46.0000000% 0 0.0000000 73net2 0
115 cd m u235f rc cu 0.0021665 30.0 0.0022000 0.0000000 99 mo g u235f 5.9000000 60bon1 0
115 u235he cm cu es 0.0000000 0.0 1.0250000 0.0000000 0 0.0000000 63wea1 0
115 u235he cm cu 0.0000000 0.0 0.9700000 0.0000000 0 0.0000000 69gun2 0
115 u235he cm cu 0.0000000 0.0 1.0800000 34.5000000% 0 0.0000000 77cro1 0
115 in g u235he es cu 1.0859147 21.5 1.0800000 20.0000000% 113 u235he 1.0800000 74mee6 0
115 in g u235he es cu 1.0745645 10.0 1.0800000 10.0000000% 0 0.0000000 74mee8 0
115 cd g u235he rc cu 0.9750678 60.0 0.9800000 0.0000000 0 0.0000000 52wah1 0
115 cd g u235he rc re 0.9821786 10.0 101.4000000 1.5000000 99 mo g u235t 0.0000000 56for1 7
115 cd g u235he rc re 1.0731706 10.4 0.2100000 0.0100000 99 mo g u235he 1.0000000 58pro1 0
115 cd g u235he rc re 0.9976765 10.0 103.0000000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
115 cd g u235he rc cu 1.0646149 5.0 1.0700000 0.0300000 0 0.0000000 65for2 0
115 cd g u235he cm cu 0.0000000 0.0 1.0100000 3.9000000% 0 0.0000000 73net2 0
115 cd g u235he cm cu 0.0000000 0.0 1.0000000 0.0000000 0 0.0000000 60kat1 0
115 cd g u235he rc cu 0.9909160 10.0 0.8900000 5.0000000% 99 mo g u235t 0.0104000 56for1 6
115 cd g u235he rc re su 0.0000000 0.0 102.4000000 2.3600000% 99 mo g u235t 0.0000000 64cow1 7

115 cd g u235he rc cu 0.9628063 5.0 99.4000000 1.9000000% 99 mo g u235t 0.0000000 76for1 7
115 cd g u235he rc cu 0.9821786 5.0 101.4000000 1.9000000% 99 mo g u235t 0.0000000 76for1 7
115 cd g u235he rc cu 0.8592601 10.9 0.9500000 0.1000000 99 mo g u235he 5.6500000 60bon1 0
115 cd m u235he rc re x4 0.0000000 0.0 99.4000000 0.3900000% 99 mo g u235t 0.0000000 64cow1 7
115 cd m u235he es cu 0.0596980 10.0 0.0600000 10.0000000% 0 0.0000000 89rid1 0
115 cd m u235he rc cu 0.0686527 60.0 0.0690000 0.0000000 0 0.0000000 52wah1 0
115 cd m u235he es cu 0.0692497 10.0 0.0696000 10.0000000% 0 0.0000000 73net2 36
115 cd m u235he es cu 0.0616880 30.0 0.0620000 0.0000000 0 0.0000000 60kat1 0
115 cd m u235he rc cu x4 0.0000000 0.0 102.4000000 4.4000000% 99 mo g u235t 0.0000000 76for1 7
115 cd m u235he rc fc 0.0404765 10.8 0.0640000 10.0000000% 115 cd g u235he 1.0000000 72net2 36
115 cd m u235he es cu 0.0686527 10.0 0.0690000 10.0000000% 0 0.0000000 75mee1 0
115 cd m u235he rc cu 0.0596980 30.0 0.0600000 0.0000000 0 0.0000000 60bon1 0
115 cd m u235he es in 0.6092184 30.0 0.6123000 0.0000000 0 0.0000000 91jam2 0
115 cd m u235he es fc 0.0592042 10.4 0.0545000 10.0000000% 115 u235he 1.0000000 89rid1 0
115 u238f cm cu es 0.0000000 0.0 0.0400000 0.0000000 0 0.0000000 64wal1 0
115 u238f cm cu 0.0000000 0.0 0.0420000 10.0000000% 0 0.0000000 77cro1 0
115 u238f rc cu x4 0.0000000 0.0 0.2270000 0.0090000 0 0.0000000 85li 1 0
115 in g u238f es cu cm 0.0447885 30.0 0.0450000 0.0000000 0 0.0000000 72sid1 0
115 in g u238f es cu 0.0441017 23.0 0.0390000 20.0000000% 118 u238f 0.0380000 74mee6 0
115 in g u238f es cu x3 0.0000000 0.0 0.0600000 0.0100000 140 ba g u238f 6.1600000 77bla1 0
115 in g u238f es cu 0.0417031 30.0 0.0419000 0.0000000 0 0.0000000 74mae1 0
115 cd g u238f rc cu 0.0542259 60.0 0.0600000 0.0000000 140 ba g u238f 6.4000000 52eng1 0
115 cd g u238f rc cu 0.0324721 20.0 0.0320000 0.0060000 140 ba g u238f 5.7000000 54kel1 0
115 cd g u238f rc re 0.0446935 15.1 0.0072800 0.0000000 99 mo g u238f 1.0000000 68bor2 0
115 cd g u238f rc cu 0.0316542 15.2 0.0330000 0.0050000 140 ba g u238f 6.0300000 72cun2 0
115 cd g u238f cm cu 0.0000000 0.0 0.0358000 10.0000000% 0 0.0000000 73net2 0
115 cd g u238f rc cu 0.0567321 17.5 0.0570000 0.0100000 0 0.0000000 75har1 0
115 cd g u238f cm cu 0.0000000 0.0 0.0340000 0.0000000 0 0.0000000 60kat1 0
115 cd g u238f rc cu 0.0390678 10.1 0.0420000 0.0040000 99 mo g u238f 6.6000000 60pet1 0
115 cd g u238f rc cu 0.0391324 10.0 0.0360000 3.0000000% 99 mo g u235t 0.0104000 56for1 8
115 cd g u238f rc cu 0.0305454 5.0 2.6250000 1.9000000% 99 mo g u235t 0.0000000 76for1 7
115 cd g u238f rc cu 0.0315810 5.0 2.7140000 1.9000000% 99 mo g u235t 0.0000000 76for1 7
115 cd g u238f rc cu 0.0349090 5.0 3.0000000 1.9000000% 99 mo g u235t 0.0000000 76for1 7
115 cd g u238f rc cu 0.0327446 5.0 2.8140000 1.9000000% 99 mo g u235t 0.0000000 76for1 7
115 cd g u238f rc cu 0.0336057 5.0 2.8880000 1.9000000% 99 mo g u235t 0.0000000 76for1 7
115 cd g u238f rc cu 0.0332683 5.0 2.8590000 1.9000000% 99 mo g u235t 0.0000000 76for1 7

115 cd g	u238f	rc	cu		0.0390688	12.2	0.0410000	0.0050000	140 ba g	u238f	6.0700000	77har1	0
115 cd g	u238f	rc	re		0.0598108	10.0	5.1400000	5.0000000%	99 mo g	u235t	0.0000000	61lev1	7
115 cd g	u238f	es	cu		0.0308543	29.0	0.0310000	0.0090000	0		0.0000000	78gin1	0
115 cd g	u238f	rc	cu	nr	0.0342808	60.0	0.0570000	0.0000000	115 cd g	u238f	0.0570000	51eng3	0
115 cd g	u238f	rc	cu		0.0403434	15.3	0.0460000	0.0070000	99 mo g	u238f	7.0000000	60bon1	0
115 cd g	u238f	rc	cu	sm	0.0000000	0.0	0.0600000	0.0100000	140 ba g	u238f	6.1600000	77bla1	0
115 cd g	u238f	rc	cu		0.0318496	9.4	0.0320000	0.0030000	0		0.0000000	85chi1	0
115 cd g	u238f	rc	cu		0.0254797	19.9	0.0256000	0.0051000	0		0.0000000	67bor4	0
115 cd g	u238f	cm	cu		0.0000000	0.0	0.0370000	8.0000000%	0		0.0000000	74mee1	0
115 cd g	u238f	cm	cu		0.0000000	0.0	0.0346400	4.0000000%	0		0.0000000	89mee1	0
115 cd g	u238f	cm	cu		0.0000000	0.0	0.0362900	9.0000000%	0		0.0000000	91jam2	0
115 cd g	u238f	es	cu		0.0368261	8.0	0.0370000	8.0000000%	0		0.0000000	74mee1	0
115 cd g	u238f	es	cu		0.0344772	4.0	0.0346400	4.0000000%	0		0.0000000	89mee1	0
115 cd g	u238f	es	cu		0.0361194	9.0	0.0362900	9.0000000%	0		0.0000000	91jam2	0
115 cd g	u238f	rc	cu	x4	0.0000000	0.0	0.0600000	0.0000000	140 ba g	u238f	6.4000000	52eng1	0
115 cd g	u238f	rc	cu		0.0324721	20.0	0.0320000	0.0060000	140 ba g	u238f	5.7000000	54kel1	0
115 cd g	u238f	rc	re		0.0446935	15.1	0.0072800	0.0000000	99 mo g	u238f	1.0000000	68bor2	0
115 cd g	u238f	rc	cu		0.0316542	15.2	0.0330000	0.0050000	140 ba g	u238f	6.0300000	72cun2	0
115 cd g	u238f	es	cu		0.0356317	10.0	0.0358000	10.0000000%	0		0.0000000	73net2	0
115 cd g	u238f	rc	cu	x4	0.0000000	0.0	0.0570000	0.0100000	0		0.0000000	75har1	0
115 cd g	u238f	es	cu		0.0338402	30.0	0.0340000	0.0000000	0		0.0000000	60kat1	0
115 cd g	u238f	rc	cu		0.0390678	10.1	0.0420000	0.0040000	99 mo g	u238f	6.6000000	60pet1	0
115 cd g	u238f	rc	cu		0.0391324	10.0	0.0360000	3.0000000%	99 mo g	u235t	0.0104000	56for1	8
115 cd g	u238f	rc	cu		0.0305454	5.0	2.6250000	1.9000000%	99 mo g	u235t	0.0000000	76for1	7
115 cd g	u238f	rc	cu		0.0315810	5.0	2.7140000	1.9000000%	99 mo g	u235t	0.0000000	76for1	7
115 cd g	u238f	rc	cu		0.0349090	5.0	3.0000000	1.9000000%	99 mo g	u235t	0.0000000	76for1	7

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nuclide material tech. type value err. value nuclide material value no. treatment

115 cd g	u238f	rc	cu		0.0327446	5.0	2.8140000	1.9000000%	99 mo g	u235t	0.0000000	76for1	7
115 cd g	u238f	rc	cu		0.0336057	5.0	2.8880000	1.9000000%	99 mo g	u235t	0.0000000	76for1	7
115 cd g	u238f	rc	cu		0.0332683	5.0	2.8590000	1.9000000%	99 mo g	u235t	0.0000000	76for1	7
115 cd g	u238f	rc	cu		0.0390688	12.2	0.0410000	0.0050000	140 ba g	u238f	6.0700000	77har1	0
115 cd g	u238f	rc	re	x4	0.0000000	0.0	5.1400000	5.0000000%	99 mo g	u235t	0.0000000	61lev1	7
115 cd g	u238f	es	cu		0.0308543	29.0	0.0310000	0.0090000	0		0.0000000	78gin1	0

115 cd g u238f rc cu nr 0.0342808 60.0 0.0570000 0.0000000 115 cd g u238f 0.0570000 51eng3 0
115 cd g u238f rc cu 0.0403434 15.3 0.0460000 0.0070000 99 mo g u238f 7.0000000 60bon1 0
115 cd g u238f rc cu sm 0.0000000 0.0 0.0600000 0.0100000 140 ba g u238f 6.1600000 77bla1 0
115 cd g u238f rc cu 0.0318496 9.4 0.0320000 0.0030000 0 0.0000000 85chi1 0
115 cd g u238f rc cu x4 0.0000000 0.0 0.0256000 0.0051000 0 0.0000000 67bor4 0
115 cd m u238f rc cu x4 0.0000000 0.0 0.0070000 0.0000000 140 ba g u238f 6.4000000 52eng1 0
115 cd m u238f rc cu 0.0025369 20.0 0.0025000 0.0003000 140 ba g u238f 5.7000000 54kel1 0
115 cd m u238f cm cu 0.0000000 0.0 0.0025420 46.0000000% 0 0.0000000 73net2 0
115 cd m u238f cm cu 0.0000000 0.0 0.0030000 0.0000000 0 0.0000000 60kat1 0
115 cd m u238f rc re su 0.0000000 0.0 3.2100000 0.4400000% 99 mo g u235t 0.0000000 64cow1 7
115 cd m u238f rc cu nr 0.0036085 60.0 0.0060000 0.0000000 115 cd g u238f 0.0570000 51eng3 0
115 cd m u238f rc cu 0.0026311 30.0 0.0030000 0.0000000 99 mo g u238f 7.0000000 60bon1 0
115 cd m u238f rc cu 0.0032418 5.0 3.2100000 1.9000000% 99 mo g u235t 0.0000000 76for1 7
115 u238he cm cu 0.0000000 0.0 0.7800000 0.0000000 0 0.0000000 69gun2 0
115 u238he cm cu su 0.0000000 0.0 0.8140000 0.0580000 0 0.0000000 73dar1 0
115 u238he cm cu 0.0000000 0.0 0.9480000 18.7000000% 0 0.0000000 77cro1 0
115 u238he rc cu 0.8840250 17.3 0.8700000 0.1500000 99 mo g u238he 5.6000000 75ada1 0
115 u238he rc fc 0.7949836 13.2 0.9300000 0.1200000 115 u238he 1.0000000 80gev1 0
115 in g u238he rc cu 0.9486568 9.6 0.9500000 0.0900000 140 ba g u238he 4.6000000 75cav1 0
115 in g u238he es cu 0.7055272 30.0 0.7074000 0.0000000 0 0.0000000 63wea1 0
115 in g u238he es cu 0.7666125 23.0 0.7200000 20.0000000% 119 u238he 0.6800000 74mee6 0
115 in g u238he es cu 0.8617127 15.0 0.8640000 15.0000000% 0 0.0000000 74mee9 0
115 in m u238he rc cu su 0.0000000 0.0 0.9500000 0.0900000 140 ba g u238he 4.6000000 74bla1 0
115 cd g u238he rc re 0.7981198 10.0 74.0000000 3.0000000 99 mo g u235t 0.0000000 56for1 7
115 cd g u238he rc cu 0.5914623 10.1 0.5800000 0.0300000 99 mo g u238he 5.5800000 57cun1 0
115 cd g u238he rc re 0.9104441 10.1 0.1600000 0.0100000 99 mo g u238he 1.0000000 58pro1 0
115 cd g u238he rc cu 0.6562137 15.1 1.0000000 0.0000000 140 ba g u238he 7.0000000 67bor1 0
115 cd g u238he rc re 0.7966386 15.1 0.1400000 0.0000000 99 mo g u238he 1.0000000 67bor1 0
115 cd g u238he rc cu 0.9574585 12.5 0.9600000 0.1200000 0 0.0000000 71com1 0
115 cd g u238he rc cu rp 0.5895737 53.0 1.0000000 0.0000000 no. relative values = 1 72rao3
115 cd g u238he cm cu 0.0000000 0.0 0.7550000 3.9000000% 0 0.0000000 73net2 0
115 cd g u238he rc cu 0.8407682 5.7 0.8430000 0.0480000 0 0.0000000 75dar1 0
115 cd g u238he rc cu 0.9686285 15.5 0.9700000 0.1500000 140 ba g u238he 4.6000000 76raj1 0
115 cd g u238he cm cu 0.0000000 0.0 0.6400000 0.0000000 0 0.0000000 60kat1 0
115 cd g u238he rc re su 0.0000000 0.0 84.4000000 2.0900000% 99 mo g u235t 0.0000000 64cow1 7
115 cd g u238he rc cu 0.7948842 5.0 73.7000000 1.9000000% 99 mo g u235t 0.0000000 76for1 7

115	cd g	u238he	rc	cu		0.7981198	5.0	74.0000000	1.9000000%	99 mo g	u235t	0.0000000	76for1	7
115	cd g	u238he	rc	fc		0.7632698	5.7	0.8929000	0.0179000	115	u238he	1.0000000	72rao3	0
115	cd g	u238he	rc	cu		0.9786144	9.3	0.9800000	0.0900000	140 ba g	u238he	4.6000000	75cav1	0
115	cd g	u238he	rc	cu	su	0.0000000	0.0	0.9800000	0.0900000	140 ba g	u238he	4.6000000	74bla1	0
115	cd g	u238he	rc	cu	nr	0.7904797	10.8	0.8600000	0.0900000	115	u238he	0.9300000	70gev1	0
115	cd g	u238he	rc	cu		0.7003416	11.3	0.8000000	0.0900000	99 mo g	u238he	6.5000000	60bon1	0
115	cd g	u238he	rc	cu		0.8317921	46.8	0.8340000	0.3900000	0		0.0000000	85liu1	0
115	cd g	u238he	rc	cu		0.5684910	5.0	0.5700000	0.0200000	0		0.0000000	87ram1	0
115	cd m	u238he	rc	cu		0.0611858	16.7	0.0600000	0.0100000	99 mo g	u238he	5.5800000	57cun1	0
115	cd m	u238he	rc	cu		0.0940887	17.1	0.1200000	0.0200000	115 cd g	u238he	1.0000000	72rao3	0
115	cd m	u238he	cm	cu		0.0000000	0.0	0.0565000	3.9000000%	0		0.0000000	73net2	0
115	cd m	u238he	cm	cu		0.0000000	0.0	0.0600000	0.0000000	0		0.0000000	60kat1	0
115	cd m	u238he	rc	re	su	0.0000000	0.0	73.7000000	0.3400000%	99 mo g	u235t	0.0000000	64cow1	7
115	cd m	u238he	rc	fc		0.0915513	17.0	0.1071000	0.0179000	115	u238he	1.0000000	72rao3	0
115	cd m	u238he	rc	cu		0.0790029	5.0	84.4000000	4.4000000%	99 mo g	u235t	0.0000000	76for1	7
115	cd m	u238he	es	cu		0.0588438	10.0	0.0590000	10.0000000%	0		0.0000000	75mee1	0
115	cd m	u238he	rc	fc		0.0588054	30.3	0.0750000	30.0000000%	115 cd g	u238he	1.0000000	72net2	36
115	cd m	u238he	rc	cu		0.0525256	30.0	0.0600000	0.0000000	99 mo g	u238he	6.5000000	60bon1	0
115	ag g	u238he	rc	cu		0.6551931	10.4	0.6400000	0.0500000	139 ba g	u238he	4.9200000	64jam1	0
115		pu239t	cm	cu		0.0000000	0.0	0.0390000	0.0000000	0		0.0000000	72sid1	0
115		pu239t	cm	cu		0.0000000	0.0	0.0360000	0.0000000	0		0.0000000	73lam1	0
115		pu239t	cm	cu		0.0000000	0.0	0.0380000	0.0020000	0		0.0000000	73wal1	0
115		pu239t	cm	cu		0.0000000	0.0	0.0377000	17.1000000%	0		0.0000000	77cro1	0
115		pu239t	es	cu		0.0354076	20.0	0.0350300	20.0000000%	0		0.0000000	87wah1	36
115	cd g	pu239t	rc	cu		0.0454342	20.0	0.0450000	20.0000000%	140 ba g	pu239t	5.3600000	51ste3	36
115	cd g	pu239t	rc	cu		0.0389064	10.0	0.0340000	3.0000000%	99 mo g	u235t	0.0104000	56for1	7
115	cd g	pu239t	rc	cu		0.0333557	6.1	0.0330000	0.0020000	0		0.0000000	65mar1	0
115	cd g	pu239t	rc	cu		0.0342140	10.9	0.0370000	0.0040000	99 mo g	pu239t	6.7900000	71ram1	0
115	cd g	pu239t	cm	cu		0.0000000	0.0	0.0345700	9.0000000%	0		0.0000000	73net2	0
115	cd g	pu239t	rc	cu		0.0458180	5.0	3.8500000	1.9000000%	99 mo g	u235t	0.0000000	76for1	7
115	cd g	pu239t	rc	cu		0.0414742	5.0	3.4850000	1.9000000%	99 mo g	u235t	0.0000000	76for1	7
115	cd g	pu239t	rc	cu		0.0442926	9.1	4.3800000	0.4000000	140 ba g	u235t	0.0000000	86chi1	7
115	cd g	pu239t	rc	cu		0.0333557	12.1	0.0330000	0.0040000	0		0.0000000	84jai1	0
115	cd m	pu239t	rc	cu		0.0030289	60.0	0.0030000	0.0000000	140 ba g	pu239t	5.3600000	51ste3	0
115	cd m	pu239t	rc	cu		0.0030323	20.0	0.0030000	0.0006000	0		0.0000000	65mar1	0
115	cd m	pu239t	rc	cu		0.0023118	12.1	0.0025000	0.0003000	99 mo g	pu239t	6.7900000	71ram1	0

115	cd m	pu239t	cm	cu		0.0000000	0.0	0.0024540	45.0000000%	0		0.0000000	73net2	0	
115	cd m	pu239t	rc	cu		0.0022237	13.6	0.0022000	0.0003000	0		0.0000000	84jai1	0	
115	ag g	pu239t	cm	in		0.0000000	0.0	0.0006630	44.0000000%	0		1.0000000	88wah1	0	
115	ag m	pu239t	cm	in		0.0000000	0.0	0.0006630	44.0000000%	0		1.0000000	88wah1	0	
115	pd g	pu239t	cm	in		0.0000000	0.0	0.0164700	11.0000000%	0		1.0000000	88wah1	0	
115	rh g	pu239t	cm	in		0.0000000	0.0	0.0153700	11.0000000%	0		1.0000000	88wah1	0	
115	ru g	pu239t	cm	in		0.0000000	0.0	0.0014390	41.0000000%	0		1.0000000	88wah1	0	
115		pu239f	cm	cu		0.0000000	0.0	0.0668000	86.0000000%	0		0.0000000	77cro1	0	
115	in g	pu239f	es	cu	cm	0.0933091	30.0	0.0950000	0.0000000	0		0.0000000	72sid1	0	
115	in g	pu239f	es	re		0.0748973	11.5	1.7900000	10.0000000%	115	pu239t	1.0000000	74mee4	0	
115	in g	pu239f	es	cu		0.0687540	30.0	0.0700000	0.0000000	0		0.0000000	74mae1	0	
115	cd g	pu239f	rc	cu	cm	0.0894159	15.1	0.0850000	0.0000000	140 ba g	pu239f	4.9700000	65cro2	0	
115	cd g	pu239f	rc	cu		0.0784230	9.1	0.0780000	0.0070000	140 ba g	pu239f	5.2000000	71cun1	0	
115	cd g	pu239f	rc	cu		0.0721251	5.4	0.0734000	0.0026000	99 mo g	pu239f	5.9800000	72cun1	0	
115	cd g	pu239f	rc	cu		0.0565738	20.0	0.0580000	20.0000000%	140 ba g	pu239f	5.3600000	72cun2	36	
115	cd g	pu239f	cm	cu		0.0000000	0.0	0.0834000	5.0000000%	0		0.0000000	73net2	0	
115	cd g	pu239f	es	cu		0.0637238	30.0	0.0670000	0.0000000	137 cs g	pu239f	6.8000000	60kat1	0	
115	cd g	pu239f	rc	cu		0.1045640	10.1	0.0980000	0.0080000	140 ba g	pu239f	4.9000000	60pet1	0	
115	cd g	pu239f	rc	cu		0.0871367	11.2	0.0900000	0.0100000	140 ba g	pu239f	5.4000000	61bon1	0	
115	cd g	pu239f	rc	cu		0.0803198	10.0	0.0750000	3.0000000%	99 mo g	u235t	0.0104000	56for1	7	
115	cd g	pu239f	rc	cu		0.0692764	5.0	6.2200000	1.9000000%	99 mo g	u235t	0.0000000	76for1	7	
115	cd g	pu239f	rc	cu		0.0687195	5.0	6.1700000	1.9000000%	99 mo g	u235t	0.0000000	76for1	7	
115	cd g	pu239f	rc	cu		0.0835326	5.0	7.5000000	1.9000000%	99 mo g	u235t	0.0000000	76for1	7	
115	cd m	pu239f	rc	cu		0.0050114	5.4	0.0051000	0.0002000	99 mo g	pu239f	5.9800000	72cun1	0	
115	cd m	pu239f	rc	cu		0.0048771	20.0	0.0050000	0.0010000	140 ba g	pu239f	5.3600000	72cun2	0	
115	cd m	pu239f	cm	cu		0.0000000	0.0	0.0059220	45.0000000%	0		0.0000000	73net2	0	
115	cd m	pu239f	rc	cu		0.0048409	30.0	0.0050000	0.0000000	140 ba g	pu239f	5.4000000	61bon1	0	
115	cd m	pu239f	rc	cu		0.0055774	5.0	5.7700000	4.4000000%	99 mo g	u235t	0.0000000	76for1	7	
115	cd m	pu239f	rc	cu		0.0058578	5.0	6.0600000	4.4000000%	99 mo g	u235t	0.0000000	76for1	7	
115		pu241t	cm	cu		0.0000000	0.0	0.0400000	0.0180000	0		0.0000000	73wal1	0	
115		pu241t	cm	cu	x3	0.0000000	0.0	0.1000000	0.0000000	0		0.0000000	72sid1	0	
115		pu241t	es	cu		0.0441707	30.0	0.0450000	0.0000000	0		0.0000000	75mee1	0	
115	in g	pu241t	es	cu	cm	0.0431891	20.0	0.0440000	20.0000000%	0		0.0000000	77cro1	0	
115	cd g	pu241t	rc	cu		0.0392628	30.0	0.0400000	0.0000000	0		0.0000000	63kir1	0	
115	cd g	pu241t	rc	cu		0.0431891	30.0	0.0440000	0.0000000	0		0.0000000	63kir1	0	
115	cd g	pu241t	rc	re	x4	0.0000000	0.0	0.0220000	0.0010000	0		0.0000000	73sko2	0	

115 cd g pu241t rc re sm 0.0000000 0.0 0.0240000 0.0010000 0 0.0000000 73sko2 0
115 cd g pu241t rc cu 0.0302485 10.5 2.8600000 0.3000000 140 ba g u235t 0.0000000 86chi1 7
115 u233t rc cu x1 0.0000000 0.0 0.0200000 0.0000000 99 mo g u233t 5.1000000 47ste1 0
115 u233t cm cu 0.0000000 0.0 0.0170000 0.0000000 0 0.0000000 72sid1 0
115 u233t cm cu 0.0000000 0.0 0.0210000 0.0000000 0 0.0000000 73lam1 0
115 u233t cm cu 0.0000000 0.0 0.0170000 0.0030000 0 0.0000000 73wal1 0
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115 u233t cm cu 0.0000000 0.0 0.0182000 14.1000000% 0 0.0000000 77cro1 0
115 u233t es cu 0.0122941 20.0 0.0125400 20.0000000% 0 0.0000000 87wah1 36
115 in g u233t es cu 0.0118333 8.0 0.0120700 8.0000000% 0 0.0000000 74mee6 0
115 cd g u233t rc cu x1 0.0000000 0.0 0.0190000 0.0000000 99 mo g u233t 5.1000000 47ste1 0
115 cd g u233t cm cu 0.0000000 0.0 0.0201100 6.0000000% 0 0.0000000 73net2 0
115 cd g u233t rc re x4 0.0000000 0.0 0.0042200 20.0000000% 99 mo g u233t 1.0000000 59reg1 36
115 cd g u233t es cu 0.0116666 8.0 0.0119000 8.0000000% 0 0.0000000 74mee6 0
115 cd g u233t rc cu 0.0261338 11.2 2.2300000 0.2500000 140 ba g u235t 0.0000000 86chi1 7
115 cd m u233t rc cu 0.0009441 60.1 0.0010000 0.0000000 99 mo g u233t 5.1000000 47ste1 0
115 cd m u233t cm cu 0.0000000 0.0 0.0014280 45.0000000% 0 0.0000000 73net2 0
115 pd g u233t rc fc 0.0098325 7.5 0.6700000 0.0200000 115 u233t 1.0000000 68roc1 0
115 th232f cm cu x3 0.0000000 0.0 0.0600000 0.0000000 0 0.0000000 72sid1 0
115 th232f cm cu x3 0.0000000 0.0 0.0570000 0.0000000 0 0.0000000 73lam1 0
115 th232f cm cu 0.0000000 0.0 0.0626000 9.9000000% 0 0.0000000 77cro1 0
115 th232f rc re x1 0.0000000 0.0 11.2100000 0.0100000 99 mo g u235t 0.0000000 81ert1 7
115 th232f cm cu x3 0.0000000 0.0 0.0549000 0.0031000 0 0.0000000 81ert1 0
115 th232f es cu 0.0749025 5.0 0.0750000 5.0000000% 0 0.0000000 87rid1 0
115 th232f rc cu sm 0.0000000 0.0 4.2890000 20.0000000% 89 sr g u235t 0.0000000 51tur1 7
115 in g th232f es cu cm 0.0689103 30.0 0.0690000 0.0000000 0 0.0000000 65eng1 0
115 in g th232f es cu 0.0714071 20.0 0.0715000 20.0000000% 0 0.0000000 74mee0 0
115 cd g th232f rc cu 0.0801476 20.4 0.0720000 0.0140000 89 sr g th232f 6.7000000 51tur1 0
115 cd g th232f cm cu x3 0.0000000 0.0 0.0585800 9.0000000% 0 0.0000000 73net2 0
115 cd g th232f cm cu 0.0000000 0.0 0.0720000 0.0000000 0 0.0000000 60kat1 0
115 cd g th232f rc cu x1 0.0000000 0.0 0.0061000 10.0000000% 89 sr g th232f 1.0000000 76lis1 0
115 cd g th232f rc cu 0.0658806 20.4 0.0530000 20.0000000% 89 sr g th232f 6.0000000 50nid1 36
115 cd g th232f rc cu 0.0584560 20.2 0.0550000 20.0000000% 140 ba g th232f 7.4000000 73cha1 36

115 cd g th232f rc re x1 0.0000000 0.0 11.6000000 0.6000000 99 mo g u235t 0.0000000 63iye1 7
115 cd g th232f rc re x1 0.0000000 0.0 9.6967000 0.0087000 99 mo g u235t 0.0000000 81ert1 7
115 cd g th232f es cu 0.0719064 3.0 0.0720000 3.0000000% 0 0.0000000 87rid1 0
115 cd g th232f rc cu 0.0469477 50.0 2.5730000 50.0000000% 89 sr g u235t 0.0000000 51tur1 7
115 cd m th232f rc re 0.0078838 26.4 16.3000000 4.3000000 99 mo g u235t 0.0000000 63iye1 7
115 cd m th232f cm cu 0.0000000 0.0 0.0041600 45.0000000% 0 0.0000000 73net2 0
115 cd m th232f cm cu 0.0000000 0.0 0.0030000 0.0000000 0 0.0000000 60kat1 0
115 cd m th232f rc cu 0.0033395 50.2 0.0030000 0.0015000 89 sr g th232f 6.7000000 51tur1 0
115 cd m th232f es cu 0.0056926 10.0 0.0057000 10.0000000% 0 0.0000000 75mee1 0
115 cd m th232f rc cu 0.0071198 20.0 4.4960000 19.4000000% 89 sr g u235t 0.0000000 51tur1 7
115 ag g th232f rc cu x1 0.0000000 0.0 0.0710000 0.0000000 0 0.0000000 57ale1 0
116 u235t cm cu 0.0000000 0.0 0.0100000 0.0000000 0 0.0000000 72sid1 0
116 u235t cm cu 0.0000000 0.0 0.0110000 0.0000000 0 0.0000000 73lam1 0
116 cd g u235t ms re rp 0.0144483 23.7 1.0000000 0.0000000 no. relative values = 1 75lae1
116 u235t es cu 0.0127419 20.2 0.0105000 20.0000000% 115 u235t 0.0104000 74mee6 0
116 u235t cm cu 0.0000000 0.0 0.0102000 20.0000000% 0 0.0000000 77cro1 0
116 cd g u235t ms re rp 0.0136391 21.5 1.0000000 0.0000000 no. relative values = 2 70lum1
116 u235t es cu 0.0159257 20.0 0.0158800 20.0000000% 0 0.0000000 87wah1 36
116 cd g u235t ms cu 0.0150349 30.1 0.8600000 30.0000000% 111 cd g u235t 1.0000000 77mat1 36
116 cd g u235t es cu 0.0130374 3.0 0.0130000 3.0000000% 0 0.0000000 87rid1 0
116 ag g u235t cm in 0.0000000 0.0 0.0013860 16.0000000% 0 1.0000000 88wah1 0
116 ag g u235t sp in 0.0080230 71.2 0.0080000 0.0057000 0 0.0000000 90rud1 0
116 ag g u235t sp cu 0.0086248 19.8 0.0086000 0.0017000 0 0.0000000 90rud1 0
116 ag m u235t cm in 0.0000000 0.0 0.0013860 16.0000000% 0 1.0000000 88wah1 0
116 ag m u235t sp in 0.0012937 20.9 0.0012900 0.0002700 0 0.0000000 90rud1 0
116 pd g u235t cm in 0.0000000 0.0 0.0103700 11.0000000% 0 1.0000000 88wah1 0
116 pd g u235t sp cu 0.0130374 9.2 0.0130000 0.0012000 0 0.0000000 90rud1 0
116 rh g u235t cm in 0.0000000 0.0 0.0026510 16.0000000% 0 1.0000000 88wah1 0
116 u235f es cu cm 0.0354305 30.0 0.0360000 0.0000000 0 0.0000000 72sid1 0
116 u235f es cu 0.0336856 20.2 0.0294000 20.0000000% 115 u235f 0.0291000 74mee6 0
116 u235f cm cu 0.0000000 0.0 0.0359000 10.0000000% 0 0.0000000 77cro1 0
116 cd g u235f ms cu 0.0339880 2.0 0.0359000 0.0007000 148 nd g u235f 1.7500000 70lis1 0
116 u235f es re 0.0392485 40.2 3.0100000 40.0000000% 116 u235t 1.0000000 74mee4 0
116 cd g u235he es cu 1.0131841 30.0 1.0340000 0.0000000 0 0.0000000 63wea1 0
116 u235he es cu 1.0694360 21.5 1.0800000 20.0000000% 113 u235he 1.0800000 74mee6 0
116 u235he cm cu 0.0000000 0.0 1.0500000 20.0000000% 0 0.0000000 77cro1 0

116 u235he es cu 1.0582581 10.0 1.0800000 10.0000000% 0 0.0000000 74mee8 0
116 u238f es cu cm 0.0389365 30.0 0.0400000 0.0000000 0 0.0000000 64wal1 0
116 u238f cm cu es 0.0000000 0.0 0.0350000 0.0000000 0 0.0000000 72sid1 0
116 cd g u238f ms re rp 0.0383244 13.0 1.0000000 0.0000000 no. relative values = 4 75lae1
116 u238f es cu 0.0442378 23.0 0.0400000 20.0000000% 118 u238f 0.0380000 74mee6 0
116 u238f cm cu 0.0000000 0.0 0.0440000 20.0000000% 0 0.0000000 77cro1 0
116 u238f es cu 0.0366003 30.0 0.0376000 0.0000000 0 0.0000000 74mae1 0
116 cd g u238he es cu 0.6790324 30.0 0.6863000 0.0000000 0 0.0000000 63wea1 0
116 u238he es cu su 0.0000000 0.0 0.8200000 0.0000000 0 0.0000000 73dar1 0
116 u238he es cu 0.7499452 23.0 0.7100000 20.0000000% 119 u238he 0.6800000 74mee6 0
116 u238he es cu 0.6431168 15.0 0.6500000 15.0000000% 0 0.0000000 74mee9 0
116 u238he cm cu 0.0000000 0.0 0.8800000 20.0000000% 0 0.0000000 77cro1 0
116 cd g pu239t ms cu 0.0510858 6.2 0.1700000 0.0100000 111 cd g pu239t 1.0000000 77mat1 0
116 pu239t cm cu x3 0.0000000 0.0 0.0370000 0.0000000 0 0.0000000 72sid1 0
116 pu239t cm cu x3 0.0000000 0.0 0.0350000 0.0000000 0 0.0000000 73lam1 0
116 pu239t cm cu x3 0.0000000 0.0 0.0360000 0.0070000 0 0.0000000 73wal1 0
116 pu239t cm cu x3 0.0000000 0.0 0.0380000 20.0000000% 0 0.0000000 77cro1 0
116 pu239t es cu 0.0464474 20.0 0.0457500 20.0000000% 0 0.0000000 87wah1 36
116 ag g pu239t cm in 0.0000000 0.0 0.0045140 16.0000000% 0 1.0000000 88wah1 0
116 ag m pu239t cm in 0.0000000 0.0 0.0045150 16.0000000% 0 1.0000000 88wah1 0
116 pd g pu239t cm in 0.0000000 0.0 0.0289800 11.0000000% 0 1.0000000 88wah1 0
116 rh g pu239t cm in 0.0000000 0.0 0.0073910 17.0000000% 0 1.0000000 88wah1 0
116 pu239f cm cu x3 0.0000000 0.0 0.0880000 0.0000000 0 0.0000000 72sid1 0
116 pu239f cm cu 0.0000000 0.0 0.0636000 10.0000000% 0 0.0000000 77cro1 0
116 cd g pu239f ms cu 0.0603106 2.1 0.0636000 0.0013000 148 nd g pu239f 1.7300000 70lis1 0
116 pu239f es cu 0.0543078 30.0 0.0550000 0.0000000 0 0.0000000 74mae1 0
116 pu239f es re 0.0895711 40.8 1.7900000 40.0000000% 116 pu239t 1.0000000 74mee4 0
116 pu241t cm cu 0.0000000 0.0 0.0600000 0.0000000 0 0.0000000 72sid1 0
116 pu241t es cu 0.0277884 33.3 0.0300000 0.0100000 0 0.0000000 73wal1 0
116 pu241t cm cu 0.0000000 0.0 0.0290000 20.0000000% 0 0.0000000 77cro1 0
116 u233t cm cu 0.0000000 0.0 0.0150000 0.0000000 0 0.0000000 72sid1 0
116 u233t cm cu 0.0000000 0.0 0.0210000 0.0000000 0 0.0000000 73lam1 0
116 u233t es cu 0.0134013 21.4 0.0140000 0.0030000 0 0.0000000 73wal1 0
116 cd g u233t ms re rp 0.0134053 24.6 1.0000000 0.0000000 no. relative values = 1 75lae1
116 u233t cm cu 0.0000000 0.0 0.0142000 20.0000000% 0 0.0000000 77cro1 0
116 u233t es cu 0.0124823 20.0 0.0130400 20.0000000% 0 0.0000000 87wah1 36

116 cd g u233t ms re rp 0.0232321 98.8 1.0000000 0.0000000 no. relative values = 1 75lae1
116 th232f cm cu 0.0000000 0.0 0.0670000 0.0000000 0 0.0000000 65eng1 0
116 th232f cm cu 0.0000000 0.0 0.0500000 0.0000000 0 0.0000000 72sid1 0
116 th232f cm cu 0.0000000 0.0 0.0500000 0.0000000 0 0.0000000 73lam1 0
116 th232f es cu 0.0768611 30.0 0.0800000 0.0000000 0 0.0000000 61new1 0
116 th232f cm cu 0.0000000 0.0 0.0500000 20.0000000% 0 0.0000000 77cro1 0
116 th232f es cu 0.0724416 20.0 0.0754000 20.0000000% 0 0.0000000 74mee0 0
117 u235t rc cu 0.0101183 60.0 0.0100000 0.0000000 140 ba g u235t 6.1000000 51met3 0
117 u235t cm cu 0.0000000 0.0 0.0100000 0.0000000 0 0.0000000 72sid1 0
117 u235t cm cu 0.0000000 0.0 0.0110000 0.0000000 0 0.0000000 73lam1 0
117 u235t es cu cm 0.0104584 19.0 0.0105000 0.0020000 0 0.0000000 73wal1 0
117 u235t cm cu 0.0000000 0.0 0.0102000 15.0000000% 0 0.0000000 77cro1 0
117 sn g u235t ms cu 0.0150797 10.9 0.2700000 0.0200000 126 sn g u235t 1.0000000 77mat1 0
117 sn g u235t ms cu 0.0116170 14.4 0.2080000 0.0250000 126 sn g u235t 1.0000000 83ros1 0
117 u235t es cu 0.0123907 20.0 0.0124400 20.0000000% 0 0.0000000 87wah1 36
117 cd g u235t rc fi 0.0001111 42.3 0.0087400 0.0036800 117 u235t 1.0000000 70wei1 40
117 cd g u235t cm in 0.0000000 0.0 0.0000680 51.0000000% 0 1.0000000 88wah1 0
117 cd m u235t rc fi 0.0003719 42.3 0.0292600 0.0123200 117 u235t 1.0000000 70wei1 40
117 cd m u235t cm in 0.0000000 0.0 0.0002277 51.0000000% 0 1.0000000 88wah1 0
117 ag g u235t rc fi x1 0.0000000 0.0 0.3500000 0.0500000 117 cd g u235t 1.0000000 69wei1 0
117 ag g u235t rc fc x1 0.0000000 0.0 0.9620000 0.0160000 117 u235t 1.0000000 70wei1 0
117 ag g u235t rc fi 0.0015124 17.3 0.2380000 0.0400000 117 u235t 1.0000000 70wei1 37
1
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nuclide material tech. type value err. value nuclide material value no. treatment

117 ag g u235t cm in 0.0000000 0.0 0.0022060 24.0000000% 0 1.0000000 88wah1 0
117 ag g u235t sp cu 0.0061754 16.1 0.0062000 0.0010000 0 0.0000000 90rud1 0
117 ag m u235t rc fi 0.0015124 17.3 0.2380000 0.0400000 117 u235t 1.0000000 70wei1 37
117 ag m u235t cm in 0.0000000 0.0 0.0022060 24.0000000% 0 1.0000000 88wah1 0
117 ag m u235t sp in x1 0.0000000 0.0 0.0056000 0.0013000 0 0.0000000 90rud1 0
117 ag m u235t sp cu 0.0053786 24.1 0.0054000 0.0013000 0 0.0000000 90rud1 0
117 pd g u235t rc fc su 0.0000000 0.0 0.6690000 0.0000000 117 cd g u235t 1.0000000 68wei1 0
117 pd g u235t rc fc 0.0092013 7.5 0.7240000 0.0460000 117 u235t 1.0000000 70wei1 0
117 pd g u235t cm in 0.0000000 0.0 0.0071810 11.0000000% 0 1.0000000 88wah1 0
117 rh g u235t rc fc x1 0.0000000 0.0 0.2500000 0.0800000 117 u235t 1.0000000 70wei1 0

117 rh g u235t cm in 0.0000000 0.0 0.0005727 35.0000000% 0 1.0000000 88wah1 0
117 u235f es cu 0.0345018 30.0 0.0376000 0.0000000 148 nd g u235f 1.8100000 63wea1 0
117 u235f es cu cm 0.0374904 30.0 0.0380000 0.0000000 0 0.0000000 72sid1 0
117 u235f es cu 0.0337682 20.2 0.0294000 20.0000000% 115 u235f 0.0291000 74mee6 0
117 u235f cm cu 0.0000000 0.0 0.0371000 20.0000000% 0 0.0000000 77cro1 0
117 u235f es re 0.0378992 10.8 3.0100000 10.0000000% 117 u235t 1.0000000 74mee4 0
117 sn g u235f ms cu x1 0.0000000 0.0 0.2100000 0.0800000 126 sn g u235f 1.0000000 83ros1 0
117 u235he es cu 1.0209393 30.0 1.0330000 0.0000000 0 0.0000000 63wea1 0
117 u235he es cu 1.0786650 21.5 1.0800000 20.0000000% 113 u235he 1.0800000 74mee6 0
117 u235he cm cu 0.0000000 0.0 1.0500000 20.0000000% 0 0.0000000 77cro1 0
117 u235he es cu 1.0673906 10.0 1.0800000 10.0000000% 0 0.0000000 74mee8 0
117 u238f es cu cm 0.0389365 30.0 0.0400000 0.0000000 0 0.0000000 64wal1 0
117 u238f es cu cm 0.0330960 30.0 0.0340000 0.0000000 0 0.0000000 72sid1 0
117 u238f es cu 0.0420259 23.0 0.0380000 20.0000000% 118 u238f 0.0380000 74mee6 0
117 u238f cm cu x3 0.0000000 0.0 0.0681000 20.0000000% 0 0.0000000 77cro1 0
117 u238f es cu 0.0347508 30.0 0.0357000 0.0000000 0 0.0000000 74mae1 0
117 sn g u238f ms cu 0.0368430 29.7 0.7000000 0.2000000 126 sn g u238f 1.0000000 83ros1 0
117 u238he es cu 0.6677904 30.0 0.6703000 0.0000000 0 0.0000000 63wea1 0
117 u238he es cu su 0.0000000 0.0 0.8300000 0.0000000 0 0.0000000 73dar1 0
117 u238he es cu 0.7551340 23.0 0.7100000 20.0000000% 119 u238he 0.6800000 74mee6 0
117 u238he es cu 0.7073418 15.0 0.7100000 15.0000000% 0 0.0000000 74mee9 0
117 u238he cm cu 0.0000000 0.0 0.8300000 20.0000000% 0 0.0000000 77cro1 0
117 u238he rc cu 0.8120027 20.0 0.8000000 0.1600000 99 mo g u238he 5.6000000 75ada1 0
117 cd g u238he es cu 0.4473190 16.0 0.4490000 16.0000000% 0 0.0000000 89rid1 0
117 cd g u238he rc cu 0.4688194 10.7 0.4700000 0.0500000 140 ba g u238he 4.6000000 75cav1 0
117 cd g u238he rc cu su 0.0000000 0.0 0.4700000 0.0500000 140 ba g u238he 4.6000000 74bla1 0
117 cd g u238he rc cu x4 0.0000000 0.0 0.6950000 0.0510000 140 ba g u238he 4.6000000 80zhe1 0
117 cd g u238he rc cu x4 0.0000000 0.0 0.7750000 0.0620000 0 0.0000000 85liu1 0
117 cd g u238he es cu 0.4204200 32.0 0.4220000 32.0000000% 0 0.0000000 74mee1 0
117 cd g u238he es fc 0.3385994 16.5 0.5620000 16.0000000% 117 u238he 1.0000000 89rid1 0
117 cd m u238he rc cu 0.1494384 6.7 0.1500000 0.0100000 0 0.0000000 87ram1 0
117 pu239t cm cu x3 0.0000000 0.0 0.0350000 0.0000000 0 0.0000000 73lam1 0
117 pu239t es cu 0.0355335 20.0 0.0350000 0.0070000 0 0.0000000 73wal1 0
117 pu239t cm cu 0.0000000 0.0 0.0390000 20.0000000% 0 0.0000000 77cro1 0
117 sn g pu239t ms cu 0.0306487 8.6 0.1520000 0.0050000 126 sn g pu239t 1.0000000 77mat1 0
117 pu239t cm cu 0.0000000 0.0 0.0360000 0.0000000 0 0.0000000 72sid1 0

117 pu239t es cu 0.0413407 20.0 0.0407200 20.0000000% 0 0.0000000 87wah1 36
117 cd g pu239t rc cu 0.0694229 20.1 0.0700000 20.0000000% 97 zr g pu239t 5.4600000 74jen1 0
117 cd g pu239t cm in 0.0000000 0.0 0.0003740 42.0000000% 0 1.0000000 88wah1 0
117 cd m pu239t cm in 0.0000000 0.0 0.0012500 42.0000000% 0 1.0000000 88wah1 0
117 ag g pu239t cm in 0.0000000 0.0 0.0095600 11.0000000% 0 1.0000000 88wah1 0
117 ag m pu239t cm in 0.0000000 0.0 0.0095700 11.0000000% 0 1.0000000 88wah1 0
117 pd g pu239t cm in 0.0000000 0.0 0.0185200 11.0000000% 0 1.0000000 88wah1 0
117 rh g pu239t cm in 0.0000000 0.0 0.0013500 43.0000000% 0 1.0000000 88wah1 0
117 pu239f es cu 0.0796567 30.0 0.0870000 0.0000000 148 nd g pu239f 1.7500000 65and1 0
117 pu239f es cu cm 0.0839029 30.0 0.0870000 0.0000000 0 0.0000000 72sid1 0
117 pu239f es cu 0.0582086 20.2 0.0636000 20.0000000% 116 pu239f 0.0636000 74mee6 0
117 pu239f cm cu 0.0000000 0.0 0.0450000 20.0000000% 0 0.0000000 77cro1 0
117 pu239f es re 0.0767485 12.8 1.7900000 10.0000000% 117 pu239t 1.0000000 74mee4 0
117 pu239f es cu 0.0527922 30.0 0.0570000 0.0000000 148 nd g pu239f 1.7300000 70lis1 0
117 pu239f es cu 0.0511133 30.0 0.0530000 0.0000000 0 0.0000000 74mae1 0
117 cd g pu239f rc cu x4 0.0000000 0.0 0.1600000 25.0000000% 97 zr g pu239f 4.9000000 74jen1 0
117 pu241t es cu 0.0253223 38.5 0.0260000 0.0100000 0 0.0000000 73wal1 0
117 pu241t cm cu x3 0.0000000 0.0 0.0500000 0.0000000 0 0.0000000 72sid1 0
117 pu241t sp re 0.0233660 15.1 1.0000000 0.0000000 134 pu241t 330.0000000 81cai1 0
117 pu241t cm cu x3 0.0000000 0.0 0.0260000 20.0000000% 0 0.0000000 77cro1 0
117 u233t cm cu 0.0000000 0.0 0.0150000 0.0000000 0 0.0000000 72sid1 0
117 u233t cm cu x3 0.0000000 0.0 0.0220000 0.0000000 0 0.0000000 73lam1 0
117 u233t cm cu 0.0000000 0.0 0.0140000 0.0030000 0 0.0000000 73wal1 0
117 u233t cm cu 0.0000000 0.0 0.0150000 7.0000000% 0 0.0000000 77cro1 0
117 u233t es cu 0.0148858 20.0 0.0153500 20.0000000% 0 0.0000000 87wah1 36
117 sn g u233t ms cu 0.0135091 18.0 0.0621000 0.0100000 126 sn g u233t 1.0000000 83ros1 0
117 th232f es cu cm 0.0645492 30.0 0.0650000 0.0000000 0 0.0000000 65eng1 0
117 th232f cm cu 0.0000000 0.0 0.0500000 0.0000000 0 0.0000000 72sid1 0
117 th232f cm cu 0.0000000 0.0 0.0490000 0.0000000 0 0.0000000 73lam1 0
117 th232f cm cu 0.0000000 0.0 0.0600000 0.0000000 0 0.0000000 74lam1 0
117 th232f cm cu 0.0000000 0.0 0.0490000 12.0000000% 0 0.0000000 77cro1 0
117 th232f es cu 0.0676277 20.0 0.0681000 20.0000000% 0 0.0000000 74mee0 0
117 in g th232f rc re 0.0409687 11.7 10.4400000 1.2200000 99 mo g u235t 0.0000000 63iye1 7
117 cd g th232f rc cu 0.0538988 14.0 0.0510000 0.0070000 140 ba g th232f 7.4000000 73cha1 0
117 cd g th232f rc re 0.0578441 5.0 12.9700000 0.2000000 99 mo g u235t 0.0000000 81ert1 7
117 cd g th232f rc cu sm 0.0000000 0.0 0.0730000 0.0170000 0 0.0000000 81ert1 0

117	cd g	th232f	cm	cu	0.0000000	0.0	0.0730000	0.0170000	0			0.0000000	81ert1	0
117	cd m	th232f	rc	re	0.0169695	5.0	10.3000000	0.4600000	99	mo g	u235t	0.0000000	81ert1	7
118		u235t	cm	cu	0.0000000	0.0	0.0090000	0.0000000	0			0.0000000	72sid1	0
118		u235t	cm	cu	0.0000000	0.0	0.0110000	0.0000000	0			0.0000000	73lam1	0
118		u235t	es	cu	0.0104168	19.0	0.0105000	0.0020000	0			0.0000000	73wal1	0
118		u235t	cm	cu	0.0000000	0.0	0.0106000	20.0000000%	0			0.0000000	77cro1	0
118	sn g	u235t	ms	cu	0.0144634	35.5	0.2600000	0.0900000	126	sn g	u235t	1.0000000	77mat1	0
118	sn g	u235t	ms	cu	0.0111257	14.0	0.2000000	0.0230000	126	sn g	u235t	1.0000000	83ros1	0
118		u235t	es	cu	0.0106251	20.0	0.0107100	20.0000000%	0			0.0000000	87wah1	36
118		u235t	sp	re	0.0120150	15.0	1.0000000	0.0000000	134		u235t	650.0000000	81asg1	0
118	cd g	u235t	cm	cu	0.0000000	0.0	0.0147500	32.0000000%	0			0.0000000	73net2	0
118	cd g	u235t	cm	in	0.0000000	0.0	0.0017270	67.0000000%	0			1.0000000	88wah1	0
118	ag g	u235t	rc	fi	0.0030918	29.0	0.5500000	0.1000000	118	cd g	u235t	1.0000000	69wei1	37
118	ag g	u235t	cm	in	0.0000000	0.0	0.0029520	18.0000000%	0			1.0000000	88wah1	0
118	ag g	u235t	sp	in	0.0037699	26.3	0.0038000	0.0010000	0			0.0000000	90rud1	0
118	ag g	u235t	sp	cu	0.0065477	24.2	0.0066000	0.0016000	0			0.0000000	90rud1	0
118	ag m	u235t	rc	fi	0.0030918	29.0	0.5500000	0.1000000	118	cd g	u235t	1.0000000	69wei1	37
118	ag m	u235t	cm	in	0.0000000	0.0	0.0029520	18.0000000%	0			1.0000000	88wah1	0
118	ag m	u235t	sp	in	0.0029762	30.0	0.0030000	0.0009000	0			0.0000000	90rud1	0
118	pd g	u235t	rc	fc	0.0032604	24.9	0.2900000	0.0300000	118	cd g	u235t	1.0000000	69wei1	0
118	pd g	u235t	cm	in	0.0000000	0.0	0.0030040	12.0000000%	0			1.0000000	88wah1	0
118	rh g	u235t	cm	in	0.0000000	0.0	0.0006460	93.0000000%	0			10.0000000	88wah1	0
118		u235f	es	cu	0.0346853	30.0	0.0378000	0.0000000	148	nd g	u235f	1.8100000	63wea1	0
118	sn g	u235f	sp	cu	0.0319179	14.7	0.0340000	0.0050000	140	ba g	u235f	6.2800000	71dya1	0
118		u235f	es	cu	cm 0.0394636	30.0	0.0400000	0.0000000	0			0.0000000	72sid1	0
118		u235f	es	cu	0.0337682	20.2	0.0294000	20.0000000%	115		u235f	0.0291000	74mee6	0
118		u235f	cm	cu	0.0000000	0.0	0.0381000	20.0000000%	0			0.0000000	77cro1	0
118		u235f	es	re	0.0336934	12.8	3.0100000	10.0000000%	118		u235t	1.0000000	74mee4	0
118		u235f	es	cu	0.0332172	30.0	0.0350000	0.0000000	148	nd g	u235f	1.7500000	70lis1	0
118	cd g	u235f	cm	cu	0.0000000	0.0	0.0363900	32.0000000%	0			0.0000000	73net2	0
118		u235he	es	cu	1.0287290	30.0	1.0460000	0.0000000	0			0.0000000	63wea1	0
118		u235he	es	cu	1.0733868	21.5	1.0800000	20.0000000%	113		u235he	1.0800000	74mee6	0
118		u235he	cm	cu	0.0000000	0.0	1.0500000	20.0000000%	0			0.0000000	77cro1	0
118		u235he	es	cu	1.0897053	10.0	1.1080000	10.0000000%	0			0.0000000	74mee8	0
118	cd g	u235he	cm	cu	0.0000000	0.0	1.0420000	6.0000000%	0			0.0000000	73net2	0
118		u238f	es	cu	0.0351934	30.0	0.0336000	0.0000000	0			0.0000000	63wea1	0

118 u238f es cu cm 0.0418970 30.0 0.0400000 0.0000000 0 0.0000000 64wal1 0
118 u238f es cu cm 0.0356124 30.0 0.0340000 0.0000000 0 0.0000000 72sid1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

118 u238f es cu 0.0398021 20.0 0.0380000 20.0000000% 0 0.0000000 74mee6 0
118 u238f cm cu 0.0000000 0.0 0.0460000 20.0000000% 0 0.0000000 77cro1 0
118 u238f es cu 0.0303753 30.0 0.0290000 0.0000000 0 0.0000000 74mae1 0
118 cd g u238f cm cu 0.0000000 0.0 0.0369200 16.0000000% 0 0.0000000 73net2 0
118 cd g u238f rc cu 0.0565609 18.5 0.0540000 0.0100000 0 0.0000000 75har1 0
118 u238he es cu 0.6774753 30.0 0.6716000 0.0000000 0 0.0000000 63wea1 0
118 u238he es cu su 0.0000000 0.0 0.8300000 0.0000000 0 0.0000000 73dar1 0
118 u238he es cu 0.7646027 23.0 0.7100000 20.0000000% 119 u238he 0.6800000 74mee6 0
118 u238he es cu 0.8473485 15.0 0.8400000 15.0000000% 0 0.0000000 74mee9 0
118 u238he cm cu 0.0000000 0.0 0.8880000 16.0000000% 0 0.0000000 77cro1 0
118 cd g u238he cm cu 0.0000000 0.0 0.7898000 6.1000000% 0 0.0000000 73net2 0
118 cd g u238he rc cu 0.8838484 18.7 0.8600000 0.1600000 99 mo g u238he 5.6000000 75ada1 0
118 pu239t cm cu x3 0.0000000 0.0 0.0350000 0.0000000 0 0.0000000 72sid1 0
118 pu239t cm cu x3 0.0000000 0.0 0.0350000 0.0000000 0 0.0000000 73lam1 0
118 pu239t cm cu x3 0.0000000 0.0 0.0350000 0.0070000 0 0.0000000 73wal1 0
118 sn g pu239t ms cu 0.0304336 10.4 0.1500000 0.0100000 126 sn g pu239t 1.0000000 77mat1 0
118 pu239t cm cu x3 0.0000000 0.0 0.0400000 20.0000000% 0 0.0000000 77cro1 0
118 pu239t sp re 0.0365324 15.0 1.0000000 0.0000000 140 pu239t 150.0000000 78asg2 0
118 pu239t cm cu x3 0.0000000 0.0 0.0308400 20.0000000% 0 0.0000000 87wah1 36
118 pu239t cm cu 0.0000000 0.0 0.0326000 8.0000000% 0 0.0000000 89rid1 0
118 cd g pu239t es cu 0.0354889 32.0 0.0347400 32.0000000% 0 0.0000000 73net2 0
118 cd g pu239t es in 0.0056032 17.0 0.0054850 17.0000000% 0 1.0000000 88wah1 0
118 ag g pu239t cm in 0.0000000 0.0 0.0096300 11.0000000% 0 1.0000000 88wah1 0
118 ag m pu239t cm in 0.0000000 0.0 0.0096200 11.0000000% 0 1.0000000 88wah1 0
118 pd g pu239t cm in 0.0000000 0.0 0.0058460 16.0000000% 0 1.0000000 88wah1 0
118 pu239f es cu 0.0775372 30.0 0.0860000 0.0000000 148 nd g pu239f 1.7500000 65and1 0
118 pu239f es cu cm 0.0816704 30.0 0.0860000 0.0000000 0 0.0000000 72sid1 0
118 pu239f es cu 0.0573186 20.2 0.0636000 20.0000000% 116 pu239f 0.0636000 74mee6 0
118 pu239f cm cu 0.0000000 0.0 0.0750000 20.0000000% 0 0.0000000 77cro1 0
118 pu239f es re 0.0552252 15.1 1.7900000 10.0000000% 118 pu239t 1.0000000 74mee4 0

118 pu239f es cu 0.0528971 30.0 0.0580000 0.0000000 148 nd g pu239f 1.7300000 70lis1 0
118 pu239f es cu 0.0512814 30.0 0.0540000 0.0000000 0 0.0000000 74mae1 0
118 cd g pu239f cm cu 0.0000000 0.0 0.0826400 32.0000000% 0 0.0000000 73net2 0
118 pu241t es cu 0.0231570 40.0 0.0250000 0.0100000 0 0.0000000 73wal1 0
118 pu241t cm cu 0.0000000 0.0 0.0250000 20.0000000% 0 0.0000000 77cro1 0
118 pu241t cm cu x3 0.0000000 0.0 0.0500000 0.0000000 0 0.0000000 72sid1 0
118 sn g u233t ms re su 0.0000000 0.0 1.0330000 0.0700000 117 sn g u233t 1.0000000 69lae1 0
118 u233t cm cu x3 0.0000000 0.0 0.0150000 0.0000000 0 0.0000000 72sid1 0
118 u233t cm cu x3 0.0000000 0.0 0.0220000 0.0000000 0 0.0000000 73lam1 0
118 u233t es cu x3 0.0000000 0.0 0.0145000 0.0030000 0 0.0000000 73wal1 0
118 u233t es cu 0.0164762 99.0 0.0169900 99.0000000% 0 0.0000000 74mee6 0
118 u233t cm cu x3 0.0000000 0.0 0.0155000 7.1000000% 0 0.0000000 77cro1 0
118 u233t cm cu x3 0.0000000 0.0 0.0145000 0.0030000 0 0.0000000 73wal1 0
118 u233t es cu 0.0167962 20.0 0.0173200 20.0000000% 0 0.0000000 87wah1 36
118 sn g u233t ms cu 0.0150319 16.5 0.0691000 0.0100000 126 sn g u233t 1.0000000 83ros1 0
118 u233t sp re 0.0149319 15.0 1.0000000 0.0000000 136 u233t 440.0000000 78asg2 0
118 cd g u233t cm cu x4 0.0000000 0.0 0.0296900 16.0000000% 0 0.0000000 73net2 0
118 th232f es cu cm 0.0612521 30.0 0.0630000 0.0000000 0 0.0000000 65eng1 0
118 th232f cm cu es 0.0000000 0.0 0.0400000 0.0000000 0 0.0000000 72sid1 0
118 th232f cm cu 0.0000000 0.0 0.0500000 0.0000000 0 0.0000000 73lam1 0
118 th232f es cu 0.0680579 30.0 0.0700000 0.0000000 0 0.0000000 61new1 0
118 th232f cm cu 0.0000000 0.0 0.0520000 20.0000000% 0 0.0000000 77cro1 0
118 th232f sp cu 0.0627601 15.3 1.0000000 0.0000000 140 ba g th232f 122.0000000 71hol1 0
118 th232f es cu 0.0630022 20.0 0.0648000 20.0000000% 0 0.0000000 74mee0 0
118 th232f sp cu rp 0.0627602 63.2 1.0000000 0.0000000 no. relative values = 1 71hol1
118 cd g th232f cm cu 0.0000000 0.0 0.0605600 32.0000000% 0 0.0000000 73net2 0
119 u235t cm cu 0.0000000 0.0 0.0100000 0.0000000 0 0.0000000 72sid1 0
119 u235t cm cu 0.0000000 0.0 0.0120000 0.0000000 0 0.0000000 73lam1 0
119 u235t es cu 0.0104168 19.0 0.0105000 0.0020000 0 0.0000000 73wal1 0
119 u235t cm cu 0.0000000 0.0 0.0112000 20.0000000% 0 0.0000000 77cro1 0
119 sn g u235t ms cu 0.0139071 14.4 0.2500000 0.0300000 126 sn g u235t 1.0000000 77mat1 0
119 sn g u235t ms cu 0.0127389 13.5 0.2290000 0.0250000 126 sn g u235t 1.0000000 83ros1 0
119 u235t es cu 0.0113890 20.0 0.0114800 20.0000000% 0 0.0000000 87wah1 36
119 in g u235t cm in 0.0000000 0.0 0.0007679 78.0000000% 0 10.0000000 88wah1 0
119 in g u235t sp in 0.0005357 24.1 0.0005400 0.0001300 0 0.0000000 90rud1 0
119 in g u235t sp cu 0.0083334 56.0 0.0084000 0.0047000 0 0.0000000 90rud1 0

119	in m	u235t	cm	in	0.0000000	0.0	0.0001801	78.0000000%	0				10.0000000	88wah1	0
119	cd g	u235t	cm	in	0.0000000	0.0	0.0016220	82.0000000%	0				1.0000000	88wah1	0
119	cd g	u235t	sp	in	0.0027778	67.9	0.0028000	0.0019000	0				0.0000000	90rud1	0
119	cd g	u235t	sp	cu	0.0086310	25.3	0.0087000	0.0022000	0				0.0000000	90rud1	0
119	cd m	u235t	cm	in	0.0000000	0.0	0.0016220	82.0000000%	0				1.0000000	88wah1	0
119	cd m	u235t	sp	cu	0.0036707	37.8	0.0037000	0.0014000	0				0.0000000	90rud1	0
119	ag g	u235t	cm	in	0.0000000	0.0	0.0071840	11.0000000%	0				1.0000000	88wah1	0
119	ag g	u235t	sp	in	0.0082342	24.1	0.0083000	0.0020000	0				0.0000000	90rud1	0
119	ag g	u235t	sp	cu	0.0087302	18.2	0.0088000	0.0016000	0				0.0000000	90rud1	0
119	pd g	u235t	cm	in	0.0000000	0.0	0.0009490	24.0000000%	0				1.0000000	88wah1	0
119		u235f	es	cu	0.0352359	30.0	0.0384000	0.0000000	148	nd g	u235f		1.8100000	63wea1	0
119	sn g	u235f	sp	cu	0.0319179	14.7	0.0340000	0.0050000	140	ba g	u235f		6.2800000	71dya1	0
119		u235f	es	cu	cm	0.0374904	30.0	0.0380000	0.0000000	0				0.0000000	72sid1	0
119		u235f	es	cu		0.0337682	20.2	0.0294000	20.0000000%	115	u235f		0.0291000	74mee6	0
119		u235f	cm	cu		0.0000000	0.0	0.0381000	20.0000000%	0			0.0000000	77cro1	0
119		u235f	es	re		0.0382320	12.8	3.0100000	10.0000000%	119	u235t		1.0000000	74mee4	0
119		u235f	es	cu		0.0332172	30.0	0.0350000	0.0000000	148	nd g	u235f	1.7500000	70lis1	0
119	sn g	u235f	ms	cu		0.0211259	65.6	0.2200000	0.1400000	126	sn g	u235f	1.0000000	83ros1	0
119		u235he	es	cu		1.0356134	30.0	1.0530000	0.0000000	0			0.0000000	63wea1	0
119		u235he	es	cu		1.0833256	21.5	1.0900000	20.0000000%	113	u235he		1.0800000	74mee6	0
119		u235he	cm	cu		0.0000000	0.0	1.0500000	20.0000000%	0			0.0000000	77cro1	0
119		u235he	es	cu		1.0897053	10.0	1.1080000	10.0000000%	0			0.0000000	74mee8	0
119		u238f	es	cu		0.0352982	30.0	0.0337000	0.0000000	0			0.0000000	63wea1	0
119		u238f	es	cu	cm	0.0418970	30.0	0.0400000	0.0000000	0			0.0000000	64wal1	0
119		u238f	es	cu	cm	0.0356124	30.0	0.0340000	0.0000000	0			0.0000000	72sid1	0
119		u238f	es	cu		0.0452237	23.0	0.0380000	20.0000000%	118	u238f		0.0380000	74mee6	0
119		u238f	cm	cu		0.0000000	0.0	0.0470000	20.0000000%	0			0.0000000	77cro1	0
119		u238f	es	cu		0.0303753	30.0	0.0290000	0.0000000	0			0.0000000	74mae1	0
119	sn g	u238f	ms	cu		0.0487059	35.8	0.8600000	0.3000000	126	sn g	u238f	1.0000000	83ros1	0
119		u238he	es	cu		0.6854444	30.0	0.6795000	0.0000000	0			0.0000000	63wea1	0
119		u238he	cm	cu	su	0.0000000	0.0	0.8400000	0.0000000	0			0.0000000	73dar1	0
119		u238he	es	cu		0.6859488	20.0	0.6800000	20.0000000%	0			0.0000000	74mee6	0
119		u238he	es	cu		0.7585787	15.0	0.7520000	15.0000000%	0			0.0000000	74mee9	0
119		u238he	cm	cu		0.0000000	0.0	0.9130000	20.0000000%	0			0.0000000	77cro1	0
119		pu239t	cm	cu	x3	0.0000000	0.0	0.0360000	0.0000000	0			0.0000000	73lam1	0
119		pu239t	es	cu		0.0346727	20.0	0.0350000	0.0070000	0			0.0000000	73wal1	0

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 119        pu239t   cm    cu        0.0000000  0.0   0.0410000 20.0000000%    0                    0.0000000   77cro1      0
 119 sn g   pu239t   ms    cu        0.0314803 10.2   0.1600000  0.0100000   126 sn g      pu239t      1.0000000   77mat1      0
 119        pu239t   cm    cu        0.0000000  0.0   0.0360000  0.0000000     0                    0.0000000   72sid1      0
 119        pu239t   es    cu        0.0328103 20.0   0.0331200 20.0000000%    0                    0.0000000   87wah1     36
 119 in g   pu239t   cm    in        0.0000000  0.0   0.0008800 50.0000000%    0                    1.0000000   88wah1      0
 119 in m   pu239t   cm    in        0.0000000  0.0   0.0002060 50.0000000%    0                    1.0000000   88wah1      0
 119 cd g   pu239t   cm    in        0.0000000  0.0   0.0070300 11.0000000%    0                    1.0000000   88wah1      0
 119 cd m   pu239t   cm    in        0.0000000  0.0   0.0070300 11.0000000%    0                    1.0000000   88wah1      0
 119 ag g   pu239t   cm    in        0.0000000  0.0   0.0163200 11.0000000%    0                    1.0000000   88wah1      0
 119 pd g   pu239t   cm    in        0.0000000  0.0   0.0015770 36.0000000%    0                    1.0000000   88wah1      0
 119        pu239f   es    cu        0.0601316 30.0   0.0640000  0.0000000   148 nd g      pu239f      1.7000000   69lis1      0
 119        pu239f   cm    cu    x3  0.0000000  0.0   0.0860000  0.0000000     0                    0.0000000   72sid1      0
 119        pu239f   es    cu        0.0580253 20.2   0.0636000 20.0000000%  116          pu239f      0.0636000   74mee6      0
 119        pu239f   cm    cu        0.0000000  0.0   0.0820000 20.0000000%    0                    0.0000000   77cro1      0
 119        pu239f   es    re        0.0554959 12.8   1.7900000 10.0000000%  119          pu239t      1.0000000   74mee4      0
 119        pu239f   es    cu        0.0581656 30.0   0.0630000  0.0000000   148 nd g      pu239f      1.7300000   70lis1      0
 119        pu239f   es    cu        0.0374932 30.0   0.0390000  0.0000000     0                    0.0000000   74mae1      0
 119        pu241t   es    cu        0.0231570 40.0   0.0250000  0.0100000     0                    0.0000000   73wal1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value       no.   treatment

 119        pu241t   cm    cu        0.0000000  0.0   0.0250000 20.0000000%    0                    0.0000000   77cro1      0
 119        pu241t   cm    cu    x3  0.0000000  0.0   0.0500000  0.0000000     0                    0.0000000   72sid1      0
 119 sn g   u233t    ms    re    su  0.0000000  0.0   1.0500000  0.0800000   117 sn g      u233t       1.0000000   69lae1      0
 119        u233t    cm    cu    x3  0.0000000  0.0   0.0150000  0.0000000     0                    0.0000000   72sid1      0
 119        u233t    cm    cu    x3  0.0000000  0.0   0.0230000  0.0000000     0                    0.0000000   73lam1      0
 119        u233t    es    cu    x3  0.0000000  0.0   0.0150000  0.0030000     0                    0.0000000   73wal1      0
 119        u233t    es    cu        0.0197286 99.0   0.0206100 99.0000000%    0                    0.0000000   74mee6      0
 119        u233t    cm    cu    x3  0.0000000  0.0   0.0158000  8.0000000%    0                    0.0000000   77cro1      0
 119        u233t    cm    cu    x3  0.0000000  0.0   0.0150000  0.0030000     0                    0.0000000   73wal1      0
 119        u233t    es    cu        0.0201019 20.0   0.0210000 20.0000000%    0                    0.0000000   87wah1     36
 119 sn g   u233t    ms    cu        0.0175863 15.6   0.0819000  0.0110000   126 sn g      u233t       1.0000000   83ros1      0
 119        th232f   cm    cu        0.0000000  0.0   0.0400000  0.0000000     0                    0.0000000   72sid1      0
 119        th232f   cm    cu        0.0000000  0.0   0.0500000  0.0000000     0                    0.0000000   73lam1      0
 119        th232f   es    cu        0.0586066 30.0   0.0610000  0.0000000     0                    0.0000000   65eng1      0
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119		th232f	cm	cu		0.0000000	0.0	0.0530000	20.0000000%	0				0.0000000	77cro1	0
119		th232f	es	cu		0.0565890	20.0	0.0589000	20.0000000%	0				0.0000000	74mee0	0
120		u235t	cm	cu		0.0000000	0.0	0.0090000	0.0000000	0				0.0000000	72sid1	0
120		u235t	cm	cu		0.0000000	0.0	0.0130000	0.0000000	0				0.0000000	73lam1	0
120		u235t	es	cu		0.0109128	18.2	0.0110000	0.0020000	0				0.0000000	73wal1	0
120		u235t	cm	cu		0.0000000	0.0	0.0118000	20.0000000%	0				0.0000000	77cro1	0
120	sn g	u235t	ms	cu		0.0144634	20.8	0.2600000	0.0500000	126	sn g	u235t		1.0000000	77mat1	0
120		u235t	es	cu		0.0115775	20.0	0.0116700	20.0000000%	0				0.0000000	87wah1	36
120	sn g	u235t	ms	cu		0.0135734	13.0	0.2440000	0.0250000	126	sn g	u235t		1.0000000	83ros1	0
120	in g	u235t	cm	in		0.0000000	0.0	0.0004200	32.0000000%	0				1.0000000	88wah1	0
120	in g	u235t	sp	in		0.0003571	94.4	0.0007200	0.0006800	0				0.0000000	90rud1	37
120	in g	u235t	sp	cu		0.0060020	21.5	0.0121000	0.0026000	0				0.0000000	90rud1	37
120	in m	u235t	cm	in		0.0000000	0.0	0.0000985	32.0000000%	0				1.0000000	88wah1	0
120	in m	u235t	sp	in		0.0003571	94.4	0.0007200	0.0006800	0				0.0000000	90rud1	37
120	in m	u235t	sp	cu		0.0060020	21.5	0.0121000	0.0026000	0				0.0000000	90rud1	37
120	cd g	u235t	cm	in		0.0000000	0.0	0.0064500	11.0000000%	0				1.0000000	88wah1	0
120	ag g	u235t	cm	in		0.0000000	0.0	0.0045030	11.0000000%	0				1.0000000	88wah1	0
120	ag g	u235t	sp	in		0.0009921	99.0	0.0010000	99.0000000%	0				0.0000000	90rud1	36
120	ag g	u235t	sp	cu		0.0040675	22.0	0.0041000	0.0009000	0				0.0000000	90rud1	0
120	ag m	u235t	sp	in	x6	0.0000000	0.0	0.0056000	0.0019000	0				0.0000000	90rud1	0
120	pd g	u235t	cm	in		0.0000000	0.0	0.0001939	57.0000000%	0				1.0000000	88wah1	0
120		u235f	es	cu		0.0361535	30.0	0.0394000	0.0000000	148	nd g	u235f		1.8100000	63wea1	0
120	sn g	u235f	sp	cu		0.0319179	14.7	0.0340000	0.0050000	140	ba g	u235f		6.2800000	71dya1	0
120		u235f	es	cu	cm	0.0384770	30.0	0.0390000	0.0000000	0				0.0000000	72sid1	0
120		u235f	es	cu		0.0353762	20.2	0.0308000	20.0000000%	115		u235f		0.0291000	74mee6	0
120		u235f	cm	cu		0.0000000	0.0	0.0426000	20.0000000%	0				0.0000000	77cro1	0
120		u235f	es	re		0.0374446	12.8	3.0100000	10.0000000%	120		u235t		1.0000000	74mee4	0
120		u235f	es	cu		0.0332172	30.0	0.0350000	0.0000000	148	nd g	u235f		1.7500000	70lis1	0
120		u235he	es	cu		1.0739695	30.0	1.0920000	0.0000000	0				0.0000000	63wea1	0
120		u235he	es	cu		1.0932644	21.5	1.1000000	20.0000000%	113		u235he		1.0800000	74mee6	0
120		u235he	cm	cu		0.0000000	0.0	1.0500000	20.0000000%	0				0.0000000	77cro1	0
120		u235he	es	cu		1.0916723	10.0	1.1100000	10.0000000%	0				0.0000000	74mee8	0
120		u238f	es	cu		0.0355077	30.0	0.0339000	0.0000000	0				0.0000000	63wea1	0
120		u238f	es	cu	cm	0.0418970	30.0	0.0400000	0.0000000	0				0.0000000	64wal1	0
120		u238f	es	cu	cm	0.0356124	30.0	0.0340000	0.0000000	0				0.0000000	72sid1	0
120		u238f	es	cu		0.0452237	23.0	0.0380000	20.0000000%	118		u238f		0.0380000	74mee6	0

120		u238f	cm	cu		0.0000000	0.0	0.0480000	20.0000000%	0				0.0000000	77cro1	0
120		u238f	es	cu		0.0303753	30.0	0.0290000	0.0000000	0				0.0000000	74mae1	0
120	sn g	u238f	ms	cu		0.0390780	30.1	0.6900000	0.2000000	126	sn g	u238f		1.0000000	83ros1	0
120		u238he	es	cu		0.7131850	30.0	0.7070000	0.0000000	0				0.0000000	63wea1	0
120		u238he	es	cu	su	0.0000000	0.0	0.8400000	0.0000000	0				0.0000000	73dar1	0
120		u238he	es	cu		0.7646088	23.0	0.7100000	20.0000000%	119		u238he		0.6800000	74mee6	0
120		u238he	es	cu		0.7989286	15.0	0.7920000	15.0000000%	0				0.0000000	74mee9	0
120		u238he	cm	cu		0.0000000	0.0	0.9240000	20.0000000%	0				0.0000000	77cro1	0
120		pu239t	cm	cu	x3	0.0000000	0.0	0.0350000	0.0000000	0				0.0000000	72sid1	0
120		pu239t	cm	cu	x3	0.0000000	0.0	0.0380000	0.0000000	0				0.0000000	73lam1	0
120		pu239t	es	cu		0.0345372	20.0	0.0350000	0.0070000	0				0.0000000	73wal1	0
120		pu239t	cm	cu		0.0000000	0.0	0.0418000	20.0000000%	0				0.0000000	77cro1	0
120	sn g	pu239t	ms	cu		0.0274376	16.4	0.1400000	0.0200000	126	sn g	pu239t		1.0000000	77mat1	0
120		pu239t	es	cu		0.0313301	20.0	0.0317500	20.0000000%	0				0.0000000	87wah1	36
120	in g	pu239t	cm	in		0.0000000	0.0	0.0037590	20.0000000%	0				1.0000000	88wah1	0
120	in m	pu239t	cm	in		0.0000000	0.0	0.0008820	20.0000000%	0				1.0000000	88wah1	0
120	cd g	pu239t	cm	in		0.0000000	0.0	0.0192400	11.0000000%	0				1.0000000	88wah1	0
120	ag g	pu239t	cm	in		0.0000000	0.0	0.0076270	14.0000000%	0				1.0000000	88wah1	0
120		pu239f	es	cu		0.0601316	30.0	0.0640000	0.0000000	148	nd g	pu239f		1.7000000	69lis1	0
120		pu239f	cm	cu	x3	0.0000000	0.0	0.0890000	0.0000000	0				0.0000000	72sid1	0
120		pu239f	es	cu		0.0580253	20.2	0.0636000	20.0000000%	116		pu239f		0.0636000	74mee6	0
120		pu239f	es	re		0.0526325	15.1	1.7900000	10.0000000%	120		pu239t		1.0000000	74mee4	0
120		pu239f	es	cu		0.0581656	30.0	0.0630000	0.0000000	148	nd g	pu239f		1.7300000	70lis1	0
120		pu239f	cm	cu	x3	0.0000000	0.0	0.0900000	20.0000000%	0				0.0000000	77cro1	0
120		pu239f	cm	cu	x3	0.0000000	0.0	0.0390000	0.0000000	0				0.0000000	74mae1	0
120		pu241t	es	cu		0.0256232	30.0	0.0250000	0.0000000	0				0.0000000	68lis3	0
120		pu241t	cm	cu		0.0000000	0.0	0.0250000	0.0000000	0				0.0000000	72sid1	0
120		pu241t	cm	cu		0.0000000	0.0	0.0250000	0.0100000	0				0.0000000	73wal1	0
120		pu241t	cm	cu	x3	0.0000000	0.0	0.0240000	20.0000000%	0				0.0000000	77cro1	0
120	sn g	u233t	ms	re	su	0.0000000	0.0	1.1700000	0.0800000	117	sn g	u233t		1.0000000	69lae1	0
120		u233t	cm	cu	x3	0.0000000	0.0	0.0150000	0.0000000	0				0.0000000	72sid1	0
120		u233t	es	cu	x3	0.0000000	0.0	0.0160000	0.0030000	0				0.0000000	73wal1	0
120		u233t	es	cu		0.0242599	99.0	0.0247900	99.0000000%	0				0.0000000	74mee6	0
120		u233t	cm	cu	x3	0.0000000	0.0	0.0175000	7.0000000%	0				0.0000000	77cro1	0
120	sn g	u233t	ms	cu		0.0212940	8.6	0.0970000	0.0030000	126	sn g	u233t		1.0000000	83ros1	0
120		u233t	es	cu		0.0246416	20.0	0.0251800	20.0000000%	0				0.0000000	87wah1	36

120 u233t cm cu x3 0.0000000 0.0 0.0160000 0.0030000 0 0.0000000 73wal1 0
120 th232f cm cu 0.0000000 0.0 0.0400000 0.0000000 0 0.0000000 72sid1 0
120 th232f cm cu 0.0000000 0.0 0.0500000 0.0000000 0 0.0000000 73lam1 0
120 th232f es cu 0.0557243 30.0 0.0580000 0.0000000 0 0.0000000 65eng1 0
120 th232f cm cu 0.0000000 0.0 0.0540000 20.0000000% 0 0.0000000 77cro1 0
120 th232f es cu 0.0537067 20.0 0.0559000 20.0000000% 0 0.0000000 74mee0 0
121 u235t rc cu 0.0139215 7.1 0.0140000 0.0010000 0 0.0000000 69erd1 0
121 u235t cm cu 0.0000000 0.0 0.0120000 0.0000000 0 0.0000000 72sid1 0
121 u235t cm cu 0.0000000 0.0 0.0140000 0.0000000 0 0.0000000 73lam1 0
121 u235t es cu 0.0129271 13.1 0.0130000 0.0017000 0 0.0000000 73wal1 0
121 sb g u235t es fi 0.0000000 30.5 0.0000296 0.0000000 121 u235t 100.0000000 74wol1 0
121 u235t es cu 0.0119327 8.3 0.0120000 0.0010000 0 0.0000000 65wei1 0
121 u235t cm cu 0.0000000 0.0 0.0120000 8.0000000% 0 0.0000000 77cro1 0
121 u235t es cu 0.0128973 20.0 0.0129700 20.0000000% 0 0.0000000 87wah1 36
121 sn g u235t rc cu 0.0121220 60.0 0.0120000 0.0000000 140 ba g u235t 6.1000000 49coo1 0
121 sn g u235t rc cu 0.0139215 60.0 0.0140000 0.0000000 0 0.0000000 51ste4 0
121 sn g u235t rc cu 0.0109383 9.1 0.0110000 0.0010000 0 0.0000000 65wei1 0
121 sn g u235t rc cu 0.0121395 6.6 0.0122000 0.0008000 89 sr g u235t 4.7300000 69erd1 0
121 sn g u235t rc cu 0.0119327 8.3 0.0120000 0.0010000 0 0.0000000 70gev1 0
121 sn g u235t rc cu rp 0.0127693 27.2 0.0122000 0.0000000 no. relative values = 1 69erd2
121 sn g u235t cm cu x3 0.0000000 0.0 0.0178200 8.0000000% 0 0.0000000 73net2 0
121 sn g u235t rc fi ul 0.0000000 0.0 0.0058000 0.0290000 121 sn g u235t 1.0000000 63wah1 40
121 sn g u235t rc cu 0.0141423 60.0 0.0140000 0.0000000 140 ba g u235t 6.1000000 51sei2 0
121 sn g u235t rc fi ul 0.0000000 0.0 0.0500000 99.0000000% 121 sn g u235t 1.0000000 84sem1 0
121 sn g u235t rc in ul 0.0000000 0.0 0.0004000 0.0007000 0 0.0000000 84sem1 0
121 sn g u235t rc fi 0.0003889 99.9 0.0300000 0.0400000 121 u235t 1.0000000 85rob1 0
121 sn g u235t rc fi ul 0.0000000 0.0 0.1400000 0.0000000 121 u235t 1.0000000 71erd1 0
121 sn m u235t rc cu x1 0.0000000 0.0 0.0019000 0.0000000 0 0.0000000 62ort1 0
121 sn m u235t cm cu x3 0.0000000 0.0 0.0019000 0.0006000 89 sr g u235t 4.7300000 69erd1 0
121 sn m u235t rc fi ul 0.0000000 0.0 0.0142000 0.0710000 121 sn g u235t 1.0000000 63wah1 40
121 sn m u235t ms cu x1 0.0000000 0.0 0.0600000 0.0200000 126 sn g u235t 1.0000000 77mat1 0
121 sn m u235t rc fi ul 0.0000000 0.0 0.2300000 0.4300000 121 sn m u235t 1.0000000 84sem1 0
121 in g u235t rc fc 0.0095929 14.6 0.7400000 0.1000000 121 u235t 1.0000000 63wah1 0
121 in g u235t rc fi sm 0.0000000 0.0 0.2400000 0.0800000 121 u235t 1.0000000 85rob1 0
1
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nuclide	material	tech.	type	value	err.	value	nuclide	material	value	no.	treatment
121 in g	u235t	rc	in	sm	0.0000000	0.0	0.0023000	0.0013000	0	0.0000000	84sem1 0
121 in g	u235t	cm	in		0.0000000	0.0	0.0028420	35.0000000%	0	1.0000000	88wah1 0
121 in g	u235t	sp	in		0.0026849	29.6	0.0027000	0.0008000	0	0.0000000	90rud1 0
121 in g	u235t	sp	cu		0.0099440	12.0	0.0100000	0.0012000	0	0.0000000	90rud1 0
121 in m	u235t	rc	fc		0.0031112	13.7	0.2400000	0.0300000	121 u235t	1.0000000	63wah1 0
121 in m	u235t	rc	cu	su	0.0000000	0.0	0.0032000	0.0000000	0	0.0000000	65wei1 0
121 in m	u235t	rc	cu		0.0031821	15.6	0.0032000	0.0005000	0	0.0000000	65wei3 0
121 cd g	u235t	rc	in		0.0074580	46.7	0.0075000	0.0035000	0	0.0000000	84sem1 0
121 cd g	u235t	rc	fi		0.0079076	15.8	0.6100000	0.0900000	121 u235t	1.0000000	85rob1 0
121 cd g	u235t	cm	in		0.0000000	0.0	0.0082080	15.0000000%	0	1.0000000	88wah1 0
121 cd g	u235t	rc	cu	le	0.0063641	7.8	0.0064000	0.0005000	0	0.0000000	65wei1 0
121 cd g	u235t	sp	cu	sm	0.0000000	0.0	0.0104000	0.0020000	0	0.0000000	90rud1 0
121 cd g	u235t	sp	in	sm	0.0000000	0.0	0.0065000	0.0020000	0	0.0000000	90rud1 0
121 cd m	u235t	sp	in	x6	0.0000000	0.0	0.0058000	0.0020000	0	0.0000000	90rud1 0
121 ag g	u235t	rc	fc		0.0015556	42.0	0.1200000	0.0500000	121 u235t	1.0000000	85rob1 0
121 ag g	u235t	rc	cu	ul	0.0000000	0.0	0.0027000	0.0027000	0	0.0000000	84sem1 0
121 ag g	u235t	cm	in		0.0000000	0.0	0.0018510	39.0000000%	0	1.0000000	88wah1 0
121 ag g	u235t	sp	cu		0.0032815	24.2	0.0033000	0.0008000	0	0.0000000	90rud1 0
121	u235f	es	cu		0.0372546	30.0	0.0406000	0.0000000	148 nd g u235f	1.8100000	63wea1 0
121	u235f	es	cu	cm	0.0404502	30.0	0.0410000	0.0000000	0	0.0000000	72sid1 0
121	u235f	es	cu		0.0369842	20.2	0.0322000	20.0000000%	115 u235f	0.0291000	74mee6 0
121	u235f	cm	cu		0.0000000	0.0	0.0451000	20.0000000%	0	0.0000000	77cro1 0
121	u235f	es	re		0.0384888	11.5	2.9900000	10.0000000%	121 u235t	1.0000000	74mee4 0
121	u235f	es	cu		0.0332172	30.0	0.0350000	0.0000000	148 nd g u235f	1.7500000	70lis1 0
121 sn g	u235f	sp	cu		0.0319179	14.7	0.0340000	0.0050000	140 ba g u235f	6.2800000	71dya1 0
121 sn g	u235f	cm	cu		0.0000000	0.0	0.0378200	32.0000000%	0	0.0000000	73net2 0
121	u235he	cm	cu	es	0.0000000	0.0	1.1890000	0.0000000	0	0.0000000	63wea1 0
121	u235he	es	cu		1.1252228	21.5	1.1200000	20.0000000%	113 u235he	1.0800000	74mee6 0
121	u235he	cm	cu		0.0000000	0.0	1.0100000	5.9000000%	0	0.0000000	77cro1 0
121	u235he	es	cu		1.1134618	10.0	1.1200000	10.0000000%	0	0.0000000	74mee8 0
121 sn g	u235he	cm	cu		0.0000000	0.0	1.0900000	0.0000000	0	0.0000000	69gun2 0
121 sn g	u235he	cm	cu		0.0000000	0.0	1.1200000	6.0000000%	0	0.0000000	73net2 0
121 sn g	u235he	rc	cu		1.0446834	5.0	96.0000000	3.0000000%	99 mo g u235t	0.0000000	76for1 7
121 sn g	u235he	rc	re	su	0.0000000	0.0	96.0000000	3.0000000	99 mo g u235t	0.0000000	56for1 7

121 sn g u235he rc cu 0.9941279 10.4 1.1000000 0.1000000 99 mo g u235he 5.6500000 60bon1 0
121 sn g u235he rc fi ul 0.0000000 0.0 0.0500000 99.0000000% 121 sn g u235he 1.0000000 84sem1 0
121 u238f es cu 0.0361737 30.0 0.0350000 0.0000000 0 0.0000000 63wea1 0
121 u238f es cu cm 0.0413414 30.0 0.0400000 0.0000000 0 0.0000000 64wal1 0
121 u238f cm cu 0.0000000 0.0 0.0350000 0.0000000 0 0.0000000 72sid1 0
121 u238f es cu 0.0457983 23.0 0.0390000 20.0000000% 118 u238f 0.0380000 74mee6 0
121 u238f cm cu 0.0000000 0.0 0.0520000 20.0000000% 0 0.0000000 77cro1 0
121 u238f es cu 0.0299725 30.0 0.0290000 0.0000000 0 0.0000000 74mae1 0
121 u238f rc cu x4 0.0000000 0.0 0.2630000 0.0250000 0 0.0000000 85li 1 0
121 sn g u238f rc cu 0.0296851 23.3 0.0300000 0.0070000 140 ba g u238f 6.0700000 77har1 0
121 sn g u238f es cu 0.0361737 22.9 0.0350000 0.0080000 0 0.0000000 78gin1 0
121 sn g u238f rc cu 0.0268719 19.2 0.0260000 0.0050000 0 0.0000000 85chi1 0
121 sn g u238f es cu cm 0.0388815 16.0 0.0376200 16.0000000% 0 0.0000000 73net2 0
121 sn g u238f es cu cm 0.0385818 16.0 0.0373300 16.0000000% 0 0.0000000 74mee1 0
121 sn g u238f rc cu su 0.0000000 0.0 0.0590000 0.0090000 0 0.0000000 75har1 0
121 sn g u238f es cu cm 0.0406075 16.0 0.0392900 16.0000000% 0 0.0000000 89rid1 0
121 u238he es cu 0.7425897 30.0 0.7403000 0.0000000 0 0.0000000 63wea1 0
121 u238he rc cu x4 0.0000000 0.0 1.2000000 0.1400000 99 mo g u238he 5.6000000 70gev1 0
121 u238he cm cu su 0.0000000 0.0 0.8510000 0.0600000 0 0.0000000 73dar1 0
121 u238he es cu 0.7603222 12.4 0.7100000 5.0000000% 119 u238he 0.6800000 74mee6 36
121 u238he es cu 0.8405919 15.0 0.8380000 15.0000000% 0 0.0000000 74mee9 0
121 u238he cm cu 0.0000000 0.0 0.9340000 12.7000000% 0 0.0000000 77cro1 0
121 sn g u238he rc re 0.8415701 10.0 69.0000000 2.0000000 99 mo g u235t 0.0000000 56for1 7
121 sn g u238he cm cu 0.0000000 0.0 0.8100000 0.0000000 0 0.0000000 69gun2 0
121 sn g u238he rc cu x4 0.0000000 0.0 1.1400000 0.1100000 99 mo g u238he 5.6000000 70gev1 0
121 sn g u238he cm cu 0.0000000 0.0 0.8400000 6.1000000% 0 0.0000000 73net2 0
121 sn g u238he cm cu 0.0000000 0.0 0.9600000 0.0000000 0 0.0000000 60kat1 0
121 sn g u238he rc cu 0.8415701 5.0 69.0000000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
121 sn g u238he rc cu 0.8788933 16.3 0.8600000 0.1400000 99 mo g u238he 5.6000000 75ada1 0
121 pu239t cm cu 0.0000000 0.0 0.0360000 0.0000000 0 0.0000000 72sid1 0
121 pu239t cm cu 0.0000000 0.0 0.0410000 0.0000000 0 0.0000000 73lam1 0
121 pu239t cm cu 0.0000000 0.0 0.0380000 0.0030000 0 0.0000000 73wal1 0
121 sb g pu239t es fi 0.0000003 28.3 0.0000074 0.0000020 121 pu239t 1.0000000 74wol1 0
121 pu239t es cu 0.0376447 7.9 0.0380000 0.0030000 0 0.0000000 74mee1 0
121 pu239t cm cu 0.0000000 0.0 0.0426000 15.0000000% 0 0.0000000 77cro1 0
121 pu239t es cu 0.0388533 20.0 0.0392200 20.0000000% 0 0.0000000 87wah1 36

121 sn g pu239t rc cu 0.0405712 60.0 0.0410000 0.0000000 140 ba g pu239t 5.3600000 51ste3 0
121 sn g pu239t rc cu 0.0308138 11.8 0.0340000 0.0040000 99 mo g pu239t 6.7900000 71ram1 0
121 sn g pu239t cm cu 0.0000000 0.0 0.0414800 16.0000000% 0 0.0000000 73net2 0
121 sn g pu239t ms cu x1 0.0000000 0.0 0.0350000 0.0050000 126 sn g pu239t 1.0000000 77mat1 0
121 sn g pu239t rc cu 0.0336821 11.8 0.0340000 0.0040000 0 0.0000000 84jai1 0
121 sn g pu239t cm in 0.0000000 0.0 0.0001948 66.0000000% 0 1.0000000 88wah1 0
121 sn m pu239t cm in 0.0000000 0.0 0.0004769 66.0000000% 0 1.0000000 88wah1 0
121 in g pu239t cm in 0.0000000 0.0 0.0122200 12.0000000% 0 1.0000000 88wah1 0
121 in m pu239t cm in 0.0000000 0.0 0.0028700 12.0000000% 0 1.0000000 88wah1 0
121 cd g pu239t cm in 0.0000000 0.0 0.0210900 11.0000000% 0 1.0000000 88wah1 0
121 ag g pu239t cm in 0.0000000 0.0 0.0027710 28.0000000% 0 1.0000000 88wah1 0
121 pu239f es cu 0.0620107 30.0 0.0660000 0.0000000 148 nd g pu239f 1.7000000 69lis1 0
121 pu239f es cu cm 0.0884455 30.0 0.0920000 0.0000000 0 0.0000000 72sid1 0
121 pu239f es cu 0.0580253 20.2 0.0636000 20.0000000% 116 pu239f 0.0636000 74mee6 0
121 pu239f cm cu 0.0000000 0.0 0.1000000 20.0000000% 0 0.0000000 77cro1 0
121 pu239f es re 0.0650609 12.8 1.7900000 10.0000000% 121 pu239t 1.0000000 74mee4 0
121 pu239f es cu 0.0618586 30.0 0.0670000 0.0000000 148 nd g pu239f 1.7300000 70lis1 0
121 pu239f es cu 0.0403773 30.0 0.0420000 0.0000000 0 0.0000000 74mae1 0
121 sn g pu239f cm cu 0.0000000 0.0 0.0659800 32.0000000% 0 0.0000000 73net2 0
121 pu241t es cu 0.0258814 30.0 0.0250000 0.0000000 0 0.0000000 68lis3 0
121 pu241t cm cu 0.0000000 0.0 0.0250000 0.0000000 0 0.0000000 72sid1 0
121 pu241t cm cu 0.0000000 0.0 0.0250000 0.0100000 0 0.0000000 73wal1 0
121 pu241t cm cu x3 0.0000000 0.0 0.0240000 20.0000000% 0 0.0000000 77cro1 0
121 sn g pu241t rc cu x1 0.0000000 0.0 0.9500000 0.1000000 140 ba g u235t 0.0000000 86chi1 7
121 u233t cm cu x3 0.0000000 0.0 0.0160000 0.0000000 0 0.0000000 72sid1 0
121 u233t cm cu x3 0.0000000 0.0 0.0270000 0.0000000 0 0.0000000 73lam1 0
121 u233t cm cu x3 0.0000000 0.0 0.0180000 0.0040000 0 0.0000000 73wal1 0
121 u233t es cu 0.0326565 99.0 0.0333700 99.0000000% 0 0.0000000 74mee6 0
121 u233t cm cu x3 0.0000000 0.0 0.0192000 15.0000000% 0 0.0000000 77cro1 0
121 u233t es cu 0.0330968 20.0 0.0338200 20.0000000% 0 0.0000000 87wah1 36
121 sn g u233t cm cu 0.0000000 0.0 0.0282000 32.0000000% 0 0.0000000 73net2 0
121 sn g u233t rc cu x4 0.0000000 0.0 0.0180000 0.0000000 0 0.0000000 50ste1 0
121 sn g u233t rc cu 0.0205187 7.7 1.5600000 0.1200000 140 ba g u235t 0.0000000 86chi1 7
121 th232f cm cu es 0.0000000 0.0 0.0550000 0.0000000 0 0.0000000 65eng1 0
121 th232f es cu x3 0.0000000 0.0 0.0300000 0.0000000 0 0.0000000 72sid1 0
121 th232f es cu cm 0.0542370 30.0 0.0550000 0.0000000 0 0.0000000 73lam1 0

121 th232f cm cu 0.0000000 0.0 0.0500000 0.0000000 0 0.0000000 74lam1 0
121 th232f es cu 0.0473341 10.0 0.0480000 10.0000000% 0 0.0000000 77cro1 0
121 th232f es cu 0.0497008 20.0 0.0504000 20.0000000% 0 0.0000000 74mee0 0
121 sn g th232f rc re 0.0542619 10.0 8.7700000 0.4000000 99 mo g u235t 0.0000000 63iye1 7
121 sn g th232f cm cu 0.0000000 0.0 0.0470000 8.0000000% 0 0.0000000 73net2 0
121 sn g th232f rc re 0.0434493 10.8 0.0059000 10.0000000% 89 sr g th232f 1.0000000 76lis1 0
122 u235t cm cu 0.0000000 0.0 0.0130000 0.0000000 0 0.0000000 72sid1 0
122 u235t cm cu 0.0000000 0.0 0.0150000 0.0000000 0 0.0000000 73lam1 0
122 u235t es cu 0.0128970 23.1 0.0130000 0.0030000 0 0.0000000 73wal1 0
122 u235t cm cu 0.0000000 0.0 0.0140000 20.0000000% 0 0.0000000 77cro1 0
122 sn g u235t ms cu 0.0166886 10.4 0.3000000 0.0200000 126 sn g u235t 1.0000000 77mat1 0
122 sn g u235t ms cu 0.0150753 12.2 0.2710000 0.0250000 126 sn g u235t 1.0000000 83ros1 0
122 u235t es cu 0.0136509 20.0 0.0137600 20.0000000% 0 0.0000000 87wah1 36
122 sn g u235t cm in 0.0000000 0.0 0.0003042 50.0000000% 0 1.0000000 88wah1 0
1
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nuclide material tech. type value err. value nuclide material value no. treatment

122 in g u235t cm in 0.0000000 0.0 0.0025340 11.0000000% 0 1.0000000 88wah1 0
122 in g u235t sp in 0.0019643 40.4 0.0039600 0.0016000 0 0.0000000 90rud1 37
122 in g u235t sp cu 0.0103176 21.2 0.0104000 0.0022000 0 0.0000000 90rud1 0
122 in m u235t cm in 0.0000000 0.0 0.0025340 11.0000000% 0 1.0000000 88wah1 0
122 in m u235t sp in 0.0019643 40.4 0.0039600 0.0016000 0 0.0000000 90rud1 37
122 cd g u235t cm in 0.0000000 0.0 0.0069160 11.0000000% 0 1.0000000 88wah1 0
122 ag g u235t cm in 0.0000000 0.0 0.0014700 41.0000000% 0 1.0000000 88wah1 0
122 ag g u235t sp cu 0.0010516 24.5 0.0010600 0.0002600 0 0.0000000 90rud1 0
122 u235f cm cu 0.0000000 0.0 0.0621000 0.0000000 148 nd g u235f 1.8100000 63wea1 0
122 u235f cm cu 0.0000000 0.0 0.0620000 0.0000000 0 0.0000000 72sid1 0
122 u235f es cu 0.0383749 20.2 0.0336000 20.0000000% 115 u235f 0.0291000 74mee6 0
122 u235f cm cu 0.0000000 0.0 0.0491000 20.0000000% 0 0.0000000 77cro1 0
122 u235f es re 0.0445089 12.8 2.9300000 10.0000000% 122 u235t 1.0000000 74mee4 0
122 u235f es cu 0.0364275 30.0 0.0386000 0.0000000 148 nd g u235f 1.7500000 70lis1 0
122 sn g u235f ms cu 0.0219618 34.4 0.2300000 0.0700000 126 sn g u235f 1.0000000 83ros1 0
122 u235he es cu 1.1792028 30.0 1.1990000 0.0000000 0 0.0000000 63wea1 0
122 u235he es cu 1.1528970 21.5 1.1600000 20.0000000% 113 u235he 1.0800000 74mee6 0
122 u235he cm cu 0.0000000 0.0 1.1900000 20.0000000% 0 0.0000000 77cro1 0

122		u235he	es	cu		1.1408467	10.0	1.1600000	10.0000000%	0			0.0000000	74mee8	0
122		u238f	es	cu		0.0386499	30.0	0.0369000	0.0000000	0			0.0000000	63wea1	0
122		u238f	es	cu	cm	0.0418970	30.0	0.0400000	0.0000000	0			0.0000000	64wal1	0
122		u238f	es	cu	cm	0.0387547	30.0	0.0370000	0.0000000	0			0.0000000	72sid1	0
122		u238f	es	cu		0.0476039	23.0	0.0400000	20.0000000%	118		u238f	0.0380000	74mee6	0
122		u238f	es	cu		0.0314227	30.0	0.0300000	0.0000000	0			0.0000000	74mae1	0
122	sn g	u238f	ms	cu		0.0424761	22.8	0.7500000	0.1600000	126	sn g	u238f	1.0000000	83ros1	0
122		u238f	cm	cu	x3	0.0000000	0.0	0.0561000	20.0000000%	0			0.0000000	77cro1	0
122		u238he	es	cu		0.7927752	30.0	0.7859000	0.0000000	0			0.0000000	63wea1	0
122		u238he	es	cu	su	0.0000000	0.0	0.8500000	0.0000000	0			0.0000000	73dar1	0
122		u238he	es	cu		0.8292236	23.0	0.7700000	20.0000000%	119		u238he	0.6800000	74mee6	0
122		u238he	es	cu		0.8735759	15.0	0.8660000	15.0000000%	0			0.0000000	74mee9	0
122		u238he	cm	cu		0.0000000	0.0	1.0400000	20.0000000%	0			0.0000000	77cro1	0
122		pu239t	cm	cu	x3	0.0000000	0.0	0.0450000	0.0000000	0			0.0000000	73lam1	0
122		pu239t	es	cu		0.0376447	21.1	0.0380000	0.0080000	0			0.0000000	73wal1	0
122		pu239t	cm	cu		0.0000000	0.0	0.0550000	20.0000000%	0			0.0000000	77cro1	0
122	sn g	pu239t	ms	cu		0.0452529	8.3	0.2300000	0.0050000	126	sn g	pu239t	1.0000000	77mat1	0
122		pu239t	cm	cu		0.0000000	0.0	0.0430000	0.0000000	0			0.0000000	72sid1	0
122		pu239t	es	cu		0.0475115	20.0	0.0479600	20.0000000%	0			0.0000000	87wah1	36
122	sn g	pu239t	cm	in		0.0000000	0.0	0.0041800	25.0000000%	0			1.0000000	88wah1	0
122	in g	pu239t	cm	in		0.0000000	0.0	0.0148800	11.0000000%	0			1.0000000	88wah1	0
122	in m	pu239t	cm	in		0.0000000	0.0	0.0148900	11.0000000%	0			1.0000000	88wah1	0
122	cd g	pu239t	cm	in		0.0000000	0.0	0.0143100	12.0000000%	0			1.0000000	88wah1	0
122	ag g	pu239t	cm	in		0.0000000	0.0	0.0005911	76.0000000%	0			1.0000000	88wah1	0
122		pu239f	es	cu		0.0667084	30.0	0.0710000	0.0000000	148	nd g	pu239f	1.7000000	69lis1	0
122		pu239f	es	cu	cm	0.0932523	30.0	0.0970000	0.0000000	0			0.0000000	72sid1	0
122		pu239f	es	cu		0.0580253	20.2	0.0636000	20.0000000%	116		pu239f	0.0636000	74mee6	0
122		pu239f	cm	cu		0.0000000	0.0	0.1090000	20.0000000%	0			0.0000000	77cro1	0
122		pu239f	es	re		0.0768464	12.8	1.7900000	10.0000000%	122		pu239t	1.0000000	74mee4	0
122		pu239f	es	cu		0.0646284	30.0	0.0700000	0.0000000	148	nd g	pu239f	1.7300000	70lis1	0
122		pu239f	es	cu		0.0423000	30.0	0.0440000	0.0000000	0			0.0000000	74mae1	0
122		pu241t	es	cu		0.0258814	30.0	0.0250000	0.0000000	0			0.0000000	68lis3	0
122		pu241t	cm	cu		0.0000000	0.0	0.0250000	0.0000000	0			0.0000000	72sid1	0
122		pu241t	cm	cu		0.0000000	0.0	0.0250000	0.0100000	0			0.0000000	73wal1	0
122		pu241t	cm	cu	x3	0.0000000	0.0	0.0240000	20.0000000%	0			0.0000000	77cro1	0
122	sn g	u233t	ms	re	su	0.0000000	0.0	1.3000000	0.0720000	117	sn g	u233t	1.0000000	69lae1	0

122		u233t	cm	cu	x3	0.0000000	0.0	0.0170000	0.0000000	0				0.0000000	72sid1	0	
122		u233t	cm	cu	x3	0.0000000	0.0	0.0195000	6.0000000%	0				0.0000000	77cro1	0	
122		u233t	cm	cu	x3	0.0000000	0.0	0.0300000	0.0000000	0				0.0000000	73lam1	0	
122		u233t	cm	cu	x3	0.0000000	0.0	0.0250000	0.0050000	0				0.0000000	73wal1	0	
122		u233t	es	cu		0.0457699	99.0	0.0467700	99.0000000%	0				0.0000000	74mee6	0	
122	sn g	u233t	ms	cu		0.0399536	8.2	0.1820000	0.0030000	126	sn g	u233t		1.0000000	83ros1	0	
122		u233t	es	cu		0.0465332	20.0	0.0475500	20.0000000%	0				0.0000000	87wah1	36	
122		th232f	es	cu	cm	0.0432344	30.0	0.0450000	0.0000000	0				0.0000000	65eng1	0	
122		th232f	es	cu	cm	0.0288229	30.0	0.0300000	0.0000000	0				0.0000000	72sid1	0	
122		th232f	es	cu	cm	0.0384305	30.0	0.0400000	0.0000000	0				0.0000000	73lam1	0	
122		th232f	cm	cu		0.0000000	0.0	0.0559000	20.0000000%	0				0.0000000	77cro1	0	
122		th232f	es	cu		0.0361247	20.0	0.0376000	20.0000000%	0				0.0000000	74mee0	0	
123		u235t	rc	cu		0.0159552	7.5	0.0160000	0.0012000	0				0.0000000	69erd1	0	
123		u235t	cm	cu	x3	0.0000000	0.0	0.0140000	0.0000000	0				0.0000000	72sid1	0	
123		u235t	cm	cu		0.0000000	0.0	0.0164000	0.0000000	0				0.0000000	73lam1	0	
123		u235t	cm	cu		0.0000000	0.0	0.0160000	0.0010000	0				0.0000000	73wal1	0	
123		u235t	cm	cu		0.0000000	0.0	0.0158000	9.2000000%	0				0.0000000	77cro1	0	
123		u235t	es	cu		0.0150876	20.0	0.0151300	20.0000000%	0				0.0000000	87wah1	36	
123	sn g	u235t	rc	cu		0.0012313	20.0	0.0012000	20.0000000%	89	sr g	u235t		4.6000000	51lea1	0	
123	sn g	u235t	es	cu	ge	0.0018532	6.0	0.0019000	0.0001000	123		u235t		0.0160000	69erd1	0	
123	sn g	u235t	rc	in	x2	0.0000000	0.0	0.8500000	0.0500000	125	sn g	u235t		1.0000000	67bro1	0	
123	sn g	u235t	rc	fi	su	0.0000000	0.0	0.1300000	0.0600000	123		u235t		1.0000000	66erd1	0	
123	sn g	u235t	rc	fi	x1	0.0000000	0.0	0.5000000	0.0000000	123	sn g	u235t		1.0000000	71erd1	0	
123	sn g	u235t	rc	in		0.0017950	55.6	0.0018000	0.0010000	0				0.0000000	84sem1	0	
123	sn g	u235t	rc	fi	x1	0.0000000	0.0	0.8050000	0.0760000	123	sn g	u235t		1.0000000	84sem1	0	
123	sn g	u235t	es	in		0.0014709	45.0	0.0014750	45.0000000%	0				0.0000000	88wah1	0	
123	sn m	u235t	rc	cu		0.0132496	5.4	0.0135000	0.0003000	97	zr g	u235t		6.0800000	72lin1	0	
123	sn m	u235t	rc	cu		0.0143097	5.2	0.0143000	0.0004000	132	te g	u235t		4.2800000	72lin1	0	
123	sn m	u235t	rc	cu		0.0150051	9.4	0.0141000	0.0012000	121	sn g	u235t		0.0122000	69erd2	0	
123	sn m	u235t	sp	cu		0.0116277	12.9	0.0119000	0.0015000	132	sn g	u235t		0.6100000	85rud1	0	
123	sn m	u235t	rc	fi	ul	0.0000000	0.0	0.1500000	0.0000000	123	sn g	u235t		1.0000000	71erd1	0	
123	sn m	u235t	es	fi		0.0006242	30.1	0.0400000	0.0000000	123		u235t		1.0000000	73wah2	0	
123	sn m	u235t	rc	fi	ul	0.0000000	0.0	0.0180000	0.0690000	123	sn m	u235t		1.0000000	84sem1	0	
123	sn m	u235t	es	in		0.0006013	45.0	0.0006030	45.0000000%	0				0.0000000	88wah1	0	
123	sn m	u235t	sp	cu		0.0118667	12.6	0.0119000	0.0015000	0				0.0000000	90rud1	0	
123	in g	u235t	rc	in	sm	0.0000000	0.0	0.0140000	0.0020000	0				0.0000000	84sem1	0	

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 123 in g   u235t    cm    in        0.0000000  0.0   0.0075430 17.0000000%    0                    1.0000000   88wah1      0
 123 in g   u235t    rc    fi    sm   0.0000000  0.0   0.8950000  9.2000000%  123          u235t       1.0000000   88hor1      0
 123 in g   u235t    sp    in        0.0077781 47.4   0.0078000  0.0037000     0                   0.0000000   90rud1      0
 123 in g   u235t    sp    cu        0.0119664 17.5   0.0120000  0.0021000     0                   0.0000000   90rud1      0
 123 in m   u235t    cm    in        0.0000000  0.0   0.0017690 17.0000000%    0                    1.0000000   88wah1      0
 123 in m   u235t    sp    in        0.0004986 99.0   0.0005000 99.0000000%    0                    0.0000000   90rud1     36
 123 in m   u235t    sp    cu        0.0023933 20.8   0.0024000  0.0005000     0                   0.0000000   90rud1      0
 123 cd g   u235t    cm    in        0.0000000  0.0   0.0036260 44.0000000%    0                    1.0000000   88wah1      0
 123 cd g   u235t    rc    cu    x6   0.0000000  0.0   0.0037000  0.0016000     0                   0.0000000   90rud2      0
 123 cd m   u235t    rc    cu    x6   0.0000000  0.0   0.0078000  0.0033000     0                   0.0000000   90rud2      0
 123 ag g   u235t    cm    in        0.0000000  0.0   0.0001055 90.0000000%    0                    1.0000000   88wah1      0
 123 ag g   u235t    sp    cu    su   0.0000000  0.0   0.0005500  0.0004100     0                   0.0000000   90rud1      0
 123 ag g   u235t    rc    cu        0.0005485 74.5   0.0005500  0.0004100     0                   0.0000000   90rud2      0
 123        u235f    cm    cu        0.0000000  0.0   0.0945000  0.0000000   148 nd g      u235f       1.8100000   63wea1      0
 123        u235f    cm    cu        0.0000000  0.0   0.0940000  0.0000000     0                   0.0000000   72sid1      0
 123        u235f    es    cu        0.0511665 20.2   0.0448000 20.0000000%  115          u235f       0.0291000   74mee6      0
 123        u235f    cm    cu        0.0000000  0.0   0.0541000 20.0000000%    0                   0.0000000   77cro1      0
 123        u235f    es    re        0.0427034 10.4   2.7800000 10.0000000%  123          u235t       1.0000000   74mee4      0
 123        u235f    es    cu        0.0397305 30.0   0.0421000  0.0000000   148 nd g      u235f       1.7500000   70lis1      0
 123        u235he   es    cu        1.1978890 30.0   1.2180000  0.0000000     0                   0.0000000   63wea1      0
 123        u235he   es    cu        1.2025908 21.5   1.2100000 20.0000000%  113          u235he      1.0800000   74mee6      0
 123        u235he   cm    cu        0.0000000  0.0   1.3100000 20.0000000%    0                   0.0000000   77cro1      0
 123        u235he   es    cu        1.1900211 10.0   1.2100000 10.0000000%    0                   0.0000000   74mee8      0
 123 sn m   u235he   rc    fi    ul   0.0000000  0.0   0.0600000  0.1170000   123 sn m      u235he      1.0000000   84sem1      0
 123        u238f    es    cu        0.0414022 30.0   0.0388000  0.0000000     0                   0.0000000   63wea1      0
 123        u238f    es    cu    cm   0.0480180 30.0   0.0450000  0.0000000     0                   0.0000000   64wal1      0
 123        u238f    es    cu    cm   0.0416156 30.0   0.0390000  0.0000000     0                   0.0000000   72sid1      0
 123        u238f    es    cu        0.0521339 23.0   0.0430000 20.0000000%  118          u238f       0.0380000   74mee6      0
 123        u238f    es    cu        0.0341462 30.0   0.0320000  0.0000000     0                   0.0000000   74mae1      0
 123        u238f    cm    cu    x3   0.0000000  0.0   0.0621000 20.0000000%    0                   0.0000000   77cro1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type          value   err.     value                nuclide     material       value      no.   treatment

 123        u238he   es    cu        0.8638920 30.0   0.8564000  0.0000000     0                   0.0000000   63wea1      0
 123        u238he   es    cu    su   0.0000000  0.0   0.8400000  0.0000000     0                   0.0000000   73dar1      0
```

123		u238he	es	cu		0.8938384	23.0	0.8300000	20.0000000%	119		u238he	0.6800000	74mee6	0
123		u238he	es	cu		0.9482233	15.0	0.9400000	15.0000000%	0			0.0000000	74mee9	0
123		u238he	cm	cu	x3	0.0000000	0.0	1.1400000	20.0000000%	0			0.0000000	77cro1	0
123	sn m	u238he	rc	cu	x4	0.0000000	0.0	1.0900000	0.2000000	99	mo g	u238he	5.6000000	75ada1	0
123		pu239t	cm	cu		0.0000000	0.0	0.0470000	0.0000000	0			0.0000000	72sid1	0
123		pu239t	cm	cu		0.0000000	0.0	0.0550000	0.0000000	0			0.0000000	73lam1	0
123		pu239t	es	cu		0.0431771	20.5	0.0440000	0.0090000	0			0.0000000	73wal1	0
123		pu239t	cm	cu		0.0000000	0.0	0.0700000	20.0000000%	0			0.0000000	77cro1	0
123		pu239t	es	cu		0.0450220	20.0	0.0458800	20.0000000%	0			0.0000000	87wah1	36
123	sb g	pu239t	cm	in		0.0000000	0.0	0.0004117	87.0000000%	0			1.0000000	88wah1	0
123	sn g	pu239t	cm	in		0.0000000	0.0	0.0095200	13.0000000%	0			1.0000000	88wah1	0
123	sn m	pu239t	cm	in		0.0000000	0.0	0.0029000	13.0000000%	0			1.0000000	88wah1	0
123	in g	pu239t	cm	in		0.0000000	0.0	0.0234200	11.0000000%	0			1.0000000	88wah1	0
123	in m	pu239t	cm	in		0.0000000	0.0	0.0054900	11.0000000%	0			1.0000000	88wah1	0
123	cd g	pu239t	cm	in		0.0000000	0.0	0.0045680	22.0000000%	0			1.0000000	88wah1	0
123		pu239f	es	cu		0.0808018	30.0	0.0860000	0.0000000	148	nd g	pu239f	1.7000000	69lis1	0
123		pu239f	es	cu	cm	0.1057500	30.0	0.1100000	0.0000000	0			0.0000000	72sid1	0
123		pu239f	cm	cu		0.0000000	0.0	0.1210000	20.0000000%	0			0.0000000	77cro1	0
123		pu239f	es	re		0.0729549	18.9	1.7200000	10.0000000%	123		pu239t	1.0000000	74mee4	0
123		pu239f	es	cu		0.0775541	30.0	0.0840000	0.0000000	148	nd g	pu239f	1.7300000	70lis1	0
123		pu239f	es	cu		0.0528750	30.0	0.0550000	0.0000000	0			0.0000000	74mae1	0
123		pu241t	es	cu		0.0269167	30.0	0.0260000	0.0000000	0			0.0000000	68lis3	0
123		pu241t	cm	cu		0.0000000	0.0	0.0270000	0.0080000	0			0.0000000	73wal1	0
123		pu241t	cm	cu		0.0000000	0.0	0.0250000	20.0000000%	0			0.0000000	77cro1	0
123		pu241t	cm	cu	x3	0.0000000	0.0	0.0360000	0.0000000	0			0.0000000	72sid1	0
123	sn g	pu241t	rc	cu		0.0011079	7.0	1.4300000	0.1000000	140	ba g	u235t	0.0000000	86chi1	7
123		u233t	cm	cu	x3	0.0000000	0.0	0.0380000	0.0000000	0			0.0000000	73lam1	0
123		u233t	cm	cu	x3	0.0000000	0.0	0.0370000	0.0070000	0			0.0000000	73wal1	0
123		u233t	cm	cu	x3	0.0000000	0.0	0.0210000	0.0000000	0			0.0000000	72sid1	0
123		u233t	es	cu		0.0622902	20.0	0.0663000	20.0000000%	0			0.0000000	87wah1	36
123		u233t	cm	cu	x3	0.0000000	0.0	0.0204000	20.0000000%	0			0.0000000	77cro1	0
123	sn g	u233t	rc	cu		0.0005148	12.1	0.6600000	0.0800000	140	ba g	u235t	0.0000000	86chi1	7
123		th232f	es	cu	cm	0.0288229	30.0	0.0300000	0.0000000	0			0.0000000	72sid1	0
123		th232f	es	cu	cm	0.0297837	30.0	0.0310000	0.0000000	0			0.0000000	73lam1	0
123		th232f	cm	cu		0.0000000	0.0	0.0300000	0.0000000	0			0.0000000	74lam1	0
123		th232f	cm	cu	x3	0.0000000	0.0	0.0579000	20.0000000%	0			0.0000000	77cro1	0

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123        th232f   es    cu        0.0293994 20.0   0.0306000 20.0000000%    0                    0.0000000   74mee0      0
123        th232f   cm    cu    x3   0.0000000  0.0   0.0380000  0.0000000     0                    0.0000000   65eng1      0
123 sn g   th232f   rc    re    x1   0.0000000  0.0   4.1900000  0.1800000    99 mo g      u235t       0.0000000   63iye1      7
124 sb g   u235t    rc    in        0.0000094 14.7   0.0000095  0.0000014     0                    0.0000000   65str1      0
124 sb g   u235t    rc    in    x1   0.0000000  0.0   0.0000398  0.0000030   140 ba g      u235t       6.3500000   70fah1      0
124 sb g   u235t    rc    in    ul   0.0000000  0.0   0.0000440  0.0000000   127 sb g      u235t       0.1300000   66ara1      3
124 sb g   u235t    rc    fi        0.0000126 67.5   0.0004750 67.0000000%  124           u235t       1.0000000   70cow2     40
124 sb g   u235t    cm    in        0.0000000  0.0   0.0000949 81.0000000%    0                    1.0000000   88wah1      0
124 sb m   u235t    rc    in        0.0000025 97.6   0.0000025  0.0000024     0                    0.0000000   65str1      0
124 sb m   u235t    rc    fi        0.0000033 67.5   0.0001250 67.0000000%  124           u235t       1.0000000   70cow2     40
124 sb m   u235t    cm    in        0.0000000  0.0   0.0000950 81.0000000%    0                    1.0000000   88wah1      0
124        u235t    cm    cu        0.0000000  0.0   0.0170000  0.0000000     0                    0.0000000   72sid1      0
124        u235t    cm    cu        0.0000000  0.0   0.0240000  0.0000000     0                    0.0000000   73lam1      0
124        u235t    es    cu        0.0198415 20.0   0.0200000  0.0040000     0                    0.0000000   73wal1      0
124        u235t    cm    cu        0.0000000  0.0   0.0210000 20.0000000%    0                    0.0000000   77cro1      0
124 sn g   u235t    ms    cu        0.0289269 12.5   0.5200000  0.0500000   126 sn g      u235t       1.0000000   77mat1      0
124 sn g   u235t    ms    cu        0.0275918 10.0   0.4960000  0.0300000   126 sn g      u235t       1.0000000   83ros1      0
124        u235t    es    cu        0.0228673 20.0   0.0230500 20.0000000%    0                    0.0000000   87wah1     36
124 sn g   u235t    cm    in        0.0000000  0.0   0.0074490 13.0000000%    0                    1.0000000   88wah1      0
124 in g   u235t    rc    cu    rp   0.0119337 48.0   0.0200000  0.0000000  no. relative values =    3            83shm1
124 in g   u235t    cm    in        0.0000000  0.0   0.0132900 11.0000000%    0                    1.0000000   88wah1      0
124 in g   u235t    rc    fi    sm   0.0000000  0.0   0.4120000 11.5000000%  124           u235t       1.0000000   88hor1      0
124 in g   u235t    sp    in        0.0042659 93.0   0.0043000  0.0040000     0                    0.0000000   90rud1      0
124 in g   u235t    sp    cu        0.0201391 12.8   0.0203000  0.0026000     0                    0.0000000   90rud1      0
124 cd g   u235t    cm    in        0.0000000  0.0   0.0021040 24.0000000%    0                    1.0000000   88wah1      0
124 cd g   u235t    sp    in        0.0152779 39.6   0.0154000  0.0061000     0                    0.0000000   90rud1      0
124 cd g   u235t    sp    cu        0.0159724 37.9   0.0161000  0.0061000     0                    0.0000000   90rud1      0
124        u235f    cm    cu        0.0000000  0.0   0.1312000  0.0000000   148 nd g      u235f       1.8100000   63wea1      0
124        u235f    cm    cu        0.0000000  0.0   0.1300000  0.0000000     0                    0.0000000   72sid1      0
124        u235f    es    cu        0.0639582 20.2   0.0560000 20.0000000%  115           u235f       0.0291000   74mee6      0
124        u235f    cm    cu        0.0000000  0.0   0.0601000 20.0000000%    0                    0.0000000   77cro1      0
124        u235f    es    re        0.0696144 12.8   2.6500000 10.0000000%  124           u235t       1.0000000   74mee4      0
124        u235f    es    cu        0.0496396 30.0   0.0526000  0.0000000   148 nd g      u235f       1.7500000   70lis1      0
124 sn g   u235f    ms    cu        0.0391493 29.2   0.4100000  0.1000000   126 sn g      u235f       1.0000000   83ros1      0
124 sn g   u235he   es    cu        1.1664174 30.0   1.1860000  0.0000000     0                    0.0000000   63wea1      0
124        u235he   es    cu        1.3019785 21.5   1.3100000 20.0000000%  113           u235he      1.0800000   74mee6      0
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124		u235he	cm	cu		0.0000000	0.0	1.4600000	20.0000000%	0			0.0000000	77cro1	0
124		u235he	es	cu		1.2923039	10.0	1.3140000	10.0000000%	0			0.0000000	74mee8	0
124		u238f	es	cu		0.0445155	30.0	0.0425000	0.0000000	0			0.0000000	63wea1	0
124		u238f	es	cu	cm	0.0523712	30.0	0.0500000	0.0000000	0			0.0000000	64wal1	0
124		u238f	es	cu	cm	0.0439918	30.0	0.0420000	0.0000000	0			0.0000000	72sid1	0
124		u238f	es	cu		0.0559346	23.0	0.0470000	20.0000000%	118		u238f	0.0380000	74mee6	0
124		u238f	cm	cu		0.0000000	0.0	0.0691000	20.0000000%	0			0.0000000	77cro1	0
124		u238f	es	cu		0.0371836	30.0	0.0355000	0.0000000	0			0.0000000	74mae1	0
124	sn g	u238f	ms	cu		0.0413434	23.3	0.7300000	0.1600000	126	sn g	u238f	1.0000000	83ros1	0
124	sb g	u238he	rc	in	x1	0.0000000	0.0	0.0240000	0.0050000	0			0.0000000	69rao1	37
124	sb m	u238he	rc	in	x1	0.0000000	0.0	0.0240000	0.0050000	0			0.0000000	69rao1	37
124		u238he	es	cu		0.9594204	30.0	0.9511000	0.0000000	0			0.0000000	63wea1	0
124		u238he	es	cu	su	0.0000000	0.0	0.8400000	0.0000000	0			0.0000000	73dar1	0
124		u238he	es	cu		1.0122990	23.0	0.9400000	20.0000000%	119		u238he	0.6800000	74mee6	0
124		u238he	es	cu		1.0632206	15.0	1.0540000	15.0000000%	0			0.0000000	74mee9	0
124		u238he	cm	cu		0.0000000	0.0	1.0400000	20.0000000%	0			0.0000000	77cro1	0
124	sb g	pu239t	rc	in	x1	0.0000000	0.0	0.0880000	0.0040000	0			0.0000000	65mar1	37
124	sb g	pu239t	cm	in		0.0000000	0.0	0.0000520	47.0000000%	0			1.0000000	88wah1	0
124	sb m	pu239t	rc	in	x1	0.0000000	0.0	0.0880000	0.0040000	0			0.0000000	65mar1	37
124	sb m	pu239t	cm	in		0.0000000	0.0	0.0000520	47.0000000%	0			1.0000000	88wah1	0
124		pu239t	cm	cu		0.0000000	0.0	0.0780000	0.0000000	0			0.0000000	72sid1	0
124		pu239t	cm	cu		0.0000000	0.0	0.0750000	0.0000000	0			0.0000000	73lam1	0
124		pu239t	es	cu		0.0542727	20.0	0.0550000	0.0110000	0			0.0000000	73wal1	0
124		pu239t	cm	cu		0.0000000	0.0	0.0900000	20.0000000%	0			0.0000000	77cro1	0
124	sn g	pu239t	ms	cu		0.0823127	9.3	0.4200000	0.0200000	126	sn g	pu239t	1.0000000	77mat1	0
124		pu239t	es	cu		0.0859087	20.0	0.0870600	20.0000000%	0			0.0000000	87wah1	36
124	sn g	pu239t	cm	in		0.0000000	0.0	0.0367400	11.0000000%	0			1.0000000	88wah1	0
124	in g	pu239t	cm	in		0.0000000	0.0	0.0505600	11.0000000%	0			1.0000000	88wah1	0
124	cd g	pu239t	cm	in		0.0000000	0.0	0.0002619	38.0000000%	0			1.0000000	88wah1	0
124		pu239f	es	cu		0.1118071	30.0	0.1190000	0.0000000	148	nd g	pu239f	1.7000000	69lis1	0
124		pu239f	es	cu	cm	0.1249773	30.0	0.1300000	0.0000000	0			0.0000000	72sid1	0
124		pu239f	es	cu		0.1278614	20.0	0.1330000	20.0000000%	0			0.0000000	77cro1	0
124		pu239f	es	re		0.1194163	15.1	1.5800000	10.0000000%	124		pu239t	1.0000000	74mee4	0
124		pu239f	es	cu		0.1135613	30.0	0.1230000	0.0000000	148	nd g	pu239f	1.7300000	70lis1	0
124		pu239f	es	cu	x4	0.0000000	0.0	0.0710000	0.0000000	0			0.0000000	74mae1	0
124		pu241t	es	cu		0.0320929	30.0	0.0310000	0.0000000	0			0.0000000	68lis3	0

124 pu241t cm cu 0.0000000 0.0 0.0310000 0.0060000 0 0.0000000 73wal1 0
124 pu241t cm cu x3 0.0000000 0.0 0.0430000 0.0000000 0 0.0000000 72sid1 0
124 pu241t cm cu x3 0.0000000 0.0 0.0280000 20.0000000% 0 0.0000000 77cro1 0
124 u233t es cu 0.0268026 30.0 0.0280000 0.0000000 0 0.0000000 72sid1 0
124 u233t cm cu x3 0.0000000 0.0 0.0500000 0.0000000 0 0.0000000 73lam1 0
124 u233t cm cu x3 0.0000000 0.0 0.0600000 0.0120000 0 0.0000000 73wal1 0
124 u233t cm cu 0.0000000 0.0 0.0322000 7.0000000% 0 0.0000000 77cro1 0
124 sn g u233t ms re su 0.0000000 0.0 2.1440000 0.1110000 117 sn g u233t 1.0000000 69lae1 0
124 sn g u233t ms cu 0.0760140 8.1 0.3540000 0.0050000 126 sn g u233t 1.0000000 83ros1 0
124 u233t es cu 0.0871370 20.0 0.0910300 20.0000000% 0 0.0000000 87wah1 36
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

124 th232f es cu cm 0.0317052 30.0 0.0330000 0.0000000 0 0.0000000 65eng1 0
124 th232f es cu cm 0.0192153 30.0 0.0200000 0.0000000 0 0.0000000 72sid1 0
124 th232f es cu cm 0.0288229 30.0 0.0300000 0.0000000 0 0.0000000 73lam1 0
124 th232f cm cu x3 0.0000000 0.0 0.0599000 20.0000000% 0 0.0000000 77cro1 0
124 th232f es cu 0.0263249 20.0 0.0274000 20.0000000% 0 0.0000000 74mee0 0
125 u235t rc cu 0.0269465 11.1 0.0270000 0.0030000 0 0.0000000 69erd1 0
125 u235t cm cu 0.0000000 0.0 0.0280000 0.0000000 0 0.0000000 73lam1 0
125 u235t cm cu 0.0000000 0.0 0.0290000 0.0040000 0 0.0000000 73wal1 0
125 u235t ms cu 0.0293417 17.0 0.0294000 0.0050000 0 0.0000000 76dii1 0
125 u235t cm cu 0.0000000 0.0 0.0287000 10.5000000% 0 0.0000000 77cro1 0
125 u235t cm cu x3 0.0000000 0.0 0.0210000 0.0000000 0 0.0000000 72sid1 0
125 u235t es cu 0.0281341 20.0 0.0281900 20.0000000% 0 0.0000000 87wah1 36
125 te g u235t rc cu 0.0325132 11.3 0.0180000 0.0020000 130 te g u235t 1.0000000 82lae1 0
125 sb g u235t rc cu 0.0252491 60.0 0.0230000 0.0000000 144 ce g u235t 5.0000000 51sta1 0
125 sb g u235t rc cu 0.0253289 6.4 0.0210000 0.0010000 127 sb g u235t 0.1300000 66ara1 0
125 sb g u235t rc cu 0.0290612 5.3 0.0291000 0.0015000 89 sr g u235t 4.7300000 69erd1 0
125 sb g u235t cm cu 0.0000000 0.0 0.0253100 4.0000000% 0 0.0000000 73net2 0
125 sb g u235t rc cu 0.0290423 11.3 0.0291000 0.0033000 0 0.0000000 70lis1 0
125 sb g u235t cm in 0.0000000 0.0 0.0005866 40.0000000% 0 10.0000000 88wah1 0
125 sb g u235t rc cu x4 0.0000000 0.0 0.0177000 0.0000000 0 0.0000000 51lea2 0
125 sn g u235t rc cu 0.0121661 60.0 0.0120000 0.0000000 140 ba g u235t 6.1000000 49coo1 0
125 sn g u235t rc cu 0.0119762 60.0 0.0120000 0.0000000 0 0.0000000 51ste4 0

125 sn g u235t rc fi 0.0118805 42.9 0.3500000 0.1500000 125 u235t 1.0000000 66erd1 0
125 sn g u235t rc cu 0.0115845 5.1 0.0116000 0.0004000 89 sr g u235t 4.7300000 69erd1 0
125 sn g u235t rc cu 0.0119762 10.0 0.0120000 0.0012000 0 0.0000000 70gev1 0
125 sn g u235t rc fi 0.0139384 6.4 0.8710000 0.0190000 125 sn g u235t 1.0000000 84sem1 0
125 sn g u235t rc in 0.0127746 38.3 0.0128000 0.0049000 0 0.0000000 84sem1 0
125 sn g u235t cm in 0.0000000 0.0 0.0085600 32.0000000% 0 1.0000000 88wah1 0
125 sn m u235t rc cu 0.0134732 10.4 0.0135000 0.0014000 0 0.0000000 69erd2 0
125 sn m u235t rc cu 0.0183683 5.4 0.0187000 0.0004000 97 zr g u235t 6.0800000 72lin1 0
125 sn m u235t rc cu 0.0196294 5.2 0.0196000 0.0005000 132 te g u235t 4.2800000 72lin1 0
125 sn m u235t rc fi ul 0.0000000 0.0 0.4300000 99.0000000% 125 sn g u235t 1.0000000 84sem1 0
125 sn m u235t cm in 0.0000000 0.0 0.0035000 32.0000000% 0 1.0000000 88wah1 0
125 sn m u235t rc fi gt 0.0169721 15.1 0.5000000 0.0000000 125 u235t 1.0000000 71erd1 0
125 sn m u235t sp cu 0.0121758 23.0 0.0122000 0.0028000 0 0.0000000 90rud1 0
125 in g u235t rc cu 0.0088296 18.4 0.0220000 0.0020000 124 in g u235t 0.0200000 83shm1 37
125 in g u235t cm in 0.0000000 0.0 0.0080200 11.0000000% 0 1.0000000 88wah1 0
125 in g u235t rc fi sm 0.0000000 0.0 0.7920000 6.6000000% 125 u235t 1.0000000 88hor1 0
125 in g u235t rc in 0.0080839 32.1 0.0162000 0.0052000 0 0.0000000 84sem1 37
125 in g u235t sp in 0.0064871 53.8 0.0130000 0.0070000 0 0.0000000 90rud1 37
125 in g u235t sp cu 0.0229544 13.0 0.0230000 0.0030000 0 0.0000000 90rud1 0
125 in m u235t rc cu 0.0088296 18.4 0.0220000 0.0020000 124 in g u235t 0.0200000 83shm1 37
125 in m u235t cm in 0.0000000 0.0 0.0080200 11.0000000% 0 1.0000000 88wah1 0
125 in m u235t rc in 0.0080839 32.1 0.0162000 0.0052000 0 0.0000000 84sem1 37
125 in m u235t sp in 0.0064871 53.8 0.0130000 0.0070000 0 0.0000000 90rud1 37
125 in m u235t sp cu 0.0048903 12.2 0.0049000 0.0006000 0 0.0000000 90rud1 0
125 cd g u235t cm in 0.0000000 0.0 0.0003802 45.0000000% 0 10.0000000 88wah1 0
125 cd g u235t rc cu x6 0.0000000 0.0 0.0053000 0.0024000 0 0.0000000 90rud2 0
125 cd m u235t rc cu x6 0.0000000 0.0 0.0102000 0.0033000 0 0.0000000 90rud2 0
125 u235f cm cu x3 0.0000000 0.0 0.2100000 0.0000000 0 0.0000000 72sid1 0
125 u235f es cu 0.0721097 12.0 0.0728000 12.0000000% 0 0.0000000 77cro1 0
125 u235f rc cu x4 0.0000000 0.0 0.1100000 0.0400000 140 ba g u235f 6.2200000 77bla1 0
125 u235f rc cu 0.0574501 10.0 0.0580000 10.0000000% 0 0.0000000 81koc1 36
125 u235f es cu 0.0677118 10.2 0.0683600 10.2000000% 0 0.0000000 89mil1 0
125 sb g u235f rc cu 0.0692714 12.4 0.0727000 0.0090000 148 nd g u235f 1.7500000 70lis1 0
125 sb g u235f es cu 0.0709112 16.0 0.0715900 16.0000000% 0 0.0000000 73net2 0
125 sb g u235f rc cu su 0.0000000 0.0 0.0380000 0.0040000 148 nd g u235f 1.6800000 74mae1 0
125 sb g u235f es re 0.0852588 10.2 2.5300000 10.0000000% 125 u235t 1.0000000 74mee4 0

125	sb g	u235f	es	cu	x4	0.0000000	0.0	0.0783000	10.0000000%	115	u235f	0.0291000	74mee6	0
125	sb g	u235f	rc	cu		0.0594311	9.4	0.0600000	9.4000000%	0		0.0000000	77koc1	0
125	sb g	u235f	rc	cu	su	0.0000000	0.0	0.0380000	0.0040000	0		0.0000000	81mae1	0
125	sb g	u235f	rc	cu	su	0.0000000	0.0	0.0390000	0.0040000	0		0.0000000	81mae1	0
125	sb g	u235f	cm	cu	x3	0.0000000	0.0	0.0390000	0.0040000	0		0.0000000	81mae1	0
125	sb g	u235f	rc	cu	x4	0.0000000	0.0	0.0380000	0.0120000	0		0.0000000	81mae2	36
125	sb g	u235f	rc	cu	x4	0.0000000	0.0	0.0319000	20.0000000%	0		0.0000000	86dic2	36
125	sb g	u235f	es	fc		0.0674315	12.4	1.0000000	11.0000000%	125	u235f	1.0000000	89rid1	0
125		u235he	es	cu		1.2818571	30.0	1.2970000	0.0000000	0		0.0000000	63wea1	0
125		u235he	es	cu		1.4082571	21.5	1.4100000	20.0000000%	113	u235he	1.0800000	74mee6	0
125		u235he	cm	cu		0.0000000	0.0	1.8200000	7.0000000%	0		0.0000000	77cro1	0
125		u235he	es	cu		1.4053976	10.0	1.4220000	10.0000000%	0		0.0000000	74mee8	0
125	sb g	u235he	cm	cu		0.0000000	0.0	1.4300000	6.0000000%	0		0.0000000	73net2	0
125	sn g	u235he	cm	cu		0.0000000	0.0	1.4500000	0.0000000	0		0.0000000	69gun2	0
125	sn g	u235he	cm	cu		0.0000000	0.0	1.3400000	0.0000000	0		0.0000000	60kat1	0
125	sn g	u235he	rc	cu		0.9942292	5.0	74.6000000	3.0000000%	99 mo g	u235t	0.0000000	76for1	7
125	sn g	u235he	rc	re	su	0.0000000	0.0	74.6000000	1.4000000	99 mo g	u235t	0.0000000	56for1	7
125		u238f	cm	cu	x3	0.0000000	0.0	0.1680000	66.7000000%	0		0.0000000	77cro1	0
125		u238f	rc	cu		0.1023712	90.0	0.1000000	90.0000000%	0		0.0000000	81koc1	36
125	sb g	u238f	es	cu		0.0491382	15.0	0.0480000	15.0000000%	0		0.0000000	63wea1	0
125	sb g	u238f	es	cu	cm	0.0614227	30.0	0.0600000	0.0000000	0		0.0000000	64wal1	0
125	sb g	u238f	es	cu	cm	0.0818970	30.0	0.0800000	0.0000000	0		0.0000000	72sid1	0
125	sb g	u238f	cm	cu		0.0000000	0.0	0.0600000	20.1000000%	0		0.0000000	73net2	0
125	sb g	u238f	es	cu		0.0662998	23.0	0.0570000	20.0000000%	118	u238f	0.0380000	74mee6	0
125	sb g	u238f	rc	cu		0.0646866	21.2	0.0660000	0.0140000	140 ba g	u238f	6.0700000	77har1	0
125	sb g	u238f	rc	cu		0.0703612	15.4	0.0780000	0.0120000	99 mo g	u238f	7.0000000	60bon1	0
125	sb g	u238f	rc	cu		0.0772624	75.0	0.0800000	0.0600000	140 ba g	u238f	6.1600000	77bla1	0
125	sb g	u238f	rc	cu		0.0470908	10.9	0.0460000	0.0050000	0		0.0000000	81mae1	0
125	sb g	u238f	rc	cu		0.0368536	11.1	0.0360000	0.0040000	0		0.0000000	81mae1	0
125	sb g	u238f	rc	cu		0.0429959	9.5	0.0420000	0.0040000	0		0.0000000	81mae1	0
125	sb g	u238f	cm	cu		0.0000000	0.0	0.0410000	0.0040000	0		0.0000000	81mae1	0
125	sb g	u238f	rc	cu		0.0405481	10.3	0.0390000	0.0040000	148 nd g	u238f	2.0800000	74mae1	0
125	sb g	u238f	rc	cu		0.0560994	10.0	0.0548000	10.0000000%	0		0.0000000	86dic2	0
125	sn g	u238f	es	cu		0.0194505	52.6	0.0190000	0.0100000	0		0.0000000	78gin1	0
125	sn g	u238f	rc	cu		0.0104419	9.8	0.0102000	0.0010000	0		0.0000000	85chi1	0
125	sn g	u238f	rc	cu	x4	0.0000000	0.0	0.0760000	0.0030000	0		0.0000000	85li 1	0

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 125        u238he   cm    cu    es   0.0000000  0.0   1.0850000  0.0000000     0                    0.0000000   63wea1      0
 125        u238he   rc    cu    x4   0.0000000  0.0   1.5000000  0.4000000    99 mo g      u238he      5.6000000   70gev1      0
 125        u238he   cm    cu    su   0.0000000  0.0   0.8390000  0.0590000     0                    0.0000000   73dar1      0
 125        u238he   es    cu         1.0708764 23.0   1.0000000 20.0000000%  119          u238he      0.6800000   74mee6      0
 125        u238he   es    cu         1.2438353 15.0   1.2400000 15.0000000%    0                    0.0000000   74mee9      0
 125        u238he   cm    cu         0.0000000  0.0   0.9210000  7.3000000%    0                    0.0000000   77cro1      0
 125        u238he   rc    cu         0.9810902 15.7   0.9600000  0.1500000    99 mo g      u238he      5.6000000   75ada1      0
 125 sb g   u238he   cm    cu         0.0000000  0.0   1.1200000  6.1000000%    0                    0.0000000   73net2      0
 125 sb g   u238he   rc    cu         1.2087270  6.1   1.2050000  0.0730000     0                    0.0000000   75dar1      0
 125 sb g   u238he   rc    cu         1.1676002  7.1   1.1640000  7.1000000%    0                    0.0000000   75dar1      0
 125 sb g   u238he   rc    cu         1.3411353 11.1   1.3370000 11.1000000%    0                    0.0000000   75dar1      0
 125 sn g   u238he   cm    cu    x3   0.0000000  0.0   0.7000000  0.0000000     0                    0.0000000   69gun2      0
 125 sn g   u238he   rc    cu    x4   0.0000000  0.0   0.8500000  0.0850000    99 mo g      u238he      5.6000000   70gev1      0
 125 sn g   u238he   cm    cu         0.0000000  0.0   0.4500000  0.0000000     0                    0.0000000   60kat1      0
 125 sn g   u238he   rc    cu         0.5409232  5.0  36.0000000  3.0000000%   99 mo g      u235t       0.0000000   76for1      7
 125 sn g   u238he   rc    re    su   0.0000000  0.0  36.0000000  1.0000000    99 mo g      u235t       0.0000000   56for1      7
 125        pu239t   cm    cu         0.0000000  0.0   0.0600000  0.0000000     0                    0.0000000   72sid1      0
 125        pu239t   cm    cu         0.0000000  0.0   0.1100000  0.0000000     0                    0.0000000   73lam1      0
 125        pu239t   cm    cu         0.0000000  0.0   0.1000000  0.0150000     0                    0.0000000   73wal1      0
 125        pu239t   cm    cu         0.0000000  0.0   0.1160000 12.0000000%    0                    0.0000000   77cro1      0
 125        pu239t   es    cu         0.1241284 20.0   0.1253000 20.0000000%    0                    0.0000000   87wah1     36
 125 sb g   pu239t   cm    cu         0.0000000  0.0   0.1093000  8.0000000%    0                    0.0000000   73net2      0
 125 sb g   pu239t   rc    cu         0.1129340 12.3   0.1140000  0.0140000     0                    0.0000000   75mae1      0
 125 sb g   pu239t   es    cu    le   0.0713268 30.0   0.0720000  0.0000000     0                    0.0000000   61her1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type          value   err.     value                nuclide     material       value       no.   treatment

 125 sb g   pu239t   rc    cu         0.1126551 12.1   0.1160000  0.0140000   137 cs g     pu239t      6.7400000   70lis1      0
 125 sb g   pu239t   cm    in         0.0000000  0.0   0.0006501 32.0000000%    0                    1.0000000   88wah1      0
 125 sn g   pu239t   rc    cu         0.0761282 17.9   0.0840000  0.0150000    99 mo g      pu239t      6.7900000   71ram1      0
 125 sn g   pu239t   rc    cu         0.0762800 19.5   0.0770000  0.0150000     0                    0.0000000   84jai1      0
 125 sn g   pu239t   cm    in         0.0000000  0.0   0.0535600 11.0000000%    0                    1.0000000   88wah1      0
 125 sn g   pu239t   rc    cu         0.0672889 60.0   0.0680000  0.0000000   140 ba g     pu239t      5.3600000   51ste3      0
 125 sn m   pu239t   cm    in         0.0000000  0.0   0.0218700 11.0000000%    0                    1.0000000   88wah1      0
 125 in g   pu239t   cm    in         0.0000000  0.0   0.0244100 11.0000000%    0                    1.0000000   88wah1      0
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125 in m pu239t cm in 0.0000000 0.0 0.0244100 11.0000000% 0 1.0000000 88wah1 0
125 cd g pu239t cm in 0.0000000 0.0 0.0008092 56.0000000% 0 10.0000000 88wah1 0
125 pu239f cm cu x3 0.0000000 0.0 0.1450000 21.6000000% 0 0.0000000 77cro1 0
125 pu239f cm re x3 0.0000000 0.0 1.4100000 10.0000000% 125 pu239t 1.0000000 74mee4 0
125 pu239f rc cu x3 0.0000000 0.0 0.0970000 50.0000000% 0 0.0000000 81koc1 36
125 pu239f es re 0.1729873 18.8 1.0000000 15.0000000% 125 sb g pu239f 1.0000000 89rid1 0
125 sb g pu239f es cu 0.1653556 30.0 0.1700000 0.0000000 0 0.0000000 72sid1 0
125 sb g pu239f rc cu x1 0.0000000 0.0 0.1000000 12.0000000% 0 0.0000000 77koc1 0
125 sb g pu239f rc cu x1 0.0000000 0.0 0.1300000 0.0100000 148 nd g pu239f 1.6540000 77mae1 0
125 sb g pu239f rc cu x1 0.0000000 0.0 0.1200000 0.0100000 0 0.0000000 77mae1 0
125 sb g pu239f ms cu 0.1812213 11.9 0.1940000 0.0230000 148 nd g pu239f 1.7300000 70lis1 0
125 sb g pu239f cm cu x3 0.0000000 0.0 0.1916000 16.0000000% 0 0.0000000 73net2 0
125 sb g pu239f rc cu su 0.0000000 0.0 0.1250000 0.0120000 148 nd g pu239f 1.6500000 74mae1 0
125 sb g pu239f rc cu x1 0.0000000 0.0 0.1110000 8.0000000% 0 0.0000000 86dic2 0
125 pu241t cm cu x3 0.0000000 0.0 0.0620000 0.0000000 0 0.0000000 72sid1 0
125 pu241t cm cu x3 0.0000000 0.0 0.0420000 0.0050000 0 0.0000000 73wal1 0
125 pu241t cm cu x3 0.0000000 0.0 0.0416000 12.0000000% 0 0.0000000 77cro1 0
125 sb g pu241t rc cu 0.0585112 15.5 0.0580000 0.0090000 0 0.0000000 77mae1 0
125 sb g pu241t rc cu 0.0422886 12.0 0.0416000 0.0050000 137 cs g pu241t 6.6000000 70lis1 0
125 sn g pu241t rc cu 0.0194232 7.8 1.2900000 0.1000000 140 ba g u235t 0.0000000 86chi1 7
125 u233t cm cu x3 0.0000000 0.0 0.1100000 0.0000000 0 0.0000000 73lam1 0
125 u233t cm cu x3 0.0000000 0.0 0.1160000 0.0130000 0 0.0000000 73wal1 0
125 u233t cm cu 0.0000000 0.0 0.1160000 12.0000000% 0 0.0000000 77cro1 0
125 u233t cm cu x3 0.0000000 0.0 0.0600000 0.0000000 0 0.0000000 72sid1 0
125 te g u233t rc cu 0.1390091 12.8 0.0680000 0.0040000 130 te g u233t 1.0000000 82lae1 0
125 u233t es cu 0.1083329 20.0 0.1107000 20.0000000% 0 0.0000000 87wah1 36
125 sb g u233t cm cu x3 0.0000000 0.0 0.1141000 8.0000000% 0 0.0000000 73net2 0
125 sb g u233t rc cu 0.1135196 11.2 0.1160000 0.0130000 0 0.0000000 70lis1 0
125 sn g u233t rc cu 0.0489309 60.0 0.0500000 0.0000000 0 0.0000000 47ste1 0
125 sn g u233t rc cu 0.0534726 5.0 3.3000000 0.1000000 140 ba g u235t 0.0000000 86chi1 7
125 sn m u233t rc cu 0.0528453 60.0 0.0540000 0.0000000 0 0.0000000 50ste1 0
125 th232f es cu cm 0.0350012 30.0 0.0360000 0.0000000 0 0.0000000 65eng1 0
125 th232f es cu cm 0.0252786 30.0 0.0260000 0.0000000 0 0.0000000 72sid1 0
125 th232f es cu cm 0.0320844 30.0 0.0330000 0.0000000 0 0.0000000 73lam1 0
125 th232f cm cu 0.0000000 0.0 0.0300000 0.0000000 0 0.0000000 74lam1 0
125 th232f cm cu x3 0.0000000 0.0 0.0629000 20.0000000% 0 0.0000000 77cro1 0

125 th232f es cu 0.0375291 20.0 0.0386000 20.0000000% 0 0.0000000 74mee0 0
125 th232f rc cu 0.0341253 20.4 0.0047000 20.0000000% 89 sr g th232f 1.0000000 73dub1 0
125 sb g th232f cm cu 0.0000000 0.0 0.0343900 32.0000000% 0 0.0000000 73net2 0
125 sn g th232f rc cu 0.0101650 10.8 0.0014000 10.0000000% 89 sr g th232f 1.0000000 76lis1 0
125 sn g th232f rc re 0.0202908 10.0 2.7000000 0.2700000 99 mo g u235t 0.0000000 63iye1 7
126 xe g u235t ms cu ul 0.0000000 0.0 0.0000020 0.0000000 131 xe g u235t 2.9200000 70tra1 0
126 i g u235t es fi 0.0000000 31.0 0.0000451 0.0000000 126 u235t 10000.0000000 74wol1 0
126 i g u235t cm fi x3 0.0000000 0.0 0.0000300 0.0000300 126 u235t 1.0000000 70tra1 0
126 u235t cm cu 0.0000000 0.0 0.0583000 20.0000000% 0 0.0000000 77cro1 0
126 u235t cm cu x3 0.0000000 0.0 0.1000000 0.0000000 0 0.0000000 72sid1 0
126 u235t es cu 0.0566375 20.0 0.0570900 20.0000000% 0 0.0000000 87wah1 36
126 sb g u235t cm cu x3 0.0000000 0.0 0.0001690 90.0000000% 0 0.0000000 73net2 0
126 sb g u235t rc in 0.0010318 16.3 0.0010400 0.0001700 0 0.0000000 65str1 0
126 sb g u235t rc in 0.0008520 17.1 0.0008800 0.0001500 140 ba g u235t 6.3500000 70fah1 0
126 sb g u235t rc in 0.0010191 7.1 0.0008500 0.0000500 127 sb g u235t 0.1300000 66ara1 0
126 sb g u235t cm in 0.0000000 0.0 0.0001766 29.0000000% 0 1.0000000 88wah1 0
126 sb m u235t cm in x3 0.0000000 0.0 0.0023800 0.0000000 127 sb g u235t 0.1300000 66ara1 0
126 sb m u235t rc in 0.0026389 23.5 0.0026600 0.0006240 0 0.0000000 65str1 0
126 sb m u235t cm in 0.0000000 0.0 0.0003006 29.0000000% 0 1.0000000 88wah1 0
126 sn g u235t es cu 0.0595244 30.0 0.0600000 0.0000000 0 0.0000000 73lam1 0
126 sn g u235t ms cu rp 0.0495707 13.1 1.0000000 0.0000000 no. relative values = 6 77mat1
126 sn g u235t es cu 0.0625006 30.0 0.0630000 0.0000000 0 0.0000000 73lam1 0
126 sn g u235t es cu 0.0525799 18.9 0.0530000 0.0100000 0 0.0000000 73wal1 0
126 sn g u235t ms cu 0.0580363 12.0 0.0585000 0.0070000 0 0.0000000 76dii1 0
126 sn g u235t ms cu rp 0.0551068 12.4 1.0000000 0.0000000 no. relative values = 6 83ros1
126 sn g u235t cm in 0.0000000 0.0 0.0365300 19.0000000% 0 1.0000000 88wah1 0
126 in g u235t cm in 0.0000000 0.0 0.0198500 12.0000000% 0 1.0000000 88wah1 0
126 in g u235t rc cu sm 0.0000000 0.0 0.0310000 0.0060000 124 in g u235t 0.0200000 83shm1 0
126 in g u235t rc fi sm 0.0000000 0.0 0.3030000 10.9000000% 126 u235t 1.0000000 88hor1 0
126 in g u235t sp in 0.0050596 99.0 0.0051000 99.0000000% 0 0.0000000 90rud1 36
126 in g u235t sp cu 0.0188494 15.8 0.0190000 0.0030000 0 0.0000000 90rud1 0
126 cd g u235t cm in 0.0000000 0.0 0.0001400 65.0000000% 0 10.0000000 88wah1 0
126 cd g u235t sp cu 0.0124009 24.8 0.0125000 0.0031000 0 0.0000000 90rud1 0
126 u235f cm cu 0.0000000 0.0 0.1260000 20.0000000% 0 0.0000000 77cro1 0
126 u235f cm cu 0.0000000 0.0 0.0700000 0.0110000 0 0.0000000 81mae1 0
126 u235f es cu x3 0.0000000 0.0 0.0710000 0.0090000 148 nd g u235f 1.6800000 74mae1 0

126 u235f rc cu 0.0986591 10.0 0.1000000 10.0000000% 0 0.0000000 81koc1 36
126 u235f cm cu x3 0.0000000 0.0 0.3437000 0.0000000 148 nd g u235f 1.8100000 63wea1 0
126 u235f cm cu x3 0.0000000 0.0 0.3400000 0.0000000 0 0.0000000 72sid1 0
126 sb g u235f cm cu 0.0000000 0.0 0.0012340 90.0000000% 0 0.0000000 73net2 0
126 sn g u235f es cu 0.1300214 30.0 0.1370000 0.0000000 148 nd g u235f 1.7500000 70lis1 0
126 sn g u235f es re 0.1368269 12.8 2.3700000 10.0000000% 126 u235t 1.0000000 74mee4 0
126 sn g u235f es cu 0.0690614 15.7 0.0700000 0.0110000 0 0.0000000 81mae1 0
126 sn g u235f es cu 0.0690614 15.7 0.0700000 0.0110000 0 0.0000000 81mae2 0
126 sn g u235f es cu 0.0690614 15.7 0.0700000 0.0110000 0 0.0000000 81mae3 0
126 sn g u235f ms cu rp 0.1622063 45.9 1.0000000 0.0000000 no. relative values = 4 83ros1
126 u235he cm cu x3 0.0000000 0.0 1.8100000 20.0000000% 0 0.0000000 77cro1 0
126 sb g u235he rc re 0.2779911 10.0 38.0000000 2.0000000 99 mo g u235t 0.0000000 56for1 7
126 sb g u235he cm cu x3 0.0000000 0.0 0.0457900 45.0000000% 0 0.0000000 73net2 0
126 sb m u235he rc cu 1.8379165 5.0 38.0000000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
126 sn g u235he cm cu x3 0.0000000 0.0 1.7970000 0.0000000 0 0.0000000 63wea1 0
126 sn g u235he es cu 1.6275544 21.5 1.6200000 20.0000000% 113 u235he 1.0800000 74mee6 0
126 sn g u235he es cu 1.7676206 10.0 1.7780000 10.0000000% 0 0.0000000 74mee8 0
126 u238f cm cu 0.0000000 0.0 0.0952000 20.0000000% 0 0.0000000 77cro1 0
126 u238f cm cu 0.0000000 0.0 0.0470000 0.0050000 0 0.0000000 81mae1 0
126 u238f rc cu 0.0921341 90.0 0.0900000 90.0000000% 0 0.0000000 81koc1 36
126 sb g u238f cm cu 0.0000000 0.0 0.0000095 90.0000000% 0 0.0000000 73net2 0
126 sn g u238f es cu 0.0585563 30.0 0.0572000 0.0000000 0 0.0000000 63wea1 0
126 sn g u238f es cu cm 0.0716598 30.0 0.0700000 0.0000000 0 0.0000000 64wal1 0
126 sn g u238f es cu cm 0.1023712 30.0 0.1000000 0.0000000 0 0.0000000 72sid1 0
126 sn g u238f es cu 0.0802577 23.0 0.0690000 20.0000000% 118 u238f 0.0380000 74mee6 0
126 sn g u238f es cu 0.0481145 10.6 0.0470000 0.0050000 0 0.0000000 81mae1 0
126 sn g u238f es cu 0.0481145 10.6 0.0470000 0.0050000 0 0.0000000 81mae2 0
126 sn g u238f es cu 0.0481145 10.6 0.0470000 0.0050000 0 0.0000000 81mae3 0
126 sn g u238f es cu 0.0571832 12.7 0.0550000 0.0070000 148 nd g u238f 2.0800000 74mae1 0
126 sn g u238f ms cu rp 0.0574019 36.4 1.0000000 0.0000000 no. relative values = 5 83ros1
126 u238he cm cu es 0.0000000 0.0 1.2830000 0.0000000 0 0.0000000 63wea1 0
126 u238he es cu su 0.0000000 0.0 1.0800000 0.0000000 0 0.0000000 73dar1 0
126 sb g u238he rc in 0.0065804 40.0 0.0065000 0.0026000 0 0.0000000 69rao1 0
126 sb g u238he cm cu x3 0.0000000 0.0 0.0024120 90.0000000% 0 0.0000000 73net2 0
126 sb g u238he rc cu 0.2530930 5.0 0.2500000 0.0100000 0 0.0000000 87ram1 0
126 sb m u238he rc in 0.0035433 40.0 0.0035000 0.0014000 0 0.0000000 69rao1 0

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 126 sn g   u238he   es    cu        1.4374404 23.0   1.3300000 20.0000000%  119          u238he      0.6800000   74mee6      0
 126 sn g   u238he   es    cu        1.2350936 20.0   1.2200000 20.0000000%    0                      0.0000000   77cro1      0
 126        pu239t   cm    cu        0.0000000  0.0   0.2300000  0.0000000     0                      0.0000000   73lam1      0
 126        pu239t   cm    cu        0.0000000  0.0   0.2300000 20.0000000%    0                      0.0000000   77cro1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value       no.   treatment

 126        pu239t   cm    cu    x3   0.0000000  0.0   0.1600000  0.0000000     0                      0.0000000   72sid1      0
 126        pu239t   es    cu        0.2279826 20.0   0.2295000 20.0000000%    0                      0.0000000   87wah1     36
 126 sb g   pu239t   rc    in    x1   0.0000000  0.0   0.0690000  0.0030000   137 cs g      pu239t      5.4000000   65mar1      0
 126 sb g   pu239t   cm    cu        0.0000000  0.0   0.0037840 59.0000000%    0                      0.0000000   73net2      0
 126 sb g   pu239t   cm    in        0.0000000  0.0   0.0015100 23.0000000%    0                      1.0000000   88wah1      0
 126 sb m   pu239t   cm    in        0.0000000  0.0   0.0025720 23.0000000%    0                      1.0000000   88wah1      0
 126 sn g   pu239t   ms    cu    rp   0.1957552  7.9   1.0000000  0.0000000  no. relative values =    5            77mat1
 126 sn g   pu239t   es    cu        0.1986776 20.0   0.2000000  0.0400000     0                      0.0000000   73wal1      0
 126 sn g   pu239t   cm    in        0.0000000  0.0   0.1721000 11.0000000%    0                      1.0000000   88wah1      0
 126 in g   pu239t   cm    in        0.0000000  0.0   0.0522900 13.0000000%    0                      1.0000000   88wah1      0
 126 cd g   pu239t   cm    in        0.0000000  0.0   0.0002734 83.0000000%    0                     10.0000000   88wah1      0
 126        pu239f   cm    cu        0.0000000  0.0   0.2050000 20.0000000%    0                      0.0000000   77cro1      0
 126        pu239f   es    cu    su   0.0000000  0.0   0.2700000  0.0300000   148 nd g      pu239f      1.6500000   74mae1      0
 126        pu239f   rc    cu        0.1961364 50.0   0.2000000 50.0000000%    0                      0.0000000   81koc1     36
 126 sb g   pu239f   cm    cu        0.0000000  0.0   0.0075300 55.0000000%    0                      0.0000000   73net2      0
 126 sn g   pu239f   es    cu        0.2913644 30.0   0.3040000  0.0000000   148 nd g      pu239f      1.7000000   69lis1      0
 126 sn g   pu239f   es    cu        0.2448719 30.0   0.2600000  0.0000000   148 nd g      pu239f      1.7300000   70lis1      0
 126 sn g   pu239f   es    cu    cm   0.2745910 30.0   0.2800000  0.0000000     0                      0.0000000   72sid1      0
 126 sn g   pu239f   es    re        0.2480197 11.5   1.2500000 10.0000000%  126          pu239t      1.0000000   74mee4      0
 126 sn g   pu239f   es    cu        0.2745910 14.3   0.2800000  0.0400000     0                      0.0000000   77mae1      0
 126 sn g   pu239f   es    cu        0.2758254 14.3   0.2800000  0.0400000   148 nd g      pu239f      1.6540000   77mae1      0
 126        pu241t   cm    cu    es   0.0000000  0.0   0.0930000  0.0000000     0                      0.0000000   68lis3      0
 126        pu241t   cm    cu        0.0000000  0.0   0.1300000  0.0000000     0                      0.0000000   72sid1      0
 126        pu241t   cm    cu        0.0000000  0.0   0.1100000 20.0000000%    0                      0.0000000   77cro1      0
 126 sn g   pu241t   es    cu        0.0819944 20.0   0.0800000  0.0160000     0                      0.0000000   73wal1      0
 126        u233t    cm    cu    x3   0.0000000  0.0   0.2700000  0.0000000     0                      0.0000000   72sid1      0
 126        u233t    cm    cu        0.0000000  0.0   0.2470000 20.0000000%    0                      0.0000000   77cro1      0
 126        u233t    cm    cu    x3   0.0000000  0.0   0.1800000  0.0000000     0                      0.0000000   73lam1      0
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126 u233t es cu 0.2452415 20.0 0.2506000 20.0000000% 0 0.0000000 87wah1 36
126 sb g u233t cm cu 0.0000000 0.0 0.0042250 52.0000000% 0 0.0000000 73net2 0
126 sn g u233t ms re x4 0.0000000 0.0 5.5550000 0.4010000 117 sn g u233t 1.0000000 69lae1 0
126 sn g u233t es cu 0.2544405 19.2 0.2600000 0.0500000 0 0.0000000 73wal1 0
126 sn g u233t ms cu rp 0.2165990 8.3 1.0000000 0.0000000 no. relative values = 2 83ros1
126 th232f cm cu x3 0.0000000 0.0 0.0370000 0.0000000 0 0.0000000 65eng1 0
126 th232f cm cu x3 0.0000000 0.0 0.0500000 0.0000000 0 0.0000000 72sid1 0
126 th232f cm cu x3 0.0000000 0.0 0.0679000 20.0000000% 0 0.0000000 77cro1 0
126 sb g th232f cm cu x3 0.0000000 0.0 0.0000070 90.0000000% 0 0.0000000 73net2 0
126 sn g th232f es cu cm 0.0480382 30.0 0.0500000 0.0000000 0 0.0000000 73lam1 0
126 sn g th232f es cu 0.0481343 20.0 0.0501000 20.0000000% 0 0.0000000 74mee0 0
127 u235t cm cu 0.0000000 0.0 0.1300000 0.0000000 0 0.0000000 72sid1 0
127 u235t cm cu 0.0000000 0.0 0.1100000 0.0000000 0 0.0000000 73lam1 0
127 u235t cm cu 0.0000000 0.0 0.1240000 0.0100000 0 0.0000000 73wal1 0
127 u235t ms cu 0.1229545 7.3 0.1233000 0.0090000 0 0.0000000 76dii1 0
127 u235t rc cu 0.1401305 10.0 0.1440000 0.0080000 140 ba g u235t 6.3500000 63hag1 0
127 u235t cm cu 0.0000000 0.0 0.1150000 8.9000000% 0 0.0000000 77cro1 0
127 u235t es cu le 0.1296357 30.0 0.1300000 0.0000000 0 0.0000000 61her1 0
127 u235t rc cu 0.1027113 10.0 0.1030000 10.0000000% 0 0.0000000 69erd1 36
127 u235t es cu 0.1257466 20.0 0.1261000 20.0000000% 0 0.0000000 87wah1 36
127 te g u235t rc cu 0.1459692 30.0 0.1500000 0.0000000 140 ba g u235t 6.3500000 63hag1 0
127 te m u235t rc cu x4 0.0000000 0.0 0.0560000 0.0000000 0 0.0000000 51nov2 0
127 te m u235t rc cu 0.0329075 60.0 0.0330000 0.0000000 0 0.0000000 51gle7 0
127 te m u235t rc cu 0.0215559 20.0 0.0001500 0.0000300 140 ba g u235t 0.0430000 51gru1 0
127 sb g u235t rc cu 0.0952230 60.0 0.0940000 0.0000000 140 ba g u235t 6.1000000 51eng2 0
127 sb g u235t rc cu 0.0897939 60.0 0.0930000 0.0000000 140 ba g u235t 6.4000000 52eng1 0
127 sb g u235t rc cu 0.0983294 30.0 0.1000000 0.0000000 89 sr g u235t 4.8000000 57nas1 0
127 sb g u235t rc fi su 0.0000000 0.0 0.0550000 0.0420000 127 u235t 1.0000000 63tro2 0
127 sb g u235t rc fi 0.0089301 18.0 0.0570000 0.0100000 127 sb g u235t 1.0000000 64tro1 0
127 sb g u235t cm cu 0.0000000 0.0 0.1040000 6.1000000% 0 0.0000000 73net2 0
127 sb g u235t rc cu 0.1342917 30.0 0.1380000 0.0000000 140 ba g u235t 6.3500000 63hag1 0
127 sb g u235t rc cu 0.1027782 10.0 0.1030000 10.0000000% 89 sr g u235t 4.7300000 69erd1 36
127 sb g u235t rc cu 0.1522307 20.0 0.1520000 20.0000000% 140 ba g u235t 6.1700000 53pap1 0
127 sb g u235t rc cu 0.1264614 20.0 0.0008800 0.0000500 140 ba g u235t 0.0430000 51gru1 0
127 sb g u235t rc cu x4 0.0000000 0.0 0.5200000 0.0500000 0 0.0000000 77gud1 0
127 sb g u235t rc cu 0.1396077 14.3 0.1400000 0.0200000 0 0.0000000 74bla1 0

127	sb g	u235t	rc	cu		0.1286385	7.8	0.1290000	0.0100000	0		0.0000000	76thi1	0
127	sb g	u235t	cm	in		0.0000000	0.0	0.0070940	18.0000000%	0		1.0000000	88wah1	0
127	sn g	u235t	rc	cu		0.0774072	19.5	0.0770000	0.0150000	99	mo g	u235t	6.0600000	68pap1	0
127	sn g	u235t	rc	cu		0.0668557	12.0	0.0670000	0.0080000	89	sr g	u235t	4.7300000	69erd1	0
127	sn g	u235t	rc	cu		0.0618262	15.0	0.0620000	0.0000000	0		0.0000000	69erd2	0
127	sn g	u235t	rc	in	x2	0.0000000	0.0	0.7668000	0.0142000	125	sn g	u235t	1.0000000	67bro1	40
127	sn g	u235t	rc	in		0.0884514	14.2	0.0887000	0.0126000	0		0.0000000	84sem1	0
127	sn g	u235t	rc	fi		0.1111382	7.5	0.9320000	0.0170000	127	sn g	u235t	1.0000000	84sem1	0
127	sn g	u235t	rc	fi		0.1130461	7.5	0.9480000	0.0130000	127	sn g	u235t	1.0000000	84sem1	0
127	sn g	u235t	cm	in		0.0000000	0.0	0.0548000	20.0000000%	0		1.0000000	88wah1	0
127	sn g	u235t	rc	re		0.1057862	30.1	0.3200000	0.0000000	128	sn g	u235t	1.0000000	62hag1	0
127	sn g	u235t	sp	cu	su	0.0000000	0.0	0.0530000	0.0140000	132	sn g	u235t	0.6100000	85rud1	0
127	sn g	u235t	sp	cu		0.0528515	26.4	0.0530000	0.0140000	0		0.0000000	90rud1	0
127	sn m	u235t	rc	in	x2	0.0000000	0.0	0.3132000	0.0058000	125	sn g	u235t	1.0000000	67bro1	40
127	sn m	u235t	rc	fi	ul	0.0000000	0.0	0.7530000	0.0000000	127	sn m	u235t	1.0000000	84sem1	0
127	sn m	u235t	cm	in		0.0000000	0.0	0.0223900	20.0000000%	0		1.0000000	88wah1	0
127	sn m	u235t	sp	cu		0.0648178	12.3	0.0650000	0.0080000	0		0.0000000	90rud1	0
127	sn m	u235t	sp	in		0.0099720	99.0	0.0100000	99.0000000%	0		0.0000000	90rud1	36
127	in g	u235t	es	fc		0.0504475	30.1	0.3220000	0.0000000	127		u235t	1.0000000	74wol1	0
127	in g	u235t	rc	in	sm	0.0000000	0.0	0.0283000	0.0086000	0		0.0000000	84sem1	0
127	in g	u235t	rc	cu		0.0240610	29.7	0.0600000	0.0150000	124	in g	u235t	0.0200000	83shm1	37
127	in g	u235t	cm	in		0.0000000	0.0	0.0210000	33.0000000%	0		1.0000000	88wah1	0
127	in g	u235t	rc	fi	sm	0.0000000	0.0	0.2360000	5.1000000%	127		u235t	1.0000000	88hor1	0
127	in g	u235t	sp	in		0.0518543	25.0	0.0520000	0.0130000	0		0.0000000	90rud1	0
127	in g	u235t	sp	cu		0.0538487	16.7	0.0540000	0.0090000	0		0.0000000	90rud1	0
127	in m	u235t	rc	cu		0.0240610	29.7	0.0600000	0.0150000	124	in g	u235t	0.0200000	83shm1	37
127	in m	u235t	cm	in		0.0000000	0.0	0.0210000	33.0000000%	0		1.0000000	88wah1	0
127	in m	u235t	sp	in		0.0078779	41.8	0.0079000	0.0033000	0		0.0000000	90rud1	0
127	in m	u235t	sp	cu		0.0109692	18.2	0.0110000	0.0020000	0		0.0000000	90rud1	0
127	cd g	u235t	cm	in		0.0000000	0.0	0.0003295	97.0000000%	0		100.0000000	88wah1	0
127	cd g	u235t	sp	cu		0.0102711	36.9	0.0103000	0.0038000	0		0.0000000	90rud1	0
127		u235f	cm	cu	x3	0.0000000	0.0	0.4723000	0.0000000	148	nd g	u235f	1.8100000	63wea1	0
127		u235f	cm	cu	x3	0.0000000	0.0	0.1400000	0.0210000	0		0.0000000	81mae1	0
127		u235f	cm	cu	x3	0.0000000	0.0	0.1400000	0.0210000	0		0.0000000	81mae2	0
127		u235f	cm	cu	x3	0.0000000	0.0	0.1400000	0.0210000	0		0.0000000	81mae3	0
127		u235f	cm	cu	x3	0.0000000	0.0	0.2120000	20.0000000%	0		0.0000000	77cro1	0

127 u235f cm cu x3 0.0000000 0.0 0.4800000 0.0000000 0 0.0000000 72sid1 0
127 u235f es cu 0.3039946 20.2 0.2620000 20.0000000% 115 u235f 0.0291000 74mee6 0
127 u235f es cu 0.2994926 9.4 0.3005000 9.4000000% 0 0.0000000 91jam2 0
127 u235f es cu 0.3069675 4.0 0.3080000 4.0000000% 0 0.0000000 89rid1 0
127 u235f es cu 0.3099574 11.0 0.3110000 11.0000000% 0 0.0000000 74mee1 0
127 u235f es cu x3 0.0000000 0.0 0.1510000 0.0190000 148 nd g u235f 1.6800000 74mae1 0
127 u235f es cu x4 0.0000000 0.0 0.2680000 0.0000000 148 nd g u235f 1.7500000 70lis1 0
127 u235f es re 0.3285301 10.4 2.1000000 10.0000000% 127 u235t 1.0000000 74mee4 0
127 u235f rc cu x4 0.0000000 0.0 0.1900000 0.0300000 0 0.0000000 77bla1 0
127 u235f rc cu x4 0.0000000 0.0 0.2000000 10.0000000% 0 0.0000000 81koc1 36
127 sb g u235f cm cu x3 0.0000000 0.0 0.3703000 32.0000000% 0 0.0000000 73net2 0
127 sb g u235f rc cu x4 0.0000000 0.0 2.9500000 0.0900000 127 sb g u235t 1.0000000 77deb1 0
127 sb g u235f rc re 0.3037320 5.1 0.0510000 0.0020000 140 ba g u235f 1.0000000 73man1 0
127 sb g u235f rc cu 0.3089608 6.5 0.3100000 0.0200000 0 0.0000000 81mar1 0
127 sb g u235f rc cu x4 0.0000000 0.0 0.5200000 0.0500000 0 0.0000000 77gud1 0
127 sb g u235f es cu 0.3066685 6.0 0.3077000 6.0000000% 0 0.0000000 89rid1 0
127 sb g u235f es cu 0.2994926 9.4 0.3005000 9.4000000% 0 0.0000000 91jam2 0
127 sb g u235f es cu 0.3089608 23.0 0.3100000 23.0000000% 0 0.0000000 74mee1 0
127 sb g u235f es fc 0.3051237 4.5 0.9996000 4.0000000% 127 u235f 1.0000000 89rid1 0
127 u235he cm cu es 0.0000000 0.0 2.2060000 0.0000000 0 0.0000000 63wea1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

127 u235he es cu 1.9322709 21.5 1.9200000 20.0000000% 113 u235he 1.0800000 74mee6 0
127 u235he cm cu 0.0000000 0.0 1.9500000 7.0000000% 0 0.0000000 77cro1 0
127 u235he es cu 2.1749848 10.0 2.1840000 10.0000000% 0 0.0000000 74mee8 0
127 sb g u235he es cu 2.1590508 11.0 2.1680000 11.0000000% 0 0.0000000 74mee1 0
127 sb g u235he es cu 2.2994688 11.0 2.3090000 11.0000000% 0 0.0000000 89rid1 0
127 sb g u235he es cu 2.0913315 4.8 2.1000000 4.8000000% 0 0.0000000 91jam2 0
127 sb g u235he rc re x4 0.0000000 0.0 20.6000000 0.3000000 99 mo g u235t 0.0000000 56for1 7
127 sb g u235he es cu 2.0813728 30.0 2.0900000 0.0000000 0 0.0000000 69gun2 0
127 sb g u235he rc re 2.2361165 5.7 0.5000000 0.0200000 140 ba g u235he 1.0000000 73man1 0
127 sb g u235he cm cu x3 0.0000000 0.0 1.8370000 6.0000000% 0 0.0000000 73net2 0
127 sb g u235he es cu 2.2705885 30.0 2.2800000 0.0000000 0 0.0000000 60kat1 0
127 sb g u235he rc cu x4 0.0000000 0.0 20.6000000 3.0000000% 99 mo g u235t 0.0000000 76for1 7

127	sb	g	u235he	rc	cu	x4	0.0000000	0.0	1.7600000	7.5000000%	0					0.0000000	81lau1	0
127	sb	g	u235he	es	fc		2.1638778	10.4	0.9967000	10.0000000%	127	u235he				1.0000000	89rid1	0
127			u238f	es	cu		0.1180466	30.0	0.1161000	0.0000000	0					0.0000000	63wea1	0
127			u238f	cm	cu	es	0.0000000	0.0	0.1300000	0.0000000	0					0.0000000	64wal1	0
127			u238f	es	cu	cm	0.1423474	30.0	0.1400000	0.0000000	0					0.0000000	72sid1	0
127			u238f	es	cu		0.1501843	23.0	0.1300000	20.0000000%	118	u238f				0.0380000	74mee6	0
127			u238f	cm	cu		0.0000000	0.0	0.1210000	26.4000000%	0					0.0000000	77cro1	0
127			u238f	rc	cu		0.1342920	21.4	0.1400000	0.0300000	140	ba	g	u238f		6.1600000	77bla1	0
127			u238f	es	cu		0.1118444	10.0	0.1100000	0.0110000	0					0.0000000	81mae1	0
127			u238f	es	cu		0.1118444	10.0	0.1100000	0.0110000	0					0.0000000	81mae2	0
127			u238f	es	cu		0.1118444	10.0	0.1100000	0.0110000	0					0.0000000	81mae3	0
127			u238f	cm	cu		0.0000000	0.0	0.1100000	0.0110000	0					0.0000000	81mae1	0
127			u238f	es	cu		0.1032640	10.0	0.1000000	0.0100000	148	nd	g	u238f		2.0800000	74mae1	0
127			u238f	rc	cu		0.1423474	50.0	0.1400000	50.0000000%	0					0.0000000	81koc1	36
127			u238f	rc	cu	x4	0.0000000	0.0	0.5600000	0.0200000	0					0.0000000	85li 1	0
127			u238f	rc	cu	x4	0.0000000	0.0	0.7280000	0.0270000	0					0.0000000	85li 1	0
127	sb	g	u238f	rc	cu		0.1162396	60.0	0.1200000	0.0000000	140	ba	g	u238f		6.1000000	51eng3	0
127	sb	g	u238f	rc	cu		0.1107909	60.0	0.1200000	0.0000000	140	ba	g	u238f		6.4000000	52eng1	0
127	sb	g	u238f	rc	cu		0.1347632	23.1	0.1300000	0.0300000	140	ba	g	u238f		5.7000000	54kel1	0
127	sb	g	u238f	rc	re		0.1122681	10.6	0.0190000	0.0020000	140	ba	g	u238f		1.0000000	73man1	0
127	sb	g	u238f	cm	cu		0.0000000	0.0	0.0983400	16.0000000%	0					0.0000000	73net2	0
127	sb	g	u238f	rc	cu		0.1331965	15.3	0.1310000	0.0200000	0					0.0000000	75har1	0
127	sb	g	u238f	cm	cu		0.0000000	0.0	0.1200000	0.0000000	0					0.0000000	60kat1	0
127	sb	g	u238f	rc	cu		0.1654867	11.8	0.1700000	0.0200000	140	ba	g	u238f		6.0700000	77har1	0
127	sb	g	u238f	rc	cu		0.1709171	6.9	0.1750000	0.0120000	140	ba	g	u238f		6.0500000	78deb1	0
127	sb	g	u238f	rc	cu		0.1601737	12.8	0.1640000	0.0210000	140	ba	g	u238f		6.0500000	78deb1	0
127	sb	g	u238f	es	cu		0.1525150	17.3	0.1500000	0.0260000	0					0.0000000	78gin1	0
127	sb	g	u238f	rc	cu		0.1523111	11.8	0.1700000	0.0200000	99	mo	g	u238f		7.0000000	60bon1	0
127	sb	g	u238f	rc	cu		0.1270959	15.2	0.1250000	0.0190000	0					0.0000000	85chi1	0
127			u238he	cm	cu	es	0.0000000	0.0	1.6910000	0.0000000	0					0.0000000	63wea1	0
127			u238he	cm	cu	su	0.0000000	0.0	1.4000000	0.0600000	0					0.0000000	73dar1	0
127			u238he	es	cu		1.6941457	23.0	1.5800000	20.0000000%	119	u238he				0.6800000	74mee6	0
127	i	g	u238he	es	fi		0.0000000	30.5	0.0000011	30.0000000%	127	u238he				100.0000000	74wol1	0
127			u238he	es	cu		1.4864737	4.4	1.4800000	4.4000000%	0					0.0000000	77cro1	0
127	sb	g	u238he	cm	cu		0.0000000	0.0	1.5200000	0.0000000	0					0.0000000	69gun2	0
127	sb	g	u238he	rc	cu		1.5536474	5.2	1.5400000	0.0200000	99	mo	g	u238he		5.6800000	71bir2	0

127	sb g	u238he	rc	cu	su	0.0000000	0.0	1.4800000	0.1000000	0				0.0000000	71bla1	0	
127	sb g	u238he	rc	cu	su	0.0000000	0.0	1.3100000	0.3300000	0				0.0000000	73dar2	0	
127	sb g	u238he	rc	cu	su	0.0000000	0.0	1.3600000	0.1400000	0				0.0000000	73dar4	0	
127	sb g	u238he	rc	re		1.7115589	5.6	0.3700000	0.0200000	140 ba g	u238he	1.0000000	73man1	0			
127	sb g	u238he	cm	cu		0.0000000	0.0	1.5800000	6.1000000%	0				0.0000000	73net2	0	
127	sb g	u238he	rc	cu	su	0.0000000	0.0	1.3600000	0.1400000	140 ba g	u238he	4.4800000	74dar1	0			
127	sb g	u238he	rc	cu		1.4362550	5.0	1.4300000	0.0380000	0				0.0000000	75dar1	0	
127	sb g	u238he	cm	cu		0.0000000	0.0	1.7000000	0.0000000	0				0.0000000	60kat1	0	
127	sb g	u238he	rc	cu		1.5656096	9.9	1.5300000	0.1500000	99 mo g	u238he	5.6000000	75ada1	0			
127	sb g	u238he	rc	cu		1.4681997	11.0	1.4600000	0.1600000	140 ba g	u238he	4.6000000	75cav1	0			
127	sb g	u238he	rc	cu	su	0.0000000	0.0	1.4600000	0.1600000	140 ba g	u238he	4.6000000	74bla1	0			
127	sb g	u238he	rc	cu		1.3860363	5.2	1.3800000	5.2000000%	0				0.0000000	81lau1	0	
127	sb g	u238he	rc	cu		1.2167957	6.0	1.2100000	0.0700000	140 ba g	u238he	4.6000000	80zhe1	0			
127	sb g	u238he	rc	cu		1.4764299	5.0	1.4700000	0.0600000	0				0.0000000	85liu1	0	
127	sb g	u238he	rc	cu		1.4071281	11.1	1.4010000	0.1550000	0				0.0000000	75dar1	0	
127	sb g	u238he	rc	cu		1.4191806	5.0	1.4130000	0.0470000	0				0.0000000	75dar1	0	
127	sb g	u238he	rc	cu		1.4774343	5.0	1.4710000	0.0690000	0				0.0000000	75dar1	0	
127	sb g	u238he	rc	re	x4	0.0000000	0.0	14.1000000	0.4000000	99 mo g	u235t	0.0000000	56for1	7			
127	sb g	u238he	rc	cu	x4	0.0000000	0.0	14.1000000	3.0000000%	99 mo g	u235t	0.0000000	76for1	7			
127		pu239t	cm	cu		0.0000000	0.0	0.4600000	0.0000000	0				0.0000000	72sid1	0	
127		pu239t	cm	cu		0.0000000	0.0	0.5500000	0.0000000	0				0.0000000	73lam1	0	
127		pu239t	cm	cu		0.0000000	0.0	0.4500000	0.0900000	0				0.0000000	73wal1	0	
127		pu239t	cm	cu		0.0000000	0.0	0.5190000	17.8000000%	0				0.0000000	77cro1	0	
127		pu239t	es	cu		0.5302706	20.0	0.5338000	20.0000000%	0				0.0000000	87wah1	36	
127	sb g	pu239t	rc	cu		0.3671428	60.0	0.3700000	0.0000000	140 ba g	pu239t	5.3600000	51ste3	0			
127	sb g	pu239t	rc	cu		0.4180449	17.4	0.4600000	0.0800000	99 mo g	pu239t	6.7900000	71ram1	0			
127	sb g	pu239t	cm	cu		0.0000000	0.0	0.5253000	8.0000000%	0				0.0000000	73net2	0	
127	sb g	pu239t	rc	cu		0.5463634	5.5	0.5500000	0.0300000	0				0.0000000	65mar1	0	
127	sb g	pu239t	rc	cu		0.4440445	6.7	0.4470000	0.0300000	0				0.0000000	80dic1	0	
127	sb g	pu239t	rc	cu		0.4172230	19.0	0.4200000	0.0800000	0				0.0000000	84jai1	0	
127	sb g	pu239t	cm	in		0.0000000	0.0	0.0279400	17.0000000%	0				1.0000000	88wah1	0	
127	sb g	pu239t	rc	cu	x4	0.0000000	0.0	6.3000000	0.3000000	140 ba g	u235t	0.0000000	86chi1	7			
127	sn g	pu239t	rc	cu		0.4062957	20.5	0.4090000	0.0840000	0				0.0000000	80dic1	0	
127	sn g	pu239t	cm	in		0.0000000	0.0	0.3156000	11.0000000%	0				1.0000000	88wah1	0	
127	sn m	pu239t	cm	in		0.0000000	0.0	0.1289000	11.0000000%	0				1.0000000	88wah1	0	
127	in g	pu239t	es	fc	sm	0.0000000	0.0	0.2550000	0.0000000	127	pu239t	1.0000000	74wol1	0			

127 in g pu239t es in 0.0288083 15.0 0.0290000 15.0000000% 0 1.0000000 88wah1 0
127 in m pu239t es in 0.0287983 15.0 0.0289900 15.0000000% 0 1.0000000 88wah1 0
127 pu239f es cu 0.4772088 30.0 0.5020000 0.0000000 148 nd g pu239f 1.7000000 69lis1 0
127 pu239f es cu cm 0.4182525 30.0 0.4300000 0.0000000 0 0.0000000 72sid1 0
127 pu239f cm cu 0.0000000 0.0 0.3010000 20.0000000% 0 0.0000000 77cro1 0
127 pu239f es re 0.5515161 11.5 1.1200000 10.0000000% 127 pu239t 1.0000000 74mee4 0
127 pu239f es cu 0.5178381 15.1 0.5300000 0.0800000 148 nd g pu239f 1.6540000 77mae1 0
127 pu239f es cu 0.5155205 15.1 0.5300000 0.0800000 0 0.0000000 77mae1 0
127 pu239f es cu 0.4689335 30.0 0.5020000 0.0000000 148 nd g pu239f 1.7300000 70lis1 0
127 pu239f es cu su 0.0000000 0.0 0.5200000 0.0700000 148 nd g pu239f 1.6500000 74mae1 0
127 pu239f rc cu 0.4639685 10.0 0.4770000 10.0000000% 0 0.0000000 81koc1 36
127 sb g pu239f cm cu 0.0000000 0.0 0.5013000 32.0000000% 0 0.0000000 73net2 0
127 pu241t cm cu es 0.0000000 0.0 0.2250000 0.0000000 0 0.0000000 68lis3 0
127 pu241t cm cu 0.0000000 0.0 0.2500000 0.0000000 0 0.0000000 72sid1 0
127 pu241t es cu 0.1707492 23.5 0.1700000 0.0400000 0 0.0000000 73wal1 0
127 pu241t cm cu 0.0000000 0.0 0.2380000 18.3000000% 0 0.0000000 77cro1 0
127 pu241t cm cu 0.0000000 0.0 0.2600000 0.0000000 0 0.0000000 79wal1 0
127 sb g pu241t rc cu x4 0.0000000 0.0 0.7000000 0.0000000 0 0.0000000 63kir1 0
127 sb g pu241t rc cu 0.2400533 5.4 0.2390000 0.0130000 0 0.0000000 73sko2 0
127 sb g pu241t rc cu 0.2280004 5.0 0.2270000 0.0070000 0 0.0000000 73sko2 0
127 sb g pu241t rc cu x4 0.0000000 0.0 2.7000000 0.1000000 140 ba g u235t 0.0000000 86chi1 7
127 u233t cm cu x3 0.0000000 0.0 0.5900000 0.0000000 0 0.0000000 72sid1 0
127 u233t es cu 0.4848800 30.0 0.5000000 0.0000000 0 0.0000000 73lam1 0
127 u233t cm cu x3 0.0000000 0.0 0.6200000 0.1200000 0 0.0000000 73wal1 0
127 u233t cm cu 0.0000000 0.0 0.5120000 14.0000000% 0 0.0000000 77cro1 0
127 u233t es cu 0.5364713 20.0 0.5532000 20.0000000% 0 0.0000000 87wah1 36
127 sb g u233t cm cu x3 0.0000000 0.0 0.5915000 16.0000000% 0 0.0000000 73net2 0
127 sb g u233t rc cu 0.5721585 13.6 0.5900000 0.0800000 0 0.0000000 60san1 0
127 th232f cm cu es 0.0000000 0.0 0.0910000 0.0000000 0 0.0000000 65eng1 0
127 th232f es cu cm 0.1089210 30.0 0.1100000 0.0000000 0 0.0000000 72sid1 0
127 th232f es cu cm 0.0891172 30.0 0.0900000 0.0000000 0 0.0000000 73lam1 0
127 th232f cm cu 0.0000000 0.0 0.0750000 0.0000000 0 0.0000000 74lam1 0
127 th232f cm cu 0.0000000 0.0 0.0782000 10.0000000% 0 0.0000000 77cro1 0
127 th232f es cu 0.0900084 20.0 0.0909000 20.0000000% 0 0.0000000 74mee0 0
127 sb g th232f rc re 0.1138523 10.0 1.5200000 0.0700000 99 mo g u235t 0.0000000 63iye1 7
127 sb g th232f cm cu 0.0000000 0.0 0.0782100 4.0000000% 0 0.0000000 73net2 0

1
0

measured nuclide	fissile material	meas. tech.	meas. type	note	value	updated err.	pct.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
127 sb g	th232f	rc	re		0.0988717	5.0		1.3200000	0.0200000	99 mo g	u235t	0.0000000	81ert1	7
127 sb g	th232f	rc	cu	x4	0.0000000	0.0		0.0550000	0.0000000	140 ba g	th232f	7.4000000	73cha1	0
127 sb g	th232f	cm	cu	x3	0.0000000	0.0		0.0806000	0.0043000	0		0.0000000	81ert1	0
128 xe g	u235t	ms	re	ul	0.0000000	0.0		0.0000130	99.0000000%	131 xe g	u235t	1.0000000	63mch1	0
128 xe g	u235t	ms	cu		0.0000140	21.4		0.0000140	0.0000030	0		0.0000000	70tra1	0
128 xe g	u235t	ms	cu	x1	0.0000000	0.0		0.0000360	20.0000000%	131 xe g	u235t	2.9300000	56ken1	36
128 xe g	u235t	es	fi		0.0000000	30.1		0.0000002	0.0000000	128	u235t	1000.0000000	74wol1	0
128 i g	u235t	es	fi		0.0000010	30.1		0.0000030	0.0000000	128	u235t	1.0000000	74wol1	0
128 i g	u235t	es	fi	x1	0.0000000	0.0		0.0000370	0.0000080	128	u235t	1.0000000	70tra1	0
128 i g	u235t	cm	in		0.0000000	0.0		0.0001458	22.0000000%	0		10.0000000	88wah1	0
128	u235t	rc	cu		0.3589911	16.7		0.3600000	0.0600000	0		0.0000000	69erd1	0
128 te g	u235t	es	fi		0.0001739	30.1		0.0005000	0.0000000	128	u235t	1.0000000	72fow1	0
128	u235t	cm	cu		0.0000000	0.0		0.3600000	0.0000000	0		0.0000000	73lam1	0
128	u235t	cm	cu		0.0000000	0.0		0.3400000	0.0300000	0		0.0000000	73wal1	0
128	u235t	rc	cu		0.3430360	5.2		0.3440000	0.0180000	0		0.0000000	74fow1	0
128	u235t	ms	cu		0.3589911	3.1		0.3600000	0.0110000	0		0.0000000	76dii1	0
128	u235t	cm	cu	x3	0.0000000	0.0		0.2860000	20.0000000%	0		0.0000000	77cro1	0
128	u235t	cm	cu	x3	0.0000000	0.0		0.5000000	0.0000000	0		0.0000000	72sid1	0
128	u235t	es	cu		0.3670684	20.0		0.3681000	20.0000000%	0		0.0000000	87wah1	36
128 te g	u235t	rc	cu		0.3248646	5.4		0.1800000	0.0010000	130 te g	u235t	1.0000000	82lae1	0
128 sb g	u235t	rc	cu	x1	0.0000000	0.0		0.0500000	0.0000000	0		0.0000000	55cor1	0
128 sb g	u235t	rc	fi	x1	0.0000000	0.0		0.2200000	0.0400000	128	u235t	1.0000000	69bla1	0
128 sb g	u235t	rc	fi		0.0107799	16.4		0.0310000	0.0050000	128	u235t	1.0000000	74fow1	0
128 sb g	u235t	rc	fi	su	0.0000000	0.0		0.0300000	0.0040000	128	u235t	1.0000000	72fow1	0
128 sb g	u235t	rc	cu	x4	0.0000000	0.0		0.2840000	0.0350000	0		0.0000000	76thi1	0
128 sb g	u235t	cm	in		0.0000000	0.0		0.0062000	45.0000000%	0		1.0000000	88wah1	0
128 sb m	u235t	rc	fi	x1	0.0000000	0.0		0.0700000	0.0000000	128	u235t	1.0000000	69bla1	0
128 sb m	u235t	rc	fi		0.0064331	99.9		0.0185000	0.0185000	128	u235t	1.0000000	74fow1	0
128 sb m	u235t	rc	fi	su	0.0000000	0.0		0.0190000	0.0190000	128	u235t	1.0000000	72fow1	0
128 sb m	u235t	cm	in		0.0000000	0.0		0.0105500	45.0000000%	0		1.0000000	88wah1	0
128 sb m	u235t	sp	cu	x1	0.0000000	0.0		0.0210000	0.0030000	0		0.0000000	90rud1	0
128 sn g	u235t	rc	cu		0.3689631	30.0		0.3700000	0.0000000	0		0.0000000	55cor1	0

128	sn g	u235t	rc	in	x2	0.0000000	0.0	1.0400000	0.0200000	125 sn g	u235t	1.0000000	67bro1	0
128	sn g	u235t	rc	fc	x1	0.0000000	0.0	0.7100000	0.0000000	128	u235t	1.0000000	69bla1	0
128	sn g	u235t	rc	cu		0.3133237	6.1	0.3140000	0.0190000	89 sr g	u235t	4.7300000	69erd1	0
128	sn g	u235t	rc	cu		0.2991593	15.0	0.3000000	0.0000000	0		0.0000000	69erd2	0
128	sn g	u235t	rc	fc		0.3306985	5.7	0.9510000	0.0240000	128	u235t	1.0000000	72fow1	0
128	sn g	u235t	rc	cu		0.3422318	5.2	0.3420000	0.0070000	132 te g	u235t	4.2800000	72lin1	0
128	sn g	u235t	rc	cu		0.3160286	5.4	0.3220000	0.0060000	97 zr g	u235t	6.0800000	72lin1	0
128	sn g	u235t	rc	fi		0.3160363	5.4	0.9560000	0.0220000	128 sn g	u235t	1.0000000	84sem1	0
128	sn g	u235t	rc	in		0.3191032	5.0	0.3200000	0.0130000	0		0.0000000	84sem1	0
128	sn g	u235t	cm	in		0.0000000	0.0	0.3254000	4.0000000%	0		1.0000000	88wah1	0
128	sn g	u235t	sp	cu		0.3150147	7.0	0.3159000	0.0220000	0		0.0000000	90rud1	0
128	in g	u235t	rc	in		0.0146588	50.3	0.0147000	0.0074000	0		0.0000000	84sem1	0
128	in g	u235t	rc	cu		0.0312793	32.4	0.0390000	0.0110000	124 in g	u235t	0.0200000	83shm1	0
128	in g	u235t	cm	in		0.0000000	0.0	0.0248900	35.0000000%	0		1.0000000	88wah1	0
128	in g	u235t	rc	fi	sm	0.0000000	0.0	0.0692000	4.9000000%	128	u235t	1.0000000	88hor1	0
128	in g	u235t	sp	in		0.0299159	26.7	0.0300000	0.0080000	0		0.0000000	90rud1	0
128	in g	u235t	sp	cu		0.0269243	22.2	0.0270000	0.0060000	0		0.0000000	90rud1	0
128	cd g	u235t	sp	cu		0.0035899	66.7	0.0036000	0.0024000	0		0.0000000	90rud1	0
128		u235f	cm	cu	x3	0.0000000	0.0	0.7117000	0.0000000	148 nd g	u235f	1.8100000	63wea1	0
128		u235f	es	cu		0.4659892	30.0	0.4910000	0.0000000	148 nd g	u235f	1.7500000	70lis1	0
128		u235f	cm	cu	x3	0.0000000	0.0	0.7100000	0.0000000	0		0.0000000	72sid1	0
128		u235f	es	cu	x3	0.0000000	0.0	0.3720000	0.0500000	148 nd g	u235f	1.6800000	74mae1	0
128		u235f	es	re		0.5265674	10.4	1.5300000	10.0000000%	128	u235t	1.0000000	74mee4	0
128		u235f	cm	cu	x3	0.0000000	0.0	0.3540000	20.0000000%	0		0.0000000	77cro1	0
128		u235f	rc	cu		0.4883624	10.0	0.4950000	10.0000000%	0		0.0000000	81koc1	36
128		u235f	cm	cu	x3	0.0000000	0.0	0.3500000	0.0350000	0		0.0000000	81mae1	0
128		u235f	cm	cu	x3	0.0000000	0.0	0.3500000	0.0350000	0		0.0000000	81mae2	0
128		u235f	cm	cu	x3	0.0000000	0.0	0.3500000	0.0350000	0		0.0000000	81mae3	0
128	i g	u235he	cm	fi	x1	0.0000000	0.0	0.0019000	0.0002000	128	u235he	1.0000000	72net2	0
128		u235he	es	cu		2.6753948	30.0	2.7070000	0.0000000	0		0.0000000	63wea1	0
128		u235he	es	cu		2.3271198	21.5	2.3300000	20.0000000%	113	u235he	1.0800000	74mee6	0
128		u235he	cm	cu		0.0000000	0.0	2.3700000	20.0000000%	0		0.0000000	77cro1	0
128		u235he	es	cu		2.4510451	10.0	2.4800000	10.0000000%	0		0.0000000	74mee8	0
128	sn g	u235he	rc	fi		1.4430071	23.2	0.8670000	0.0420000	128 sn g	u235he	1.0000000	84sem1	0
128		u238f	cm	cu	x3	0.0000000	0.0	0.3578000	0.0000000	0		0.0000000	63wea1	0
128		u238f	es	cu	cm	0.2661651	30.0	0.2600000	0.0000000	0		0.0000000	64wal1	0

128		u238f	cm	re	x3	0.0000000	0.0	0.1400000	10.0000000%	145		u238f	1.0000000	72mat1	0
128		u238f	cm	cu	x3	0.0000000	0.0	0.5100000	0.0000000	0			0.0000000	72sid1	0
128		u238f	cm	cu	x3	0.0000000	0.0	0.1810000	20.0000000%	0			0.0000000	77cro1	0
128		u238f	cm	cu	x3	0.0000000	0.0	0.3960000	0.0400000	0			0.0000000	81mae1	0
128		u238f	cm	cu	x3	0.0000000	0.0	0.3960000	0.0400000	0			0.0000000	81mae2	0
128		u238f	cm	cu	x3	0.0000000	0.0	0.3960000	0.0400000	0			0.0000000	81mae3	0
128		u238f	cm	cu	x3	0.0000000	0.0	0.3960000	0.0400000	0			0.0000000	81mae1	0
128		u238f	es	cu	su	0.0000000	0.0	0.4100000	0.0500000	148	nd g	u238f	2.0800000	74mae1	0
128		u238f	rc	cu		0.2866394	5.0	0.2800000	5.0000000%	0			0.0000000	81koc1	36
128		u238f	rc	cu	x4	0.0000000	0.0	0.7000000	0.0300000	0			0.0000000	85li 1	0
128	sb g	u238f	rc	cu	x1	0.0000000	0.0	0.5000000	0.1400000	0			0.0000000	85chi1	0
128		u238he	cm	cu	es	0.0000000	0.0	2.2690000	0.0000000	0			0.0000000	63wea1	0
128		u238he	es	cu	su	0.0000000	0.0	1.8200000	0.0000000	0			0.0000000	73dar1	0
128		u238he	es	cu		2.2665163	23.0	2.1100000	20.0000000%	119		u238he	0.6800000	74mee6	0
128		u238he	es	cu		1.5193407	13.0	1.5100000	13.0000000%	0			0.0000000	77cro1	0
128	sb g	u238he	rc	cu	x1	0.0000000	0.0	0.2100000	0.0100000	0			0.0000000	87ram1	0
128	sn g	u238he	rc	cu		1.4966754	13.1	1.4600000	0.1900000	99	mo g	u238he	5.6000000	75ada1	0
128	sn g	u238he	rc	cu		1.8614439	5.4	1.8500000	0.1000000	0			0.0000000	85liu1	0
128	xe g	pu239t	ms	cu		0.0001585	1.6	0.0002000	0.0000000	131	xe g	u235t	3.6000000	56ken1	0
128	xe g	pu239t	ms	cu		0.0000876	11.5	0.0000870	0.0000100	131	xe g	pu239t	3.7800000	70tra1	0
128	xe g	pu239t	es	fi		0.0000000	32.1	0.0000027	0.0000000	128		pu239t	1000.0000000	74wol1	0
128	i g	pu239t	es	fi		0.0001738	84.1	0.0002400	0.0002000	128		pu239t	1.0000000	62wah1	0
128	i g	pu239t	es	fi		0.0000891	16.0	0.0001230	0.0000140	128		pu239t	1.0000000	70tra1	0
128	i g	pu239t	cm	in		0.0000000	0.0	0.0007914	16.0000000%	0			10.0000000	88wah1	0
128		pu239t	cm	cu		0.0000000	0.0	0.9000000	0.0000000	0			0.0000000	72sid1	0
128		pu239t	cm	cu		0.0000000	0.0	1.0000000	0.0000000	0			0.0000000	73lam1	0
128		pu239t	es	cu		0.8387597	20.0	0.8500000	0.1700000	0			0.0000000	73wal1	0
128		pu239t	cm	cu		0.0000000	0.0	0.8610000	20.0000000%	0			0.0000000	77cro1	0
128		pu239t	es	cu		0.7388980	20.0	0.7488000	20.0000000%	0			0.0000000	87wah1	36
128	sb g	pu239t	rc	in		0.0622701	6.7	0.0660000	0.0040000	92	sr g	pu239t	3.1000000	76ima1	0
128	sb g	pu239t	cm	in		0.0000000	0.0	0.0431000	13.0000000%	0			1.0000000	88wah1	0
128	sb m	pu239t	rc	in		0.0575527	13.4	0.0610000	0.0080000	92	sr g	pu239t	3.1000000	76ima1	0
128	sb m	pu239t	rc	cu		0.8091564	6.1	0.8200000	0.0500000	0			0.0000000	80dic1	0
128	sb m	pu239t	cm	in		0.0000000	0.0	0.0735000	13.0000000%	0			1.0000000	88wah1	0
128	sn g	pu239t	rc	cu		0.6038314	6.9	0.6400000	0.0400000	92	sr g	pu239t	3.1000000	76ima1	0
128	sn g	pu239t	rc	cu		0.4341815	13.6	0.4400000	0.0600000	0			0.0000000	77gud1	0

128 sn g pu239t rc cu 0.5328591 13.0 0.5400000 0.0700000 0 0.0000000 80dic1 0
128 sn g pu239t cm in 0.0000000 0.0 0.5942000 11.0000000% 0 1.0000000 88wah1 0
128 in g pu239t es fc 0.0693150 32.1 0.0957000 0.0000000 128 pu239t 1.0000000 74wol1 0
128 in g pu239t cm in 0.0000000 0.0 0.0288600 20.0000000% 0 1.0000000 88wah1 0
128 pu239f es cu 0.7629146 30.0 0.7960000 0.0000000 148 nd g pu239f 1.7000000 69lis1 0
128 pu239f es cu cm 0.6962842 30.0 0.7100000 0.0000000 0 0.0000000 72sid1 0
128 pu239f cm cu 0.0000000 0.0 0.4220000 20.0000000% 0 0.0000000 77cro1 0
128 pu239f es re 0.7486490 15.1 1.0400000 10.0000000% 128 pu239t 1.0000000 74mee4 0
128 pu239f es cu 0.9752399 9.1 0.9900000 0.0900000 148 nd g pu239f 1.6540000 77mae1 0
128 pu239f es cu 0.9414547 9.4 0.9600000 0.0900000 0 0.0000000 77mae1 0
128 pu239f es cu 0.7063614 30.0 0.7500000 0.0000000 148 nd g pu239f 1.7300000 70lis1 0
128 pu239f es cu su 0.0000000 0.0 0.9500000 0.0800000 148 nd g pu239f 1.6500000 74mae1 0
128 pu239f rc cu 0.8012172 10.0 0.8170000 10.0000000% 0 0.0000000 81koc1 36
128 sn g pu239f rc cu x1 0.0000000 0.0 0.4400000 0.0600000 0 0.0000000 77gud1 0
128 pu241t cm cu es 0.0000000 0.0 0.4940000 0.0000000 0 0.0000000 68lis3 0
128 pu241t cm cu 0.0000000 0.0 0.5000000 0.0000000 0 0.0000000 72sid1 0
1
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nuclide material tech. type value err. value nuclide material value no. treatment

128 pu241t es cu 0.3792240 21.6 0.3700000 0.0800000 0 0.0000000 73wal1 0
128 pu241t cm cu 0.0000000 0.0 0.4720000 20.0000000% 0 0.0000000 77cro1 0
128 xe g u233t ms cu 0.0000343 15.2 0.0000330 0.0000050 131 xe g u233t 3.3900000 70tra1 0
128 xe g u233t es fi 0.0000000 31.0 0.0000366 0.0000000 128 u233t 1000.0000000 74wol1 0
128 xe g u233t ms cu ul 0.0000000 0.0 0.0001300 0.0000000 131 xe g u233t 3.7400000 56ken1 0
128 i g u233t es fi 0.0000819 12.8 0.0001000 0.0000100 128 u233t 1.0000000 62wah1 0
128 i g u233t es fi 0.0000246 18.5 0.0000300 0.0000050 128 u233t 1.0000000 70tra1 0
128 u233t cm cu 0.0000000 0.0 1.0000000 0.0000000 0 0.0000000 73lam1 0
128 u233t es cu 0.9786172 20.0 1.0000000 0.2000000 0 0.0000000 73wal1 0
128 u233t cm cu 0.0000000 0.0 0.9020000 20.0000000% 0 0.0000000 77cro1 0
128 u233t es cu 0.9296863 30.0 0.9500000 0.0000000 0 0.0000000 72sid1 0
128 te g u233t rc cu 0.8974263 12.4 0.4390000 0.0030000 130 te g u233t 1.0000000 82lae1 0
128 u233t es cu 0.7827959 20.0 0.7999000 20.0000000% 0 0.0000000 87wah1 36
128 sb g u233t rc in 0.0663467 6.4 0.0700000 0.0040000 92 sr g u233t 6.6000000 76ima1 0
128 sb m u233t rc in 0.0587642 13.2 0.0620000 0.0080000 92 sr g u233t 6.6000000 76ima1 0
128 sn g u233t rc cu 0.5876421 7.0 0.6200000 0.0400000 92 sr g u233t 6.6000000 76ima1 0

128		th232f	es	cu	cm	0.1681336	30.0	0.1750000	0.0000000	0			0.0000000	65eng1	0
128		th232f	es	cu	cm	0.2113680	30.0	0.2200000	0.0000000	0			0.0000000	72sid1	0
128		th232f	es	cu	cm	0.1729374	30.0	0.1800000	0.0000000	0			0.0000000	73lam1	0
128		th232f	cm	cu		0.0000000	0.0	0.1890000	20.0000000%	0			0.0000000	77cro1	0
128		th232f	es	cu		0.1806235	20.0	0.1880000	20.0000000%	0			0.0000000	74mee0	0
128	sb g	th232f	rc	in		0.0022482	15.8	0.0023400	0.0003700	0			0.0000000	82ert1	0
129		u235t	es	cu	x3	0.0000000	0.0	1.0000000	0.0000000	0			0.0000000	62far1	0
129		u235t	cm	cu	x3	0.0000000	0.0	0.9000000	0.0000000	0			0.0000000	72sid1	0
129		u235t	cm	cu	x3	0.0000000	0.0	0.8800000	0.3000000	0			0.0000000	73wal1	0
129		u235t	cm	cu	x3	0.0000000	0.0	0.6120000	23.4000000%	0			0.0000000	77cro1	0
129		u235t	es	cu		0.7761302	20.0	0.7769000	20.0000000%	0			0.0000000	87wah1	36
129	i g	u235t	cm	cu	x3	0.0000000	0.0	0.5100000	0.0400000	0			0.0000000	71bir1	0
129	i g	u235t	cm	cu	x3	0.0000000	0.0	0.7781000	0.0000000	0			0.0000000	88wah1	0
129	i g	u235t	cm	cu	x3	0.0000000	0.0	0.7787000	4.1000000%	0			0.0000000	91jam2	0
129	i g	u235t	cm	cu	x3	0.0000000	0.0	0.8000000	0.0000000	0			0.0000000	60kat1	0
129	i g	u235t	es	cu		0.6393659	30.0	0.6400000	0.0000000	0			0.0000000	73lam1	0
129	i g	u235t	es	cu		0.6593461	10.0	0.6600000	10.0000000%	0			0.0000000	89rid1	0
129	i g	u235t	es	fc		0.5427543	1.0	0.9999000	0.0008000	129		u235t	1.0000000	69cro1	0
129	i g	u235t	es	fc		0.5428085	10.0	1.0000000	10.0000000%	129		u235t	1.0000000	89rid1	0
129	i g	u235t	es	fi	ul	0.0000000	0.0	0.0001000	0.0000000	129		u235t	1.0000000	69cro1	0
129	i g	u235t	ms	cu	x4	0.0000000	0.0	0.8039000	4.0000000%	0			0.0000000	76dii1	36
129	i g	u235t	rc	cu		0.6093956	5.0	0.6100000	0.0300000	0			0.0000000	74fow1	0
129	i g	u235t	rc	cu		0.6293758	6.3	0.6300000	0.0400000	0			0.0000000	69erd1	0
129	i g	u235t	rc	cu		0.6893163	7.2	0.6900000	0.0500000	0			0.0000000	82aum1	0
129	i g	u235t	sp	cu	x4	0.0000000	0.0	0.9000000	0.0000000	0			0.0000000	56pur1	0
129	te g	u235t	cm	in		0.0000000	0.0	0.0000694	92.0000000%	0			10.0000000	88wah1	0
129	te m	u235t	rc	cu		0.0899108	60.0	0.0900000	0.0000000	0			0.0000000	48gru1	0
129	te m	u235t	rc	cu	x1	0.0000000	0.0	0.3370000	0.0130000	140	ba g	u235t	6.1700000	53pap1	0
129	te m	u235t	rc	cu		0.1295705	20.0	0.0009000	0.0001000	140	ba g	u235t	0.0430000	51gru1	0
129	te m	u235t	cm	in		0.0000000	0.0	0.0001698	92.0000000%	0			10.0000000	88wah1	0
129	sb g	u235t	rc	cu	x4	0.0000000	0.0	0.3900000	20.0000000%	140	ba g	u235t	6.1700000	53pap1	0
129	sb g	u235t	rc	re	x4	0.0000000	0.0	7.8000000	0.7000000	127	sb g	u235t	1.0000000	63hag1	0
129	sb g	u235t	rc	cu	x4	0.0000000	0.0	1.1200000	15.0000000%	140	ba g	u235t	6.3500000	63hag1	0
129	sb g	u235t	es	fc	cm	0.5337979	1.4	0.9834000	0.0092000	129		u235t	1.0000000	69cro1	0
129	sb g	u235t	rc	cu		0.6197886	5.1	0.6200000	0.0300000	89	sr g	u235t	4.7300000	69erd1	0
129	sb g	u235t	rc	cu	su	0.0000000	0.0	0.3900000	0.0300000	0			0.0000000	71bir1	0

129	sb g	u235t	rc	cu	x4	0.0000000	0.0	0.5000000	0.0400000	0				0.0000000	71bir1	0
129	sb g	u235t	rc	fi	su	0.0000000	0.0	0.1140000	0.0450000	129	u235t			1.0000000	72fow1	0
129	sb g	u235t	es	cu		0.6293758	30.0	0.6300000	0.0000000	0				0.0000000	73lam1	0
129	sb g	u235t	rc	fi		0.0618802	40.4	0.1140000	0.0460000	129	u235t			1.0000000	74fow1	0
129	sb g	u235t	es	cu		0.6363688	25.0	0.6370000	25.0000000%	0				0.0000000	74mee1	36
129	sb g	u235t	rc	cu	x4	0.0000000	0.0	0.8170000	0.0470000	0				0.0000000	76thi1	0
129	sb g	u235t	cm	in		0.0000000	0.0	0.0829700	40.0000000%	0				1.0000000	88wah1	0
129	sb g	u235t	es	fc		0.5428085	1.4	1.0000000	1.0000000%	129	u235t			1.0000000	88wah1	0
129	sb g	u235t	es	fc		0.5422657	4.1	0.9990000	4.0000000%	129	u235t			1.0000000	89rid1	0
129	sn g	u235t	rc	fc	su	0.0000000	0.0	0.5290000	0.0340000	129	u235t			1.0000000	72fow1	0
129	sn g	u235t	rc	re	x4	0.0000000	0.0	52.9000000	3.4000000	129	sb g	u235t		100.0000000	74fow1	0
129	sn g	u235t	sp	cu	su	0.0000000	0.0	0.2140000	0.0240000	0				0.0000000	85rud1	0
129	sn g	u235t	cm	in		0.0000000	0.0	0.1907000	6.0000000%	0				1.0000000	88wah1	0
129	sn g	u235t	sp	in		0.2357662	13.1	0.2360000	0.0310000	0				0.0000000	90rud1	0
129	sn g	u235t	sp	cu		0.2407612	14.1	0.2410000	0.0340000	0				0.0000000	90rud1	0
129	sn m	u235t	sp	cu	su	0.0000000	0.0	0.1620000	0.0160000	0				0.0000000	85rud1	0
129	sn m	u235t	rc	re	x4	0.0000000	0.0	0.2000000	0.0000000	128	sn g	u235t		1.0000000	62hag1	0
129	sn m	u235t	rc	cu	su	0.0000000	0.0	0.1700000	0.0100000	97	zr g	u235t		5.9000000	67bir1	0
129	sn m	u235t	rc	cu		0.1998018	5.0	0.2000000	0.0100000	0				0.0000000	71bir1	0
129	sn m	u235t	rc	re	x4	0.0000000	0.0	35.7000000	3.0000000	129	sb g	u235t		100.0000000	74fow1	0
129	sn m	u235t	rc	fc	su	0.0000000	0.0	0.3570000	0.0300000	129	u235t			1.0000000	72fow1	0
129	sn m	u235t	cm	in		0.0000000	0.0	0.4669000	6.0000000%	0				1.0000000	88wah1	0
129	sn m	u235t	sp	in		0.1778236	19.1	0.1780000	0.0340000	0				0.0000000	90rud1	0
129	sn m	u235t	sp	cu		0.1648365	8.5	0.1650000	0.0140000	0				0.0000000	90rud1	0
129	in g	u235t	rc	fi	aj	0.0265976	44.0	0.0490000	44.0000000%	129	u235t			1.0000000	83shm1	0
129	in g	u235t	cm	in		0.0000000	0.0	0.0187700	24.0000000%	0				1.0000000	88wah1	0
129	in g	u235t	rc	fi	sm	0.0000000	0.0	0.0279000	5.9000000%	129	u235t			1.0000000	88hor1	0
129	in g	u235t	sp	cu		0.0369633	27.0	0.0370000	0.0100000	0				0.0000000	90rud1	0
129	in m	u235t	cm	in		0.0000000	0.0	0.0187700	24.0000000%	0				1.0000000	88wah1	0
129	in m	u235t	sp	cu		0.0119881	25.0	0.0120000	0.0030000	0				0.0000000	90rud1	0
129		u235f	cm	cu	x3	0.0000000	0.0	1.3000000	0.0000000	0				0.0000000	72sid1	0
129		u235f	cm	cu		0.0000000	0.0	0.5530000	11.0000000%	0				0.0000000	77cro1	0
129		u235f	cm	cu		0.0000000	0.0	0.8000000	0.0800000	0				0.0000000	81mae1	0
129		u235f	rc	cu		1.0826920	10.0	1.0900000	10.0000000%	0				0.0000000	81koc1	36
129	i g	u235f	rc	cu		0.8312045	6.6	1.5400000	0.1000000	129	i g	u235t		1.0000000	77deb1	0
129	i g	u235f	es	cu		0.9650662	30.0	1.0100000	0.0000000	148	nd g	u235f		1.7500000	70lis1	0

129 i g u235f es re 0.6584867 10.0 1.2200000 10.0000000% 129 u235t 1.0000000 74mee4 0
129 i g u235f rc cu 0.8492913 5.7 0.8900000 0.0500000 140 ba g u235f 6.2200000 77bla1 0
129 i g u235f es cu 0.7946363 10.0 0.8000000 0.0800000 0 0.0000000 81mae1 0
129 i g u235f es cu 0.7946363 10.0 0.8000000 0.0800000 0 0.0000000 81mae2 0
129 i g u235f es cu 0.7946363 10.0 0.8000000 0.0800000 0 0.0000000 81mae3 0
129 i g u235f es cu 0.8360722 12.7 0.8400000 0.1070000 148 nd g u235f 1.6800000 74mae1 0
129 te m u235f rc cu x1 0.0000000 0.0 0.5500000 0.0600000 99 mo g u235f 5.9000000 60bon1 0
129 u235he cm cu x3 0.0000000 0.0 1.4700000 9.3000000% 0 0.0000000 77cro1 0
129 te m u235he cm cu x3 0.0000000 0.0 1.5800000 0.0000000 0 0.0000000 69gun2 0
129 te m u235he rc cu x4 0.0000000 0.0 1.5800000 0.1200000 99 mo g u235he 5.6500000 60bon1 0
129 sb g u235he rc re x4 0.0000000 0.0 2.7000000 0.3000000 99 mo g u235t 0.0000000 56for1 7
129 sb g u235he es cu 3.1092693 30.0 3.1460000 0.0000000 0 0.0000000 63wea1 0
129 sb g u235he cm cu x3 0.0000000 0.0 2.4000000 0.0000000 0 0.0000000 69gun2 0
129 sb g u235he rc re 3.1512206 7.6 0.7100000 0.0500000 140 ba g u235he 1.0000000 73man1 0
129 sb g u235he rc cu x4 0.0000000 0.0 2.7000000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
129 u238f cm cu x3 0.0000000 0.0 0.5300000 0.0000000 0 0.0000000 64wal1 0
129 u238f cm cu x3 0.0000000 0.0 0.4000000 0.0200000 0 0.0000000 71bir1 0
129 u238f cm cu x3 0.0000000 0.0 0.8800000 0.0000000 0 0.0000000 72sid1 0
129 u238f cm cu x3 0.0000000 0.0 0.2610000 11.0000000% 0 0.0000000 77cro1 0
129 u238f es cu 1.0124512 10.0 0.9890000 0.0990000 0 0.0000000 81mae1 0
129 u238f es cu 1.0124512 10.0 0.9890000 0.0990000 0 0.0000000 81mae2 0
129 u238f es cu 1.0032377 10.1 0.9800000 0.0990000 0 0.0000000 81mae1 0
129 u238f es cu 1.0124512 10.0 0.9890000 0.0990000 0 0.0000000 81mae1 0
129 u238f rc cu x4 0.0000000 0.0 0.5900000 50.0000000% 0 0.0000000 81koc1 36
129 u238f rc cu x4 0.0000000 0.0 1.3200000 0.0500000 0 0.0000000 85li 1 0
129 i g u238f cm re x3 0.0000000 0.0 0.2900000 10.0000000% 145 u238f 1.0000000 72mat1 0
129 i g u238f es cu 1.0085029 13.4 0.9700000 0.1300000 148 nd g u238f 2.0800000 74mae1 0
129 te m u238f rc cu x1 0.0000000 0.0 0.2600000 0.0300000 99 mo g u238f 7.0000000 60bon1 0
129 te m u238f es fc 0.1718636 20.8 0.1660000 20.0000000% 129 u238f 1.0000000 89rid1 0
129 sb g u238f rc cu x1 0.0000000 0.0 0.4000000 0.0200000 0 0.0000000 71bir1 0
129 sb g u238f rc re 1.0113654 17.7 0.1700000 0.0300000 140 ba g u238f 1.0000000 73man1 0
129 sb g u238f rc cu x4 0.0000000 0.0 0.6700000 0.1000000 140 ba g u238f 6.0500000 78deb1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

129	sb	g	u238f	rc	cu	x4	0.0000000	0.0	0.4900000	0.1300000	140	ba	g	u238f	6.0500000	78deb1	0
129	sb	g	u238f	cm	cu	x3	0.0000000	0.0	0.5530000	0.0680000	0				0.0000000	78gin1	0
129	sb	g	u238f	rc	cu	x1	0.0000000	0.0	0.3290000	0.0140000	99	mo	g	u238f	6.3200000	70lyl1	0
129	sb	g	u238f	rc	cu	x4	0.0000000	0.0	0.6200000	0.0500000	140	ba	g	u238f	6.1600000	77bla1	0
129	sb	g	u238f	rc	cu	x4	0.0000000	0.0	0.4500000	0.1000000	0				0.0000000	85chi1	0
129	sb	g	u238f	rc	cu	x4	0.0000000	0.0	0.4300000	11.6000000%	0				0.0000000	88afa1	0
129	sb	g	u238f	rc	cu	x4	0.0000000	0.0	0.4400000	15.9000000%	0				0.0000000	88afa1	0
129	sb	g	u238f	es	fc		1.0353230	20.8	1.0000000	20.0000000%	129			u238f	1.0000000	89rid1	0
129			u238he	cm	cu	es	0.0000000	0.0	2.9100000	0.0000000	0				0.0000000	63wea1	0
129			u238he	cm	cu		0.0000000	0.0	1.3200000	7.4000000%	0				0.0000000	77cro1	0
129	te	g	u238he	rc	cu		1.4121185	18.9	1.3800000	0.2600000	99	mo	g	u238he	5.6000000	75ada1	0
129	te	m	u238he	cm	cu	x3	0.0000000	0.0	1.2200000	0.0000000	0				0.0000000	69gun2	0
129	te	m	u238he	rc	cu		0.5283008	9.7	0.5260000	0.0510000	0				0.0000000	75dar1	0
129	te	m	u238he	rc	cu	x1	0.0000000	0.0	1.2200000	0.0900000	99	mo	g	u238he	6.5000000	60bon1	0
129	sb	g	u238he	rc	cu	x4	0.0000000	0.0	1.1800000	0.0100000	139	ba	g	u238he	4.9200000	64jam1	0
129	sb	g	u238he	rc	cu		1.7049767	15.1	1.6900000	15.0000000%	99	mo	g	u238he	5.6800000	71bir2	36
129	sb	g	u238he	es	cu	su	0.0000000	0.0	2.3500000	0.0000000	0				0.0000000	73dar1	0
129	sb	g	u238he	rc	re		2.9631830	15.1	0.6400000	15.0000000%	140			u238he	1.0000000	73man1	36
129	sb	g	u238he	es	cu		2.8950591	23.0	2.7000000	20.0000000%	119			u238he	0.6800000	74mee6	0
129	sb	g	u238he	rc	cu		1.5687614	15.1	1.5600000	15.0000000%	140	ba	g	u238he	4.6000000	76raj1	36
129	sb	g	u238he	rc	cu		1.8805024	15.1	1.8700000	15.0000000%	140	ba	g	u238he	4.6000000	75cav1	36
129	sb	g	u238he	rc	cu	su	0.0000000	0.0	1.8700000	0.1500000	140	ba	g	u238he	4.6000000	74bla1	0
129	sb	g	u238he	cm	cu	x3	0.0000000	0.0	1.4000000	0.0000000	0				0.0000000	60kat1	0
129	sb	g	u238he	cm	cu	x3	0.0000000	0.0	1.3000000	0.0000000	0				0.0000000	69gun2	0
129	sb	g	u238he	rc	cu		1.9106709	15.1	1.9000000	15.0000000%	140	ba	g	u238he	4.6000000	80zhe1	36
129	sb	g	u238he	rc	cu		2.0388794	15.0	2.0300000	15.0000000%	0				0.0000000	85liu1	36
129	sb	g	u238he	es	fc		2.0796091	17.0	0.9966000	16.0000000%	129			u238he	1.0000000	74mee1	0
129	sb	g	u238he	es	cu		1.6140292	15.0	1.6070000	15.0000000%	0				0.0000000	91jam3	36
129	sb	g	u238he	es	cu		2.0780500	15.0	2.0690000	15.0000000%	0				0.0000000	89rid1	36
129	sb	g	u238he	es	fc		2.0789831	16.0	0.9963000	15.0000000%	129			u238he	1.0000000	89rid1	36
129			pu239t	cm	cu		0.0000000	0.0	1.7000000	0.0000000	0				0.0000000	72sid1	0
129			pu239t	cm	cu		0.0000000	0.0	1.6500000	0.0000000	0				0.0000000	73lam1	0
129			pu239t	cm	cu		0.0000000	0.0	1.5400000	20.0000000%	0				0.0000000	77cro1	0
129			pu239t	es	cu		1.4223189	20.0	1.4290000	20.0000000%	0				0.0000000	87wah1	36
129	i	g	pu239t	es	cu		1.4929870	20.0	1.5000000	0.3000000	0				0.0000000	73wal1	0
129	te	g	pu239t	cm	in		0.0000000	0.0	0.0001503	65.0000000%	0				1.0000000	88wah1	0

129	te	m	pu239t	cm	in		0.0000000	0.0	0.0003680	65.0000000%	0			1.0000000	88wah1	0
129	sb	g	pu239t	rc	cu		1.4584465	20.1	1.5000000	20.0000000%	97	zr	g	pu239t	5.4600000	74jen1	0
129	sb	g	pu239t	rc	cu		1.2939221	10.8	1.3000000	0.1400000	0			0.0000000	77gud1	0
129	sb	g	pu239t	rc	cu		1.3735480	5.0	1.3800000	0.0500000	0			0.0000000	80dic1	0
129	sb	g	pu239t	cm	in		0.0000000	0.0	0.3961000	12.0000000%	0			1.0000000	88wah1	0
129	sn	g	pu239t	cm	in		0.0000000	0.0	0.7150000	11.0000000%	0			1.0000000	88wah1	0
129	sn	m	pu239t	cm	in		0.0000000	0.0	0.2920000	11.0000000%	0			1.0000000	88wah1	0
129	in	g	pu239t	es	fc		0.0462741	30.3	0.0339000	0.0000000	129			pu239t	1.0000000	74wol1	0
129	in	g	pu239t	cm	in		0.0000000	0.0	0.0080100	28.0000000%	0			1.0000000	88wah1	0
129	in	m	pu239t	cm	in		0.0000000	0.0	0.0080100	28.0000000%	0			1.0000000	88wah1	0
129			pu239f	cm	cu	x3	0.0000000	0.0	0.6240000	44.4000000%	0			0.0000000	77cro1	0
129			pu239f	es	cu	su	0.0000000	0.0	1.6100000	0.1200000	148	nd	g	pu239f	1.6500000	74mae1	0
129			pu239f	rc	cu		1.4778878	10.0	1.5070000	10.0000000%	0			0.0000000	81koc1	36	
129	i	g	pu239f	es	cu		1.2582650	30.0	1.3360000	0.0000000	148	nd	g	pu239f	1.7300000	70lis1	0
129	i	g	pu239f	es	cu	cm	1.1768184	30.0	1.2000000	0.0000000	0			0.0000000	72sid1	0
129	i	g	pu239f	es	re		1.3449600	10.8	1.0000000	10.0000000%	129			pu239t	1.0000000	74mee4	0
129	i	g	pu239f	es	cu		1.6083185	10.4	1.6400000	0.1700000	0			0.0000000	77mae1	0
129	i	g	pu239f	es	cu		1.6056980	10.4	1.6300000	0.1700000	148	nd	g	pu239f	1.6540000	77mae1	0
129	te	g	pu239f	rc	cu	x1	0.0000000	0.0	0.7200000	0.0000000	140	ba	g	pu239f	5.4000000	61bon1	0
129	te	m	pu239f	rc	cu	x1	0.0000000	0.0	0.4500000	0.0900000	140	ba	g	pu239f	5.4000000	61bon1	0
129	sb	g	pu239f	rc	cu		1.3701022	25.0	1.3000000	25.0000000%	97	zr	g	pu239f	4.9000000	74jen1	0
129	sb	g	pu239f	rc	cu		1.2748866	10.8	1.3000000	0.1400000	0			0.0000000	77gud1	0
129			pu241t	cm	cu	es	0.0000000	0.0	1.0080000	0.0000000	0			0.0000000	68lis3	0
129			pu241t	cm	cu		0.0000000	0.0	1.0200000	0.0000000	0			0.0000000	72sid1	0
129			pu241t	cm	cu		0.0000000	0.0	0.9370000	20.0000000%	0			0.0000000	77cro1	0
129	i	g	pu241t	es	cu		0.8199438	20.0	0.8000000	0.1600000	0			0.0000000	73wal1	0
129			u233t	cm	cu	x3	0.0000000	0.0	1.1400000	20.0000000%	0			0.0000000	77cro1	0
129			u233t	cm	cu	x3	0.0000000	0.0	1.7000000	0.0000000	0			0.0000000	72sid1	0
129			u233t	cm	cu		0.0000000	0.0	1.5600000	0.0000000	0			0.0000000	73lam1	0
129			u233t	es	cu		1.5468906	20.0	1.6160000	20.0000000%	0			0.0000000	87wah1	36	
129	i	g	u233t	es	cu		1.6272983	20.0	1.7000000	0.3400000	0			0.0000000	73wal1	0
129	te	m	u233t	rc	cu		0.2590689	20.2	0.0022000	0.0002000	140	ba	g	u233t	0.0520000	51gru1	0
129	i	g	th232f	es	cu	cm	0.3960764	30.0	0.4000000	0.0000000	0			0.0000000	65eng1	0
129	i	g	th232f	es	cu	cm	0.4356840	30.0	0.4400000	0.0000000	0			0.0000000	72sid1	0
129	i	g	th232f	es	cu	cm	0.3564687	30.0	0.3600000	0.0000000	0			0.0000000	73lam1	0
129	i	g	th232f	es	cu		0.3832039	20.0	0.3870000	20.0000000%	0			0.0000000	74mee0	0

129 i g th232f es cu 0.3822137 20.0 0.3860000 20.0000000% 0 0.0000000 77cro1 0
129 sb g th232f rc cu x1 0.0000000 0.0 0.1480000 0.0050000 99 mo g th232f 2.7800000 68lyl1 0
129 sb g th232f rc re 0.2185770 5.0 0.8430000 0.0080000 99 mo g u235t 0.0000000 81ert1 7
129 sb g th232f cm cu 0.0000000 0.0 0.3100000 0.0250000 0 0.0000000 81ert1 0
129 sb g th232f rc cu 0.4257821 20.9 0.4300000 0.0900000 0 0.0000000 86ric1 0
130 xe g u235t ms cu x1 0.0000000 0.0 0.0005000 20.0000000% 131 xe g u235t 2.9300000 56ken1 36
130 xe g u235t ms re 0.0001630 99.9 0.0000565 0.0000565 131 xe g u235t 1.0000000 63mch1 0
130 xe g u235t ms cu 0.0002273 13.1 0.0002300 0.0000300 131 xe g u235t 2.9200000 70tra1 0
130 xe g u235t es fi 0.0000000 30.1 0.0000102 0.0000000 130 u235t 1000.0000000 74wol1 0
130 i g u235t es fi su 0.0000000 0.0 0.0000805 0.0000105 130 u235t 1.0000000 70tra1 40
130 i g u235t es fi 0.0001454 13.2 0.0000805 0.0000105 130 u235t 1.0000000 70tra1 40
130 i g u235t cm in 0.0000000 0.0 0.0001692 13.0000000% 0 1.0000000 88wah1 0
130 i m u235t es fi su 0.0000000 0.0 0.0000345 0.0000045 130 u235t 1.0000000 70tra1 40
130 i m u235t es fi 0.0000623 13.2 0.0000345 0.0000045 130 u235t 1.0000000 70tra1 40
130 i m u235t cm in 0.0000000 0.0 0.0000725 13.0000000% 0 1.0000000 88wah1 0
130 te g u235t rc fi 0.0541887 15.1 0.0300000 0.0000000 130 u235t 1.0000000 69bla1 0
130 u235t cm cu 0.0000000 0.0 1.9000000 0.0000000 0 0.0000000 72sid1 0
130 u235t cm cu 0.0000000 0.0 2.0000000 0.0000000 0 0.0000000 73lam1 0
130 u235t cm cu 0.0000000 0.0 1.7000000 0.5000000 0 0.0000000 73wal1 0
130 u235t ms cu 1.8088085 2.0 1.8124000 0.0230000 0 0.0000000 76dii1 0
130 u235t rc cu 1.8062888 12.7 1.4300000 0.1800000 130 u235t 1.4300000 74fow1 0
130 u235t rc cu rp 1.8546660 26.6 1.4300000 0.0000000 no. relative values = 2 74fow1
130 u235t cm cu 0.0000000 0.0 1.5700000 20.0000000% 0 0.0000000 77cro1 0
130 u235t es cu 1.8593082 20.0 1.8630000 20.0000000% 0 0.0000000 87wah1 36
130 te g u235t rc cu rp 1.9341563 16.1 1.0000000 0.0000000 no. relative values = 1 82lae1
130 te g u235t sp fi 0.0541887 99.9 0.0300000 0.0900000 130 u235t 1.0000000 84den1 36
130 te g u235t cm in 0.0000000 0.0 0.0360900 59.0000000% 0 1.0000000 88wah1 0
130 sb g u235t rc fi x1 0.0000000 0.0 0.0900000 0.0000000 130 u235t 1.0000000 69bla1 0
130 sb g u235t rc fi 0.2492679 24.7 0.1380000 0.0340000 130 u235t 1.0000000 74fow1 0
130 sb g u235t rc in 0.2173057 18.2 0.2200000 0.0400000 92 sr g u235t 6.0000000 76ima1 0
130 sb g u235t rc fi su 0.0000000 0.0 0.1390000 0.0300000 130 u235t 1.0000000 72fow1 0
130 sb g u235t sp fi 0.1871315 14.1 0.1036000 14.0000000% 130 u235t 1.0000000 84den1 0
130 sb g u235t sp in 0.2035957 13.2 0.2040000 0.0270000 0 0.0000000 90rud1 0
130 sb g u235t sp cu sm 0.0000000 0.0 1.4200000 0.1700000 0 0.0000000 90rud1 0
130 sb g u235t es in 0.1960108 8.0 0.1964000 8.0000000% 0 1.0000000 88wah1 0
130 sb m u235t es fi 0.3865458 16.1 0.2140000 16.0000000% 130 u235t 1.0000000 89rid1 0

130 sb m u235t es in 0.3338371 8.0 0.3345000 8.0000000% 0 1.0000000 88wah1 0
130 sb m u235t rc cu su 0.0000000 0.0 2.1000000 20.0000000% 0 0.0000000 53pap1 18
130 sb m u235t rc cu x4 0.0000000 0.0 2.0000000 25.0000000% 0 0.0000000 56pap1 18
130 sb m u235t rc fi 0.3648703 15.0 0.2020000 0.0300000 130 u235t 1.0000000 74fow1 0
130 sb m u235t rc fi su 0.0000000 0.0 0.2030000 0.0270000 130 u235t 1.0000000 72fow1 0
130 sb m u235t rc fi x4 0.0000000 0.0 0.3700000 0.0000000 130 u235t 1.0000000 69bla1 0
130 sb m u235t rc in 0.2666934 18.6 0.2700000 0.0500000 92 sr g u235t 6.0000000 76ima1 0
130 sb m u235t sp fi 0.3186293 14.1 0.1764000 14.0000000% 130 u235t 1.0000000 84den1 0
130 sb m u235t sp in 0.2994055 23.3 0.3000000 0.0700000 0 0.0000000 90rud1 0
130 sn g u235t rc fc 0.9031444 15.1 0.5000000 0.0000000 130 u235t 1.0000000 69bla1 0
130 sn g u235t es fc cm 1.1379619 11.3 0.6300000 0.0700000 130 u235t 1.0000000 73ami1 0
130 sn g u235t rc cu 1.0865286 10.1 1.1000000 0.1100000 92 sr g u235t 6.0000000 76ima1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

130 sn g u235t rc cu 1.1241937 11.4 0.8900000 0.1000000 130 u235t 1.4300000 74fow1 0
130 sn g u235t rc fc su 0.0000000 0.0 0.6280000 0.0410000 130 u235t 1.0000000 72fow1 0
130 sn g u235t cm in 0.0000000 0.0 1.2880000 14.0000000% 0 1.0000000 88wah1 0
130 sn g u235t sp cu 1.0688777 8.8 1.0710000 0.0940000 0 0.0000000 90rud1 0
130 sn g u235t sp in 1.0738678 8.7 1.0760000 0.0940000 0 0.0000000 90rud1 0
130 in g u235t es fc 0.0910370 30.1 0.0504000 0.0000000 130 u235t 1.0000000 74wol1 0
130 in g u235t rc fi aj 0.0091218 38.1 0.0050500 38.0000000% 130 u235t 1.0000000 83shm1 0
130 in g u235t cm in 0.0000000 0.0 0.0061600 21.0000000% 0 1.0000000 88wah1 0
130 in g u235t sp in 0.0087826 13.6 0.0088000 0.0012000 0 0.0000000 90rud1 0
130 u235f es cu cm 2.0958532 30.0 2.1100000 0.0000000 0 0.0000000 72sid1 0
130 u235f cm cu 0.0000000 0.0 1.5700000 20.0000000% 0 0.0000000 77cro1 0
130 u235f es cu 1.9733151 30.0 2.1360000 0.0000000 148 nd g u235f 1.8100000 63wea1 0
130 u235f es re 2.0320483 10.2 1.1300000 10.0000000% 130 u235t 1.0000000 74mee4 0
130 u235f es cu 2.0639039 30.0 2.1600000 0.0000000 148 nd g u235f 1.7500000 70lis1 0
130 u235f es cu 1.6488703 10.0 1.6600000 0.1660000 0 0.0000000 81mae1 0
130 u235f es cu 1.6488703 10.0 1.6600000 0.1660000 0 0.0000000 81mae2 0
130 u235f es cu 1.6488703 10.0 1.6600000 0.1660000 0 0.0000000 81mae3 0
130 u235f cm cu 0.0000000 0.0 1.6600000 0.1660000 0 0.0000000 81mae1 0
130 u235f es cu 1.7020041 12.3 1.7100000 0.2100000 148 nd g u235f 1.6800000 74mae1 0
130 u235f rc cu 1.9816243 10.0 1.9950000 10.0000000% 0 0.0000000 81koc1 36

130	i	g	u235he	cm	fi	0.0000000	0.0	0.0238000	0.0024600	130		u235he	1.0000000	72net2	40
130	i	m	u235he	cm	fi	0.0000000	0.0	0.0052000	0.0005400	130		u235he	1.0000000	72net2	40
130			u235he	es	cu	3.4357477	21.5	3.4400000	20.0000000%	113		u235he	1.0800000	74mee6	0
130			u235he	cm	cu	0.0000000	0.0	3.3900000	20.0000000%	0			0.0000000	77cro1	0
130			u235he	es	cu	3.5382022	30.0	3.5800000	0.0000000	0			0.0000000	63wea1	0
130			u235he	es	cu	3.6073849	10.0	3.6500000	10.0000000%	0			0.0000000	74mee8	0
130			u238f	es	cu	1.8723692	30.0	1.8290000	0.0000000	0			0.0000000	63wea1	0
130			u238f	cm	cu	x3	0.0000000	0.0	1.1000000	0.0000000	0		0.0000000	64wal1	0
130			u238f	es	re	1.9886391	20.0	0.5100000	20.0000000%	145		u238f	1.0000000	72mat1	0
130			u238f	es	cu	cm	2.0474240	30.0	2.0000000	0.0000000	0		0.0000000	72sid1	0
130			u238f	cm	cu	x3	0.0000000	0.0	1.1400000	20.0000000%	0		0.0000000	77cro1	0
130			u238f	es	cu	1.9041043	10.0	1.8600000	0.1860000	0			0.0000000	81mae1	0
130			u238f	es	cu	1.9041043	10.0	1.8600000	0.1860000	0			0.0000000	81mae2	0
130			u238f	es	cu	1.9041043	10.0	1.8600000	0.1860000	0			0.0000000	81mae3	0
130			u238f	cm	cu	0.0000000	0.0	1.8600000	0.1860000	0			0.0000000	81mae1	0
130			u238f	es	cu	1.9130365	13.1	1.8400000	0.2400000	148	nd	g	u238f	2.0800000	74mae1	0
130			u238f	rc	cu	x4	0.0000000	0.0	1.3400000	40.0000000%	0		0.0000000	81koc1	36
130	sb	g	u238f	rc	cu	x1	0.0000000	0.0	0.6600000	0.0400000	0		0.0000000	85li 1	0
130			u238he	cm	cu	es	0.0000000	0.0	3.7230000	0.0000000	0		0.0000000	63wea1	0
130			u238he	cm	cu	su	0.0000000	0.0	3.0000000	0.0000000	0		0.0000000	73dar1	0
130			u238he	es	cu	3.8800084	23.0	3.5900000	20.0000000%	119		u238he	0.6800000	74mee6	0
130			u238he	es	cu	2.5714245	20.4	2.5400000	20.4000000%	0			0.0000000	77cro1	0
130	sb	g	u238he	rc	cu	x1	0.0000000	0.0	1.7800000	0.1000000	0		0.0000000	85liu1	0
130	xe	g	pu239t	ms	cu	0.0041366	1.6	0.0052000	0.0000000	131	xe	g	u235t	3.6000000	56ken1	0
130	xe	g	pu239t	ms	cu	0.0051140	3.4	0.0050600	0.0001700	131	xe	g	pu239t	3.7800000	70tra1	0
130	i	g	pu239t	es	fi	0.0032688	9.4	0.0014000	0.0000700	130		pu239t	1.0000000	62wah1	40
130	i	g	pu239t	es	fi	0.0030564	8.6	0.0013090	0.0000420	130		pu239t	1.0000000	70tra1	40
130	i	g	pu239t	cm	in	0.0000000	0.0	0.0032230	12.0000000%	0			1.0000000	88wah1	0
130	i	m	pu239t	es	fi	0.0014009	9.4	0.0006000	0.0000300	130		pu239t	1.0000000	62wah1	40
130	i	m	pu239t	es	fi	0.0013099	8.6	0.0005610	0.0000180	130		pu239t	1.0000000	70tra1	40
130	i	m	pu239t	cm	in	0.0000000	0.0	0.0013820	12.0000000%	0			1.0000000	88wah1	0
130			pu239t	cm	cu	x3	0.0000000	0.0	2.5000000	0.0000000	0		0.0000000	72sid1	0
130			pu239t	cm	cu	0.0000000	0.0	2.6000000	0.0000000	0			0.0000000	73lam1	0
130			pu239t	es	cu	2.4766233	20.0	2.5000000	0.5000000	0			0.0000000	73wal1	0
130			pu239t	cm	cu	0.0000000	0.0	2.6100000	20.0000000%	0			0.0000000	77cro1	0
130			pu239t	es	cu	2.1279147	20.0	2.1480000	20.0000000%	0			0.0000000	87wah1	36

130	te g	pu239t	cm	in		0.0000000	0.0	0.2527000	76.0000000%	0			1.0000000	88wah1	0
130	sb g	pu239t	rc	in		0.5493701	12.4	0.5800000	0.0700000	92	sr g	pu239t	3.1000000	76ima1	0
130	sb g	pu239t	rc	cu		0.7628000	7.8	0.7700000	0.0600000	0			0.0000000	81dic1	0
130	sb g	pu239t	es	in		0.3636674	14.0	0.3671000	14.0000000%	0			1.0000000	88wah1	0
130	sb m	pu239t	rc	in		0.4735949	10.4	0.5000000	0.0500000	92	sr g	pu239t	3.1000000	76ima1	0
130	sb m	pu239t	rc	cu		1.0104623	12.7	1.0200000	0.1300000	0			0.0000000	81dic1	0
130	sb m	pu239t	rc	cu	su	0.0000000	0.0	0.8560000	0.0440000	0			0.0000000	80dic1	0
130	sb m	pu239t	rc	cu		1.7831688	7.2	1.8000000	0.1300000	0			0.0000000	77gud1	0
130	sb m	pu239t	es	in		0.6192549	14.0	0.6251000	14.0000000%	0			1.0000000	88wah1	0
130	sn g	pu239t	rc	cu		0.9187741	10.7	0.9700000	0.1000000	92	sr g	pu239t	3.1000000	76ima1	0
130	sn g	pu239t	cm	in		0.0000000	0.0	0.8516000	20.0000000%	0			1.0000000	88wah1	0
130	in g	pu239t	cm	in		0.0000000	0.0	0.0416800	60.0000000%	0			1.0000000	88wah1	0
130	xe g	pu239f	ms	cu		0.0050995	99.9	0.0052000	0.0052000	0			0.0000000	56ken1	0
130		pu239f	es	cu		1.9935457	30.0	2.0800000	0.0000000	148	nd g	pu239f	1.7000000	69lis1	0
130		pu239f	es	cu	cm	2.2653754	30.0	2.3100000	0.0000000	0			0.0000000	72sid1	0
130		pu239f	cm	cu		0.0000000	0.0	1.9000000	20.0000000%	0			0.0000000	77cro1	0
130		pu239f	es	cu		2.5218325	10.2	2.5600000	0.2600000	148	nd g	pu239f	1.6540000	77mae1	0
130		pu239f	es	cu		2.5399664	10.0	2.5900000	0.2600000	0			0.0000000	77mae1	0
130		pu239f	es	cu		2.0173681	30.0	2.1420000	0.0000000	148	nd g	pu239f	1.7300000	70lis1	0
130		pu239f	es	cu	su	0.0000000	0.0	2.5400000	0.1800000	148	nd g	pu239f	1.6500000	74mae1	0
130		pu239f	es	re		2.2883468	12.8	0.9900000	10.0000000%	130		pu239t	1.0000000	74mee4	0
130		pu239f	rc	cu		2.4742607	10.0	2.5230000	10.0000000%	0			0.0000000	81koc1	36
130	sb m	pu239f	rc	cu		1.7652276	7.2	1.8000000	0.1300000	0			0.0000000	77gud1	0
130		pu241t	cm	cu	es	0.0000000	0.0	1.8170000	0.0000000	0			0.0000000	68lis3	0
130		pu241t	cm	cu		0.0000000	0.0	1.8400000	0.0000000	0			0.0000000	72sid1	0
130		pu241t	es	cu		1.7211903	20.0	1.7000000	0.3400000	0			0.0000000	73wal1	0
130		pu241t	es	cu		1.8426861	9.9	1.8200000	0.1800000	0			0.0000000	77mae1	0
130		pu241t	cm	cu	x3	0.0000000	0.0	2.5000000	20.0000000%	0			0.0000000	77cro1	0
130	xe g	u233t	ms	cu		0.0036448	1.7	0.0039000	0.0000000	131	xe g	u233t	3.7400000	56ken1	0
130	xe g	u233t	ms	cu		0.0030004	5.9	0.0029100	0.0001700	131	xe g	u233t	3.3900000	70tra1	0
130	i g	u233t	es	fi		0.0018434	19.1	0.0009100	0.0001400	130		u233t	1.0000000	62wah1	40
130	i g	u233t	es	fi		0.0015882	12.9	0.0007840	0.0000490	130		u233t	1.0000000	70tra1	40
130	i m	u233t	es	fi		0.0007900	19.1	0.0003900	0.0000600	130		u233t	1.0000000	62wah1	40
130	i m	u233t	es	fi		0.0006807	12.9	0.0003360	0.0000210	130		u233t	1.0000000	70tra1	40
130		u233t	cm	cu		0.0000000	0.0	2.2000000	0.0000000	0			0.0000000	72sid1	0
130		u233t	cm	cu		0.0000000	0.0	2.4000000	0.0000000	0			0.0000000	73lam1	0

130 u233t es cu 2.4244002 20.0 2.5000000 0.5000000 0 0.0000000 73wal1 0
130 u233t cm cu 0.0000000 0.0 2.3500000 20.0000000% 0 0.0000000 77cro1 0
130 u233t es cu 2.1305629 20.0 2.1970000 20.0000000% 0 0.0000000 87wah1 36
130 te g u233t rc cu rp 1.8486145 17.7 1.0000000 0.0000000 no. relative values = 1 82lae1
130 sb g u233t rc in 0.3381234 11.5 0.3600000 0.0400000 92 sr g u233t 6.6000000 76ima1 0
130 sb g u233t sp fi 0.4446520 12.4 0.2195000 4.0000000% 130 u233t 1.0000000 86lei1 40
130 sb m u233t rc in 0.4038696 12.0 0.4300000 0.0500000 92 sr g u233t 6.6000000 76ima1 0
130 sb m u233t sp fi 0.7566175 12.4 0.3735000 4.0000000% 130 u233t 1.0000000 86lei1 40
130 sn g u233t rc cu 0.6386775 12.1 0.6800000 0.0800000 92 sr g u233t 6.6000000 76ima1 0
130 sn g u233t sp fc 0.8244801 12.4 0.4070000 3.0000000% 130 u233t 1.0000000 86lei1 0
130 i g th232f rc in x1 0.0000000 0.0 0.0012000 0.0003000 0 0.0000000 82li 1 0
130 th232f es cu cm 0.8555850 30.0 0.8800000 0.0000000 0 0.0000000 65eng1 0
130 th232f es cu cm 0.8361399 30.0 0.8600000 0.0000000 0 0.0000000 72sid1 0
130 th232f es cu cm 0.7778045 30.0 0.8000000 0.0000000 0 0.0000000 73lam1 0
130 th232f cm cu 0.0000000 0.0 0.8010000 20.0000000% 0 0.0000000 77cro1 0
130 th232f es cu 0.8166947 20.0 0.8400000 20.0000000% 0 0.0000000 74mee0 0
130 sb g th232f rc cu 0.5347406 18.2 0.5500000 0.1000000 0 0.0000000 86ric1 0
130 sb m th232f es cu 0.2527865 50.0 0.2600000 0.1300000 0 0.0000000 86ric1 0
131 u235t es cu 2.8785732 30.0 2.8800000 0.0000000 0 0.0000000 72sid1 0
131 u235t cm cu 0.0000000 0.0 2.8200000 0.0000000 0 0.0000000 73lam1 0
131 u235t ms cu 2.9235509 2.0 2.9250000 0.0400000 0 0.0000000 76dii1 0
131 xe g u235t ms cu 2.7986129 5.0 2.8000000 5.0000000% 0 0.0000000 49tho1 0
131 xe g u235t cm cu 0.0000000 0.0 2.8000000 0.0000000 0 0.0000000 50cor2 0
131 xe g u235t ms cu 2.9285485 2.0 2.9300000 1.0000000% 0 0.0000000 56bla1 0
131 xe g u235t ms re 2.8911169 0.6 0.1573000 0.0005000 148 nd g u235t 0.0910100 76mae1 0
131 xe g u235t ms cu 2.7886178 2.0 2.7900000 1.4000000% 0 0.0000000 70lis1 0
131 xe g u235t ms cu 2.9095579 2.0 2.9110000 0.0190000 0 0.0000000 78mae1 0
131 xe g u235t ms cu 2.9215519 2.0 2.9230000 0.0190000 0 0.0000000 78mae1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

131 xe g u235t ms cu 2.9075589 2.0 2.9090000 0.0190000 0 0.0000000 78mae1 0
131 xe g u235t ms cu cm 2.9125564 6.0 2.9140000 0.0000000 0 0.0000000 80mae3 0
131 u235t cm cu x3 0.0000000 0.0 2.8000000 0.0700000 0 0.0000000 73wal1 0
131 u235t cm cu x3 0.0000000 0.0 2.7800000 1.7000000% 0 0.0000000 77cro1 0

131 xe g u235t ms cu rp 2.8670085 9.1 3.0000000 0.0000000 no. relative values = 3 55wan1
131 xe g u235t ms re rp 2.8845194 1.8 1.0000000 0.0000000 no. relative values = 3 63mch1
131 xe g u235t ms cu rp 2.9150839 9.1 2.8000000 0.0000000 no. relative values = 3 49tho1
131 xe g u235t ms cu rp 2.8687096 1.8 2.9300000 0.0000000 no. relative values = 3 56bla1
131 xe g u235t ms cu rp 2.9069219 3.3 2.7900000 0.0000000 no. relative values = 2 70lis1
131 xe g u235t ms cu 2.9185534 5.0 2.9200000 5.0000000% 0 0.0000000 55pet2 36
131 xe g u235t ms cu x4 0.0000000 0.0 3.0000000 5.0000000% 0 0.0000000 55wan1 0
131 xe m u235t cm cu x3 0.0000000 0.0 0.0312000 5.0000000% 0 0.0000000 73net2 0
131 i g u235t bm cu 2.8585831 4.6 2.8600000 4.6000000% 0 0.0000000 77gil1 0
131 i g u235t cm cu 0.0000000 0.0 2.8700000 5.0000000% 0 0.0000000 73net2 0
131 i g u235t cm in 0.0000000 0.0 0.0043670 10.0000000% 0 1.0000000 88wah1 0
131 i g u235t rc cu 2.8738587 5.1 0.4640000 3.0000000% 140 ba g u235t 1.0000000 72lar1 0
131 i g u235t rc cu 3.1688499 60.0 0.0220000 0.0000000 140 ba g u235t 0.0430000 51gru1 0
131 i g u235t rc cu 2.6786723 6.7 2.6800000 0.1800000 0 0.0000000 74bla1 0
131 i g u235t rc cu 2.7086574 5.0 2.7100000 0.0200000 0 0.0000000 79ram1 0
131 i g u235t rc cu 2.7986129 60.0 2.8000000 0.0000000 0 0.0000000 51kat8 0
131 i g u235t rc cu 2.8429920 60.0 2.8000000 0.0000000 140 ba g u235t 6.1000000 51eng2 0
131 i g u235t rc cu 2.8385930 5.0 2.8400000 3.8000000% 0 0.0000000 81lau1 0
131 i g u235t rc cu 2.8065027 60.0 2.9000000 0.0000000 140 ba g u235t 6.4000000 52eng1 0
131 i g u235t rc cu 2.8985633 5.2 2.9000000 0.1500000 0 0.0000000 76thi1 0
131 i g u235t rc cu 2.9085584 5.0 2.9100000 0.0300000 0 0.0000000 72deb1 0
131 i g u235t rc cu 3.0315813 20.0 3.0200000 0.1200000 140 ba g u235t 6.1700000 53pap1 0
131 i g u235t rc cu 3.1784246 6.3 3.1800000 0.2000000 0 0.0000000 80wan1 0
131 i g u235t rc cu 2.9582185 5.0 3.2800000 0.0700000 132 i g u235t 4.7800000 77gud1 0
131 i g u235t rc cu nr 3.1475982 20.0 3.1000000 0.1000000 140 ba g u235t 6.1000000 53bar1 0
131 i g u235t rc cu rp 2.7838384 11.2 2.6600000 0.0000000 no. relative values = 2 74lar1
131 i g u235t rc cu su 0.0000000 0.0 0.4640000 3.0000000% 140 ba g u235t 1.0000000 72lar1 0
131 i g u235t rc cu su 0.0000000 0.0 2.6200000 3.0000000% 95 zr g u235t 6.4500000 73lar4 0
131 i g u235t rc cu su 0.0000000 0.0 2.8600000 2.9000000% 0 0.0000000 76gil4 0
131 i g u235t rc cu x4 0.0000000 0.0 2.2300000 0.0000000 140 ba g u235t 5.6000000 47yaf1 0
131 i g u235t rc cu x4 0.0000000 0.0 2.6800000 0.0700000 0 0.0000000 71mcl1 0
131 i g u235t rc fi ul 0.0000000 0.0 0.0030000 0.0000000 131 i g u235t 1.0000000 73kik1 0
131 i g u235t rc fi x4 0.0000000 0.0 0.0050000 0.0050000 131 i g u235t 1.0000000 55wah1 0
131 i g u235t rc in 0.0022778 30.5 0.0023000 0.0007000 135 i g u235t 6.3400000 80nis1 0
131 i g u235t rc in 0.0041033 9.6 0.0042000 0.0004000 99 mo g u235t 6.2500000 70del1 0
131 i g u235t rc in su 0.0000000 0.0 0.0023000 0.0007000 135 i g u235t 6.3000000 77nis1 0

131 i g u235t rc in su 0.0000000 0.0 0.0041100 10.0000000% 0 0.0000000 68gre1 0
131 te g u235t rc fi x4 0.0000000 0.0 0.0150000 0.0150000 131 i g u235t 1.0000000 55wah1 0
131 te g u235t cm fc x3 0.0000000 0.0 0.9980000 0.0000000 131 u235t 1.0000000 70del1 0
131 te g u235t es cu 2.5017600 8.1 2.5030000 8.1000000% 0 0.0000000 73net2 0
131 te g u235t rc fi su 0.0000000 0.0 0.0290000 0.0030000 131 u235t 1.0000000 73sha1 0
131 te g u235t rc fi 0.0837927 10.4 0.0290000 0.0030000 131 u235t 1.0000000 74par1 0
131 te g u235t rc in 0.1088147 18.2 0.1100000 0.0200000 92 sr g u235t 6.0000000 76ima1 0
131 te g u235t rc fi 0.1013892 15.0 0.1210000 0.0000000 131 u235t 1.0000000 69bla1 39
131 te g u235t rc cu 2.2988606 60.0 2.3000000 0.0000000 0 0.0000000 51kat8 0
131 te g u235t rc fi 0.1282895 18.6 0.0444000 0.0082600 131 i g u235t 1.0000000 65sar1 0
131 te g u235t rc in x1 0.0000000 0.0 1.4000000 0.3000000 140 ba g u235t 6.1700000 53pap1 0
131 te g u235t sp fi 0.0335171 75.0 0.0116000 75.0000000% 131 u235t 1.0000000 84den1 36
131 te g u235t cm in 0.0000000 0.0 0.0856000 12.0000000% 0 1.0000000 88wah1 0
131 te g u235t rc fi sm 0.0000000 0.0 0.1240000 0.0140000 131 u235t 1.0000000 65sar1 0
131 te m u235t rc cu 0.4467559 60.0 0.4400000 0.0000000 140 ba g u235t 6.1000000 51kat3 0
131 te m u235t rc fi le 0.1444702 30.0 0.0500000 0.0000000 131 i g u235t 1.0000000 55wah1 0
131 te m u235t es cu 0.4442798 32.1 0.4445000 32.1000000% 0 0.0000000 73net2 0
131 te m u235t rc fi su 0.0000000 0.0 0.0560000 0.0050000 131 u235t 1.0000000 73par1 0
131 te m u235t rc fi su 0.0000000 0.0 0.0560000 0.0090000 131 u235t 1.0000000 73sha1 0
131 te m u235t rc fi 0.1618066 16.1 0.0560000 0.0090000 131 u235t 1.0000000 74par1 0
131 te m u235t rc in 0.1099455 30.0 0.1100000 0.0000000 0 0.0000000 60gle1 0
131 te m u235t rc in 0.2077371 9.6 0.2100000 0.0200000 92 sr g u235t 6.0000000 76ima1 0
131 te m u235t rc fi 0.2482287 15.0 0.1210000 0.0000000 131 u235t 1.0000000 69bla1 39
131 te m u235t rc cu 0.4497771 60.0 0.4500000 0.0000000 0 0.0000000 51kat8 0
131 te m u235t rc fi 0.2302854 13.8 0.0797000 0.0110000 131 i g u235t 1.0000000 65sar1 0
131 te m u235t rc cu 0.4175953 20.0 0.4160000 0.0020000 140 ba g u235t 6.1700000 53pap1 0
131 te m u235t rc cu x4 0.0000000 0.0 1.9000000 0.1000000 0 0.0000000 77gud1 0
131 te m u235t rc cu 0.4997523 10.0 0.5000000 0.0500000 0 0.0000000 79bra1 0
131 te m u235t rc cu 0.4997523 10.0 0.5000000 0.0500000 0 0.0000000 85bra1 0
131 te m u235t sp fi 0.0820591 75.0 0.0284000 75.0000000% 131 u235t 1.0000000 84den1 36
131 te m u235t cm in 0.0000000 0.0 0.2096000 12.0000000% 0 1.0000000 88wah1 0
131 sb g u235t rc cu 2.5587318 10.0 2.5600000 0.2000000 0 0.0000000 56pap1 0
131 sb g u235t rc in 1.6417865 24.1 1.6600000 0.4000000 0 0.0000000 66str1 4
131 sb g u235t rc fi 1.5024899 15.0 0.5200000 0.0000000 131 u235t 1.0000000 69bla1 0
131 sb g u235t rc cu rp 3.2227142 53.8 1.6600000 0.0000000 no. relative values = 2 69par1
131 sb g u235t es fi 1.6382918 24.2 0.5670000 0.1370000 131 u235t 1.0000000 70del1 0

131 sb g u235t es fc 2.5282281 16.0 0.8750000 0.1400000 131 u235t 1.0000000 70del1 0
131 sb g u235t cm cu 0.0000000 0.0 2.4830000 8.1000000% 0 0.0000000 73net2 0
131 sb g u235t rc fi su 0.0000000 0.0 0.6530000 0.0500000 131 u235t 1.0000000 73par1 0
131 sb g u235t rc fi 1.7625362 8.2 0.6100000 0.0500000 131 u235t 1.0000000 74par1 0
131 sb g u235t rc in 1.5234053 6.6 1.5400000 0.1000000 92 sr g u235t 6.0000000 76ima1 0
131 sb g u235t rc fc 2.4559930 7.1 0.8500000 0.0600000 131 u235t 1.0000000 76thi1 0
131 sb g u235t sp fi 1.7914302 7.0 0.6200000 7.0000000% 131 u235t 1.0000000 84den1 36
131 sb g u235t cm in 0.0000000 0.0 1.6810000 5.0000000% 0 1.0000000 88wah1 0
131 sb g u235t sp in 1.7591281 16.5 1.7600000 0.2900000 0 0.0000000 90rud1 0
131 sb g u235t sp cu 2.6486872 14.0 2.6500000 0.3700000 0 0.0000000 90rud1 0
131 sn g u235t rc fc 1.0112913 15.0 0.3500000 0.0000000 131 u235t 1.0000000 69bla1 0
131 sn g u235t cm fc x3 0.0000000 0.0 0.4370000 0.0720000 131 u235t 1.0000000 70del1 0
131 sn g u235t rc cu x4 0.0000000 0.0 0.7800000 0.0000000 0 0.0000000 70iza1 0
131 sn g u235t cm cu 0.0000000 0.0 1.0750000 22.0000000% 0 0.0000000 73net2 0
131 sn g u235t cm fc su 0.0000000 0.0 0.3300000 0.0600000 131 u235t 1.0000000 73wah1 0
131 sn g u235t rc fc 0.9535032 18.2 0.3300000 0.0600000 131 u235t 1.0000000 74fow2 0
131 sn g u235t rc fc 0.8668211 16.7 0.3000000 0.0500000 131 u235t 1.0000000 74par1 0
131 sn g u235t rc cu 1.2659559 16.4 1.2800000 0.2100000 0 0.0000000 66str1 4
131 sn g u235t rc cu nr 0.7913794 8.9 0.8000000 0.0700000 92 sr g u235t 6.0000000 76ima1 0
131 sn g u235t sp fc 0.9823972 9.0 0.3400000 9.0000000% 131 u235t 1.0000000 84den1 36
131 sn g u235t sp fi 0.9390562 13.0 0.3250000 13.0000000% 131 u235t 1.0000000 84den1 36
131 sn g u235t cm in 0.0000000 0.0 0.9072000 7.0000000% 0 1.0000000 88wah1 0
131 sn g u235t sp in 0.8295888 9.6 0.8300000 0.0800000 0 0.0000000 90rud1 0
131 sn g u235t sp cu 0.8595739 9.3 0.8600000 0.0800000 0 0.0000000 90rud1 0
131 in g u235t es fc 0.0288940 30.0 0.0100000 0.0000000 131 u235t 1.0000000 74wol1 0
131 in g u235t rc fi aj 0.0111820 38.0 0.0038700 38.0000000% 131 u235t 1.0000000 83shm1 0
131 in g u235t cm in 0.0000000 0.0 0.0102200 38.0000000% 0 1.0000000 88wah1 0
131 in g u235t sp cu 0.0191705 37.0 0.0191800 0.0071000 0 0.0000000 90rud1 0
131 xe g u235f ms re 3.1057286 1.6 14.4100000 0.0000000 134 xe g u235f 35.5300000 70ebe1 0
131 xe g u235f ms re 3.5069949 3.0 3.6500000 3.0000000% 148 nd g u235f 1.7500000 72kry1 0
131 u235f es cu cm 3.2960888 30.0 3.3000000 0.0000000 0 0.0000000 72sid1 0
131 u235f cm cu 0.0000000 0.0 3.3000000 0.0000000 0 0.0000000 73lar3 0
131 xe g u235f ms cu su 0.0000000 0.0 3.2100000 0.0000000 0 0.0000000 76koc1 0
131 u235f cm cu 0.0000000 0.0 3.2300000 1.9000000% 0 0.0000000 77cro1 0
131 xe g u235f ms cu 3.2428776 0.8 3.2100000 0.6000000% 134 xe g u235f 7.5800000 77koc1 0
131 u235f es re 3.1271323 10.0 1.0830000 10.0000000% 131 u235t 1.0000000 74mee4 0

131 xe g u235f ms cu 3.2771113 2.0 3.2810000 0.0220000 0 0.0000000 80mae1 0
131 xe g u235f ms cu rp 3.3001157 6.0 3.1500000 0.0000000 no. relative values = 2 70lis1
131 xe g u235f ms cu cm 3.2771113 6.0 3.2810000 0.0000000 0 0.0000000 80mae3 0
131 u235f rc cu 3.0993866 5.1 3.2300000 0.0600000 140 ba g u235f 6.2200000 77bla1 0
131 xe g u235f ms cu 3.2022002 2.0 3.2060000 0.0130000 0 0.0000000 81mae1 0
131 xe g u235f cm cu 0.0000000 0.0 3.2060000 0.0130000 0 0.0000000 81mae1 0
131 xe g u235f ms cu 3.1827180 0.8 3.1800000 0.0200000 148 nd g u235f 1.6800000 74mae1 0
131 u235f rc cu 3.2061954 10.0 3.2100000 10.0000000% 0 0.0000000 81koc1 36
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

131 xe g u235f ms cu rp 3.4021938 19.0 3.1500000 0.0000000 no. relative values = 1 70lis1
131 xe m u235f cm cu x3 0.0000000 0.0 0.0390000 14.9000000% 0 0.0000000 73net2 0
131 i g u235f rc cu 3.0353391 5.1 2.9700000 3.0000000% 140 ba g u235f 5.8400000 72sch1 0
131 i g u235f rc cu su 0.0000000 0.0 3.2600000 0.1500000 0 0.0000000 73dud1 0
131 i g u235f rc cu su 0.0000000 0.0 3.1300000 7.0000000% 0 0.0000000 73dud2 0
131 i g u235f cm cu 0.0000000 0.0 3.5010000 10.0000000% 0 0.0000000 73net2 0
131 i g u235f rc cu 3.2461480 5.0 3.2500000 3.1000000% 0 0.0000000 74lar1 0
131 i g u235f rc cu 3.3160651 5.0 3.3200000 4.5000000% 0 0.0000000 75dud1 0
131 i g u235f rc cu 3.1562547 7.3 3.1600000 7.3000000% 0 0.0000000 75dud2 0
131 i g u235f rc re 3.0294419 5.0 1.0880000 0.0200000 140 ba g u235t 0.0000000 75raj1 7
131 i g u235f rc cu su 0.0000000 0.0 1.2610000 0.0190000 131 i g u235t 1.0000000 76deb1 0
131 i g u235f rc cu su 0.0000000 0.0 3.3480000 4.1000000% 0 0.0000000 76gil2 0
131 i g u235f rc cu su 0.0000000 0.0 3.2780000 4.2000000% 0 0.0000000 76gil3 0
131 i g u235f rc cu 3.6324393 5.1 1.2580000 0.0190000 131 i g u235t 1.0000000 77deb1 0
131 i g u235f bm cu 3.3060769 4.3 3.3100000 4.3000000% 0 0.0000000 77gil1 0
131 i g u235f rc re 3.1290751 5.1 0.9117000 0.0090000 140 ba g u235f 1.7390000 72rid1 0
131 i g u235f rc re 3.1918566 5.1 0.7610000 0.0080000 140 ba g u235f 1.4230000 72rid2 0
131 i g u235f rc cu 3.5111655 21.3 1.2160000 0.2590000 131 i g u235t 1.0000000 79yur1 36
131 i g u235f rc cu 3.4477309 5.1 3.4400000 3.0000000% 95 zr g u235f 6.4100000 73lar4 0
131 i g u235f rc cu 3.3160651 5.0 3.3200000 3.1000000% 0 0.0000000 81lau1 0
131 i g u235f rc cu 3.3464288 5.1 3.2800000 0.1600000 140 ba g u235f 5.8500000 78bya1 0
131 i g u235f rc cu 4.0352117 6.4 4.0400000 0.2600000 0 0.0000000 80wan1 0
131 i g u235f rc cu 3.4558991 5.0 3.4600000 3.3000000% 0 0.0000000 86dho1 0
131 i g u235f rc cu 3.4558991 5.6 3.4600000 5.6000000% 0 0.0000000 82gar1 0

131 i g u235f rc cu 3.2761125 5.0 3.2800000 0.0700000 0 0.0000000 77gud1 0
131 i g u235f rc cu 3.5857451 5.6 3.5900000 0.2000000 0 0.0000000 81mar1 0
131 i g u235f rc cu su 0.0000000 0.0 3.4400000 3.1000000% 0 0.0000000 72lar1 0
131 te g u235f cm cu 0.0000000 0.0 2.9690000 12.0000000% 0 0.0000000 73net2 0
131 te g u235f rc in sm 0.0000000 0.0 0.6300000 0.1300000 0 0.0000000 81mar1 0
131 te m u235f cm cu x3 0.0000000 0.0 0.6427000 33.0000000% 0 0.0000000 73net2 0
131 te m u235f rc cu x1 0.0000000 0.0 1.9000000 0.1000000 0 0.0000000 77gud1 0
131 sb g u235f cm cu 0.0000000 0.0 2.8800000 12.0000000% 0 0.0000000 73net2 0
131 sb g u235f rc cu 2.5569658 5.0 2.5600000 0.1100000 0 0.0000000 81mar1 0
131 sn g u235f cm cu 0.0000000 0.0 1.0890000 23.0000000% 0 0.0000000 73net2 0
131 sn g u235f rc cu x4 0.0000000 0.0 0.5700000 0.0500000 0 0.0000000 81mar1 0
131 u235he cm cu es 0.0000000 0.0 4.1520000 0.0000000 0 0.0000000 63wea1 0
131 u235he es cu 4.1060757 21.5 4.0800000 20.0000000% 113 u235he 1.0800000 74mee6 0
131 xe g u235he cm cu 0.0000000 0.0 4.3000000 0.0000000 0 0.0000000 60kat1 0
131 u235he cm cu 0.0000000 0.0 4.0900000 3.6000000% 0 0.0000000 77cro1 0
131 u235he es cu 3.9785092 10.0 3.9950000 10.0000000% 0 0.0000000 74mee8 0
131 xe g u235he ms re rp 4.0887645 3.3 20.7500000 0.0000000 no. relative values = 3 77pet1
131 xe m u235he cm cu x3 0.0000000 0.0 0.0442000 14.9000000% 0 0.0000000 73net2 0
131 i g u235he rc fi 0.1634104 99.9 0.0400000 0.0400000 131 i g u235he 1.0000000 55wah1 0
131 i g u235he rc re 4.2608678 10.0 1.4800000 0.0700000 131 i g u235t 1.0000000 55wah1 0
131 i g u235he rc re 3.9211211 10.0 1.6200000 0.0300000 99 mo g u235t 0.0000000 56for1 7
131 i g u235he rc re 4.2454369 10.4 0.8300000 0.0500000 99 mo g u235he 1.0000000 58pro1 0
131 i g u235he cm cu 0.0000000 0.0 4.2300000 0.0000000 0 0.0000000 69gun2 0
131 i g u235he rc re 4.1591766 10.1 0.9300000 0.0900000 140 ba g u235he 1.0000000 73man1 0
131 i g u235he cm cu x3 0.0000000 0.0 4.7000000 4.1000000% 0 0.0000000 73net2 0
131 i g u235he cm cu 0.0000000 0.0 4.3000000 0.0000000 0 0.0000000 60kat1 0
131 i g u235he rc cu 3.9211211 5.0 1.6200000 2.2000000% 99 mo g u235t 0.0000000 76for1 7
131 i g u235he rc cu 4.3021676 5.0 4.3200000 4.0000000% 0 0.0000000 81lau1 0
131 te g u235he rc fi x1 0.0000000 0.0 0.1500000 0.1500000 131 i g u235he 1.0000000 55wah1 0
131 te g u235he cm cu 0.0000000 0.0 3.2700000 13.0000000% 0 0.0000000 73net2 0
131 te m u235he rc re x1 0.0000000 0.0 5.5000000 1.5000000 131 te m u235t 1.0000000 55wah1 0
131 te m u235he cm cu x3 0.0000000 0.0 1.6000000 0.0000000 0 0.0000000 69gun2 0
131 te m u235he cm cu x3 0.0000000 0.0 1.6760000 22.0000000% 0 0.0000000 73net2 0
131 te m u235he rc fi 1.4298410 14.8 0.3500000 0.0500000 131 i g u235he 1.0000000 55wah1 0
131 sb g u235he cm cu x3 0.0000000 0.0 2.6280000 15.0000000% 0 0.0000000 73net2 0
131 sn g u235he cm cu x3 0.0000000 0.0 0.4694000 45.0000000% 0 0.0000000 73net2 0

131 u238f cm cu 0.0000000 0.0 3.2000000 0.0000000 0 0.0000000 73lar3 0
131 u238f cm cu 0.0000000 0.0 3.1900000 2.9000000% 0 0.0000000 77cro1 0
131 u238f es cu 3.2134135 30.0 3.2000000 0.0000000 0 0.0000000 72sid1 0
131 u238f rc cu 3.1732458 5.0 3.1600000 0.1000000 0 0.0000000 85li 1 0
131 u238f rc cu 3.3037908 5.0 3.2900000 0.1100000 0 0.0000000 85li 1 0
131 u238f rc cu 3.4845453 30.0 3.4700000 30.0000000% 0 0.0000000 81koc1 36
131 u238f rc cu x4 0.0000000 0.0 3.2600000 0.0400000 140 ba g u238f 6.1600000 77bla1 0
131 xe g u238f cm cu 0.0000000 0.0 3.2550000 0.0290000 0 0.0000000 81mae1 0
131 xe g u238f es fi 0.0000000 30.0 0.0000003 0.0000000 131 u238f 1000.0000000 74wol1 40
131 xe g u238f ms cu 3.4309897 3.0 0.4490000 0.0040000 134 xe g u238f 1.0000000 84tep1 0
131 xe g u238f ms cu 3.2737787 2.1 3.2100000 2.0000000% 148 nd g u238f 2.0800000 74mae1 36
131 xe g u238f ms cu 3.2686440 2.0 3.2550000 0.0290000 0 0.0000000 81mae1 0
131 xe g u238f ms cu rp 3.5248391 15.9 3.0000000 0.0000000 no. relative values = 1 55wan1
131 xe g u238f ms re x4 0.0000000 0.0 0.4850000 0.0000000 134 xe g u238f 1.0000000 72mat1 0
131 xe m u238f cm cu x3 0.0000000 0.0 0.0330000 14.9000000% 0 0.0000000 73net2 0
131 xe m u238f es fi 0.0000000 30.0 0.0000009 0.0000000 131 u238f 1000.0000000 74wol1 40
131 i g u238f rc cu 3.7155094 15.0 3.7000000 0.0000000 0 0.0000000 68bel1 0
131 i g u238f rc cu 3.0382284 5.2 3.1000000 0.0600000 99 mo g u238f 6.3200000 70lyl1 0
131 i g u238f rc cu su 0.0000000 0.0 3.6200000 3.1000000% 140 ba g u238f 5.9600000 72lar1 0
131 i g u238f rc re 3.1140582 5.0 1.8890000 0.0190000 140 ba g u238f 3.5400000 72rid1 0
131 i g u238f rc re 3.1009670 5.0 1.6260000 0.0160000 140 ba g u238f 3.0600000 72rid2 0
131 i g u238f rc cu su 0.0000000 0.0 3.3200000 0.1500000 0 0.0000000 73dud1 0
131 i g u238f rc cu su 0.0000000 0.0 3.3100000 7.0000000% 0 0.0000000 73dud2 0
131 i g u238f rc re 3.7348916 15.0 0.6400000 15.0000000% 140 ba g u238f 1.0000000 73man1 36
131 i g u238f es cu 3.3740842 6.1 3.3600000 6.1000000% 0 0.0000000 73net2 0
131 i g u238f rc cu 3.0627847 5.0 3.0500000 4.0000000% 0 0.0000000 74lar1 0
131 i g u238f rc cu 3.0278767 5.3 2.9100000 0.1500000 131 i g u235t 2.7900000 74yur1 0
131 i g u238f rc cu 3.2535812 5.0 3.2400000 4.7000000% 0 0.0000000 75dud1 0
131 i g u238f rc cu 3.3238746 7.3 3.3100000 7.3000000% 0 0.0000000 75dud2 0
131 i g u238f rc cu 3.3841261 15.0 3.3700000 0.0000000 0 0.0000000 75fly4 0
131 i g u238f rc cu su 0.0000000 0.0 3.2860000 4.2000000% 0 0.0000000 76gil2 0
131 i g u238f rc cu su 0.0000000 0.0 3.2390000 4.2000000% 0 0.0000000 76gil3 0
131 i g u238f rc cu 3.2880275 7.6 3.4200000 0.2600000 140 ba g u238f 6.0700000 77har1 0
131 i g u238f bm cu 3.2736650 4.3 3.2600000 4.3000000% 0 0.0000000 77gil1 0
131 i g u238f rc cu 3.8360124 20.0 3.8200000 20.0000000% 0 0.0000000 77gud1 36
131 i g u238f rc cu 3.2892511 5.0 3.4100000 0.0600000 140 ba g u238f 6.0500000 78deb1 0

131 i g u238f rc cu 3.0673955 5.0 3.1800000 0.0800000 140 ba g u238f 6.0500000 78deb1 0
131 i g u238f es cu 3.3841261 2.7 3.3700000 0.0900000 0 0.0000000 78gin1 0
131 i g u238f rc cu 3.2636231 5.0 3.2500000 0.0900000 0 0.0000000 78nag1 0
131 i g u238f rc cu 2.9262399 20.4 1.0080000 0.2050000 131 i g u235t 1.0000000 79yur1 36
131 i g u238f rc in ul 0.0000000 0.0 0.0010000 99.0000000% 135 i g u238f 6.2300000 84dob1 0
131 i g u238f rc cu 2.2393475 50.0 2.2300000 1.1150000 0 0.0000000 85chi1 36
131 i g u238f rc cu 3.4242938 5.4 3.4100000 5.4000000% 0 0.0000000 82gar1 0
131 i g u238f rc cu 3.8058866 5.0 3.7900000 4.0000000% 0 0.0000000 87chu1 0
131 i g u238f rc cu 3.5447968 10.5 3.5300000 10.5000000% 0 0.0000000 88afa1 0
131 i g u238f rc cu 3.5849644 10.4 3.5700000 10.4000000% 0 0.0000000 88afa1 0
131 te g u238f cm cu 0.0000000 0.0 3.1510000 7.0000000% 0 0.0000000 73net2 0
131 te g u238f rc in ul 0.0000000 0.0 0.1200000 99.0000000% 135 i g u238f 6.2300000 84dob1 0
131 te m u238f cm cu 0.0000000 0.0 0.2552000 45.0000000% 0 0.0000000 73net2 0
131 te m u238f rc cu x1 0.0000000 0.0 1.6800000 0.1800000 0 0.0000000 75har1 0
131 te m u238f rc in 0.0361509 30.0 0.0360000 0.0000000 0 0.0000000 60gle1 0
131 te m u238f rc cu x1 0.0000000 0.0 1.7200000 0.1500000 0 0.0000000 77gud1 0
131 sb g u238f cm cu 0.0000000 0.0 3.2960000 6.1000000% 0 0.0000000 73net2 0
131 sb g u238f rc cu 3.2108106 5.4 2.8700000 0.1500000 135 i g u238f 6.2300000 84dob1 0
131 sn g u238f cm cu 0.0000000 0.0 2.4240000 11.0000000% 0 0.0000000 73net2 0
131 u238he es cu 4.7862281 30.0 4.7810000 0.0000000 0 0.0000000 63wea1 0
131 xe g u238he ms re 3.9923914 2.1 0.6180000 0.0020000 134 xe g u238he 1.0000000 68gor1 0
131 xe g u238he ms cu 3.8082783 3.6 18.6400000 0.5500000 134 xe g u238he 31.6200000 70pet1 0
131 u238he cm cu su 0.0000000 0.0 3.9000000 0.1000000 0 0.0000000 73dar1 0
131 u238he es cu 4.6597145 23.0 4.3600000 20.0000000% 119 u238he 0.6800000 74mee6 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

131 xe g u238he es fi 0.0000002 30.0 0.0000059 0.0000000 131 u238he 100.0000000 74wol1 40
131 u238he es cu 4.1034824 15.0 4.0990000 15.0000000% 0 0.0000000 74mee9 0
131 u238he cm cu 0.0000000 0.0 3.9200000 4.1000000% 0 0.0000000 77cro1 0
131 u238he rc cu 4.1044834 5.0 4.1000000 0.2000000 0 0.0000000 87ram1 0
131 xe m u238he cm cu 0.0000000 0.0 0.0509000 14.9000000% 0 0.0000000 73net2 0
131 xe m u238he es fi 0.0000011 30.0 0.0000269 0.0000000 131 u238he 100.0000000 74wol1 40
131 i g u238he rc re 5.1975732 10.1 0.9100000 0.0500000 99 mo g u238he 1.0000000 58pro1 0
131 i g u238he rc cu x4 0.0000000 0.0 2.7000000 0.2000000 140 ba g u238he 4.3000000 62bro1 0

131	i	g	u238he	rc	cu		4.7268641	10.4	4.6000000	0.4200000	139 ba g	u238he	4.9200000	64jam1	0
131	i	g	u238he	rc	re		3.9460540	9.6	1.4600000	0.1400000	99 mo g	u235t	0.0000000	68gor1	7
131	i	g	u238he	cm	cu		0.0000000	0.0	4.3700000	0.0000000	0		0.0000000	69gun2	0
131	i	g	u238he	rc	re		3.6554361	6.4	0.6400000	0.0400000	99 mo g	u238he	1.0000000	69lyl1	0
131	i	g	u238he	rc	cu		3.6300958	5.2	3.6100000	0.0600000	99 mo g	u238he	5.6800000	71bir2	0
131	i	g	u238he	rc	cu	su	0.0000000	0.0	4.3000000	0.5000000	0		0.0000000	71bla1	0
131	i	g	u238he	rc	cu	su	0.0000000	0.0	3.7500000	0.4800000	0		0.0000000	73dar2	0
131	i	g	u238he	rc	cu	su	0.0000000	0.0	3.9200000	0.1300000	0		0.0000000	73dar4	0
131	i	g	u238he	rc	re		4.8412618	5.2	1.0500000	0.0500000	140 ba g	u238he	1.0000000	73man1	0
131	i	g	u238he	cm	cu		0.0000000	0.0	3.9800000	4.1000000%	0		0.0000000	73net2	0
131	i	g	u238he	rc	cu	su	0.0000000	0.0	3.9200000	0.1300000	140 ba g	u238he	4.4800000	74dar1	0
131	i	g	u238he	rc	cu		4.0444178	5.0	4.0400000	0.0800000	0		0.0000000	75dar1	0
131	i	g	u238he	rc	cu		3.7587436	6.0	3.7500000	0.2200000	140 ba g	u238he	4.6000000	76raj1	0
131	i	g	u238he	cm	cu		0.0000000	0.0	4.8000000	0.0000000	0		0.0000000	60kat1	0
131	i	g	u238he	rc	cu		3.8589768	10.5	3.8500000	0.4000000	140 ba g	u238he	4.6000000	75cav1	0
131	i	g	u238he	rc	cu	su	0.0000000	0.0	3.8500000	0.4000000	140 ba g	u238he	4.6000000	74bla1	0
131	i	g	u238he	rc	cu		4.0544288	5.0	4.0500000	4.3000000%	0		0.0000000	81lau1	0
131	i	g	u238he	rc	cu		3.6339695	5.0	3.6300000	0.1300000	0		0.0000000	85liu1	0
131	i	g	u238he	rc	cu		3.8349441	8.1	3.7600000	0.3000000	99 mo g	u238he	5.6000000	80li 1	0
131	i	g	u238he	rc	cu		4.1396296	5.2	4.1300000	0.1400000	140 ba g	u238he	4.6000000	80zhe1	0
131	i	g	u238he	rc	cu		4.0143850	5.0	4.0100000	0.1100000	0		0.0000000	75dar1	0
131	i	g	u238he	rc	cu		4.0844616	5.1	4.0800000	0.2100000	0		0.0000000	75dar1	0
131	te	g	u238he	cm	cu		0.0000000	0.0	3.5580000	7.0000000%	0		0.0000000	73net2	0
131	te	g	u238he	rc	in	x1	0.0000000	0.0	1.3770000	0.2080000	0		0.0000000	75dar1	0
131	te	g	u238he	rc	cu		3.8041554	5.0	3.8000000	0.1600000	0		0.0000000	75dar1	0
131	te	g	u238he	rc	cu		3.9063394	13.4	3.8300000	0.5100000	99 mo g	u238he	5.6000000	75ada1	0
131	te	m	u238he	cm	cu		0.0000000	0.0	0.5129000	32.1000000%	0		0.0000000	73net2	0
131	te	m	u238he	rc	cu		0.3593926	9.7	0.3590000	0.0350000	0		0.0000000	75dar1	0
131	te	m	u238he	rc	in		0.1811979	19.9	0.1810000	0.0360000	0		0.0000000	75dar1	0
131	te	m	u238he	rc	cu	su	0.0000000	0.0	0.6000000	0.0600000	140 ba g	u238he	4.6000000	74bla1	0
131	te	m	u238he	rc	cu		0.3633969	8.3	0.3630000	0.0300000	0		0.0000000	75dar1	0
131	te	m	u238he	rc	cu	x4	0.0000000	0.0	0.6000000	0.0600000	140 ba g	u238he	4.6000000	75cav1	0
131	te	m	u238he	rc	cu	x4	0.0000000	0.0	0.3110000	0.1250000	0		0.0000000	75dar1	0
131	sb	g	u238he	cm	cu		0.0000000	0.0	3.5960000	6.0000000%	0		0.0000000	73net2	0
131	sb	g	u238he	rc	cu	x1	0.0000000	0.0	2.5400000	0.1400000	0		0.0000000	75dar1	0
131	sn	g	u238he	cm	cu		0.0000000	0.0	1.7840000	22.0000000%	0		0.0000000	73net2	0

131 xe g pu239t ms re 3.8235488 1.5 2.7100000 0.0300000 133 xe g pu239t 4.9700000 56fle1 0
131 xe g pu239t ms re x4 0.0000000 0.0 17.5000000 0.5400000 134 xe g pu239t 30.8000000 72pet1 0
131 pu239t es cu 3.6878435 30.0 3.6900000 0.0000000 0 0.0000000 72sid1 0
131 pu239t cm cu 0.0000000 0.0 3.7300000 0.0000000 0 0.0000000 73lam1 0
131 pu239t cm cu 0.0000000 0.0 3.7300000 0.0900000 0 0.0000000 73wal1 0
131 xe g pu239t ms cu 3.8377558 2.3 3.8400000 0.0900000 0 0.0000000 75mae1 0
131 xe g pu239t ms cu 3.7877851 6.0 3.7900000 0.0000000 0 0.0000000 59fri1 0
131 xe g pu239t ms cu 3.8553038 0.9 13.0000000 0.1000000 83 kr g pu239t 1.0000000 59fri1 0
131 xe g pu239t ms re 3.9184747 6.6 16.6000000 1.1000000 134 xe g pu239t 32.5000000 72pet1 0
131 xe g pu239t ms cu 3.9356986 2.0 3.9380000 0.0440000 0 0.0000000 79mae2 0
131 pu239t cm cu 0.0000000 0.0 3.7800000 5.8000000% 0 0.0000000 77cro1 0
131 xe g pu239t ms re 3.8953201 0.7 0.2862000 0.0009000 148 nd g pu239t 0.1205800 76mae1 0
131 xe g pu239t ms cu rp 3.8288477 5.3 3.6000000 0.0000000 no. relative values = 2 70lis1
131 pu239t ms cu 3.7677968 3.0 3.7700000 3.0000000% 0 0.0000000 59fic2 0
131 xe g pu239t ms cu 3.7744825 0.7 0.4920000 0.0020000 134 xe g pu239t 1.0000000 84tep1 0
131 xe g pu239t es cu cm 3.9277032 1.0 3.9300000 1.0000000% 0 0.0000000 81mae2 0
131 xe m pu239t cm cu 0.0000000 0.0 0.0424400 50.0000000% 0 0.0000000 73net2 0
131 i g pu239t rc cu 3.5938754 60.0 3.6000000 0.0000000 140 ba g pu239t 5.3600000 51ste3 0
131 i g pu239t rc cu 3.7977792 5.0 3.8000000 0.1400000 0 0.0000000 65mar1 0
131 i g pu239t rc cu x4 0.0000000 0.0 4.6400000 0.1000000 99 mo g pu239t 6.7900000 71ram1 0
131 i g pu239t rc cu 4.1080289 5.0 4.4700000 0.1400000 99 mo g u235t 2.9000000 71ram1 31
131 i g pu239t cm cu 0.0000000 0.0 3.8890000 2.0000000% 0 0.0000000 73net2 0
131 i g pu239t rc cu 3.8700456 5.0 3.9500000 3.0000000% 137 cs g pu239t 6.7400000 74lar1 0
131 i g pu239t rc cu 4.0279264 6.0 4.2500000 0.2500000 132 i g pu239t 5.7000000 77gud1 0
131 i g pu239t rc cu 3.8777325 5.0 3.8800000 0.1000000 0 0.0000000 80dic1 0
131 i g pu239t rc cu 3.7378143 5.0 3.7400000 0.0300000 0 0.0000000 79ram1 0
131 i g pu239t rc cu su 0.0000000 0.0 3.9800000 3.0000000% 95 zr g pu239t 4.8600000 73lar4 0
131 i g pu239t rc in su 0.0000000 0.0 0.2300000 0.0100000 135 pu239t 6.3000000 77nis1 0
131 i g pu239t rc cu 4.2436968 5.0 1.7000000 0.0500000 140 ba g u235t 0.0000000 86chi1 7
131 i g pu239t rc cu 4.3774403 5.0 4.3800000 0.0500000 0 0.0000000 84jai1 0
131 i g pu239t rc cu 4.1175922 5.0 4.1200000 0.1400000 0 0.0000000 84jai1 0
131 i g pu239t rc cu 4.2275279 5.0 4.2300000 0.1000000 0 0.0000000 84jai1 0
131 te g pu239t rc in 0.4108957 9.7 0.4300000 0.0400000 92 sr g pu239t 3.1000000 76ima1 0
131 te g pu239t rc cu rp 2.3635773 23.5 2.9000000 0.0000000 no. relative values = 1 77gud1
131 te g pu239t es cu 2.9202923 10.0 2.9220000 10.0000000% 0 0.0000000 73net2 0
131 te g pu239t cm in 0.0000000 0.0 0.4110000 5.0000000% 0 1.0000000 88wah1 0

131 te m pu239t cm fi 0.0000000 0.0 0.1800000 0.0180000 131 pu239t 1.0000000 62wah1 0
131 te m pu239t cm cu x3 0.0000000 0.0 1.1490000 32.1000000% 0 0.0000000 73net2 0
131 te m pu239t rc in 0.8695701 6.2 0.9100000 0.0500000 92 sr g pu239t 3.1000000 76ima1 0
131 te m pu239t rc cu 0.9414495 6.8 0.9420000 0.0640000 0 0.0000000 80dic1 0
131 te m pu239t rc fi 0.6937496 27.8 0.1800000 0.0500000 131 pu239t 1.0000000 60gle1 0
131 te m pu239t cm in 0.0000000 0.0 1.0060000 5.0000000% 0 1.0000000 88wah1 0
131 te m pu239t rc fi 0.6937496 99.9 0.1800000 0.1800000 131 pu239t 1.0000000 62gle2 0
131 sb g pu239t cm cu 0.0000000 0.0 2.5440000 12.0000000% 0 0.0000000 73net2 0
131 sb g pu239t rc in 1.7678073 8.1 1.8500000 0.1400000 92 sr g pu239t 3.1000000 76ima1 0
131 sb g pu239t rc cu 2.4285799 12.3 2.4300000 0.3000000 0 0.0000000 80dic1 0
131 sb g pu239t cm in 0.0000000 0.0 1.7930000 8.0000000% 0 1.0000000 88wah1 0
131 sb g pu239t rc cu x4 0.0000000 0.0 1.0600000 0.3900000 0 0.0000000 76paf1 0
131 sn g pu239t cm cu 0.0000000 0.0 0.5941000 32.1000000% 0 0.0000000 73net2 0
131 sn g pu239t rc cu 0.6593443 10.5 0.6900000 0.0700000 92 sr g pu239t 3.1000000 76ima1 0
131 sn g pu239t rc cu 0.4199877 16.1 0.4500000 0.0700000 131 sn g u235t 0.9700000 76paf1 0
131 sn g pu239t cm in 0.0000000 0.0 0.5997000 21.0000000% 0 1.0000000 88wah1 0
131 pu239f es cu cm 4.1429139 30.0 4.1500000 0.0000000 0 0.0000000 72sid1 0
131 pu239f cm cu 0.0000000 0.0 4.3000000 0.0000000 0 0.0000000 73lar3 0
131 xe g pu239f ms cu su 0.0000000 0.0 4.1000000 0.0000000 0 0.0000000 76koc1 0
131 pu239f cm cu 0.0000000 0.0 4.1200000 3.0000000% 0 0.0000000 77cro1 0
131 xe g pu239f ms cu 3.9812799 2.9 4.2300000 2.9000000% 134 xe g pu239f 7.8300000 77koc1 0
131 xe g pu239f ms cu 3.8837689 1.1 3.8730000 0.0420000 148 nd g pu239f 1.6540000 77mae1 0
131 xe g pu239f ms cu 3.8364381 2.0 3.8430000 0.0560000 0 0.0000000 77mae1 0
131 xe g pu239f ms cu 3.8924346 2.0 4.0600000 0.0800000 148 nd g pu239f 1.7300000 70lis1 0
131 xe g pu239f ms cu 3.8766661 0.9 0.1646000 0.0003000 132 xe g pu239f 0.2259000 80mae4 0
131 xe g pu239f ms cu su 0.0000000 0.0 3.8400000 0.0600000 148 nd g pu239f 1.6500000 74mae1 0
131 pu239f es re 3.8113552 2.1 0.9900000 2.0000000% 131 pu239t 1.0000000 74mee4 0
131 pu239f rc cu 4.1998166 10.0 4.2070000 10.0000000% 0 0.0000000 81koc1 36
131 xe g pu239f es cu cm 3.8733750 1.0 3.8800000 1.0000000% 0 0.0000000 81mae2 0
131 xe m pu239f cm cu 0.0000000 0.0 0.0486000 14.9000000% 0 0.0000000 73net2 0
131 i g pu239f rc cu su 0.0000000 0.0 4.1100000 0.1800000 0 0.0000000 73dud1 0
131 i g pu239f cm cu 0.0000000 0.0 4.3050000 5.0000000% 0 0.0000000 73net2 0
131 i g pu239f rc cu 4.0730335 5.0 4.0800000 3.1000000% 0 0.0000000 74lar1 0
131 i g pu239f rc cu 4.0929993 5.0 4.1000000 4.6000000% 0 0.0000000 75dud1 0
131 i g pu239f rc re 4.0814271 5.2 0.7650000 0.0080000 140 ba g pu239f 0.9960000 72rid1 0
131 i g pu239f rc re 4.1109286 5.2 0.7450000 0.0070000 140 ba g pu239f 0.9630000 72rid2 0

131 i g pu239f rc cu 4.2809904 21.2 1.1120000 0.2350000 131 i g pu239t 1.0000000 79yur1 36
131 i g pu239f rc cu su 0.0000000 0.0 4.7700000 3.0000000% 95 zr g pu239f 4.7700000 73lar4 0
131 i g pu239f ms cu rp 3.9853965 6.5 4.0600000 0.0000000 no. relative values = 1 70lis1
131 i g pu239f rc cu su 0.0000000 0.0 4.7700000 3.1000000% 140 ba g pu239f 5.2500000 72lar1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

131 i g pu239f rc cu 3.6238018 5.0 3.6300000 4.7000000% 0 0.0000000 81lau1 0
131 i g pu239f rc cu 4.4282151 5.9 4.4000000 0.2500000 140 ba g pu239f 5.2800000 78bya1 0
131 i g pu239f rc cu 4.2427432 5.9 4.2500000 0.2500000 0 0.0000000 77gud1 0
131 te g pu239f cm cu 0.0000000 0.0 3.0700000 11.0000000% 0 0.0000000 73net2 0
131 te m pu239f cm cu x3 0.0000000 0.0 1.4540000 22.0000000% 0 0.0000000 73net2 0
131 te m pu239f rc cu x1 0.0000000 0.0 2.9000000 0.3500000 0 0.0000000 77gud1 0
131 sb g pu239f rc cu 3.1833074 8.8 2.4000000 0.2000000 137 xe g pu239f 4.2000000 69moo1 0
131 sb g pu239f cm cu 0.0000000 0.0 2.5350000 16.1000000% 0 0.0000000 73net2 0
131 sn g pu239f cm cu x3 0.0000000 0.0 0.4928000 32.1000000% 0 0.0000000 73net2 0
131 pu241t es cu 3.0146899 30.0 3.0100000 0.0000000 0 0.0000000 72sid1 0
131 pu241t rc cu rp 3.1262882 20.0 3.3300000 0.0000000 no. relative values = 10 73chi1
131 pu241t cm cu 0.0000000 0.0 3.1200000 0.0700000 0 0.0000000 73wal1 0
131 pu241t cm cu 0.0000000 0.0 3.2000000 17.3000000% 0 0.0000000 77cro1 0
131 pu241t cm cu 0.0000000 0.0 3.1500000 0.0000000 0 0.0000000 79wal1 0
131 xe g pu241t ms cu 3.1519034 2.0 3.1470000 0.0280000 0 0.0000000 77mae1 0
131 xe g pu241t ms cu 3.1053753 3.2 3.1500000 0.0900000 131 xe g pu241t 3.1500000 70lis1 0
131 xe g pu241t ms cu rp 3.1024972 5.2 3.1500000 0.0000000 no. relative values = 3 70lis1
131 pu241t rc cu rp 3.1542517 44.7 3.3300000 0.0000000 no. relative values = 2 73chi1
131 xe g pu241t ms re 3.0528475 1.5 0.3850000 0.0014000 134 xe g pu241t 1.0000000 64far1 0
131 i g pu241t rc cu x4 0.0000000 0.0 4.7000000 0.0000000 0 0.0000000 63kir1 0
131 i g pu241t rc cu 3.2049859 5.0 3.2000000 0.1400000 0 0.0000000 73sko2 0
131 i g pu241t rc cu 3.0547522 5.0 3.0500000 0.1200000 0 0.0000000 79dic1 0
131 i g pu241t rc cu 3.2600622 5.0 1.2100000 0.0300000 140 ba g u235t 0.0000000 86chi1 7
131 i g pu241t rc in 0.0021033 15.0 0.0021000 0.0000000 0 0.0000000 87red1 0
131 te g pu241t rc fc sm 0.0000000 0.0 0.9968000 0.0290000 131 pu241t 1.0000000 87red1 0
131 te m pu241t rc in 0.1302026 10.0 0.1300000 0.0130000 0 0.0000000 87red1 0
131 u233t es cu 3.5432905 30.0 3.5500000 0.0000000 0 0.0000000 72sid1 0
131 u233t cm cu 0.0000000 0.0 3.5400000 0.0000000 0 0.0000000 73lam1 0

131 u233t cm cu 0.0000000 0.0 3.5300000 0.0800000 0 0.0000000 73wal1 0
131 xe g u233t ms cu 3.6106755 3.1 3.5200000 3.0000000% 132 xe g u233t 4.8200000 61bid1 0
131 u233t cm cu 0.0000000 0.0 3.4800000 4.9000000% 0 0.0000000 77cro1 0
131 xe g u233t ms re 3.6972368 20.3 15.8000000 3.2000000 134 xe g u233t 26.9000000 72pet1 0
131 xe g u233t ms cu 3.5819961 1.1 3.5500000 0.0300000 132 xe g u233t 4.9000000 54fle1 0
131 xe g u233t ms cu 3.6223566 0.9 3.5900000 0.0100000 132 xe g u233t 4.9000000 54fle1 0
131 xe g u233t ms cu 3.5033661 2.0 3.5100000 0.0400000 0 0.0000000 70lis1 0
131 xe g u233t ms cu 3.6194310 0.9 0.5750000 0.0020000 134 xe g u233t 1.0000000 84tep1 0
131 xe m u233t cm cu x3 0.0000000 0.0 0.0382700 50.0000000% 0 0.0000000 73net2 0
131 i g u233t rc cu x4 0.0000000 0.0 2.7000000 0.0000000 135 i g u233t 5.1000000 47ste1 0
131 i g u233t rc cu 3.6479826 5.0 3.6500000 0.0700000 99 mo g u235t 2.9300000 66gor1 24
131 i g u233t rc cu x4 0.0000000 0.0 3.0800000 0.2000000 99 mo g u233t 4.8000000 67gan1 0
131 i g u233t rc fi 0.0503647 21.4 0.0140000 0.0030000 131 u233t 1.0000000 72ber1 0
131 i g u233t cm cu 0.0000000 0.0 3.5050000 2.0000000% 0 0.0000000 73net2 0
131 i g u233t rc cu 3.4804610 10.4 2.8400000 0.2000000 140 ba g u233t 5.2100000 60san1 0
131 i g u233t rc cu x4 0.0000000 0.0 4.8000000 0.6500000 0 0.0000000 77gud1 0
131 i g u233t rc in su 0.0000000 0.0 0.0180000 0.0040000 135 i g u233t 4.9000000 77nis1 0
131 i g u233t rc in 0.0182634 22.4 0.0180000 0.0040000 135 i g u233t 4.9500000 80nis1 0
131 i g u233t rc cu 3.4434795 5.0 3.4500000 4.4000000% 0 0.0000000 81ram1 0
131 i g u233t rc cu 3.5446490 5.0 1.1900000 0.0300000 140 ba g u235t 0.0000000 86chi1 7
131 te g u233t rc fc x1 0.0000000 0.0 0.9800000 0.0020000 131 u233t 1.0000000 71ber1 0
131 te g u233t cm fc x3 0.0000000 0.0 0.9800000 0.0200000 131 u233t 1.0000000 71tro3 0
131 te g u233t rc fi 0.4856592 14.8 0.1350000 0.0200000 131 u233t 1.0000000 72ber1 0
131 te g u233t cm cu x3 0.0000000 0.0 2.5900000 10.0000000% 0 0.0000000 73net2 0
131 te g u233t rc in 0.4833446 10.4 0.5000000 0.0500000 92 sr g u233t 6.6000000 76ima1 0
131 te m u233t cm fi 0.0000000 0.0 0.2300000 0.0230000 131 u233t 1.0000000 62wah1 0
131 te m u233t cm cu x3 0.0000000 0.0 1.0850000 21.0000000% 0 0.0000000 73net2 0
131 te m u233t rc in 0.9086878 7.0 0.9400000 0.0600000 92 sr g u233t 6.6000000 76ima1 0
131 te m u233t rc fi 1.2015570 6.0 0.3340000 0.0200000 131 u233t 1.0000000 72ber1 0
131 te m u233t rc fc 1.3562484 5.0 0.3770000 0.0060000 131 u233t 1.0000000 72ber1 0
131 sb g u233t es fc cm 2.3743341 30.0 0.6600000 0.0000000 131 u233t 1.0000000 70run1 0
131 sb g u233t cm cu 0.0000000 0.0 2.2170000 12.0000000% 0 0.0000000 73net2 0
131 sb g u233t rc in 1.3726985 7.6 1.4200000 0.1000000 92 sr g u233t 6.6000000 76ima1 0
131 sb g u233t rc fc 1.8706875 5.8 0.5200000 0.0300000 131 u233t 1.0000000 72ber1 0
131 sn g u233t cm cu x3 0.0000000 0.0 0.4877000 32.1000000% 0 0.0000000 73net2 0
131 sn g u233t rc cu 0.4930114 10.2 0.5100000 0.0500000 92 sr g u233t 6.6000000 76ima1 0

131	xe g	th232f	ms	cu		1.6120546	2.0	1.6200000	0.0100000	0			0.0000000	57ken1	0
131		th232f	es	cu	cm	1.6916623	30.0	1.7000000	0.0000000	0			0.0000000	65eng1	0
131		th232f	cm	cu		0.0000000	0.0	1.7000000	0.0000000	0			0.0000000	72sid1	0
131		th232f	es	cu	cm	1.5125451	30.0	1.5200000	0.0000000	0			0.0000000	73lam1	0
131		th232f	cm	cu		0.0000000	0.0	1.6000000	0.0000000	0			0.0000000	74lam1	0
131	xe g	th232f	cm	cu		0.0000000	0.0	1.6200000	0.0000000	0			0.0000000	60kat1	0
131		th232f	cm	cu		0.0000000	0.0	1.7500000	10.7000000%	0			0.0000000	77cro1	0
131		th232f	es	cu		1.6120546	5.0	1.6200000	5.0000000%	0			0.0000000	74mee0	0
131	xe m	th232f	cm	cu		0.0000000	0.0	0.0172700	50.0000000%	0			0.0000000	73net2	0
131	i g	th232f	rc	cu	x4	0.0000000	0.0	0.6500000	0.0000000	89	sr g	th232f	6.0000000	50nid1	0
131	i g	th232f	rc	cu		1.3309727	50.2	1.2000000	0.6000000	89	sr g	th232f	6.7000000	51tur1	0
131	i g	th232f	rc	re		1.6913068	10.0	1.2200000	0.0500000	99	mo g	u235t	0.0000000	63iye1	7
131	i g	th232f	rc	re		2.0363542	7.8	0.5570000	7.8000000%	140	ba g	u235t	0.0000000	73bra1	7
131	i g	th232f	rc	cu	su	0.0000000	0.0	0.9220000	0.1000000	0			0.0000000	73dee1	0
131	i g	th232f	cm	cu		0.0000000	0.0	1.5840000	4.0000000%	0			0.0000000	73net2	0
131	i g	th232f	rc	cu	x4	0.0000000	0.0	0.9200000	0.1000000	0			0.0000000	75dee1	0
131	i g	th232f	cm	cu		0.0000000	0.0	1.2000000	0.0000000	0			0.0000000	60kat1	0
131	i g	th232f	rc	cu	su	0.0000000	0.0	2.1300000	0.0400000	99	mo g	th232f	2.7800000	64wyt1	0
131	i g	th232f	rc	cu	x4	0.0000000	0.0	2.1300000	0.0400000	99	mo g	th232f	2.7800000	65wyt1	0
131	i g	th232f	rc	cu		1.0867953	12.3	1.1500000	0.1400000	99	mo g	th232f	3.1000000	64bro1	0
131	i g	th232f	ms	re		1.4429204	6.3	0.5050000	0.0300000	132	te g	th232f	1.0000000	68har1	0
131	i g	th232f	rc	cu		1.8214813	5.7	1.7200000	0.0200000	140	ba g	th232f	7.4000000	73cha1	0
131	i g	th232f	cm	cu		0.0000000	0.0	1.6300000	0.0000000	0			0.0000000	79zij1	0
131	i g	th232f	rc	re		1.7606226	5.0	1.2700000	0.0200000	99	mo g	u235t	0.0000000	81ert1	7
131	i g	th232f	cm	cu		0.0000000	0.0	1.7300000	0.0700000	0			0.0000000	81ert1	0
131	i g	th232f	rc	cu		1.5025941	5.0	1.5100000	4.7000000%	0			0.0000000	81ram1	0
131	i g	th232f	rc	cu		2.0156891	12.5	2.0500000	0.2500000	140	ba g	th232f	7.9700000	85chu1	0
131	i g	th232f	rc	cu		1.8011228	5.0	1.8100000	0.0500000	0			0.0000000	86ric1	0
131	i g	th232f	rc	cu		1.3348944	50.0	0.2941000	50.0000000%	89	sr g	u235t	0.0000000	51tur1	7
131	te g	th232f	cm	cu		0.0000000	0.0	1.4820000	6.0000000%	0			0.0000000	73net2	0
131	te g	th232f	rc	fi		0.0041938	30.1	0.0026000	0.0000000	131		th232f	1.0000000	60gle1	40
131	te m	th232f	cm	cu		0.0000000	0.0	0.1244000	45.0000000%	0			0.0000000	73net2	0
131	te m	th232f	rc	fi		0.0119363	30.1	0.0074000	0.0000000	131		th232f	1.0000000	60gle1	40
131	sb g	th232f	cm	cu		0.0000000	0.0	1.5480000	4.0000000%	0			0.0000000	73net2	0
131	sb g	th232f	rc	in		0.3801265	91.0	0.3820000	91.0000000%	0			0.0000000	77iza1	0
131	sb g	th232f	rc	in		0.3960480	89.6	0.3980000	89.6000000%	0			0.0000000	77iza1	0

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 131 sb g   th232f   cm    fi        0.0000000  0.0   0.2210000  0.2020000   131          th232f      1.0000000   78iza2      0
 131 sb g   th232f   rc    cu        1.7993712 11.8   1.8300000  0.2100000   140 ba g     th232f      7.9700000   85chu1      0
 131 sn g   th232f   cm    cu         0.0000000  0.0   1.1050000 13.0000000%    0                   0.0000000   73net2      0
 131 sn g   th232f   rc    in        1.2239674 25.5   1.2300000 25.5000000%    0                   0.0000000   77iza1      0
 131 sn g   th232f   cm    fi        0.0000000  0.0   0.7100000  0.2020000   131          th232f      1.0000000   78iza2      0
 131 sn g   th232f   rc    cu        1.3334279 28.4   1.3400000  0.3800000    0                   0.0000000   82ert1      0
 132 cs g   u235t    ms    in        0.0000001 99.9   0.0000001  0.0000001   137 cs g     u235t       6.1700000   66mch1      0
 132 xe g   u235t    ms    cu         4.3251957  1.6   4.4900000  0.0000000   131 xe g     u235t       3.0000000   55wan1      0
 132 xe g   u235t    ms    re         4.3145994  1.1   1.4930000  1.0000000%  131 xe g     u235t       1.0000000   63mch1      0
 132        u235t    cm    cu        0.0000000  0.0   4.2600000  0.0000000    0                   0.0000000   72sid1      0
 132        u235t    es    cu        4.1985287 30.0   4.2000000  0.0000000    0                   0.0000000   73lam1      0
 132        u235t    cm    cu        0.0000000  0.0   4.1700000  0.0900000    0                   0.0000000   73wal1      0
 132        u235t    ms    cu        4.2015277  2.0   4.2030000  0.0480000    0                   0.0000000   76dii1      0
 132 xe g   u235t    ms    cu         4.3038656  1.6   4.1700000  0.0000000   131 xe g     u235t       2.8000000   49tho1      0
 132 xe g   u235t    cm    cu         0.0000000  0.0   4.1700000  0.0000000   131 xe g     u235t       2.8000000   51cor2      0
 132 xe g   u235t    ms    cu         4.3200340  0.7   4.3800000  0.2000000%  131 xe g     u235t       2.9300000   56bla1      0
 132        u235t    cm    cu        0.0000000  0.0   4.2900000  1.2000000%    0                   0.0000000   77cro1      0
 132 xe g   u235t    ms    re         4.3106506  0.6   0.2345000  0.0008000   148 nd g     u235t       0.0910100   76mae1      0
 132 xe g   u235t    ms    cu         4.3089336  1.5   4.1600000  0.0600000   131 xe g     u235t       2.7900000   70lis1      0
 132 xe g   u235t    ms    cu         4.3254842  2.0   4.3270000  0.0250000    0                   0.0000000   78mae1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type          value   err.     value                nuclide     material       value      no.   treatment

 132 xe g   u235t    ms    cu         4.3564734  2.0   4.3580000  0.0260000    0                   0.0000000   78mae1      0
 132 xe g   u235t    ms    cu         4.3444776  2.0   4.3460000  0.0250000    0                   0.0000000   78mae1      0
 132 xe g   u235t    ms    cu    cm   4.3424783  6.0   4.3440000  0.0000000    0                   0.0000000   80mae3      0
 132 i  g   u235t    rc    fi        0.0215584 99.9   0.0050000  0.0050000   132 i  g     u235t       1.0000000   55wah1      0
 132 i  g   u235t    rc    in        0.0149947 99.9   0.0150000  0.0150000    0                   0.0000000   67wun1      0
 132 i  g   u235t    es    fi        0.0194028 30.0   0.0045000  0.0000000   132          u235t       1.0000000   69cro1      0
 132 i  g   u235t    rc    in        0.0170020  6.5   0.0174000  0.0011000    99 mo g      u235t       6.2500000   70del1      0
 132 i  g   u235t    rc    cu         4.3784657  5.0   4.3800000  0.1200000    0                   0.0000000   71mcl1      0
 132 i  g   u235t    rc    cu    rp   4.3192134 11.2   4.7800000  0.0000000  no. relative values =    2            77gud1
 132 i  g   u235t    rc    cu         4.2685042  5.0   4.2700000  0.0400000    0                   0.0000000   79ram1      0
 132 i  g   u235t    rc    cu         4.3984586  5.0   4.4000000  0.1700000    0                   0.0000000   74bla1      0
 132 i  g   u235t    rc    cu         4.1285532  5.1   4.1300000  0.2100000    0                   0.0000000   76thi1      0
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132 i g u235t rc in su 0.0000000 0.0 0.0220000 0.0020000 135 i g u235t 6.3000000 77nis1 0
132 i g u235t rc in 0.0217912 9.2 0.0220000 0.0020000 135 i g u235t 6.3400000 80nis1 0
132 i g u235t rc in x6 0.0000000 0.0 0.0120000 0.0020000 135 i g u235t 6.3400000 80nis1 0
132 i g u235t cm in 0.0000000 0.0 0.0181300 6.0000000% 0 1.0000000 88wah1 0
132 i g u235t rc in su 0.0000000 0.0 0.0170000 7.0000000% 0 0.0000000 68gre1 0
132 i g u235t rc cu x4 0.0000000 0.0 3.5500000 0.3000000 0 0.0000000 80wan1 0
132 i m u235t rc in x6 0.0000000 0.0 0.0100000 0.0010000 135 i g u235t 6.3400000 80nis1 0
132 te g u235t rc cu 4.3984586 60.0 4.4000000 0.0000000 0 0.0000000 50pap1 0
132 te g u235t rc cu x4 0.0000000 0.0 3.4400000 20.0000000% 140 ba g u235t 5.8200000 51eng1 0
132 te g u235t rc cu x4 0.0000000 0.0 2.1000000 0.0000000 140 ba g u235t 6.1000000 51kat3 0
132 te g u235t rc in x1 0.0000000 0.0 0.8600000 0.1000000 0 0.0000000 66str1 4
132 te g u235t cm fi x3 0.0000000 0.0 0.2193000 0.0000000 132 u235t 1.0000000 69cro1 0
132 te g u235t cm fi x3 0.0000000 0.0 0.1960000 0.0237000 132 u235t 1.0000000 70del1 0
132 te g u235t rc cu 4.1685392 5.0 4.1700000 0.1000000 0 0.0000000 71mcl1 0
132 te g u235t rc fc cm 4.2949147 5.0 0.9961000 0.0003000 132 u235t 1.0000000 71tro3 0
132 te g u235t rc fi x2 0.0000000 0.0 0.0200000 0.0000000 132 u235t 1.0000000 72gun1 0
132 te g u235t rc fi 1.6143307 5.2 0.3760000 0.0150000 132 te g u235t 1.0000000 72nae1 0
132 te g u235t es cu 4.2884972 5.0 4.2900000 5.0000000% 0 0.0000000 73net2 0
132 te g u235t rc fi su 0.0000000 0.0 0.3250000 0.0320000 132 u235t 1.0000000 73par1 0
132 te g u235t rc fi 1.4056241 9.2 0.3260000 0.0300000 132 u235t 1.0000000 74par1 0
132 te g u235t rc fi su 0.0000000 0.0 0.3750000 0.0150000 132 u235t 1.0000000 71den1 0
132 te g u235t rc cu su 0.0000000 0.0 4.2400000 7.0000000% 0 0.0000000 76gil4 0
132 te g u235t rc cu su 0.0000000 0.0 4.2200000 7.0000000% 0 0.0000000 76gil4 0
132 te g u235t bm cu 4.2085252 6.2 4.2100000 6.2000000% 0 0.0000000 77gil1 0
132 te g u235t rc cu 4.5078728 20.0 4.4900000 0.1500000 140 ba g u235t 6.1700000 53pap1 0
132 te g u235t rc cu 4.3284832 5.0 4.3300000 0.0800000 0 0.0000000 79ram1 0
132 te g u235t rc cu 4.2285182 5.0 4.2300000 3.5000000% 0 0.0000000 81lau1 0
132 te g u235t sp fi 1.7678095 7.0 0.4100000 7.0000000% 132 u235t 1.0000000 84den1 0
132 te g u235t cm in 0.0000000 0.0 1.6270000 5.0000000% 0 1.0000000 88wah1 0
132 te g u235t rc cu x4 0.0000000 0.0 4.6000000 0.2000000 0 0.0000000 70ohy1 0
132 te g u235t rc cu x4 0.0000000 0.0 4.7200000 0.1100000 0 0.0000000 77gud1 0
132 sb g u235t es fi x2 0.0000000 0.0 0.2200000 0.0800000 132 u235t 1.0000000 65kon1 0
132 sb g u235t rc fi x2 0.0000000 0.0 0.1600000 0.0200000 132 u235t 1.0000000 72gun1 0
132 sb g u235t rc re rp 2.6391671 36.1 1.0000000 0.0000000 no. relative values = 1 76paf1
132 sb g u235t rc re rp 2.9775219 48.8 1.0000000 0.0000000 no. relative values = 1 76rud1
132 sb g u235t rc in 1.6344272 12.7 1.6350000 0.2070000 0 0.0000000 66str1 18

132	sb	g	u235t	rc	cu	ca	1.7763775	30.0	1.7770000	0.0000000	0			0.0000000	56pap1	18
132	sb	g	u235t	rc	fi	su	0.0000000	0.0	0.3217000	0.0200000	132		u235t	1.0000000	73par1	40
132	sb	g	u235t	rc	fi		1.3543145	7.6	0.3141000	0.0237000	132		u235t	1.0000000	74par1	40
132	sb	g	u235t	rc	fi	su	0.0000000	0.0	0.2874000	0.0148000	132		u235t	1.0000000	71den1	40
132	sb	g	u235t	es	fi		1.6095690	12.7	0.3733000	0.0474000	132		u235t	1.0000000	70del1	40
132	sb	g	u235t	es	fi		1.6319900	30.0	0.3785000	0.0000000	132		u235t	1.0000000	69cro1	40
132	sb	g	u235t	rc	fi		1.2386553	5.2	0.2885000	0.0059000	132	te g	u235t	1.0000000	72nae1	40
132	sb	g	u235t	rc	re	su	0.0000000	0.0	0.4740000	20.0000000%	133	sb g	u235t	1.0000000	53pap1	40
132	sb	g	u235t	rc	in		1.6027759	18.6	1.6200000	0.3000000	92	sr g	u235t	6.0000000	76ima1	0
132	sb	g	u235t	sp	fi		1.1253616	7.0	0.2610000	7.0000000%	132		u235t	1.0000000	84den1	0
132	sb	g	u235t	cm	in		0.0000000	0.0	1.1820000	2.0000000%	0			1.0000000	88wah1	0
132	sb	g	u235t	sp	in	x1	0.0000000	0.0	0.3400000	0.0300000	0			0.0000000	90rud1	0
132	sb	m	u235t	rc	in	x1	0.0000000	0.0	0.3800000	0.0800000	92	sr g	u235t	6.0000000	76ima1	0
132	sb	m	u235t	rc	re		0.7047903	12.7	0.4400000	0.0500000	132	sb g	u235t	1.0000000	76paf1	0
132	sb	m	u235t	rc	re		0.6247005	16.4	0.3900000	0.0600000	132	sb g	u235t	1.0000000	76rud1	0
132	sb	m	u235t	rc	in		1.1246059	12.7	1.1250000	0.1430000	0			0.0000000	66str1	18
132	sb	m	u235t	rc	cu	ca	1.2225716	30.0	1.2230000	0.0000000	0			0.0000000	56pap1	18
132	sb	m	u235t	rc	fi	su	0.0000000	0.0	0.2213000	0.0130000	132		u235t	1.0000000	73par1	40
132	sb	m	u235t	rc	fi		0.9309026	7.6	0.2159000	0.0163000	132		u235t	1.0000000	74par1	40
132	sb	m	u235t	rc	fi	su	0.0000000	0.0	0.1976000	0.0102000	132		u235t	1.0000000	71den1	40
132	sb	m	u235t	es	fi		1.1068212	12.7	0.2567000	0.0326000	132		u235t	1.0000000	70del1	40
132	sb	m	u235t	es	fi		1.1227746	30.0	0.2604000	0.0000000	132		u235t	1.0000000	69cro1	40
132	sb	m	u235t	rc	fi		0.8522464	5.2	0.1985000	0.0041000	132	te g	u235t	1.0000000	72nae1	40
132	sb	m	u235t	rc	re	su	0.0000000	0.0	0.3260000	20.0000000%	133	sb g	u235t	1.0000000	53pap1	40
132	sb	m	u235t	sp	fi		0.8149171	7.0	0.1890000	7.0000000%	132		u235t	1.0000000	84den1	0
132	sb	m	u235t	cm	in		0.0000000	0.0	0.8560000	2.0000000%	0			1.0000000	88wah1	0
132	sb	m	u235t	sp	in	x1	0.0000000	0.0	1.3200000	0.1400000	0			0.0000000	90rud1	0
132	sb	m	u235t	sp	cu	x1	0.0000000	0.0	1.9800000	0.2300000	0			0.0000000	90rud1	0
132	sn	g	u235t	es	fi	x2	0.0000000	0.0	0.5100000	0.0900000	132		u235t	1.0000000	65kon1	0
132	sn	g	u235t	rc	cu		0.5836113	28.8	0.5900000	0.1700000	0			0.0000000	66str1	4
132	sn	g	u235t	es	fi		0.5851018	30.0	0.1357000	0.0000000	132		u235t	1.0000000	69cro1	0
132	sn	g	u235t	es	fc		0.5820836	28.9	0.1350000	0.0390000	132		u235t	1.0000000	70del1	0
132	sn	g	u235t	rc	cu	x4	0.0000000	0.0	0.8400000	0.0000000	0			0.0000000	70iza1	0
132	sn	g	u235t	rc	fc	x4	0.0000000	0.0	0.3200000	0.0300000	132	te g	u235t	1.0000000	70lin1	0
132	sn	g	u235t	rc	fi	x2	0.0000000	0.0	0.5600000	0.0000000	132		u235t	1.0000000	72gun1	0
132	sn	g	u235t	rc	fc		0.5882003	6.0	0.1370000	0.0080000	132	te g	u235t	1.0000000	72nae1	0

132	sn	g	u235t	rc	fc	su	0.0000000	0.0	0.1400000	0.0300000	132		u235t	1.0000000	71den1	0
132	sn	g	u235t	rc	fc		0.6036423	21.4	0.1400000	0.0300000	132		u235t	1.0000000	74par1	0
132	sn	g	u235t	sp	fc		0.6036423	21.0	0.1400000	21.0000000%	132		u235t	1.0000000	84den1	36
132	sn	g	u235t	sp	fi		0.5907071	22.0	0.1370000	22.0000000%	132		u235t	1.0000000	84den1	36
132	sn	g	u235t	cm	in		0.0000000	0.0	0.6168000	7.0000000%	0			1.0000000	88wah1	0
132	sn	g	u235t	sp	in		0.6097863	5.0	0.6100000	0.0200000	0			0.0000000	90rud1	0
132	sn	g	u235t	sp	cu		0.6097863	5.0	0.6100000	0.0200000	0			0.0000000	90rud1	0
132	in	g	u235t	es	fi	x2	0.0000000	0.0	0.2200000	0.0600000	132		u235t	1.0000000	65kon1	0
132	in	g	u235t	es	fi		0.0068988	30.0	0.0016000	0.0000000	132		u235t	1.0000000	69cro1	0
132	in	g	u235t	rc	fi	x2	0.0000000	0.0	0.2500000	0.0200000	132		u235t	1.0000000	72gun1	0
132	in	g	u235t	rc	fi	aj	0.0048723	49.0	0.0011300	49.0000000%	132		u235t	1.0000000	83shm1	0
132	in	g	u235t	cm	in		0.0000000	0.0	0.0044570	49.0000000%	0			1.0000000	88wah1	0
132	in	g	u235t	sp	cu		0.0002799	25.0	0.0002800	0.0000700	0			0.0000000	90rud1	0
132	xe	g	u235f	ms	re		4.5448655	1.6	21.0800000	0.0000000	134	xe	g	u235f	35.5300000	70ebe1	0
132	xe	g	u235f	ms	re		4.9595570	3.0	5.1600000	3.0000000%	148	nd	g	u235f	1.7500000	72kry1	0
132			u235f	es	cu	cm	4.8958934	30.0	4.9000000	0.0000000	0			0.0000000	72sid1	0
132			u235f	cm	cu		0.0000000	0.0	4.7500000	0.0000000	0			0.0000000	73lar3	0
132	xe	g	u235f	ms	cu	su	0.0000000	0.0	4.6800000	0.0000000	0			0.0000000	76koc1	0
132			u235f	cm	cu		0.0000000	0.0	4.6300000	3.0000000%	0			0.0000000	77cro1	0
132	xe	g	u235f	ms	cu		4.7295769	0.7	4.6800000	0.4000000%	134	xe	g	u235f	7.5800000	77koc1	0
132			u235f	es	re		4.5597600	10.0	1.0580000	10.0000000%	132		u235t	1.0000000	74mee4	0
132	xe	g	u235f	ms	cu		4.6960610	2.0	4.7000000	0.0280000	0			0.0000000	80mae1	0
132	xe	g	u235f	ms	cu		4.5444426	2.8	4.4500000	0.1200000	131	xe	g	u235f	3.1500000	70lis1	0
132	xe	g	u235f	ms	cu	cm	4.7220392	6.0	4.7260000	0.0000000	0			0.0000000	80mae3	0
132	xe	g	u235f	ms	cu		4.6341130	2.0	4.6380000	0.0190000	0			0.0000000	81mae1	0
132	xe	g	u235f	cm	cu		0.0000000	0.0	4.6380000	0.0190000	0			0.0000000	81mae1	0
132	xe	g	u235f	ms	cu		4.6055318	0.8	4.6000000	0.0300000	148	nd	g	u235f	1.6800000	74mae1	0
132			u235f	rc	cu		4.6760778	10.0	4.6800000	10.0000000%	0			0.0000000	81koc1	36
132			u235f	rc	cu		4.3463544	7.1	4.3500000	0.3100000	0			0.0000000	77bla1	36
132			u235f	rc	cu		4.6960610	5.0	4.7000000	2.9000000%	0			0.0000000	86dho1	0
132	i	g	u235f	rc	cu		4.2734435	5.1	4.1800000	3.0000000%	140	ba	g	u235f	5.8400000	72sch1	0
132	i	g	u235f	rc	cu	x4	0.0000000	0.0	1.1360000	0.0080000	87	kr	g	u235t	1.0000000	77deb1	0
132	i	g	u235f	rc	cu	x4	0.0000000	0.0	3.9700000	0.3400000	0			0.0000000	80wan1	0
132	i	g	u235f	rc	cu		4.7759940	5.0	4.7800000	0.1300000	0			0.0000000	77gud1	0
132	te	g	u235f	rc	cu	su	0.0000000	0.0	4.5800000	0.2100000	0			0.0000000	73dud1	0
132	te	g	u235f	rc	cu	su	0.0000000	0.0	4.9200000	7.0000000%	0			0.0000000	73dud2	0

1
0

measured nuclide	fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
132 te g	u235f	es	cu	cm	4.8009730	5.0	4.8050000	5.0000000%	0		0.0000000	73net2	0
132 te g	u235f	rc	cu		4.6760778	7.6	4.6800000	7.6000000%	0		0.0000000	75dud1	0
132 te g	u235f	rc	cu		4.9558431	9.6	4.9600000	9.6000000%	0		0.0000000	75dud2	0
132 te g	u235f	rc	re		4.5231970	5.0	1.0930000	0.0150000	140 ba g	u235t	0.0000000	75raj1	7
132 te g	u235f	rc	cu	su	0.0000000	0.0	1.1450000	0.0120000	132 te g	u235t	1.0000000	76deb1	0
132 te g	u235f	rc	cu	su	0.0000000	0.0	4.8400000	7.1000000%	0		0.0000000	76gil2	0
132 te g	u235f	bm	cu		4.8259521	6.1	4.8300000	6.1000000%	0		0.0000000	77gil1	0
132 te g	u235f	rc	re		5.0675881	5.1	1.4760000	0.0660000	140 ba g	u235f	1.7390000	72rid1	0
132 te g	u235f	rc	re		5.2950368	5.1	1.2620000	0.0570000	140 ba g	u235f	1.4230000	72rid2	0
132 te g	u235f	rc	cu		5.0296404	19.1	1.1720000	0.2230000	132 te g	u235t	1.0000000	79yur1	36
132 te g	u235f	rc	cu		4.7660024	6.1	4.7700000	6.1000000%	0		0.0000000	72lar1	0
132 te g	u235f	rc	cu		4.7560108	5.0	4.7600000	3.0000000%	0		0.0000000	81lau1	0
132 te g	u235f	rc	cu		5.3846434	10.1	5.3500000	0.5000000	99 mo g	u235f	5.9000000	60bon1	0
132 te g	u235f	rc	cu		4.9193271	6.7	4.8200000	0.3200000	140 ba g	u235f	5.8500000	78bya1	0
132 te g	u235f	rc	cu		4.0445679	14.1	3.9900000	0.5600000	140 ba g	u235f	5.8900000	72cun2	36
132 te g	u235f	rc	cu		4.7160443	5.0	4.7200000	0.1100000	0		0.0000000	77gud1	0
132 te g	u235f	rc	cu		4.8958934	5.1	4.9000000	0.2500000	0		0.0000000	81mar1	0
132 te g	u235f	rc	in		1.6286339	12.3	1.6300000	0.2000000	0		0.0000000	81mar1	0
132 sb g	u235f	rc	in	sm	0.0000000	0.0	2.8000000	0.2000000	0		0.0000000	81mar1	0
132 sn g	u235f	rc	cu		0.4895893	10.2	0.4900000	0.0500000	0		0.0000000	81mar1	0
132	u235he	cm	cu	es	0.0000000	0.0	4.8410000	0.0000000	0		0.0000000	63wea1	0
132 xe g	u235he	cm	cu		0.0000000	0.0	5.0000000	0.0000000	0		0.0000000	60kat1	0
132	u235he	es	cu		4.7592730	10.0	4.7790000	10.0000000%	0		0.0000000	74mee8	0
132 xe g	u235he	ms	re		4.9329189	3.2	25.0500000	0.4000000	131 xe g	u235he	20.7500000	77pet1	0
132	u235he	cm	cu	x3	0.0000000	0.0	4.2900000	3.9000000%	0		0.0000000	77cro1	0
132 i g	u235he	rc	re		4.8110270	10.0	1.1200000	0.0200000	132 i g	u235t	1.0000000	55wah1	0
132 i g	u235he	cm	cu		0.0000000	0.0	4.7000000	0.0000000	0		0.0000000	69gun2	0
132 i g	u235he	rc	re		4.8747339	8.7	1.0900000	0.0900000	140 ba g	u235he	1.0000000	73man1	0
132 i g	u235he	cm	cu		0.0000000	0.0	5.0000000	0.0000000	0		0.0000000	60kat1	0
132 i g	u235he	rc	fi		0.7786658	60.1	0.1600000	0.0000000	132	u235he	1.0000000	53for2	0
132 i g	u235he	rc	fi		0.7760582	10.4	0.1600000	0.0100000	132 i g	u235he	1.0000000	55wah1	0
132 te g	u235he	rc	re		4.1490510	10.1	0.9700000	0.0200000	132 te g	u235t	1.0000000	55wah1	0

132	te g	u235he	rc	re		4.0636320	10.0	1.1300000	0.0300000	99 mo g	u235t	0.0000000	56for1	7
132	te g	u235he	cm	cu		0.0000000	0.0	4.2000000	0.0000000	0		0.0000000	69gun2	0
132	te g	u235he	cm	cu		0.0000000	0.0	3.9900000	9.0000000%	0		0.0000000	73net2	0
132	te g	u235he	cm	cu		0.0000000	0.0	4.2000000	0.0000000	0		0.0000000	60kat1	0
132	te g	u235he	rc	cu		4.0636320	5.0	1.1300000	3.8000000%	99 mo g	u235t	0.0000000	76for1	7
132	te g	u235he	rc	cu		4.1229107	5.0	4.1400000	3.9000000%	0		0.0000000	81lau1	0
132	te g	u235he	rc	cu		3.8022892	10.4	4.2000000	0.3000000	99 mo g	u235he	5.6500000	60bon1	0
132		u238f	cm	cu		0.0000000	0.0	5.4000000	0.0000000	0		0.0000000	73lar3	0
132		u238f	cm	cu		0.0000000	0.0	5.1100000	4.4000000%	0		0.0000000	77cro1	0
132		u238f	es	cu	cm	4.7278615	30.0	4.7000000	0.0000000	0		0.0000000	64wal1	0
132		u238f	es	cu	cm	5.0497585	30.0	5.0200000	0.0000000	0		0.0000000	72sid1	0
132		u238f	rc	cu		4.6373280	5.0	4.6100000	0.1200000	0		0.0000000	85li 1	0
132		u238f	rc	cu		4.3843937	5.0	4.6200000	0.0700000	140 ba g	u238f	6.1600000	77bla1	0
132		u238f	rc	cu		5.1604106	5.0	5.1300000	0.2400000	0		0.0000000	85li 1	0
132		u238f	rc	cu	x4	0.0000000	0.0	6.7600000	30.0000000%	0		0.0000000	81koc1	36
132	xe g	u238f	cm	cu		0.0000000	0.0	4.7000000	0.0000000	0		0.0000000	60kat1	0
132	xe g	u238f	cm	cu		0.0000000	0.0	5.2290000	0.0460000	0		0.0000000	81mae1	0
132	xe g	u238f	ms	cu		5.0061179	4.9	0.6540000	4.0000000%	134 xe g	u238f	1.0000000	84tep1	36
132	xe g	u238f	ms	cu		4.8551097	4.1	4.4000000	4.0000000%	131 xe g	u238f	3.0000000	55wan1	36
132	xe g	u238f	ms	cu		5.2599975	4.0	5.2290000	4.0000000%	0		0.0000000	81mae1	36
132	xe g	u238f	ms	cu	su	0.0000000	0.0	5.1600000	0.0300000	148 nd g	u238f	2.0800000	74mae1	0
132	xe g	u238f	ms	re	cm	5.4424309	4.9	0.7110000	4.0000000%	134 xe g	u238f	1.0000000	72mat1	36
132	i g	u238f	rc	re		5.2612725	5.0	0.9000000	0.0300000	140 ba g	u238f	1.0000000	73man1	0
132	i g	u238f	rc	cu		4.9543120	5.0	4.7500000	1.2000000%	132 i g	u235t	4.1600000	74yur1	0
132	i g	u238f	rc	cu		5.1404903	5.0	5.3200000	0.1000000	140 ba g	u238f	6.0500000	78deb1	0
132	i g	u238f	rc	cu		4.9665639	5.0	5.1400000	0.1100000	140 ba g	u238f	6.0500000	78deb1	0
132	i g	u238f	rc	cu		5.2610034	5.0	5.2300000	0.1400000	0		0.0000000	78nag1	0
132	i g	u238f	rc	in		0.0201723	27.8	0.0180000	0.0050000	135 i g	u238f	6.2300000	84dob1	0
132	i g	u238f	rc	cu		4.9089286	5.5	4.8800000	5.5000000%	0		0.0000000	87chu1	0
132	i g	u238f	rc	cu		5.4118926	11.0	5.3800000	11.0000000%	0		0.0000000	88afa1	0
132	i g	u238f	rc	cu		5.7237303	10.4	5.6900000	10.4000000%	0		0.0000000	88afa1	0
132	i g	u238f	rc	cu	x4	0.0000000	0.0	6.0500000	10.2000000%	0		0.0000000	88afa1	0
132	i g	u238f	rc	cu	x4	0.0000000	0.0	6.1400000	11.2000000%	0		0.0000000	88afa1	0
132	i g	u238f	rc	cu		4.6473873	12.6	4.6200000	12.6000000%	0		0.0000000	88afa1	0
132	i g	u238f	rc	cu		4.9290471	10.2	4.9000000	10.2000000%	0		0.0000000	88afa1	0
132	i g	u238f	rc	cu		5.0396992	14.2	5.0100000	14.2000000%	0		0.0000000	88afa1	0

132	i g	u238f	rc	cu		5.5024261	10.8	5.4700000	10.8000000%	0			0.0000000	88afa1	0
132	te g	u238f	rc	cu		4.8202691	20.0	4.7000000	0.7000000	140	ba g	u238f	5.7000000	54kel1	0
132	te g	u238f	rc	cu		4.7278615	15.0	4.7000000	0.0000000	0			0.0000000	68bel1	0
132	te g	u238f	rc	cu	x4	0.0000000	0.0	4.2300000	0.3400000	140	ba g	u238f	6.0300000	72cun2	0
132	te g	u238f	rc	cu	su	0.0000000	0.0	5.7200000	7.0000000%	0			0.0000000	73dud2	0
132	te g	u238f	es	cu		4.9562072	4.1	4.9270000	4.1000000%	0			0.0000000	73net2	0
132	te g	u238f	rc	cu		5.7539081	9.6	5.7200000	9.6000000%	0			0.0000000	75dud2	0
132	te g	u238f	rc	cu	x4	0.0000000	0.0	3.7900000	0.3500000	0			0.0000000	75har1	0
132	te g	u238f	cm	cu		0.0000000	0.0	4.7000000	0.0000000	0			0.0000000	60kat1	0
132	te g	u238f	rc	cu		4.6172095	15.0	4.5900000	0.0000000	0			0.0000000	75fly4	0
132	te g	u238f	rc	cu		4.1846604	15.0	4.1600000	0.0000000	0			0.0000000	75fly4	0
132	te g	u238f	rc	cu		5.9517964	8.6	6.1800000	0.5300000	140	ba g	u238f	6.0700000	77har1	0
132	te g	u238f	es	cu		5.2408848	2.5	5.2100000	0.1300000	0			0.0000000	78gin1	0
132	te g	u238f	rc	cu		5.2509441	5.0	5.2200000	0.2500000	0			0.0000000	77gud1	0
132	te g	u238f	rc	re		5.2034744	5.0	3.1510000	0.1420000	140	ba g	u238f	3.5400000	72rid1	0
132	te g	u238f	rc	re		5.4160158	5.0	2.8350000	0.1280000	140	ba g	u238f	3.0600000	72rid2	0
132	te g	u238f	rc	cu		5.1976373	5.2	1.2030000	0.0230000	132	te g	u235t	1.0000000	79yur1	0
132	te g	u238f	rc	cu		5.1690727	6.0	5.2700000	6.0000000%	140	ba g	u238f	5.9600000	72lar1	0
132	te g	u238f	rc	cu	x4	0.0000000	0.0	4.1000000	0.4000000	99	mo g	u238f	7.0000000	60bon1	0
132	te g	u238f	rc	cu		4.7178023	5.1	4.6900000	0.2400000	0			0.0000000	85chi1	0
132	te g	u238f	rc	cu		6.7397175	46.3	6.7000000	3.1000000	0			0.0000000	84gud1	0
132	te g	u238f	rc	cu		5.5137637	5.2	4.9200000	0.1600000	135	i g	u238f	6.2300000	84dob1	0
132		u238he	es	cu		4.6746118	30.0	4.6710000	0.0000000	0			0.0000000	63wea1	0
132	xe g	u238he	ms	re		4.9081662	2.1	0.7600000	0.0040000	134	xe g	u238he	1.0000000	68gor1	0
132	xe g	u238he	ms	cu		4.7098069	2.9	23.0600000	0.4800000	134	xe g	u238he	31.6200000	70pet1	0
132		u238he	cm	cu	su	0.0000000	0.0	4.7200000	0.1000000	0			0.0000000	73dar1	0
132		u238he	es	cu		5.0098708	15.0	5.0060000	15.0000000%	0			0.0000000	74mee9	0
132		u238he	cm	cu		0.0000000	0.0	4.6500000	2.5000000%	0			0.0000000	77cro1	0
132		u238he	cm	cu		0.0000000	0.0	4.8200000	0.0600000	0			0.0000000	75dar1	0
132	i g	u238he	rc	cu		4.8236341	10.1	4.5000000	0.4000000	140	ba g	u238he	4.3000000	62bro1	0
132	i g	u238he	rc	re		4.4345270	10.9	1.1000000	0.1200000	99	mo g	u235t	0.0000000	68gor1	7
132	i g	u238he	cm	cu		0.0000000	0.0	4.6000000	0.0000000	0			0.0000000	69gun2	0
132	i g	u238he	rc	re		5.2530082	5.2	0.9200000	0.0400000	99	mo g	u238he	1.0000000	69lyl1	0
132	i g	u238he	rc	cu	su	0.0000000	0.0	4.9900000	0.3000000	0			0.0000000	71bla1	0
132	i g	u238he	rc	cu	su	0.0000000	0.0	4.4300000	0.4500000	0			0.0000000	73dar2	0
132	i g	u238he	rc	re		4.7014354	5.2	1.0200000	0.0300000	140	ba g	u238he	1.0000000	73man1	0

132 i g u238he rc cu 4.9799944 7.2 4.9700000 0.3500000 140 ba g u238he 4.6000000 75cav1 0
132 i g u238he rc cu su 0.0000000 0.0 4.9700000 0.3500000 140 ba g u238he 4.6000000 74bla1 0
132 i g u238he rc in 0.1701315 23.5 0.1700000 0.0400000 0 0.0000000 80li 1 0
132 te g u238he rc re 4.5763237 10.0 1.1400000 0.0500000 99 mo g u235t 0.0000000 56for1 7
132 te g u238he cm cu 0.0000000 0.0 4.6000000 0.0000000 0 0.0000000 69gun2 0
132 te g u238he rc cu su 0.0000000 0.0 4.2000000 0.4300000 0 0.0000000 73dar2 0
132 te g u238he rc cu su 0.0000000 0.0 4.4600000 0.0800000 0 0.0000000 73dar4 0
132 te g u238he cm cu 0.0000000 0.0 4.5900000 5.9000000% 0 0.0000000 73net2 0
132 te g u238he rc cu su 0.0000000 0.0 4.4600000 0.0800000 140 ba g u238he 4.4800000 74dar1 0
132 te g u238he rc cu 4.6475909 5.0 4.6440000 0.0530000 0 0.0000000 75dar1 0
132 te g u238he rc cu 4.3186672 5.7 4.3100000 0.2400000 140 ba g u238he 4.6000000 76raj1 0
132 te g u238he cm cu 0.0000000 0.0 4.7000000 0.0000000 0 0.0000000 60kat1 0
132 te g u238he rc cu 4.5763237 5.0 1.1400000 3.8000000% 99 mo g u235t 0.0000000 76for1 7
132 te g u238he rc cu 4.1905792 7.7 4.1100000 0.3100000 99 mo g u238he 5.6000000 75ada1 0
132 te g u238he rc cu 4.7236497 5.0 4.7200000 3.9000000% 0 0.0000000 81lau1 0
132 te g u238he rc cu 4.6836188 5.0 4.6800000 0.2300000 0 0.0000000 85liu1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

132 te g u238he rc cu 4.7395118 5.2 4.7300000 0.1500000 140 ba g u238he 4.6000000 80zhe1 0
132 te g u238he cm cu 0.0000000 0.0 4.6470000 0.0660000 0 0.0000000 75dar1 0
132 te g u238he rc cu 4.4134100 9.1 4.4100000 9.1000000% 0 0.0000000 75dar1 0
132 te g u238he rc cu 4.4334254 8.8 4.4300000 8.8000000% 0 0.0000000 75dar1 0
132 te g u238he rc cu 4.5335028 5.7 4.5300000 5.7000000% 0 0.0000000 75dar1 0
132 te g u238he rc cu 4.5635260 5.0 4.5600000 4.0000000% 0 0.0000000 75dar1 0
132 te g u238he rc cu 4.5835414 5.0 4.5800000 3.9000000% 0 0.0000000 75dar1 0
132 te g u238he rc cu 4.6035569 5.0 4.6000000 2.5000000% 0 0.0000000 75dar1 0
132 te g u238he rc cu 4.6235724 5.0 4.6200000 3.0000000% 0 0.0000000 75dar1 0
132 te g u238he rc cu 4.6435878 5.0 4.6400000 0.1600000 0 0.0000000 75dar1 0
132 te g u238he rc cu 4.6435878 5.0 4.6400000 0.1600000 0 0.0000000 75dar1 0
132 te g u238he rc cu 4.6535956 5.0 4.6500000 1.4000000% 0 0.0000000 75dar1 0
132 te g u238he rc cu 4.6636033 5.0 4.6600000 0.1500000 0 0.0000000 75dar1 0
132 te g u238he rc cu 4.6636033 5.8 4.6600000 5.8000000% 0 0.0000000 75dar1 0
132 te g u238he rc cu 4.6936265 5.0 4.6900000 2.9000000% 0 0.0000000 75dar1 0
132 te g u238he rc cu 4.7136420 5.5 4.7100000 5.5000000% 0 0.0000000 75dar1 0

132 te g u238he rc cu 4.7736883 5.0 4.7700000 4.0000000% 0 0.0000000 75dar1 0
132 te g u238he rc cu 4.8737657 5.0 4.8700000 0.2100000 0 0.0000000 75dar1 0
132 te g u238he rc cu x4 0.0000000 0.0 4.4000000 0.3000000 99 mo g u238he 6.5000000 60bon1 0
132 xe g pu239t ms re 5.3332157 1.5 3.7800000 0.0400000 133 xe g pu239t 4.9700000 56fle1 0
132 xe g pu239t ms re 5.6790599 3.3 22.8000000 0.7500000 134 xe g pu239t 30.8000000 72pet1 0
132 pu239t cm cu 0.0000000 0.0 5.1900000 0.0000000 0 0.0000000 72sid1 0
132 pu239t cm cu 0.0000000 0.0 5.2500000 0.0000000 0 0.0000000 73lam1 0
132 pu239t cm cu 0.0000000 0.0 5.2100000 0.1200000 0 0.0000000 73wal1 0
132 xe g pu239t ms cu 5.4268266 2.2 5.4300000 0.1200000 0 0.0000000 75mae1 0
132 xe g pu239t ms re 5.3111856 7.1 22.5000000 1.6000000 134 xe g pu239t 32.5000000 72pet1 0
132 pu239t cm cu 0.0000000 0.0 5.1500000 2.2000000% 0 0.0000000 77cro1 0
132 xe g pu239t ms cu 5.4438167 2.0 5.4470000 0.0530000 0 0.0000000 79mae2 0
132 xe g pu239t ms re 5.4210551 0.7 0.3983000 0.0008000 148 nd g pu239t 0.1205800 76mae1 0
132 xe g pu239t ms cu 5.4493890 2.4 5.0900000 0.1200000 131 xe g pu239t 3.6000000 70lis1 0
132 xe g pu239t ms cu 5.3701987 0.7 0.7000000 0.0020000 134 xe g pu239t 1.0000000 84tep1 0
132 xe g pu239t es cu cm 5.4368208 1.0 5.4400000 1.0000000% 0 0.0000000 81mae2 0
132 i g pu239t rc cu rp 5.1690853 18.6 5.7000000 0.0000000 no. relative values = 1 77gud1
132 i g pu239t rc cu 5.2469318 5.0 5.2500000 0.0800000 0 0.0000000 79ram1 0
132 i g pu239t rc in su 0.0000000 0.0 0.2300000 0.0140000 135 pu239t 6.3000000 77nis1 0
132 i g pu239t rc in 0.2606220 9.1 0.2300000 0.0200000 135 i g pu239t 5.7700000 80nis1 0
132 i g pu239t rc in x6 0.0000000 0.0 0.1200000 0.0100000 135 i g pu239t 5.7700000 80nis1 0
132 i g pu239t cm in 0.0000000 0.0 0.1591000 42.0000000% 0 1.0000000 88wah1 0
132 i m pu239t rc in x6 0.0000000 0.0 0.1100000 0.0100000 135 i g pu239t 5.7700000 80nis1 0
132 te g pu239t rc cu 4.8916637 60.0 4.9000000 0.0000000 140 ba g pu239t 5.3600000 51ste3 0
132 te g pu239t rc cu 5.5067799 5.0 5.5100000 0.2700000 0 0.0000000 65mar1 0
132 te g pu239t rc cu 5.2145629 5.0 5.6100000 0.1200000 99 mo g u235t 4.2600000 71ram1 31
132 te g pu239t rc fi x2 0.0000000 0.0 0.0200000 0.0000000 132 pu239t 1.0000000 72gun1 0
132 te g pu239t cm cu 0.0000000 0.0 4.9700000 2.0000000% 0 0.0000000 73net2 0
132 te g pu239t rc fi su 0.0000000 0.0 38.5000000 3.0000000 132 pu239t 100.0000000 74paf1 0
132 te g pu239t rc fi 2.0755599 5.4 39.6000000 1.2000000 132 te g pu239t 98.0000000 76paf1 0
132 te g pu239t rc cu 5.3110391 25.1 5.4400000 25.0000000% 97 zr g pu239t 5.4600000 74jen1 0
132 te g pu239t rc cu 5.4568091 5.0 5.4600000 0.1500000 0 0.0000000 77gud1 0
132 te g pu239t rc cu 5.2069552 5.0 5.2100000 0.1300000 0 0.0000000 80dic1 0
132 te g pu239t rc cu 5.1170078 5.0 5.1200000 0.1500000 0 0.0000000 79ram1 0
132 te g pu239t rc cu 5.2169493 5.0 5.2200000 0.1000000 0 0.0000000 84jai1 0
132 te g pu239t rc cu 5.6374110 5.0 1.5200000 0.0300000 140 ba g u235t 0.0000000 86chi1 7

132 te g pu239t cm in 0.0000000 0.0 2.3640000 3.0000000% 0 1.0000000 88wah1 0
132 sb g pu239t rc fi x2 0.0000000 0.0 0.0900000 0.0700000 132 pu239t 1.0000000 72gun1 0
132 sb g pu239t rc in 1.1657972 16.6 1.2200000 0.2000000 92 sr g pu239t 3.1000000 76ima1 0
132 sb g pu239t rc fi su 0.0000000 0.0 28.7680000 2.9000000 132 pu239t 100.0000000 74paf1 40
132 sb g pu239t rc fi 1.9864575 12.6 37.9000000 4.7000000 132 te g pu239t 98.0000000 76paf1 0
132 sb g pu239t rc fi sm 0.0000000 0.0 50.4000000 2.5000000 132 te g pu239t 98.0000000 76paf1 0
132 sb g pu239t rc in sm 0.0000000 0.0 2.6000000 0.1600000 132 sb g u235t 2.0000000 76paf1 15
132 sb g pu239t rc re rp 2.3869487 48.2 1.0000000 0.0000000 no. relative values = 1 76paf1
132 sb g pu239t rc cu sm 0.0000000 0.0 1.6100000 0.2200000 0 0.0000000 81dic1 0
132 sb g pu239t rc cu sm 0.0000000 0.0 1.8600000 0.2600000 0 0.0000000 81dic1 0
132 sb g pu239t rc cu x4 0.0000000 0.0 0.9338000 0.1286000 0 0.0000000 81dic1 18
132 sb g pu239t rc cu x4 0.0000000 0.0 1.0788000 0.1508000 0 0.0000000 81dic1 18
132 sb g pu239t cm in 0.0000000 0.0 1.3620000 17.0000000% 0 1.0000000 88wah1 0
132 sb m pu239t rc in 0.5064529 20.9 0.5300000 0.1100000 92 sr g pu239t 3.1000000 76ima1 0
132 sb m pu239t rc fi su 0.0000000 0.0 20.8320000 2.9000000 132 pu239t 100.0000000 74paf1 40
132 sb m pu239t rc re 0.6919933 17.1 0.3300000 0.0500000 132 sb g pu239t 1.0000000 76paf1 0
132 sb m pu239t rc fi 0.6551641 20.1 12.5000000 2.5000000 132 te g pu239t 98.0000000 76paf1 0
132 sb m pu239t rc cu 0.6758048 13.7 0.6762000 0.0924000 0 0.0000000 81dic1 18
132 sb m pu239t rc cu 0.7807435 14.0 0.7812000 0.1092000 0 0.0000000 81dic1 18
132 sb m pu239t rc cu sm 0.0000000 0.0 1.6100000 0.2200000 0 0.0000000 81dic1 0
132 sb m pu239t rc cu sm 0.0000000 0.0 1.8600000 0.2600000 0 0.0000000 81dic1 0
132 sb m pu239t cm in 0.0000000 0.0 0.9850000 17.0000000% 0 1.0000000 88wah1 0
132 sn g pu239t rc fi x2 0.0000000 0.0 0.6100000 0.0000000 132 pu239t 1.0000000 72gun1 0
132 sn g pu239t rc fi su 0.0000000 0.0 9.5000000 3.0000000 132 pu239t 100.0000000 74paf1 0
132 sn g pu239t rc fc 0.4717182 19.0 9.0000000 1.7000000 132 te g pu239t 98.0000000 76paf1 0
132 sn g pu239t rc cu 0.4693932 52.3 0.4400000 0.2300000 132 sn g u235t 0.5600000 76paf1 0
132 sn g pu239t cm in 0.0000000 0.0 0.4938000 19.0000000% 0 1.0000000 88wah1 0
132 in g pu239t rc fi x2 0.0000000 0.0 0.2700000 0.0005000 132 pu239t 1.0000000 72gun1 0
132 pu239f es cu cm 5.4069121 30.0 5.4200000 0.0000000 0 0.0000000 72sid1 0
132 pu239f cm cu 0.0000000 0.0 5.3000000 0.0000000 0 0.0000000 73lar3 0
132 pu239f es re 5.3398638 10.0 0.9900000 10.0000000% 132 pu239t 1.0000000 74mee4 0
132 xe g pu239f ms cu su 0.0000000 0.0 5.4900000 0.0000000 0 0.0000000 76koc1 0
132 pu239f cm cu 0.0000000 0.0 5.3400000 3.3000000% 0 0.0000000 77cro1 0
132 xe g pu239f ms cu 5.3892604 2.7 5.7300000 2.7000000% 134 xe g pu239f 7.8300000 77koc1 0
132 xe g pu239f ms cu 5.3350210 1.2 5.3240000 0.0620000 148 nd g pu239f 1.6540000 77mae1 0
132 xe g pu239f ms cu 5.4867189 2.0 5.5000000 0.0780000 0 0.0000000 77mae1 0

132 xe g pu239f ms cu 5.1926228 2.1 5.4200000 0.1100000 148 nd g pu239f 1.7300000 70lis1 0
132 xe g pu239f ms cu rp 5.3013307 1.9 0.2259000 0.0000000 no. relative values = 3 80mae4
132 xe g pu239f ms cu su 0.0000000 0.0 5.2700000 0.0900000 148 nd g pu239f 1.6500000 74mae1 0
132 pu239f rc cu 5.7161635 10.0 5.7300000 10.0000000% 0 0.0000000 81koc1 36
132 xe g pu239f es cu cm 5.3071536 1.0 5.3200000 1.0000000% 0 0.0000000 81mae2 0
132 i g pu239f rc re 5.5110372 5.0 1.4910000 0.0680000 140 ba g u235t 0.0000000 75raj1 7
132 i g pu239f rc cu 5.6862360 5.0 5.7000000 0.2100000 0 0.0000000 77gud1 0
132 te g pu239f rc cu 4.9732591 7.3 5.0200000 0.3600000 140 ba g pu239f 5.3600000 72cun2 0
132 te g pu239f rc cu su 0.0000000 0.0 4.9800000 0.2200000 0 0.0000000 73dud1 0
132 te g pu239f rc cu su 0.0000000 0.0 5.5900000 6.0000000% 0 0.0000000 73dud2 0
132 te g pu239f es cu cm 4.7933971 7.0 4.8050000 7.0000000% 0 0.0000000 73net2 0
132 te g pu239f rc cu x4 0.0000000 0.0 3.5800000 30.0000000% 97 zr g pu239f 4.9000000 74jen1 0
132 te g pu239f rc cu 4.9579987 7.6 4.9700000 7.6000000% 0 0.0000000 75dud1 0
132 te g pu239f rc cu 5.6263808 8.4 5.6400000 8.4000000% 0 0.0000000 75dud2 0
132 te g pu239f rc cu x4 0.0000000 0.0 3.5000000 1.0000000 140 ba g pu239f 5.4000000 61bon1 0
132 te g pu239f rc cu su 0.0000000 0.0 5.3340000 7.3000000% 0 0.0000000 76gil2 0
132 te g pu239f rc cu su 0.0000000 0.0 5.4780000 7.2000000% 0 0.0000000 76gil3 0
132 te g pu239f bm cu 5.4268638 6.1 5.4400000 6.1000000% 0 0.0000000 77gil1 0
132 te g pu239f rc re 5.6086528 5.2 1.0520000 0.0470000 140 ba g pu239f 0.9960000 72rid1 0
132 te g pu239f rc re 5.6354262 5.2 1.0220000 0.0460000 140 ba g pu239f 0.9630000 72rid2 0
132 te g pu239f rc cu 5.2040299 6.3 1.0150000 0.0610000 132 te g pu239t 1.0000000 79yur1 36
132 te g pu239f rc cu 5.4213524 6.3 5.3600000 6.1000000% 140 ba g pu239f 5.2500000 72lar1 0
132 te g pu239f rc cu 4.8582402 5.0 4.8700000 3.3000000% 0 0.0000000 81lau1 0
132 te g pu239f rc cu 5.7324871 6.1 5.7000000 0.3400000 140 ba g pu239f 5.2800000 78bya1 0
132 te g pu239f rc cu 5.4468155 5.0 5.4600000 0.1500000 0 0.0000000 77gud1 0
132 pu241t cm cu 0.0000000 0.0 4.4700000 0.0000000 0 0.0000000 72sid1 0
132 pu241t rc cu 4.3647231 15.1 4.6800000 0.0000000 131 pu241t 3.3300000 73chi1 0
132 pu241t cm cu 0.0000000 0.0 4.6400000 0.1100000 0 0.0000000 73wal1 0
132 pu241t cm cu 0.0000000 0.0 4.5800000 4.1000000% 0 0.0000000 77cro1 0
132 pu241t cm cu 0.0000000 0.0 4.5500000 0.0000000 0 0.0000000 79wal1 0
132 xe g pu241t ms cu 4.6011579 2.0 4.5940000 0.0380000 0 0.0000000 77mae1 0
132 xe g pu241t ms cu 4.5746988 3.1 4.6400000 0.1300000 131 xe g pu241t 3.1500000 70lis1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

132 xe g pu241t ms re 4.5404168 1.5 0.5726000 0.0020000 134 xe g pu241t 1.0000000 64far1 0
132 i g pu241t rc in 0.0617961 10.5 0.0617000 0.0065000 0 0.0000000 87red1 0
132 te g pu241t rc cu 4.4869803 5.0 4.4800000 0.1000000 0 0.0000000 73sko2 0
132 te g pu241t rc cu 4.4969959 5.0 4.4900000 0.1200000 0 0.0000000 73sko2 0
132 te g pu241t rc cu 4.6572452 5.0 4.6500000 0.1800000 0 0.0000000 79dic1 0
132 te g pu241t rc cu 4.6034036 5.0 1.1500000 0.0200000 140 ba g u235t 0.0000000 86chi1 7
132 te g pu241t rc fc sm 0.0000000 0.0 0.9985000 0.0200000 132 pu241t 1.0000000 87red1 0
132 te g pu241t rc cu x4 0.0000000 0.0 4.9000000 0.0000000 0 0.0000000 63kir1 0
132 te g pu241t rc cu x4 0.0000000 0.0 5.0300000 11.0000000% 0 0.0000000 87red1 0
132 xe g u233t ms re x4 0.0000000 0.0 19.2000000 1.9000000 134 xe g u233t 26.9000000 72pet1 0
132 u233t cm cu 0.0000000 0.0 4.9000000 0.0000000 0 0.0000000 72sid1 0
132 u233t cm cu 0.0000000 0.0 4.8400000 0.0000000 0 0.0000000 73lam1 0
132 u233t es cu 4.8108902 2.3 4.8200000 0.1100000 0 0.0000000 73wal1 0
132 xe g u233t ms cu rp 4.8555854 5.5 4.8200000 0.0000000 no. relative values = 3 61bid1
132 u233t cm cu 0.0000000 0.0 4.8000000 3.8000000% 0 0.0000000 77cro1 0
132 xe g u233t ms cu rp 4.9224500 1.6 4.9000000 0.0000000 no. relative values = 5 54fle1
132 xe g u233t ms cu 4.8707768 2.0 4.8800000 0.0600000 0 0.0000000 70lis1 0
132 xe g u233t ms cu 5.0042568 0.9 0.7950000 0.0020000 134 xe g u233t 1.0000000 84tep1 0
132 i g u233t rc cu 4.8979948 5.0 4.9100000 0.0300000 99 mo g u235t 4.3800000 66gor1 24
132 i g u233t rc cu x4 0.0000000 0.0 4.1000000 0.4000000 99 mo g u233t 4.8000000 67gan1 0
132 i g u233t rc fi 0.2965856 50.0 0.0600000 0.0300000 132 i g u233t 1.0000000 70run1 0
132 i g u233t rc in su 0.0000000 0.0 0.1900000 0.0100000 135 i g u233t 4.9000000 77nis1 0
132 i g u233t rc in 0.1927808 6.9 0.1900000 0.0120000 135 i g u233t 4.9500000 80nis1 0
132 i g u233t rc in x6 0.0000000 0.0 0.1100000 0.0100000 135 i g u233t 4.9500000 80nis1 0
132 i g u233t rc cu 4.6312304 5.0 4.6400000 4.4000000% 0 0.0000000 81ram1 0
132 i m u233t rc in x6 0.0000000 0.0 0.0820000 0.0100000 135 i g u233t 4.9500000 80nis1 0
132 te g u233t rc fi 3.1840414 6.3 0.6440000 0.0400000 132 u233t 1.0000000 72nae1 0
132 te g u233t cm cu 0.0000000 0.0 4.6340000 2.0000000% 0 0.0000000 73net2 0
132 te g u233t rc cu 4.6695758 60.1 4.9000000 0.0000000 140 ba g u233t 6.7000000 48gru1 0
132 te g u233t rc fc 4.6475138 5.4 0.9400000 0.0500000 132 u233t 1.0000000 72nae1 0
132 te g u233t rc cu 4.4914950 8.0 4.5000000 0.3600000 0 0.0000000 77gud1 0
132 te g u233t rc cu 4.6888182 24.6 0.0490000 0.0120000 140 la g u233t 0.0670000 51gru1 0
132 te g u233t sp fi 3.8960010 5.0 0.7880000 3.0000000% 132 u233t 1.0000000 86lei1 0
132 te g u233t rc cu 4.8238463 5.0 1.0900000 0.0200000 140 ba g u235t 0.0000000 86chi1 7
132 te g u233t rc cu x4 0.0000000 0.0 4.3200000 0.2500000 0 0.0000000 60san1 0
132 te g u233t rc cu x4 0.0000000 0.0 5.9100000 30.0000000% 0 0.0000000 81ram1 36

132 sb g u233t rc in 0.8120189 18.1 0.8400000 0.1500000 92 sr g u233t 6.6000000 76ima1 0
132 sb g u233t rc fi 0.7772225 11.1 0.1572000 0.0174000 132 u233t 1.0000000 72nae1 40
132 sb g u233t sp fi 0.5735230 7.0 0.1160000 7.0000000% 132 u233t 1.0000000 86lei1 40
132 sb g u233t es in 0.6912111 14.0 0.6925200 14.0000000% 0 0.0000000 88wah1 18
132 sb g u233t es in 0.6474740 11.0 0.6487000 11.0000000% 0 0.0000000 89rid1 18
132 sb m u233t rc in 0.2900067 20.2 0.3000000 0.0600000 92 sr g u233t 6.6000000 76ima1 0
132 sb m u233t rc fi 0.5626458 11.1 0.1138000 0.0126000 132 u233t 1.0000000 72nae1 40
132 sb m u233t sp fi 0.4153097 7.0 0.0840000 7.0000000% 132 u233t 1.0000000 86lei1 40
132 sb m u233t es in 0.5005322 14.0 0.5014800 14.0000000% 0 0.0000000 88wah1 18
132 sb m u233t es in 0.4427616 11.0 0.4436000 11.0000000% 0 0.0000000 89rid1 18
132 sn g u233t rc fc 0.1236041 20.0 0.0250000 0.0050000 132 u233t 1.0000000 72nae1 0
132 sn g u233t sp fc 0.0642741 15.0 0.0130000 15.0000000% 132 u233t 1.0000000 86lei1 0
132 xe g th232f ms cu 2.8600467 2.0 2.8700000 0.0200000 0 0.0000000 57ken1 0
132 th232f es cu cm 2.8600467 30.0 2.8700000 0.0000000 0 0.0000000 65eng1 0
132 th232f es cu cm 2.8899427 30.0 2.9000000 0.0000000 0 0.0000000 72sid1 0
132 th232f es cu cm 2.6906363 30.0 2.7000000 0.0000000 0 0.0000000 73lam1 0
132 th232f cm cu 0.0000000 0.0 2.8300000 0.0000000 0 0.0000000 74lam1 0
132 xe g th232f cm cu 0.0000000 0.0 2.8700000 0.0000000 0 0.0000000 60kat1 0
132 th232f cm cu 0.0000000 0.0 2.7600000 7.5000000% 0 0.0000000 77cro1 0
132 xe g th232f ms re rp 2.9720370 6.6 1.0000000 0.0000000 no. relative values = 1 68har1
132 th232f rc cu 2.5680362 12.3 2.5000000 0.3000000 140 ba g th232f 7.6400000 70kob1 0
132 i g th232f es cu 2.6507750 10.0 2.6600000 10.0000000% 0 0.0000000 74mee1 36
132 i g th232f es cu 2.8152028 10.0 2.8250000 10.0000000% 0 0.0000000 91jam2 36
132 i g th232f es fc 2.9585315 10.1 1.0000000 10.0000000% 132 th232f 1.0000000 89rid1 36
132 i g th232f rc cu 2.8634298 5.7 2.7000000 0.0500000 140 ba g th232f 7.4000000 73cha1 0
132 i g th232f rc cu 3.2686248 5.0 3.2800000 0.1000000 0 0.0000000 86ric1 0
132 i g th232f rc cu x4 0.0000000 0.0 2.5000000 0.1900000 99 mo g th232f 3.1000000 64bro1 0
132 i g th232f rc fi ul 0.0000000 0.0 0.0400000 0.0000000 132 th232f 1.0000000 57ale1 0
132 i g th232f rc in 0.0966636 19.6 0.0970000 0.0190000 0 0.0000000 82li 1 0
132 te g th232f rc cu x4 0.0000000 0.0 1.6000000 0.0000000 89 sr g th232f 6.0000000 50nid1 0
132 te g th232f rc cu 2.6657881 29.4 2.4000000 0.7000000 89 sr g th232f 6.7000000 51tur1 0
132 te g th232f rc re 2.7143500 10.0 0.4990000 10.0000000% 140 ba g u235t 0.0000000 73bra1 7
132 te g th232f rc cu su 0.0000000 0.0 1.9000000 0.2000000 0 0.0000000 73dee1 0
132 te g th232f cm cu 0.0000000 0.0 2.6700000 4.0000000% 0 0.0000000 73net2 0
132 te g th232f rc cu x4 0.0000000 0.0 1.9000000 0.2000000 0 0.0000000 75dee1 0
132 te g th232f rc cu 3.2926677 9.8 3.1200000 0.3000000 99 mo g th232f 2.7800000 68lyl1 0

132 te g th232f ms re rp 2.9605603 2.1 1.0000000 0.0000000 no. relative values = 7 68har1
132 te g th232f rc cu 2.7504282 5.8 2.7600000 0.1600000 0 0.0000000 81ert1 0
132 te g th232f rc re 3.0940049 5.0 1.5000000 0.0200000 99 mo g u235t 0.0000000 81ert1 7
132 te g th232f cm cu 0.0000000 0.0 2.8800000 0.0800000 0 0.0000000 81ert1 0
132 te g th232f rc cu 2.8500814 5.2 2.8600000 5.2000000% 0 0.0000000 81ram1 0
132 te g th232f rc cu 3.3774606 12.9 3.4300000 0.4300000 140 ba g th232f 7.9700000 85chu1 0
132 te m th232f rc cu 0.4688831 29.2 0.3743000 29.2000000% 89 sr g u235t 0.0000000 51tur1 7
132 sb g th232f cm fi 0.0000000 0.0 0.1749000 0.0700000 132 th232f 1.0000000 78iza2 40
132 sb g th232f cm fi 0.0000000 0.0 0.1828000 0.0509000 132 th232f 1.0000000 78iza2 40
132 sb g th232f rc fi 0.5409675 27.8 0.1828500 27.8000000% 132 th232f 1.0000000 77iza1 40
132 sb g th232f rc fi 0.5002877 5.2 0.1691000 3.0400000% 132 th232f 1.0000000 77iza1 40
132 sb g th232f rc fi 0.5174472 40.0 0.1749000 40.0000000% 132 th232f 1.0000000 77iza1 40
132 sb g th232f rc cu 1.3687085 12.6 1.3900000 0.1700000 140 ba g th232f 7.9700000 85chu1 0
132 sb m th232f cm fi 0.0000000 0.0 0.1551000 0.0620000 132 th232f 1.0000000 78iza2 40
132 sb m th232f cm fi 0.0000000 0.0 0.1622000 0.0451000 132 th232f 1.0000000 78iza2 40
132 sb m th232f rc fi 0.4797259 27.8 0.1621500 27.8000000% 132 th232f 1.0000000 77iza1 40
132 sb m th232f rc fi 0.4434839 5.2 0.1499000 3.0400000% 132 th232f 1.0000000 77iza1 40
132 sb m th232f rc fi 0.4588682 40.0 0.1551000 40.0000000% 132 th232f 1.0000000 77iza1 40
132 sb m th232f rc cu 1.2210062 12.4 1.2400000 0.1500000 140 ba g th232f 7.9700000 85chu1 0
132 sn g th232f rc in 1.5147286 16.1 1.5200000 16.1000000% 0 0.0000000 77iza1 0
132 sn g th232f rc in 1.5745205 25.3 1.5800000 25.3000000% 0 0.0000000 77iza1 0
132 sn g th232f rc in 1.4947979 26.7 1.5000000 26.7000000% 0 0.0000000 77iza1 0
132 sn g th232f cm fi 0.0000000 0.0 0.5290000 0.0850000 132 th232f 1.0000000 78iza2 0
132 sn g th232f cm fi 0.0000000 0.0 0.5500000 0.1340000 132 th232f 1.0000000 78iza2 0
133 cs g u235t ms re x4 0.0000000 0.0 1.0300000 0.0000000 137 cs g u235t 1.0000000 49ing1 0
133 cs g u235t ms cu rp 6.7572711 11.2 7.4300000 0.0000000 no. relative values = 2 53wil1
133 cs g u235t ms cu 6.5876915 2.0 6.5900000 1.0000000% 0 0.0000000 55pet1 0
133 cs g u235t ms re rp 6.7204393 15.8 6.5900000 0.0000000 no. relative values = 1 55pet1
133 cs g u235t ms cu 6.6476705 2.0 6.6500000 0.0700000 0 0.0000000 66lar1 0
133 u235t cm cu 0.0000000 0.0 6.6000000 0.0000000 0 0.0000000 72sid1 0
133 u235t cm cu 0.0000000 0.0 6.7300000 0.0000000 0 0.0000000 73lam1 0
133 u235t cm cu 0.0000000 0.0 6.7900000 0.1600000 0 0.0000000 73wal1 0
133 cs g u235t ms cu 6.7476354 2.0 6.7500000 0.0800000 0 0.0000000 65rid1 0
133 cs g u235t ms re 6.8297362 0.7 4.0530000 0.0230000 148 nd g u235t 0.9928000 65rid2 0
133 u235t ms cu 6.5527037 2.0 6.5550000 0.0600000 0 0.0000000 76dii1 0
133 cs g u235t ms cu 6.5876915 3.0 6.5900000 3.0000000% 0 0.0000000 59bid1 0

133 u235t cm cu 0.0000000 0.0 6.7500000 2.8000000% 0 0.0000000 77cro1 0
133 cs g u235t es fi 0.0000008 30.0 0.0001200 0.0000000 133 u235t 1000.0000000 74wol1 0
133 cs g u235t ms re 6.6323358 0.6 0.3608000 0.0003000 148 nd g u235t 0.0910100 76mae1 0
133 cs g u235t ms cu 6.6986526 2.0 6.7010000 0.0390000 0 0.0000000 78mae1 0
133 cs g u235t ms cu 6.6536684 2.0 6.6560000 0.0390000 0 0.0000000 78mae1 0
133 cs g u235t ms cu 6.6946540 2.0 6.6970000 0.0380000 0 0.0000000 78mae1 0
133 cs g u235t ms cu 6.7276424 2.0 6.7300000 0.0400000 0 0.0000000 70lis1 0
133 cs g u235t ms cu cm 6.6826582 6.0 6.6850000 0.0000000 0 0.0000000 80mae3 0
133 cs g u235t ms cu rp 6.6857282 3.2 6.7000000 0.0000000 no. relative values = 1 86chi1
133 xe g u235t ms cu 6.6889573 0.7 6.2900000 0.0100000 134 xe g u235t 7.4000000 50mac1 0
133 xe g u235t gc cu 6.6176810 2.3 6.6200000 0.1500000 0 0.0000000 53kat1 0
133 xe g u235t rc cu nr 6.7997992 20.0 24.0000000 2.0000000% 85 kr g u235t 1.0000000 53kat2 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

133 xe g u235t rc cu 6.6676635 7.8 6.6700000 0.5200000 0 0.0000000 71mcl1 0
133 xe g u235t cm cu 0.0000000 0.0 6.7660000 2.0000000% 0 0.0000000 73net2 0
133 xe g u235t rc fi 0.0006831 5.0 0.0001020 0.0000050 133 u235t 1.0000000 74wol2 0
133 xe g u235t rc fi ul 0.0000000 0.0 0.0005000 0.0005000 133 xe g u235t 1.0000000 53kat1 39
133 xe g u235t rc fi ul 0.0000000 0.0 0.0005000 0.0005000 133 u235t 1.0000000 65sto1 39
133 xe g u235t rc in x4 0.0000000 0.0 0.1334000 39.0000000% 0 0.0000000 81hsu1 0
133 xe g u235t rc fi 0.0005693 20.0 0.0000850 0.0000170 133 u235t 1.0000000 84for1 0
133 xe g u235t rc cu rp 6.7559198 26.9 7.2100000 0.0000000 no. relative values = 2 81hsu1
133 xe g u235t cm in 0.0000000 0.0 0.0006650 5.0000000% 0 1.0000000 88wah1 0
133 xe g u235t rc fi su 0.0000000 0.0 0.0000970 0.0000160 133 u235t 1.0000000 70for2 0
133 xe g u235t rc cu x4 0.0000000 0.0 6.2900000 0.2900000 0 0.0000000 76thi1 0
133 xe m u235t cm cu 0.0000000 0.0 0.1996000 45.0000000% 0 0.0000000 73net2 0
133 xe m u235t rc fi 0.0019958 5.0 0.0002980 0.0000150 133 u235t 1.0000000 74wol2 0
133 xe m u235t rc fi ul 0.0000000 0.0 0.0005000 0.0005000 133 xe g u235t 1.0000000 53kat1 39
133 xe m u235t rc fi ul 0.0000000 0.0 0.0005000 0.0005000 133 u235t 1.0000000 65sto1 39
133 xe m u235t rc in x4 0.0000000 0.0 0.3266000 39.0000000% 0 0.0000000 81hsu1 0
133 xe m u235t rc fi 0.0017814 6.4 0.0002660 0.0000170 133 u235t 1.0000000 84for1 0
133 xe m u235t cm in 0.0000000 0.0 0.0016270 5.0000000% 0 1.0000000 88wah1 0
133 xe m u235t es fi su 0.0000000 0.0 0.0002990 0.0000110 133 u235t 1.0000000 70for2 0
133 i g u235t rc cu 6.5876915 5.0 6.5900000 0.1900000 0 0.0000000 71mcl1 0

133	i	g	u235t	rc	fi	x2	0.0000000	0.0	0.0200000	0.0000000	133		u235t	1.0000000	72gun1	0
133	i	g	u235t	cm	cu		0.0000000	0.0	6.7620000	2.0000000%	0			0.0000000	73net2	0
133	i	g	u235t	rc	fi	su	0.0000000	0.0	0.0260000	0.0050000	133		u235t	1.0000000	73par1	0
133	i	g	u235t	rc	in	x3	0.0000000	0.0	0.8000000	0.0000000	133	i g	u235t	6.9000000	66yos1	0
133	i	g	u235t	rc	cu		6.6463515	20.0	6.6200000	0.2300000	140	ba g	u235t	6.1700000	53pap1	0
133	i	g	u235t	rc	in	x4	0.0000000	0.0	1.7000000	0.2000000	140	ba g	u235t	6.1700000	53pap1	0
133	i	g	u235t	rc	in		0.1699404	29.4	0.1700000	0.0500000	0			0.0000000	67wun1	0
133	i	g	u235t	rc	in		0.1719738	5.3	0.1760000	0.0090000	99	mo g	u235t	6.2500000	70del1	0
133	i	g	u235t	rc	fi		0.1339434	99.9	2.0000000	2.0000000	133		u235t	100.0000000	69den2	0
133	i	g	u235t	rc	fi		0.1741264	19.2	0.0260000	0.0050000	133		u235t	1.0000000	74par1	0
133	i	g	u235t	rc	fi		0.1727869	6.0	0.0258000	6.0000000%	133		u235t	1.0000000	68gre1	0
133	i	g	u235t	rc	fi		0.1781447	5.3	0.0266000	0.0014000	133		u235t	1.0000000	71den1	0
133	i	g	u235t	rc	fi		0.1673654	99.9	0.0250000	0.0250000	133	i g	u235t	1.0000000	55wah1	0
133	i	g	u235t	rc	fi		0.1338923	70.0	0.0200000	0.0140000	133	i g	u235t	1.0000000	73kik1	0
133	i	g	u235t	rc	cu		6.4977230	6.2	6.5000000	0.4000000	0			0.0000000	77gud1	0
133	i	g	u235t	rc	cu		6.6676635	5.0	6.6700000	0.0500000	0			0.0000000	79ram1	0
133	i	g	u235t	rc	cu		6.3677685	8.0	6.3700000	0.5100000	0			0.0000000	74bla1	0
133	i	g	u235t	rc	in	su	0.0000000	0.0	0.1200000	0.0100000	135	i g	u235t	6.3000000	77nis1	0
133	i	g	u235t	rc	in		0.1188613	8.5	0.1200000	0.0100000	135	i g	u235t	6.3400000	80nis1	0
133	i	g	u235t	cm	in		0.0000000	0.0	0.1821000	10.0000000%	0			1.0000000	88wah1	0
133	i	g	u235t	rc	in		0.1522084	35.3	0.1700000	0.0600000	133		u235t	7.4800000	66str1	0
133	i	g	u235t	rc	cu	su	0.0000000	0.0	6.5800000	2.8000000%	0			0.0000000	76gil4	0
133	i	m	u235t	rc	cu	x6	0.0000000	0.0	4.6000000	0.0000000	0			0.0000000	51sul2	0
133	i	m	u235t	sp	in	x6	0.0000000	0.0	0.0120000	0.0030000	0			0.0000000	90rud1	0
133	i	m	u235t	sp	cu	x6	0.0000000	0.0	0.6200000	0.1100000	0			0.0000000	90rud1	0
133	te	g	u235t	es	cu		3.4517904	15.0	3.4530000	15.0000000%	0			0.0000000	73net2	0
133	te	g	u235t	rc	fi	su	0.0000000	0.0	0.1590000	0.0150000	133		u235t	1.0000000	73sha1	0
133	te	g	u235t	rc	fi		1.0648496	9.4	0.1590000	0.0150000	133		u235t	1.0000000	74par1	0
133	te	g	u235t	rc	in		1.4840517	13.4	1.5000000	0.2000000	92	sr g	u235t	6.0000000	76ima1	0
133	te	g	u235t	es	fi		1.2507630	10.6	0.6440000	0.0680000	133		u235t	1.0000000	70del1	39
133	te	g	u235t	rc	fi	x2	0.0000000	0.0	0.4500000	0.0700000	133		u235t	1.0000000	72gun1	39
133	te	g	u235t	rc	fi	ul	0.0000000	0.0	0.0500000	0.0500000	133	i g	u235t	1.0000000	55wah1	0
133	te	g	u235t	sp	fi		1.0876200	7.0	0.1624000	7.0000000%	133		u235t	1.0000000	84den1	36
133	te	g	u235t	cm	in		0.0000000	0.0	1.1830000	7.0000000%	0			1.0000000	88wah1	0
133	te	g	u235t	rc	in	x4	0.0000000	0.0	2.0700000	0.3100000	133		u235t	7.4800000	66str1	0
133	te	g	u235t	sp	in		1.1895831	16.0	1.1900000	0.1900000	0			0.0000000	90rud1	0

133	te	g	u235t	sp	cu		2.8090156	15.7	2.8100000	0.4400000	0			0.0000000	90rud1	0			
133	te	m	u235t	rc	cu	x1	0.0000000	0.0	4.5000000	0.0000000	0			0.0000000	50pap1	0			
133	te	m	u235t	rc	re	x1	0.0000000	0.0	1.5500000	0.5000000	133	te	g	u235t	1.0000000	65sar1	0		
133	te	m	u235t	es	cu		3.4238002	15.0	3.4250000	15.0000000%	0			0.0000000	73net2	0			
133	te	m	u235t	rc	fi	su	0.0000000	0.0	0.4950000	0.0270000	133			u235t	1.0000000	73par1	0		
133	te	m	u235t	rc	fi		3.3150979	5.5	0.4950000	0.0270000	133			u235t	1.0000000	73sha1	0		
133	te	m	u235t	rc	fi		3.3150979	5.5	0.4950000	0.0270000	133			u235t	1.0000000	74par1	0		
133	te	m	u235t	es	fi		3.0622129	10.6	0.6440000	0.0680000	133			u235t	1.0000000	70del1	39		
133	te	m	u235t	rc	fi	x2	0.0000000	0.0	0.4500000	0.0700000	133			u235t	1.0000000	72gun1	39		
133	te	m	u235t	rc	in	x4	0.0000000	0.0	1.9600000	0.1000000	92	sr	g	u235t	6.0000000	76ima1	0		
133	te	m	u235t	rc	cu	x4	0.0000000	0.0	4.6800000	0.1100000%	140	ba	g	u235t	6.1700000	53pap1	0		
133	te	m	u235t	rc	cu	x4	0.0000000	0.0	2.7600000	0.2200000	0			0.0000000	77gud1	0			
133	te	m	u235t	rc	cu		3.7886723	5.0	3.7900000	0.1500000	0			0.0000000	79bra1	0			
133	te	m	u235t	sp	fi		2.6627938	7.0	0.3976000	7.0000000%	133			u235t	1.0000000	84den1	36		
133	te	m	u235t	rc	cu		3.6087354	5.0	3.6100000	0.1500000	0			0.0000000	85bra1	0			
133	te	m	u235t	cm	in		0.0000000	0.0	2.8960000	7.0000000%	0			1.0000000	88wah1	0			
133	te	m	u235t	rc	in	x4	0.0000000	0.0	2.1900000	0.3300000	133			u235t	7.4800000	66str1	0		
133	te	m	u235t	sp	in		4.2984937	18.6	4.3000000	0.8000000	0			0.0000000	90rud1	0			
133	te	m	u235t	sp	cu		4.8982835	12.2	4.9000000	0.6000000	0			0.0000000	90rud1	0			
133	sb	g	u235t	rc	cu		2.6173270	23.7	1.7000000	0.4000000	131	sb	g	u235t	1.6600000	69par1	0		
133	sb	g	u235t	es	fc	x1	0.0000000	0.0	0.4040000	0.0450000	133			u235t	1.0000000	70del1	0		
133	sb	g	u235t	rc	fi	x2	0.0000000	0.0	0.5100000	0.0500000	133			u235t	1.0000000	72gun1	0		
133	sb	g	u235t	cm	cu	x3	0.0000000	0.0	2.0860000	21.0000000%	0			0.0000000	73net2	0			
133	sb	g	u235t	rc	fi	su	0.0000000	0.0	0.3260000	0.0410000	133			u235t	1.0000000	73par1	0		
133	sb	g	u235t	rc	fi		2.1832766	12.3	0.3260000	0.0400000	133			u235t	1.0000000	74par1	0		
133	sb	g	u235t	rc	cu		2.2656523	5.4	2.2900000	0.1200000	92	sr	g	u235t	6.0000000	76ima1	0		
133	sb	g	u235t	es	fc	x1	0.0000000	0.0	0.4610000	0.0590000	133			u235t	1.0000000	70del1	0		
133	sb	g	u235t	es	fc		2.2100653	21.2	0.3300000	0.0700000	133			u235t	1.0000000	70del1	0		
133	sb	g	u235t	rc	cu	x1	0.0000000	0.0	3.7400000	0.1000000	140	ba	g	u235t	6.1700000	53pap1	0		
133	sb	g	u235t	sp	fc		2.9467537	7.0	0.4400000	7.0000000%	133			u235t	1.0000000	84den1	36		
133	sb	g	u235t	sp	fi		2.7793245	14.0	0.4150000	14.0000000%	133			u235t	1.0000000	84den1	36		
133	sb	g	u235t	cm	in		0.0000000	0.0	2.2760000	7.0000000%	0			1.0000000	88wah1	0			
133	sb	g	u235t	sp	in		2.1292538	6.6	2.1300000	0.1400000	0			0.0000000	90rud1	0			
133	sb	g	u235t	sp	cu		2.2692048	12.3	2.2700000	0.2800000	0			0.0000000	90rud1	0			
133	sn	g	u235t	rc	cu	x1	0.0000000	0.0	0.0150000	0.0150000	133			u235t	7.4800000	66str1	0		
133	sn	g	u235t	rc	fi	x2	0.0000000	0.0	0.0300000	0.0000000	133			u235t	1.0000000	72gun1	0		

133 sn g u235t cm cu x3 0.0000000 0.0 0.1606000 45.0000000% 0 0.0000000 73net2 0
133 sn g u235t cm in 0.0000000 0.0 0.1388000 56.0000000% 0 1.0000000 88wah1 0
133 sn g u235t sp cu 0.1399510 57.1 0.1400000 0.0800000 0 0.0000000 90rud1 0
133 cs g u235f ms cu 6.3427253 1.6 6.5350000 0.0000000 143 nd g u235f 5.9000000 71cro2 0
133 cs g u235f ms cu 6.3029316 1.6 6.4940000 0.0000000 143 nd g u235f 5.9000000 71cro2 0
133 u235f es cu x3 0.0000000 0.0 5.4700000 0.0000000 0 0.0000000 72sid1 0
133 cs g u235f ms cu 6.4346028 5.0 6.4400000 5.0000000% 0 0.0000000 73cro3 0
133 cs g u235f ms cu 6.3846447 5.0 6.3900000 5.0000000% 0 0.0000000 73cro3 0
133 cs g u235f ms cu su 0.0000000 0.0 6.8500000 0.0000000 0 0.0000000 76koc1 0
133 u235f cm cu 0.0000000 0.0 6.6500000 2.3000000% 0 0.0000000 77cro1 0
133 u235f es re 6.7943584 10.0 1.0150000 10.0000000% 133 u235t 1.0000000 74mee4 0
133 cs g u235f ms cu 6.7553338 2.0 6.7610000 0.0430000 0 0.0000000 80mae1 0
133 cs g u235f ms cu 6.4301234 2.0 6.6900000 0.1300000 148 nd g u235f 1.7500000 70lis1 0
133 cs g u235f ms cu 6.6943849 2.0 6.7000000 2.0000000% 0 0.0000000 72lar1 0
133 cs g u235f ms cu cm 6.7463413 6.0 6.7520000 0.0000000 0 0.0000000 80mae3 0
133 u235f rc cu 6.6808756 5.1 6.9600000 0.1000000 140 ba g u235f 6.2200000 77bla1 0
133 cs g u235f ms cu 6.8772315 2.0 6.8830000 0.0300000 0 0.0000000 81mae1 0
133 cs g u235f es cu 6.6584151 0.6 6.6640000 0.0370000 0 0.0000000 81mae1 0
133 cs g u235f ms cu 6.6004637 2.0 6.6060000 0.0360000 0 0.0000000 81mae1 0
133 cs g u235f cm cu 0.0000000 0.0 6.7170000 0.0910000 0 0.0000000 81mae1 0
133 cs g u235f ms cu 6.8282015 0.9 6.8200000 0.0500000 148 nd g u235f 1.6800000 74mae1 0
133 u235f rc cu 6.8492550 10.0 6.8550000 10.0000000% 0 0.0000000 81koc1 36
133 xe g u235f cm cu 0.0000000 0.0 6.6300000 14.9000000% 0 0.0000000 73net2 0
133 xe g u235f rc fi 0.0016123 5.0 0.0002400 0.0000120 133 u235f 1.0000000 74wol2 0
133 xe g u235f es re cm 6.7179605 10.0 1.0000000 0.1000000 133 u235f 1.0000000 74mee5 0
133 xe g u235f ms cu 6.9225644 0.9 6.8500000 0.7000000% 134 xe g u235f 7.5800000 77koc1 0
133 xe g u235f rc fi 0.0011017 23.8 0.0001640 0.0000390 133 u235f 1.0000000 84for1 0
133 xe g u235f rc fi su 0.0000000 0.0 0.0001600 0.0000520 133 u235f 1.0000000 70for2 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

133 xe m u235f cm cu 0.0000000 0.0 0.1840000 14.9000000% 0 0.0000000 73net2 0
133 xe m u235f rc fi 0.0047227 5.0 0.0007030 0.0000350 133 u235f 1.0000000 74wol2 0
133 xe m u235f rc fi 0.0045279 5.0 0.0006740 0.0000330 133 u235f 1.0000000 84for1 0
133 xe m u235f rc fi su 0.0000000 0.0 0.0007550 0.0000380 133 u235f 1.0000000 70for2 0

133	i	g	u235f	rc	cu		6.7066481	5.1	6.5600000	3.0000000%	140	ba	g	u235f	5.8400000	72sch1	0
133	i	g	u235f	rc	cu	su	0.0000000	0.0	6.5300000	7.0000000%	0				0.0000000	73dud2	0
133	i	g	u235f	cm	cu		0.0000000	0.0	6.6240000	14.9000000%	0				0.0000000	73net2	0
133	i	g	u235f	rc	cu		6.5844771	7.8	6.5900000	7.8000000%	0				0.0000000	75dud2	0
133	i	g	u235f	rc	re		6.7945590	5.0	1.0530000	0.0150000	140	ba	g	u235t	0.0000000	75raj1	7
133	i	g	u235f	rc	cu		6.6913985	5.1	1.0000000	0.0080000	133	i	g	u235t	1.0000000	77deb1	0
133	i	g	u235f	rc	re		6.7467244	8.0	1.1300000	0.0900000	140	ba	g	u235f	1.0000000	73man1	0
133	i	g	u235f	rc	cu		7.0460426	8.7	1.0530000	0.0910000	133	i	g	u235t	1.0000000	79yur1	36
133	i	g	u235f	rc	cu	x4	0.0000000	0.0	5.9000000	5.4000000%	0				0.0000000	81lau1	0
133	i	g	u235f	rc	cu		7.0840580	5.0	7.0900000	3.0000000%	0				0.0000000	86dho1	0
133	i	g	u235f	rc	cu		6.4945525	6.2	6.5000000	0.4000000	0				0.0000000	77gud1	0
133	i	g	u235f	rc	cu		6.6943849	5.0	6.7000000	0.3300000	0				0.0000000	81mar1	0
133	i	g	u235f	rc	cu	x4	0.0000000	0.0	7.5100000	0.5000000	140	ba	g	u235f	5.8500000	78bya1	0
133	i	g	u235f	es	in		0.4196480	10.0	0.4200000	10.0000000%	0				0.0000000	89rid1	0
133	te	g	u235f	cm	cu		0.0000000	0.0	3.1520000	26.0000000%	0				0.0000000	73net2	0
133	te	g	u235f	rc	in	sm	0.0000000	0.0	3.8300000	0.2000000	0				0.0000000	81mar1	0
133	te	m	u235f	cm	cu		0.0000000	0.0	3.4960000	21.0000000%	0				0.0000000	73net2	0
133	te	m	u235f	rc	cu		2.7576869	8.0	2.7600000	0.2200000	0				0.0000000	77gud1	0
133	sb	g	u235f	cm	cu		0.0000000	0.0	1.6990000	35.0000000%	0				0.0000000	73net2	0
133	sb	g	u235f	rc	cu		1.8184747	5.5	1.8200000	0.1000000	0				0.0000000	81mar1	0
133	sn	g	u235f	cm	cu		0.0000000	0.0	0.1041000	52.0000000%	0				0.0000000	73net2	0
133			u235he	cm	cu	x3	0.0000000	0.0	5.2700000	0.0000000	0				0.0000000	63wea1	0
133	cs	g	u235he	cm	cu		0.0000000	0.0	5.6000000	0.0000000	0				0.0000000	69gun2	0
133	cs	g	u235he	cm	cu		0.0000000	0.0	5.6000000	0.0000000	0				0.0000000	60kat1	0
133			u235he	es	cu		5.4803789	10.0	5.5260000	10.0000000%	0				0.0000000	74mee8	0
133			u235he	cm	cu	x3	0.0000000	0.0	4.9100000	11.7000000%	0				0.0000000	77cro1	0
133	xe	g	u235he	cm	cu		0.0000000	0.0	5.4200000	9.9000000%	0				0.0000000	73net2	0
133	xe	g	u235he	rc	fi	x4	0.0000000	0.0	0.0089000	0.0004000	133			u235he	1.0000000	74wol2	0
133	xe	g	u235he	rc	fi		0.0279716	12.2	0.0051000	0.0005500	133			u235he	1.0000000	84for1	0
133	xe	g	u235he	rc	fi	su	0.0000000	0.0	0.0056700	0.0005600	133			u235he	1.0000000	73for1	0
133	xe	g	u235he	es	fi	x4	0.0000000	0.0	0.0040000	0.0013000	133			u235he	1.0000000	72ale1	40
133	xe	g	u235he	es	in		0.0321325	11.0	0.0324000	11.0000000%	0				0.0000000	74mee1	0
133	xe	g	u235he	es	in		0.0297523	23.0	0.0300000	23.0000000%	0				0.0000000	89rid1	0
133	xe	m	u235he	cm	cu	x3	0.0000000	0.0	0.1730000	14.9000000%	0				0.0000000	73net2	0
133	xe	m	u235he	rc	fi		0.1426004	7.5	0.0260000	0.0010000	133			u235he	1.0000000	74wol2	0
133	xe	m	u235he	rc	fi		0.1420519	7.5	0.0259000	0.0012000	133			u235he	1.0000000	84for1	0

133	xe	m	u235he	rc	fi	su	0.0000000	0.0	0.0291000	0.0012000	133		u235he	1.0000000	73for1	0
133	xe	m	u235he	es	fi	x4	0.0000000	0.0	0.0180000	0.0057000	133		u235he	1.0000000	72ale1	40
133	xe	m	u235he	es	in		0.1445963	8.0	0.1458000	8.0000000%	0			0.0000000	74mee1	0
133	xe	m	u235he	es	in		0.1406293	6.0	0.1418000	6.0000000%	0			0.0000000	89rid1	0
133	xe	m	u235he	es	fi		0.1414486	7.3	0.0257900	4.6000000%	133		u235he	1.0000000	91jam2	0
133	i	g	u235he	rc	re		5.3797952	10.0	0.8100000	0.0300000	133	i g	u235t	1.0000000	55wah1	0
133	i	g	u235he	cm	cu		0.0000000	0.0	5.4500000	0.0000000	0			0.0000000	69gun2	0
133	i	g	u235he	rc	re		5.2553609	11.4	1.1800000	0.1300000	140	ba g	u235he	1.0000000	73man1	0
133	i	g	u235he	cm	cu		0.0000000	0.0	5.3720000	9.9000000%	0			0.0000000	73net2	0
133	i	g	u235he	cm	cu		0.0000000	0.0	5.4000000	0.0000000	0			0.0000000	60kat1	0
133	i	g	u235he	rc	fi	ul	0.0000000	0.0	0.2000000	0.2000000	133	i g	u235he	1.0000000	55wah1	0
133	i	g	u235he	rc	cu		5.3851714	5.0	5.4300000	4.9000000%	0			0.0000000	81lau1	0
133	te	g	u235he	rc	fi	x1	0.0000000	0.0	0.2000000	0.2000000	133	i g	u235he	1.0000000	55wah1	0
133	te	g	u235he	cm	cu	x3	0.0000000	0.0	1.8380000	23.0000000%	0			0.0000000	73net2	0
133	te	g	u235he	rc	re	x1	0.0000000	0.0	0.6400000	0.1500000	133	te g	u235t	1.0000000	55wah1	0
133	te	m	u235he	cm	cu		0.0000000	0.0	2.8980000	18.0000000%	0			0.0000000	73net2	0
133	sb	g	u235he	cm	cu	x3	0.0000000	0.0	0.5118000	46.0000000%	0			0.0000000	73net2	0
133	sn	g	u235he	cm	cu	x3	0.0000000	0.0	0.0106800	90.0000000%	0			0.0000000	73net2	0
133			u238f	es	cu	cm	5.2108985	30.0	5.2000000	0.0000000	0			0.0000000	64wal1	0
133			u238f	es	cu	cm	5.8121560	30.0	5.8000000	0.0000000	0			0.0000000	72sid1	0
133	cs	g	u238f	cm	cu		0.0000000	0.0	5.5000000	0.0000000	0			0.0000000	60kat1	0
133			u238f	cm	cu		0.0000000	0.0	6.4700000	6.1000000%	0			0.0000000	77cro1	0
133			u238f	rc	cu		6.8729686	5.0	7.2700000	0.1200000	140	ba g	u238f	6.1600000	77bla1	0
133	cs	g	u238f	es	cu		6.7651491	0.7	6.7510000	0.0460000	0			0.0000000	81mae1	0
133	cs	g	u238f	ms	cu		6.7300758	2.0	6.7160000	0.0460000	0			0.0000000	81mae1	0
133	cs	g	u238f	ms	cu		6.8613503	2.0	6.8470000	0.0790000	0			0.0000000	81mae1	0
133	cs	g	u238f	cm	cu		0.0000000	0.0	6.7710000	0.0700000	0			0.0000000	81mae1	0
133	cs	g	u238f	ms	cu		6.8188591	1.1	6.7000000	0.0600000	148	nd g	u238f	2.0800000	74mae1	0
133			u238f	rc	cu		7.6760543	15.0	7.6600000	15.0000000%	0			0.0000000	81koc1	36
133			u238f	rc	cu		7.2251111	5.0	7.2100000	0.2200000	0			0.0000000	85li 1	0
133	cs	g	u238f	ms	re		6.5869416	1.4	1.0860000	0.0100000	137	cs g	u238f	1.0000000	72mat1	0
133	xe	g	u238f	rc	re		6.8246856	5.1	1.3000000	0.0500000	135	xe g	u238f	1.3300000	69lyl1	0
133	xe	g	u238f	ms	re		6.5273885	3.3	0.8560000	0.0150000	134	xe g	u238f	1.0000000	72mat1	0
133	xe	g	u238f	cm	cu		0.0000000	0.0	5.9300000	4.1000000%	0			0.0000000	73net2	0
133	xe	g	u238f	rc	fi		0.0004912	99.9	0.0000725	0.0000725	133		u238f	1.0000000	74wol2	0
133	xe	g	u238f	rc	fi	ul	0.0000000	0.0	0.0002500	0.0000000	133		u238f	1.0000000	84for1	0

133 xe g u238f rc fi su 0.0000000 0.0 0.0001250 0.0001250 133 u238f 1.0000000 70for2 0
133 xe m u238f cm cu 0.0000000 0.0 0.1620000 14.9000000% 0 0.0000000 73net2 0
133 xe m u238f rc fi 0.0014363 99.9 0.0002120 0.0002120 133 u238f 1.0000000 74wol2 0
133 xe m u238f rc fi ul 0.0000000 0.0 0.0015000 99.0000000% 133 u238f 1.0000000 84for1 0
133 xe m u238f rc fi su 0.0000000 0.0 0.0007500 0.0007500 133 u238f 1.0000000 70for2 0
133 i g u238f cm cu 0.0000000 0.0 5.9300000 4.1000000% 0 0.0000000 73net2 0
133 i g u238f rc cu 6.8800661 5.1 6.9200000 0.2300000 133 i g u235t 6.7500000 74yur1 0
133 i g u238f rc cu 7.3854465 11.1 7.3700000 0.8200000 0 0.0000000 75har1 0
133 i g u238f rc cu 7.0647758 15.0 7.0500000 0.0000000 0 0.0000000 75fly4 0
133 i g u238f rc cu 6.2745086 5.0 6.5400000 0.2800000 140 ba g u238f 6.0700000 77har1 0
133 i g u238f rc cu 6.7187844 5.0 6.9800000 0.1600000 140 ba g u238f 6.0500000 78deb1 0
133 i g u238f rc cu 6.4877660 5.0 6.7400000 0.2400000 140 ba g u238f 6.0500000 78deb1 0
133 i g u238f es cu 7.1449435 2.5 7.1300000 0.1800000 0 0.0000000 78gin1 0
133 i g u238f rc cu 6.8342938 5.0 6.8200000 0.3200000 0 0.0000000 77gud1 0
133 i g u238f rc cu 6.6138327 15.0 6.6000000 0.0000000 0 0.0000000 75fly4 0
133 i g u238f rc cu 7.1875314 12.8 1.0710000 0.1370000 133 i g u235t 1.0000000 79yur1 36
133 i g u238f rc cu 5.5816739 10.2 5.5700000 0.5700000 0 0.0000000 85chi1 0
133 i g u238f rc in 0.2221665 20.2 0.1990000 0.0400000 135 i g u238f 6.2300000 84dob1 0
133 i g u238f rc cu 5.6417997 9.4 5.6300000 0.5300000 0 0.0000000 84gud1 0
133 i g u238f rc cu 7.5658237 5.0 7.5500000 4.8000000% 0 0.0000000 87chu1 0
133 i g u238f rc cu 6.9745872 10.3 6.9600000 10.3000000% 0 0.0000000 88afa1 0
133 i g u238f rc cu 7.0948387 10.0 7.0800000 10.0000000% 0 0.0000000 88afa1 0
133 i g u238f es cu 7.7762639 5.0 7.7600000 5.0000000% 0 0.0000000 89rid1 0
133 te g u238f cm cu 0.0000000 0.0 4.2810000 10.0000000% 0 0.0000000 73net2 0
133 te g u238f rc in 0.9422537 6.3 0.8440000 0.0522000 135 i g u238f 6.2300000 84dob1 40
133 te m u238f cm cu 0.0000000 0.0 1.8500000 22.0000000% 0 0.0000000 73net2 0
133 te m u238f rc in 2.3065121 6.3 2.0660000 0.1278000 135 i g u238f 6.2300000 84dob1 40
133 sb g u238f cm cu 0.0000000 0.0 3.9210000 13.0000000% 0 0.0000000 73net2 0
133 sb g u238f rc cu 4.4544933 7.4 3.9900000 0.2900000 135 i g u238f 6.2300000 84dob1 0
133 sn g u238f cm cu 0.0000000 0.0 0.9339000 32.1000000% 0 0.0000000 73net2 0
133 cs g u238he cm cu es 0.0000000 0.0 6.5690000 0.0000000 0 0.0000000 63wea1 0
133 u238he cm cu su 0.0000000 0.0 5.9600000 0.1100000 0 0.0000000 73dar1 0
133 u238he es cu 6.3419275 15.0 6.3350000 15.0000000% 0 0.0000000 74mee9 0
133 u238he cm cu 0.0000000 0.0 6.2500000 6.8000000% 0 0.0000000 77cro1 0
133 xe g u238he rc cu 6.8334014 10.4 6.6500000 0.2300000 139 ba g u238he 4.9200000 64jam1 0
133 xe g u238he ms re 6.0402685 2.1 0.9350000 0.0010000 134 xe g u238he 1.0000000 68gor1 0

133 xe g u238he cm cu 0.0000000 0.0 6.6200000 0.0000000 0 0.0000000 69gun2 0
133 xe g u238he rc re 6.7968265 6.9 1.1900000 0.0800000 99 mo g u238he 1.0000000 69lyl1 0
133 xe g u238he cm cu 0.0000000 0.0 6.7600000 14.9000000% 0 0.0000000 73net2 0
133 xe g u238he cm cu 0.0000000 0.0 6.6000000 0.0000000 0 0.0000000 60kat1 0
133 xe g u238he rc fi 0.0030121 40.0 0.0005000 0.0002000 133 u238he 1.0000000 72ale1 40
133 xe g u238he rc fi 0.0028313 29.8 0.0004700 0.0001400 133 u238he 1.0000000 84for1 0
133 xe m u238he cm cu 0.0000000 0.0 0.2000000 14.9000000% 0 0.0000000 73net2 0
133 xe m u238he rc fi 0.0150603 44.0 0.0025000 0.0011000 133 u238he 1.0000000 72ale1 40
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

133 xe m u238he rc fi 0.0143374 5.2 0.0023800 0.0001000 133 u238he 1.0000000 84for1 0
133 i g u238he rc cu x4 0.0000000 0.0 2.6000000 0.3000000 140 ba g u238he 4.3000000 62bro1 0
133 i g u238he rc re 6.3238243 7.9 1.0100000 0.0800000 99 mo g u235t 0.0000000 68gor1 7
133 i g u238he cm cu x3 0.0000000 0.0 2.6000000 0.0000000 0 0.0000000 69gun2 0
133 i g u238he rc re 6.3970132 5.2 1.1200000 0.0300000 99 mo g u238he 1.0000000 69lyl1 0
133 i g u238he rc cu su 0.0000000 0.0 6.5300000 0.4000000 0 0.0000000 71bla1 0
133 i g u238he rc cu su 0.0000000 0.0 5.4600000 0.6200000 0 0.0000000 73dar2 0
133 i g u238he rc cu su 0.0000000 0.0 5.9400000 0.2100000 0 0.0000000 73dar4 0
133 i g u238he rc re 6.6394447 7.1 1.4400000 0.1000000 140 ba g u238he 1.0000000 73man1 0
133 i g u238he cm cu 0.0000000 0.0 6.7580000 14.9000000% 0 0.0000000 73net2 0
133 i g u238he rc cu su 0.0000000 0.0 5.9400000 0.2100000 140 ba g u238he 4.4800000 74dar1 0
133 i g u238he rc cu 5.7863206 5.0 5.7800000 0.1200000 0 0.0000000 75dar1 0
133 i g u238he rc cu 5.7433602 6.6 5.7300000 0.3700000 140 ba g u238he 4.6000000 76raj1 0
133 i g u238he rc cu 5.7932135 9.1 5.6800000 0.5100000 99 mo g u238he 5.6000000 75ada1 0
133 i g u238he rc cu 6.0139898 5.2 6.0000000 0.2100000 140 ba g u238he 4.6000000 75cav1 0
133 i g u238he rc cu su 0.0000000 0.0 6.0000000 0.2100000 140 ba g u238he 4.6000000 74bla1 0
133 i g u238he rc cu 5.5060144 6.0 5.5000000 6.0000000% 0 0.0000000 81lau1 0
133 i g u238he rc cu 5.7333369 5.2 5.7200000 0.2600000 140 ba g u238he 4.6000000 80zhe1 0
133 i g u238he rc cu 6.0065611 5.0 6.0000000 0.1900000 0 0.0000000 85liu1 0
133 i g u238he rc cu 6.4867672 7.2 6.3600000 0.4500000 99 mo g u238he 5.6000000 80li 1 0
133 i g u238he rc cu 5.6561784 5.0 5.6500000 0.1600000 0 0.0000000 75dar1 0
133 i g u238he rc cu 5.6862112 6.2 5.6800000 0.3500000 0 0.0000000 75dar1 0
133 i g u238he rc cu 6.0065611 5.0 6.0000000 0.3000000 0 0.0000000 75dar1 0
133 i g u238he rc cu 6.1367033 5.2 6.1300000 0.3200000 0 0.0000000 75dar1 0

133 te g u238he cm cu 0.0000000 0.0 3.7250000 21.0000000% 0 0.0000000 73net2 0
133 te m u238he cm cu 0.0000000 0.0 3.2170000 26.0000000% 0 0.0000000 73net2 0
133 sb g u238he cm cu 0.0000000 0.0 2.5170000 26.0000000% 0 0.0000000 73net2 0
133 sn g u238he cm cu x3 0.0000000 0.0 0.2479000 47.0000000% 0 0.0000000 73net2 0
133 pu239t cm cu 0.0000000 0.0 6.8900000 0.0000000 0 0.0000000 72sid1 0
133 pu239t cm cu 0.0000000 0.0 6.9200000 0.1900000 0 0.0000000 73wal1 0
133 pu239t cm cu 0.0000000 0.0 6.9400000 0.0000000 0 0.0000000 73lam1 0
133 pu239t cm cu 0.0000000 0.0 6.9700000 9.5000000% 0 0.0000000 77cro1 0
133 cs g pu239t cm cu 0.0000000 0.0 6.9200000 3.0000000% 0 0.0000000 59bid1 0
133 cs g pu239t es cu cm 7.0358857 1.0 7.0400000 1.0000000% 0 0.0000000 81mae2 0
133 cs g pu239t ms cu 6.7960260 2.1 6.8000000 0.1400000 0 0.0000000 66rid2 0
133 cs g pu239t ms cu 7.0358857 2.1 7.0400000 0.1500000 0 0.0000000 75mae1 0
133 cs g pu239t ms cu 7.0548746 2.0 7.0590000 0.0770000 0 0.0000000 79mae2 0
133 cs g pu239t ms cu 7.0346652 2.1 7.1800000 0.1500000 137 cs g pu239t 6.7400000 70lis1 0
133 cs g pu239t ms cu rp 6.6447440 2.2 1.0000000 0.0000000 no. relative values = 2 56wil1
133 cs g pu239t ms cu rp 6.8957897 9.2 6.9000000 0.0000000 no. relative values = 3 59fic1
133 cs g pu239t ms cu x4 0.0000000 0.0 5.2600000 0.1300000 0 0.0000000 59ani1 0
133 cs g pu239t ms re 7.0597572 0.7 0.5187000 0.0022000 148 nd g pu239t 0.1205800 76mae1 0
133 cs g pu239t ms re rp 6.9952886 4.1 6.9000000 0.0000000 no. relative values = 3 59fic2
133 cs g pu239t ms re rp 7.0613251 8.6 6.9000000 0.0000000 no. relative values = 1 61bay1
133 cs g pu239t ms re x4 0.0000000 0.0 0.4460000 0.0020000 137 cs g pu239t 1.0000000 57kri1 0
133 xe g pu239t ms re rp 7.0921529 1.9 4.9700000 0.0000000 no. relative values = 3 56fle1
133 xe g pu239t rc cu 7.2104538 5.0 7.8100000 0.1400000 99 mo g u235t 6.6900000 71ram1 31
133 xe g pu239t cm cu 0.0000000 0.0 6.8380000 2.0000000% 0 0.0000000 73net2 0
133 xe g pu239t rc fi 0.0119909 99.9 0.0017100 0.0017100 133 pu239t 1.0000000 74wol2 0
133 xe g pu239t rc fi 0.0091159 8.5 0.0013000 0.0001100 133 pu239t 1.0000000 84for1 0
133 xe g pu239t rc cu 7.2757455 5.0 7.2800000 0.1200000 0 0.0000000 84jai1 0
133 xe g pu239t cm in 0.0000000 0.0 0.0122400 4.0000000% 0 1.0000000 88wah1 0
133 xe g pu239t rc fi su 0.0000000 0.0 0.0014900 0.0001200 133 pu239t 1.0000000 70for2 0
133 xe m pu239t cm cu x3 0.0000000 0.0 0.2208000 45.0000000% 0 0.0000000 73net2 0
133 xe m pu239t rc fi 0.0351312 99.9 0.0050100 0.0050100 133 pu239t 1.0000000 74wol2 0
133 xe m pu239t rc fi 0.0326769 5.6 0.0046600 0.0002600 133 pu239t 1.0000000 84for1 0
133 xe m pu239t cm in 0.0000000 0.0 0.0299800 4.0000000% 0 1.0000000 88wah1 0
133 xe m pu239t rc fi su 0.0000000 0.0 0.0052400 0.0001900 133 pu239t 1.0000000 70for2 0
133 i g pu239t rc cu x4 0.0000000 0.0 5.0000000 0.0000000 140 ba g pu239t 5.3600000 51ste3 0
133 i g pu239t rc cu 6.7625464 5.0 5.5300000 0.0600000 137 cs g pu239t 5.4000000 65mar1 0

133 i g pu239t rc fi su 0.0000000 0.0 15.0000000 5.0000000 133 pu239t 100.0000000 69den2 0
133 i g pu239t rc cu 6.9677579 5.0 7.5500000 0.1800000 99 mo g u235t 6.6900000 71ram1 31
133 i g pu239t rc fi x2 0.0000000 0.0 0.0600000 0.0000000 133 pu239t 1.0000000 72gun1 0
133 i g pu239t cm cu 0.0000000 0.0 6.9100000 0.0000000 0 0.0000000 73lam1 0
133 i g pu239t cm cu 0.0000000 0.0 6.8070000 2.0000000% 0 0.0000000 73net2 0
133 i g pu239t rc fi 1.0523140 18.6 0.1510000 0.0280000 133 i g pu239t 1.0000000 70qai1 0
133 i g pu239t rc cu 6.5461721 5.0 6.5500000 0.3000000 0 0.0000000 77gud1 0
133 i g pu239t rc cu 7.1458214 5.0 7.1500000 0.1900000 0 0.0000000 80dic1 0
133 i g pu239t rc cu 7.1957922 5.0 7.2000000 0.0300000 0 0.0000000 79ram1 0
133 i g pu239t rc in su 0.0000000 0.0 0.9400000 0.0700000 135 pu239t 6.3000000 77nis1 0
133 i g pu239t rc in sm 0.0000000 0.0 0.9400000 0.0700000 135 i g pu239t 5.7700000 80nis1 0
133 i g pu239t rc in 1.0651508 8.0 0.9400000 0.0700000 135 i g pu239t 5.7700000 80nis1 0
133 i g pu239t rc cu 6.9959091 5.0 7.0000000 0.1600000 0 0.0000000 84jai1 0
133 i g pu239t rc cu 7.0551055 5.0 1.2200000 0.0200000 140 ba g u235t 0.0000000 86chi1 7
133 i g pu239t cm in 0.0000000 0.0 1.0480000 19.0000000% 0 1.0000000 88wah1 0
133 te g pu239t rc fi x2 0.0000000 0.0 0.1160000 0.0200000 133 pu239t 1.0000000 72gun1 0
133 te g pu239t cm cu x3 0.0000000 0.0 2.6030000 21.0000000% 0 0.0000000 73net2 0
133 te g pu239t rc in 1.5766930 10.7 1.6500000 0.1700000 92 sr g pu239t 3.1000000 76ima1 0
133 te g pu239t rc cu 3.0881942 9.1 3.0900000 0.2800000 0 0.0000000 81dic1 0
133 te g pu239t cm in 0.0000000 0.0 1.3650000 5.0000000% 0 1.0000000 88wah1 0
133 te m pu239t rc fi x2 0.0000000 0.0 0.2840000 0.0500000 133 pu239t 1.0000000 72gun1 0
133 te m pu239t cm cu x3 0.0000000 0.0 3.7500000 15.0000000% 0 0.0000000 73net2 0
133 te m pu239t rc in 2.5418202 6.0 2.6600000 0.1400000 92 sr g pu239t 3.1000000 76ima1 0
133 te m pu239t rc cu 3.5679136 6.7 3.5700000 0.2400000 0 0.0000000 77gud1 0
133 te m pu239t rc cu 3.6178844 8.6 3.6200000 0.3100000 0 0.0000000 80dic1 0
133 te m pu239t cm in 0.0000000 0.0 3.3420000 5.0000000% 0 1.0000000 88wah1 0
133 sb g pu239t rc fi x2 0.0000000 0.0 0.4900000 0.0500000 133 pu239t 1.0000000 72gun1 0
133 sb g pu239t cm cu x3 0.0000000 0.0 0.9228000 32.7000000% 0 0.0000000 73net2 0
133 sb g pu239t rc cu 1.1562415 7.2 1.2100000 0.0800000 92 sr g pu239t 3.1000000 76ima1 0
133 sb g pu239t rc cu 1.4940392 37.2 1.0600000 0.3900000 133 sb g u235t 1.7000000 76paf1 0
133 sb g pu239t cm in 0.0000000 0.0 1.1870000 7.0000000% 0 1.0000000 88wah1 0
133 sn g pu239t rc fi x2 0.0000000 0.0 0.0500000 0.0000000 133 pu239t 1.0000000 72gun1 0
133 sn g pu239t cm cu 0.0000000 0.0 0.0275700 90.0000000% 0 0.0000000 73net2 0
133 pu239f es cu cm 5.8899259 30.0 5.9000000 0.0000000 0 0.0000000 72sid1 0
133 pu239f es re 6.9343539 10.0 0.9900000 10.0000000% 133 pu239t 1.0000000 74mee4 0
133 cs g pu239f ms cu su 0.0000000 0.0 7.2900000 0.0000000 0 0.0000000 76koc1 0

133 pu239f cm cu 0.0000000 0.0 6.9700000 3.3000000% 0 0.0000000 77cro1 0
133 cs g pu239f ms cu 7.0405220 0.8 7.0210000 0.0490000 148 nd g pu239f 1.6540000 77mae1 0
133 cs g pu239f ms cu 6.9531074 2.0 6.9650000 0.0620000 0 0.0000000 77mae1 0
133 cs g pu239f ms cu 6.9592587 0.9 0.3301000 0.0002000 137 cs g pu239f 0.3118000 80mae4 0
133 cs g pu239f ms cu su 0.0000000 0.0 6.9900000 0.0400000 148 nd g pu239f 1.6500000 74mae1 0
133 pu239f rc cu 7.2605815 10.0 7.2730000 10.0000000% 0 0.0000000 81koc1 36
133 cs g pu239f es cu cm 6.9481159 1.0 6.9600000 1.0000000% 0 0.0000000 81mae2 0
133 cs g pu239f ms cu 6.8982013 2.0 6.9100000 0.1200000 0 0.0000000 70lis1 0
133 xe g pu239f cm cu 0.0000000 0.0 6.2900000 14.9000000% 0 0.0000000 73net2 0
133 xe g pu239f rc fi 0.0155189 5.0 0.0022300 0.0000900 133 pu239f 1.0000000 74wol2 0
133 xe g pu239f ms cu 6.7860586 1.3 7.2100000 1.2000000% 134 xe g pu239f 7.8300000 77koc1 0
133 xe g pu239f rc fi su 0.0000000 0.0 0.0018400 0.0001500 133 pu239f 1.0000000 73for1 0
133 xe m pu239f cm cu 0.0000000 0.0 0.1900000 14.9000000% 0 0.0000000 73net2 0
133 xe m pu239f rc fi 0.0455128 5.0 0.0065400 0.0002500 133 pu239f 1.0000000 74wol2 0
133 xe m pu239f rc fi su 0.0000000 0.0 0.0069500 0.0002700 133 pu239f 1.0000000 73for1 0
133 i g pu239f rc cu su 0.0000000 0.0 6.8500000 6.0000000% 0 0.0000000 73dud2 0
133 i g pu239f cm cu 0.0000000 0.0 6.2450000 14.9000000% 0 0.0000000 73net2 0
133 i g pu239f rc cu 6.8383037 6.4 6.8500000 6.4000000% 0 0.0000000 75dud2 0
133 i g pu239f rc re 7.1441194 5.0 1.2440000 0.0210000 140 ba g u235t 0.0000000 75raj1 7
133 i g pu239f rc cu 6.8498249 5.2 0.9840000 0.0160000 133 i g pu239t 1.0000000 79yur1 0
133 i g pu239f rc cu x4 0.0000000 0.0 5.9200000 6.0000000% 0 0.0000000 81lau1 0
133 i g pu239f rc cu 6.5618096 5.8 6.5200000 0.3700000 140 ba g pu239f 5.2800000 78bya1 0
133 i g pu239f rc cu 6.5388160 5.0 6.5500000 0.3000000 0 0.0000000 77gud1 0
133 te g pu239f cm cu x3 0.0000000 0.0 2.2120000 26.0000000% 0 0.0000000 73net2 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

133 te m pu239f cm cu x3 0.0000000 0.0 3.4000000 21.0000000% 0 0.0000000 73net2 0
133 te m pu239f rc cu 3.5639043 6.7 3.5700000 0.2400000 0 0.0000000 77gud1 0
133 sb g pu239f cm cu x3 0.0000000 0.0 0.6653000 35.0000000% 0 0.0000000 73net2 0
133 sn g pu239f cm cu 0.0000000 0.0 0.0155100 90.0000000% 0 0.0000000 73net2 0
133 pu241t cm cu 0.0000000 0.0 6.5600000 0.0000000 0 0.0000000 72sid1 0
133 pu241t rc cu 7.0172650 15.1 7.5300000 0.0000000 131 pu241t 3.3300000 73chi1 0
133 cs g pu241t ms cu 6.9575498 5.3 6.5200000 0.3400000 148 nd g pu241t 1.8120000 67rid1 0
133 pu241t cm cu 0.0000000 0.0 6.5500000 10.6000000% 0 0.0000000 77cro1 0

133 pu241t cm cu 0.0000000 0.0 6.7200000 0.2000000 0 0.0000000 73wal1 0
133 pu241t cm cu 0.0000000 0.0 6.8800000 0.0000000 0 0.0000000 79wal1 0
133 cs g pu241t ms cu 6.7382454 2.0 6.7330000 0.0430000 0 0.0000000 77mae1 0
133 cs g pu241t ms cu 6.9693361 2.8 6.7100000 0.1800000 148 nd g pu241t 1.8616500 70lis1 0
133 cs g pu241t ms re 6.5952450 1.0 0.9909000 0.0070000 137 cs g pu241t 1.0000000 64far1 0
133 cs g pu241t ms cu 6.8227071 1.1 6.8100000 0.0600000 148 nd g pu241t 1.9300000 86chi1 0
133 cs g pu241t ms cu rp 6.8571991 3.2 6.8100000 0.0000000 no. relative values = 1 86chi1
133 xe g pu241t ms re 6.6555771 1.8 0.8400000 0.0090000 134 xe g pu241t 1.0000000 64far1 0
133 i g pu241t rc cu 7.2356326 5.0 7.2300000 0.2500000 0 0.0000000 73sko2 0
133 i g pu241t rc cu 6.9253910 5.0 6.9200000 0.2700000 0 0.0000000 79dic1 0
133 i g pu241t rc cu 6.7979400 5.0 1.0900000 0.0200000 140 ba g u235t 0.0000000 86chi1 7
133 i g pu241t rc in 0.0674525 99.9 0.0674000 0.0717000 0 0.0000000 87red1 0
133 i g pu241t rc cu x4 0.0000000 0.0 5.6000000 0.0000000 0 0.0000000 63kir1 0
133 te g pu241t rc fc sm 0.0000000 0.0 0.8300000 0.0370000 133 pu241t 1.0000000 87red1 0
133 cs g u233t ms cu rp 6.0388290 16.4 5.2000000 0.0000000 no. relative values = 1 57iva1
133 u233t cm cu x3 0.0000000 0.0 5.9000000 0.0000000 0 0.0000000 72sid1 0
133 cs g u233t cm cu x3 0.0000000 0.0 6.0300000 0.0000000 0 0.0000000 73lam1 0
133 u233t cm cu x3 0.0000000 0.0 5.9900000 0.2100000 0 0.0000000 73wal1 0
133 cs g u233t ms cu 5.7545777 3.0 5.7700000 3.0000000% 0 0.0000000 61bid1 0
133 cs g u233t ms cu rp 5.9467694 6.7 5.7700000 0.0000000 no. relative values = 2 61bid1
133 cs g u233t ms re x4 0.0000000 0.0 4.8210000 0.0620000 148 nd g u233t 0.9946000 65rid2 0
133 u233t cm cu x3 0.0000000 0.0 5.9600000 2.1000000% 0 0.0000000 77cro1 0
133 cs g u233t ms cu 6.0139438 2.5 5.5000000 0.1300000 137 cs g u233t 6.1600000 59ani1 0
133 cs g u233t ms cu 6.0388290 5.8 5.2000000 0.3000000 137 cs g u233t 5.8000000 59ani1 0
133 cs g u233t ms cu su 0.0000000 0.0 5.6000000 3.0000000% 0 0.0000000 59bid1 0
133 cs g u233t ms cu rp 5.9349493 3.2 5.9300000 0.0000000 no. relative values = 1 54fle1
133 cs g u233t ms cu 5.9787938 3.9 5.9300000 0.2300000 132 xe g u233t 4.9000000 54fle1 0
133 cs g u233t ms cu rp 5.8728305 5.6 5.9900000 0.0000000 no. relative values = 1 54fle1
133 cs g u233t ms cu 6.0438025 2.0 6.0600000 0.0500000 0 0.0000000 70lis1 0
133 cs g u233t ms cu rp 5.9675203 5.6 6.0600000 0.0000000 no. relative values = 1 86chi1
133 cs g u233t ms cu 5.8303745 2.4 5.8460000 0.1400000 0 0.0000000 66rid1 0
133 xe g u233t rc cu 6.1152865 5.0 5.9700000 0.1000000 99 mo g u235t 6.6200000 66gor1 24
133 xe g u233t cm cu 0.0000000 0.0 5.9590000 2.0000000% 0 0.0000000 73net2 0
133 xe g u233t rc fi 0.0155481 5.1 0.0026200 0.0000800 133 u233t 1.0000000 74wol2 0
133 xe g u233t rc fi ul 0.0000000 0.0 0.0016000 0.0008000 133 u233t 1.0000000 65sto1 39
133 xe g u233t rc fi 0.0159635 6.4 0.0026900 0.0001700 133 u233t 1.0000000 84for1 0

133 xe g u233t rc fi su 0.0000000 0.0 0.0030100 0.0001800 133 u233t 1.0000000 70for2 0
133 xe m u233t cm cu 0.0000000 0.0 0.1956000 45.0000000% 0 0.0000000 73net2 0
133 xe m u233t rc fi 0.0455760 5.1 0.0076800 0.0002200 133 u233t 1.0000000 74wol2 0
133 xe m u233t rc fi ul 0.0000000 0.0 0.0016000 0.0008000 133 u233t 1.0000000 65sto1 39
133 xe m u233t rc fi 0.0384547 10.7 0.0064800 0.0006900 133 u233t 1.0000000 84for1 0
133 xe m u233t rc fi su 0.0000000 0.0 0.0072100 0.0002500 133 u233t 1.0000000 70for2 0
133 i g u233t rc cu 6.0310414 5.0 5.8900000 0.1100000 99 mo g u235t 6.6200000 66gor1 24
133 i g u233t rc cu x4 0.0000000 0.0 6.5000000 0.6500000 99 mo g u233t 4.8000000 67gan1 0
133 i g u233t rc fi su 0.0000000 0.0 14.0000000 3.0000000 133 u233t 100.0000000 69den2 0
133 i g u233t cm cu 0.0000000 0.0 6.0000000 0.0000000 0 0.0000000 73lam1 0
133 i g u233t cm cu 0.0000000 0.0 5.9280000 2.0000000% 0 0.0000000 73net2 0
133 i g u233t rc cu x4 0.0000000 0.0 3.3700000 0.2900000 0 0.0000000 60san1 0
133 i g u233t rc fi 0.8053582 9.9 0.1370000 0.0130000 133 i g u233t 1.0000000 70qai1 0
133 i g u233t rc fi 0.9198276 64.5 0.1550000 0.1000000 133 u233t 1.0000000 72ber1 0
133 i g u233t rc fi 0.8308120 21.5 0.1400000 0.0300000 133 u233t 1.0000000 71den1 0
133 i g u233t rc in su 0.0000000 0.0 0.7200000 0.0500000 135 i g u233t 4.9000000 77nis1 0
133 i g u233t rc in 0.7299647 7.5 0.7200000 0.0500000 135 i g u233t 4.9500000 80nis1 0
133 i g u233t rc cu 5.9986429 5.0 0.8700000 0.0200000 140 ba g u235t 0.0000000 86chi1 7
133 i g u233t rc cu 5.8144173 5.0 5.8300000 4.4000000% 0 0.0000000 81ram1 0
133 i g u233t rc fi x4 0.0000000 0.0 0.2100000 0.0300000 133 i g u233t 1.0000000 70run1 0
133 i g u233t rc cu x4 0.0000000 0.0 5.1000000 0.6500000 0 0.0000000 77gud1 0
133 te g u233t rc fi 1.2462181 9.6 0.2100000 0.0200000 133 u233t 1.0000000 72ber1 0
133 te g u233t cm cu x3 0.0000000 0.0 2.2100000 21.0000000% 0 0.0000000 73net2 0
133 te g u233t rc in 1.4875336 10.1 1.5400000 0.1500000 92 sr g u233t 6.6000000 76ima1 0
133 te g u233t sp fi 1.4123805 6.1 0.2380000 6.0000000% 133 u233t 1.0000000 86lei1 40
133 te g u233t es in 1.2576295 14.0 1.2610000 14.0000000% 0 0.0000000 88wah1 18
133 te m u233t rc fi 3.2639045 5.1 0.5500000 0.0200000 133 u233t 1.0000000 72ber1 0
133 te m u233t cm cu x3 0.0000000 0.0 3.2570000 15.0000000% 0 0.0000000 73net2 0
133 te m u233t rc in x4 0.0000000 0.0 2.0300000 0.1500000 92 sr g u233t 6.6000000 76ima1 0
133 te m u233t rc fc 3.5072137 5.1 0.5910000 0.0200000 133 u233t 1.0000000 72ber1 0
133 te m u233t sp fi 3.4597387 6.1 0.5830000 6.0000000% 133 u233t 1.0000000 86lei1 40
133 te m u233t es in 3.0119280 16.0 3.0200000 16.0000000% 0 0.0000000 74mee1 36
133 te m u233t es in 3.1515538 16.0 3.1600000 16.0000000% 0 0.0000000 89rid1 36
133 te m u233t es in 3.0787489 14.0 3.0870000 14.0000000% 0 0.0000000 88wah1 18
133 te m u233t es fi 2.8020917 21.3 0.4721800 21.3000000% 133 u233t 1.0000000 91jam2 0
133 sb g u233t rc cu 0.8113820 6.6 0.8400000 0.0500000 92 sr g u233t 6.6000000 76ima1 0

133 sb g u233t sp fc 1.0622525 7.1 0.1790000 7.0000000% 133 u233t 1.0000000 86lei1 0
133 sb g u233t rc fc x4 0.0000000 0.0 0.0800000 0.0400000 133 u233t 1.0000000 72ber1 0
133 sb g u233t es cu 0.7408146 32.1 0.7428000 32.1000000% 0 0.0000000 73net2 0
133 sb g u233t es in 0.8231938 10.0 0.8254000 10.0000000% 0 0.0000000 88wah1 0
133 sb g u233t es in 0.8706666 10.0 0.8730000 10.0000000% 0 0.0000000 89rid1 36
133 sb g u233t es fc 0.8011402 10.0 0.1350000 10.0000000% 133 u233t 1.0000000 88wah1 0
133 sb g u233t es fc 0.8545495 10.0 0.1440000 10.0000000% 133 u233t 1.0000000 89rid1 0
133 sn g u233t cm cu 0.0000000 0.0 0.0204400 90.0000000% 0 0.0000000 73net2 0
133 th232f es cu cm 3.6818532 30.0 3.7000000 0.0000000 0 0.0000000 65eng1 0
133 th232f es cu cm 3.2838150 30.0 3.3000000 0.0000000 0 0.0000000 72sid1 0
133 th232f es cu cm 3.7216570 30.0 3.7400000 0.0000000 0 0.0000000 73lam1 0
133 th232f cm cu 0.0000000 0.0 3.9600000 0.0000000 0 0.0000000 74lam1 0
133 th232f cm cu 0.0000000 0.0 3.8600000 7.1000000% 0 0.0000000 77cro1 0
133 th232f es cu 3.9405780 5.0 3.9600000 5.0000000% 0 0.0000000 74mee0 0
133 cs g th232f ms re x4 0.0000000 0.0 0.8130000 0.0050000 137 cs g th232f 1.0000000 68har1 0
133 xe g th232f rc re 4.0943962 17.6 1.6600000 0.2900000 135 xe g th232f 2.2300000 69lyl1 0
133 xe g th232f cm cu 0.0000000 0.0 4.0940000 4.0000000% 0 0.0000000 73net2 0
133 xe g th232f ms re 4.0060089 2.4 1.3560000 0.0270000 132 xe g th232f 1.0000000 68har1 0
133 xe m th232f cm cu 0.0000000 0.0 0.1192000 45.0000000% 0 0.0000000 73net2 0
133 i g th232f cm cu 0.0000000 0.0 4.0940000 4.0000000% 0 0.0000000 73net2 0
133 i g th232f ms re 4.0259472 2.7 1.4090000 0.0250000 132 te g th232f 1.0000000 68har1 0
133 i g th232f rc cu 4.0997933 5.3 4.1200000 5.3000000% 0 0.0000000 81ram1 0
133 i g th232f rc cu 4.6490134 5.7 4.3900000 0.1400000 140 ba g th232f 7.4000000 73cha1 0
133 i g th232f rc cu 4.0976605 8.5 4.6200000 8.0000000% 135 i g th232f 6.1900000 69lyl1 0
133 i g th232f rc cu 4.6769486 15.1 4.7000000 0.7100000 0 0.0000000 86ric1 36
133 i g th232f rc cu x4 0.0000000 0.0 3.2600000 0.3100000 99 mo g th232f 3.1000000 64bro1 0
133 i g th232f rc fi su 0.0000000 0.0 0.0250000 0.0250000 133 th232f 1.0000000 71den1 0
133 i g th232f rc fi su 0.0000000 0.0 2.5000000 2.5000000 133 th232f 100.0000000 69den2 0
133 i g th232f rc fi ul 0.0000000 0.0 2.5000000 2.5000000 133 th232f 100.0000000 71qai1 0
133 i g th232f rc re 3.9128063 9.1 0.4620000 9.1000000% 140 ba g u235t 0.0000000 73bra1 7
133 te g th232f cm cu 0.0000000 0.0 2.8890000 10.0000000% 0 0.0000000 73net2 0
133 te g th232f rc cu x1 0.0000000 0.0 1.3300000 0.0600000 140 ba g th232f 7.9700000 85chu1 0
133 te m th232f cm cu 0.0000000 0.0 1.3480000 22.0000000% 0 0.0000000 73net2 0
133 sb g th232f cm cu 0.0000000 0.0 2.5900000 13.0000000% 0 0.0000000 73net2 0
133 sb g th232f rc fi le 1.8712868 15.1 0.4650000 0.0000000 133 th232f 1.0000000 78iza2 0
133 sn g th232f cm cu 0.0000000 0.0 0.5697000 32.1000000% 0 0.0000000 73net2 0

134 ba g u235t es in 0.0000000 99.0 0.0005347 99.0000000% 0 1000000.0000000 88wah1 0
134 ba g u235t es cu 0.0000000 99.0 0.0005347 99.0000000% 0 1000000.0000000 89rid1 0
134 cs g u235t rc in x4 0.0000000 0.0 0.0000140 0.0000140 0 1.0000000 66and1 0
134 cs g u235t ms cu 0.0000089 7.0 0.0000089 0.0000006 137 cs g u235t 6.1700000 66mch1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

134 cs g u235t rc fi x4 0.0000000 0.0 0.0000017 15.0000000% 134 u235t 1.0000000 70cow2 0
134 cs g u235t cm cu x3 0.0000000 0.0 0.0000569 90.0000000% 0 1.0000000 73net2 0
134 cs g u235t rc in x4 0.0000000 0.0 0.0000013 0.0000002 0 1.0000000 79ume1 0
134 cs g u235t rc in 0.0000078 15.0 0.0000078 0.0000000 0 1.0000000 79ume1 0
134 cs g u235t es in 0.0000095 20.0 0.0009520 20.0000000% 0 100.0000000 88wah1 0
134 cs g u235t es in 0.0000077 5.7 1.0000000 1.0000000% 134 cs g u235t 1.0000000 89rid1 0
134 cs m u235t rc fi x6 0.0000000 0.0 0.0000009 0.0000009 134 u235t 1.0000000 60bae1 0
134 xe g u235t ms cu rp 7.8779343 3.2 7.4000000 0.0000000 no. relative values = 1 50mac1
134 xe g u235t ms cu 7.9460323 1.6 8.2500000 0.0000000 131 xe g u235t 3.0000000 55wan1 0
134 xe g u235t ms re 7.9026903 1.1 2.7350000 1.0000000% 131 xe g u235t 1.0000000 63mch1 0
134 xe g u235t rc fi x2 0.0000000 0.0 0.0500000 0.0200000 134 u235t 1.0000000 65kon1 0
134 u235t cm cu 0.0000000 0.0 7.8000000 0.0000000 0 0.0000000 72sid1 0
134 u235t cm cu 0.0000000 0.0 7.6700000 0.0000000 0 0.0000000 73lam1 0
134 u235t cm cu 0.0000000 0.0 7.6100000 0.1700000 0 0.0000000 73wal1 0
134 u235t ms cu 7.6472096 2.0 7.6510000 0.0640000 0 0.0000000 76dii1 0
134 xe g u235t ms cu 7.6467661 1.6 7.4100000 0.0000000 131 xe g u235t 2.8000000 49tho1 0
134 xe g u235t cm cu 0.0000000 0.0 7.4100000 0.0000000 131 xe g u235t 2.8000000 51cor2 0
134 xe g u235t ms cu 7.9484977 0.7 8.0600000 0.2000000% 131 xe g u235t 2.9300000 56bla1 0
134 u235t cm cu 0.0000000 0.0 7.7400000 1.8000000% 0 0.0000000 77cro1 0
134 xe g u235t ms re 7.2636882 10.0 1.0000000 10.0000000% 85 kr g u235t 0.0390000 49arr1 36
134 xe g u235t ms re rp 7.6425639 6.2 1.0000000 0.0000000 no. relative values = 1 56bla1
134 xe g u235t ms re 7.8554569 0.6 0.4274000 0.0011000 148 nd g u235t 0.0910100 76mae1 0
134 xe g u235t ms cu 7.7777390 1.5 7.5100000 0.1100000 131 xe g u235t 2.7900000 70lis1 0
134 xe g u235t ms cu 7.8970858 2.0 7.9010000 0.0400000 0 0.0000000 78mae1 0
134 xe g u235t ms cu 7.9230729 2.0 7.9270000 0.0410000 0 0.0000000 78mae1 0
134 xe g u235t ms cu 7.9230729 2.0 7.9270000 0.0400000 0 0.0000000 78mae1 0
134 xe g u235t ms cu cm 7.9140774 6.0 7.9180000 0.0000000 0 0.0000000 80mae3 0
134 xe g u235t ms cu 8.0260219 5.0 8.0300000 5.0000000% 0 0.0000000 55pet2 36

134	i	g	u235t	rc	cu	x4	0.0000000	0.0	0.0580000	0.0000000	140	ba	g	u235t	0.0430000	51gru1	0
134	i	g	u235t	rc	cu	x1	0.0000000	0.0	5.7500000	0.0000000	139	ba	g	u235t	6.1000000	47yaf1	0
134	i	g	u235t	rc	cu	x1	0.0000000	0.0	5.7000000	0.0000000	140	ba	g	u235t	6.1000000	51kat4	0
134	i	g	u235t	rc	cu		7.5962349	5.0	7.6000000	0.1500000	0				0.0000000	71mcl1	0
134	i	g	u235t	rc	fi	x2	0.0000000	0.0	0.3500000	0.0500000	134			u235t	1.0000000	72gun1	0
134	i	g	u235t	rc	in		0.5797127	60.0	0.5800000	0.0000000	0				0.0000000	49gle2	18
134	i	g	u235t	rc	in		0.5099846	9.0	0.5220000	0.0464000	99	mo	g	u235t	6.2500000	70del1	40
134	i	g	u235t	rc	fi	su	0.0000000	0.0	0.0655000	0.0052200	134			u235t	1.0000000	73par1	40
134	i	g	u235t	rc	fi		0.4992858	19.0	0.0638000	0.0116000	134	i	g	u235t	1.0000000	55wah1	40
134	i	g	u235t	rc	fi		0.5153684	8.0	0.0655000	0.0052200	134			u235t	1.0000000	74par1	40
134	i	g	u235t	rc	fi		0.5476281	16.7	6.9600000	1.1600000	134			u235t	100.0000000	69den2	40
134	i	g	u235t	rc	fi		0.4563567	13.0	0.0580000	0.0075400	134			u235t	1.0000000	69bla1	40
134	i	g	u235t	rc	fi		0.5476281	15.0	0.0696000	0.0000000	134			u235t	1.0000000	66yos1	40
134	i	g	u235t	rc	fi		0.5019924	10.0	0.0638000	0.0063800	134			u235t	1.0000000	71den1	40
134	i	g	u235t	rc	cu	x4	0.0000000	0.0	5.2000000	0.6000000	0				0.0000000	77gud1	0
134	i	g	u235t	rc	cu		7.2863885	5.0	7.2900000	0.2000000	0				0.0000000	76thi1	0
134	i	g	u235t	sp	fi		0.5932637	23.1	0.0754000	0.0174000	134			u235t	1.0000000	76thi1	40
134	i	g	u235t	rc	in	su	0.0000000	0.0	0.3600000	0.0200000	135	i	g	u235t	6.3000000	77nis1	0
134	i	g	u235t	rc	in	sm	0.0000000	0.0	0.7800000	0.0600000	135	i	g	u235t	6.3400000	80nis1	0
134	i	g	u235t	rc	in		0.4159540	5.2	0.4200000	0.0200000	135	i	g	u235t	6.3400000	80nis1	0
134	i	g	u235t	rc	cu		7.2564033	5.0	7.2600000	5.0000000%	0				0.0000000	80ram1	0
134	i	g	u235t	cm	cu	x3	0.0000000	0.0	7.1370000	2.0000000%	0				0.0000000	73net2	0
134	i	g	u235t	rc	in		0.6550753	10.6	0.6554000	0.0696000	0				0.0000000	81mar1	18
134	i	g	u235t	es	in		0.5504272	6.0	0.5507000	6.0000000%	0				1.0000000	88wah1	0
134	i	g	u235t	rc	in		0.6296879	12.7	0.6300000	0.0800000	0				0.0000000	88lee1	0
134	i	g	u235t	rc	in	sm	0.0000000	0.0	1.0300000	0.0800000	0				0.0000000	88lee1	0
134	i	g	u235t	sp	in	x4	0.0000000	0.0	1.2000000	1.0000000	0				0.0000000	90rud1	0
134	i	g	u235t	sp	cu		7.0964826	11.3	7.1000000	0.8000000	0				0.0000000	90rud1	0
134	i	g	u235t	es	fc		7.8351728	0.7	0.9958000	0.5000000%	134			u235t	1.0000000	88wah1	0
134	i	m	u235t	rc	in		0.4197919	60.0	0.4200000	0.0000000	0				0.0000000	49gle2	18
134	i	m	u235t	rc	in		0.3692992	9.0	0.3780000	0.0336000	99	mo	g	u235t	6.2500000	70del1	40
134	i	m	u235t	rc	fi	su	0.0000000	0.0	0.0475000	0.0037800	134			u235t	1.0000000	73par1	40
134	i	m	u235t	rc	fi		0.3615518	19.0	0.0462000	0.0084000	134	i	g	u235t	1.0000000	55wah1	40
134	i	m	u235t	rc	fi		0.3737404	8.0	0.0475000	0.0037800	134			u235t	1.0000000	74par1	40
134	i	m	u235t	rc	fi		0.3965583	16.7	5.0400000	0.8400000	134			u235t	100.0000000	69den2	40
134	i	m	u235t	rc	fi		0.3304652	13.0	0.0420000	0.0054600	134			u235t	1.0000000	69bla1	40

134	i	m	u235t	rc	fi		0.3965583	15.0	0.0504000	0.0000000	134		u235t	1.0000000	66yos1	40			
134	i	m	u235t	rc	fi		0.3635117	10.0	0.0462000	0.0046200	134		u235t	1.0000000	71den1	40			
134	i	m	u235t	sp	fi		0.4296048	23.1	0.0546000	0.0126000	134		u235t	1.0000000	76thi1	40			
134	i	m	u235t	rc	in	su	0.0000000	0.0	0.3100000	0.0200000	135	i	g	u235t	6.3000000	77nis1	0		
134	i	m	u235t	rc	in		0.3565320	5.7	0.3600000	0.0200000	135	i	g	u235t	6.3400000	80nis1	0		
134	i	m	u235t	rc	in		0.4743649	10.6	0.4746000	0.0504000	0				0.0000000	81mar1	18		
134	i	m	u235t	sp	fi		0.3965583	25.0	0.0504000	25.0000000%	134			u235t	1.0000000	84den1	36		
134	i	m	u235t	cm	in		0.0000000	0.0	0.3987000	6.0000000%	0				1.0000000	88wah1	0		
134	i	m	u235t	rc	in		0.3898068	10.3	0.3900000	0.0400000	0				0.0000000	88lee1	0		
134	i	m	u235t	sp	in		0.2798613	10.7	0.2800000	0.0300000	0				0.0000000	90rud1	0		
134	te	g	u235t	rc	cu		6.8965817	60.0	6.9000000	0.0000000	0				0.0000000	50pap1	0		
134	te	g	u235t	rc	cu		6.5958287	20.0	6.4800000	0.4700000	139	ba	g	u235t	6.3000000	53yaf1	0		
134	te	g	u235t	rc	fi	x2	0.0000000	0.0	0.5400000	0.0900000	134			u235t	1.0000000	65kon1	0		
134	te	g	u235t	rc	fc		7.0813973	15.0	0.9000000	0.0000000	134			u235t	1.0000000	69bla1	0		
134	te	g	u235t	rc	fc	cm	7.0027152	5.0	0.8900000	0.0100000	134			u235t	1.0000000	71tro3	0		
134	te	g	u235t	rc	fi	x2	0.0000000	0.0	0.5200000	0.0600000	134			u235t	1.0000000	72gun1	0		
134	te	g	u235t	es	fi	ge	6.5306220	30.0	0.8300000	0.0000000	134			u235t	1.0000000	73wah2	0		
134	te	g	u235t	rc	cu		7.0870741	20.0	7.0600000	0.1600000	140	ba	g	u235t	6.1700000	53pap1	0		
134	te	g	u235t	rc	cu	x4	0.0000000	0.0	4.1000000	0.4100000	0				0.0000000	77gud1	0		
134	te	g	u235t	rc	fi		6.4519398	15.0	82.0000000	0.0000000	134			u235t	100.0000000	77rud1	0		
134	te	g	u235t	rc	cu		6.7966312	5.5	6.8000000	5.5000000%	0				0.0000000	80ram1	0		
134	te	g	u235t	sp	fi		6.4519398	10.0	0.8200000	10.0000000%	134			u235t	1.0000000	84den1	0		
134	te	g	u235t	cm	in		0.0000000	0.0	6.4330000	10.0000000%	0				1.0000000	88wah1	0		
134	te	g	u235t	sp	in		6.3968294	5.0	6.4000000	0.2500000	0				0.0000000	90rud1	0		
134	te	g	u235t	sp	cu		6.7966312	17.6	6.8000000	1.2000000	0				0.0000000	90rud1	0		
134	sb	g	u235t	rc	fi	x2	0.0000000	0.0	0.0550000	0.0300000	134			u235t	1.0000000	65kon1	0		
134	sb	g	u235t	es	fi	ul	0.0000000	0.0	0.0300000	0.0300000	134			u235t	1.0000000	73wah2	0		
134	sb	g	u235t	rc	fc	x6	0.0000000	0.0	0.0110000	0.0020000	134			u235t	1.0000000	75rud1	0		
134	sb	g	u235t	rc	fc	x6	0.0000000	0.0	1.2300000	0.0800000	134			u235t	100.0000000	77rud1	0		
134	sb	m	u235t	sp	cu	x6	0.0000000	0.0	0.2100000	0.0800000	133	sb	g	u235t	2.2400000	85rud1	0		
134	sb	m	u235t	rc	cu	x6	0.0000000	0.0	0.3200000	0.0400000	99	mo	g	u235t	6.2500000	68del1	0		
134	sb	m	u235t	rc	cu	x6	0.0000000	0.0	0.2900000	0.0000000	131	sb	g	u235t	1.6600000	69par1	0		
134	sb	m	u235t	rc	fi	x6	0.0000000	0.0	0.1600000	0.0000000	134			u235t	1.0000000	72gun1	0		
134	sb	m	u235t	rc	fc	x6	0.0000000	0.0	0.0530000	0.0090000	134			u235t	1.0000000	75rud1	0		
134	sb	m	u235t	rc	fc	x6	0.0000000	0.0	6.1500000	0.4000000	134			u235t	100.0000000	77rud1	0		
134	sb	m	u235t	rc	fc	sm	0.0000000	0.0	7.3800000	0.5000000	134			u235t	100.0000000	77rud1	0		

134 sb m u235t sp fi x6 0.0000000 0.0 0.0590000 51.0000000% 134 u235t 1.0000000 84den1 36
134 sb m u235t sp fc x6 0.0000000 0.0 0.0600000 50.0000000% 134 u235t 1.0000000 84den1 36
134 sb m u235t cm in x6 0.0000000 0.0 0.4945000 19.0000000% 0 1.0000000 88wah1 0
134 sb m u235t sp cu x6 0.0000000 0.0 0.2100000 0.0800000 0 0.0000000 90rud1 0
134 sb m u235t sp in x6 0.0000000 0.0 0.4000000 0.0700000 0 0.0000000 90rud1 0
134 sn g u235t rc fi x2 0.0000000 0.0 0.0100000 0.0000000 134 u235t 1.0000000 72gun1 0
134 sn g u235t sp cu su 0.0000000 0.0 0.0080000 99.0000000% 0 0.0000000 90rud1 36
134 sn g u235t rc cu 0.0179911 61.1 0.0180000 0.0110000 0 0.0000000 90rud2 0
134 cs g u235f cm cu 0.0000000 0.0 0.0001126 90.0000000% 0 0.0000000 73net2 0
134 xe g u235f ms re rp 7.8082824 9.1 35.5300000 0.0000000 no. relative values = 3 70ebe1
134 xe g u235f ms re 7.9006897 3.0 8.2200000 3.0000000% 148 nd g u235f 1.7500000 72kry1 0
134 u235f es cu cm 7.0840580 30.0 7.0900000 0.0000000 0 0.0000000 72sid1 0
134 xe g u235f ms cu su 0.0000000 0.0 7.5800000 0.0000000 0 0.0000000 76koc1 0
134 u235f cm cu 0.0000000 0.0 7.7100000 3.3000000% 0 0.0000000 77cro1 0
134 xe g u235f ms cu 7.6602976 0.7 7.5800000 0.3000000% 134 xe g u235f 7.5800000 77koc1 0
134 xe g u235f ms cu rp 7.5505587 1.3 7.5800000 0.0000000 no. relative values = 6 77koc1
134 u235f es re 7.8660383 10.0 1.0000000 10.0000000% 134 u235t 1.0000000 74mee4 0
134 xe g u235f ms cu 7.7075351 2.0 7.7140000 0.0420000 0 0.0000000 80mae1 0
134 xe g u235f ms cu cm 7.6585761 6.0 7.6650000 0.0000000 0 0.0000000 80mae3 0
134 u235f rc cu x4 0.0000000 0.0 6.5300000 0.0500000 140 ba g u235f 6.2200000 77bla1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
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134 xe g u235f ms cu 7.7375099 2.0 7.7440000 0.0320000 0 0.0000000 81mae1 0
134 xe g u235f ms cu 7.7375099 2.0 7.7440000 0.0320000 0 0.0000000 81mae2 0
134 xe g u235f cm cu 0.0000000 0.0 7.7440000 0.0320000 0 0.0000000 81mae1 0
134 xe g u235f ms cu 7.6792237 0.8 7.6700000 0.0500000 148 nd g u235f 1.6800000 74mae1 0
134 u235f rc cu 7.5736474 10.0 7.5800000 10.0000000% 0 0.0000000 81koc1 36
134 xe g u235f ms cu 7.2404714 6.1 7.0900000 0.4300000 131 xe g u235f 3.1500000 70lis1 36
134 i g u235f cm cu x3 0.0000000 0.0 6.8950000 8.0000000% 0 0.0000000 73net2 0
134 i g u235f rc cu x1 0.0000000 0.0 5.2000000 0.6000000 0 0.0000000 77gud1 0
134 i g u235f rc in sm 0.0000000 0.0 2.0800000 0.0800000 0 0.0000000 81mar1 0
134 te g u235f rc cu x4 0.0000000 0.0 5.3700000 0.1500000 0 0.0000000 81mar1 0
134 te g u235f es fc 6.3120852 4.1 0.8240000 4.1000000% 134 u235f 1.0000000 89rid1 0
134 te g u235f rc re 6.8662865 5.0 1.0220000 0.0140000 140 ba g u235t 0.0000000 75raj1 7

134 te g u235f rc cu 6.4794474 5.7 0.9300000 0.0400000 134 te g u235t 1.0000000 77deb1 0
134 te g u235f rc cu x4 0.0000000 0.0 4.1000000 0.4100000 0 0.0000000 77gud1 0
134 te g u235f rc in x1 0.0000000 0.0 4.9400000 0.1000000 0 0.0000000 81mar1 0
134 sb g u235f rc cu 0.4995810 16.0 0.5000000 0.0800000 0 0.0000000 81mar1 0
134 cs g u235he cm cu 0.0000000 0.0 0.0015220 90.0000000% 0 0.0000000 73net2 0
134 u235he es cu 6.0310017 5.0 6.0560000 5.0000000% 0 0.0000000 74mee8 0
134 xe g u235he ms re 5.5827645 3.2 28.3500000 0.4000000 131 xe g u235he 20.7500000 77pet1 0
134 xe g u235he cm cu x3 0.0000000 0.0 5.9000000 0.0000000 0 0.0000000 60kat1 0
134 u235he cm cu x3 0.0000000 0.0 5.7090000 0.0000000 0 0.0000000 63wea1 0
134 xe g u235he cm cu x3 0.0000000 0.0 5.9000000 0.0000000 0 0.0000000 69gun2 0
134 u235he cm cu x3 0.0000000 0.0 5.0800000 7.0000000% 0 0.0000000 77cro1 0
134 i g u235he rc re 5.0686133 11.5 0.6500000 0.0200000 134 i g u235t 1.0000000 55wah1 0
134 i g u235he cm cu 0.0000000 0.0 4.5300000 0.0000000 0 0.0000000 69gun2 0
134 i g u235he cm cu 0.0000000 0.0 4.8200000 6.0000000% 0 0.0000000 73net2 0
134 i g u235he cm cu 0.0000000 0.0 5.3000000 0.0000000 0 0.0000000 60kat1 0
134 i g u235he rc fi x1 0.0000000 0.0 0.1560000 0.0000000 134 u235he 1.0000000 53for2 40
134 i g u235he rc fi x1 0.0000000 0.0 0.1677000 0.0078000 134 i g u235he 1.0000000 55wah1 40
134 i m u235he rc fi x1 0.0000000 0.0 0.2440000 0.0000000 134 u235he 1.0000000 53for2 40
134 i m u235he rc fi x1 0.0000000 0.0 0.2623000 0.0122000 134 i g u235he 1.0000000 55wah1 40
134 cs g u238f cm cu 0.0000000 0.0 0.0000007 90.0000000% 0 0.0000000 73net2 0
134 u238f cm cu 0.0000000 0.0 7.4900000 4.7000000% 0 0.0000000 77cro1 0
134 u238f cm cu x3 0.0000000 0.0 5.7000000 0.0000000 0 0.0000000 64wal1 0
134 u238f es cu cm 6.7288423 30.0 6.6500000 0.0000000 0 0.0000000 72sid1 0
134 u238f rc cu 6.6276567 5.0 6.5500000 0.2300000 0 0.0000000 85li 1 0
134 u238f rc cu 6.6439847 5.0 6.9600000 0.1500000 140 ba g u238f 6.1600000 77bla1 0
134 u238f rc cu 7.8216468 10.0 7.7300000 10.0000000% 0 0.0000000 81koc1 36
134 xe g u238f cm cu 0.0000000 0.0 6.6000000 0.0000000 0 0.0000000 60kat1 0
134 xe g u238f cm cu 0.0000000 0.0 8.0530000 0.0720000 0 0.0000000 81mae1 0
134 xe g u238f ms cu 6.8705077 1.8 6.1900000 0.0000000 131 xe g u238f 3.0000000 55wan1 0
134 xe g u238f ms cu 8.1484763 2.0 8.0530000 0.0720000 0 0.0000000 81mae1 0
134 xe g u238f ms cu rp 7.6241650 1.9 1.0000000 0.0000000 no. relative values = 4 84tep1
134 xe g u238f ms cu su 0.0000000 0.0 7.9500000 0.0500000 148 nd g u238f 2.0800000 74mae1 0
134 xe g u238f ms re rp 7.9132442 3.3 1.0000000 0.0000000 no. relative values = 2 72mat1
134 i g u238f cm cu 0.0000000 0.0 6.9270000 4.1000000% 0 0.0000000 73net2 0
134 i g u238f rc cu 8.2871005 10.3 8.1900000 0.8400000 0 0.0000000 75har1 0
134 i g u238f rc cu 8.4489975 10.3 8.3500000 0.8600000 0 0.0000000 85chi1 0

134 i g u238f rc in 0.5034468 9.2 0.4466000 0.0406000 135 i g u238f 6.2300000 84dob1 40
134 i g u238f rc cu x4 0.0000000 0.0 8.9500000 8.0000000% 0 0.0000000 87chu1 0
134 i m u238f rc in 0.3645649 9.2 0.3234000 0.0294000 135 i g u238f 6.2300000 84dob1 40
134 i m u238f rc cu x1 0.0000000 0.0 1.3900000 29.2000000% 0 0.0000000 87chu1 0
134 te g u238f rc cu x4 0.0000000 0.0 5.8000000 0.0000000 0 0.0000000 68bel1 0
134 te g u238f es cu 7.9936623 3.3 7.9000000 0.2600000 0 0.0000000 78gin1 0
134 te g u238f rc cu x1 0.0000000 0.0 6.2000000 0.7000000 0 0.0000000 77gud1 0
134 te g u238f rc cu 7.8722396 5.0 7.7800000 0.3700000 0 0.0000000 78nag1 0
134 te g u238f rc cu 7.6881037 5.2 6.8200000 0.2200000 135 i g u238f 6.2300000 84dob1 0
134 te g u238f rc cu x4 0.0000000 0.0 4.6100000 10.2000000% 0 0.0000000 87chu1 0
134 te g u238f rc cu 6.6175381 10.9 6.5400000 10.9000000% 0 0.0000000 88afa1 0
134 te g u238f rc cu 6.7187237 11.1 6.6400000 11.1000000% 0 0.0000000 88afa1 0
134 cs g u238he cm cu 0.0000000 0.0 0.0000210 90.0000000% 0 0.0000000 73net2 0
134 xe g u238he ms re rp 6.4211201 1.7 1.0000000 0.0000000 no. relative values = 5 68gor1
134 xe g u238he ms cu rp 6.6907056 4.3 31.6200000 0.0000000 no. relative values = 3 70pet1
134 u238he cm cu su 0.0000000 0.0 6.4000000 0.1400000 0 0.0000000 73dar1 0
134 u238he es cu 6.7053537 15.0 6.6950000 15.0000000% 0 0.0000000 74mee9 0
134 u238he cm cu 0.0000000 0.0 6.7200000 5.2000000% 0 0.0000000 77cro1 0
134 i g u238he rc cu x4 0.0000000 0.0 4.7000000 0.5000000 140 ba g u238he 4.3000000 62bro1 0
134 i g u238he cm cu x3 0.0000000 0.0 4.7000000 0.0000000 0 0.0000000 69gun2 0
134 i g u238he rc re 7.0284699 5.9 1.2300000 0.0700000 99 mo g u238he 1.0000000 69lyl1 0
134 i g u238he rc cu su 0.0000000 0.0 6.5500000 0.3500000 0 0.0000000 73dar4 0
134 i g u238he cm cu 0.0000000 0.0 5.9820000 4.1000000% 0 0.0000000 73net2 0
134 i g u238he rc cu su 0.0000000 0.0 6.5500000 0.3500000 140 ba g u238he 4.4800000 74dar1 0
134 i g u238he rc cu 5.8991087 5.0 5.8900000 0.1600000 0 0.0000000 75dar1 0
134 i g u238he rc cu 5.5052904 8.3 5.4900000 0.4500000 140 ba g u238he 4.6000000 76raj1 0
134 i g u238he rc in 0.5589531 14.7 0.5580900 0.0819000 0 0.0000000 75dar1 18
134 i g u238he rc cu 6.4794983 5.2 6.3500000 0.3000000 99 mo g u238he 5.6000000 75ada1 0
134 i g u238he rc cu 5.7448150 10.0 5.6300000 0.5600000 99 mo g u238he 5.6000000 80li 1 0
134 i g u238he rc cu 6.2573793 6.1 6.2400000 0.3700000 140 ba g u238he 4.6000000 80zhe1 0
134 i g u238he rc cu 6.5100521 5.0 6.5000000 0.2000000 0 0.0000000 85liu1 0
134 i g u238he rc cu 5.8590469 5.0 5.8500000 0.1800000 0 0.0000000 75dar1 0
134 i g u238he rc cu 5.8991087 16.3 5.8900000 0.9600000 0 0.0000000 75dar1 0
134 i g u238he rc cu 6.4399438 13.1 6.4300000 0.8400000 0 0.0000000 75dar1 0
134 i m u238he rc in 0.8742599 14.7 0.8729100 0.1281000 0 0.0000000 75dar1 18
134 te g u238he rc cu 4.5069591 5.0 4.5000000 0.1500000 0 0.0000000 75dar1 0

134 te g u238he rc cu 4.3667426 18.3 4.3600000 18.3000000% 0 0.0000000 75dar1 0
134 te g u238he rc cu 4.4268354 5.0 4.4200000 4.1000000% 0 0.0000000 75dar1 0
134 te g u238he rc cu 4.7673612 6.5 4.7600000 6.5000000% 0 0.0000000 75dar1 0
134 cs g pu239t cm cu 0.0000000 0.0 0.0008694 90.0000000% 0 0.0000000 73net2 0
134 xe g pu239t ms re 7.5766241 1.4 5.3700000 0.0500000 133 xe g pu239t 4.9700000 56fle1 0
134 pu239t cm cu 0.0000000 0.0 7.3900000 0.0000000 0 0.0000000 72sid1 0
134 pu239t cm cu 0.0000000 0.0 7.4300000 0.0000000 0 0.0000000 73lam1 0
134 pu239t cm cu 0.0000000 0.0 7.4100000 0.1700000 0 0.0000000 73wal1 0
134 xe g pu239t ms cu 7.6555234 2.2 7.6600000 0.1700000 0 0.0000000 75mae1 0
134 xe g pu239t ms re rp 7.9693859 8.1 32.5000000 0.0000000 no. relative values = 3 72pet1
134 pu239t cm cu 0.0000000 0.0 7.3100000 3.0000000% 0 0.0000000 77cro1 0
134 xe g pu239t ms cu 7.6984982 2.0 7.7030000 0.0700000 0 0.0000000 79mae2 0
134 xe g pu239t ms re rp 7.3460353 8.7 30.8000000 0.0000000 no. relative values = 2 72pet1
134 xe g pu239t ms re 7.7008109 0.7 0.5658000 0.0012000 148 nd g pu239t 0.1205800 76mae1 0
134 xe g pu239t ms cu 7.7083696 2.4 7.2000000 0.1700000 131 xe g pu239t 3.6000000 70lis1 0
134 pu239t ms cu 7.4556403 3.0 7.4600000 3.0000000% 0 0.0000000 59fic2 0
134 xe g pu239t ms cu rp 7.7407446 1.7 1.0000000 0.0000000 no. relative values = 4 84tep1
134 xe g pu239t es cu cm 7.6755117 1.0 7.6800000 1.0000000% 0 0.0000000 81mae2 0
134 xe g pu239t cm in 0.0000000 0.0 0.0668000 54.0000000% 0 1.0000000 88wah1 0
134 xe m pu239t cm in 0.0000000 0.0 0.1560000 54.0000000% 0 1.0000000 88wah1 0
134 i g pu239t rc fi x2 0.0000000 0.0 0.1500000 0.0700000 134 pu239t 1.0000000 72gun1 0
134 i g pu239t cm cu 0.0000000 0.0 6.9250000 2.0000000% 0 0.0000000 73net2 0
134 i g pu239t rc fi su 0.0000000 0.0 19.1400000 2.9000000 134 pu239t 100.0000000 69den2 40
134 i g pu239t rc fi 1.4618801 9.4 0.1943000 0.0145000 134 i g pu239t 0.9840000 70qai1 40
134 i g pu239t rc fi 1.5128617 14.7 0.1972000 0.0290000 134 pu239t 1.0000000 71den1 40
134 i g pu239t rc cu x4 0.0000000 0.0 5.8800000 20.0000000% 97 zr g pu239t 5.4600000 74jen1 0
134 i g pu239t rc cu 6.8959675 10.1 6.9000000 0.7000000 0 0.0000000 77gud1 0
134 i g pu239t rc cu 7.4356519 5.2 7.4400000 0.3900000 0 0.0000000 80dic1 0
134 i g pu239t rc in su 0.0000000 0.0 1.2400000 0.0600000 135 pu239t 6.3000000 77nis1 0
134 i g pu239t rc in sm 0.0000000 0.0 2.3400000 0.0800000 135 i g pu239t 5.7700000 80nis1 0
134 i g pu239t rc in 1.4050926 5.7 1.2400000 0.0600000 135 i g pu239t 5.7700000 80nis1 0
134 i g pu239t cm in 0.0000000 0.0 1.3810000 7.0000000% 0 1.0000000 88wah1 0
134 i m pu239t rc fi su 0.0000000 0.0 13.8600000 2.1000000 134 pu239t 100.0000000 69den2 40
134 i m pu239t rc fi 1.0586028 9.4 0.1407000 0.0105000 134 i g pu239t 0.9840000 70qai1 40
134 i m pu239t rc fi 1.0955205 14.7 0.1428000 0.0210000 134 pu239t 1.0000000 71den1 40
134 i m pu239t rc in su 0.0000000 0.0 1.1000000 0.0600000 135 pu239t 6.3000000 77nis1 0

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nuclide material tech. type value err. value nuclide material value no. treatment

134 i m pu239t rc in 1.2464531 6.1 1.1000000 0.0600000 135 i g pu239t 5.7700000 80nis1 0
134 i m pu239t cm in 0.0000000 0.0 1.0000000 7.0000000% 0 1.0000000 88wah1 0
134 te g pu239t rc fi x2 0.0000000 0.0 0.5100000 0.0600000 134 pu239t 1.0000000 72gun1 0
134 te g pu239t rc cu 4.6972532 7.4 4.7000000 0.3500000 0 0.0000000 77gud1 0
134 te g pu239t rc cu 4.9071305 6.1 4.9100000 0.3000000 0 0.0000000 80dic1 0
134 te g pu239t rc cu 4.7272357 5.2 4.7300000 5.2000000% 0 0.0000000 80ram1 0
134 te g pu239t cm in 0.0000000 0.0 4.6980000 11.0000000% 0 1.0000000 88wah1 0
134 sb g pu239t rc fi x2 0.0000000 0.0 0.2300000 0.0000000 134 pu239t 1.0000000 72gun1 0
134 sb g pu239t es fc 0.3751467 30.0 0.0489000 0.0000000 134 pu239t 1.0000000 74wol1 0
134 sb g pu239t rc cu 0.5383215 57.6 0.2800000 0.1000000 134 sb g u235t 0.3800000 76paf1 0
134 sb g pu239t rc cu rp 0.2669153 99.9 0.2800000 0.0000000 no. relative values = 1 76rud1
134 sb g pu239t cm in 0.0000000 0.0 0.3237000 34.0000000% 0 1.0000000 88wah1 0
134 sn g pu239t rc fi x2 0.0000000 0.0 0.0500000 0.0000000 134 pu239t 1.0000000 72gun1 0
134 cs g pu239f cm cu 0.0000000 0.0 0.0016300 90.0000000% 0 0.0000000 73net2 0
134 pu239f es cu cm 6.5987135 30.0 6.6100000 0.0000000 0 0.0000000 72sid1 0
134 pu239f es re 7.5864726 10.0 0.9900000 10.0000000% 134 pu239t 1.0000000 74mee4 0
134 xe g pu239f ms cu su 0.0000000 0.0 7.2800000 0.0000000 0 0.0000000 76koc1 0
134 pu239f cm cu 0.0000000 0.0 7.0900000 5.2000000% 0 0.0000000 77cro1 0
134 xe g pu239f ms cu 7.3696032 3.5 7.8300000 3.5000000% 134 xe g pu239f 7.8300000 77koc1 0
134 xe g pu239f ms cu rp 7.6064421 2.1 7.8300000 0.0000000 no. relative values = 6 77koc1
134 xe g pu239f ms cu 7.4737231 1.0 7.4530000 0.0680000 148 nd g pu239f 1.6540000 77mae1 0
134 xe g pu239f ms cu 7.4243015 2.0 7.4370000 0.1040000 0 0.0000000 77mae1 0
134 xe g pu239f ms cu 7.0466488 2.1 7.3500000 0.1500000 148 nd g pu239f 1.7300000 70lis1 0
134 xe g pu239f ms cu 7.3435610 0.9 0.3118000 0.0004000 132 xe g pu239f 0.2259000 80mae4 0
134 xe g pu239f ms cu su 0.0000000 0.0 7.3900000 0.1000000 148 nd g pu239f 1.6500000 74mae1 0
134 xe g pu239f es cu cm 7.3673988 1.0 7.3800000 1.0000000% 0 0.0000000 81mae2 0
134 pu239f rc cu 7.8166304 10.0 7.8300000 10.0000000% 0 0.0000000 81koc1 36
134 i g pu239f cm cu 0.0000000 0.0 6.8270000 6.0000000% 0 0.0000000 73net2 0
134 i g pu239f rc cu 6.2010759 25.0 5.7800000 25.0000000% 97 zr g pu239f 4.9000000 74jen1 0
134 i g pu239f rc re 6.5131527 5.0 0.9700000 0.0230000 140 ba g u235t 0.0000000 75raj1 7
134 i g pu239f rc cu 6.8882184 10.1 6.9000000 0.7000000 0 0.0000000 77gud1 0
134 te g pu239f rc cu 4.6919748 7.4 4.7000000 0.3500000 0 0.0000000 77gud1 0

134 pu241t cm cu 0.0000000 0.0 7.9300000 0.0000000 0 0.0000000 72sid1 0
134 pu241t cm cu 0.0000000 0.0 8.0800000 0.1800000 0 0.0000000 73wal1 0
134 pu241t cm cu 0.0000000 0.0 8.0300000 4.5000000% 0 0.0000000 77cro1 0
134 xe g pu241t ms cu 7.8101501 2.0 7.7980000 0.0860000 0 0.0000000 77mae1 0
134 xe g pu241t ms cu 7.9465673 3.1 8.0600000 0.2200000 131 xe g pu241t 3.1500000 70lis1 0
134 xe g pu241t ms re rp 7.9865881 1.8 1.0000000 0.0000000 no. relative values = 4 64far1
134 i g pu241t rc in sm 0.0000000 0.0 1.5920000 0.1430000 0 0.0000000 87red1 0
134 te g pu241t rc fc 7.2078919 7.1 0.9090000 0.0630000 134 pu241t 1.0000000 87red1 0
134 cs g u233t cm cu 0.0000000 0.0 0.0009143 90.0000000% 0 0.0000000 73net2 0
134 u233t cm cu 0.0000000 0.0 6.0300000 0.0000000 0 0.0000000 72sid1 0
134 u233t cm cu 0.0000000 0.0 6.1500000 0.0000000 0 0.0000000 73lam1 0
134 u233t cm cu 0.0000000 0.0 6.1400000 0.1400000 0 0.0000000 73wal1 0
134 xe g u233t ms cu 6.3392397 3.1 6.1800000 3.0000000% 132 xe g u233t 4.8200000 61bid1 0
134 u233t cm cu 0.0000000 0.0 6.1700000 4.1000000% 0 0.0000000 77cro1 0
134 xe g u233t ms re rp 6.1248367 64.0 26.9000000 0.0000000 no. relative values = 1 72pet1
134 xe g u233t ms cu 6.3467341 1.1 6.2900000 0.0500000 132 xe g u233t 4.9000000 54fle1 0
134 xe g u233t ms cu 6.3366439 0.9 6.2800000 0.0100000 132 xe g u233t 4.9000000 54fle1 0
134 xe g u233t ms cu 6.1184144 2.0 6.1300000 0.0700000 0 0.0000000 70lis1 0
134 xe g u233t ms cu rp 6.2128852 1.7 1.0000000 0.0000000 no. relative values = 4 84tep1
134 i g u233t rc cu 6.2292217 5.7 6.1000000 0.3000000 99 mo g u233t 4.8000000 67gan1 0
134 i g u233t cm cu 0.0000000 0.0 5.8660000 2.0000000% 0 0.0000000 73net2 0
134 i g u233t rc fi su 0.0000000 0.0 19.1400000 2.3200000 134 u233t 100.0000000 69den2 40
134 i g u233t rc fi 1.3085288 12.4 0.2146000 0.0075000 134 i g u233t 1.0000000 70run1 40
134 i g u233t rc fi 1.2047984 12.1 0.1914000 0.0232000 134 u233t 1.0000000 71den1 40
134 i g u233t rc fi su 0.0000000 0.0 0.1919800 0.0116000 134 i g u233t 0.9750000 70qai1 40
134 i g u233t rc in su 0.0000000 0.0 1.0200000 0.0600000 135 i g u233t 4.9000000 77nis1 0
134 i g u233t rc in sm 0.0000000 0.0 1.7900000 0.0700000 135 i g u233t 4.9500000 80nis1 0
134 i g u233t rc in 1.0349284 6.5 1.0200000 0.0600000 135 i g u233t 4.9500000 80nis1 0
134 i g u233t sp fi 1.3407631 9.0 0.2130000 9.0000000% 134 u233t 1.0000000 86lei1 40
134 i g u233t rc cu 6.2681309 5.0 6.2800000 4.9000000% 0 0.0000000 81ram1 0
134 i m u233t rc fi su 0.0000000 0.0 13.8600000 1.6800000 134 u233t 100.0000000 69den2 40
134 i m u233t rc fi su 0.0000000 0.0 0.1390200 0.0084000 134 i g u233t 0.9750000 70qai1 40
134 i m u233t rc fi 0.9475554 12.4 0.1554000 0.0054000 134 i g u233t 1.0000000 70run1 40
134 i m u233t rc fi 0.8724402 12.1 0.1386000 0.0168000 134 u233t 1.0000000 71den1 40
134 i m u233t rc in su 0.0000000 0.0 0.7700000 0.0400000 135 i g u233t 4.9000000 77nis1 0
134 i m u233t rc in 0.7812694 5.9 0.7700000 0.0400000 135 i g u233t 4.9500000 80nis1 0

134 i m u233t sp fi 0.9756727 9.0 0.1550000 9.0000000% 134 u233t 1.0000000 86lei1 40
134 te g u233t rc fc 3.9026908 5.0 0.6200000 0.0300000 134 u233t 1.0000000 71tro3 0
134 te g u233t rc cu 3.6682401 11.9 4.3000000 0.4500000 142 la g u233t 7.8000000 77gud1 0
134 te g u233t sp fc 3.9782268 5.0 0.6320000 4.0000000% 134 u233t 1.0000000 86lei1 0
134 cs g th232f cm cu 0.0000000 0.0 0.0000008 90.0000000% 0 0.0000000 73net2 0
134 cs m th232f rc in x6 0.0000000 0.0 0.0003100 0.0001600 0 0.0000000 82li 1 0
134 xe g th232f ms cu 5.3536135 2.0 5.3800000 0.0300000 0 0.0000000 57ken1 0
134 th232f es cu cm 5.0749868 30.0 5.1000000 0.0000000 0 0.0000000 65eng1 0
134 th232f es cu cm 5.3735154 30.0 5.4000000 0.0000000 0 0.0000000 72sid1 0
134 th232f es cu cm 5.0351830 30.0 5.0600000 0.0000000 0 0.0000000 73lam1 0
134 th232f cm cu 0.0000000 0.0 5.3200000 0.0000000 0 0.0000000 74lam1 0
134 xe g th232f cm cu 0.0000000 0.0 5.3800000 0.0000000 0 0.0000000 60kat1 0
134 th232f cm cu 0.0000000 0.0 5.2600000 7.1000000% 0 0.0000000 77cro1 0
134 th232f es cu 5.3536135 5.0 5.3800000 5.0000000% 0 0.0000000 74mee0 0
134 i g th232f cm cu x3 0.0000000 0.0 5.1510000 4.0000000% 0 0.0000000 73net2 0
134 i g th232f rc cu x1 0.0000000 0.0 8.1500000 0.9200000 99 mo g th232f 3.1000000 64bro1 0
134 i g th232f rc fi su 0.0000000 0.0 0.0159000 0.0000000 134 th232f 1.0000000 69den2 40
134 i g th232f rc fi su 0.0000000 0.0 0.0159000 0.0000000 134 th232f 1.0000000 71den1 40
134 i g th232f rc fi 0.0846755 99.9 0.0159000 0.0159000 134 th232f 1.0000000 71den2 40
134 i g th232f rc fi su 0.0000000 0.0 1.5900000 0.0000000 134 th232f 100.0000000 71qai1 40
134 i g th232f rc re 6.1205382 5.0 1.6300000 0.0700000 99 mo g u235t 0.0000000 81ert1 7
134 i g th232f cm cu x3 0.0000000 0.0 5.7500000 0.2900000 0 0.0000000 81ert1 0
134 i g th232f rc cu 6.0863977 10.1 6.1900000 0.6000000 140 ba g th232f 7.9700000 85chu1 0
134 i g th232f rc cu 5.9108670 5.0 5.9400000 0.1800000 0 0.0000000 86ric1 0
134 i g th232f rc fi x1 0.0000000 0.0 0.0408100 0.0212000 134 th232f 1.0000000 57ale1 40
134 i g th232f rc in sm 0.0000000 0.0 0.7800000 0.2600000 0 0.0000000 82li 1 0
134 i g th232f rc fi 0.0852081 25.1 1.6000000 0.4000000 134 th232f 100.0000000 90hen1 0
134 i m th232f rc fi su 0.0000000 0.0 0.0141000 0.0000000 134 th232f 1.0000000 69den2 40
134 i m th232f rc fi su 0.0000000 0.0 0.0141000 0.0000000 134 th232f 1.0000000 71den1 40
134 i m th232f rc fi 0.0750896 99.9 0.0141000 0.0141000 134 th232f 1.0000000 71den2 40
134 i m th232f rc fi su 0.0000000 0.0 1.4100000 0.0000000 134 th232f 100.0000000 71qai1 40
134 i m th232f rc fi x1 0.0000000 0.0 0.0361900 0.0188000 134 th232f 1.0000000 57ale1 40
134 te g th232f rc fi 3.6639462 11.5 0.6880000 0.0780000 134 th232f 1.0000000 77iza1 0
134 te g th232f rc fi 3.8450133 10.4 0.7220000 0.0740000 134 th232f 1.0000000 77iza1 0
135 u235t cm cu 0.0000000 0.0 6.4100000 0.0000000 0 0.0000000 72sid1 0
135 u235t cm cu 0.0000000 0.0 6.5500000 0.0000000 0 0.0000000 73lam1 0

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 135        u235t    cm    cu        0.0000000  0.0   6.6000000  0.1600000     0                    0.0000000   73wal1      0
 135        u235t    cm    cu        0.0000000  0.0   6.5800000  2.0000000%    0                    0.0000000   77cro1      0
 135 cs g   u235t    ms    cu    x4   0.0000000  0.0   1.2800000  0.0000000   137 cs g      u235t       1.0000000   49ing1      0
 135 cs g   u235t    ms    cu    x4   0.0000000  0.0   1.1000000  0.0000000   137 cs g      u235t       1.0000000   50nag1      0
 135 cs g   u235t    ms    cu        6.4718733  1.5   7.1800000  0.0000000   133 cs g      u235t       7.4300000   53wil1      0
 135 cs g   u235t    ms    re        6.5142885  5.0   6.4100000  5.0000000%  133 cs g      u235t       6.5900000   55pet1      0
 135 cs g   u235t    es    cu    cm  6.5976880  2.4   6.6000000  0.1600000     0                    0.0000000   73wal3      0
 135 cs g   u235t    cm    cu        0.0000000  0.0   6.5040000  0.0730000     0                    0.0000000   78wal1      0
 135 cs g   u235t    es    re        6.6165270  1.4   0.3599400  0.0050400   148 nd g      u235t       0.0910100   76mae1      0
 135 cs g   u235t    es    cu    cm  6.4477405 30.0   6.4500000  0.0000000     0                    0.0000000   62far1      0
 135 cs g   u235t    ms    cu        6.5344529  0.5  12.8430000  0.0680000     0                    1.9647400   78mae1      0
 135 cs g   u235t    ms    cu        6.5455798  0.6  12.8650000  0.0710000     0                    1.9647600   78mae1      0
 135 cs g   u235t    ms    cu        6.5298073  0.5  12.8340000  0.0690000     0                    1.9647600   78mae1      0
 135 cs g   u235t    ms    cu        6.5547030  2.0   6.5570000  0.0600000     0                    0.0000000   76dii1      0
 135 cs g   u235t    ms    cu    cm  6.5177160  6.0   6.5200000  0.0000000     0                    0.0000000   80mae3      0
 135 xe g   u235t    rc    cu    x4  0.0000000  0.0   5.9000000 23.0000000%     0                    0.0000000   51hoa3     36
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value       no.   treatment

 135 xe g   u235t    rc    cu        6.7076494  5.0   6.7100000  0.1800000     0                    0.0000000   71mcl1      0
 135 xe g   u235t    cm    cu    x3  0.0000000  0.0   6.7250000  4.0000000%    0                    0.0000000   73net2      0
 135 xe g   u235t    rc    fi        0.1183175 35.9   0.0181000  0.0065000   135           u235t       1.0000000   74wol2      0
 135 xe g   u235t    rc    fi        0.0587665 30.0   0.0310000  0.0000000   135           u235t       1.0000000   62cor1     39
 135 xe g   u235t    rc    fi        0.0663443 28.6   0.0350000  0.0100000   135 xe g      u235t       1.0000000   53kat1     39
 135 xe g   u235t    rc    fi    su  0.0000000  0.0   0.0500000  0.0300000   135 xe g      u235t       1.0000000   65big1     39
 135 xe g   u235t    rc    fi        0.0650151  5.5   0.0357000  0.0019000   135 i  g      u235t       1.0000000   71haw1     39
 135 xe g   u235t    rc    fi        0.0455288 72.0   0.0250000  0.0180000   135 i  g      u235t       1.0000000   71oka1     39
 135 xe g   u235t    rc    fi        0.0491711 37.1   0.0270000  0.0100000   135 i  g      u235t       1.0000000   53bro1     39
 135 xe g   u235t    rc    fi        0.0360182 68.4   0.0190000  0.0130000   135           u235t       1.0000000   65sto1     39
 135 xe g   u235t    ms    cu        6.4077545  3.0   6.4100000  3.0000000%    0                    0.0000000   59bid1      0
 135 xe g   u235t    sp    in        0.0898685 12.1   0.0899000  0.0109000     0                    0.0000000   69yel1      0
 135 xe g   u235t    rc    cu        6.4577370  5.0   6.4600000  0.2000000     0                    0.0000000   78sch1      0
 135 xe g   u235t    cm    cu        0.0000000  0.0   6.5020000  0.0730000     0                    0.0000000   78wal1      0
 135 xe g   u235t    rc    fi        0.0777235 29.3   0.0410000  0.0120000   135           u235t       1.0000000   51hoa3     39
 135 xe g   u235t    es    in        0.0608787 30.0   0.2100000  0.0000000     0                    0.0000000   61lev2     39
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135	xe g	u235t	rc	cu	x4	0.0000000	0.0	7.3500000	0.1500000	0			0.0000000	77gud1	0
135	xe g	u235t	rc	cu	x4	0.0000000	0.0	6.1800000	0.1900000	0			0.0000000	76thi1	0
135	xe g	u235t	sp	fi		0.0947847	12.0	0.0500000	0.0060000	135		u235t	1.0000000	76thi1	39
135	xe g	u235t	rc	in	sm	0.0000000	0.0	0.2300000	0.0200000	135	xe g	u235t	6.4600000	80nis1	0
135	xe g	u235t	rc	in		0.0839814	12.1	0.0830000	0.0100000	135	xe g	u235t	6.4600000	80nis1	0
135	xe g	u235t	rc	in		0.0956665	9.1	0.0957000	0.0087000	0			0.0000000	81mar1	18
135	xe g	u235t	rc	cu		6.5671732	12.0	7.0700000	0.8500000	133	xe g	u235t	7.2100000	81hsu1	0
135	xe g	u235t	rc	fi		0.0947847	10.0	0.0145000	10.0000000%	135		u235t	1.0000000	79bla1	0
135	xe g	u235t	rc	fi		0.0934773	12.6	0.0143000	0.0018000	135		u235t	1.0000000	84for1	0
135	xe g	u235t	rc	fi		0.0379139	99.9	0.0058000	0.0058000	135		u235t	1.0000000	84den1	36
135	xe g	u235t	rc	in	x4	0.0000000	0.0	0.2260000	19.0000000%	0			0.0000000	81hsu1	0
135	xe g	u235t	cm	in		0.0000000	0.0	0.0795000	9.0000000%	0			1.0000000	88wah1	0
135	xe g	u235t	rc	fi	su	0.0000000	0.0	0.0142000	0.0021000	135		u235t	1.0000000	70for2	0
135	xe g	u235t	cm	fi		0.0000000	0.0	0.0350000	0.0020000	135		u235t	1.0000000	78wal1	39
135	xe m	u235t	cm	cu		0.0000000	0.0	1.1730000	32.1000000%	0			0.0000000	73net2	0
135	xe m	u235t	rc	fi		0.1673440	36.7	0.0256000	0.0094000	135		u235t	1.0000000	74wol2	0
135	xe m	u235t	rc	fi		0.1438767	30.0	0.0310000	0.0000000	135		u235t	1.0000000	62cor1	39
135	xe m	u235t	rc	fi		0.1624292	28.6	0.0350000	0.0100000	135	xe g	u235t	1.0000000	53kat1	39
135	xe m	u235t	rc	fi	su	0.0000000	0.0	0.0500000	0.0300000	135	xe g	u235t	1.0000000	65big1	39
135	xe m	u235t	rc	fi		0.1591750	5.5	0.0357000	0.0019000	135	i g	u235t	1.0000000	71haw1	39
135	xe m	u235t	rc	fi		0.1114671	72.0	0.0250000	0.0180000	135	i g	u235t	1.0000000	71oka1	39
135	xe m	u235t	rc	fi		0.1203845	37.1	0.0270000	0.0100000	135	i g	u235t	1.0000000	53bro1	39
135	xe m	u235t	rc	fi		0.0881825	68.4	0.0190000	0.0130000	135		u235t	1.0000000	65sto1	39
135	xe m	u235t	sp	in		0.1527465	12.0	0.1528000	0.0184000	0			0.0000000	69yel1	0
135	xe m	u235t	rc	fi		0.1902885	29.3	0.0410000	0.0120000	135		u235t	1.0000000	51hoa3	39
135	xe m	u235t	es	in		0.1490478	30.0	0.2100000	0.0000000	0			0.0000000	61lev2	39
135	xe m	u235t	sp	fi		0.2320591	12.0	0.0500000	0.0060000	135		u235t	1.0000000	76thi1	39
135	xe m	u235t	rc	in		0.1517737	13.4	0.1500000	0.0200000	135	xe g	u235t	6.4600000	80nis1	0
135	xe m	u235t	rc	fi		0.0928236	99.9	0.0142000	0.0213000	135		u235t	1.0000000	84den1	36
135	xe m	u235t	rc	fi		0.2320591	10.0	0.0355000	10.0000000%	135		u235t	1.0000000	79bla1	0
135	xe m	u235t	rc	fi		0.1673440	12.1	0.0256000	0.0031000	135		u235t	1.0000000	84for1	0
135	xe m	u235t	rc	cu		1.0096462	14.9	1.0100000	0.1500000	0			0.0000000	81hsu1	0
135	xe m	u235t	rc	in		0.2342179	9.1	0.2343000	0.0213000	0			0.0000000	81mar1	18
135	xe m	u235t	rc	in	x4	0.0000000	0.0	0.5540000	19.0000000%	0			0.0000000	81hsu1	0
135	xe m	u235t	cm	in		0.0000000	0.0	0.1948000	9.0000000%	0			1.0000000	88wah1	0
135	xe m	u235t	rc	fi	su	0.0000000	0.0	0.0294000	0.0014000	135	xe g	u235t	1.0000000	70for2	0

135	xe	m	u235t	cm	fi		0.0000000	0.0	0.0350000	0.0020000	135	u235t	1.0000000	78wal1	39
135	i	g	u235t	cm	cu		0.0000000	0.0	6.2720000	0.0710000	0		0.0000000	78wal1	0
135	i	g	u235t	cm	cu		0.0000000	0.0	6.3400000	6.0000000%	0		0.0000000	73net2	0
135	i	g	u235t	cm	fi		0.0000000	0.0	0.4670000	0.0170000	135	u235t	1.0000000	78wal1	0
135	i	g	u235t	cm	in		0.0000000	0.0	2.9740000	5.0000000%	0		1.0000000	88wah1	0
135	i	g	u235t	es	cu	su	0.0000000	0.0	6.8600000	10.0000000%	0		0.0000000	85rud1	36
135	i	g	u235t	es	fc		6.3571125	1.9	0.9725000	0.0180000	135	u235t	1.0000000	71oka1	0
135	i	g	u235t	rc	cu		6.3077896	8.1	6.3100000	0.5100000	0		0.0000000	71mcl1	0
135	i	g	u235t	rc	cu		6.3351175	20.0	6.3100000	0.2000000	140	ba g	u235t	6.1700000	53pap1	0
135	i	g	u235t	rc	cu		6.1159767	5.0	6.7800000	0.2000000	132	i g	u235t	4.7800000	77gud1	0
135	i	g	u235t	rc	cu	x4	0.0000000	0.0	5.6000000	0.3000000	140	ba g	u235t	6.1000000	51gle3	0
135	i	g	u235t	rc	cu	x4	0.0000000	0.0	5.6000000	0.3000000	140	ba g	u235t	6.1000000	51kat5	0
135	i	g	u235t	rc	cu	x4	0.0000000	0.0	5.6400000	0.1500000	0		0.0000000	74bla1	0
135	i	g	u235t	rc	cu	x4	0.0000000	0.0	6.8600000	6.5000000%	0		0.0000000	80ram1	0
135	i	g	u235t	rc	cu	x6	0.0000000	0.0	0.9300000	10.8000000%	0		0.0000000	84chu1	0
135	i	g	u235t	rc	fc	cm	6.2754015	15.0	0.9600000	0.0000000	135	u235t	1.0000000	71tro3	0
135	i	g	u235t	rc	fi		3.0723320	5.0	0.4700000	0.0200000	135	u235t	1.0000000	71den1	0
135	i	g	u235t	rc	fi		2.8782584	16.0	0.4400000	0.0700000	135	i g	u235t	0.9600000	70del1	0
135	i	g	u235t	rc	fi		3.0428074	5.2	0.4700000	0.0200000	135	i g	u235t	0.9700000	69den1	0
135	i	g	u235t	rc	fi		3.1638483	5.0	0.4840000	0.0240000	135	u235t	1.0000000	73kik1	0
135	i	g	u235t	rc	fi	su	0.0000000	0.0	0.4310000	16.0000000%	135	u235t	1.0000000	68gre1	0
135	i	g	u235t	rc	in		2.6766517	15.1	2.6000000	0.0000000	135	i g	u235t	6.1000000	66yos1	0
135	i	g	u235t	rc	in		3.5987389	16.7	3.6000000	0.6000000	0		0.0000000	67wun1	0
135	i	g	u235t	sp	cu	x4	0.0000000	0.0	6.8600000	0.3600000	0		0.0000000	90rud1	0
135	i	g	u235t	sp	fi		2.7454882	7.0	0.4200000	7.0000000%	135	u235t	1.0000000	84den1	36
135	i	g	u235t	sp	in	x4	0.0000000	0.0	4.6000000	1.1000000	0		0.0000000	62fro1	0
135	te	g	u235t	sp	in	x4	0.0000000	0.0	1.5000000	1.1000000	0		0.0000000	62fro1	0
135	te	g	u235t	rc	cu	x3	0.0000000	0.0	2.6000000	0.8000000	135	u235t	6.4000000	67wun1	0
135	te	g	u235t	rc	fc		3.4015782	13.5	0.5200000	0.0700000	135	i g	u235t	0.9600000	70del1	0
135	te	g	u235t	rc	fc	cm	3.2684383	8.0	0.5000000	0.0400000	135	u235t	1.0000000	71tro3	0
135	te	g	u235t	rc	fi	x2	0.0000000	0.0	0.5000000	0.0400000	135	u235t	1.0000000	72gun1	0
135	te	g	u235t	rc	fc		3.2619014	16.4	0.4990000	0.0820000	135	u235t	1.0000000	73kik1	0
135	te	g	u235t	cm	cu		0.0000000	0.0	3.7070000	15.0000000%	0		0.0000000	73net2	0
135	te	g	u235t	es	fi	ca	3.0723320	30.0	0.4700000	0.0000000	135	u235t	1.0000000	73wal3	0
135	te	g	u235t	rc	fi	su	0.0000000	0.0	0.4310000	16.0000000%	135	u235t	1.0000000	68gre1	0
135	te	g	u235t	sp	fi		3.2684383	7.0	0.5000000	7.0000000%	135	u235t	1.0000000	84den1	36

135 te g u235t cm in 0.0000000 0.0 3.2760000 7.0000000% 0 1.0000000 88wah1 0
135 te g u235t sp in 3.4787809 8.6 3.4800000 0.3000000 0 0.0000000 90rud1 0
135 te g u235t sp cu 4.1985287 21.4 4.2000000 0.9000000 0 0.0000000 90rud1 0
135 sb g u235t es fi ca 0.1961063 30.0 0.0300000 0.0000000 135 u235t 1.0000000 73wal3 0
135 sb g u235t rc fc 0.1503482 13.0 0.0230000 0.0030000 135 u235t 1.0000000 75rud1 0
135 sb g u235t cm cu x3 0.0000000 0.0 0.1553000 45.0000000% 0 0.0000000 73net2 0
135 sb g u235t rc fc 0.1463386 8.0 2.3000000 0.1800000 135 i g u235t 98.7000000 77rud1 0
135 sb g u235t sp fi x4 0.0000000 0.0 0.0590000 51.0000000% 135 u235t 1.0000000 84den1 0
135 sb g u235t sp fc x4 0.0000000 0.0 0.0600000 50.0000000% 135 u235t 1.0000000 84den1 0
135 sb g u235t cm in 0.0000000 0.0 0.1402000 12.0000000% 0 1.0000000 88wah1 0
135 sb g u235t sp cu x4 0.0000000 0.0 0.5700000 0.1500000 0 0.0000000 90rud1 0
135 sn g u235t es cu 0.0006428 30.0 0.0006430 0.0000000 0 0.0000000 74mee2 0
135 u235f cm cu 0.0000000 0.0 6.2800000 2.8000000% 0 0.0000000 77cro1 0
135 u235f rc cu 6.7120353 10.0 6.7200000 10.0000000% 0 0.0000000 81koc1 36
135 cs g u235f ms cu su 0.0000000 0.0 5.9000000 0.0000000 143 nd g u235f 5.9000000 71cro2 0
135 cs g u235f ms cu 5.9863838 1.6 6.1700000 0.0000000 143 nd g u235f 5.9000000 71cro2 0
135 cs g u235f ms cu 6.0727939 5.0 6.0800000 5.0000000% 0 0.0000000 73cro3 0
135 cs g u235f ms cu 5.8031139 5.0 5.8100000 5.0000000% 0 0.0000000 73cro3 0
135 cs g u235f ms cu su 0.0000000 0.0 6.7200000 0.0000000 0 0.0000000 76koc1 0
135 cs g u235f ms cu 6.4922961 2.0 6.5000000 0.0380000 0 0.0000000 80mae1 0
135 cs g u235f ms cu 6.2837663 2.0 6.5400000 0.1300000 148 nd g u235f 1.7500000 70lis1 0
135 cs g u235f ms cu 6.5222605 2.0 6.5300000 2.0000000% 0 0.0000000 72lar1 0
135 cs g u235f es cu cm 5.9928887 30.0 6.0000000 0.0000000 0 0.0000000 72sid1 0
135 cs g u235f es re 6.4010688 10.0 0.9800000 10.0000000% 135 u235t 1.0000000 74mee4 0
135 cs g u235f ms cu 6.6097826 4.4 6.8400000 0.3000000 148 u235f 1.7400000 77gab1 0
135 cs g u235f ms cu cm 6.5512261 6.0 6.5590000 0.0000000 0 0.0000000 80mae3 0
135 cs g u235f rc cu 5.7861614 5.1 6.0300000 0.0400000 140 ba g u235f 6.2200000 77bla1 0
135 cs g u235f ms cu 6.6041633 2.0 6.6120000 0.0290000 0 0.0000000 81mae1 0
135 cs g u235f es cu 6.5722012 1.0 6.5800000 1.0000000% 0 0.0000000 81mae1 36
135 cs g u235f ms cu 6.6241396 2.0 6.6320000 0.0360000 0 0.0000000 81mae1 0
135 cs g u235f cm cu 0.0000000 0.0 6.6080000 0.0370000 0 0.0000000 81mae1 0
135 cs g u235f ms cu 6.5255728 0.9 6.5200000 0.0500000 148 nd g u235f 1.6800000 74mae1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

135	xe g	u235f	rc	cu		6.0297982	5.1	5.9000000	3.0000000%	140	ba g	u235f	5.8400000	72sch1	0
135	xe g	u235f	cm	cu		0.0000000	0.0	6.3000000	14.9000000%	0			0.0000000	73net2	0
135	xe g	u235f	rc	fi		0.1430806	30.4	0.0217000	0.0066000	135		u235f	1.0000000	74wol2	0
135	xe g	u235f	ms	cu		6.7888444	0.7	6.7200000	0.2000000%	134	xe g	u235f	7.5800000	77koc1	0
135	xe g	u235f	rc	cu		6.6161183	5.0	1.0130000	0.0080000	135	xe g	u235t	1.0000000	77deb1	0
135	xe g	u235f	rc	cu		6.9165540	11.0	1.0590000	0.1160000	135	xe g	u235t	1.0000000	79yur1	36
135	xe g	u235f	rc	fi		0.1153876	24.0	0.0175000	0.0042000	135		u235f	1.0000000	84for1	0
135	xe g	u235f	rc	cu		7.3254143	6.8	7.1800000	0.4800000	140	ba g	u235f	5.8500000	78bya1	0
135	xe g	u235f	rc	cu		7.3412886	5.0	7.3500000	0.1500000	0			0.0000000	77gud1	0
135	xe g	u235f	rc	in	sm	0.0000000	0.0	0.3900000	0.0400000	0			0.0000000	81mar1	0
135	xe g	u235f	rc	fi	su	0.0000000	0.0	0.0177000	0.0028000	135		u235f	1.0000000	70for2	0
135	xe m	u235f	cm	cu	x3	0.0000000	0.0	1.1690000	35.0000000%	0			0.0000000	73net2	0
135	xe m	u235f	rc	fi		0.2017634	30.7	0.0306000	0.0094000	135		u235f	1.0000000	74wol2	0
135	xe m	u235f	rc	fi		0.1964885	5.7	0.0298000	0.0017000	135		u235f	1.0000000	84for1	0
135	xe m	u235f	rc	fi	su	0.0000000	0.0	0.0331000	0.0019000	135		u235f	1.0000000	70for2	0
135	i g	u235f	rc	cu		5.9991382	5.1	5.8700000	3.0000000%	140	ba g	u235f	5.8400000	72sch1	0
135	i g	u235f	cm	cu		0.0000000	0.0	5.7940000	16.1000000%	0			0.0000000	73net2	0
135	i g	u235f	rc	re		6.1235151	5.0	1.0120000	0.0140000	140	ba g	u235t	0.0000000	75raj1	7
135	i g	u235f	rc	cu		7.1621739	6.6	7.0200000	0.4600000	140	ba g	u235f	5.8500000	78bya1	0
135	i g	u235f	rc	cu		6.7719642	5.0	6.7800000	0.2000000	0			0.0000000	77gud1	0
135	i g	u235f	rc	in		3.8754013	7.2	3.8800000	0.2800000	0			0.0000000	81mar1	0
135	te g	u235f	cm	cu		0.0000000	0.0	3.0590000	26.0000000%	0			0.0000000	73net2	0
135	te g	u235f	rc	cu	x4	0.0000000	0.0	2.0800000	0.0800000	0			0.0000000	81mar1	0
135	te g	u235f	rc	in		2.0176059	5.0	2.0200000	0.0800000	0			0.0000000	81mar1	0
135	sb g	u235f	cm	cu	x3	0.0000000	0.0	0.1013000	52.0000000%	0			0.0000000	73net2	0
135		u235he	cm	cu	x3	0.0000000	0.0	4.5900000	7.0000000%	0			0.0000000	77cro1	0
135	cs g	u235he	cm	cu		0.0000000	0.0	5.7000000	0.0000000	0			0.0000000	69gun2	0
135	cs g	u235he	cm	cu		0.0000000	0.0	5.7000000	0.0000000	0			0.0000000	60kat1	0
135	cs g	u235he	es	cu		5.4714532	30.0	5.5170000	0.0000000	0			0.0000000	63wea1	0
135	cs g	u235he	es	cu		5.8631921	10.0	5.9120000	10.0000000%	0			0.0000000	74mee8	0
135	xe g	u235he	rc	re		5.5225826	7.0	1.2400000	0.0800000	140	ba g	u235he	1.0000000	73man1	0
135	xe g	u235he	cm	cu		0.0000000	0.0	4.4200000	14.9000000%	0			0.0000000	73net2	0
135	xe g	u235he	rc	fi		0.6537093	30.5	0.1150000	30.0000000%	135		u235he	1.0000000	74wol2	36
135	xe g	u235he	rc	fi		0.2660313	30.5	0.0468000	30.0000000%	135		u235he	1.0000000	72ale1	36
135	xe g	u235he	rc	cu		4.9289690	30.0	4.9700000	30.0000000%	0			0.0000000	81lau1	36
135	xe g	u235he	rc	fi		0.4718076	14.4	0.0830000	0.0110000	135		u235he	1.0000000	84for1	0

135 xe g u235he rc fi su 0.0000000 0.0 0.0950000 0.0150000 135 u235he 1.0000000 73for1 0
135 xe g u235he es fi 0.4320166 32.5 0.0760000 32.0000000% 135 u235he 1.0000000 89rid1 0
135 xe m u235he cm cu 0.0000000 0.0 1.2180000 35.0000000% 0 0.0000000 73net2 0
135 xe m u235he rc fi 0.9208774 11.5 0.1620000 10.0000000% 135 u235he 1.0000000 74wol2 36
135 xe m u235he rc fi 1.2119201 11.5 0.2132000 10.0000000% 135 u235he 1.0000000 72ale1 36
135 xe m u235he rc fi 0.9089401 11.5 0.1599000 10.0000000% 135 u235he 1.0000000 84for1 36
135 xe m u235he rc fi su 0.0000000 0.0 0.1698000 0.0088000 135 u235he 1.0000000 73for1 0
135 xe m u235he es fi 1.0095545 32.5 0.1776000 32.0000000% 135 u235he 1.0000000 89rid1 0
135 i g u235he rc re 4.2990065 10.1 0.6900000 0.0200000 135 i g u235t 1.0000000 55wah1 0
135 i g u235he cm cu x3 0.0000000 0.0 5.0000000 0.0000000 0 0.0000000 69gun2 0
135 i g u235he cm cu 0.0000000 0.0 3.2360000 18.0000000% 0 0.0000000 73net2 0
135 i g u235he cm cu 0.0000000 0.0 4.5000000 0.0000000 0 0.0000000 60kat1 0
135 te g u235he cm cu 0.0000000 0.0 0.9315000 35.0000000% 0 0.0000000 73net2 0
135 sb g u235he cm cu 0.0000000 0.0 0.0103900 90.0000000% 0 0.0000000 73net2 0
135 u238f cm cu es 0.0000000 0.0 6.0000000 0.0000000 0 0.0000000 64wal1 0
135 u238f cm cu 0.0000000 0.0 6.7100000 5.8000000% 0 0.0000000 77cro1 0
135 u238f rc cu 6.9304812 10.0 6.9100000 10.0000000% 0 0.0000000 81koc1 36
135 u238f rc cu 6.7700070 5.0 6.7500000 0.3400000 0 0.0000000 85li 1 0
135 cs g u238f ms cu 6.1782582 6.0 6.1600000 0.0000000 0 0.0000000 72mat1 0
135 cs g u238f cm cu 0.0000000 0.0 6.0000000 0.0000000 0 0.0000000 60kat1 0
135 cs g u238f es cu cm 6.0378432 30.0 6.0200000 0.0000000 0 0.0000000 72sid1 0
135 cs g u238f ms cu 7.0177391 2.0 6.9970000 0.0480000 0 0.0000000 81mae1 0
135 cs g u238f ms cu 7.0207479 2.0 7.0000000 0.0480000 0 0.0000000 81mae1 0
135 cs g u238f ms cu 7.0157331 2.0 6.9950000 0.0800000 0 0.0000000 81mae1 0
135 cs g u238f cm cu 0.0000000 0.0 6.9970000 0.0690000 0 0.0000000 81mae1 0
135 cs g u238f ms cu 7.0488632 1.1 6.9200000 0.0600000 148 nd g u238f 2.0800000 74mae1 0
135 cs g u238f ms re 6.8476123 1.2 1.1280000 0.0070000 137 cs g u238f 1.0000000 72mat1 0
135 xe g u238f rc re rp 6.9375163 15.8 1.3300000 0.0000000 no. relative values = 1 69lyl1
135 xe g u238f rc re 6.5863556 5.0 1.1300000 0.0400000 140 ba g u238f 1.0000000 73man1 0
135 xe g u238f cm cu 0.0000000 0.0 6.0400000 9.9000000% 0 0.0000000 73net2 0
135 xe g u238f rc fi 0.0114608 99.9 0.0016400 0.0016400 135 u238f 1.0000000 74wol2 0
135 xe g u238f rc cu 5.9977247 20.0 5.9800000 20.0000000% 0 0.0000000 77gud1 36
135 xe g u238f rc cu 7.5814457 20.1 1.1560000 0.2320000 135 xe g u235t 1.0000000 79yur1 36
135 xe g u238f rc cu 5.4785368 5.0 5.7900000 0.1000000 140 ba g u238f 6.1600000 77bla1 0
135 xe g u238f rc fi ul 0.0000000 0.0 0.0069000 99.0000000% 135 u238f 1.0000000 84for1 0
135 xe g u238f rc cu 5.7770726 14.1 5.7600000 0.8100000 0 0.0000000 84gud1 0

135 xe g u238f ms cu 7.1282506 3.4 0.9340000 0.0180000 134 xe g u238f 1.0000000 84tep1 0
135 xe g u238f rc fi su 0.0000000 0.0 0.0074000 0.0000000 135 u238f 1.0000000 70for2 0
135 xe g u238f rc cu x4 0.0000000 0.0 4.9000000 0.1800000 0 0.0000000 87chu1 0
135 xe g u238f es cu 6.9605701 10.0 6.9400000 10.0000000% 0 0.0000000 89rid1 0
135 xe m u238f cm cu 0.0000000 0.0 0.9048000 33.0000000% 0 0.0000000 73net2 0
135 xe m u238f rc fi 0.0161429 99.9 0.0023100 0.0023100 135 u238f 1.0000000 74wol2 0
135 xe m u238f rc fi ul 0.0000000 0.0 0.0066000 99.0000000% 135 u238f 1.0000000 84for1 0
135 xe m u238f rc fi su 0.0000000 0.0 0.0035000 0.0000000 135 u238f 1.0000000 70for2 0
135 i g u238f rc cu x1 0.0000000 0.0 5.3000000 0.0000000 0 0.0000000 68bel1 0
135 i g u238f cm cu 0.0000000 0.0 6.0050000 9.9000000% 0 0.0000000 73net2 0
135 i g u238f rc cu 6.9003923 13.1 6.8800000 0.9000000 0 0.0000000 75har1 0
135 i g u238f rc cu 6.2584953 15.0 6.2400000 0.0000000 0 0.0000000 75fly4 0
135 i g u238f rc cu 5.3558277 15.0 5.3400000 0.0000000 0 0.0000000 75fly4 0
135 i g u238f rc cu 7.0714328 5.0 7.3400000 0.1700000 140 ba g u238f 6.0500000 78deb1 0
135 i g u238f rc cu 7.0810669 5.0 7.3500000 0.2200000 140 ba g u238f 6.0500000 78deb1 0
135 i g u238f es cu 7.0408072 2.6 7.0200000 0.1800000 0 0.0000000 78gin1 0
135 i g u238f rc cu 6.0779618 15.0 6.0600000 15.0000000% 0 0.0000000 77gud1 36
135 i g u238f rc cu 7.2213407 5.0 7.2000000 0.2000000 0 0.0000000 78nag1 0
135 i g u238f rc cu rp 6.5272802 10.5 6.2300000 0.0000000 no. relative values = 3 84dob1
135 i g u238f rc cu 8.4248975 46.4 8.4000000 3.9000000 0 0.0000000 84gud1 0
135 i g u238f rc cu rp 6.5121143 15.9 6.2300000 0.0000000 no. relative values = 1 84dob1
135 i g u238f rc cu 7.6827042 8.6 7.6600000 0.6600000 0 0.0000000 85chi1 0
135 i g u238f rc cu 7.6024671 6.9 7.5800000 0.5200000 0 0.0000000 85chi1 0
135 i g u238f rc cu 6.6496513 5.9 6.6300000 5.9000000% 0 0.0000000 87chu1 0
135 i g u238f rc cu 6.9705997 10.5 6.9500000 10.5000000% 0 0.0000000 88afa1 0
135 i g u238f rc cu 7.0608665 10.8 7.0400000 10.8000000% 0 0.0000000 88afa1 0
135 i g u238f rc cu 7.5322596 11.1 7.5100000 11.1000000% 0 0.0000000 88afa1 0
135 i g u238f rc cu 6.7499477 10.0 6.7300000 10.0000000% 0 0.0000000 88afa1 0
135 i g u238f rc cu 7.3416964 10.7 7.3200000 10.7000000% 0 0.0000000 88afa1 0
135 i g u238f rc cu 7.3717853 10.5 7.3500000 10.5000000% 0 0.0000000 88afa1 0
135 te g u238f cm cu 0.0000000 0.0 5.0650000 12.0000000% 0 0.0000000 73net2 0
135 sb g u238f cm cu x3 0.0000000 0.0 0.7133000 33.0000000% 0 0.0000000 73net2 0
135 u238he cm cu es 0.0000000 0.0 5.3880000 0.0000000 0 0.0000000 63wea1 0
135 u238he cm cu su 0.0000000 0.0 5.6500000 0.2800000 0 0.0000000 73dar1 0
135 u238he cm cu 0.0000000 0.0 5.7400000 4.7000000% 0 0.0000000 77cro1 0
135 cs g u238he ms re rp 5.9724718 31.6 1.0000000 0.0000000 no. relative values = 1 68gor1

135 cs g u238he es cu 6.0243021 15.0 6.0150000 15.0000000% 0 0.0000000 74mee9 0
135 xe g u238he rc cu 5.7467665 10.4 5.5900000 0.1900000 139 ba g u238he 4.9200000 64jam1 0
135 xe g u238he ms re 5.8555006 2.7 0.9060000 0.0160000 134 xe g u238he 1.0000000 68gor1 0
135 xe g u238he rc re 6.3608631 5.8 1.0400000 0.0600000 99 mo g u235t 0.0000000 68gor1 7
135 xe g u238he cm cu 0.0000000 0.0 5.5500000 0.0000000 0 0.0000000 69gun2 0
135 xe g u238he rc re x4 0.0000000 0.0 1.2600000 0.0500000 99 mo g u238he 1.0000000 69lyl1 0
135 xe g u238he rc cu su 0.0000000 0.0 4.7800000 0.2200000 0 0.0000000 73dar4 0
135 xe g u238he cm cu 0.0000000 0.0 5.6100000 9.9000000% 0 0.0000000 73net2 0
135 xe g u238he rc fi 0.1357476 5.4 0.0232000 0.0009000 135 u238he 1.0000000 74wol2 0
135 xe g u238he rc cu 5.5886293 5.0 5.5800000 0.1500000 0 0.0000000 75dar1 0
135 xe g u238he rc cu 6.2072400 5.8 6.1900000 0.3500000 140 ba g u238he 4.6000000 76raj1 0
135 xe g u238he cm cu 0.0000000 0.0 5.5000000 0.0000000 0 0.0000000 60kat1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

135 xe g u238he rc fi 0.0585119 70.0 0.0100000 0.0070000 135 u238he 1.0000000 72ale1 40
135 xe g u238he rc in 0.0562869 19.6 0.0562000 0.0110000 0 0.0000000 75dar1 18
135 xe g u238he rc cu 5.7088149 5.0 5.7000000 5.0000000% 0 0.0000000 81lau1 0
135 xe g u238he rc fi 0.1100024 12.4 0.0188000 0.0023000 135 u238he 1.0000000 84for1 0
135 xe m u238he cm cu 0.0000000 0.0 0.9275000 33.0000000% 0 0.0000000 73net2 0
135 xe m u238he rc fi 0.1913339 5.4 0.0327000 0.0012000 135 u238he 1.0000000 74wol2 0
135 xe m u238he rc fi 0.2691548 65.2 0.0460000 0.0300000 135 u238he 1.0000000 72ale1 40
135 xe m u238he rc in 0.2561956 20.3 0.2558000 0.0520000 0 0.0000000 75dar1 18
135 xe m u238he rc fi 0.1679292 14.4 0.0287000 0.0041000 135 u238he 1.0000000 84for1 0
135 i g u238he rc cu 5.3637345 10.1 5.0000000 0.5000000 140 ba g u238he 4.3000000 62bro1 0
135 i g u238he cm cu 0.0000000 0.0 5.0000000 0.0000000 0 0.0000000 69gun2 0
135 i g u238he rc cu su 0.0000000 0.0 4.6500000 0.7000000 0 0.0000000 71bla1 0
135 i g u238he rc cu su 0.0000000 0.0 4.2900000 0.5000000 0 0.0000000 73dar2 0
135 i g u238he rc cu su 0.0000000 0.0 4.4800000 0.1800000 0 0.0000000 73dar4 0
135 i g u238he rc re 5.4431177 5.2 1.1800000 0.0400000 140 ba g u238he 1.0000000 73man1 0
135 i g u238he cm cu 0.0000000 0.0 5.3960000 9.9000000% 0 0.0000000 73net2 0
135 i g u238he rc cu su 0.0000000 0.0 4.7800000 0.2200000 140 ba g u238he 4.4800000 74dar1 0
135 i g u238he rc cu 5.2981809 5.0 5.2900000 0.1100000 0 0.0000000 75dar1 0
135 i g u238he rc cu 5.4551512 6.0 5.4400000 0.3200000 140 ba g u238he 4.6000000 76raj1 0
135 i g u238he rc cu 5.4999206 8.3 5.3900000 0.4400000 99 mo g u238he 5.6000000 75ada1 0

135	i	g	u238he	rc	cu		4.9136472	6.3	4.9000000	0.3000000	140	ba	g	u238he	4.6000000	75cav1	0
135	i	g	u238he	rc	cu	su	0.0000000	0.0	4.9000000	0.3000000	140	ba	g	u238he	4.6000000	74bla1	0
135	i	g	u238he	rc	cu		5.2346183	7.2	5.1300000	0.3600000	99	mo	g	u238he	5.6000000	80li 1	0
135	i	g	u238he	rc	cu		5.3047334	5.2	5.2900000	0.2400000	140	ba	g	u238he	4.6000000	80zhe1	0
135	i	g	u238he	rc	cu		5.7889386	5.0	5.7800000	0.1800000	0				0.0000000	85liu1	0
135	i	g	u238he	rc	cu		5.0477942	5.8	5.0400000	5.8000000%	0				0.0000000	75dar1	0
135	i	g	u238he	rc	cu		5.1479489	5.2	5.1400000	5.2000000%	0				0.0000000	75dar1	0
135	i	g	u238he	rc	cu		5.2581190	5.5	5.2500000	5.5000000%	0				0.0000000	75dar1	0
135	i	g	u238he	rc	cu		5.3682891	5.0	5.3600000	4.1000000%	0				0.0000000	75dar1	0
135	i	g	u238he	rc	cu		5.4884747	5.0	5.4800000	4.0000000%	0				0.0000000	75dar1	0
135	i	g	u238he	rc	cu	sm	0.0000000	0.0	5.3000000	0.3000000	0				0.0000000	75dar1	0
135	i	g	u238he	rc	cu	sm	0.0000000	0.0	5.6800000	0.2200000	0				0.0000000	75dar1	0
135	te	g	u238he	cm	cu	x3	0.0000000	0.0	3.4840000	16.1000000%	0				0.0000000	73net2	0
135	sb	g	u238he	cm	cu		0.0000000	0.0	0.1885000	46.0000000%	0				0.0000000	73net2	0
135			pu239t	cm	cu		0.0000000	0.0	7.1900000	0.0000000	0				0.0000000	72sid1	0
135			pu239t	cm	cu		0.0000000	0.0	7.4800000	0.0000000	0				0.0000000	73lam1	0
135			pu239t	cm	cu		0.0000000	0.0	7.1800000	4.1000000%	0				0.0000000	77cro1	0
135			pu239t	cm	cu		0.0000000	0.0	7.6900000	0.2600000	0				0.0000000	73wal1	0
135	cs	g	pu239t	ms	re		6.9980903	9.4	1.0600000	0.1000000	137	cs	g	pu239t	1.0000000	57kri1	0
135	cs	g	pu239t	cm	cu		0.0000000	0.0	7.6900000	0.2600000	0				0.0000000	73wal3	0
135	cs	g	pu239t	ms	cu		7.3611082	14.3	1.0500000	0.1500000	133	cs	g	pu239t	1.0000000	56wil1	0
135	cs	g	pu239t	cm	cu		0.0000000	0.0	7.6230000	0.1310000	0				0.0000000	78wal1	0
135	cs	g	pu239t	ms	cu	aw	7.6936360	2.6	7.7000000	0.2000000	0				0.0000000	70jai1	0
135	cs	g	pu239t	ms	cu	x4	0.0000000	0.0	6.9500000	0.1900000	0				0.0000000	59ani1	0
135	cs	g	pu239t	ms	re		7.6104990	0.7	0.5593000	0.0010800	148	nd	g	pu239t	0.1205800	76mae1	0
135	cs	g	pu239t	ms	re	su	0.0000000	0.0	7.4300000	2.3000000%	133	cs	g	pu239t	6.9000000	59fic2	36
135	cs	g	pu239t	es	cu	cm	7.5837269	1.0	7.5900000	1.0000000%	0				0.0000000	81mae2	0
135	xe	g	pu239t	es	in	cm	0.3307264	4.0	0.3310000	4.0000000%	0				1.0000000	88wah1	18
135	xe	g	pu239t	cm	cu		0.0000000	0.0	7.2080000	2.0000000%	0				0.0000000	73net2	0
135	xe	g	pu239t	rc	fi	x4	0.0000000	0.0	0.0677000	0.0024000	135			pu239t	1.0000000	74wol2	0
135	xe	g	pu239t	cm	cu		0.0000000	0.0	7.2700000	3.0000000%	0				0.0000000	59bid1	0
135	xe	g	pu239t	ms	re		7.5490730	2.7	7.4300000	2.7000000%	133	cs	g	pu239t	6.9000000	61bay1	0
135	xe	g	pu239t	rc	fi		0.2805521	17.1	0.1480000	0.0250000	135	i	g	pu239t	1.0000000	71oka1	39
135	xe	g	pu239t	rc	fi		0.3377999	5.7	0.1782000	0.0023000	135	i	g	pu239t	1.0000000	71haw1	39
135	xe	g	pu239t	rc	fi	su	0.0000000	0.0	0.1500000	0.0300000	135	xe	g	pu239t	1.0000000	65big1	39
135	xe	g	pu239t	cm	cu		0.0000000	0.0	7.6080000	0.1310000	0				0.0000000	78wal1	0

135 xe g pu239t es in x3 0.0000000 0.0 0.5800000 0.0000000 0 0.0000000 61lev2 39
135 xe g pu239t rc cu aw 7.7070236 5.0 7.8900000 0.1900000 99 mo g u235t 6.1700000 71ram1 31
135 xe g pu239t rc cu 7.2440080 5.0 7.2500000 0.2400000 0 0.0000000 77gud1 0
135 xe g pu239t ms cu 7.5837269 2.2 7.5900000 0.1700000 0 0.0000000 79mae2 0
135 xe g pu239t rc cu 7.5937187 5.0 7.6000000 0.3800000 0 0.0000000 80dic1 0
135 xe g pu239t rc in sm 0.0000000 0.0 1.2900000 0.0700000 135 i g pu239t 5.7700000 80nis1 0
135 xe g pu239t rc in x4 0.0000000 0.0 0.4400000 0.0500000 135 i g pu239t 5.7700000 80nis1 0
135 xe g pu239t rc cu 7.0941319 5.0 7.1000000 0.1700000 0 0.0000000 84jai1 0
135 xe g pu239t rc cu 7.5078909 5.0 1.3300000 0.0200000 140 ba g u235t 0.0000000 86chi1 7
135 xe g pu239t ms cu 7.9766610 1.3 1.0400000 0.0130000 134 xe g pu239t 1.0000000 84tep1 0
135 xe g pu239t rc fi x4 0.0000000 0.0 0.0598000 0.0063000 135 pu239t 1.0000000 84for1 0
135 xe g pu239t rc fi su 0.0000000 0.0 0.0669000 0.0083000 135 pu239t 1.0000000 70for2 0
135 xe g pu239t cm fi x3 0.0000000 0.0 0.1510000 0.0050000 135 pu239t 1.0000000 78wal1 39
135 xe g pu239t es in 0.3147397 11.0 0.3150000 11.0000000% 0 0.0000000 89rid1 0
135 xe m pu239t cm cu x3 0.0000000 0.0 1.7220000 32.1000000% 0 0.0000000 73net2 0
135 xe m pu239t rc fi 0.7271827 5.0 0.0955000 0.0033000 135 pu239t 1.0000000 74wol2 0
135 xe m pu239t rc fi 0.6868690 17.1 0.1480000 0.0250000 135 i g pu239t 1.0000000 71oka1 39
135 xe m pu239t rc fi 0.8270274 5.7 0.1782000 0.0023000 135 i g pu239t 1.0000000 71haw1 39
135 xe m pu239t rc fi su 0.0000000 0.0 0.1500000 0.0300000 135 xe g pu239t 1.0000000 65big1 39
135 xe m pu239t es in x3 0.0000000 0.0 0.5800000 0.0000000 0 0.0000000 61lev2 39
135 xe m pu239t rc in 0.9629350 6.5 0.8500000 0.0500000 135 i g pu239t 5.7700000 80nis1 0
135 xe m pu239t rc fi 0.6601753 5.4 0.0867000 0.0046000 135 pu239t 1.0000000 84for1 0
135 xe m pu239t rc fi su 0.0000000 0.0 0.0939000 0.0049000 135 pu239t 1.0000000 70for2 0
135 xe m pu239t cm fi 0.0000000 0.0 0.1510000 0.0050000 135 pu239t 1.0000000 78wal1 39
135 xe m pu239t es in cm 0.8103297 4.0 0.8110000 4.0000000% 0 1.0000000 88wah1 18
135 xe m pu239t es in 0.6284801 20.0 0.6290000 20.0000000% 0 0.0000000 74mee1 36
135 xe m pu239t es in 0.7363909 20.0 0.7370000 20.0000000% 0 0.0000000 89rid1 36
135 xe m pu239t es fi 0.6738128 20.0 0.0884910 20.0000000% 135 pu239t 1.0000000 91jam2 36
135 i g pu239t rc cu x4 0.0000000 0.0 5.5000000 0.0000000 140 ba g pu239t 5.3600000 51ste3 0
135 i g pu239t sp cu su 0.0000000 0.0 0.9230000 0.0000000 135 i g u235t 1.0000000 64dur1 0
135 i g pu239t sp re 6.3147797 6.8 1.0060000 0.0670000 135 i g u235t 1.0000000 68nis1 0
135 i g pu239t rc fi su 0.0000000 0.0 61.0000000 5.0000000 135 pu239t 100.0000000 69den2 0
135 i g pu239t rc fc 6.2575786 5.0 0.8218000 5.0000000% 135 pu239t 1.0000000 71haw1 0
135 i g pu239t rc re 6.7016101 6.3 0.9660000 0.0540000 135 i g pu241t 1.0000000 71haw1 0
135 i g pu239t cm cu 0.0000000 0.0 6.3200000 0.0000000 0 0.0000000 73lam1 0
135 i g pu239t cm cu 0.0000000 0.0 5.8270000 7.0000000% 0 0.0000000 73net2 0

135 i g pu239t cm fi 0.0000000 0.0 0.6100000 0.0300000 135 pu239t 1.0000000 71den1 0
135 i g pu239t cm cu 0.0000000 0.0 6.4600000 0.1160000 0 0.0000000 78wal1 0
135 i g pu239t rc cu 6.4246857 5.0 6.4300000 0.1800000 0 0.0000000 80dic1 0
135 i g pu239t rc cu 6.6245204 7.2 6.6300000 7.2000000% 0 0.0000000 80ram1 0
135 i g pu239t rc cu x4 0.0000000 0.0 5.5300000 20.0000000% 0 0.0000000 77gud1 36
135 i g pu239t cm in 0.0000000 0.0 4.3410000 3.0000000% 0 1.0000000 88wah1 0
135 i g pu239t rc cu 5.9142254 5.1 5.9700000 0.0900000 140 ba g u235t 6.2500000 65oka1 0
135 i g pu239t sp cu su 0.0000000 0.0 1.2040000 0.0480000 135 i g u235t 1.0000000 66nis1 0
135 i g pu239t rc fi 4.6296030 5.0 0.6080000 0.0170000 135 pu239t 1.0000000 70qai1 0
135 i g pu239t cm fi 0.0000000 0.0 0.6080000 0.0170000 135 pu239t 1.0000000 78wal1 0
135 te g pu239t cm cu 0.0000000 0.0 2.0990000 32.1000000% 0 0.0000000 73net2 0
135 te g pu239t cm in 0.0000000 0.0 1.8210000 8.0000000% 0 1.0000000 88wah1 0
135 sb g pu239t cm cu 0.0000000 0.0 0.0335900 90.0000000% 0 0.0000000 73net2 0
135 sb g pu239t es fc 0.0585553 30.0 0.0076900 0.0000000 135 pu239t 1.0000000 74wol1 0
135 sb g pu239t rc cu 0.1004369 48.5 0.0700000 0.0300000 134 sb g pu239t 0.2800000 76rud1 0
135 sb g pu239t cm in 0.0000000 0.0 0.0662500 44.0000000% 0 1.0000000 88wah1 0
135 pu239f cm cu 0.0000000 0.0 7.3300000 3.8000000% 0 0.0000000 77cro1 0
135 pu239f rc cu 7.5840283 10.0 7.5970000 10.0000000% 0 0.0000000 81koc1 36
135 cs g pu239f ms cu su 0.0000000 0.0 7.6100000 0.0000000 0 0.0000000 76koc1 0
135 cs g pu239f ms cu 7.6131096 0.7 7.5920000 0.0480000 148 nd g pu239f 1.6540000 77mae1 0
135 cs g pu239f ms cu 7.4891905 2.0 7.5020000 0.0640000 0 0.0000000 77mae1 0
135 cs g pu239f es re 7.5319071 10.0 0.9900000 10.0000000% 135 pu239t 1.0000000 74mee4 0
135 cs g pu239f ms cu 7.5863728 2.5 7.7300000 0.1900000 148 nd g pu239f 1.6900000 77gab1 0
135 cs g pu239f ms cu 7.5474542 0.9 0.3580000 0.0001000 137 cs g pu239f 0.3118000 80mae4 0
135 cs g pu239f ms cu su 0.0000000 0.0 7.5700000 0.0300000 148 nd g pu239f 1.6500000 74mae1 0
135 cs g pu239f ms cu 7.5271256 2.0 7.5400000 0.1300000 0 0.0000000 70lis1 0
135 cs g pu239f es cu cm 7.5470914 1.0 7.5600000 1.0000000% 0 0.0000000 81mae2 0
135 cs g pu239f es cu x3 0.0000000 0.0 7.0100000 0.0000000 0 0.0000000 72sid1 0
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135 xe g pu239f cm cu x3 0.0000000 0.0 5.9700000 14.9000000% 0 0.0000000 73net2 0
135 xe g pu239f rc fi 0.5973035 5.0 0.0792000 0.0030000 135 pu239f 1.0000000 74wol2 0
135 xe g pu239f ms cu 7.1532132 1.5 7.6000000 1.4000000% 134 xe g pu239f 7.8300000 77koc1 0
135 xe g pu239f rc cu 7.3523393 5.1 0.9680000 0.0230000 135 xe g pu239t 1.0000000 79yur1 36

135	xe	g	pu239f	rc	cu		7.3266831	5.5	7.2800000	0.3900000	140	ba	g	pu239f	5.2800000	78bya1	0
135	xe	g	pu239f	rc	cu		7.2376208	5.0	7.2500000	0.2400000	0				0.0000000	77gud1	0
135	xe	g	pu239f	rc	fi	su	0.0000000	0.0	0.0810000	0.0091000	135			pu239f	1.0000000	73for1	0
135	xe	m	pu239f	rc	in		0.7886511	8.9	0.7900000	0.0700000	0				0.0000000	69moo1	0
135	xe	m	pu239f	cm	cu		0.0000000	0.0	1.5740000	35.0000000%	0				0.0000000	73net2	0
135	xe	m	pu239f	rc	fi		0.8424090	5.0	0.1117000	0.0041000	135			pu239f	1.0000000	74wol2	0
135	xe	m	pu239f	rc	fi	su	0.0000000	0.0	0.1090000	0.0560000	135			pu239f	1.0000000	73for1	0
135	i	g	pu239f	cm	cu		0.0000000	0.0	4.5180000	18.0000000%	0				0.0000000	73net2	0
135	i	g	pu239f	rc	re		6.6155352	5.0	1.2280000	0.0210000	140	ba	g	u235t	0.0000000	75raj1	7
135	i	g	pu239f	rc	cu		5.5654612	5.4	5.5300000	0.2900000	140	ba	g	pu239f	5.2800000	78bya1	0
135	i	g	pu239f	rc	cu		5.5205576	5.0	5.5300000	0.2300000	0				0.0000000	77gud1	0
135	i	g	pu239f	es	cu		5.6902674	32.0	5.7000000	32.0000000%	0				0.0000000	74mee1	0
135	i	g	pu239f	es	cu		6.0496527	32.0	6.0600000	32.0000000%	0				0.0000000	89rid1	0
135	te	g	pu239f	cm	cu		0.0000000	0.0	1.3970000	35.0000000%	0				0.0000000	73net2	0
135	sb	g	pu239f	cm	cu		0.0000000	0.0	0.0174300	90.0000000%	0				0.0000000	73net2	0
135			pu241t	cm	cu		0.0000000	0.0	7.3000000	0.0000000	0				0.0000000	72sid1	0
135			pu241t	cm	cu		0.0000000	0.0	7.0600000	0.2400000	0				0.0000000	73wal1	0
135			pu241t	cm	cu		0.0000000	0.0	7.4700000	7.1000000%	0				0.0000000	77cro1	0
135			pu241t	cm	cu		0.0000000	0.0	7.4000000	0.0000000	0				0.0000000	79wal1	0
135	cs	g	pu241t	es	cu	cm	7.0677783	3.4	7.0600000	0.2400000	0				0.0000000	73wal3	0
135	cs	g	pu241t	cm	cu		0.0000000	0.0	7.2000000	0.1150000	0				0.0000000	78wal1	0
135	cs	g	pu241t	ms	cu		7.3590989	2.0	7.3510000	0.0430000	0				0.0000000	77mae1	0
135	cs	g	pu241t	rc	cu		7.2246134	15.1	7.7500000	0.0000000	131			pu241t	3.3300000	73chi1	0
135	cs	g	pu241t	ms	re		7.1233504	0.9	1.0699000	0.0050000	137	cs	g	pu241t	1.0000000	64far1	0
135	xe	g	pu241t	rc	fi		0.1048192	77.0	0.0520000	0.0400000	135	i	g	pu241t	1.0000000	71oka1	39
135	xe	g	pu241t	rc	fi		0.0669230	5.7	0.0332000	0.0016000	135	i	g	pu241t	1.0000000	71haw1	39
135	xe	g	pu241t	rc	fi	su	0.0000000	0.0	0.0700000	0.0400000	135	xe	g	pu241t	1.0000000	65big1	39
135	xe	g	pu241t	rc	cu	aw	7.3380758	5.0	7.3300000	0.1900000	0				0.0000000	73sko2	0
135	xe	g	pu241t	cm	cu		0.0000000	0.0	7.1970000	0.1160000	0				0.0000000	78wal1	0
135	xe	g	pu241t	rc	cu	x2	0.0000000	0.0	7.8000000	0.1900000	0				0.0000000	73sko2	0
135	xe	g	pu241t	rc	cu		7.7970200	5.0	1.2800000	0.0300000	140	ba	g	u235t	0.0000000	86chi1	7
135	xe	g	pu241t	rc	cu		7.0878004	10.0	7.0800000	0.3500000	0				0.0000000	64far1	0
135	xe	g	pu241t	cm	fi		0.0000000	0.0	0.0320000	0.0020000	135			pu241t	1.0000000	78wal1	39
135	xe	m	pu241t	rc	fi		0.2566262	77.0	0.0520000	0.0400000	135	i	g	pu241t	1.0000000	71oka1	39
135	xe	m	pu241t	rc	fi		0.1638460	5.7	0.0332000	0.0016000	135	i	g	pu241t	1.0000000	71haw1	39
135	xe	m	pu241t	rc	fi	su	0.0000000	0.0	0.0700000	0.0400000	135	xe	g	pu241t	1.0000000	65big1	39

135 xe m pu241t cm fi 0.0000000 0.0 0.0320000 0.0020000 135 pu241t 1.0000000 78wal1 39
135 i g pu241t sp re 7.6791508 7.4 1.2210000 0.0890000 135 i g u235t 1.0000000 68nis1 0
135 i g pu241t es fc 6.9402673 5.1 0.9668000 5.0000000% 135 pu241t 1.0000000 71haw1 0
135 i g pu241t rc re 6.7796755 6.3 1.0000000 0.0560000 135 i g pu239t 0.9660000 71haw1 0
135 i g pu241t cm cu 0.0000000 0.0 6.9660000 0.1120000 0 0.0000000 78wal1 0
135 i g pu241t sp cu 7.0187816 5.2 1.1160000 2.0000000% 135 i g u235t 1.0000000 64dur1 36
135 i g pu241t rc cu 7.2179436 5.3 7.2100000 0.3800000 0 0.0000000 79dic1 0
135 i g pu241t rc fc 6.9402673 5.1 0.9668000 0.0061000 135 pu241t 1.0000000 80nai1 0
135 i g pu241t es in cm 3.0533603 30.0 3.0500000 0.0000000 0 0.0000000 87red1 0
135 i g pu241t rc cu 7.4740469 5.1 7.5300000 0.1900000 140 ba g u235t 6.2500000 65oka1 0
135 i g pu241t rc cu x4 0.0000000 0.0 5.6000000 0.0000000 0 0.0000000 63kir1 0
135 u233t cm cu 0.0000000 0.0 6.1000000 0.0000000 0 0.0000000 72sid1 0
135 u233t cm cu 0.0000000 0.0 6.2700000 0.0000000 0 0.0000000 73lam1 0
135 u233t cm cu 0.0000000 0.0 6.2100000 0.1500000 0 0.0000000 73wal1 0
135 u233t cm cu 0.0000000 0.0 6.0100000 5.8000000% 0 0.0000000 77cro1 0
135 cs g u233t ms cu 6.1848515 3.2 6.0200000 3.0000000% 133 cs g u233t 5.7700000 61bid1 0
135 cs g u233t cm cu 0.0000000 0.0 6.2620000 0.1040000 0 0.0000000 78wal1 0
135 cs g u233t es cu cm 6.1865263 2.4 6.2100000 0.1500000 0 0.0000000 73wal3 0
135 xe g u233t cm cu 0.0000000 0.0 6.0840000 4.0000000% 0 0.0000000 73net2 0
135 xe g u233t es fc gt 6.1778491 30.0 0.9900000 0.0000000 135 u233t 1.0000000 73wal3 0
135 xe g u233t rc fi 0.6614667 20.0 0.1060000 20.0000000% 135 u233t 1.0000000 74wol2 36
135 xe g u233t rc fi 0.3076444 20.0 0.1700000 20.0000000% 135 u233t 1.0000000 74har1 39
135 xe g u233t rc fi 0.2645828 20.2 0.1820000 20.0000000% 135 i g u233t 1.0000000 71oka1 39
135 xe g u233t rc fi 0.4055967 20.2 0.2790000 20.0000000% 135 i g u233t 1.0000000 71haw1 39
135 xe g u233t rc fi su 0.0000000 0.0 0.1800000 0.0300000 135 xe g u233t 1.0000000 65big1 39
135 xe g u233t rc fi 0.1791576 20.0 0.0990000 20.0000000% 135 u233t 1.0000000 65sto1 39
135 xe g u233t ms cu 5.9773201 3.0 6.0000000 3.0000000% 0 0.0000000 59bid1 0
135 xe g u233t rc cu x2 0.0000000 0.0 5.5100000 0.0000000 99 mo g u235t 6.4500000 66gor1 24
135 xe g u233t rc cu aw 6.2861483 5.0 6.3100000 0.0600000 0 0.0000000 66gor1 0
135 xe g u233t cm cu 0.0000000 0.0 6.2430000 0.1040000 0 0.0000000 78wal1 0
135 xe g u233t es in 0.2253450 30.0 0.7800000 0.0000000 0 0.0000000 61lev2 39
135 xe g u233t rc fi su 0.0000000 0.0 0.1700000 0.0200000 135 u233t 1.0000000 73har2 39
135 xe g u233t rc in sm 0.0000000 0.0 1.6400000 0.0800000 0 0.0000000 80nis1 0
135 xe g u233t rc in 0.6276186 20.0 0.6300000 20.0000000% 0 0.0000000 80nis1 36
135 xe g u233t rc cu 5.7160779 5.0 0.8500000 0.0200000 140 ba g u235t 0.0000000 86chi1 7
135 xe g u233t rc fi 0.3438379 20.0 0.0551000 20.0000000% 135 u233t 1.0000000 79bla1 36

135	xe	g	u233t	ms		cu	6.5026699	1.4	1.0350000	0.0120000	134	xe	g	u233t	1.0000000	84tep1	0
135	xe	g	u233t	rc		fi	0.6202810	20.0	0.0994000	20.0000000%	135			u233t	1.0000000	84for1	36
135	xe	g	u233t	rc		fi	su	0.0000000	0.0	0.0990000	0.0110000	135		u233t	1.0000000	70for2	0
135	xe	g	u233t	cm		fi		0.0000000	0.0	0.2130000	0.0090000	135		u233t	1.0000000	78wal1	39
135	xe	g	u233t	es		in		0.5847812	20.0	0.5870000	20.0000000%	0			0.0000000	74mee1	36
135	xe	g	u233t	es		in		0.4343519	20.0	0.4360000	20.0000000%	0			0.0000000	89rid1	36
135	xe	g	u233t	es		fi		0.4124806	20.0	0.0661000	20.0000000%	135		u233t	1.0000000	88wah1	36
135	xe	g	u233t	es		fi		0.7039628	20.0	0.1128100	20.0000000%	135		u233t	1.0000000	91jam2	36
135	xe	g	u233t	es		in	cm	0.4079521	20.0	0.4095000	20.0000000%	0			1.0000000	88wah1	18
135	xe	m	u233t	cm		cu		0.0000000	0.0	1.5020000	32.1000000%	0			0.0000000	73net2	0
135	xe	m	u233t	rc		fi		0.9360377	5.2	0.1500000	0.0040000	135		u233t	1.0000000	74wol2	0
135	xe	m	u233t	rc		fi		0.7531984	10.1	0.1700000	10.0000000%	135		u233t	1.0000000	74har1	39
135	xe	m	u233t	rc		fi		0.6477716	9.2	0.1820000	0.0160000	135	i g	u233t	1.0000000	71oka1	39
135	xe	m	u233t	rc		fi		0.9930125	5.7	0.2790000	0.0069000	135	i g	u233t	1.0000000	71haw1	39
135	xe	m	u233t	rc		fi		0.7967540	16.8	0.1800000	0.0300000	135	xe g	u233t	1.0000000	65big1	39
135	xe	m	u233t	rc		fi		0.4386273	13.2	0.0990000	0.0130000	135		u233t	1.0000000	65sto1	39
135	xe	m	u233t	es		in		0.5517066	30.0	0.7800000	0.0000000	0			0.0000000	61lev2	39
135	xe	m	u233t	rc		fi		0.7531984	11.8	0.1700000	0.0200000	135		u233t	1.0000000	73har2	39
135	xe	m	u233t	rc		in		1.0061822	5.0	1.0100000	0.0500000	0			0.0000000	80nis1	0
135	xe	m	u233t	rc		fi		0.8418099	11.1	0.1349000	11.0000000%	135		u233t	1.0000000	79bla1	0
135	xe	m	u233t	rc		fi		0.7987522	13.4	0.1280000	0.0170000	135		u233t	1.0000000	84for1	0
135	xe	m	u233t	rc		fi		0.9285494	5.2	0.1488000	0.0073000	135		u233t	1.0000000	70for2	0
135	xe	m	u233t	es		fi		0.9437133	4.5	0.2130000	0.0090000	135		u233t	1.0000000	78wal1	39
135	xe	m	u233t	es		in	cm	0.9518882	4.0	0.9555000	4.0000000%	0			1.0000000	88wah1	18
135	i	g	u233t	sp		cu	su	0.0000000	0.0	0.7000000	0.0350000	135	i g	u235t	1.0000000	66nis1	0
135	i	g	u233t	sp		re		5.1633139	8.8	0.8250000	0.0720000	135	i g	u235t	1.0000000	68nis1	0
135	i	g	u233t	rc		fi	su	0.0000000	0.0	61.0000000	5.0000000	135		u233t	100.0000000	69den2	0
135	i	g	u233t	rc		fi	su	0.0000000	0.0	0.6060000	0.0240000	135	i g	u233t	0.8050000	70qai1	0
135	i	g	u233t	rc		fc		4.4992214	15.1	0.7210000	0.0000000	135		u233t	1.0000000	71haw1	0
135	i	g	u233t	cm		cu		0.0000000	0.0	4.8900000	0.0000000	0			0.0000000	73lam1	0
135	i	g	u233t	cm		cu		0.0000000	0.0	4.8180000	10.0000000%	0			0.0000000	73net2	0
135	i	g	u233t	rc		fi		3.8065535	6.7	0.6100000	0.0400000	135		u233t	1.0000000	71den1	0
135	i	g	u233t	rc		cu	aw	4.8515915	9.2	4.8700000	0.4500000	0			0.0000000	67gan1	0
135	i	g	u233t	cm		cu		0.0000000	0.0	4.9120000	0.0840000	0			0.0000000	78wal1	0
135	i	g	u233t	rc		cu		5.0807221	60.0	5.1000000	0.0000000	0			0.0000000	47ste1	0
135	i	g	u233t	sp		cu		4.7126974	6.2	0.7530000	6.0000000%	135	i g	u235t	1.0000000	64dur1	36

135 i g u233t rc cu x2 0.0000000 0.0 4.5500000 0.4500000 99 mo g u233t 4.8000000 67gan1 0
135 i g u233t rc cu 4.6224609 5.0 4.6400000 4.6000000% 0 0.0000000 81ram1 0
135 i g u233t rc cu 4.7213455 5.1 4.7800000 0.0700000 140 ba g u235t 6.2500000 65oka1 0
135 i g u233t cm fi 0.0000000 0.0 0.6060000 0.0240000 135 u233t 1.0000000 78wal1 0
135 te g u233t cm cu x3 0.0000000 0.0 1.6520000 32.1000000% 0 0.0000000 73net2 0
135 sb g u233t cm cu 0.0000000 0.0 0.0243300 90.0000000% 0 0.0000000 73net2 0
135 th232f cm cu es 0.0000000 0.0 5.6000000 0.0000000 0 0.0000000 65eng1 0
135 th232f cm cu 0.0000000 0.0 5.3000000 0.0000000 0 0.0000000 74lam1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

135 th232f cm cu 0.0000000 0.0 5.9200000 7.6000000% 0 0.0000000 77cro1 0
135 cs g th232f ms re x1 0.0000000 0.0 1.0110000 0.0050000 137 cs g th232f 1.0000000 68har1 0
135 cs g th232f es cu cm 5.5725345 30.0 5.6000000 0.0000000 0 0.0000000 72sid1 0
135 cs g th232f es cu cm 4.6271939 30.0 4.6500000 0.0000000 0 0.0000000 73lam1 0
135 cs g th232f es cu 5.3536135 5.0 5.3800000 5.0000000% 0 0.0000000 74mee0 0
135 cs m th232f rc in x6 0.0000000 0.0 0.0055000 0.0019000 0 0.0000000 82li 1 0
135 xe g th232f rc re rp 5.4068200 55.2 2.2300000 0.0000000 no. relative values = 1 69lyl1
135 xe g th232f cm cu 0.0000000 0.0 5.0770000 4.0000000% 0 0.0000000 73net2 0
135 xe g th232f rc fi ul 0.0000000 0.0 0.0100000 0.0100000 135 th232f 1.0000000 71den1 0
135 xe g th232f ms re 5.2431605 2.3 1.8350000 0.0200000 132 te g th232f 1.0000000 68har1 0
135 xe g th232f rc cu 4.0003616 23.2 3.9000000 0.9000000 140 ba g th232f 7.6400000 70kob1 0
135 xe g th232f rc cu 5.2309589 7.3 5.3200000 0.3600000 140 ba g th232f 7.9700000 85chu1 0
135 xe g th232f rc cu 5.8611122 5.0 5.8900000 0.1900000 0 0.0000000 86ric1 0
135 xe m th232f cm cu 0.0000000 0.0 0.7638000 32.1000000% 0 0.0000000 73net2 0
135 xe m th232f rc cu x1 0.0000000 0.0 2.3200000 0.1100000 140 ba g th232f 7.9700000 85chu1 0
135 i g th232f rc fi 0.6600368 50.0 12.0000000 6.0000000 135 th232f 100.0000000 69den2 0
135 i g th232f rc fi 0.8250460 20.1 15.0000000 3.0000000 135 th232f 100.0000000 71qai1 0
135 i g th232f rc re 6.1175200 7.4 0.7700000 7.4000000% 140 ba g u235t 0.0000000 73bra1 7
135 i g th232f rc re 6.3558649 7.0 0.8000000 7.0000000% 140 ba g u235t 0.0000000 73bra1 7
135 i g th232f cm cu 0.0000000 0.0 5.0410000 4.0000000% 0 0.0000000 73net2 0
135 i g th232f rc fi su 0.0000000 0.0 0.1500000 0.0300000 135 th232f 1.0000000 71den1 0
135 i g th232f rc cu rp 5.3925293 25.4 6.1900000 0.0000000 no. relative values = 1 69lyl1
135 i g th232f rc fi 0.8250460 20.1 0.1500000 0.0300000 135 th232f 1.0000000 71den2 0
135 i g th232f rc cu 5.2638695 11.0 5.5700000 0.6000000 99 mo g th232f 3.1000000 64bro1 0

135	i	g	th232f	rc	cu	5.3479539	5.7	5.0500000	0.1000000	140	ba g	th232f	7.4000000	73cha1	0
135	i	g	th232f	rc	re	5.9951793	5.0	1.9900000	0.0300000	99	mo g	u235t	0.0000000	81ert1	7
135	i	g	th232f	cm	cu	0.0000000	0.0	5.5300000	0.3300000	0			0.0000000	81ert1	0
135	i	g	th232f	rc	cu	3.8112156	50.0	3.8300000	50.0000000%	0			0.0000000	81ram1	36
135	i	g	th232f	rc	fi	0.8910497	18.6	16.2000000	3.0000000	135		th232f	100.0000000	90hen1	0
135	te	g	th232f	cm	cu	0.0000000	0.0	4.1730000	8.1000000%	0			0.0000000	73net2	0
135	te	g	th232f	rc	fi	4.1802329	6.2	0.7600000	0.0450000	135		th232f	1.0000000	77iza1	0
135	te	g	th232f	rc	fi	4.1472311	6.7	0.7540000	0.0480000	135		th232f	1.0000000	77iza1	0
135	sb	g	th232f	cm	cu	0.0000000	0.0	0.5370000	32.1000000%	0			0.0000000	73net2	0
136	ba	g	u235t	ms	re	0.0061946	3.3	0.0010000	0.0000310	140	ba g	u235t	1.0000000	62far1	0
136	cs	g	u235t	rc	in	0.0061978	60.0	0.0062000	0.0000000	0			0.0000000	49gle2	0
136	cs	g	u235t	rc	in	x4	0.0000000	0.0	0.0110000	0.0000000	137	cs g	u235t	6.0000000	51gle4	0
136	cs	g	u235t	rc	in	0.0056980	30.0	0.0057000	0.0000000	0			0.0000000	55coo1	0
136	cs	g	u235t	rc	in	0.0067904	15.0	0.0011000	15.0000000%	144	ce g	u235t	5.7000000	62wah1	30
136	cs	g	u235t	rc	in	x4	0.0000000	0.0	0.0085600	6.0000000%	140	ba g	u235t	6.3500000	65bal1	0
136	cs	g	u235t	ms	in	0.0059562	2.6	0.0059400	0.0001540	137	cs g	u235t	6.1700000	66mch1	0
136	cs	g	u235t	cm	cu	0.0000000	0.0	0.0059000	5.0000000%	0			0.0000000	73net2	0
136	cs	g	u235t	rc	in	0.0073974	9.5	0.0074000	0.0007000	0			0.0000000	75fly1	0
136	cs	g	u235t	rc	in	0.0060979	10.0	0.0061000	0.0002400	0			0.0000000	60bae1	0
136	cs	g	u235t	rc	fi	0.0071941	30.0	0.0011400	0.0000000	136		u235t	1.0000000	60fly1	0
136	cs	g	u235t	rc	fi	0.0058689	5.0	0.0009300	5.0000000%	136		u235t	1.0000000	79bla1	0
136	cs	g	u235t	cm	in	0.0000000	0.0	0.0070410	9.0000000%	0			1.0000000	88wah1	0
136	cs	g	u235t	rc	fi	0.0066893	10.0	0.0010600	0.0000500	136		u235t	1.0000000	61gru1	36
136	cs	g	u235t	rc	in	0.0068910	10.0	0.0068500	4.7000000%	137	cs g	u235t	6.1500000	61gru1	36
136	cs	g	u235t	es	in	cm	0.0070385	9.0	0.0070410	9.0000000%	0		1.0000000	88wah1	0
136	xe	g	u235t	ms	cu	6.3770146	1.6	6.6200000	0.0000000	131	xe g	u235t	3.0000000	55wan1	0
136	xe	g	u235t	ms	re	6.3115105	1.1	2.1840000	1.0000000%	131	xe g	u235t	1.0000000	63mch1	0
136	xe	g	u235t	cm	cu	x3	0.0000000	0.0	6.4400000	0.3000000	0		0.0000000	65cro2	0
136	xe	g	u235t	sp	fi	x2	0.0000000	0.0	0.2100000	0.0400000	136	xe g	u235t	1.0000000	65kon1	0
136	xe	g	u235t	rc	fi	x2	0.0000000	0.0	0.3400000	0.0500000	136		u235t	1.0000000	72gun1	0
136			u235t	cm	cu	0.0000000	0.0	6.4400000	0.0000000	0			0.0000000	72sid1	0
136	xe	g	u235t	rc	fi	1.5145480	75.0	0.2400000	0.1800000	136		u235t	1.0000000	72wah1	0
136			u235t	cm	cu	0.0000000	0.0	6.1800000	0.0000000	0			0.0000000	73lam1	0
136			u235t	cm	cu	0.0000000	0.0	6.1300000	0.1400000	0			0.0000000	73wal1	0
136			u235t	ms	cu	6.2208200	2.0	6.2230000	0.0670000	0			0.0000000	76dii1	0
136	xe	g	u235t	ms	cu	6.3371066	1.6	6.1400000	0.0000000	131	xe g	u235t	2.8000000	49tho1	0

136 xe g u235t cm cu 0.0000000 0.0 6.1400000 0.0000000 131 xe g u235t 2.8000000 51cor2 0
136 xe g u235t ms cu 6.3715570 0.7 6.4600000 0.2000000% 131 xe g u235t 2.9300000 56bla1 0
136 u235t cm cu 0.0000000 0.0 6.3300000 2.0000000% 0 0.0000000 77cro1 0
136 xe g u235t cm cu x3 0.0000000 0.0 6.4600000 0.0000000 0 0.0000000 61her1 0
136 xe g u235t es re 6.1297636 1.6 0.3334600 0.0052900 148 nd g u235t 0.0910100 76mae1 0
136 xe g u235t cm cu x3 0.0000000 0.0 6.4700000 0.0000000 0 0.0000000 62far1 0
136 xe g u235t ms cu 6.3149979 0.6 12.8650000 0.0710000 0 2.0365000 78mae1 0
136 xe g u235t ms cu 6.3041989 0.5 12.8430000 0.0680000 0 2.0365000 78mae1 0
136 xe g u235t ms cu 6.2997811 0.5 12.8340000 0.0690000 0 2.0365000 78mae1 0
136 xe g u235t ms cu cm 6.3177861 6.0 6.3200000 0.0000000 0 0.0000000 80mae3 0
136 xe g u235t sp fi 2.6504591 36.0 0.4200000 36.0000000% 136 u235t 1.0000000 84den1 0
136 xe g u235t cm in 0.0000000 0.0 2.0500000 39.0000000% 0 1.0000000 88wah1 0
136 i g u235t rc cu 3.0989140 60.0 3.1000000 0.0000000 0 0.0000000 49sta1 0
136 i g u235t sp fi x2 0.0000000 0.0 0.6700000 0.2500000 136 xe g u235t 1.0000000 65kon1 0
136 i g u235t rc in x1 0.0000000 0.0 1.3000000 0.5000000 0 0.0000000 67wun1 37
136 i g u235t rc fi x2 0.0000000 0.0 0.3500000 0.0500000 136 u235t 1.0000000 72gun1 0
136 i g u235t rc in 1.3755180 9.1 1.3760000 0.1250000 0 0.0000000 80ham1 18
136 i g u235t sp fi 1.1927066 19.0 0.1890000 19.0000000% 136 u235t 1.0000000 84den1 0
136 i g u235t rc in 1.6094360 5.0 3.2200000 0.1200000 0 0.0000000 81mar1 37
136 i g u235t cm in 0.0000000 0.0 1.4070000 12.0000000% 0 1.0000000 88wah1 0
136 i g u235t rc cu 3.8942097 20.5 3.9000000 0.8000000 136 xe g u235t 6.3200000 72wah1 0
136 i g u235t rc in 1.0696252 12.1 1.0700000 0.1300000 0 0.0000000 88lee1 0
136 i g u235t rc in sm 0.0000000 0.0 2.4200000 0.1800000 0 0.0000000 88lee1 0
136 i g u235t sp in 0.2898984 82.8 0.2900000 0.2400000 0 0.0000000 90rud1 0
136 i g u235t sp cu 1.6994045 15.3 1.7000000 0.2600000 0 0.0000000 90rud1 0
136 i g u235t es cu 2.9289736 25.0 2.9300000 25.0000000% 0 0.0000000 74mee1 36
136 i g u235t es cu 2.6490717 25.0 2.6500000 25.0000000% 0 0.0000000 89rid1 36
136 i g u235t es fc 2.7577395 25.0 0.4370000 25.0000000% 136 u235t 1.0000000 88wah1 36
136 i m u235t rc in x1 0.0000000 0.0 1.3000000 0.5000000 0 0.0000000 67wun1 37
136 i m u235t rc in 1.6804111 9.1 1.6810000 0.1530000 0 0.0000000 80ham1 18
136 i m u235t sp fi 1.4577525 19.0 0.2310000 19.0000000% 136 u235t 1.0000000 84den1 0
136 i m u235t rc cu 1.4994745 11.3 1.5000000 0.1700000 0 0.0000000 85has1 0
136 i m u235t rc cu 0.9296742 10.8 0.9300000 0.1000000 0 0.0000000 84chu1 0
136 i m u235t rc in 1.6094360 5.0 3.2200000 0.1200000 0 0.0000000 81mar1 37
136 i m u235t cm in 0.0000000 0.0 1.4080000 12.0000000% 0 1.0000000 88wah1 0
136 i m u235t rc in 1.3795166 8.7 1.3800000 0.1200000 0 0.0000000 88lee1 0

136 i m u235t sp in 1.0896182 11.0 1.0900000 0.1200000 0 0.0000000 90rud1 0
136 te g u235t sp fi x2 0.0000000 0.0 0.1000000 0.0300000 136 xe g u235t 1.0000000 65kon1 0
136 te g u235t rc fi x2 0.0000000 0.0 0.2400000 0.0400000 136 u235t 1.0000000 72gun1 0
136 te g u235t es fc 1.6281391 30.0 0.2580000 0.0000000 136 u235t 1.0000000 74wol1 0
136 te g u235t rc cu nr 1.7748610 27.8 1.8000000 0.5000000 136 u235t 6.4000000 67wun1 0
136 te g u235t rc cu 1.4394956 6.9 1.4400000 0.1000000 0 0.0000000 81mar1 0
136 te g u235t sp fc 1.0096987 25.0 0.1600000 25.0000000% 136 u235t 1.0000000 84den1 0
136 te g u235t sp fi 0.9907668 26.0 0.1570000 26.0000000% 136 u235t 1.0000000 84den1 0
136 te g u235t cm in 0.0000000 0.0 1.2680000 35.0000000% 0 1.0000000 88wah1 0
136 te g u235t sp cu 1.9293239 13.0 1.9300000 0.2500000 0 0.0000000 90rud1 0
136 sb g u235t rc fi x2 0.0000000 0.0 0.0200000 0.0200000 136 u235t 1.0000000 65kon1 0
136 sb g u235t rc fi x2 0.0000000 0.0 0.0500000 0.0300000 136 u235t 1.0000000 72gun1 0
136 sb g u235t rc fc ul 0.0000000 0.0 0.0050000 0.0000000 136 u235t 1.0000000 77rud1 0
136 cs g u235f rc fi x4 0.0000000 0.0 0.0025000 0.0003000 136 u235f 1.0000000 72kno1 0
136 cs g u235f rc in x4 0.0000000 0.0 0.0500000 0.0050000 0 0.0000000 81mar1 0
136 cs g u235f es fi 0.0108057 5.2 0.0017400 5.2000000% 136 u235f 1.0000000 91jam1 0
136 cs g u235f ms in 0.0090924 3.3 0.0091000 3.3000000% 0 0.0000000 85cha1 0
136 cs g u235f es cu 0.0125894 15.0 0.0126000 15.0000000% 0 0.0000000 73net2 0
136 cs g u235f rc cu 0.0103564 10.0 1.9240000 10.0000000% 99 mo g u235t 0.0000000 76for1 7
136 cs g u235f rc cu 0.0154485 10.0 2.8700000 10.0000000% 99 mo g u235t 0.0000000 76for1 7
136 cs g u235f rc cu 0.0129186 10.0 2.4000000 10.0000000% 99 mo g u235t 0.0000000 76for1 7
136 cs g u235f rc cu 0.0109808 10.0 2.0400000 10.0000000% 99 mo g u235t 0.0000000 76for1 7
136 cs g u235f rc cu 0.0097051 10.0 1.8030000 10.0000000% 99 mo g u235t 0.0000000 76for1 7
136 cs g u235f es cu 0.0155869 10.0 0.0156000 10.0000000% 0 0.0000000 74mee1 36
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0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

136 cs g u235f es cu 0.0114904 10.0 0.0115000 10.0000000% 0 0.0000000 89rid1 36
136 u235f cm cu 0.0000000 0.0 6.1700000 4.5000000% 0 0.0000000 77cro1 0
136 u235f es cu cm 6.2947201 30.0 6.3000000 0.0000000 0 0.0000000 72sid1 0
136 u235f es re 6.1186386 10.0 0.9700000 10.0000000% 136 u235t 1.0000000 74mee4 0
136 u235f rc cu 6.1898081 10.0 6.1950000 10.0000000% 0 0.0000000 81koc1 36
136 xe g u235f cm cu 0.0000000 0.0 6.2160000 0.0270000 0 0.0000000 81mae1 0
136 xe g u235f ms cu 6.0558527 2.8 5.9300000 0.1600000 131 xe g u235f 3.1500000 70lis1 0
136 xe g u235f ms cu 6.1674078 0.8 6.1600000 0.0400000 148 nd g u235f 1.6800000 74mae1 0

136 xe g u235f ms cu 6.2555882 0.7 6.1900000 0.4000000% 134 xe g u235f 7.5800000 77koc1 0
136 xe g u235f ms cu 6.2107905 2.0 6.2160000 0.0270000 0 0.0000000 81mae1 0
136 xe g u235f ms cu 6.3147034 2.0 6.3200000 0.0400000 0 0.0000000 80mae1 0
136 xe g u235f ms cu cm 6.2197830 6.0 6.2250000 0.0000000 0 0.0000000 80mae3 0
136 xe g u235f ms cu su 0.0000000 0.0 6.2000000 0.0000000 0 0.0000000 76koc1 0
136 xe g u235f ms re 6.2373474 1.6 28.9300000 0.0000000 134 xe g u235f 35.5300000 70ebe1 0
136 xe g u235f ms re x4 0.0000000 0.0 6.8800000 3.0000000% 148 nd g u235f 1.7500000 72kry1 0
136 xe g u235f rc in 1.3988267 10.7 1.4000000 0.1500000 0 0.0000000 81mar1 0
136 i g u235f rc in sm 0.0000000 0.0 3.9300000 0.1200000 0 0.0000000 81mar1 0
136 te g u235f rc cu 0.8492876 5.0 0.8500000 0.0400000 0 0.0000000 81mar1 0
136 te g u235f rc in 0.8492876 5.0 0.8500000 0.0400000 0 0.0000000 81mar1 0
136 cs g u235he rc fc 0.2017852 60.1 0.0400000 0.0000000 136 u235he 1.0000000 53for2 0
136 cs g u235he rc re 0.2129141 10.0 46.0000000 0.5000000 99 mo g u235t 0.0000000 56for1 7
136 cs g u235he rc re 0.2129141 10.0 46.0000000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
136 cs g u235he rc fi cm 0.2421423 7.4 0.0480000 0.0030000 136 u235he 1.0000000 72net2 0
136 cs g u235he rc fi 0.2370976 7.5 0.0470000 0.0030000 136 u235he 1.0000000 72pri1 0
136 cs g u235he rc in 0.2455581 5.0 0.2470000 0.0120000 0 0.0000000 72pri1 0
136 cs g u235he cm cu 0.0000000 0.0 0.2570000 3.9000000% 0 0.0000000 73net2 0
136 cs g u235he cm cu 0.0000000 0.0 0.2300000 0.0000000 0 0.0000000 60kat1 0
136 cs g u235he rc fi 0.2017852 13.1 0.0400000 0.0050000 136 u235he 1.0000000 60kri2 0
136 cs g u235he rc fc 0.2270084 10.8 0.0450000 5.0000000% 136 u235he 1.0000000 56for1 0
136 cs g u235he rc cu 0.2141874 10.0 0.2400000 5.0000000% 99 mo g u235t 0.0062000 56for1 6
136 cs g u235he rc cu 0.2129141 5.0 46.0000000 2.7000000% 99 mo g u235t 0.0000000 76for1 7
136 cs g u235he es fi 0.2426467 4.1 0.0481000 0.0005000 136 u235he 1.0000000 72kno1 0
136 cs g u235he rc cu 0.2147391 9.0 0.2160000 9.0000000% 0 0.0000000 81lau1 0
136 cs g u235he rc cu x4 0.0000000 0.0 0.1450000 0.0200000 99 mo g u235he 5.6500000 60bon1 0
136 cs g u235he rc fi su 0.0000000 0.0 0.0580000 0.0000000 136 u235he 1.0000000 65net1 0
136 xe g u235he es cu 4.4041391 30.0 4.4300000 0.0000000 0 0.0000000 63wea1 0
136 u235he cm cu 0.0000000 0.0 5.7700000 20.0000000% 0 0.0000000 77cro1 0
136 u235he es cu 5.0394088 10.0 5.0690000 10.0000000% 0 0.0000000 74mee8 0
136 xe g u235he ms re 5.0817174 3.2 25.8500000 0.4000000 131 xe g u235he 20.7500000 77pet1 0
136 cs g u238f rc fi 0.0009923 10.1 0.0001410 0.0000140 136 u238f 1.0000000 72kno1 0
136 cs g u238f rc fi 0.0009571 10.2 0.0001360 10.0000000% 136 u238f 1.0000000 73net1 0
136 cs g u238f cm cu 0.0000000 0.0 0.0008120 10.0000000% 0 0.0000000 73net2 0
136 cs g u238f rc re 0.0007893 21.4 0.1400000 0.0300000 99 mo g u235t 0.0000000 61lev1 7
136 cs g u238f rc cu 0.0016632 5.0 0.2950000 4.5000000% 99 mo g u235t 0.0000000 76for1 7

136 cs g u238f rc in 0.0016186 30.1 0.0002300 0.0000000 136 u238f 1.0000000 60fly1 0
136 cs g u238f rc cu x4 0.0000000 0.0 0.0350000 0.0070000 99 mo g u238f 7.0000000 60bon1 0
136 u238f es cu cm 6.0503007 30.0 6.0000000 0.0000000 0 0.0000000 64wal1 0
136 xe g u238f ms re 6.8828593 4.1 0.8970000 3.0000000% 134 xe g u238f 1.0000000 72mat1 36
136 u238f es cu cm 6.8570074 30.0 6.8000000 0.0000000 0 0.0000000 72sid1 0
136 xe g u238f cm cu 0.0000000 0.0 5.9000000 0.0000000 0 0.0000000 60kat1 0
136 xe g u238f ms cu 6.0726399 54.7 5.4900000 3.0000000 131 xe g u238f 3.0000000 55wan1 36
136 u238f cm cu 0.0000000 0.0 6.6300000 5.2000000% 0 0.0000000 77cro1 0
136 u238f cm cu 0.0000000 0.0 5.9600000 4.3000000% 0 0.0000000 77cro1 0
136 xe g u238f ms cu 7.2129668 3.0 7.1530000 3.0000000% 0 0.0000000 81mae1 36
136 xe g u238f cm cu 0.0000000 0.0 7.1530000 0.0620000 0 0.0000000 81mae1 0
136 xe g u238f ms cu 7.2405702 3.1 7.0700000 3.0000000% 148 nd g u238f 2.0800000 74mae1 36
136 xe g u238f ms cu 7.2051336 4.1 0.9390000 3.0000000% 134 xe g u238f 1.0000000 84tep1 36
136 u238f rc cu 6.4234025 10.0 6.3700000 10.0000000% 0 0.0000000 81koc1 36
136 xe g u238f es cu 6.2318097 5.0 6.1800000 5.0000000% 0 0.0000000 74mee1 36
136 xe g u238f es cu 7.0687680 5.0 7.0100000 5.0000000% 0 0.0000000 89rid1 36
136 xe g u238f es cu 6.4748301 4.1 6.4210000 4.1000000% 0 0.0000000 91jam2 0
136 i g u238f rc cu x1 0.0000000 0.0 1.6500000 29.1000000% 0 0.0000000 87chu1 0
136 i m u238f rc cu x1 0.0000000 0.0 4.1600000 20.9000000% 0 0.0000000 87chu1 0
136 cs g u238he rc re 0.0264165 10.0 5.1000000 0.2000000 99 mo g u235t 0.0000000 56for1 7
136 cs g u238he rc in x4 0.0000000 0.0 0.0490000 0.0080000 0 0.0000000 69rao1 0
136 cs g u238he rc fi x4 0.0000000 0.0 0.0050000 0.0005000 136 u238he 1.0000000 72kno1 0
136 cs g u238he rc in 0.0219339 5.0 0.0219000 0.0010000 0 0.0000000 72pri1 0
136 cs g u238he rc fi 0.0225324 7.8 0.0040000 0.0003000 136 u238he 1.0000000 72pri1 0
136 cs g u238he cm cu 0.0000000 0.0 0.0219000 3.9000000% 0 0.0000000 73net2 0
136 cs g u238he rc fc 0.0292921 10.2 0.0052000 5.0000000% 136 u238he 1.0000000 56for1 0
136 cs g u238he rc cu 0.0264165 5.0 5.1000000 2.7000000% 99 mo g u235t 0.0000000 76for1 7
136 cs g u238he rc cu 0.0258985 5.0 5.0000000 2.7000000% 99 mo g u235t 0.0000000 76for1 7
136 cs g u238he rc fi 0.0225324 7.8 0.0040000 0.0003000 136 u238he 1.0000000 72net2 0
136 cs g u238he rc cu x4 0.0000000 0.0 0.0340000 0.0040000 99 mo g u238he 6.5000000 60bon1 0
136 cs g u238he rc in x4 0.0000000 0.0 0.0160000 0.0010000 0 0.0000000 80li 1 0
136 cs g u238he es in 0.0231357 8.0 0.0231000 8.0000000% 0 0.0000000 74mee1 36
136 cs g u238he es in 0.0206319 8.0 0.0206000 8.0000000% 0 0.0000000 89rid1 36
136 cs g u238he es re 0.0212752 8.5 1.0000000 8.0000000% 136 cs g u238he 1.0000000 89rid1 36
136 u238he es cu 5.3312319 30.0 5.3230000 0.0000000 0 0.0000000 63wea1 0
136 xe g u238he ms re 5.7068511 2.1 0.8830000 0.0030000 134 xe g u238he 1.0000000 68gor1 0

136 xe g u238he ms cu 5.4410413 2.9 26.6200000 0.5500000 134 xe g u238he 31.6200000 70pet1 0
136 u238he cm cu su 0.0000000 0.0 5.5700000 0.1300000 0 0.0000000 73dar1 0
136 u238he es cu 5.8490314 15.0 5.8400000 15.0000000% 0 0.0000000 74mee9 0
136 u238he cm cu 0.0000000 0.0 5.7500000 4.1000000% 0 0.0000000 77cro1 0
136 cs g pu239t rc in 0.0888960 60.0 0.0890000 0.0000000 0 0.0000000 49gle2 0
136 cs g pu239t rc in 0.0971326 60.0 0.0890000 0.0000000 140 ba g pu239t 4.9000000 51gle4 0
136 cs g pu239t es fi 0.0703770 70.0 0.0100000 0.0070000 136 pu239t 1.0000000 62wah1 0
136 cs g pu239t rc in 0.1014400 8.4 0.0830000 0.0070000 137 cs g pu239t 5.4000000 65mar1 0
136 cs g pu239t cm cu x3 0.0000000 0.0 0.1360000 25.0000000% 0 0.0000000 73net2 0
136 cs g pu239t rc in 0.0998831 10.0 0.1000000 0.0100000 0 0.0000000 75fly1 0
136 cs g pu239t rc in 0.0810152 5.0 0.0811100 2.7000000% 0 0.0000000 76for1 0
136 cs g pu239t rc in 0.0766803 5.0 0.0767700 2.7000000% 0 0.0000000 76for1 0
136 cs g pu239t rc in 0.1126032 30.0 0.0160000 0.0000000 136 pu239t 1.0000000 60fly1 0
136 cs g pu239t rc cu 0.0888615 5.0 15.8000000 2.7000000% 99 mo g u235t 0.0000000 76for1 7
136 cs g pu239t rc cu 0.0841372 5.0 14.9600000 2.7000000% 99 mo g u235t 0.0000000 76for1 7
136 cs g pu239t rc in x4 0.0000000 0.0 0.0180000 0.0000000 0 0.0000000 55coo1 0
136 cs g pu239t cm in 0.0000000 0.0 0.0924400 5.0000000% 0 1.0000000 88wah1 0
136 cs g pu239t rc fi 0.1161220 10.0 0.0165000 0.0005000 136 pu239t 1.0000000 61gru1 36
136 cs g pu239t rc in 0.1051671 10.0 0.0835000 3.0000000% 137 cs g pu239t 5.2400000 61gru1 36
136 xe g pu239t es cu cm 6.6422273 8.3 6.6500000 0.5500000 0 0.0000000 65cro2 0
136 xe g pu239t rc fi x2 0.0000000 0.0 0.3200000 0.0500000 136 pu239t 1.0000000 72gun1 0
136 pu239t cm cu 0.0000000 0.0 6.6400000 0.0000000 0 0.0000000 72sid1 0
136 pu239t cm cu 0.0000000 0.0 6.8300000 0.0000000 0 0.0000000 73lam1 0
136 pu239t cm cu 0.0000000 0.0 6.4700000 0.1500000 0 0.0000000 73wal1 0
136 xe g pu239t ms re 6.6763953 3.0 28.3000000 0.8500000 134 xe g pu239t 32.5000000 72pet1 0
136 pu239t cm cu 0.0000000 0.0 6.9800000 20.0000000% 0 0.0000000 77cro1 0
136 xe g pu239t ms re aw 6.5569274 10.8 4.6500000 0.5000000 133 xe g pu239t 4.9700000 56fle1 0
136 xe g pu239t es cu cm 6.6522156 30.0 6.6600000 0.0000000 0 0.0000000 61her1 0
136 xe g pu239t ms re 7.2440467 1.6 29.1000000 0.0000000 134 xe g pu239t 30.8000000 72pet1 0
136 xe g pu239t ms cu 7.3513974 3.0 7.3600000 0.2200000 0 0.0000000 79mae2 0
136 xe g pu239t ms re 7.1222813 1.6 0.5236000 1.5000000% 148 nd g pu239t 0.1205800 76mae1 36
136 xe g pu239t ms cu 6.6122623 3.0 6.6200000 3.0000000% 0 0.0000000 59fic2 0
136 xe g pu239t es cu cm 7.2415260 1.5 7.2500000 1.5000000% 0 0.0000000 81mae2 36
136 xe g pu239t ms cu 6.7931733 1.6 0.8860000 1.5000000% 134 xe g pu239t 1.0000000 84tep1 36
136 xe g pu239t cm in 0.0000000 0.0 3.0170000 12.0000000% 0 1.0000000 88wah1 0
136 xe g pu239t es cu 6.8839444 30.0 6.8920000 0.0000000 0 0.0000000 88wah1 0

136 xe g pu239t es cu 6.9748380 10.0 6.9830000 10.0000000% 0 0.0000000 91jam2 36
136 xe g pu239t es cu 6.6192541 10.0 6.6270000 10.0000000% 0 0.0000000 74mee1 36
136 xe g pu239t es cu 7.0018065 10.0 7.0100000 10.0000000% 0 0.0000000 89rid1 36
136 i g pu239t rc fi x2 0.0000000 0.0 0.3300000 0.0300000 136 pu239t 1.0000000 72gun1 37
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

136 i g pu239t rc cu 1.8977792 60.0 1.9000000 0.0000000 0 0.0000000 49sta1 0
136 i g pu239t rc cu 1.1186909 41.1 1.1200000 0.4600000 0 0.0000000 81dic1 0
136 i g pu239t cm in 0.0000000 0.0 1.5580000 11.0000000% 0 1.0000000 88wah1 0
136 i m pu239t rc fi x2 0.0000000 0.0 0.3300000 0.0300000 136 pu239t 1.0000000 72gun1 37
136 i m pu239t rc cu 1.5781532 8.9 1.5800000 0.1400000 0 0.0000000 81dic1 0
136 i m pu239t rc cu 1.3015993 15.6 1.3000000 0.2000000 139 xe g pu239t 3.0780000 82gol1 0
136 i m pu239t cm in 0.0000000 0.0 1.5570000 11.0000000% 0 1.0000000 88wah1 0
136 te g pu239t rc fi x2 0.0000000 0.0 0.2500000 0.0400000 136 pu239t 1.0000000 72gun1 0
136 te g pu239t cm in 0.0000000 0.0 0.6640000 28.0000000% 0 1.0000000 88wah1 0
136 sb g pu239t rc fi x2 0.0000000 0.0 0.0500000 0.0300000 136 pu239t 1.0000000 72gun1 0
136 cs g pu239f es cu 0.1106209 20.0 0.1110000 20.0000000% 0 0.0000000 91jam2 36
136 cs g pu239f es cu 0.1136107 20.0 0.1140000 20.0000000% 0 0.0000000 89mee1 36
136 cs g pu239f es cu 0.1464980 20.0 0.1470000 20.0000000% 0 0.0000000 74mee1 36
136 cs g pu239f es cu 0.1474946 15.0 0.1480000 15.0000000% 0 0.0000000 73net2 0
136 cs g pu239f es fi 0.1249945 9.2 0.0180720 9.1000000% 136 pu239f 1.0000000 91jam2 0
136 cs g pu239f es in 0.1136107 20.0 0.1140000 20.0000000% 0 0.0000000 89rid1 36
136 cs g pu239f es in 0.1464980 20.0 0.1470000 20.0000000% 0 0.0000000 74mee1 36
136 cs g pu239f es re 0.1226671 2.2 1.0000000 1.0000000% 136 cs g pu239f 1.0000000 89rid1 36
136 cs g pu239f ms in 0.1091261 4.0 0.1095000 4.0000000% 0 0.0000000 85cha1 36
136 cs g pu239f rc cu 0.1106209 6.5 0.1110000 6.5000000% 0 0.0000000 81lau1 0
136 cs g pu239f rc cu 0.1221414 6.0 22.6000000 6.0000000% 99 mo g u235t 0.0000000 76for1 7
136 cs g pu239f rc cu 0.1372739 6.0 25.4000000 6.0000000% 99 mo g u235t 0.0000000 76for1 7
136 cs g pu239f rc cu 0.1415975 6.0 26.2000000 6.0000000% 99 mo g u235t 0.0000000 76for1 7
136 cs g pu239f rc cu 0.1421380 6.0 26.3000000 6.0000000% 99 mo g u235t 0.0000000 76for1 7
136 cs g pu239f rc cu 0.1437593 6.0 26.6000000 6.0000000% 99 mo g u235t 0.0000000 76for1 7
136 cs g pu239f rc cu x4 0.0000000 0.0 0.1500000 6.0000000% 137 cs g pu239f 6.1500000 67sch1 0
136 cs g pu239f rc cu x4 0.0000000 0.0 14.9000000 2.7000000% 99 mo g u235t 0.0000000 76for1 7
136 cs g pu239f rc cu x4 0.0000000 0.0 18.7000000 6.0000000% 99 mo g u235t 0.0000000 76for1 7

136 cs g pu239f rc fi 0.1410960 10.0 0.0204000 10.0000000% 136 pu239f 1.0000000 73net1 0
136 cs g pu239f rc fi 0.1362545 10.2 0.0197000 0.0020000 136 pu239f 1.0000000 72kno1 0
136 pu239f es cu cm 7.3846951 30.0 7.4100000 0.0000000 0 0.0000000 72sid1 0
136 pu239f es re 6.9517125 10.0 0.9900000 10.0000000% 136 pu239t 1.0000000 74mee4 0
136 xe g pu239f ms cu su 0.0000000 0.0 6.5900000 0.0000000 0 0.0000000 76koc1 0
136 pu239f cm cu 0.0000000 0.0 7.0400000 4.5000000% 0 0.0000000 77cro1 0
136 xe g pu239f ms cu 6.6148010 1.2 7.0400000 1.1000000% 134 xe g pu239f 7.8300000 77koc1 0
136 xe g pu239f ms cu 7.0565096 1.0 7.0490000 0.0670000 148 nd g pu239f 1.6540000 77mae1 0
136 xe g pu239f ms cu 7.1574737 2.0 7.1820000 0.1000000 0 0.0000000 77mae1 0
136 xe g pu239f ms cu 6.6230483 2.1 6.9200000 0.1400000 148 nd g pu239f 1.7300000 70lis1 0
136 xe g pu239f ms cu 6.9971320 0.9 0.2976000 0.0004000 132 xe g pu239f 0.2259000 80mae4 0
136 xe g pu239f ms cu su 0.0000000 0.0 6.9900000 0.0900000 148 nd g pu239f 1.6500000 74mae1 0
136 xe g pu239f es cu cm 6.9760952 1.0 7.0000000 1.0000000% 0 0.0000000 81mae2 0
136 pu239f rc cu 7.0329006 10.0 7.0570000 10.0000000% 0 0.0000000 81koc1 36
136 i g pu239f rc cu x1 0.0000000 0.0 1.2000000 0.1000000 137 xe g pu239f 4.2000000 69moo1 0
136 cs g pu241t rc cu 0.0175273 5.0 0.0175000 0.0007000 0 0.0000000 73sko2 0
136 pu241t cm cu x3 0.0000000 0.0 7.0400000 0.0000000 0 0.0000000 72sid1 0
136 pu241t cm cu 0.0000000 0.0 7.1300000 10.0000000% 0 0.0000000 77cro1 0
136 pu241t cm cu 0.0000000 0.0 7.3000000 0.1700000 0 0.0000000 73wal1 0
136 xe g pu241t ms cu 6.9768538 2.0 6.9660000 0.0790000 0 0.0000000 77mae1 0
136 xe g pu241t ms re 7.1493975 1.6 0.9016000 0.0060000 134 xe g pu241t 1.0000000 64far1 0
136 ba g u233t ms cu 0.0742240 25.1 0.0800000 0.0200000 138 ba g u233t 6.3500000 61gor1 0
136 cs g u233t rc in 0.1196793 60.0 0.1200000 0.0000000 0 0.0000000 49gle2 0
136 cs g u233t rc in 0.1216911 6.6 0.1030000 6.0000000% 140 ba g u233t 5.4000000 65bal1 0
136 cs g u233t cm cu 0.0000000 0.0 0.1218000 50.0000000% 0 0.0000000 73net2 0
136 cs g u233t rc in 0.1047194 10.5 0.1050000 0.0110000 0 0.0000000 75fly1 0
136 cs g u233t rc cu 0.0874755 25.0 0.0800000 0.0200000 137 cs g u233t 6.1600000 59gor1 0
136 cs g u233t rc in 0.1216225 30.0 0.0180000 0.0000000 136 u233t 1.0000000 60fly1 0
136 cs g u233t rc fi 0.0945953 28.6 0.0140000 0.0040000 136 u233t 1.0000000 60san1 0
136 cs g u233t rc cu 0.1039646 10.4 0.0849000 0.0022000 140 ba g u233t 5.2100000 60san1 0
136 cs g u233t rc fi 0.0945953 6.1 0.0140000 6.0000000% 136 u233t 1.0000000 79bla1 0
136 cs g u233t rc fi 0.1148657 10.0 0.0170000 0.0003000 136 u233t 1.0000000 61gru1 36
136 cs g u233t rc in 0.1110060 10.0 0.1180000 1.8000000% 137 cs g u233t 7.1600000 61gru1 36
136 xe g u233t ms re x1 0.0000000 0.0 38.0000000 1.9000000 134 xe g u233t 26.9000000 72pet1 0
136 u233t cm cu 0.0000000 0.0 6.7000000 0.0000000 0 0.0000000 72sid1 0
136 u233t cm cu 0.0000000 0.0 6.8200000 0.0000000 0 0.0000000 73lam1 0

136 u233t cm cu 0.0000000 0.0 6.8800000 0.1600000 0 0.0000000 73wal1 0
136 xe g u233t ms cu 7.0619908 3.1 6.8900000 3.0000000% 132 xe g u233t 4.8200000 61bid1 0
136 u233t cm cu x3 0.0000000 0.0 7.5400000 10.1000000% 0 0.0000000 77cro1 0
136 xe g u233t ms cu 6.7803560 0.9 1.0780000 0.0050000 134 xe g u233t 1.0000000 84tep1 0
136 i g u233t rc cu 1.6954562 60.0 1.7000000 0.0000000 0 0.0000000 49sta1 0
136 i g u233t es fi 0.9121690 18.5 0.2700000 0.0500000 136 u233t 1.0000000 62wah1 37
136 i g u233t sp fi x1 0.0000000 0.0 0.3280000 4.0000000% 136 u233t 1.0000000 86lei1 40
136 i m u233t es fi 0.9121690 18.5 0.2700000 0.0500000 136 u233t 1.0000000 62wah1 37
136 i m u233t rc cu sm 0.0000000 0.0 3.3900000 0.0000000 0 0.0000000 81gud1 0
136 i m u233t sp fi x1 0.0000000 0.0 0.5840000 4.0000000% 136 u233t 1.0000000 86lei1 40
136 te g u233t sp fc 0.5945990 6.1 0.0880000 6.0000000% 136 u233t 1.0000000 86lei1 0
136 cs g th232f rc cu x4 0.0000000 0.0 0.0007600 0.0000400 89 sr g th232f 1.0000000 57ale1 0
136 cs g th232f rc cu 0.0011950 82.4 0.0017000 0.0014000 89 sr g u235t 6.7000000 51tur1 0
136 cs g th232f rc fi x1 0.0000000 0.0 0.0006300 0.0000300 136 th232f 1.0000000 57ale1 0
136 cs g th232f rc cu 0.0001398 99.9 0.0000250 0.0000250 136 th232f 1.0000000 60fly1 36
136 cs g th232f es cu 0.0008247 90.0 0.0008288 90.0000000% 0 0.0000000 73net2 0
136 cs g th232f rc in 0.0001692 7.6 0.0001700 0.0000130 0 0.0000000 82ert1 0
136 cs g th232f rc in x1 0.0000000 0.0 0.0100000 0.0020000 0 0.0000000 82li 1 0
136 cs g th232f rc cu 0.0016337 58.8 0.1879000 58.8000000% 89 sr g u235t 0.0000000 51tur1 7
136 xe g th232f ms cu 5.6222893 2.0 5.6500000 0.0300000 0 0.0000000 57ken1 0
136 th232f cm cu x3 0.0000000 0.0 6.4000000 0.0000000 0 0.0000000 65eng1 0
136 th232f es cu cm 5.6720441 30.0 5.7000000 0.0000000 0 0.0000000 72sid1 0
136 th232f es cu cm 5.2740059 30.0 5.3000000 0.0000000 0 0.0000000 73lam1 0
136 th232f cm cu 0.0000000 0.0 5.6500000 0.0000000 0 0.0000000 74lam1 0
136 xe g th232f cm cu 0.0000000 0.0 5.6500000 0.0000000 0 0.0000000 60kat1 0
136 th232f cm cu 0.0000000 0.0 5.4700000 5.0000000% 0 0.0000000 77cro1 0
136 th232f es cu 5.6222893 5.0 5.6500000 5.0000000% 0 0.0000000 74mee0 0
136 i g th232f rc cu x1 0.0000000 0.0 3.6100000 0.1700000 140 ba g th232f 7.9700000 85chu1 0
136 i g th232f rc fi 0.9341460 18.1 33.4000000 6.0000000 136 th232f 100.0000000 90hen1 37
136 i m th232f rc cu 0.7866104 6.9 0.8000000 0.0500000 140 ba g th232f 7.9700000 85chu1 0
136 i m th232f rc fi 0.9341460 18.1 33.4000000 6.0000000 136 th232f 100.0000000 90hen1 37
137 u235t cm cu 0.0000000 0.0 6.2600000 0.0000000 0 0.0000000 73lam1 0
137 u235t cm cu 0.0000000 0.0 6.2400000 0.1600000 0 0.0000000 73wal1 0
137 u235t cm cu 0.0000000 0.0 6.2500000 0.0000000 0 0.0000000 72sid1 0
137 u235t cm cu 0.0000000 0.0 6.2200000 1.3000000% 0 0.0000000 77cro1 0
137 ba g u235t ms re 6.1168597 2.2 0.9876000 2.0000000% 140 ba g u235t 1.0000000 62far1 0

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 137        u235t    ms    cu    x4   0.0000000  0.0   6.4580000  5.0000000%    0                    0.0000000   76dii1     36
 137 cs g   u235t    ms    cu         6.1374735  1.5   6.8100000  0.0000000   133 cs g      u235t       7.4300000   53wil1      0
 137 cs g   u235t    rc    re         6.1007562 10.0   0.9850000  2.7000000%  140 ba g      u235t       1.0000000   55bro1      0
 137 cs g   u235t    ms    cu    x4   0.0000000  0.0   5.9400000  0.0000000     0                    0.0000000   55gle1      0
 137 cs g   u235t    sp    fi    x2   0.0000000  0.0   0.0500000  0.0300000   137 cs g      u235t       1.0000000   65kon1      0
 137 cs g   u235t    ms    cu         6.2169186  2.0   6.2200000  0.0400000     0                    0.0000000   66lar1      0
 137 cs g   u235t    rc    cu         6.1969285  5.0   6.2000000  0.1800000     0                    0.0000000   71mcl1      0
 137 cs g   u235t    rc    cu         6.2677398  5.0   6.1000000  0.0600000   144 ce g      u235t       5.3500000   72deb1      0
 137 cs g   u235t    cm    cu         0.0000000  0.0   6.2800000  5.0000000%    0                    0.0000000   73net2      0
 137 cs g   u235t    ms    cu         6.1869334  2.0   6.1900000  0.0750000     0                    0.0000000   65rid1      0
 137 cs g   u235t    ms    re         6.1227877  1.3   3.6340000  0.0470000   148 nd g      u235t       0.9928000   65rid2      0
 137 cs g   u235t    ms    re    aw   6.1983451  5.0   6.1000000  5.0000000%  133 cs g      u235t       6.5900000   55pet1      0
 137 cs g   u235t    bm    cu    su   0.0000000  0.0   6.1000000  2.4000000%    0                    0.0000000   76gil1      0
 137 cs g   u235t    sp    fi         0.0600050 10.3   0.9700000  0.1000000   137           u235t     100.0000000   79bal1      0
 137 cs g   u235t    ms    re         6.1847479  0.6   0.3365000  0.0005000   148 nd g      u235t       0.0910100   76mae1      0
 137 cs g   u235t    rc    cu         6.2480368  5.2   6.2000000  3.0000000%   95 zr g      u235t       6.4500000   73lar4      0
 137 cs g   u235t    ms    cu         6.2309116  2.0   6.2340000  0.0410000     0                    0.0000000   78mae1      0
 137 cs g   u235t    ms    cu         6.2199171  2.0   6.2230000  0.0410000     0                    0.0000000   78mae1      0
 137 cs g   u235t    ms    cu         6.2409067  2.0   6.2440000  0.0400000     0                    0.0000000   78mae1      0
 137 cs g   u235t    ms    cu         6.2768888  2.0   6.2800000  0.0300000     0                    0.0000000   70lis1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type          value   err.     value                nuclide     material       value      no.   treatment

 137 cs g   u235t    rc    cu         6.2369086  6.4   6.2400000  0.4000000     0                    0.0000000   76thi1      0
 137 cs g   u235t    ms    cu    cm   6.2309116  6.0   6.2340000  0.0000000     0                    0.0000000   80mae3      0
 137 cs g   u235t    ms    cu         6.1965252  1.0   6.2000000  0.0600000   133 cs g      u235t       6.7000000   86chi1      0
 137 cs g   u235t    cm    in         0.0000000  0.0   0.0740300 25.0000000%    0                    1.0000000   88wah1      0
 137 xe g   u235t    sp    fi    x2   0.0000000  0.0   0.3300000  0.0500000   137 cs g      u235t       1.0000000   65kon1      0
 137 xe g   u235t    cm    fc         0.0000000  0.0   0.9780000  0.0030000   137           u235t       1.0000000   71tro3      0
 137 xe g   u235t    rc    in         2.9685286 12.5   2.9700000  0.3700000     0                    0.0000000   72ehr1      0
 137 xe g   u235t    cm    cu         0.0000000  0.0   6.1620000  5.0000000%    0                    0.0000000   73net2      0
 137 xe g   u235t    ms    fi         3.5322532  4.1  57.1000000  2.3000000   137           u235t     100.0000000   76ris1      0
 137 xe g   u235t    sp    cu         6.1969285  5.0   6.2000000  0.2400000     0                    0.0000000   75bri1      0
 137 xe g   u235t    sp    in         2.7186525  5.5   2.7200000  0.1500000     0                    0.0000000   75bri1      0
 137 xe g   u235t    rc    fi         3.0744831 11.3  49.7000000  5.6000000   137           u235t     100.0000000   80mei1      0
```

137	xe	g	u235t	sp	fi		3.0311805	10.0	0.4900000	10.0000000%	137		u235t	1.0000000	84den1	0	
137	xe	g	u235t	rc	cu		6.9365619	12.8	6.9400000	0.8900000	0			0.0000000	84chu1	0	
137	xe	g	u235t	rc	fi		3.2167630	10.0	0.5200000	10.0000000%	137		u235t	1.0000000	79bla1	36	
137	xe	g	u235t	rc	in		3.2383949	5.0	3.2400000	0.0700000	0			0.0000000	81mar1	0	
137	xe	g	u235t	rc	cu		6.9365619	12.8	6.9400000	0.8900000	0			0.0000000	85has1	0	
137	xe	g	u235t	cm	in		0.0000000	0.0	3.0310000	5.0000000%	0			1.0000000	88wah1	0	
137	xe	g	u235t	rc	fc		6.0499889	10.0	0.9780000	0.0030000	137		u235t	1.0000000	59wol1	0	
137	xe	g	u235t	sp	cu		7.6961854	15.6	7.7000000	1.2000000	0			0.0000000	90rud1	0	
137	i	g	u235t	sp	fi	x2	0.0000000	0.0	0.5300000	0.0600000	137	cs	g	u235t	1.0000000	65kon1	0
137	i	g	u235t	cm	in	x3	0.0000000	0.0	3.4800000	0.1500000	0			0.0000000	69bra2	0	
137	i	g	u235t	rc	cu		3.2983652	15.2	3.3000000	0.5000000	0			0.0000000	71mar1	0	
137	i	g	u235t	cm	cu	x3	0.0000000	0.0	3.0480000	22.0000000%	0			0.0000000	73net2	0	
137	i	g	u235t	rc	fi	x1	0.0000000	0.0	0.2800000	0.0600000	137		u235t	1.0000000	73ven1	0	
137	i	g	u235t	ms	fi		2.1403846	4.9	34.6000000	1.7000000	137		u235t	100.0000000	76ris1	0	
137	i	g	u235t	sp	cu		3.4782760	5.0	3.4800000	0.1000000	0			0.0000000	75bri1	0	
137	i	g	u235t	sp	in		2.9885187	6.7	2.9900000	0.2000000	0			0.0000000	75bri1	0	
137	i	g	u235t	rc	fi	su	0.0000000	0.0	0.4600000	0.0700000	137		u235t	1.0000000	73kra3	0	
137	i	g	u235t	rc	fi	su	0.0000000	0.0	0.4860000	0.0440000	137		u235t	1.0000000	77kra1	0	
137	i	g	u235t	rc	fi		3.0064362	9.1	48.6000000	4.4000000	137		u235t	100.0000000	78kra1	0	
137	i	g	u235t	rc	fi		2.6414573	13.4	42.7000000	5.7000000	137		u235t	100.0000000	80mei1	0	
137	i	g	u235t	sp	fi		2.6600155	12.0	0.4300000	12.0000000%	137		u235t	1.0000000	84den1	0	
137	i	g	u235t	es	fc	x1	0.0000000	0.0	0.6800000	0.0000000	137		u235t	1.0000000	71gri1	0	
137	i	g	u235t	rc	cu		2.6486872	11.3	2.6500000	0.3000000	0			0.0000000	88lee1	0	
137	i	g	u235t	sp	cu		2.4487862	8.6	2.4500000	0.2100000	0			0.0000000	90rud1	0	
137	i	g	u235t	es	cu		3.2513884	16.0	3.2530000	16.0000000%	0			0.0000000	74mee1	0	
137	i	g	u235t	es	fc		3.1054135	5.5	0.5020000	5.5000000%	137		u235t	1.0000000	88wah1	0	
137	i	g	u235t	es	cu		3.0324969	6.0	3.0340000	6.0000000%	0			0.0000000	89rid1	0	
137	i	g	u235t	es	in		2.8365940	16.0	2.8380000	16.0000000%	0			0.0000000	74mee1	0	
137	i	g	u235t	es	in		2.5857184	8.0	2.5870000	8.0000000%	0			0.0000000	89rid1	0	
137	i	g	u235t	es	fi		2.6697277	7.0	0.4315700	7.0000000%	137		u235t	1.0000000	91jam2	0	
137	i	g	u235t	es	in		2.7626307	10.0	2.7640000	10.0000000%	0			1.0000000	88wah1	0	
137	te	g	u235t	sp	fi	x2	0.0000000	0.0	0.0800000	0.0300000	137	cs	g	u235t	1.0000000	65kon1	0
137	te	g	u235t	es	fc		0.4429235	30.0	0.0716000	0.0000000	137		u235t	1.0000000	74wol1	0	
137	te	g	u235t	ms	fi		0.3897232	6.4	6.3000000	0.4000000	137		u235t	100.0000000	76ris1	0	
137	te	g	u235t	rc	fc	x1	0.0000000	0.0	0.3100000	0.0660000	137		u235t	1.0000000	71gri1	0	
137	te	g	u235t	rc	fc		0.4701423	10.5	7.6000000	0.8000000	137		u235t	100.0000000	80mei1	0	

137 te g u235t sp fc 0.4948866 38.0 0.0800000 38.0000000% 137 u235t 1.0000000 84den1 36
137 te g u235t sp fi 0.4887005 38.0 0.0790000 38.0000000% 137 u235t 1.0000000 84den1 36
137 te g u235t cm in 0.0000000 0.0 0.5056000 38.0000000% 0 1.0000000 88wah1 0
137 te g u235t sp cu 0.4597721 17.4 0.4600000 0.0800000 0 0.0000000 90rud1 0
137 sb g u235t sp fi x2 0.0000000 0.0 0.0100000 0.0100000 137 cs g u235t 1.0000000 65kon1 0
137 u235f es cu 6.2490389 30.0 6.5000000 0.0000000 148 nd g u235f 1.7500000 72sid1 0
137 u235f cm cu 0.0000000 0.0 5.9900000 0.0000000 0 0.0000000 73lar3 0
137 u235f es re 5.9997180 10.0 0.9700000 10.0000000% 137 u235t 1.0000000 74mee4 0
137 ba g u235f ms cu su 0.0000000 0.0 6.2700000 0.0000000 0 0.0000000 76koc1 0
137 u235f cm cu 0.0000000 0.0 6.1800000 4.6000000% 0 0.0000000 77cro1 0
137 u235f ms cu 6.1979305 4.9 6.4100000 0.3100000 148 u235f 1.7400000 77gab1 0
137 ba g u235f ms cu 6.1953264 2.0 6.1990000 0.0410000 0 0.0000000 80mae1 0
137 u235f rc cu 5.9720194 5.1 6.2200000 0.0900000 140 ba g u235f 6.2200000 77bla1 0
137 u235f es re nr 6.1118133 1.7 1.0000000 1.0000000% 137 xe g u235f 0.9800000 75mee1 0
137 u235f rc cu 6.2662843 10.0 6.2700000 10.0000000% 0 0.0000000 81koc1 36
137 cs g u235f rc cu x4 0.0000000 0.0 6.3000000 0.1700000 0 0.0000000 57kaf1 35
137 cs g u235f rc cu 6.2971084 5.0 6.5500000 3.5000000% 148 nd g u235f 1.7500000 69dav1 0
137 cs g u235f sp cu rp 6.1903211 15.9 6.3000000 0.0000000 no. relative values = 1 69pil1
137 cs g u235f ms cu rp 6.4003482 2.3 1.0000000 0.0000000 no. relative values = 2 70ebe1
137 cs g u235f rc cu rp 6.0534803 44.7 6.2000000 0.0000000 no. relative values = 2 70mce1
137 cs g u235f rc cu 5.9413939 5.0 6.1800000 0.1800000 148 nd g u235f 1.7500000 70rid1 0
137 cs g u235f ms cu x4 0.0000000 0.0 5.7600000 0.0000000 143 nd g u235f 5.9000000 71cro2 0
137 cs g u235f ms cu x4 0.0000000 0.0 5.4600000 0.0000000 143 nd g u235f 5.9000000 71cro2 0
137 cs g u235f sp cu 5.9720194 5.1 6.2800000 0.0500000 140 ba g u235f 6.2800000 71dya1 0
137 cs g u235f rc cu x4 0.0000000 0.0 4.5600000 1.6200000 140 ba g u235f 5.8900000 72cun2 0
137 cs g u235f ms re rp 6.1330527 2.3 1.0000000 0.0000000 no. relative values = 2 72ebe1
137 cs g u235f ms re rp 6.1340127 5.4 6.2000000 0.0000000 no. relative values = 2 72ebe1
137 cs g u235f rc re rp 6.1457915 22.1 2.2900000 0.0000000 no. relative values = 1 72rid3
137 cs g u235f ms cu x4 0.0000000 0.0 5.6700000 5.0000000% 0 0.0000000 73cro3 0
137 cs g u235f ms cu x4 0.0000000 0.0 5.3800000 5.0000000% 0 0.0000000 73cro3 0
137 cs g u235f rc re 6.0317396 6.0 1.0100000 0.0600000 140 ba g u235f 1.0000000 73man1 0
137 cs g u235f rc cu 6.1363614 5.0 6.1400000 0.2300000 0 0.0000000 73mce1 0
137 cs g u235f cm cu 0.0000000 0.0 6.0920000 5.0000000% 0 0.0000000 73net2 0
137 cs g u235f rc cu 6.2394232 5.1 6.3000000 0.1100000 140 ba g u235f 6.0300000 75zim1 0
137 cs g u235f rc cu 5.9207748 5.0 0.9840000 2.5000000% 99 mo g u235t 0.0000000 76for1 7
137 cs g u235f rc cu 5.9328089 5.0 0.9860000 2.5000000% 99 mo g u235t 0.0000000 76for1 7

```
137 cs g   u235f    rc    cu        6.2662843  5.0   6.2700000  0.3000000%    0                    0.0000000   77koc1      0
137 cs g   u235f    rc    cu        6.0651839  5.0   1.0080000  2.5000000%   99 mo g      u235t       0.0000000   76for1      7
137 cs g   u235f    rc    cu        6.0110305  5.0   0.9990000  2.5000000%   99 mo g      u235t       0.0000000   76for1      7
137 cs g   u235f    rc    cu        6.0230646  5.0   1.0010000  2.5000000%   99 mo g      u235t       0.0000000   76for1      7
137 cs g   u235f    rc    cu        6.2637465  5.0   1.0410000  4.0000000%   99 mo g      u235t       0.0000000   76for1      7
137 cs g   u235f    rc    cu        5.8606043  5.0   0.9740000  2.5000000%   99 mo g      u235t       0.0000000   76for1      7
137 cs g   u235f    rc    cu    su   0.0000000  0.0   6.1380000  3.1000000%    0                    0.0000000   76gil2      0
137 cs g   u235f    rc    cu    su   0.0000000  0.0   6.1330000  3.4000000%    0                    0.0000000   76gil3      0
137 cs g   u235f    rc    cu    su   0.0000000  0.0   6.0980000  3.4000000%    0                    0.0000000   76gil3      0
137 cs g   u235f    bm    cu        6.2562903  5.8   6.2600000  5.8000000%    0                    0.0000000   77gil1      0
137 cs g   u235f    rc    re    rp   6.2988718  5.5   1.0000000  0.0000000  no. relative values =    4            77kel1
137 cs g   u235f    ms    cu        5.9606217  2.6   6.2000000  0.1600000   148 nd g      u235f       1.7500000   70lis1      0
137 cs g   u235f    ms    cu        6.1963258  2.0   6.2000000  1.8000000%    0                    0.0000000   72lar1     36
137 cs g   u235f    ms    cu    cm   6.2303057  6.0   6.2340000  0.0000000     0                    0.0000000   80mae3      0
137 cs g   u235f    sp    cu    rp   6.3867352 15.8   1.0000000  0.0000000  no. relative values =    1            67vil1
137 cs g   u235f    ms    cu        6.2962666  2.0   6.3000000  0.0280000     0                    0.0000000   81mae1      0
137 cs g   u235f    es    cu        6.2692826  0.5   6.2730000  0.0340000     0                    0.0000000   81mae1      0
137 cs g   u235f    ms    cu        6.3052612  2.0   6.3090000  0.0340000     0                    0.0000000   81mae1      0
137 cs g   u235f    cm    cu        0.0000000  0.0   6.2940000  0.0340000     0                    0.0000000   81mae1      0
137 cs g   u235f    ms    cu        6.2189954  0.9   6.2100000  0.0500000   148 nd g      u235f       1.6800000   74mae1      0
137 cs g   u235f    rc    cu        6.1363614  8.5   6.1400000  8.5000000%    0                    0.0000000   81lau1      0
137 cs g   u235f    rc    in        0.3098163 64.5   0.3100000  0.2000000     0                    0.0000000   81mar1      0
137 cs g   u235f    rc    cu        5.8064509  5.0   0.9650000  4.0000000%   99 mo g      u235t       0.0000000   76for1      7
137 cs g   u235f    rc    cu        5.8485702  5.0   0.9720000  4.0000000%   99 mo g      u235t       0.0000000   76for1      7
137 cs g   u235f    rc    cu        5.9568771  5.0   0.9900000  2.5000000%   99 mo g      u235t       0.0000000   76for1      7
137 cs g   u235f    rc    cu        5.9869623  5.0   0.9950000  2.5000000%   99 mo g      u235t       0.0000000   76for1      7
137 xe g   u235f    cm    cu        0.0000000  0.0   5.9290000  5.0000000%    0                    0.0000000   73net2      0
137 xe g   u235f    rc    cu        5.8165510  5.0   5.8200000  5.0000000%    0                    0.0000000   74bal1      0
137 xe g   u235f    rc    cu        5.6045216  5.4   5.6900000  0.0800000    88 kr g      u235f       3.4900000   74bal1      0
137 xe g   u235f    rc    cu        5.6439207  5.4   5.7300000  0.0700000    88 kr g      u235f       3.4900000   74bal1      0
137 xe g   u235f    rc    cu        5.7164175  5.2   5.9300000  0.2200000   138 xe g      u235f       6.2300000   74bal1      0
137 xe g   u235f    rc    cu        5.7067777  5.2   5.9200000  0.1000000   138 xe g      u235f       6.2300000   74bal1      0
137 xe g   u235f    es    fc    nr   6.0935364  1.1   0.9800000  1.0000000%  137           u235f       1.0000000   75mee1      0
137 xe g   u235f    rc    in        3.3280266  6.0   3.3300000  0.2000000     0                    0.0000000   81mar1      0
137 i  g   u235f    cm    cu    x3   0.0000000  0.0   2.5620000 22.0000000%    0                    0.0000000   73net2      0
137 i  g   u235f    rc    cu        2.5384948  5.0   2.5400000  0.1200000     0                    0.0000000   81mar1      0
```

1
0

measured nuclide	fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
137 i g	u235f	rc	cu		2.9982222	20.0	3.0000000	0.6000000	0		0.0000000	81wal1	0
137 i g	u235f	rc	in		2.3785896	6.3	2.3800000	0.1500000	0		0.0000000	81mar1	0
137 te g	u235f	rc	in		0.1599052	62.5	0.1600000	0.1000000	0		0.0000000	81mar1	0
137	u235he	cm	cu	es	0.0000000	0.0	4.8900000	0.0000000	0		0.0000000	63wea1	0
137	u235he	es	cu		4.8797735	4.1	4.9000000	0.2000000	0		0.0000000	72boc1	0
137	u235he	ms	cu	rp	4.8230896	10.2	4.9000000	0.0000000	no. relative values =		4	72boc1	
137	u235he	es	cu		4.8967033	10.0	4.9170000	10.0000000%	0		0.0000000	74mee8	0
137	u235he	cm	cu	x3	0.0000000	0.0	6.1500000	10.0000000%	0		0.0000000	77cro1	0
137 cs g	u235he	cm	cu		0.0000000	0.0	5.9000000	0.0000000	0		0.0000000	69gun2	0
137 cs g	u235he	rc	re		4.9194563	7.0	1.1000000	0.0700000	140 ba g	u235he	1.0000000	73man1	0
137 cs g	u235he	cm	cu		0.0000000	0.0	5.5800000	7.9000000%	0		0.0000000	73net2	0
137 cs g	u235he	rc	cu		5.3413110	10.6	5.9000000	0.6000000	99 mo g	u235he	5.6500000	60bon1	0
137 xe g	u235he	es	in		3.1170798	16.0	3.1300000	0.5000000	0		0.0000000	72boc1	0
137 xe g	u235he	cm	cu		0.0000000	0.0	5.0330000	9.0000000%	0		0.0000000	73net2	0
137 xe g	u235he	rc	cu		4.4316310	5.0	4.4500000	5.0000000%	0		0.0000000	74bal1	0
137 xe g	u235he	rc	cu		3.8988158	5.7	4.1500000	0.0900000	88 kr g	u235he	3.4700000	74bal1	0
137 xe g	u235he	rc	cu		3.8142632	5.7	4.0600000	0.0400000	88 kr g	u235he	3.4700000	74bal1	0
137 xe g	u235he	rc	cu		3.8032738	5.7	4.7800000	0.0700000	138 xe g	u235he	3.9600000	74bal1	0
137 xe g	u235he	rc	cu		3.8351003	5.7	4.8200000	0.0900000	138 xe g	u235he	3.9600000	74bal1	0
137 i g	u235he	cm	cu		0.0000000	0.0	1.0450000	33.0000000%	0		0.0000000	73net2	0
137	u238f	cm	cu	es	0.0000000	0.0	6.0000000	0.0000000	0		0.0000000	64wal1	0
137	u238f	es	cu		6.3186732	30.0	6.3000000	0.0000000	0		0.0000000	72sid1	0
137	u238f	cm	cu		0.0000000	0.0	5.9000000	0.0000000	0		0.0000000	73lar3	0
137	u238f	cm	cu		0.0000000	0.0	6.0400000	5.6000000%	0		0.0000000	77cro1	0
137	u238f	rc	cu		6.1787298	5.0	6.5300000	0.0600000	140 ba g	u238f	6.1600000	77bla1	0
137 ba g	u238f	ms	cu		6.0689351	2.0	6.0510000	0.0410000	0		0.0000000	81mae1	0
137 ba g	u238f	ms	cu		6.0659262	2.0	6.0480000	0.0410000	0		0.0000000	81mae1	0
137 ba g	u238f	ms	cu		6.0829766	2.0	6.0650000	0.1090000	0		0.0000000	81mae1	0
137 ba g	u238f	cm	cu		0.0000000	0.0	6.0550000	0.0600000	0		0.0000000	81mae1	0
137	u238f	rc	cu		5.8673394	10.0	5.8500000	10.0000000%	0		0.0000000	81koc1	36
137 cs g	u238f	rc	cu		6.6002068	20.0	7.1000000	0.7000000	140 ba g	u238f	5.7000000	54kel1	35
137 cs g	u238f	rc	cu		6.3186732	15.0	6.3000000	0.0000000	0		0.0000000	70mce1	0

137 cs g u238f rc cu x4 0.0000000 0.0 7.6800000 1.7200000 140 ba g u238f 6.0300000 72cun2 0
137 cs g u238f ms re 5.2910654 20.0 1.3850000 20.0000000% 145 nd g u238f 1.0000000 72mat1 36
137 cs g u238f rc re rp 6.4724143 21.6 4.6640000 0.0000000 no. relative values = 1 72rid3
137 cs g u238f rc re x4 0.0000000 0.0 1.3000000 0.0700000 140 ba g u238f 1.0000000 73man1 0
137 cs g u238f rc cu 6.3186732 5.0 6.3000000 0.2700000 0 0.0000000 73mce1 0
137 cs g u238f cm cu 0.0000000 0.0 5.4600000 4.1000000% 0 0.0000000 73net2 0
137 cs g u238f es cu cm 6.2183768 30.0 6.2000000 0.0000000 0 0.0000000 60kat1 0
137 cs g u238f rc cu 5.5839793 5.0 0.8910000 4.0000000% 99 mo g u235t 0.0000000 76for1 7
137 cs g u238f rc cu 6.1542847 5.0 0.9820000 2.5000000% 99 mo g u235t 0.0000000 76for1 7
137 cs g u238f rc cu 5.7093211 5.0 0.9110000 2.5000000% 99 mo g u235t 0.0000000 76for1 7
137 cs g u238f rc cu 5.7218553 5.0 0.9130000 4.0000000% 99 mo g u235t 0.0000000 76for1 7
137 cs g u238f rc cu 5.9611022 60.0 7.2000000 0.0000000 140 ba g u238f 6.4000000 52eng1 35
137 cs g u238f rc re 5.5150412 10.0 0.8800000 5.0000000% 99 mo g u235t 0.0000000 61lev1 7
137 cs g u238f bm cu 6.0177840 4.5 6.0000000 4.5000000% 0 0.0000000 77gil1 0
137 cs g u238f rc re rp 5.9429190 6.3 1.0000000 0.0000000 no. relative values = 4 77kel1
137 cs g u238f rc cu 6.1301143 11.5 6.1000000 0.7000000 140 ba g u238f 5.8000000 60bon1 0
137 cs g u238f ms cu 6.1015449 1.1 5.9900000 0.0500000 148 nd g u238f 2.0800000 74mae1 0
137 xe g u238f cm cu 0.0000000 0.0 5.4510000 4.1000000% 0 0.0000000 73net2 0
137 xe g u238f rc cu 6.0679322 5.0 6.0500000 5.0000000% 0 0.0000000 74bal1 0
137 xe g u238f rc cu 5.4761068 5.7 6.3600000 0.1600000 88 kr g u238f 2.3600000 74bal1 0
137 xe g u238f rc cu 5.5622092 5.7 6.4600000 0.1700000 88 kr g u238f 2.3600000 74bal1 0
137 xe g u238f rc cu 5.7673652 5.7 5.9600000 0.2400000 138 xe g u238f 5.9100000 74bal1 0
137 xe g u238f rc cu 5.9415473 5.7 6.1400000 0.2500000 138 xe g u238f 5.9100000 74bal1 0
137 xe g u238f rc cu 5.9475765 11.0 5.9300000 11.0000000% 0 0.0000000 87chu1 0
137 i g u238f cm cu 0.0000000 0.0 4.4920000 8.1000000% 0 0.0000000 73net2 0
137 i g u238f rc fc 4.4315286 12.3 0.7300000 0.0900000 137 u238f 1.0000000 71gri1 0
137 i g u238f rc cu 6.0177840 16.7 6.0000000 1.0000000 0 0.0000000 81wal1 0
137 u238he es cu 5.2981809 30.0 5.2900000 0.0000000 0 0.0000000 63wea1 0
137 u238he es cu 5.0678252 4.9 5.0600000 0.2500000 0 0.0000000 72boc1 0
137 u238he ms cu rp 5.0144311 10.8 5.0600000 0.0000000 no. relative values = 4 72boc1
137 u238he cm cu su 0.0000000 0.0 4.7200000 0.2600000 0 0.0000000 73dar1 0
137 u238he es cu 4.9276087 15.0 4.9200000 15.0000000% 0 0.0000000 74mee9 0
137 u238he rc cu rp 5.0656458 8.4 5.1500000 0.0000000 no. relative values = 4 77feu1
137 u238he cm cu x3 0.0000000 0.0 6.1400000 13.0000000% 0 0.0000000 77cro1 0
137 cs g u238he ms re 5.0493815 10.2 0.8630000 0.0860000 135 cs g u238he 1.0000000 68gor1 0
137 cs g u238he cm cu x3 0.0000000 0.0 6.6000000 0.0000000 0 0.0000000 69gun2 0

137	cs	g	u238he	rc	cu		5.0477942	5.0	5.0400000	0.1000000	0			0.0000000	71bri1	0
137	cs	g	u238he	rc	re		5.3508615	7.0	1.1600000	0.0800000	140	ba	g	u238he	1.0000000	73man1	0
137	cs	g	u238he	cm	cu		0.0000000	0.0	5.1300000	3.9000000%	0			0.0000000	73net2	0
137	cs	g	u238he	rc	cu		5.2180571	6.9	5.2100000	0.3600000	0			0.0000000	75dar1	0
137	cs	g	u238he	rc	cu		5.8021140	10.1	6.6000000	0.6000000	99	mo	g	u238he	6.5000000	60bon1	0
137	xe	g	u238he	es	in		1.6625672	7.2	1.6600000	0.1200000	0			0.0000000	72boc1	0
137	xe	g	u238he	cm	cu		0.0000000	0.0	5.0660000	3.9000000%	0			0.0000000	73net2	0
137	xe	g	u238he	rc	cu		4.6371602	5.0	4.6300000	5.0000000%	0			0.0000000	74bal1	0
137	xe	g	u238he	rc	cu		4.5606518	5.4	4.7000000	0.1700000	88	kr	g	u238he	2.2300000	74bal1	0
137	xe	g	u238he	rc	cu		4.5412447	5.4	4.6800000	0.1300000	88	kr	g	u238he	2.2300000	74bal1	0
137	xe	g	u238he	rc	cu		4.7744881	5.4	4.4400000	0.1100000	138	xe	g	u238he	4.2200000	74bal1	0
137	xe	g	u238he	rc	cu		5.0540753	5.4	4.7000000	0.2200000	138	xe	g	u238he	4.2200000	74bal1	0
137	i	g	u238he	cm	cu		0.0000000	0.0	2.8680000	15.0000000%	0			0.0000000	73net2	0
137	i	g	u238he	rc	fc		3.2475262	12.9	0.6300000	0.0800000	137			u238he	1.0000000	71gri1	0
137			pu239t	es	cu		6.5861487	30.0	6.5900000	0.0000000	0			0.0000000	72sid1	0
137			pu239t	cm	cu		0.0000000	0.0	6.6200000	0.0000000	0			0.0000000	73lam1	0
137			pu239t	cm	cu		0.0000000	0.0	6.7200000	0.1800000	0			0.0000000	73wal1	0
137			pu239t	cm	cu		0.0000000	0.0	6.6400000	2.9000000%	0			0.0000000	77cro1	0
137	cs	g	pu239t	ms	re	x4	0.0000000	0.0	0.9940000	0.0500000	133	cs	g	pu239t	1.0000000	56wil1	36
137	cs	g	pu239t	cm	cu		0.0000000	0.0	6.5270000	2.0000000%	0			0.0000000	73net2	0
137	cs	g	pu239t	ms	cu		6.6061370	2.1	6.6100000	0.1400000	0			0.0000000	75mae1	0
137	cs	g	pu239t	ms	re		6.4904594	1.4	3.9390000	0.0530000	148	nd	g	pu239t	0.9960000	65rid2	0
137	cs	g	pu239t	ms	cu		6.7160727	2.1	6.7200000	0.1400000	0			0.0000000	66rid2	0
137	cs	g	pu239t	rc	cu		6.7292621	5.0	1.0700000	2.5000000%	99	mo	g	u235t	0.0000000	76for1	7
137	cs	g	pu239t	ms	cu		6.4962013	2.5	6.5000000	0.1600000	0			0.0000000	59ani1	0
137	cs	g	pu239t	ms	cu		6.6251259	2.0	6.6290000	0.0720000	0			0.0000000	79mae2	0
137	cs	g	pu239t	ms	re		6.6296660	0.7	0.4871000	0.0018000	148	nd	g	pu239t	0.1205800	76mae1	0
137	cs	g	pu239t	rc	cu		6.7172230	5.2	6.7800000	3.0000000%	95	zr	g	pu239t	4.8600000	73lar4	0
137	cs	g	pu239t	ms	re		6.5854434	1.5	6.4800000	1.4000000%	133	cs	g	pu239t	6.9000000	59fic2	0
137	cs	g	pu239t	es	cu	cm	6.6161312	1.0	6.6200000	1.0000000%	0			0.0000000	81mae2	0
137	cs	g	pu239t	ms	cu		6.6015586	1.0	6.5900000	0.0600000	133	cs	g	pu239t	7.0000000	86chi1	0
137	cs	g	pu239t	rc	cu	rp	6.6969956	12.5	5.4000000	0.0000000	no. relative values =			2		65mar1	
137	cs	g	pu239t	rc	cu	rp	6.6626085	9.2	6.7400000	0.0000000	no. relative values =			3		74lar1	
137	cs	g	pu239t	rc	cu	rp	6.6077661	2.2	6.7400000	0.0000000	no. relative values =			11		70lis1	
137	cs	g	pu239t	cm	in		0.0000000	0.0	0.5843000	7.0000000%	0			1.0000000	88wah1	0	
137	cs	g	pu239t	rc	cu		6.1464058	30.0	6.1500000	0.0000000	0			0.0000000	63kir1	0	

137 xe g pu239t rc fc 6.0554751 5.0 91.7000000 0.5000000 137 cs g pu239t 100.0000000 65wol1 0
137 xe g pu239t cm cu 0.0000000 0.0 6.0900000 4.1000000% 0 0.0000000 73net2 0
137 xe g pu239t ms cu 6.1464058 4.9 6.1500000 0.3000000 0 0.0000000 76bri2 0
137 xe g pu239t ms in 3.8177675 5.2 3.8200000 0.2000000 0 0.0000000 77bri1 0
137 xe g pu239t rc cu 6.2915088 5.4 6.1500000 0.3000000 140 xe g pu239t 1.5600000 77bri1 0
137 xe g pu239t rc cu 5.9665110 5.0 5.9700000 5.0000000% 0 0.0000000 74bal1 0
137 xe g pu239t rc cu 5.4920998 6.2 5.7900000 0.3400000 88 kr g pu239t 1.3400000 74bal1 0
137 xe g pu239t rc cu 5.5205563 5.4 5.8200000 0.2900000 88 kr g pu239t 1.3400000 74bal1 0
137 xe g pu239t rc cu 6.2837272 5.2 6.2500000 0.2400000 138 xe g pu239t 5.1400000 74bal1 0
137 xe g pu239t rc cu 6.0725939 5.2 6.0400000 0.1200000 138 xe g pu239t 5.1400000 74bal1 0
137 xe g pu239t rc cu 5.0370545 11.9 5.0400000 0.6000000 0 0.0000000 81dic1 0
137 xe g pu239t cm in 0.0000000 0.0 3.9290000 5.0000000% 0 1.0000000 88wah1 0
137 i g pu239t rc fc 2.7761753 5.0 0.4200000 0.0200000 137 pu239t 1.0000000 71gri1 0
137 i g pu239t cm cu x3 0.0000000 0.0 1.6390000 32.1000000% 0 0.0000000 73net2 0
137 i g pu239t es fc 2.5778771 30.0 0.3900000 0.0000000 137 pu239t 1.0000000 74wol1 0
137 i g pu239t rc cu 2.3286383 5.0 2.3300000 0.1000000 0 0.0000000 77bri1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

137 i g pu239t rc in 2.2386909 5.0 2.2400000 0.1000000 0 0.0000000 77bri1 0
137 i g pu239t cm in 0.0000000 0.0 2.1340000 10.0000000% 0 1.0000000 88wah1 0
137 te g pu239t rc fc x1 0.0000000 0.0 0.1550000 0.0370000 137 pu239t 1.0000000 71gri1 0
137 te g pu239t cm in 0.0000000 0.0 0.1148000 71.0000000% 0 1.0000000 88wah1 0
137 pu239f es cu 6.6925923 30.0 6.9000000 0.0000000 148 nd g pu239f 1.7100000 72sid1 0
137 pu239f cm cu 0.0000000 0.0 6.2200000 0.0000000 0 0.0000000 73lar3 0
137 pu239f es re 6.5365217 2.1 0.9900000 2.0000000% 137 pu239t 1.0000000 74mee4 0
137 ba g pu239f ms cu su 0.0000000 0.0 6.5000000 0.0000000 0 0.0000000 76koc1 0
137 pu239f cm cu 0.0000000 0.0 6.7000000 8.6000000% 0 0.0000000 77cro1 0
137 pu239f ms cu 6.4184836 2.8 6.5400000 0.1800000 148 nd g pu239f 1.6900000 77gab1 0
137 ba g pu239f ms cu 6.6404125 0.8 6.6220000 0.0460000 148 nd g pu239f 1.6540000 77mae1 0
137 ba g pu239f ms cu 6.5328262 2.0 6.5440000 0.0590000 0 0.0000000 77mae1 0
137 pu239f rc cu 6.4160260 10.0 6.4270000 10.0000000% 0 0.0000000 81koc1 36
137 cs g pu239f rc cu 6.1803382 10.0 6.8100000 0.2000000 0 0.0000000 57kaf1 35
137 cs g pu239f rc cu 6.3497842 5.0 6.4700000 3.0000000% 148 nd g pu239f 1.6900000 69dav1 0
137 cs g pu239f rc cu x4 0.0000000 0.0 4.5900000 1.4700000 140 ba g pu239f 5.3600000 72cun2 0

137 cs g pu239f rc cu 6.3890721 5.5 6.4000000 0.3500000 0 0.0000000 73mce1 0
137 cs g pu239f cm cu 0.0000000 0.0 6.1900000 5.0000000% 0 0.0000000 73net2 0
137 cs g pu239f rc cu 6.2207079 5.2 1.0200000 4.0000000% 99 mo g u235t 0.0000000 76for1 0
137 cs g pu239f rc cu 6.1712197 5.0 1.0200000 2.5000000% 99 mo g u235t 0.0000000 76for1 7
137 cs g pu239f rc cu 6.1591193 5.0 1.0180000 4.0000000% 99 mo g u235t 0.0000000 76for1 7
137 cs g pu239f rc cu 6.4190209 5.0 6.4300000 1.0000000% 0 0.0000000 77koc1 0
137 cs g pu239f rc cu su 0.0000000 0.0 6.4370000 6.5000000% 0 0.0000000 76gil3 0
137 cs g pu239f ms cu su 0.0000000 0.0 6.6100000 0.0400000 148 nd g pu239f 1.6500000 74mae1 0
137 cs g pu239f bm cu 6.7484574 1.5 6.7600000 1.5000000% 0 0.0000000 77gil1 36
137 cs g pu239f ms cu 6.5687648 2.0 6.5800000 0.1100000 0 0.0000000 70lis1 0
137 cs g pu239f es cu cm 6.5787477 1.0 6.5900000 1.0000000% 0 0.0000000 81mae2 0
137 cs g pu239f rc cu rp 6.0866786 8.5 6.1500000 0.0000000 no. relative values = 5 67sch1
137 cs g pu239f rc re rp 6.1761187 17.1 1.4050000 0.0000000 no. relative values = 1 72rid3
137 cs g pu239f rc re rp 6.4826523 5.4 1.0000000 0.0000000 no. relative values = 4 77kel1
137 cs g pu239f ms cu rp 6.5708814 2.3 0.3118000 0.0000000 no. relative values = 2 80mae4
137 xe g pu239f rc cu rp 5.3747954 19.1 4.2000000 0.0000000 no. relative values = 2 69moo1
137 xe g pu239f cm cu 0.0000000 0.0 5.6480000 7.0000000% 0 0.0000000 73net2 0
137 xe g pu239f rc cu 5.6104039 5.0 5.6200000 5.0000000% 0 0.0000000 74bal1 0
137 xe g pu239f rc cu 5.2089014 5.7 5.5500000 0.1800000 88 kr g pu239f 1.3700000 74bal1 0
137 xe g pu239f rc cu 5.3966096 5.7 5.7500000 0.0900000 88 kr g pu239f 1.3700000 74bal1 0
137 xe g pu239f rc cu 5.8285508 5.4 5.6500000 0.1200000 138 xe g pu239f 4.5600000 74bal1 0
137 xe g pu239f rc cu 5.6841265 5.4 5.5100000 0.1400000 138 xe g pu239f 4.5600000 74bal1 0
137 i g pu239f cm cu x3 0.0000000 0.0 1.2720000 32.1000000% 0 0.0000000 73net2 0
137 i g pu239f rc cu 1.9965850 15.0 2.0000000 0.3000000 0 0.0000000 81wal1 0
137 pu241t es cu 6.4950561 30.0 6.4900000 0.0000000 0 0.0000000 72sid1 0
137 pu241t cm cu 0.0000000 0.0 6.5000000 3.6000000% 0 0.0000000 77cro1 0
137 pu241t cm cu 0.0000000 0.0 6.5000000 0.2000000 0 0.0000000 73wal1 0
137 ba g pu241t ms cu 6.5881285 2.0 6.5830000 0.0410000 0 0.0000000 77mae1 0
137 cs g pu241t rc cu 7.0554923 5.0 7.0500000 0.3300000 0 0.0000000 73sko2 0
137 cs g pu241t ms cu 6.5520485 5.3 6.1400000 0.3200000 148 nd g pu241t 1.8120000 67rid1 0
137 cs g pu241t ms cu 6.8550847 2.7 6.6000000 0.1700000 148 nd g pu241t 1.8616500 70lis1 0
137 cs g pu241t rc cu rp 6.6310922 15.9 6.6000000 0.0000000 no. relative values = 1 70lis1
137 cs g pu241t ms cu 6.8378703 5.1 2.0940000 5.0000000% 145 nd g pu241t 1.0000000 64far1 0
137 cs g pu241t ms re rp 6.7527159 2.3 1.0000000 0.0000000 no. relative values = 2 64far1
137 cs g pu241t ms cu 6.5362570 1.2 6.6100000 0.0600000 133 cs g pu241t 6.8100000 86chi1 0
137 cs g pu241t ms cu 6.7125018 1.1 6.7000000 0.0600000 148 nd g pu241t 1.9300000 86chi1 0

```
137 cs g   pu241t   rc    cu    x4   0.0000000  0.0   5.5000000  0.0000000     0                    0.0000000   63kir1      0
137 xe g   pu241t   ms    cu         6.3649548  4.7   6.3600000  0.3000000     0                    0.0000000   76bri2      0
137 xe g   pu241t   ms    in         2.4919398  8.0   2.4900000  0.2000000     0                    0.0000000   77bri1      0
137 xe g   pu241t   rc    cu         6.4587352  5.7   6.3600000  0.3000000   140 xe g      pu241t      3.2500000   77bri1      0
137 i  g   pu241t   rc    cu         3.8730149  5.2   3.8700000  0.2000000     0                    0.0000000   77bri1      0
137 i  g   pu241t   rc    in         3.4426799  8.7   3.4400000  0.3000000     0                    0.0000000   77bri1      0
137        u233t    es    cu         6.6374316 30.0   6.6500000  0.0000000     0                    0.0000000   72sid1      0
137        u233t    cm    cu         0.0000000  0.0   6.8500000  0.0000000     0                    0.0000000   73lam1      0
137        u233t    cm    cu         0.0000000  0.0   6.7600000  0.1600000     0                    0.0000000   73wal1      0
137        u233t    cm    cu         0.0000000  0.0   6.6400000  3.8000000%    0                    0.0000000   77cro1      0
137 cs g   u233t    cm    cu         0.0000000  0.0   6.5530000  2.0000000%    0                    0.0000000   73net2      0
137 cs g   u233t    ms    cu         6.6245502  5.3   5.8000000  0.3000000   133 cs g      u233t       5.2000000   57iva1      0
137 cs g   u233t    ms    cu         6.7409042  2.4   6.1600000  0.1400000   137 cs g      u233t       6.1600000   59gor1      0
137 cs g   u233t    ms    cu         6.7730117  3.2   6.5800000  3.0000000%  133 cs g      u233t       5.7700000   61bid1      0
137 cs g   u233t    ms    cu         6.6154731  2.4   6.6280000  0.1600000     0                    0.0000000   66rid1      0
137 cs g   u233t    ms    cu         6.7405000  1.2   6.7300000  0.0500000   133 cs g      u233t       5.9300000   54fle1      0
137 cs g   u233t    ms    cu         6.7037100  2.0   6.8400000  0.1200000   133 cs g      u233t       6.0600000   86chi1      0
137 cs g   u233t    ms    cu         6.8117964  2.0   6.8700000  0.1200000   133 cs g      u233t       5.9900000   54fle1      0
137 cs g   u233t    ms    cu         6.9169024  2.0   6.9300000  0.0600000     0                    0.0000000   70lis1      0
137 cs g   u233t    ms    cu    rp   6.7445672  8.5   5.8000000  0.0000000  no. relative values =    5          59ani1
137 cs g   u233t    ms    cu    rp   6.7409042  7.2   6.1600000  0.0000000  no. relative values =    1          59gor1
137 cs g   u233t    ms    cu    rp   6.5813443  5.7   6.1600000  0.0000000  no. relative values =    3          59ani1
137 cs g   u233t    ms    cu    rp   6.5863994  8.8   6.1600000  0.0000000  no. relative values =    2          59gor1
137 cs g   u233t    ms    cu    su   0.0000000  0.0   5.8000000  0.3000000   148 nd g      u233t       1.0500000   57iva1      0
137 cs g   u233t    ms    cu    su   0.0000000  0.0   6.1600000  0.1400000   148 nd g      u233t       1.0500000   57iva1      0
137 cs g   u233t    ms    re         6.7712000  1.9   5.1840000  0.0860000   148 nd g      u233t       0.9946000   65rid2      0
137 cs g   u233t    rc    cu         6.6055227 10.4   5.3900000  0.1100000   140 ba g      u233t       5.2100000   60san1      0
137 cs g   u233t    rc    cu         6.8071103  6.0   6.8200000  6.0000000%    0                    0.0000000   65bal1      0
137 cs g   u233t    rc    cu    x4   0.0000000  0.0   6.1300000  0.1300000     0                    0.0000000   66ond1      0
137 xe g   u233t    rc    fc         6.0398501  5.0  89.6000000  0.5000000   137 cs g      u233t     100.0000000   65wol1      0
137 xe g   u233t    cm    cu         0.0000000  0.0   6.0720000  4.1000000%    0                    0.0000000   73net2      0
137 xe g   u233t    sp    cu         6.0485467  5.0   6.0600000  0.2000000     0                    0.0000000   75bri1      0
137 xe g   u233t    sp    in         4.4316084  5.0   4.4400000  0.1500000     0                    0.0000000   75bri1      0
137 xe g   u233t    sp    fi    x1   0.0000000  0.0   0.8320000  4.0000000%  137          u233t       1.0000000   86lei1      0
137 i  g   u233t    rc    fc         1.8884558 10.7   0.2800000  0.0300000   137          u233t       1.0000000   71gri1      0
137 i  g   u233t    cm    cu    x3   0.0000000  0.0   1.5410000 32.1000000%    0                    0.0000000   73net2      0
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137 i g u233t sp cu 1.5969760 6.2 1.6000000 0.1000000 0 0.0000000 75bri1 0
137 i g u233t sp in 1.5370894 6.5 1.5400000 0.1000000 0 0.0000000 75bri1 0
137 i g u233t sp fi 1.0453952 24.0 0.1550000 24.0000000% 137 u233t 1.0000000 86lei1 0
137 te g u233t sp fc 0.0876783 46.0 0.0130000 46.0000000% 137 u233t 1.0000000 86lei1 0
137 th232f es cu 6.6342790 30.0 6.7000000 0.0000000 0 0.0000000 65eng1 0
137 th232f es cu 6.4362408 30.0 6.5000000 0.0000000 0 0.0000000 72sid1 0
137 th232f es cu cm 6.3867313 30.0 6.4500000 0.0000000 0 0.0000000 74lam1 0
137 th232f cm cu 0.0000000 0.0 6.5000000 7.2000000% 0 0.0000000 77cro1 0
137 th232f es cu 5.8718320 30.0 5.9300000 0.0000000 0 0.0000000 74mee0 0
137 cs g th232f rc cu 7.1481496 60.1 5.8000000 0.0000000 89 sr g th232f 6.0000000 50nid1 0
137 cs g th232f rc cu 7.6904230 30.3 1.0400000 0.0000000 89 sr g th232f 1.0000000 57ale1 0
137 cs g th232f rc cu 6.5318024 6.4 6.5000000 0.2000000 144 ce g th232f 7.8000000 73fud1 0
137 cs g th232f es cu 6.2382027 30.0 6.3000000 0.0000000 0 0.0000000 60kat1 0
137 cs g th232f rc cu su 0.0000000 0.0 6.5900000 0.1800000 99 mo g th232f 2.7800000 64wyt1 0
137 cs g th232f rc cu 6.9104514 5.4 6.5900000 0.1800000 99 mo g th232f 2.7800000 65wyt1 0
137 cs g th232f rc cu 4.6166997 20.0 6.6000000 1.0000000 89 sr g u235t 6.7000000 51tur1 0
137 cs g th232f rc re 4.6659972 10.0 1.5800000 0.0200000 99 mo g u235t 0.0000000 63iye1 7
137 cs g th232f es cu cm 5.2282079 4.0 5.2800000 4.0000000% 0 0.0000000 73net2 0
137 cs g th232f es cu cm 5.8718320 30.0 5.9300000 0.0000000 0 0.0000000 79zij1 0
137 cs g th232f rc cu 5.8770904 5.7 1.0500000 5.0000000% 95 zr g th232f 1.0000000 79mar1 36
137 cs g th232f rc cu 5.4852844 5.7 0.9800000 5.0000000% 95 zr g th232f 1.0000000 73fud1 36
137 cs g th232f rc in 7.0660266 20.0 0.7308000 15.2000000% 89 sr g u235t 0.0000000 51tur1 7
137 xe g th232f cm cu 0.0000000 0.0 5.2690000 4.0000000% 0 0.0000000 73net2 0
137 i g th232f rc fc 4.5101049 12.2 0.7800000 0.0900000 137 th232f 1.0000000 71gri1 0
137 i g th232f cm cu 0.0000000 0.0 4.2310000 8.1000000% 0 0.0000000 73net2 0
137 i g th232f rc cu 4.0597827 34.1 4.1000000 1.4000000 0 0.0000000 81wal1 0
138 la g u235t ms cu lt 0.0000641 1.7 0.0000100 0.0000000 139 la g u235t 1.0000000 70ebe1 0
138 ba g u235t ms cu x4 0.0000000 0.0 5.7400000 0.0000000 0 0.0000000 55gle1 0
138 ba g u235t rc fi x2 0.0000000 0.0 0.1000000 0.0400000 138 u235t 1.0000000 66kon1 0
138 u235t cm cu 0.0000000 0.0 6.6800000 0.0000000 0 0.0000000 72sid1 0
138 u235t cm cu 0.0000000 0.0 6.8200000 0.0000000 0 0.0000000 73lam1 0
138 u235t cm cu 0.0000000 0.0 6.7600000 0.1800000 0 0.0000000 73wal1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

138	ba g	u235t	ms	cu		6.5167699	4.9	6.5200000	0.3200000	0			0.0000000	67rid1	0				
138		u235t	ms	cu		6.8076258	2.0	6.8110000	0.0770000	0			0.0000000	76dii1	0				
138		u235t	cm	cu		0.0000000	0.0	6.9100000	2.1000000%	0			0.0000000	77cro1	0				
138	ba g	u235t	ms	re		6.6975398	0.7	0.3644000	0.0023700	148	nd g	u235t	0.0910100	76mae1	0				
138	ba g	u235t	ms	re		6.6210237	1.4	1.0690000	1.0000000%	140	ba g	u235t	1.0000000	62far1	0				
138	ba g	u235t	ms	cu		6.7256664	2.0	6.7290000	0.0400000	0			0.0000000	78mae1	0				
138	ba g	u235t	ms	cu		6.7656466	2.0	6.7690000	0.0500000	0			0.0000000	78mae1	0				
138	ba g	u235t	ms	cu		6.7666461	2.0	6.7700000	0.0580000	0			0.0000000	78mae1	0				
138	ba g	u235t	ms	cu		6.7966312	2.0	6.8000000	0.0300000	0			0.0000000	70lis1	0				
138	ba g	u235t	ms	cu	cm	6.7526530	6.0	6.7560000	0.0000000	0			0.0000000	80mae3	0				
138	cs g	u235t	rc	cu	x4	0.0000000	0.0	6.2000000	0.3000000	0			0.0000000	76thi1	0				
138	cs g	u235t	es	in		0.2025496	15.0	0.4053000	15.0000000%	0			1.0000000	88wah1	37				
138	cs g	u235t	es	in		0.2296862	16.0	0.2298000	16.0000000%	0			0.0000000	89rid1	0				
138	cs g	u235t	es	fc		6.7612495	0.5	0.9994000	0.0400000%	138		u235t	1.0000000	89rid1	0				
138	cs g	u235t	es	fi		0.3181589	13.0	0.0470280	13.0000000%	138		u235t	1.0000000	91jam2	36				
138	cs g	u235t	rc	fi		0.1589848	13.0	0.0470000	13.0000000%	138		u235t	1.0000000	62wah1	37				
138	cs g	u235t	rc	fi	x2	0.0000000	0.0	0.2500000	0.0700000	138		u235t	1.0000000	66kon1	0				
138	cs g	u235t	rc	in		0.1609202	23.9	0.3220000	0.0770000	0			0.0000000	70for1	37				
138	cs g	u235t	rc	cu		6.9065767	5.0	6.9100000	0.3200000	0			0.0000000	71mcl1	0				
138	cs g	u235t	rc	fi	x2	0.0000000	0.0	0.1400000	0.0000000	138		u235t	1.0000000	72gun1	0				
138	cs g	u235t	cm	cu		0.0000000	0.0	6.7390000	2.0000000%	0			0.0000000	73net2	0				
138	cs g	u235t	rc	fi	su	0.0000000	0.0	0.0450000	0.0050000	138		u235t	1.0000000	59wol1	37				
138	cs g	u235t	rc	cu		7.0756698	10.0	7.2200000	0.2900000	140	ba g	u235t	6.3200000	56bar1	0				
138	cs g	u235t	sp	fi		0.2658766	13.0	7.8600000	13.0000000%	138		u235t	100.0000000	79bal1	37				
138	cs g	u235t	rc	cu		6.5467551	5.4	6.5500000	5.4000000%	0			0.0000000	80ram1	0				
138	cs g	u235t	es	in		0.3088469	13.0	0.3090000	13.0000000%	0			0.0000000	74mee1	0				
138	cs m	u235t	es	in		0.2025496	15.0	0.4053000	15.0000000%	0			1.0000000	88wah1	37				
138	cs m	u235t	es	in		0.2344838	64.0	0.2346000	64.0000000%	0			0.0000000	89rid1	0				
138	cs m	u235t	es	fi		0.3105277	16.0	0.0459000	16.0000000%	138		u235t	1.0000000	91jam2	0				
138	cs m	u235t	es	fc		0.2365152	64.0	0.0349600	64.0000000%	138		u235t	1.0000000	89rid1	0				
138	cs m	u235t	rc	fi		0.1589848	10.0	0.0470000	0.0020000	138		u235t	1.0000000	62wah1	37				
138	cs m	u235t	rc	in		0.1609202	23.9	0.3220000	0.0770000	0			0.0000000	70for1	37				
138	cs m	u235t	rc	fi	su	0.0000000	0.0	0.0450000	0.0050000	138		u235t	1.0000000	59wol1	37				
138	cs m	u235t	sp	fi		0.2658766	13.0	7.8600000	13.0000000%	138		u235t	100.0000000	79bal1	37				
138	cs m	u235t	sp	in		0.3098464	16.1	0.3100000	0.0500000	0			0.0000000	90rud1	0				
138	cs m	u235t	es	in		0.2498761	64.0	0.2500000	64.0000000%	0			0.0000000	74mee1	0				

138 xe g u235t rc fc 6.4676351 10.0 0.9560000 0.0030000 138 u235t 1.0000000 62wah1 0
138 xe g u235t rc fi x2 0.0000000 0.0 0.4600000 0.0900000 138 u235t 1.0000000 66kon1 0
138 xe g u235t rc fc cm 6.4473392 5.0 0.9530000 0.0020000 138 u235t 1.0000000 71tro3 0
138 xe g u235t rc in 5.0275081 11.3 5.0300000 0.5700000 0 0.0000000 72ehr1 0
138 xe g u235t rc fi x2 0.0000000 0.0 0.5600000 0.0500000 138 u235t 1.0000000 72gun1 0
138 xe g u235t rc cu rp 6.0675000 15.9 5.2800000 0.0000000 no. relative values = 1 74haw1
138 xe g u235t sp cu 6.2568987 5.0 6.2600000 0.2400000 0 0.0000000 75bri1 0
138 xe g u235t sp in 4.7276567 6.6 4.7300000 0.3100000 0 0.0000000 75bri1 0
138 xe g u235t cm in 0.0000000 0.0 4.6670000 7.0000000% 0 1.0000000 88wah1 0
138 xe g u235t sp in 5.7771365 5.0 5.7800000 0.1500000 0 0.0000000 90rud1 0
138 xe g u235t sp cu 6.4967798 15.4 6.5000000 1.0000000 0 0.0000000 90rud1 0
138 i g u235t es fi 1.6148792 6.3 0.2387000 0.0150000 138 u235t 1.0000000 69bra1 0
138 i g u235t rc fi x2 0.0000000 0.0 0.1700000 0.0300000 138 u235t 1.0000000 72gun1 0
138 i g u235t rc fi x1 0.0000000 0.0 0.1240000 0.0250000 138 u235t 1.0000000 73ven1 0
138 i g u235t rc fi 1.0824494 25.0 0.1600000 0.0400000 138 u235t 1.0000000 73ven1 0
138 i g u235t sp cu 1.5192470 9.9 1.5200000 0.1500000 0 0.0000000 75bri1 0
138 i g u235t sp in 1.4392866 10.4 1.4400000 0.1500000 0 0.0000000 75bri1 0
138 i g u235t rc fi su 0.0000000 0.0 0.2050000 0.0200000 138 u235t 1.0000000 77kra1 0
138 i g u235t rc fi 1.3868883 9.8 20.5000000 2.0000000 138 u235t 100.0000000 78kra1 0
138 i g u235t es fc x1 0.0000000 0.0 0.3600000 0.0000000 138 u235t 1.0000000 71gri1 0
138 i g u235t rc cu 1.0994551 7.3 1.1000000 0.0800000 0 0.0000000 88lee1 0
138 i g u235t sp cu 1.4992569 18.0 1.5000000 0.2700000 0 0.0000000 90rud1 0
138 i g u235t sp cu x4 0.0000000 0.0 0.6900000 0.1600000 0 0.0000000 90rud1 0
138 i g u235t es in 1.5342395 8.0 1.5350000 8.0000000% 0 1.0000000 88wah1 0
138 i g u235t es fi 1.4252476 6.2 0.2106700 6.2000000% 138 u235t 1.0000000 91jam2 0
138 i g u235t es fc 1.4252476 6.2 0.2106700 6.2000000% 138 u235t 1.0000000 91jam2 0
138 i g u235t es in 1.4492817 6.0 1.4500000 6.0000000% 0 0.0000000 89rid1 0
138 i g u235t es cu 1.4492817 6.0 1.4500000 6.0000000% 0 0.0000000 89rid1 0
138 te g u235t rc fi x2 0.0000000 0.0 0.0300000 0.0100000 138 u235t 1.0000000 66kon1 0
138 te g u235t es cu 0.0671667 30.0 0.0672000 0.0000000 0 0.0000000 74mee2 0
138 te g u235t cm in 0.0000000 0.0 0.0779500 76.0000000% 0 1.0000000 88wah1 0
138 la g u235f ms cu lt 0.0000190 1.6 0.0000030 0.0000000 139 la g u235f 1.0000000 70ebe1 0
138 u235f es cu cm 6.5921775 30.0 6.6000000 0.0000000 0 0.0000000 72sid1 0
138 u235f es re 6.5572316 10.0 0.9700000 10.0000000% 138 u235t 1.0000000 74mee4 0
138 u235f cm cu 0.0000000 0.0 6.7200000 4.5000000% 0 0.0000000 77cro1 0
138 ba g u235f ms cu 6.4423553 2.0 6.4500000 0.0690000 0 0.0000000 80mae1 0

138 ba g u235f ms cu 6.3414155 1.9 6.6000000 0.1200000 148 nd g u235f 1.7500000 70lis1 0
138 ba g u235f ms cu cm 6.6131527 6.0 6.6210000 0.0000000 0 0.0000000 80mae3 0
138 ba g u235f ms cu 6.7719642 2.0 6.7800000 0.0370000 0 0.0000000 81mae1 0
138 ba g u235f es cu 6.7429986 0.6 6.7510000 0.0400000 0 0.0000000 81mae1 0
138 ba g u235f ms cu 6.7090389 2.0 6.7170000 0.0370000 0 0.0000000 81mae1 0
138 ba g u235f cm cu 0.0000000 0.0 6.7490000 0.0400000 0 0.0000000 81mae1 0
138 ba g u235f ms cu 6.6656924 1.0 6.6600000 0.0600000 148 nd g u235f 1.6800000 74mae1 0
138 u235f rc cu 6.6870649 10.0 6.6950000 10.0000000% 0 0.0000000 81koc1 36
138 cs g u235f sp cu 5.9684782 5.1 6.2800000 0.0500000 140 ba g u235f 6.2800000 71dya1 0
138 cs g u235f cm cu 0.0000000 0.0 6.4850000 8.0000000% 0 0.0000000 73net2 0
138 cs g u235f rc cu 6.2980902 5.0 0.9400000 0.0300000 138 cs g u235t 1.0000000 77deb1 0
138 cs g u235f rc in sm 0.0000000 0.0 0.8100000 0.1500000 0 0.0000000 81mar1 0
138 xe g u235f rc cu 6.1127465 5.0 6.1200000 5.0000000% 0 0.0000000 74bal1 0
138 xe g u235f rc cu 5.8866724 5.4 5.9800000 0.2700000 88 kr g u235f 3.4900000 74bal1 0
138 xe g u235f rc cu 5.8965163 5.4 5.9900000 0.1400000 88 kr g u235f 3.4900000 74bal1 0
138 xe g u235f rc cu 5.9260481 5.4 6.0200000 0.2500000 88 kr g u235f 3.4900000 74bal1 0
138 xe g u235f rc cu 5.9358921 5.4 6.0300000 0.1200000 88 kr g u235f 3.4900000 74bal1 0
138 xe g u235f rc cu rp 5.9132615 4.4 6.2300000 0.0000000 no. relative values = 13 74bal1
138 xe g u235f rc cu 5.7331968 5.0 5.7400000 0.2000000 0 0.0000000 81mar1 0
138 xe g u235f rc in 4.4547139 5.0 4.4600000 0.2000000 0 0.0000000 81mar1 0
138 i g u235f rc cu 1.2684948 5.0 1.2700000 0.0600000 0 0.0000000 81mar1 0
138 i g u235f rc in 1.2585066 5.0 1.2600000 0.0600000 0 0.0000000 81mar1 0
138 u235he es cu 4.8208689 30.0 4.8610000 0.0000000 0 0.0000000 63wea1 0
138 u235he ms cu 4.5172878 7.2 4.5100000 0.3000000 137 u235he 4.9000000 72boc1 0
138 u235he es cu 4.5957430 10.0 4.6340000 10.0000000% 0 0.0000000 74mee8 0
138 u235he cm cu x3 0.0000000 0.0 6.0600000 20.0000000% 0 0.0000000 77cro1 0
138 cs g u235he cm cu x3 0.0000000 0.0 4.9330000 4.1000000% 0 0.0000000 73net2 0
138 cs g u235he rc fi 0.6857456 16.0 0.3010000 0.0000000 138 u235he 1.0000000 74bal1 37
138 cs m u235he rc fi 0.6857456 16.0 0.3010000 0.0000000 138 u235he 1.0000000 74bal1 37
138 xe g u235he rc fc 3.2194599 16.8 75.0000000 2.0000000 138 cs g u235he 100.0000000 65wol1 0
138 xe g u235he ms in 2.5785351 17.3 2.6000000 0.4500000 0 0.0000000 72boc1 0
138 xe g u235he rc cu 3.6397015 5.0 3.6700000 5.0000000% 0 0.0000000 74bal1 0
138 xe g u235he rc cu 3.2183938 5.7 3.4400000 0.1200000 88 kr g u235he 3.4700000 74bal1 0
138 xe g u235he rc cu 3.1903264 5.7 3.4100000 0.1700000 88 kr g u235he 3.4700000 74bal1 0
138 xe g u235he rc cu 3.1435475 5.7 3.3600000 0.0700000 88 kr g u235he 3.4700000 74bal1 0
138 xe g u235he rc cu 3.1154801 5.7 3.3300000 0.0500000 88 kr g u235he 3.4700000 74bal1 0

138 xe g u235he rc cu 3.9273073 5.0 3.9600000 5.0000000% 0 0.0000000 74bal1 36
138 xe g u235he rc fi 2.6883052 16.0 0.5900000 0.0000000 138 u235he 1.0000000 74bal1 0
138 xe g u235he rc cu rp 3.2192635 4.5 3.9600000 0.0000000 no. relative values = 13 74bal1
138 i g u235he rc fi 0.4419756 16.0 0.0970000 0.0000000 138 u235he 1.0000000 74bal1 0
138 u238f es cu cm 6.0355679 30.0 6.0000000 0.0000000 0 0.0000000 64wal1 0
138 ba g u238f ms re 5.7990914 6.1 0.9920000 0.0600000 140 ba g u238f 1.0000000 72mat1 0
138 u238f es cu cm 6.2971092 30.0 6.2600000 0.0000000 0 0.0000000 72sid1 0
138 ba g u238f ms cu 5.8695898 2.0 5.8350000 0.0470000 0 0.0000000 81mae1 0
138 ba g u238f ms cu 5.6814813 2.0 5.6480000 0.0580000 0 0.0000000 81mae1 0
138 ba g u238f ms cu 5.9621352 8.6 5.9270000 0.5100000 0 0.0000000 81mae1 0
138 ba g u238f cm cu 0.0000000 0.0 5.8030000 0.1690000 0 0.0000000 81mae1 0
138 ba g u238f ms cu 5.8539520 3.0 5.7300000 0.1700000 148 nd g u238f 2.0800000 74mae1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

138 u238f rc cu 5.7639674 10.0 5.7300000 10.0000000% 0 0.0000000 81koc1 36
138 u238f rc cu 5.9047973 5.0 5.8700000 0.1600000 0 0.0000000 85li 1 0
138 cs g u238f ms in su 0.0000000 0.0 0.0330000 0.0240000 141 cs g u238f 1.0000000 73bal1 37
138 cs g u238f cm cu 0.0000000 0.0 6.2500000 4.1000000% 0 0.0000000 73net2 0
138 cs g u238f ms in 0.0291719 72.4 0.0580000 0.0420000 0 0.0000000 74bal2 37
138 cs g u238f cm fi 0.0000000 0.0 0.0099000 0.0075000 138 u238f 1.0000000 74wol1 37
138 cs g u238f rc in 0.0306808 75.4 0.0610000 0.0460000 0 0.0000000 74wol4 37
138 cs g u238f rc cu 6.6092018 6.6 6.8400000 0.4500000 140 ba g u238f 6.0500000 78deb1 0
138 cs g u238f rc cu 6.3289871 7.5 6.5500000 0.4900000 140 ba g u238f 6.0500000 78deb1 0
138 cs g u238f es cu 5.6030189 4.3 5.5700000 0.2400000 0 0.0000000 78gin1 0
138 cs g u238f rc cu 5.7237303 5.0 5.6900000 0.1900000 0 0.0000000 78nag1 0
138 cs g u238f rc cu 5.5225447 7.3 5.4900000 0.4000000 0 0.0000000 85chi1 0
138 cs g u238f rc cu x4 0.0000000 0.0 7.7000000 26.0000000% 0 0.0000000 87chu1 0
138 cs g u238f rc cu 5.3213591 10.8 5.2900000 10.8000000% 0 0.0000000 88afa1 0
138 cs m u238f ms in su 0.0000000 0.0 0.0330000 0.0240000 141 cs g u238f 1.0000000 73bal1 37
138 cs m u238f ms in 0.0291719 72.4 0.0580000 0.0420000 0 0.0000000 74bal2 37
138 cs m u238f cm fi 0.0000000 0.0 0.0099000 0.0075000 138 u238f 1.0000000 74wol1 37
138 cs m u238f rc in 0.0306808 75.4 0.0610000 0.0460000 0 0.0000000 74wol4 37
138 xe g u238f rc cu 6.0255087 5.0 5.9900000 5.0000000% 0 0.0000000 74bal1 0
138 xe g u238f rc cu 5.1986770 5.7 6.0200000 0.1400000 88 kr g u238f 2.3600000 74bal1 0

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138 xe g   u238f    rc    cu        5.2763981  5.7   6.1100000  0.1500000    88 kr g      u238f       2.3600000   74bal1      0
138 xe g   u238f    rc    cu        5.1900414  5.7   6.0100000  0.1500000    88 kr g      u238f       2.3600000   74bal1      0
138 xe g   u238f    rc    cu        5.2677625  5.7   6.1000000  0.1500000    88 kr g      u238f       2.3600000   74bal1      0
138 xe g   u238f    rc    cu    rp   5.7582569  4.8   5.9100000  0.0000000  no. relative values =   12            74bal1
138 xe g   u238f    rc    cu        6.0053901  7.9   5.9700000  7.9000000%    0                    0.0000000   87chu1      0
138        u238he   es    cu        5.1362086 30.0   5.1250000  0.0000000     0                    0.0000000   63wea1      0
138        u238he   ms    cu        4.9539666  6.5   4.8600000  0.3000000   137          u238he      5.0600000   72boc1      0
138        u238he   es    cu        4.3975968 15.0   4.3880000 15.0000000%    0                    0.0000000   74mee9      0
138        u238he   es    cu        5.0209571  6.6   5.0100000  6.6000000%    0                    0.0000000   77cro1      0
138        u238he   rc    cu        5.1378032  5.4   5.1300000  0.1100000   137          u238he      5.1500000   77feu1      0
138        u238he   es    cu    su   0.0000000  0.0   4.7500000  0.2800000     0                    0.0000000   73dar1      0
138 cs g   u238he   rc    cu        4.8906728  5.0   4.8800000  0.2000000     0                    0.0000000   71bri1      0
138 cs g   u238he   rc    cu    su   0.0000000  0.0   5.5400000  0.5500000     0                    0.0000000   73dar3      0
138 cs g   u238he   cm    cu        0.0000000  0.0   5.1260000  4.1000000%    0                    0.0000000   73net2      0
138 cs g   u238he   rc    cu        4.5399073  5.0   4.5300000  0.2200000     0                    0.0000000   75dar1      0
138 cs g   u238he   rc    cu        5.1174752 15.7   5.1000000  0.8000000   140 ba g      u238he      4.6000000   76raj1      0
138 cs g   u238he   rc    fi        0.2031153 10.4   0.0830000  0.0050000   138          u238he      1.0000000   62apo2     37
138 cs g   u238he   rc    in        0.1232690 99.9   0.2460000  0.5830000     0                    0.0000000   75dar1     37
138 cs g   u238he   rc    cu        5.0337570  9.4   4.9300000  0.4600000    99 mo g      u238he      5.6000000   75ada1      0
138 cs g   u238he   rc    cu        5.0710665  5.1   5.0600000  0.2600000     0                    0.0000000   85liu1      0
138 cs g   u238he   rc    cu        5.1664930  7.1   5.0600000  0.3500000    99 mo g      u238he      5.6000000   80li 1      0
138 cs m   u238he   rc    fi        0.2031153 10.4   0.0830000  0.0050000   138          u238he      1.0000000   62apo2     37
138 cs m   u238he   rc    in        0.1232690 99.9   0.2460000  0.5830000     0                    0.0000000   75dar1     37
138 xe g   u238he   rc    fc        4.5556923  6.4  94.0000000  2.0000000   138 cs g      u238he    100.0000000   65wol1      0
138 xe g   u238he   ms    in        2.3952270  7.1   2.3900000  0.1700000     0                    0.0000000   72boc1      0
138 xe g   u238he   rc    cu        4.2693168 10.3   4.2600000  0.4400000     0                    0.0000000   75dar1      0
138 xe g   u238he   rc    fc        4.1210373  5.7   0.8420000  0.0020000   138          u238he      1.0000000   77feu1      0
138 xe g   u238he   rc    cu        4.2893606  5.0   4.2800000  5.0000000%    0                    0.0000000   74bal1      0
138 xe g   u238he   rc    cu        4.3402451  5.4   4.4700000  0.0800000    88 kr g      u238he      2.2300000   74bal1      0
138 xe g   u238he   rc    cu        4.1072118  5.4   4.2300000  0.1000000    88 kr g      u238he      2.2300000   74bal1      0
138 xe g   u238he   rc    cu        4.3208257  5.4   4.4500000  0.0300000    88 kr g      u238he      2.2300000   74bal1      0
138 xe g   u238he   rc    cu        4.0780826  5.4   4.2000000  0.0900000    88 kr g      u238he      2.2300000   74bal1      0
138 xe g   u238he   rc    cu    rp   4.3227752  4.3   4.2200000  0.0000000  no. relative values =   14            74bal1
138 xe g   u238he   rc    fi        1.7962241 11.3   0.3670000  0.0400000   138          u238he      1.0000000   62apo2      0
138 i  g   u238he   rc    fc        2.6918890 11.3   0.5500000  0.0600000   138          u238he      1.0000000   62apo2      0
138 te g   u238he   rc    fi        0.5873212 10.4   0.1200000  0.0060000   138          u238he      1.0000000   62apo2      0
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138 pu239t cm cu 0.0000000 0.0 6.1900000 0.0000000 0 0.0000000 72sid1 0
138 pu239t cm cu 0.0000000 0.0 5.4600000 0.0000000 0 0.0000000 73lam1 0
138 pu239t cm cu 0.0000000 0.0 5.7400000 0.3700000 0 0.0000000 73wal1 0
138 ba g pu239t ms cu 5.8831156 2.0 5.8900000 0.1100000 0 0.0000000 75mae1 0
138 ba g pu239t ms cu x1 0.0000000 0.0 5.1500000 0.2600000 0 0.0000000 67rid1 0
138 pu239t cm cu 0.0000000 0.0 5.8200000 4.1000000% 0 0.0000000 77cro1 0
138 ba g pu239t ms cu 6.2526831 2.4 6.2600000 0.1500000 0 0.0000000 59ani1 0
138 ba g pu239t ms cu 6.1168421 2.0 6.1240000 0.0960000 0 0.0000000 79mae2 0
138 ba g pu239t ms re 6.0884895 0.7 0.4476000 0.0020000 148 nd g pu239t 0.1205800 76mae1 0
138 ba g pu239t ms cu x1 0.0000000 0.0 5.4000000 0.1100000 148 nd g pu239t 1.7000000 70lis1 0
138 ba g pu239t ms re 6.4089273 1.6 6.3100000 0.0000000 133 cs g pu239t 6.9000000 59fic2 0
138 ba g pu239t es cu cm 6.1228351 1.0 6.1300000 1.0000000% 0 0.0000000 81mae2 0
138 cs g pu239t rc fi x2 0.0000000 0.0 0.2200000 0.0000000 138 pu239t 1.0000000 72gun1 0
138 cs g pu239t cm cu 0.0000000 0.0 5.6390000 2.0000000% 0 0.0000000 73net2 0
138 cs g pu239t rc in 0.4344916 20.7 0.8700000 0.1800000 0 0.0000000 75bal1 37
138 cs g pu239t rc cu 5.2884189 20.1 5.4200000 20.0000000% 97 zr g pu239t 5.4600000 74jen1 0
138 cs g pu239t rc cu 5.7133143 8.0 5.7200000 0.4600000 0 0.0000000 80dic1 0
138 cs g pu239t rc in sm 0.0000000 0.0 0.8400000 0.0700000 0 0.0000000 80nis1 0
138 cs g pu239t rc in 0.2596961 11.5 0.2600000 0.0300000 0 0.0000000 80nis1 0
138 cs g pu239t rc in 0.2896610 10.0 0.2900000 10.0000000% 0 0.0000000 85tom2 36
138 cs g pu239t cm in 0.0000000 0.0 0.4476000 8.0000000% 0 1.0000000 88wah1 0
138 cs m pu239t rc in 0.4344916 20.7 0.8700000 0.1800000 0 0.0000000 75bal1 37
138 cs m pu239t rc in 0.5793221 10.3 0.5800000 0.0600000 0 0.0000000 80nis1 0
138 cs m pu239t rc in 0.5893104 10.0 0.5900000 10.0000000% 0 0.0000000 85tom2 36
138 cs m pu239t cm in 0.0000000 0.0 0.4477000 8.0000000% 0 1.0000000 88wah1 0
138 xe g pu239t rc fc 5.0351118 7.5 85.1000000 1.0000000 138 cs g pu239t 100.0000000 65wol1 0
138 xe g pu239t rc fi x2 0.0000000 0.0 0.5500000 0.0700000 138 pu239t 1.0000000 72gun1 0
138 xe g pu239t ms cu 5.4136649 6.5 5.4200000 0.3500000 0 0.0000000 76bri2 0
138 xe g pu239t rc cu rp 5.0812506 15.9 4.3200000 0.0000000 no. relative values = 1 74haw1
138 xe g pu239t ms in 4.1351610 7.2 4.1400000 0.3000000 0 0.0000000 77bri1 0
138 xe g pu239t rc cu 5.5414695 6.8 5.4200000 0.3500000 140 xe g pu239t 1.5600000 77bri1 0
138 xe g pu239t rc cu 4.9941558 5.0 5.0000000 5.0000000% 0 0.0000000 74bal1 0
138 xe g pu239t rc cu 4.6736130 5.4 4.9300000 0.2100000 88 kr g pu239t 1.3400000 74bal1 0
138 xe g pu239t rc cu 4.5124539 5.4 4.7600000 0.2300000 88 kr g pu239t 1.3400000 74bal1 0
138 xe g pu239t rc cu 4.6925729 5.4 4.9500000 0.1700000 88 kr g pu239t 1.3400000 74bal1 0
138 xe g pu239t rc cu 4.5408938 5.4 4.7900000 0.1900000 88 kr g pu239t 1.3400000 74bal1 0

138 xe g pu239t rc cu rp 4.8634705 4.5 5.1400000 0.0000000 no. relative values = 13 74bal1
138 xe g pu239t rc cu 5.2538519 8.9 5.2600000 0.4700000 0 0.0000000 80dic1 0
138 xe g pu239t rc cu 5.0840506 7.5 5.0900000 0.3800000 0 0.0000000 81dic1 0
138 xe g pu239t cm in 0.0000000 0.0 4.0770000 8.0000000% 0 1.0000000 88wah1 0
138 i g pu239t rc fi x2 0.0000000 0.0 0.1500000 0.0300000 138 pu239t 1.0000000 72gun1 0
138 i g pu239t es fc 1.0705324 30.0 0.1750000 0.0000000 138 pu239t 1.0000000 74wol1 0
138 i g pu239t rc cu 1.2685156 10.2 1.2700000 0.1300000 0 0.0000000 77bri1 0
138 i g pu239t rc in 1.2485390 10.4 1.2500000 0.1300000 0 0.0000000 77bri1 0
138 i g pu239t rc fc 0.8747779 62.9 0.1430000 0.0900000 138 pu239t 1.0000000 71gri1 0
138 i g pu239t rc cu 1.1013533 18.4 1.1000000 0.2000000 139 xe g pu239t 3.0780000 82gol1 0
138 i g pu239t cm in 0.0000000 0.0 1.1040000 13.0000000% 0 1.0000000 88wah1 0
138 te g pu239t rc fi x2 0.0000000 0.0 0.0400000 0.0200000 138 pu239t 1.0000000 72gun1 0
138 te g pu239t es cu 0.0112269 30.0 0.0112400 0.0000000 0 0.0000000 74mee2 0
138 pu239f es cu cm 6.2847871 10.0 6.3000000 10.0000000% 0 0.0000000 72sid1 36
138 pu239f es re 6.0486290 2.2 0.9900000 2.0000000% 138 pu239t 1.0000000 74mee4 0
138 pu239f cm cu 0.0000000 0.0 6.0400000 10.4000000% 0 0.0000000 77cro1 0
138 ba g pu239f ms cu 6.1446936 0.8 6.1320000 0.0450000 148 nd g pu239f 1.6540000 77mae1 0
138 ba g pu239f ms cu 6.1391397 2.0 6.1540000 0.0650000 0 0.0000000 77mae1 0
138 pu239f rc cu 6.3322286 15.1 5.8100000 0.0000000 97 zr g pu239f 4.8200000 74bal1 0
138 ba g pu239f ms cu x4 0.0000000 0.0 4.9700000 20.0000000% 0 0.0000000 70lis1 36
138 ba g pu239f ms cu su 0.0000000 0.0 6.1200000 0.0400000 148 nd g pu239f 1.6500000 74mae1 0
138 pu239f rc cu 5.5435813 10.0 5.5570000 10.0000000% 0 0.0000000 81koc1 36
138 ba g pu239f es cu cm 6.1151976 1.0 6.1300000 1.0000000% 0 0.0000000 81mae2 0
138 cs g pu239f rc cu rp 5.3629369 20.2 5.0000000 0.0000000 no. relative values = 1 69moo1
138 cs g pu239f cm cu 0.0000000 0.0 4.8490000 4.0000000% 0 0.0000000 73net2 0
138 cs g pu239f rc cu 5.5319865 25.0 5.1600000 25.0000000% 97 zr g pu239f 4.9000000 74jen1 0
138 cs g pu239f rc fi 0.6447977 15.0 0.2110000 0.0000000 138 pu239f 1.0000000 74bal1 37
138 cs g pu239f rc cu 6.2995321 15.1 5.7800000 0.0000000 97 zr g pu239f 4.8200000 74bal1 0
1
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nuclide material tech. type value err. value nuclide material value no. treatment

138 cs m pu239f rc fi 0.6447977 15.0 0.2110000 0.0000000 138 pu239f 1.0000000 74bal1 37
138 xe g pu239f rc cu x4 0.0000000 0.0 3.2000000 0.8000000 139 xe g pu239f 4.4000000 69moo1 0
138 xe g pu239f rc cu 4.5789163 5.0 4.5900000 5.0000000% 0 0.0000000 74bal1 0
138 xe g pu239f rc cu 4.2016839 5.7 4.4800000 0.1700000 88 kr g pu239f 1.3700000 74bal1 0

138 xe g pu239f rc cu 4.3705015 5.7 4.6600000 0.1100000 88 kr g pu239f 1.3700000 74bal1 0
138 xe g pu239f rc cu 4.3611228 5.7 4.6500000 0.1100000 88 kr g pu239f 1.3700000 74bal1 0
138 xe g pu239f rc cu 4.3986378 5.7 4.6900000 0.0500000 88 kr g pu239f 1.3700000 74bal1 0
138 xe g pu239f rc cu 4.9698731 15.1 4.5600000 0.0000000 97 zr g pu239f 4.8200000 74bal1 0
138 xe g pu239f rc fi 3.8198916 15.0 0.6250000 0.0000000 138 pu239f 1.0000000 74bal1 0
138 xe g pu239f rc cu rp 4.5218378 4.9 4.5600000 0.0000000 no. relative values = 12 74bal1
138 i g pu239f rc cu 1.0026937 15.1 0.9200000 0.0000000 97 zr g pu239f 4.8200000 74bal1 0
138 i g pu239f rc fi 0.9534449 15.0 0.1560000 0.0000000 138 pu239f 1.0000000 74bal1 0
138 pu241t cm cu 0.0000000 0.0 6.6500000 0.0000000 0 0.0000000 72sid1 0
138 pu241t cm cu 0.0000000 0.0 6.7100000 0.2500000 0 0.0000000 73wal1 0
138 pu241t cm cu 0.0000000 0.0 6.4900000 4.1000000% 0 0.0000000 77cro1 0
138 pu241t cm cu 0.0000000 0.0 6.4400000 0.0000000 0 0.0000000 79wal1 0
138 ba g pu241t ms cu 6.4480964 2.0 6.4410000 0.0400000 0 0.0000000 77mae1 0
138 ba g pu241t ms cu 6.6183287 2.8 6.3700000 0.1700000 148 nd g pu241t 1.8616500 70lis1 0
138 ba g pu241t ms cu 6.6545349 1.1 6.6400000 0.0600000 148 nd g pu241t 1.9300000 86chi1 0
138 cs g pu241t rc cu 6.8082827 5.0 6.7500000 0.2200000 137 cs g pu239t 5.9000000 69cro2 25
138 cs g pu241t rc in 0.1201322 20.0 0.1200000 20.0000000% 0 0.0000000 85tom2 36
138 cs m pu241t rc in 0.2302534 20.0 0.2300000 20.0000000% 0 0.0000000 85tom2 36
138 xe g pu241t ms cu 6.1667868 6.5 6.1600000 0.4000000 0 0.0000000 76bri2 0
138 xe g pu241t ms in 3.8842748 7.7 3.8800000 0.3000000 0 0.0000000 77bri1 0
138 xe g pu241t rc cu 6.2576474 7.1 6.1600000 0.4000000 140 xe g pu241t 3.2500000 77bri1 0
138 xe g pu241t ms re nr 6.8798241 4.8 0.8680000 0.0400000 134 xe g pu241t 1.0000000 64far1 0
138 i g pu241t rc cu 2.2825120 6.6 2.2800000 0.1500000 0 0.0000000 77bri1 0
138 i g pu241t rc in 2.1523688 9.3 2.1500000 0.2000000 0 0.0000000 77bri1 0
138 u233t cm cu 0.0000000 0.0 6.4000000 0.0000000 0 0.0000000 72sid1 0
138 u233t cm cu 0.0000000 0.0 6.0000000 0.0000000 0 0.0000000 73lam1 0
138 u233t cm cu 0.0000000 0.0 5.8400000 0.1400000 0 0.0000000 73wal1 0
138 ba g u233t ms cu su 0.0000000 0.0 6.3500000 0.2300000 137 cs g u233t 6.1600000 59gor1 0
138 ba g u233t ms cu x4 0.0000000 0.0 6.3500000 0.2300000 0 0.0000000 61gor1 0
138 ba g u233t ms cu 5.7093157 5.1 5.7400000 0.2900000 0 0.0000000 67rid1 0
138 u233t cm cu 0.0000000 0.0 5.8900000 3.5000000% 0 0.0000000 77cro1 0
138 ba g u233t ms cu 5.9380862 2.0 5.9700000 0.0500000 0 0.0000000 70lis1 0
138 cs g u233t cm cu 0.0000000 0.0 6.3050000 2.0000000% 0 0.0000000 73net2 0
138 cs g u233t rc in sm 0.0000000 0.0 1.1700000 0.0700000 0 0.0000000 80nis1 0
138 cs g u233t rc in 0.3381825 8.8 0.3400000 0.0300000 0 0.0000000 80nis1 0
138 cs g u233t rc in 0.2685567 10.0 0.2700000 10.0000000% 0 0.0000000 85tom2 36

138 cs m u233t rc in 0.8255631 7.2 0.8300000 0.0600000 0 0.0000000 80nis1 0
138 cs m u233t rc in 0.7260976 10.0 0.7300000 10.0000000% 0 0.0000000 85tom2 36
138 xe g u233t rc fc 4.6893078 12.4 82.7000000 1.2000000 138 cs g u233t 100.0000000 65wol1 0
138 xe g u233t cm fc 0.0000000 0.0 0.8270000 0.0120000 138 u233t 1.0000000 71tro3 0
138 xe g u233t sp cu 5.6098502 5.0 5.6400000 0.2000000 0 0.0000000 75bri1 0
138 xe g u233t sp in 4.9235388 5.1 4.9500000 0.2500000 0 0.0000000 75bri1 0
138 i g u233t rc fc 0.6169528 86.7 0.1050000 0.0910000 138 u233t 1.0000000 71gri1 0
138 i g u233t sp cu 0.6962580 18.6 0.7000000 0.1300000 0 0.0000000 75bri1 0
138 i g u233t sp in 0.6763649 19.1 0.6800000 0.1300000 0 0.0000000 75bri1 0
138 th232f es cu cm 7.1987332 15.0 7.3000000 15.0000000% 0 0.0000000 65eng1 0
138 th232f es cu cm 6.7056693 30.0 6.8000000 0.0000000 0 0.0000000 72sid1 0
138 th232f es cu x3 0.0000000 0.0 6.0200000 0.0000000 0 0.0000000 73lam1 0
138 th232f es cu 7.0409527 30.0 7.1400000 0.0000000 0 0.0000000 74mee0 0
138 th232f cm cu x3 0.0000000 0.0 5.0000000 20.0000000% 0 0.0000000 77cro1 0
138 cs g th232f cm cu 0.0000000 0.0 7.0170000 16.0000000% 0 0.0000000 73net2 0
138 cs g th232f rc cu x4 0.0000000 0.0 5.5400000 0.3500000 140 ba g th232f 7.9700000 85chu1 0
138 cs g th232f rc cu 6.3013568 5.0 6.3900000 0.2000000 0 0.0000000 86ric1 0
139 la g u235t ms cu su 0.0000000 0.0 6.4400000 0.0600000 0 0.0000000 70ebe1 0
139 la g u235t ms cu 6.4354880 2.0 6.4400000 0.0100000 0 0.0000000 72ebe1 0
139 u235t cm cu 0.0000000 0.0 6.5500000 0.0000000 0 0.0000000 72sid1 0
139 la g u235t cm cu 0.0000000 0.0 6.5500000 0.0000000 0 0.0000000 73lam1 0
139 u235t cm cu 0.0000000 0.0 6.5300000 0.1200000 0 0.0000000 73wal1 0
139 u235t ms cu 6.3165714 2.0 6.3210000 0.0760000 0 0.0000000 76dii1 0
139 la g u235t ms cu x1 0.0000000 0.0 8.2000000 0.8000000 146 nd g u235t 3.2000000 57gor1 0
139 u235t cm cu 0.0000000 0.0 6.6500000 4.6000000% 0 0.0000000 77cro1 0
139 la g u235t ms cu cm 6.3525462 6.0 6.3570000 0.0000000 0 0.0000000 80mae3 0
139 ba g u235t cm cu 0.0000000 0.0 6.5500000 0.0000000 0 0.0000000 73lam1 0
139 ba g u235t cm cu 0.0000000 0.0 6.5890000 4.0000000% 0 0.0000000 73net2 0
139 ba g u235t cm in 0.0000000 0.0 0.0654400 52.0000000% 0 1.0000000 88wah1 0
139 ba g u235t ms re aw 6.3038525 1.4 1.0180000 1.0000000% 140 ba g u235t 1.0000000 62far1 0
139 ba g u235t rc cu 6.0957263 60.0 6.1000000 0.0000000 0 0.0000000 47gru1 0
139 ba g u235t rc cu 6.3954186 60.0 6.3000000 0.0000000 140 ba g u235t 6.1000000 51kat6 0
139 ba g u235t rc cu 6.3055791 5.0 6.3100000 0.2700000 0 0.0000000 71mcl1 0
139 ba g u235t rc cu 6.3355581 5.0 6.3400000 5.0000000% 0 0.0000000 80ram1 0
139 ba g u235t rc cu 6.3327342 20.0 6.4000000 3.5000000% 89 sr g u235t 4.7800000 53ree1 0
139 ba g u235t rc cu 6.5454110 5.0 6.5500000 0.1000000 0 0.0000000 67gun2 0

139	ba	g	u235t	rc	cu		6.4373416	10.0	6.5700000	1.3000000%	140	ba	g	u235t	6.3200000	57bae1	0		
139	ba	g	u235t	rc	cu	x4	0.0000000	0.0	5.7000000	0.6000000	0				0.0000000	77gud1	0		
139	ba	g	u235t	rc	cu	x4	0.0000000	0.0	5.7900000	0.2000000	140	ba	g	u235t	6.1700000	53pap1	0		
139	ba	g	u235t	rc	fi		0.0705245	36.4	0.0110000	0.0040000	139			u235t	1.0000000	62wah1	0		
139	ba	g	u235t	rc	fi	su	0.0000000	0.0	0.0110000	0.0050000	139			u235t	1.0000000	59fer1	0		
139	ba	g	u235t	rc	fi	x2	0.0000000	0.0	0.3500000	0.0500000	139			u235t	1.0000000	66kon1	0		
139	ba	g	u235t	sp	fi	ul	0.0000000	0.0	0.0200000	0.0500000	139			u235t	1.0000000	84den1	36		
139	cs	g	u235t	rc	fi	su	0.0000000	0.0	0.1700000	0.0300000	139			u235t	1.0000000	59fer1	0		
139	cs	g	u235t	rc	fc		6.3343816	10.0	0.9880000	0.0040000	139			u235t	1.0000000	62wah1	0		
139	cs	g	u235t	rc	in		1.2691102	15.0	1.2700000	0.1900000	0				0.0000000	70for1	0		
139	cs	g	u235t	ms	in		1.1991593	10.0	1.2000000	0.1200000	0				0.0000000	72bal1	0		
139	cs	g	u235t	ms	in		1.5888860	9.4	1.5900000	0.1500000	0				0.0000000	72cha1	0		
139	cs	g	u235t	rc	fi		1.1796824	9.8	0.1840000	0.0180000	139			u235t	1.0000000	72ree1	0		
139	cs	g	u235t	sp	in	x4	0.0000000	0.0	0.5641000	0.0627000	0				0.0000000	75ree1	0		
139	cs	g	u235t	ms	fi	x1	0.0000000	0.0	33.8000000	1.7000000	139			u235t	100.0000000	76ris1	0		
139	cs	g	u235t	sp	fi		1.4361351	5.0	22.4000000	0.8900000	139			u235t	100.0000000	79bal1	0		
139	cs	g	u235t	ms	cu		6.3755301	10.0	6.3800000	0.6400000	0				0.0000000	79shm1	0		
139	cs	g	u235t	sp	fi	x4	0.0000000	0.0	0.0800000	63.0000000%	139			u235t	1.0000000	84den1	0		
139	cs	g	u235t	es	in		1.3370626	6.0	1.3380000	6.0000000%	0				1.0000000	88wah1	0		
139	cs	g	u235t	es	in		1.2536211	8.0	1.2545000	8.0000000%	0				0.0000000	89rid1	0		
139	cs	g	u235t	es	fc		6.3452808	0.9	0.9897000	0.5000000%	139			u235t	1.0000000	89rid1	0		
139	cs	g	u235t	sp	cu		6.6853129	5.0	6.6900000	0.1300000	0				0.0000000	90rud1	0		
139	cs	g	u235t	es	fi		1.4011934	7.2	0.2185500	7.2000000%	139			u235t	1.0000000	91jam2	0		
139	xe	g	u235t	rc	fc		5.2572617	10.0	0.8200000	0.0200000	139	ba	g	u235t	1.0000000	58wah1	0		
139	xe	g	u235t	rc	fi	x2	0.0000000	0.0	0.1300000	0.0300000	139			u235t	1.0000000	66kon1	0		
139	xe	g	u235t	cm	fc	x3	0.0000000	0.0	0.8200000	0.0200000	139			u235t	1.0000000	71tro3	0		
139	xe	g	u235t	sp	cu		5.3262657	5.0	5.3300000	0.2000000	0				0.0000000	75bri1	0		
139	xe	g	u235t	sp	in		4.7866441	6.3	4.7900000	0.3000000	0				0.0000000	75bri1	0		
139	xe	g	u235t	rc	fc		5.1931671	5.0	0.8100000	0.0400000	139			u235t	1.0000000	76mei1	0		
139	xe	g	u235t	sp	fi		4.7443749	7.0	0.7400000	7.0000000%	139			u235t	1.0000000	84den1	36		
139	xe	g	u235t	rc	cu		5.4661676	32.9	5.4700000	1.8000000	0				0.0000000	84chu1	0		
139	xe	g	u235t	rc	cu		5.4661676	32.9	5.4700000	1.8000000	0				0.0000000	85has1	0		
139	xe	g	u235t	sp	cu		6.3955161	15.6	6.4000000	1.0000000	0				0.0000000	90rud1	0		
139	xe	g	u235t	rc	in	x4	0.0000000	0.0	5.1600000	0.4700000	0				0.0000000	72ehr1	0		
139	xe	g	u235t	es	in		4.2247380	4.0	4.2277000	4.0000000%	0				0.0000000	89rid1	0		
139	xe	g	u235t	es	fi		4.6757096	5.8	0.7292900	5.8000000%	139			u235t	1.0000000	91jam2	0		

139 xe g u235t ms fi x4 0.0000000 0.0 48.8000000 6.0000000 139 u235t 100.0000000 76ris1 36
139 xe g u235t es in 4.3759320 5.0 4.3790000 5.0000000% 0 1.0000000 88wah1 0
139 i g u235t rc fi x2 0.0000000 0.0 0.0200000 0.0100000 139 u235t 1.0000000 66kon1 0
139 i g u235t rc fi 0.4616149 52.8 0.0720000 0.0380000 139 u235t 1.0000000 73ven1 0
139 i g u235t sp in 0.5296287 37.7 0.5300000 0.2000000 0 0.0000000 75bri1 0
139 i g u235t rc in 1.0292784 27.2 1.0300000 0.2800000 0 0.0000000 69bra2 0
139 i g u235t es fc 1.0899240 30.0 0.1700000 0.0000000 139 u235t 1.0000000 71gri1 0
139 i g u235t rc in x1 0.0000000 0.0 0.3700000 50.0000000% 137 i g u235t 1.0000000 69bra1 14
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

139 i g u235t rc fi 0.7693581 41.7 0.1200000 0.0500000 139 u235t 1.0000000 73kra3 0
139 i g u235t ms fi 0.9873429 60.0 15.4000000 60.0000000% 139 u235t 100.0000000 76ris1 36
139 i g u235t rc fi 0.5000828 28.2 0.0780000 0.0220000 139 u235t 1.0000000 77kra1 0
139 i g u235t rc fi 0.5000828 28.2 7.8000000 2.2000000 139 u235t 100.0000000 78kra1 0
139 i g u235t sp cu 0.5396217 37.0 0.5400000 0.2000000 0 0.0000000 75bri1 0
139 i g u235t rc in 0.5508937 20.2 0.5600000 20.0000000% 138 i g u235t 1.5100000 83eng1 36
139 i g u235t sp fc 1.2181503 16.0 0.1900000 16.0000000% 139 u235t 1.0000000 84den1 0
139 i g u235t sp fi 1.1989163 20.0 0.1870000 20.0000000% 139 u235t 1.0000000 84den1 36
139 i g u235t sp cu 0.6695306 19.4 0.6700000 0.1300000 0 0.0000000 90rud1 0
139 i g u235t es in 0.5980807 20.0 0.5985000 20.0000000% 0 1.0000000 88wah1 36
139 i g u235t es fi 0.4584092 20.0 0.0715000 20.0000000% 139 u235t 1.0000000 91jam2 36
139 i g u235t es cu 0.6695306 20.0 0.6700000 20.0000000% 0 0.0000000 91jam2 0
139 i g u235t es in 0.8504038 11.0 0.8510000 11.0000000% 0 0.0000000 89rid1 0
139 i g u235t es cu 0.8504038 20.0 0.8510000 20.0000000% 0 0.0000000 89rid1 36
139 i g u235t es in 0.7804528 32.0 0.7810000 32.0000000% 0 0.0000000 74mee1 0
139 te g u235t rc fi x2 0.0000000 0.0 0.0100000 0.0100000 139 u235t 1.0000000 66kon1 0
139 te g u235t es cu 0.0068352 30.0 0.0068400 0.0000000 0 0.0000000 74mee2 0
139 la g u235f ms cu 6.1541004 1.1 0.9900000 1.0000000% 137 cs g u235f 1.0000000 70ebe1 0
139 la g u235f ms cu 6.1603167 1.1 0.9910000 1.0000000% 137 cs g u235f 1.0000000 70ebe1 0
139 la g u235f ms re 6.4213997 0.7 1.0330000 0.0020000 137 cs g u235f 1.0000000 72ebe1 0
139 la g u235f ms re 6.3866311 0.7 3.7970000 0.0110000 148 nd g u235f 1.0000000 72ebe1 0
139 la g u235f ms re 6.3294424 0.7 3.7630000 0.0180000 148 nd g u235f 1.0000000 72ebe1 0
139 la g u235f ms re 6.4268139 2.5 6.4100000 0.1600000 137 cs g u235f 6.2000000 72ebe1 0
139 u235f es cu cm 6.0948877 30.0 6.1000000 0.0000000 0 0.0000000 72sid1 0

139 u235f es re 6.2162492 10.0 0.9700000 10.0000000% 139 u235t 1.0000000 74mee4 0
139 u235f cm cu 0.0000000 0.0 6.6500000 4.5000000% 0 0.0000000 77cro1 0
139 la g u235f ms cu 6.3696573 2.0 6.3750000 0.0470000 0 0.0000000 80mae1 0
139 u235f es cu 6.1321655 20.1 6.3800000 1.2800000 148 nd g u235f 1.7500000 70lis1 0
139 la g u235f ms cu 6.1248626 2.0 6.1300000 2.0000000% 0 0.0000000 72lar1 0
139 la g u235f ms cu cm 6.3516723 6.0 6.3570000 0.0000000 0 0.0000000 80mae3 0
139 la g u235f sp cu rp 6.3354368 15.8 1.0000000 0.0000000 no. relative values = 1 67vil1
139 la g u235f ms cu 6.4855600 2.0 6.4910000 0.0620000 0 0.0000000 81mae1 0
139 la g u235f es cu 6.3936371 1.5 6.3990000 0.0940000 0 0.0000000 81mae1 0
139 la g u235f ms cu 6.5894729 2.0 6.5950000 0.0420000 0 0.0000000 81mae1 0
139 la g u235f cm cu 0.0000000 0.0 6.4950000 0.0700000 0 0.0000000 81mae1 0
139 la g u235f ms cu su 0.0000000 0.0 6.7600000 0.0700000 148 nd g u235f 1.6800000 74mae1 0
139 u235f rc cu 6.4346028 10.0 6.4400000 10.0000000% 0 0.0000000 81koc1 36
139 ba g u235f sp cu 5.9705526 5.1 6.2800000 0.0500000 140 ba g u235f 6.2800000 71dya1 0
139 ba g u235f cm cu 0.0000000 0.0 6.3830000 16.0000000% 0 0.0000000 73net2 0
139 ba g u235f rc re 6.2662701 5.0 1.0140000 0.0140000 140 ba g u235t 0.0000000 75raj1 7
139 ba g u235f rc cu x4 0.0000000 0.0 5.7000000 0.6000000 0 0.0000000 77gud1 0
139 cs g u235f rc in 2.1382065 9.3 2.1400000 0.2000000 0 0.0000000 81mar1 0
139 xe g u235f rc fc su 0.0000000 0.0 0.7200000 0.0100000 139 u235f 1.0000000 72wol1 0
139 xe g u235f rc fc 4.5633500 5.0 0.7200000 0.0100000 139 u235f 1.0000000 75wol1 0
139 xe g u235f rc cu 4.1964801 5.0 4.2000000 0.2000000 0 0.0000000 81mar1 0
139 xe g u235f rc in 3.7168824 5.9 3.7200000 0.2200000 0 0.0000000 81mar1 0
139 i g u235f rc cu 0.4795977 6.2 0.4800000 0.0300000 0 0.0000000 81mar1 0
139 i g u235f rc in 0.4696061 6.4 0.4700000 0.0300000 0 0.0000000 81mar1 0
139 u235he cm cu es 0.0000000 0.0 4.8370000 0.0000000 0 0.0000000 63wea1 0
139 u235he ms cu 4.8696814 5.0 4.8500000 0.2000000 137 u235he 4.9000000 72boc1 0
139 u235he cm cu 0.0000000 0.0 4.9200000 7.0000000% 0 0.0000000 77cro1 0
139 u235he es cu 4.7103411 10.0 4.7380000 10.0000000% 0 0.0000000 74mee8 0
139 ba g u235he cm cu 0.0000000 0.0 5.0000000 0.0000000 0 0.0000000 69gun2 0
139 ba g u235he cm cu 0.0000000 0.0 4.8980000 4.1000000% 0 0.0000000 73net2 0
139 ba g u235he cm cu 0.0000000 0.0 5.0000000 0.0000000 0 0.0000000 60kat1 0
139 ba g u235he rc cu 4.7711764 5.0 0.8900000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
139 ba g u235he rc re su 0.0000000 0.0 0.8900000 0.0400000 99 mo g u235t 0.0000000 56for1 7
139 xe g u235he rc fc 2.0492700 7.5 42.9000000 0.9000000 139 ba g u235he 100.0000000 65wol1 0
139 xe g u235he ms in 1.7894922 16.7 1.8000000 0.3000000 0 0.0000000 72boc1 0
139 u238f cm cu es 0.0000000 0.0 6.0000000 0.0000000 0 0.0000000 64wal1 0

139 u238f es re 6.0816549 20.0 1.5900000 20.0000000% 145 u238f 1.0000000 72mat1 0
139 u238f es cu cm 6.0753599 30.0 6.0500000 0.0000000 0 0.0000000 72sid1 0
139 u238f cm cu 0.0000000 0.0 6.0400000 5.0000000% 0 0.0000000 77cro1 0
139 la g u238f ms cu 5.6204611 2.0 5.5970000 0.0870000 0 0.0000000 81mae1 0
139 la g u238f ms cu 5.7007964 2.0 5.6770000 0.0440000 0 0.0000000 81mae1 0
139 la g u238f es cu 5.6606287 1.5 5.6370000 0.0820000 0 0.0000000 81mae1 0
139 la g u238f cm cu 0.0000000 0.0 5.6370000 0.0560000 0 0.0000000 81mae1 0
139 la g u238f ms cu su 0.0000000 0.0 5.9400000 0.1400000 148 nd g u238f 2.0800000 74mae1 0
139 u238f rc cu 5.6636413 10.0 5.6400000 10.0000000% 0 0.0000000 81koc1 36
139 u238f rc cu x4 0.0000000 0.0 4.8900000 0.3000000 0 0.0000000 85li 1 0
139 ba g u238f rc cu 5.1213778 60.0 5.1000000 0.0000000 0 0.0000000 47gru1 0
139 ba g u238f rc cu 5.3222161 15.0 5.3000000 0.0000000 0 0.0000000 68bel1 0
139 ba g u238f cm cu 0.0000000 0.0 5.2700000 10.0000000% 0 0.0000000 73net2 0
139 ba g u238f rc cu 6.5372881 9.4 6.5100000 0.6100000 0 0.0000000 75har1 0
139 ba g u238f rc cu 6.8385456 15.0 6.8100000 0.0000000 0 0.0000000 75fly4 0
139 ba g u238f es cu 6.2460725 9.3 6.2200000 0.5800000 0 0.0000000 78gin1 0
139 ba g u238f rc cu 5.3222161 13.2 5.3000000 0.7000000 0 0.0000000 77gud1 0
139 ba g u238f rc cu 6.9791325 7.9 6.9500000 0.5500000 0 0.0000000 78nag1 0
139 ba g u238f rc cu 5.4226353 20.4 5.4000000 1.1000000 0 0.0000000 84gud1 0
139 ba g u238f rc cu x4 0.0000000 0.0 4.5500000 0.8700000 0 0.0000000 87chu1 0
139 ba g u238f es cu 5.6736832 5.0 5.6500000 5.0000000% 0 0.0000000 89rid1 0
139 cs g u238f ms in su 0.0000000 0.0 0.1980000 0.0340000 141 cs g u238f 1.0000000 73bal1 0
139 cs g u238f ms in 0.3414252 25.6 0.3400000 0.0870000 0 0.0000000 74bal2 0
139 cs g u238f cm fi 0.0000000 0.0 0.0610000 0.0150000 139 u238f 1.0000000 74wol1 0
139 cs g u238f rc in 0.3695426 23.1 0.3680000 0.0850000 0 0.0000000 74wol4 0
139 xe g u238f rc fc su 0.0000000 0.0 0.9480000 0.0050000 139 u238f 1.0000000 72wol1 0
139 xe g u238f rc fc 5.3977991 5.1 0.9480000 0.0050000 139 u238f 1.0000000 75wol1 0
139 xe g u238f rc cu 5.8243120 15.3 5.8000000 15.3000000% 0 0.0000000 87chu1 0
139 u238he cm cu es 0.0000000 0.0 4.5770000 0.0000000 0 0.0000000 63wea1 0
139 u238he ms cu 5.0017343 6.4 4.9100000 0.3000000 137 u238he 5.0600000 72boc1 0
139 u238he es cu 5.0167463 15.0 5.0090000 15.0000000% 0 0.0000000 74mee9 0
139 u238he cm cu 0.0000000 0.0 4.8300000 3.5000000% 0 0.0000000 77cro1 0
139 u238he rc cu 5.3046690 5.4 5.3000000 0.1400000 137 u238he 5.1500000 77feu1 0
139 ba g u238he rc cu 4.7200863 11.5 4.4000000 0.5000000 140 ba g u238he 4.3000000 62bro1 0
139 ba g u238he rc re 5.1653087 5.0 0.8610000 0.0410000 99 mo g u235t 0.0000000 68gor1 7
139 ba g u238he cm cu 0.0000000 0.0 4.6400000 0.0000000 0 0.0000000 69gun2 0

139 ba g u238he rc cu 4.8274540 5.0 4.8200000 0.2000000 0 0.0000000 71bri1 0
139 ba g u238he cm cu 0.0000000 0.0 4.9100000 4.1000000% 0 0.0000000 73net2 0
139 ba g u238he rc cu 5.1379334 5.0 5.1300000 0.2500000 0 0.0000000 75dar1 0
139 ba g u238he rc cu 5.1142042 6.4 5.1000000 0.3200000 140 ba g u238he 4.6000000 76raj1 0
139 ba g u238he cm cu 0.0000000 0.0 4.6000000 0.0000000 0 0.0000000 60kat1 0
139 ba g u238he rc fi 0.2832516 23.3 0.0560000 0.0130000 139 u238he 1.0000000 60kri1 0
139 ba g u238he es cu su 0.0000000 0.0 4.6800000 0.1600000 0 0.0000000 73dar1 0
139 ba g u238he rc cu 5.5509402 7.7 5.4400000 0.4100000 99 mo g u238he 5.6000000 75ada1 0
139 ba g u238he rc cu rp 4.7385579 9.6 4.9200000 0.0000000 no. relative values = 13 64jam1
139 ba g u238he rc cu rp 4.6343380 13.4 1.0000000 0.0000000 no. relative values = 3 66bro1
139 ba g u238he rc cu 4.6271447 7.8 4.6200000 0.3600000 0 0.0000000 85liu1 0
139 ba g u238he rc cu 4.9337029 7.1 4.9200000 0.3400000 140 ba g u238he 4.6000000 80zhe1 0
139 cs g u238he rc fi 1.4466062 10.2 0.2860000 0.0150000 139 u238he 1.0000000 60kri1 0
139 xe g u238he rc fc 4.0716715 5.7 80.5000000 0.6000000 139 ba g u238he 100.0000000 65wol1 0
139 xe g u238he rc fc 3.4849461 5.7 68.9000000 2.4000000 139 ba g u238he 100.0000000 66gra1 0
139 xe g u238he ms in 2.6641136 6.8 2.6600000 0.1800000 0 0.0000000 72boc1 0
139 xe g u238he rc fc 3.3282060 10.2 0.6580000 0.0200000 139 u238he 1.0000000 60kri1 0
139 xe g u238he rc fc 3.5861672 5.4 0.7090000 0.0070000 139 u238he 1.0000000 77feu1 0
139 xe g u238he rc fi 2.4025803 20.1 0.4750000 0.0950000 139 u238he 1.0000000 62apo1 0
139 i g u238he rc fi 0.9256257 11.1 0.1830000 0.0200000 139 u238he 1.0000000 62apo1 0
139 pu239t cm cu 0.0000000 0.0 5.6900000 0.0000000 0 0.0000000 72sid1 0
139 pu239t cm cu 0.0000000 0.0 5.8200000 0.0000000 0 0.0000000 73lam1 0
139 pu239t cm cu 0.0000000 0.0 5.7400000 0.2200000 0 0.0000000 73wal1 0
139 pu239t cm cu 0.0000000 0.0 5.7300000 6.1000000% 0 0.0000000 77cro1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

139 ba g pu239t rc cu 5.3761332 60.0 5.4000000 0.0000000 140 ba g pu239t 5.3600000 51ste3 0
139 ba g pu239t rc cu 5.6148269 5.0 6.1700000 0.1000000 99 mo g u235t 6.4800000 71ram1 31
139 ba g pu239t cm cu 0.0000000 0.0 5.8400000 4.0000000% 0 0.0000000 73net2 0
139 ba g pu239t rc re 5.7098517 10.1 1.0700000 2.0000000% 140 ba g pu239t 1.0000000 59bar1 0
139 ba g pu239t rc cu x4 0.0000000 0.0 7.5000000 1.4000000 0 0.0000000 80dic1 0
139 ba g pu239t rc cu 5.7309907 5.0 5.7500000 4.8000000% 0 0.0000000 80ram1 0
139 ba g pu239t rc cu 5.5316519 5.0 5.5500000 0.0900000 0 0.0000000 84jai1 0
139 ba g pu239t cm in 0.0000000 0.0 0.2196000 43.0000000% 0 1.0000000 88wah1 0

139 ba g pu239t rc cu 5.6213544 5.0 5.6400000 2.8000000% 0 0.0000000 69dan1 0
139 ba g pu239t rc cu x4 0.0000000 0.0 4.9500000 20.0000000% 0 0.0000000 77gud1 36
139 cs g pu239t rc in 2.3322641 17.9 2.3400000 0.4200000 0 0.0000000 75bal1 0
139 cs g pu239t rc cu 5.4818172 22.7 5.5000000 1.2500000 0 0.0000000 80dic1 0
139 cs g pu239t rc cu 5.7808254 44.8 5.8000000 2.6000000 0 0.0000000 81dic1 0
139 cs g pu239t cm in 0.0000000 0.0 2.4690000 8.0000000% 0 1.0000000 88wah1 0
139 xe g pu239t rc fc 3.0670644 5.7 54.6000000 0.8000000 139 ba g pu239t 100.0000000 65wol1 0
139 xe g pu239t ms cu 3.0598507 4.9 3.0700000 0.1500000 0 0.0000000 76bri2 0
139 xe g pu239t ms in 2.7309417 7.3 2.7400000 0.2000000 0 0.0000000 77bri1 0
139 xe g pu239t rc cu 3.1320870 5.4 3.0700000 0.1500000 140 xe g pu239t 1.5600000 77bri1 0
139 xe g pu239t rc cu 4.0166770 13.4 4.0300000 0.5400000 0 0.0000000 81dic1 0
139 xe g pu239t rc cu rp 3.2145320 22.0 3.0780000 0.0000000 no. relative values = 7 82gol1
139 xe g pu239t cm in 0.0000000 0.0 2.7470000 8.0000000% 0 1.0000000 88wah1 0
139 i g pu239t rc fc 0.3033914 63.0 0.0540000 0.0340000 139 pu239t 1.0000000 71gri1 0
139 i g pu239t rc cu 0.3289090 30.3 0.3300000 0.1000000 0 0.0000000 77bri1 0
139 i g pu239t rc in 0.3189421 31.2 0.3200000 0.1000000 0 0.0000000 77bri1 0
139 i g pu239t cm in 0.0000000 0.0 0.2951000 28.0000000% 0 1.0000000 88wah1 0
139 te g pu239t es cu 0.0008203 30.0 0.0008230 0.0000000 0 0.0000000 74mee2 0
139 pu239f es cu 5.7188601 10.0 5.8800000 10.0000000% 148 nd g pu239f 1.7000000 69lis1 36
139 pu239f es cu cm 5.5729548 10.0 5.6000000 10.0000000% 0 0.0000000 72sid1 36
139 pu239f es re 5.5538764 10.4 0.9900000 10.0000000% 139 pu239t 1.0000000 74mee4 0
139 pu239f cm cu 0.0000000 0.0 5.8300000 3.2000000% 0 0.0000000 77cro1 0
139 la g pu239f ms cu 5.4970449 2.0 5.4990000 0.1100000 148 nd g pu239f 1.6540000 77mae1 0
139 la g pu239f ms cu 5.7222304 2.1 5.7500000 0.1230000 0 0.0000000 77mae1 0
139 pu239f es cu 5.6196891 20.1 5.8800000 1.1800000 148 nd g pu239f 1.7300000 70lis1 0
139 la g pu239f ms cu su 0.0000000 0.0 5.5100000 0.0900000 148 nd g pu239f 1.6500000 74mae1 0
139 pu239f rc cu 5.4465682 10.0 5.4730000 10.0000000% 0 0.0000000 81koc1 36
139 ba g pu239f cm cu 0.0000000 0.0 6.8360000 16.0000000% 0 0.0000000 73net2 0
139 ba g pu239f es cu 5.4813991 4.9 5.5080000 4.9000000% 0 0.0000000 91jam2 0
139 ba g pu239f es cu 5.5729548 5.0 5.6000000 5.0000000% 0 0.0000000 89rid1 0
139 ba g pu239f es cu 5.7908972 8.0 5.8190000 8.0000000% 0 0.0000000 74mee1 0
139 ba g pu239f es fc 5.5831274 5.2 0.9998000 5.0000000% 139 pu239f 1.0000000 89rid1 0
139 ba g pu239f rc cu 6.4216623 15.1 6.4500000 0.0000000 99 mo g pu239f 5.9800000 72cun1 36
139 ba g pu239f rc cu su 0.0000000 0.0 6.5000000 0.0000000 140 ba g pu239f 5.2000000 71cun1 0
139 ba g pu239f rc cu x4 0.0000000 0.0 4.9500000 0.0900000 0 0.0000000 77gud1 0
139 ba g pu239f rc re 6.1243420 7.2 1.1170000 0.0800000 140 ba g u235t 0.0000000 75raj1 7

139		pu241t	cm	cu	es	0.0000000	0.0	5.8800000	0.0000000	0				0.0000000	68lis3	0
139		pu241t	cm	cu		0.0000000	0.0	6.2500000	0.0000000	0				0.0000000	72sid1	0
139		pu241t	es	cu		6.3138820	9.5	6.3000000	0.6000000	0				0.0000000	73wal1	0
139		pu241t	cm	cu		0.0000000	0.0	6.4800000	20.0000000%	0				0.0000000	77cro1	0
139	la g	pu241t	ms	cu		6.2226815	2.0	6.2090000	0.1240000	0				0.0000000	77mae1	0
139	xe g	pu241t	ms	cu		4.5600259	5.5	4.5500000	0.2500000	0				0.0000000	76bri2	0
139	xe g	pu241t	ms	in		3.7281970	6.7	3.7200000	0.2500000	0				0.0000000	77bri1	0
139	xe g	pu241t	rc	cu		4.6272127	6.2	4.5500000	0.2500000	140	xe g	pu241t		3.2500000	77bri1	0
139	i g	pu241t	rc	cu		0.8318289	12.0	0.8300000	0.1000000	0				0.0000000	77bri1	0
139	i g	pu241t	rc	in		0.8318289	12.0	0.8300000	0.1000000	0				0.0000000	77bri1	0
139	te g	pu241t	es	cu		0.0174484	30.0	0.0174100	0.0000000	0				0.0000000	74mee2	0
139		u233t	cm	cu		0.0000000	0.0	5.9000000	0.0000000	0				0.0000000	72sid1	0
139		u233t	cm	cu		0.0000000	0.0	6.3400000	0.0000000	0				0.0000000	73lam1	0
139		u233t	cm	cu		0.0000000	0.0	6.4100000	0.1400000	0				0.0000000	73wal1	0
139	la g	u233t	ms	cu	su	0.0000000	0.0	5.9100000	0.2300000	137	cs g	u233t		6.1600000	59gor1	0
139		u233t	cm	cu		0.0000000	0.0	6.4500000	5.8000000%	0				0.0000000	77cro1	0
139	la g	u233t	ms	cu		6.4307126	4.0	5.9100000	0.2300000	137	cs g	u233t		6.1600000	59ani1	0
139	ba g	u233t	rc	cu		6.2085477	5.0	6.1700000	0.1400000	99	mo g	u235t		6.4200000	66gor1	24
139	ba g	u233t	rc	fi	su	0.0000000	0.0	0.0840000	0.0070000	139		u233t		1.0000000	70eic1	0
139	ba g	u233t	rc	fi		0.5256481	8.8	0.0840000	0.0070000	139		u233t		1.0000000	71eic1	0
139	ba g	u233t	cm	cu		0.0000000	0.0	6.0920000	4.0000000%	0				0.0000000	73net2	0
139	ba g	u233t	rc	re		6.3486592	10.4	1.0000000	2.0000000%	140	ba g	u233t		1.0000000	59bar1	0
139	ba g	u233t	rc	cu	x4	0.0000000	0.0	8.0000000	0.8000000	0				0.0000000	77gud1	0
139	ba g	u233t	rc	cu		6.2027502	5.0	6.2500000	4.9000000%	0				0.0000000	81ram1	0
139	ba g	u233t	sp	fi		0.6320293	22.2	0.1010000	22.0000000%	139		u233t		1.0000000	86lei1	0
139	cs g	u233t	sp	fi		2.5281170	6.6	0.4040000	6.0000000%	139		u233t		1.0000000	86lei1	0
139	xe g	u233t	rc	fc		2.9784051	6.4	47.6000000	0.8000000	139	ba g	u233t		100.0000000	65wol1	0
139	xe g	u233t	sp	cu		3.0666397	5.0	3.0900000	0.1200000	0				0.0000000	75bri1	0
139	xe g	u233t	sp	in		2.8483029	5.2	2.8700000	0.1500000	0				0.0000000	75bri1	0
139	xe g	u233t	sp	fi		2.6219827	5.7	0.4190000	3.0000000%	139		u233t		1.0000000	86lei1	0
139	i g	u233t	rc	fc	ul	0.0000000	0.0	0.0440000	0.0620000	139		u233t		1.0000000	71gri1	0
139	i g	u233t	sp	cu		0.2084124	57.1	0.2100000	0.1200000	0				0.0000000	75bri1	0
139	i g	u233t	sp	in		0.2084124	57.1	0.2100000	0.1200000	0				0.0000000	75bri1	0
139	i g	u233t	sp	fc	x4	0.0000000	0.0	0.0760000	17.0000000%	139		u233t		1.0000000	86lei1	0
139	te g	u233t	es	cu		0.0005687	30.0	0.0005730	0.0000000	0				0.0000000	74mee2	0
139		th232f	cm	cu	x3	0.0000000	0.0	7.5100000	0.0000000	0				0.0000000	65eng1	0

```
139        th232f   es    cu    x3   0.0000000  0.0   6.0000000  0.0000000     0                    0.0000000   72sid1      0
139        th232f   es    cu    cm   7.3438044 30.0   7.3800000  0.0000000     0                    0.0000000   73lam1      0
139        th232f   cm    cu         0.0000000  0.0   7.3200000  0.0000000     0                    0.0000000   74lam1      0
139        th232f   cm    cu         0.0000000  0.0   7.0200000  5.7000000%    0                    0.0000000   77cro1      0
139        th232f   es    cu         7.1149325  5.0   7.1500000  5.0000000%    0                    0.0000000   74mee0      0
139 ba g   th232f   rc    re         6.7973767 10.0   2.2100000  0.1100000    99 mo g      u235t      0.0000000   63iye1      7
139 ba g   th232f   cm    cu         0.0000000  0.0   6.5290000  4.0000000%    0                    0.0000000   73net2      0
139 ba g   th232f   rc    cu         6.4073672 10.2   6.7800000  0.5000000    99 mo g      th232f     3.1000000   64bro1      0
139 ba g   th232f   ms    re         7.2289897  2.8   2.5300000  0.0500000   132 te g      th232f     1.0000000   68har1      0
139 ba g   th232f   rc    re         7.0126782  5.0   2.2800000  0.0500000    99 mo g      u235t      0.0000000   81ert1      7
139 ba g   th232f   cm    cu         0.0000000  0.0   7.0400000  0.2900000     0                    0.0000000   81ert1      0
139 ba g   th232f   rc    cu    x4   0.0000000  0.0   8.5500000  0.5400000   140 ba g      th232f     7.9700000   85chu1      0
139 ba g   th232f   rc    cu         6.8860605  5.2   6.9200000  0.3600000     0                    0.0000000   86ric1      0
139 xe g   th232f   rc    in         5.2541040 10.3   5.2800000 10.3000000%    0                    0.0000000   77iza1      0
139 xe g   th232f   rc    fc         6.9208072  5.4   0.9800000  0.0370000   139          th232f     1.0000000   78iza1      0
139 xe g   th232f   ms    fi         5.3318463 10.5   0.7550000  0.0780000   139          th232f     1.0000000   77iza1      0
139 xe g   th232f   rc    cu    x4   0.0000000  0.0   3.7000000  0.7000000   140 ba g      th232f     7.9700000   85chu1      0
139 xe g   th232f   rc    fc         6.7089457  5.4   0.9500000  0.0100000   139          th232f     1.0000000   89sri1      0
140 ce g   u235t    ms    cu         6.5554040  6.0   6.5600000  0.0000000     0                    0.0000000   55gle1      0
140 ce g   u235t    ms    cu         6.1317006  1.7   6.3300000  0.0000000   142 ce g      u235t      6.0300000   55pet2      0
140        u235t    es    cu         6.3955161 30.0   6.4000000  0.0000000     0                    0.0000000   72sid1      0
140        u235t    cm    cu         0.0000000  0.0   6.3700000  0.0000000     0                    0.0000000   73lam1      0
140        u235t    cm    cu         0.0000000  0.0   6.3600000  0.1400000     0                    0.0000000   73wal1      0
140 ce g   u235t    ms    re         6.2534086  1.0   1.0500000  0.0100000   145 nd g      u235t      0.6600000   59chu1      0
140        u235t    ms    cu         6.0657473  2.0   6.0700000  0.0630000     0                    0.0000000   76dii1      0
140 ce g   u235t    ms    cu         5.8962336  4.8   6.3000000  0.3000000   146 nd g      u235t      3.2000000   57gor1      0
140        u235t    cm    cu         0.0000000  0.0   6.3100000  1.2000000%    0                    0.0000000   77cro1      0
140 ce g   u235t    ms    cu         6.3446417  4.8   6.3000000  0.3000000   142 ce g      u235t      5.8000000   59ani1      0
140 ce g   u235t    ms    re         6.2850222  1.6   1.0760000  1.4000000%  142 ce g      u235t      1.0000000   62far1      0
140 ce g   u235t    ms    cu         6.0777389  2.0   6.0820000  0.0540000     0                    0.0000000   78mae1      0
140 ce g   u235t    ms    cu         6.0997235  2.0   6.1040000  0.0790000     0                    0.0000000   78mae1      0
140 ce g   u235t    ms    cu         6.1177108  2.0   6.1220000  0.0540000     0                    0.0000000   78mae1      0
140 ce g   u235t    ms    cu         6.3055791  2.0   6.3100000  0.0300000     0                    0.0000000   70lis1      0
140        u235t    es    re         6.2203940  2.1   1.0000000  2.0000000%  140          u235f      0.9600000   74mee4      0
140 ce g   u235t    ms    cu    cm   6.0977249  6.0   6.1020000  0.0000000     0                    0.0000000   80mae3      0
140 ce g   u235t    ms    cu    rp   6.2047897  3.2   6.1930000  0.0000000  no. relative values =    1            86chi1
```

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 140 la g   u235t    rc    in        0.1015146 99.9   0.1000000  0.1000000   140 ba g      u235t       6.1000000   51sug1      0
 140 la g   u235t    rc    fi        0.0043347 10.0   0.0007000  0.0000400   140 ba g      u235t       1.0000000   57gru1      0
 140 ba g   u235t    rc    cu        6.2337853 20.0   6.3000000  0.5900000    89 sr g      u235t       4.7800000   53ree1     36
 140 ba g   u235t    rc    cu        6.3334870  5.1   6.5100000  0.1500000   141 ce g      u235t       6.0000000   67bre1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                 nuclide     material       value      no.   treatment

 140 ba g   u235t    rc    cu        6.3555441  5.0   6.3600000  0.2500000     0                    0.0000000   68ciu1      0
 140 ba g   u235t    rc    cu        6.2855931  5.0   6.2900000  0.2500000     0                    0.0000000   71kra1     36
 140 ba g   u235t    rc    cu        6.3955161  5.0   6.4000000  0.2600000     0                    0.0000000   71mcl1     36
 140 ba g   u235t    rc    cu        6.4719105  5.0   6.3000000  0.0900000   144 ce g      u235t       5.3500000   72deb1      0
 140 ba g   u235t    cm    cu         0.0000000  0.0   6.3100000  5.0000000%    0                    0.0000000   73net2      0
 140 ba g   u235t    rc    cu        6.3099059  5.1   5.8100000  3.0000000%  131 i  g      u235t       2.6600000   74lar1      0
 140 ba g   u235t    rc    cu        6.5953759  5.0   6.6000000  0.3300000     0                    0.0000000   74rao1      0
 140 ba g   u235t    rc    fi    su   0.0000000  0.0   0.0700000  0.0300000   140          u235t       1.0000000   59fer1      0
 140 ba g   u235t    rc    cu        6.3155721 20.0   6.3200000  0.2400000     0                    0.0000000   54yaf1      0
 140 ba g   u235t    rc    cu        6.1456912 20.0   6.1500000  0.1300000     0                    0.0000000   51fre1      0
 140 ba g   u235t    rc    cu    aw   6.5454110 20.0   6.5500000  0.6400000     0                    0.0000000   52eng1     36
 140 ba g   u235t    rc    cu    aw   6.6753199 10.0   6.6800000  0.4600000     0                    0.0000000   60san2     36
 140 ba g   u235t    es    cu        6.3841241 30.0   6.3886000  0.0000000     0                    0.0000000   63wea1      0
 140 ba g   u235t    bm    cu    su   0.0000000  0.0   6.2200000  2.3000000%    0                    0.0000000   76gil1      0
 140 ba g   u235t    bm    cu         6.2156422  2.3   6.2200000  2.3000000%    0                    0.0000000   77gil1      0
 140 ba g   u235t    rc    cu        6.2456212  5.0   6.2500000  0.0500000     0                    0.0000000   79ram1      0
 140 ba g   u235t    rc    cu    su   0.0000000  0.0   5.7300000  3.0000000%   95 zr g      u235t       6.4500000   73lar4      0
 140 ba g   u235t    rc    cu        6.3355581  5.0   6.3400000  4.8000000%    0                    0.0000000   74bla1     36
 140 ba g   u235t    rc    cu        6.7952358  5.0   6.8000000  0.2100000     0                    0.0000000   76thi1      0
 140 ba g   u235t    rc    cu        6.2656071  5.0   6.2700000  3.7000000%    0                    0.0000000   81lau1      0
 140 ba g   u235t    sp    fi        0.1859280 99.9   0.0300000  0.0750000   140          u235t       1.0000000   84den1     36
 140 ba g   u235t    rc    cu    rp   6.0215908 63.2   6.1000000  0.0000000  no. relative values =    1            51bal1
 140 ba g   u235t    rc    cu    rp   6.2469513 63.2   6.1000000  0.0000000  no. relative values =    1            51bur1
 140 ba g   u235t    rc    cu    rp   6.2936152 63.2   6.1000000  0.0000000  no. relative values =    1            51eng2
 140 ba g   u235t    rc    cu    rp   6.0064185 63.2   6.1000000  0.0000000  no. relative values =    1            51fin1
 140 ba g   u235t    rc    cu    rp   6.2058915 63.2   6.1000000  0.0000000  no. relative values =    1            51kat6
 140 ba g   u235t    rc    cu    rp   6.2720742 63.2   6.1000000  0.0000000  no. relative values =    1            51nov1
 140 ba g   u235t    rc    cu    rp   6.5307432 63.5   6.1000000  0.0000000  no. relative values =    1            51sul1
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140	ba	g	u235t	rc	cu	rp	6.3754429	63.2	6.4000000	0.0000000	no. relative values =	1		52eng1
140	ba	g	u235t	rc	cu	rp	6.5894595	63.2	6.2000000	0.0000000	no. relative values =	1		53har1
140	ba	g	u235t	rc	re	rp	6.2785998	31.6	1.0000000	0.0000000	no. relative values =	1		55bro1
140	ba	g	u235t	rc	cu	rp	6.1936637	15.8	6.3200000	0.0000000	no. relative values =	4		57bae1
140	ba	g	u235t	rc	cu	rp	6.7204258	31.6	6.3500000	0.0000000	no. relative values =	1		62cro1
140	ba	g	u235t	rc	cu	rp	6.4761998	19.0	6.3500000	0.0000000	no. relative values =	1		65bal1
140	ba	g	u235t	rc	cu	rp	5.8677495	31.6	6.3200000	0.0000000	no. relative values =	1		56bar1
140	ba	g	u235t	rc	cu	rp	6.2012697	28.3	6.1700000	0.0000000	no. relative values =	5		53pap1
140	ba	g	u235t	rc	cu	rp	6.2241903	28.3	0.0430000	0.0000000	no. relative values =	5		51gru1
140	ba	g	u235t	ms	re	rp	6.3136726	2.9	1.0000000	0.0000000	no. relative values =	2		62far1
140	ba	g	u235t	rc	cu	rp	6.7235327	63.2	6.1000000	0.0000000	no. relative values =	1		51kat7
140	ba	g	u235t	rc	cu	rp	6.2705159	36.7	6.2000000	0.0000000	no. relative values =	3		54wil1
140	ba	g	u235t	cm	in		0.0000000	0.0	0.2650000	62.0000000%	0		1.0000000	88wah1 0
140	ba	g	u235t	rc	cu		6.1956562	6.3	6.2000000	0.3900000	0		0.0000000	80wan1 0
140	ba	g	u235t	rc	fi		0.2850897	65.2	0.0460000	0.0300000	140	u235t	1.0000000	69wah1 0
140	cs	g	u235t	rc	fc		5.7885599	10.0	0.9340000	0.0260000	140	u235t	1.0000000	62wah1 0
140	cs	g	u235t	ms	in		2.1185147	8.0	2.1200000	0.1700000	0		0.0000000	72bal1 0
140	cs	g	u235t	ms	in		2.0385707	5.9	2.0400000	0.1200000	0		0.0000000	72cha1 0
140	cs	g	u235t	rc	fi		2.0433493	8.0	0.3297000	0.0264000	140	u235t	1.0000000	72ree1 0
140	cs	g	u235t	cm	cu		0.0000000	0.0	5.9050000	7.0000000%	0		0.0000000	73net2 0
140	cs	g	u235t	rc	fi	su	0.0000000	0.0	0.3400000	0.0500000	140	u235t	1.0000000	59fer1 0
140	cs	g	u235t	sp	in	x4	0.0000000	0.0	1.6924000	0.0627000	0		0.0000000	75ree1 0
140	cs	g	u235t	sp	re	rp	5.9575121	9.2	1.0000000	0.0000000	no. relative values =	3		75ree1
140	cs	g	u235t	sp	fi	x4	0.0000000	0.0	45.2000000	1.9000000	140	u235t	100.0000000	79bal1 0
140	cs	g	u235t	ms	cu		6.1356982	9.9	6.1400000	0.6100000	0		0.0000000	79shm1 0
140	cs	g	u235t	rc	cu		5.6960065	5.0	5.7000000	0.2000000	0		0.0000000	81mar1 0
140	cs	g	u235t	sp	fi	x4	0.0000000	0.0	0.2200000	14.0000000%	140	u235t	1.0000000	84den1 36
140	cs	g	u235t	sp	in	x4	0.0000000	0.0	2.4000000	0.6000000	0		0.0000000	90rud1 0
140	cs	g	u235t	es	in		2.1824699	4.0	2.1840000	4.0000000%	0		0.0000000	74mee1 0
140	cs	g	u235t	rc	cu	x4	0.0000000	0.0	4.1800000	1.2500000	0		0.0000000	84chu1 36
140	cs	g	u235t	rc	cu	x4	0.0000000	0.0	4.1800000	0.8200000	0		0.0000000	85has1 36
140	cs	g	u235t	es	in		2.1265091	10.0	2.1280000	10.0000000%	0		1.0000000	88wah1 0
140	cs	g	u235t	es	in		2.0105904	8.0	2.0120000	8.0000000%	0		0.0000000	89rid1 0
140	cs	g	u235t	es	cu		5.6460415	5.0	5.6500000	5.0000000%	0		0.0000000	89rid1 0
140	cs	g	u235t	sp	cu	x4	0.0000000	0.0	4.3000000	1.1000000	0		0.0000000	90rud1 36
140	xe	g	u235t	cm	fc	x3	0.0000000	0.0	0.5960000	0.0010000	140	u235t	1.0000000	71tro3 0

140 xe g u235t rc in 2.9179542 13.0 2.9200000 0.3800000 0 0.0000000 72ehr1 0
140 xe g u235t cm cu 0.0000000 0.0 3.3420000 16.1000000% 0 0.0000000 73net2 0
140 xe g u235t rc fc aj 3.6906641 10.0 0.5960000 0.0100000 140 ba g u235t 1.0000000 58wah1 0
140 xe g u235t sp cu 3.7473727 5.0 3.7500000 0.1000000 0 0.0000000 75bri1 0
140 xe g u235t sp in 3.5475128 5.0 3.5500000 0.1300000 0 0.0000000 75bri1 0
140 xe g u235t rc fc 3.5946089 5.0 0.5800000 0.0100000 140 u235t 1.0000000 76mei1 0
140 xe g u235t sp fi 4.4622732 7.0 0.7200000 7.0000000% 140 u235t 1.0000000 84den1 36
140 xe g u235t sp in 3.5774918 5.0 3.5800000 0.0700000 0 0.0000000 90rud1 0
140 xe g u235t sp cu 3.6974077 27.0 3.7000000 1.0000000 0 0.0000000 90rud1 0
140 xe g u235t es in 3.6954091 9.0 3.6980000 9.0000000% 0 1.0000000 88wah1 0
140 xe g u235t es in 3.4885542 8.0 3.4910000 8.0000000% 0 0.0000000 74mee1 0
140 xe g u235t es in 3.4875549 4.0 3.4900000 4.0000000% 0 0.0000000 89rid1 0
140 xe g u235t es fi 3.6251631 6.6 0.5849300 6.6000000% 140 u235t 1.0000000 91jam2 0
140 i g u235t rc fi su 0.0000000 0.0 0.0340000 0.0210000 140 u235t 1.0000000 73kra3 0
140 i g u235t rc fi su 0.0000000 0.0 0.0180000 0.0050000 140 u235t 1.0000000 77kra1 0
140 i g u235t rc fi 0.1115568 27.8 1.8000000 0.5000000 140 u235t 100.0000000 78kra1 0
140 i g u235t rc in 0.1573982 31.4 0.1600000 0.0500000 138 i g u235t 1.5100000 83eng1 0
140 i g u235t sp fi 0.2417065 77.0 0.0390000 77.0000000% 140 u235t 1.0000000 84den1 36
140 i g u235t sp fc 0.2479041 75.0 0.0400000 75.0000000% 140 u235t 1.0000000 84den1 36
140 i g u235t cm in 0.0000000 0.0 0.1586000 19.0000000% 0 1.0000000 88wah1 0
140 i g u235t sp cu 0.1498949 20.0 0.1500000 0.0300000 0 0.0000000 90rud1 0
140 u235f es cu 5.6688411 30.0 5.9000000 0.0000000 148 nd g u235f 1.7500000 72sid1 0
140 u235f cm cu 0.0000000 0.0 5.8000000 0.0000000 0 0.0000000 73lar3 0
140 u235f es re 5.9642495 10.0 0.9600000 10.0000000% 140 u235t 1.0000000 74mee4 0
140 u235f cm cu 0.0000000 0.0 5.9500000 1.5000000% 0 0.0000000 77cro1 0
140 u235f ms cu x4 0.0000000 0.0 6.6400000 0.3000000 148 u235f 1.7400000 77gab1 0
140 ce g u235f ms cu 5.8860155 2.0 5.8930000 0.0610000 0 0.0000000 80mae1 0
140 ce g u235f ms cu 5.9666955 1.8 6.2100000 0.1100000 148 nd g u235f 1.7500000 70lis1 0
140 ce g u235f rc cu rp 5.9895310 15.8 5.6900000 0.0000000 no. relative values = 1 72lar1
140 ce g u235f ms cu cm 5.8999989 6.0 5.9070000 0.0000000 0 0.0000000 80mae3 0
140 ce g u235f ms cu 5.9159799 2.0 5.9230000 0.0570000 0 0.0000000 81mae1 0
140 ce g u235f ms cu 6.0837808 2.0 6.0910000 0.0450000 0 0.0000000 81mae1 0
140 ce g u235f ms cu 5.9059918 2.0 5.9130000 0.0640000 0 0.0000000 81mae1 0
140 ce g u235f cm cu 0.0000000 0.0 5.9760000 0.0720000 0 0.0000000 81mae1 0
140 ce g u235f ms cu su 0.0000000 0.0 6.1900000 0.0500000 148 nd g u235f 1.6800000 74mae1 0
140 la g u235f rc cu 5.9684782 5.1 5.8400000 3.0000000% 140 ba g u235f 5.8400000 72sch1 0

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 140 la g   u235f    rc    cu        6.0885046  5.1   0.9800000  0.0170000   140 la g      u235t       1.0000000   79yur1      0
 140 la g   u235f    rc    cu        6.0528176 10.0   6.0600000 10.0000000%    0                    0.0000000   81koc1     36
 140 la g   u235f    rc    cu        6.1127465  5.0   6.1200000  2.9000000%    0                    0.0000000   86dho1      0
 140 ba g   u235f    bm    cu        6.0927702  1.9   6.1000000  1.9000000%    0                    0.0000000   77gil1      0
 140 ba g   u235f    bm    cu    su   0.0000000  0.0   6.0600000  1.9000000%    0                    0.0000000   76gil1      0
 140 ba g   u235f    es    cu    cm   6.0428294  3.9   6.0500000  3.9000000%    0                    0.0000000   73net2      0
 140 ba g   u235f    rc    cu        5.7550702  5.0   0.9530000  1.5000000%   99 mo g      u235t       0.0000000   76for1      7
 140 ba g   u235f    rc    cu        5.7731869  5.0   0.9560000  1.5000000%   99 mo g      u235t       0.0000000   76for1      7
 140 ba g   u235f    rc    cu        5.7792258  5.0   0.9570000  1.5000000%   99 mo g      u235t       0.0000000   76for1      7
 140 ba g   u235f    rc    cu        5.9592483  5.1   0.9600000  0.0090000   140 ba g      u235t       1.0000000   77deb1      0
 140 ba g   u235f    rc    cu        5.8154592  5.0   0.9630000  1.5000000%   99 mo g      u235t       0.0000000   76for1      7
 140 ba g   u235f    rc    cu        5.8637704  5.0   0.9710000  1.5000000%   99 mo g      u235t       0.0000000   76for1      7
 140 ba g   u235f    rc    cu        5.9905872  5.0   0.9920000  1.5000000%   99 mo g      u235t       0.0000000   76for1      7
 140 ba g   u235f    rc    cu        5.6632798  5.0   5.6700000  2.9000000%    0                    0.0000000   74lar1      0
 140 ba g   u235f    rc    cu        5.7556802  5.1   5.6800000  0.2300000   140 ba g      u235f       5.8900000   72cun2      0
 140 ba g   u235f    rc    cu        5.9529361  6.0   5.9600000  0.3600000    0                    0.0000000   74cun1      0
 140 ba g   u235f    rc    cu        5.9529361  5.0   5.9600000  3.9000000%    0                    0.0000000   81lau1      0
 140 ba g   u235f    rc    cu        5.9629242  6.0   5.9700000  0.3600000    0                    0.0000000   73cun2      0
 140 ba g   u235f    rc    cu        5.9928887  5.0   6.0000000  0.1800000    0                    0.0000000   73mce1      0
 140 ba g   u235f    rc    cu        6.0328413  5.0   6.0400000  1.8000000%    0                    0.0000000   75dud1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type          value   err.     value                nuclide     material       value      no.   treatment

 140 ba g   u235f    rc    cu        6.0727939  6.4   6.0800000  6.4000000%    0                    0.0000000   75dud2      0
 140 ba g   u235f    rc    cu        6.1138758 15.0   6.1000000  0.0000000   137 cs g      u235f       6.2000000   70mce1      0
 140 ba g   u235f    rc    cu        6.0927702  5.0   6.1000000  0.1500000    0                    0.0000000   71kra1      0
 140 ba g   u235f    rc    cu        6.1227346  5.0   6.1300000  3.1000000%    0                    0.0000000   82gar1      0
 140 ba g   u235f    rc    cu        6.3324857  5.8   6.3400000  0.3700000    0                    0.0000000   80wan1      0
 140 ba g   u235f    rc    cu        6.0260924  5.1   0.9380000  0.3000000%   95 zr g      u235f       1.0000000   75dud1      0
 140 ba g   u235f    rc    cu        5.9928887 10.0   6.0000000  0.5000000    0                    0.0000000   60pet1      0
 140 ba g   u235f    rc    cu        6.0927702  5.0   6.1000000  0.2000000    0                    0.0000000   81mar1      0
 140 ba g   u235f    rc    cu        5.8456537  5.0   0.9680000  1.5000000%   99 mo g      u235t       0.0000000   76for1      7
 140 ba g   u235f    rc    cu        5.8758481  5.0   0.9730000  1.5000000%   99 mo g      u235t       0.0000000   76for1      7
 140 ba g   u235f    rc    cu    rp   6.0112950 15.9   1.0000000  0.0000000  no. relative values =    1            75dud1
 140 ba g   u235f    rc    cu    rp   6.1433459 36.6   1.0000000  0.0000000  no. relative values =    1            73man1
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140 ba g u235f rc cu rp 6.0200855 6.1 5.7500000 0.0000000 no. relative values = 7 70bow1
140 ba g u235f rc cu rp 6.2397243 4.4 5.8400000 0.0000000 no. relative values = 13 72sch1
140 ba g u235f rc cu rp 5.5167108 8.3 5.8500000 0.0000000 no. relative values = 6 78bya1
140 ba g u235f rc cu rp 6.1527328 6.2 5.8900000 0.0000000 no. relative values = 11 72cun2
140 ba g u235f rc cu rp 6.0723223 9.1 6.0300000 0.0000000 no. relative values = 3 75zim1
140 ba g u235f rc cu rp 6.0701457 3.4 6.2200000 0.0000000 no. relative values = 22 77bla1
140 ba g u235f rc cu su 0.0000000 0.0 0.9630000 0.0100000 140 ba g u235t 1.0000000 76deb1 0
140 ba g u235f rc cu su 0.0000000 0.0 5.6700000 2.9000000% 140 ce g u235f 5.6900000 72lar1 0
140 ba g u235f rc cu su 0.0000000 0.0 5.9700000 0.1800000 0 0.0000000 73dud1 0
140 ba g u235f rc cu su 0.0000000 0.0 6.0200000 7.0000000% 0 0.0000000 73dud2 0
140 ba g u235f rc cu x4 0.0000000 0.0 5.0000000 0.4000000 99 mo g u235f 5.9000000 60bon1 0
140 ba g u235f rc cu x4 0.0000000 0.0 6.2900000 0.1300000 0 0.0000000 75raj1 0
140 ba g u235f rc re 6.0836071 5.0 0.9790000 3.3000000% 137 cs g u235f 1.0000000 77kel1 0
140 ba g u235f rc re rp 6.1254138 7.7 1.0000000 0.0000000 no. relative values = 6 73man1
140 ba g u235f rc re rp 5.6847470 10.6 1.4230000 0.0000000 no. relative values = 3 72rid2
140 ba g u235f rc re rp 5.7869648 10.2 1.7390000 0.0000000 no. relative values = 3 72rid1
140 ba g u235f rc re su 0.0000000 0.0 0.9260000 0.4900000% 99 mo g u235t 0.0000000 64cow1 7
140 ba g u235f sp cu rp 6.2851387 7.9 6.2800000 0.0000000 no. relative values = 4 71dya1
140 cs g u235f cm cu 0.0000000 0.0 5.5090000 6.0000000% 0 0.0000000 73net2 0
140 cs g u235f rc cu 5.6932442 5.0 5.7000000 0.0800000 0 0.0000000 81mar1 0
140 cs g u235f rc in 3.0663614 6.5 3.0700000 0.2000000 0 0.0000000 81mar1 0
140 xe g u235f rc fc su 0.0000000 0.0 0.4700000 0.0100000 140 u235f 1.0000000 72wol1 0
140 xe g u235f cm cu 0.0000000 0.0 2.8030000 22.0000000% 0 0.0000000 73net2 0
140 xe g u235f rc fc 2.8052807 5.0 0.4700000 0.0100000 140 u235f 1.0000000 75wol1 0
140 xe g u235f rc cu 2.6268829 5.0 2.6300000 0.1000000 0 0.0000000 81mar1 0
140 xe g u235f rc in 2.5469777 5.1 2.5500000 0.1300000 0 0.0000000 81mar1 0
140 u235he cm cu es 0.0000000 0.0 4.4450000 0.0000000 0 0.0000000 63wea1 0
140 u235he ms cu 4.8780566 8.7 4.8500000 0.4000000 137 u235he 4.9000000 72boc1 0
140 u235he cm cu 0.0000000 0.0 4.4200000 2.6000000% 0 0.0000000 77cro1 0
140 u235he es cu 4.4595154 10.0 4.4780000 10.0000000% 0 0.0000000 74mee8 0
140 la g u235he cm fi 0.0000000 0.0 0.0072000 0.0005000 140 u235he 1.0000000 72net2 0
140 la g u235he rc fi 0.0328915 7.4 0.0073000 0.0005000 140 u235he 1.0000000 65net1 0
140 ba g u235he rc re 4.4750327 10.0 0.8600000 0.0200000 99 mo g u235t 0.0000000 56for1 7
140 ba g u235he rc re 4.3988864 10.4 0.8600000 0.0400000 99 mo g u235he 1.0000000 58pro1 0
140 ba g u235he rc re x4 0.0000000 0.0 0.9600000 5.0000000% 99 mo g u235t 0.0000000 62hic1 0
140 ba g u235he cm cu 0.0000000 0.0 4.6100000 0.0000000 0 0.0000000 69gun2 0

140 ba g u235he rc re 4.2324566 5.0 0.0425000 0.0017000 0 0.0100000 69net1 0
140 ba g u235he rc cu 4.4615072 99.9 4.4800000 6.3000000 0 0.0000000 73man1 36
140 ba g u235he cm cu 0.0000000 0.0 4.5600000 3.9000000% 0 0.0000000 73net2 0
140 ba g u235he cm cu 0.0000000 0.0 4.6000000 0.0000000 0 0.0000000 60kat1 0
140 ba g u235he rc cu 4.5478821 5.0 0.8740000 1.5000000% 99 mo g u235t 0.0000000 76for1 7
140 ba g u235he rc cu 4.4750327 5.0 0.8600000 1.5000000% 99 mo g u235t 0.0000000 76for1 7
140 ba g u235he rc re su 0.0000000 0.0 0.8740000 0.7200000% 99 mo g u235t 0.0000000 64cow1 7
140 ba g u235he rc cu 4.5909706 5.0 4.6100000 4.2000000% 0 0.0000000 81lau1 0
140 ba g u235he rc cu x4 0.0000000 0.0 4.2000000 0.3000000 99 mo g u235he 5.6500000 60bon1 0
140 ba g u235he rc cu 4.7403514 8.2 4.7600000 0.3900000 0 0.0000000 84chi1 0
140 ba g u235he rc re rp 4.4514652 6.4 1.0000000 0.0000000 no. relative values = 17 73man1
140 cs g u235he cm cu 0.0000000 0.0 3.2500000 10.0000000% 0 0.0000000 73net2 0
140 xe g u235he rc fc 0.9123355 5.7 20.4000000 0.8000000 140 ba g u235he 100.0000000 65wol1 0
140 xe g u235he ms in 0.9560373 15.6 0.9600000 0.1500000 0 0.0000000 72boc1 0
140 xe g u235he cm cu x3 0.0000000 0.0 0.8851000 32.1000000% 0 0.0000000 73net2 0
140 i g u235he es cu 0.0231940 30.1 0.0230000 0.0000000 140 u235he 4.4680000 74mee2 0
140 u238f es cu cm 5.8171912 30.0 5.8000000 0.0000000 0 0.0000000 64wal1 0
140 ce g u238f ms re 5.7490698 4.1 1.2500000 0.0500000 142 ce g u238f 1.0000000 72mat1 0
140 u238f es cu 6.4691178 30.0 6.4500000 0.0000000 0 0.0000000 72sid1 0
140 u238f cm cu 0.0000000 0.0 5.9200000 0.0000000 0 0.0000000 73lar3 0
140 u238f cm cu 0.0000000 0.0 6.0700000 2.1000000% 0 0.0000000 77cro1 0
140 ce g u238f ms cu 5.6476902 2.0 5.6310000 0.0440000 0 0.0000000 81mae1 0
140 ce g u238f ms cu 5.7379570 2.0 5.7210000 0.0430000 0 0.0000000 81mae1 0
140 ce g u238f es cu 5.6928236 1.3 5.6760000 0.0740000 0 0.0000000 81mae1 0
140 ce g u238f cm cu 0.0000000 0.0 5.6760000 0.0590000 0 0.0000000 81mae1 0
140 ce g u238f ms cu su 0.0000000 0.0 5.9200000 0.1200000 148 nd g u238f 2.0800000 74mae1 0
140 u238f rc cu 5.5764798 10.0 5.5600000 10.0000000% 0 0.0000000 81koc1 36
140 u238f rc cu 5.6567169 5.0 5.6400000 0.1600000 0 0.0000000 85li 1 0
140 u238f rc cu 5.7269244 5.0 5.7100000 0.1700000 0 0.0000000 85li 1 0
140 la g u238f rc cu 5.6147116 5.1 5.6700000 0.0588000 140 la g u235t 6.3000000 71die1 33
140 la g u238f rc cu 6.1180804 5.0 6.1000000 0.1300000 0 0.0000000 78nag1 0
140 la g u238f rc cu 6.0139800 5.1 0.9640000 0.0190000 140 la g u235t 1.0000000 79yur1 0
140 la g u238f rc cu 5.6065687 10.6 5.5900000 10.6000000% 0 0.0000000 88afa1 0
140 la g u238f rc cu 5.6567169 11.3 5.6400000 11.3000000% 0 0.0000000 88afa1 0
140 la g u238f rc cu 6.1481693 10.4 6.1300000 10.4000000% 0 0.0000000 88afa1 0
140 la g u238f rc cu 5.7068651 10.9 5.6900000 10.9000000% 0 0.0000000 88afa1 0

140 la g u238f rc cu 5.8372504 10.7 5.8200000 10.7000000% 0 0.0000000 88afa1 0
140 ba g u238f bm cu 6.0177840 2.2 6.0000000 2.2000000% 0 0.0000000 77gil1 0
140 ba g u238f bm cu su 0.0000000 0.0 5.9900000 2.2000000% 0 0.0000000 76gil1 0
140 ba g u238f cm cu 0.0000000 0.0 5.7000000 0.0000000 0 0.0000000 60kat1 0
140 ba g u238f cm cu 0.0000000 0.0 6.3000000 4.1000000% 0 0.0000000 73net2 0
140 ba g u238f es cu 5.9776654 2.0 5.9600000 0.1200000 0 0.0000000 78gin1 0
140 ba g u238f ms re rp 5.8261468 19.2 1.0000000 0.0000000 no. relative values = 1 72mat1
140 ba g u238f rc cu 5.7145735 5.0 0.9080000 1.5000000% 99 mo g u235t 0.0000000 76for1 7
140 ba g u238f rc cu 5.7334542 5.0 0.9110000 1.5000000% 99 mo g u235t 0.0000000 76for1 7
140 ba g u238f rc cu 5.7460414 5.0 0.9130000 1.5000000% 99 mo g u235t 0.0000000 76for1 7
140 ba g u238f rc cu 5.7712157 5.0 0.9170000 1.5000000% 99 mo g u235t 0.0000000 76for1 7
140 ba g u238f rc cu 5.8026836 5.0 0.9220000 1.5000000% 99 mo g u235t 0.0000000 76for1 7
140 ba g u238f rc cu 5.8656194 5.0 0.9320000 1.5000000% 99 mo g u235t 0.0000000 76for1 7
140 ba g u238f rc cu 5.8845002 5.0 0.9350000 1.5000000% 99 mo g u235t 0.0000000 76for1 7
140 ba g u238f rc cu 5.6165984 15.0 5.6000000 0.0000000 0 0.0000000 68bel1 0
140 ba g u238f rc cu 5.7871022 15.0 5.7700000 0.0000000 0 0.0000000 75fly4 0
140 ba g u238f rc cu 5.7871022 5.0 5.7700000 0.2200000 0 0.0000000 85chi1 0
140 ba g u238f rc cu 5.9375468 5.0 5.9200000 3.0000000% 0 0.0000000 74lar1 0
140 ba g u238f rc cu 5.9876950 15.0 5.9700000 0.0000000 0 0.0000000 75fly4 0
140 ba g u238f rc cu 5.9977247 5.0 5.9800000 3.8000000% 0 0.0000000 75dud1 0
140 ba g u238f rc cu 6.0177840 15.0 6.0000000 0.0000000 0 0.0000000 70mce1 0
140 ba g u238f rc cu 5.9099094 5.1 6.0300000 0.2200000 140 ba g u235t 6.3600000 68ciu1 0
140 ba g u238f rc cu 5.8286333 5.0 6.0700000 0.2400000 140 ba g u238f 6.0700000 77har1 0
140 ba g u238f rc cu 6.1381396 5.0 6.1200000 0.2000000 0 0.0000000 73mce1 0
140 ba g u238f rc cu 6.1782582 5.0 6.1600000 0.1300000 0 0.0000000 75har1 0
140 ba g u238f rc cu 6.1983175 6.3 6.1800000 6.3000000% 0 0.0000000 75dud2 0
140 ba g u238f rc cu 6.3587917 6.5 6.3400000 0.4100000 0 0.0000000 71kra1 0
140 ba g u238f rc cu 6.7198588 10.0 6.7000000 0.5000000 0 0.0000000 60pet1 0
140 ba g u238f rc cu 5.1259511 10.1 5.8000000 0.5000000 99 mo g u238f 7.0000000 60bon1 0
140 ba g u238f rc cu rp 5.6792076 23.9 5.7000000 0.0000000 no. relative values = 7 54kel1
140 ba g u238f rc cu rp 5.7168613 17.7 6.0300000 0.0000000 no. relative values = 2 72cun2
140 ba g u238f rc cu rp 5.8173948 36.5 6.4000000 0.0000000 no. relative values = 3 52eng1
140 ba g u238f rc cu rp 5.8155184 5.2 6.0700000 0.0000000 no. relative values = 18 77har1
140 ba g u238f rc cu rp 5.6775835 8.4 6.0500000 0.0000000 no. relative values = 5 78deb1
140 ba g u238f rc cu su 0.0000000 0.0 6.1000000 0.2500000 0 0.0000000 73dud1 0
140 ba g u238f rc cu su 0.0000000 0.0 6.1800000 7.0000000% 0 0.0000000 73dud2 0

1
0

measured nuclide	fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
140 ba g	u238f	rc	cu	x4	0.0000000	0.0	4.8000000	0.2400000	0		0.0000000	74rao1	0
140 ba g	u238f	rc	re		5.5698210	10.0	0.8850000	5.0000000%	99 mo g	u235t	0.0000000	61lev1	7
140 ba g	u238f	rc	re		5.9083766	5.1	1.0000000	3.0000000%	140 ba g	u235t	1.0550000	65acc1	0
140 ba g	u238f	rc	re		6.1311482	5.1	1.0100000	3.3000000%	137 cs g	u238f	1.0000000	77kel1	0
140 ba g	u238f	rc	re	rp	5.9339735	4.9	1.0000000	0.0000000	no. relative values =		11	73man1	
140 ba g	u238f	rc	re	su	0.0000000	0.0	0.8960000	0.8700000%	99 mo g	u235t	0.0000000	64cow1	7
140 ba g	u238f	rc	cu		5.8773690	5.1	5.8600000	0.3000000	0		0.0000000	84chi3	0
140 ba g	u238f	rc	cu		6.0779618	5.0	6.0600000	4.1000000%	0		0.0000000	82gar1	0
140 ba g	u238f	rc	cu		5.4942980	5.0	0.8730000	1.5000000%	99 mo g	u235t	0.0000000	76for1	7
140 ba g	u238f	rc	cu		5.5949954	5.0	0.8890000	1.5000000%	99 mo g	u235t	0.0000000	76for1	7
140 ba g	u238f	rc	cu		5.6138761	5.0	0.8920000	1.5000000%	99 mo g	u235t	0.0000000	76for1	7
140 ba g	u238f	rc	cu		5.6201697	5.0	0.8930000	1.5000000%	99 mo g	u235t	0.0000000	76for1	7
140 ba g	u238f	rc	cu		5.6264633	5.0	0.8940000	1.5000000%	99 mo g	u235t	0.0000000	76for1	7
140 ba g	u238f	rc	cu		5.6390505	5.0	0.8960000	1.5000000%	99 mo g	u235t	0.0000000	76for1	7
140 ba g	u238f	rc	cu		5.6642248	5.0	0.9000000	1.5000000%	99 mo g	u235t	0.0000000	76for1	7
140 ba g	u238f	rc	cu		5.6642248	5.0	0.9000000	1.5000000%	99 mo g	u235t	0.0000000	76for1	7
140 ba g	u238f	rc	cu		5.6642248	5.0	0.9000000	1.5000000%	99 mo g	u235t	0.0000000	76for1	7
140 ba g	u238f	rc	cu		5.6956927	5.0	0.9050000	1.5000000%	99 mo g	u235t	0.0000000	76for1	7
140 ba g	u238f	rc	cu		5.7082799	5.0	0.9070000	1.5000000%	99 mo g	u235t	0.0000000	76for1	7
140 ba g	u238f	rc	cu		5.6868058	10.8	5.6700000	10.8000000%	0		0.0000000	88afa1	0
140 ba g	u238f	rc	cu		5.7469837	11.0	5.7300000	11.0000000%	0		0.0000000	88afa1	0
140 ba g	u238f	rc	cu		6.0980211	5.0	6.0800000	4.9000000%	0		0.0000000	87chu1	0
140 ba g	u238f	rc	cu	rp	5.7188976	36.5	6.1000000	0.0000000	no. relative values =		3	51eng3	
140 ba g	u238f	rc	cu	rp	5.7718974	36.3	5.8000000	0.0000000	no. relative values =		1	60bon1	
140 ba g	u238f	rc	cu	rp	6.0476554	3.4	6.1600000	0.0000000	no. relative values =		22	77bla1	
140 ba g	u238f	rc	cu	rp	5.9533018	3.1	6.0500000	0.0000000	no. relative values =		30	78deb1	
140 ba g	u238f	rc	re	rp	5.8202178	8.2	3.0600000	0.0000000	no. relative values =		5	72rid2	
140 ba g	u238f	rc	re	rp	5.8503440	8.2	3.5400000	0.0000000	no. relative values =		5	72rid1	
140 cs g	u238f	cm	cu		0.0000000	0.0	6.2570000	4.1000000%	0		0.0000000	73net2	0
140 cs g	u238f	rc	cu		6.0679322	6.8	6.0500000	6.8000000%	0		0.0000000	87chu1	0
140 xe g	u238f	rc	fc	su	0.0000000	0.0	0.8600000	0.0150000	140	u238f	1.0000000	72wol1	0
140 xe g	u238f	cm	cu		0.0000000	0.0	5.2050000	8.1000000%	0		0.0000000	73net2	0

140	xe g	u238f	rc	fc		5.0126460	5.0	0.8600000	0.0150000	140		u238f	1.0000000	75wol1	0				
140		u238he	es	cu		4.5769996	30.0	4.5720000	0.0000000	0			0.0000000	63wea1	0				
140		u238he	ms	cu		4.9485612	6.5	4.8600000	0.3000000	137		u238he	5.0600000	72boc1	0				
140		u238he	es	cu		4.5489690	15.0	4.5440000	15.0000000%	0			0.0000000	74mee9	0				
140		u238he	cm	cu		0.0000000	0.0	4.6200000	2.8000000%	0			0.0000000	77cro1	0				
140		u238he	rc	cu		4.5519487	5.4	4.5500000	0.1500000	137		u238he	5.1500000	77feu1	0				
140	ce g	u238he	es	fi		0.0000006	30.0	0.0001340	0.0000000	140		u238he	1000.0000000	74wol1	0				
140	la g	u238he	rc	cu	su	0.0000000	0.0	4.6000000	0.3000000	0			0.0000000	71bla1	0				
140	la g	u238he	rc	cu		4.7852270	5.0	4.7800000	0.2400000	0			0.0000000	71bri1	0				
140	la g	u238he	rc	cu		4.9253801	14.2	4.9200000	0.7000000	0			0.0000000	71com1	0				
140	la g	u238he	rc	cu	su	0.0000000	0.0	4.4500000	0.4500000	0			0.0000000	73dar2	0				
140	la g	u238he	rc	in	ul	0.0000000	0.0	0.0460000	0.0500000	0			0.0000000	75dar1	0				
140	la g	u238he	rc	cu		4.6250521	5.0	4.6200000	0.0700000	0			0.0000000	75dar1	0				
140	la g	u238he	rc	in		0.0043047	48.8	0.0043000	0.0021000	0			0.0000000	80li 1	0				
140	la g	u238he	rc	cu		4.3647678	5.0	4.3600000	0.1600000	0			0.0000000	75dar1	0				
140	la g	u238he	rc	cu		4.4448552	7.2	4.4400000	0.3200000	0			0.0000000	75dar1	0				
140	ba g	u238he	cm	cu		0.0000000	0.0	4.6000000	0.0000000	0			0.0000000	60kat1	0				
140	ba g	u238he	cm	cu		0.0000000	0.0	4.6000000	0.0000000	0			0.0000000	69gun2	0				
140	ba g	u238he	cm	cu		0.0000000	0.0	4.5400000	3.9000000%	0			0.0000000	73net2	0				
140	ba g	u238he	es	cu	su	0.0000000	0.0	4.4600000	0.2200000	0			0.0000000	73dar1	0				
140	ba g	u238he	rc	cu		4.5902864	5.0	0.7900000	1.5000000%	99	mo g	u235t	0.0000000	76for1	7				
140	ba g	u238he	rc	cu		4.7123066	5.0	0.8110000	1.5000000%	99	mo g	u235t	0.0000000	76for1	7				
140	ba g	u238he	rc	cu		4.3447459	5.0	4.3400000	0.1700000	0			0.0000000	87ram1	0				
140	ba g	u238he	rc	cu		4.5140214	10.1	4.4100000	0.2200000	99	mo g	u238he	5.5800000	57cun1	0				
140	ba g	u238he	rc	cu		4.6304911	8.9	4.5400000	0.4000000	99	mo g	u238he	5.6000000	75ada1	0				
140	ba g	u238he	rc	cu		4.6550849	5.0	4.6500000	4.2000000%	0			0.0000000	81lau1	0				
140	ba g	u238he	rc	cu		4.7982921	10.4	4.6700000	0.1400000	139	ba g	u238he	4.9200000	64jam1	0				
140	ba g	u238he	rc	cu		4.3047022	10.0	4.3000000	0.4000000	0			0.0000000	62bro1	0				
140	ba g	u238he	rc	cu		4.3247240	5.1	4.3200000	0.2200000	0			0.0000000	75dar1	0				
140	ba g	u238he	rc	cu		4.3948006	5.5	4.3900000	0.2400000	0			0.0000000	75dar1	0				
140	ba g	u238he	rc	cu		4.4648771	5.0	4.4600000	0.1300000	0			0.0000000	75dar1	0				
140	ba g	u238he	rc	cu		4.5950193	5.0	4.5900000	0.1500000	0			0.0000000	85liu1	0				
140	ba g	u238he	rc	cu		4.7151505	5.0	4.7100000	0.1300000	0			0.0000000	75dar1	0				
140	ba g	u238he	rc	cu		4.7952380	5.0	4.7900000	0.1400000	0			0.0000000	75dar1	0				
140	ba g	u238he	rc	cu		4.8152599	6.0	4.8100000	0.2900000	0			0.0000000	75dar1	0				
140	ba g	u238he	rc	cu		4.8953473	5.5	4.8900000	0.2700000	0			0.0000000	75dar1	0				

140 ba g u238he rc cu 4.3056820 10.1 4.9000000 0.4000000 99 mo g u238he 6.5000000 60bon1 0
140 ba g u238he rc cu rp 4.7801598 4.2 4.6000000 0.0000000 no. relative values = 26 76raj1
140 ba g u238he rc cu rp 5.5087968 63.3 7.0000000 0.0000000 no. relative values = 1 67bor1
140 ba g u238he rc cu rp 4.6832679 22.4 4.3000000 0.0000000 no. relative values = 2 62bro1
140 ba g u238he rc cu rp 4.8354529 32.5 4.3000000 0.0000000 no. relative values = 1 64men1
140 ba g u238he rc cu rp 4.9402700 36.0 4.3000000 0.0000000 no. relative values = 1 62bro1
140 ba g u238he rc cu rp 3.9270730 38.1 4.3000000 0.0000000 no. relative values = 2 64men1
140 ba g u238he rc cu rp 4.7104415 5.1 4.6000000 0.0000000 no. relative values = 27 75cav1
140 ba g u238he rc cu su 0.0000000 0.0 4.4400000 0.4500000 0 0.0000000 73dar2 0
140 ba g u238he rc cu su 0.0000000 0.0 4.4800000 0.0800000 0 0.0000000 73dar4 0
140 ba g u238he rc cu su 0.0000000 0.0 4.4800000 0.0800000 0 0.0000000 74dar1 0
140 ba g u238he rc re 4.4648771 5.0 0.0446000 0.0018000 0 0.0100000 69net1 0
140 ba g u238he rc re 4.5902864 10.0 0.7900000 0.0200000 99 mo g u235t 0.0000000 56for1 7
140 ba g u238he rc re 4.5692951 10.1 0.8000000 0.0400000 99 mo g u238he 1.0000000 58pro1 0
140 ba g u238he rc re 4.6483912 10.9 0.8000000 0.0870000 99 mo g u235t 0.0000000 68gor1 7
140 ba g u238he rc re rp 4.5271927 4.2 1.0000000 0.0000000 no. relative values = 18 73man1
140 ba g u238he rc re su 0.0000000 0.0 0.8110000 0.6200000% 99 mo g u235t 0.0000000 64cow1 7
140 cs g u238he cm cu 0.0000000 0.0 4.3440000 3.9000000% 0 0.0000000 73net2 0
140 xe g u238he rc fc 2.8171533 5.2 61.1000000 1.2000000 140 ba g u238he 100.0000000 65wol1 0
140 xe g u238he rc fc 2.5266776 23.8 54.8000000 13.0000000 140 ba g u238he 100.0000000 66gra1 0
140 xe g u238he ms in 2.5227557 6.7 2.5200000 0.1700000 0 0.0000000 72boc1 0
140 xe g u238he cm cu 0.0000000 0.0 2.7270000 13.0000000% 0 0.0000000 73net2 0
140 xe g u238he rc fc 2.8427480 5.2 0.6160000 0.0050000 140 u238he 1.0000000 77feu1 0
140 ce g pu239t ms cu rp 5.4857168 11.2 7.3600000 0.0000000 no. relative values = 2 56wil1
140 ce g pu239t ms re x4 0.0000000 0.0 0.8500000 0.0100000 142 ce g pu239t 1.0000000 57kri1 0
140 pu239t es cu 5.4835831 30.0 5.4900000 0.0000000 0 0.0000000 72sid1 0
140 ce g pu239t cm cu 0.0000000 0.0 5.5300000 0.0000000 0 0.0000000 73lam1 0
140 pu239t cm cu 0.0000000 0.0 5.6200000 0.0900000 0 0.0000000 73wal1 0
140 ce g pu239t ms cu 5.4935714 2.2 5.5000000 0.1200000 0 0.0000000 75mae1 0
140 pu239t cm cu 0.0000000 0.0 5.5800000 5.9000000% 0 0.0000000 77cro1 0
140 ce g pu239t ms cu 5.5135480 2.5 5.5200000 0.1400000 0 0.0000000 59ani1 0
140 ce g pu239t ms cu 5.0730635 2.0 5.0790000 0.0740000 0 0.0000000 79mae2 0
140 ce g pu239t ms cu 5.4932584 2.2 5.6100000 0.1200000 137 cs g pu239t 6.7400000 70lis1 0
140 ce g pu239t ms re 5.5138967 1.0 1.1200000 0.0100000 142 ce g pu239t 1.0000000 59fic2 0
140 ce g pu239t es cu nr 5.2843575 1.1 5.1200000 1.0000000% 142 ce g pu239t 4.7700000 81mae2 0
140 ce g pu239t ms cu rp 5.3268181 3.2 5.4100000 0.0000000 no. relative values = 1 86chi1

140 la g pu239t rc cu 5.3437467 5.0 5.3500000 0.1300000 0 0.0000000 80dic1 0
140 ba g pu239t cm cu 0.0000000 0.0 5.4900000 0.0000000 0 0.0000000 73lam1 0
140 ba g pu239t cm cu 0.0000000 0.0 5.4900000 2.0000000% 0 0.0000000 73net2 0
140 ba g pu239t cm in 0.0000000 0.0 0.8972000 20.0000000% 0 1.0000000 88wah1 0
140 ba g pu239t rc cu 5.3146370 5.0 0.8420000 1.5000000% 99 mo g u235t 0.0000000 76for1 7
140 ba g pu239t rc cu 4.9741792 5.0 4.9800000 0.1000000 0 0.0000000 84jai1 0
140 ba g pu239t rc cu 5.0341091 5.0 5.0400000 0.1000000 0 0.0000000 84jai1 0
140 ba g pu239t rc cu 5.1539688 5.0 5.1600000 0.0700000 0 0.0000000 65oka1 0
140 ba g pu239t rc cu 5.1309579 5.0 5.2400000 3.0000000% 137 cs g pu239t 6.7400000 74lar1 0
140 ba g pu239t rc cu 5.2438636 5.0 5.2500000 0.1500000 0 0.0000000 80dic1 0
140 ba g pu239t rc cu 5.2181512 5.2 5.2700000 3.0000000% 95 zr g pu239t 4.8600000 73lar4 0
140 ba g pu239t rc cu 5.3537351 5.0 5.3600000 0.1400000 0 0.0000000 84jai1 0
140 ba g pu239t rc cu 5.4236532 5.0 5.4300000 0.0600000 0 0.0000000 79ram1 0
140 ba g pu239t rc cu 5.4636065 5.0 5.4700000 0.1000000 0 0.0000000 71ram1 0
140 ba g pu239t rc cu 5.3717944 5.0 5.9100000 0.1500000 99 mo g u235t 6.3000000 71ram1 31
140 ba g pu239t rc cu 5.4636065 5.9 5.4700000 0.3200000 0 0.0000000 65mar1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

140 ba g pu239t rc cu rp 5.4436190 22.4 5.3600000 0.0000000 no. relative values = 8 51ste3
140 ba g pu239t rc re rp 5.4817275 15.9 1.0000000 0.0000000 no. relative values = 4 59bar1
140 cs g pu239t cm cu x3 0.0000000 0.0 4.3480000 10.0000000% 0 0.0000000 73net2 0
140 cs g pu239t rc cu 3.7156519 9.7 3.7200000 0.3600000 0 0.0000000 81dic1 0
140 cs g pu239t cm in 0.0000000 0.0 3.0470000 11.0000000% 0 1.0000000 88wah1 0
140 xe g pu239t rc fc 1.6096734 5.2 30.1000000 0.8000000 140 ba g pu239t 100.0000000 65wol1 0
140 xe g pu239t cm cu 0.0000000 0.0 1.4910000 32.1000000% 0 0.0000000 73net2 0
140 xe g pu239t ms cu 1.5581766 3.8 1.5600000 0.0600000 0 0.0000000 76bri2 0
140 xe g pu239t ms in 1.4982468 4.0 1.5000000 0.0600000 0 0.0000000 77bri1 0
140 xe g pu239t rc cu rp 1.5307128 8.9 1.5600000 0.0000000 no. relative values = 4 77bri1
140 xe g pu239t cm in 0.0000000 0.0 1.5540000 6.0000000% 0 1.0000000 88wah1 0
140 i g pu239t es fc 0.0584017 30.0 0.0109000 0.0000000 140 pu239t 1.0000000 74wol1 0
140 pu239f es cu 5.1855075 30.0 5.3500000 0.0000000 148 nd g pu239f 1.7100000 72sid1 0
140 pu239f cm cu 0.0000000 0.0 5.2500000 0.0000000 0 0.0000000 73lar3 0
140 ce g pu239f es fi 0.0000054 29.4 0.0000010 0.0000003 140 pu239f 1.0000000 74wol1 0
140 pu239f es re 5.2447995 2.2 0.9800000 2.0000000% 140 pu239t 1.0000000 74mee4 0

140		pu239f	cm	cu		0.0000000	0.0	5.2300000	1.9000000%	0			0.0000000	77cro1	0
140		pu239f	ms	cu		5.5116700	3.4	5.6200000	0.1900000	148 nd g	pu239f		1.6900000	77gab1	0
140	ce g	pu239f	ms	cu		5.3169838	1.0	5.3060000	0.0500000	148 nd g	pu239f		1.6540000	77mae1	0
140	ce g	pu239f	ms	cu		5.3420690	2.0	5.3550000	0.0620000	0			0.0000000	77mae1	0
140	ce g	pu239f	ms	cu		5.3554911	1.8	5.5900000	0.1000000	148 nd g	pu239f		1.7300000	70lis1	0
140	ce g	pu239f	ms	cu	su	0.0000000	0.0	5.3900000	0.0600000	148 nd g	pu239f		1.6500000	74mae1	0
140	ce g	pu239f	es	cu	nr	5.4484458	1.2	5.5600000	1.0000000%	142 ce g	pu239f		4.8400000	81mae2	0
140		pu239f	rc	cu		5.3041608	10.0	5.3170000	10.0000000%	0			0.0000000	81koc1	36
140	la g	pu239f	rc	cu		5.5926552	12.8	1.0450000	0.1330000	140 la g	pu239t		1.0000000	79yur1	36
140	ba g	pu239f	rc	cu		5.2971777	10.0	5.3100000	0.1500000	0			0.0000000	57cro1	0
140	ba g	pu239f	rc	cu		5.3294394	8.5	5.3400000	0.4400000	99 mo g	pu239f		5.9800000	72cun1	0
140	ba g	pu239f	rc	cu		5.2308382	5.3	5.2800000	0.2700000	140 ba g	pu239f		5.3600000	72cun2	0
140	ba g	pu239f	rc	cu	su	0.0000000	0.0	5.2100000	0.1900000	0			0.0000000	73dud1	0
140	ba g	pu239f	rc	cu	su	0.0000000	0.0	5.2400000	6.0000000%	0			0.0000000	73dud2	0
140	ba g	pu239f	rc	cu		5.1076365	5.0	5.1200000	0.1700000	0			0.0000000	73mce1	0
140	ba g	pu239f	cm	cu		0.0000000	0.0	4.9400000	5.0000000%	0			0.0000000	73net2	0
140	ba g	pu239f	rc	cu		5.2373226	5.0	5.2500000	2.9000000%	0			0.0000000	74lar1	0
140	ba g	pu239f	rc	cu		5.1275882	5.0	5.1400000	2.3000000%	0			0.0000000	75dud1	0
140	ba g	pu239f	rc	cu		5.3769845	5.0	5.3900000	4.4000000%	0			0.0000000	75dud2	0
140	ba g	pu239f	es	cu		4.8300128	30.0	5.0000000	0.0000000	137 cs g	pu239f		6.8000000	60kat1	0
140	ba g	pu239f	rc	cu		4.8881677	10.0	4.9000000	0.4000000	0			0.0000000	60pet1	0
140	ba g	pu239f	rc	cu		5.1449773	5.4	5.0000000	0.1176000	99 mo g	pu239f		5.8000000	70arm1	33
140	ba g	pu239f	rc	cu		5.0271895	5.0	0.8280000	1.5000000%	99 mo g	u235t		0.0000000	76for1	7
140	ba g	pu239f	rc	cu		5.0089751	5.0	0.8250000	1.5000000%	99 mo g	u235t		0.0000000	76for1	7
140	ba g	pu239f	rc	cu		5.1000473	5.0	0.8400000	1.5000000%	99 mo g	u235t		0.0000000	76for1	7
140	ba g	pu239f	bm	cu	su	0.0000000	0.0	5.3000000	2.0000000%	0			0.0000000	76gil1	0
140	ba g	pu239f	bm	cu		5.2971777	2.0	5.3100000	2.0000000%	0			0.0000000	77gil1	0
140	ba g	pu239f	rc	re		5.2222098	5.0	0.7950000	3.4000000%	137 cs g	pu239f		1.0000000	77kel1	0
140	ba g	pu239f	rc	cu		5.1288403	5.2	5.2500000	3.0000000%	95 zr g	pu239f		4.7700000	73lar4	0
140	ba g	pu239f	rc	cu		4.9679746	5.0	4.9800000	4.5000000%	0			0.0000000	81lau1	0
140	ba g	pu239f	rc	cu	rp	4.4103483	36.9	5.0000000	0.0000000	no. relative values =		3		51ste3	
140	ba g	pu239f	rc	cu	rp	4.5373179	31.6	5.2000000	0.0000000	no. relative values =		4		71cun1	
140	ba g	pu239f	rc	cu	rp	5.0619655	6.4	5.3600000	0.0000000	no. relative values =		10		72cun2	
140	ba g	pu239f	rc	cu	rp	5.2368053	25.0	5.4000000	0.0000000	no. relative values =		2		61bon1	
140	ba g	pu239f	rc	re	rp	4.9493383	8.2	0.9960000	0.0000000	no. relative values =		5		72rid1	
140	ba g	pu239f	rc	re	rp	4.9247952	8.2	0.9630000	0.0000000	no. relative values =		5		72rid2	

140 ba g pu239f rc cu rp 5.2664122 7.2 5.2800000 0.0000000 no. relative values = 6 78bya1
140 ba g pu239f rc cu 5.7161635 5.0 5.7300000 3.8000000% 0 0.0000000 82gar1 0
140 ba g pu239f rc cu 5.3370811 10.5 5.3500000 0.5600000 0 0.0000000 77cun1 0
140 cs g pu239f rc cu x1 0.0000000 0.0 1.8000000 0.1000000 0 0.0000000 69moo1 0
140 cs g pu239f cm cu x3 0.0000000 0.0 3.6480000 11.0000000% 0 0.0000000 73net2 0
140 xe g pu239f cm cu x3 0.0000000 0.0 1.0690000 32.1000000% 0 0.0000000 73net2 0
140 pu241t es cu 5.9592707 30.0 5.9500000 0.0000000 0 0.0000000 72sid1 0
140 pu241t rc cu 5.6051252 15.1 6.0100000 0.0000000 131 pu241t 3.3300000 73chi1 0
140 pu241t cm cu 0.0000000 0.0 5.9100000 0.1100000 0 0.0000000 73wal1 0
140 pu241t cm cu 0.0000000 0.0 5.8200000 2.2000000% 0 0.0000000 77cro1 0
140 pu241t cm cu 0.0000000 0.0 5.5300000 0.0000000 0 0.0000000 79wal1 0
140 ce g pu241t ms cu 5.3873811 2.0 5.3790000 0.0480000 0 0.0000000 77mae1 0
140 ce g pu241t ms cu 6.0912223 2.8 5.8600000 0.1600000 148 nd g pu241t 1.8616500 70lis1 0
140 ce g pu241t ms re 5.8521517 1.1 1.2309000 0.0030000 142 ce g pu241t 1.0000000 64far1 0
140 ce g pu241t ms cu 5.7451607 1.3 5.7300000 0.0600000 148 nd g pu241t 1.9300000 86chi1 0
140 ce g pu241t ms cu rp 5.7804176 3.3 5.6900000 0.0000000 no. relative values = 1 86chi1
140 ba g pu241t rc cu 5.6487877 5.0 5.6400000 0.1500000 0 0.0000000 73sko2 0
140 ba g pu241t rc cu 5.5786787 5.0 5.5700000 0.2200000 0 0.0000000 79dic1 0
140 ba g pu241t rc cu 5.6487877 5.0 5.6400000 0.1100000 0 0.0000000 71sor1 0
140 ba g pu241t rc fc 5.7404326 5.2 0.9939000 0.0006000 140 pu241t 1.0000000 80nai1 0
140 ba g pu241t rc cu 6.2196758 5.0 6.2100000 0.1400000 0 0.0000000 65oka1 0
140 ba g pu241t rc cu 5.1079463 30.0 5.1000000 0.0000000 0 0.0000000 63kir1 0
140 xe g pu241t ms cu 3.2550638 3.1 3.2500000 0.1000000 0 0.0000000 76bri2 0
140 xe g pu241t ms in 3.0347211 5.0 3.0300000 0.1500000 0 0.0000000 77bri1 0
140 xe g pu241t rc cu rp 3.3814742 8.3 3.2500000 0.0000000 no. relative values = 5 77bri1
140 u233t es cu 6.6746741 30.0 6.7000000 0.0000000 0 0.0000000 72sid1 0
140 ce g u233t cm cu 0.0000000 0.0 6.4500000 0.0000000 0 0.0000000 73lam1 0
140 u233t cm cu 0.0000000 0.0 6.3900000 0.1200000 0 0.0000000 73wal1 0
140 ce g u233t ms cu 6.7282686 4.0 6.1600000 0.2400000 137 cs g u233t 6.1600000 59gor1 0
140 ce g u233t ms cu 6.4965207 3.6 6.7200000 3.0000000% 144 ce g u233t 4.8700000 61bid1 0
140 ce g u233t ms cu su 0.0000000 0.0 5.6000000 0.1700000 148 nd g u233t 1.1500000 55kuk1 0
140 ce g u233t ms cu su 0.0000000 0.0 5.4500000 0.5000000 148 nd g u233t 1.0500000 57iva1 0
140 ce g u233t ms cu su 0.0000000 0.0 6.1600000 0.2400000 148 nd g u233t 1.0500000 57iva1 0
140 u233t cm cu 0.0000000 0.0 6.3500000 2.6000000% 0 0.0000000 77cro1 0
140 ce g u233t ms cu 6.7282686 4.0 6.1600000 0.2400000 137 cs g u233t 6.1600000 59ani1 0
140 ce g u233t ms cu 6.3222524 9.2 5.4500000 0.5000000 137 cs g u233t 5.8000000 59ani1 0

140 ce g u233t ms cu 6.5053167 2.0 6.5300000 0.0500000 0 0.0000000 70lis1 0
140 ce g u233t ms cu rp 6.3903955 3.5 6.5300000 0.0000000 no. relative values = 1 86chi1
140 la g u233t rc cu 6.0674821 5.0 6.0300000 0.0500000 99 mo g u235t 6.2500000 66gor1 24
140 la g u233t cm cu 0.0000000 0.0 6.4500000 0.0000000 0 0.0000000 73lam1 0
140 la g u233t rc cu rp 6.4832088 77.4 0.0670000 0.0000000 no. relative values = 1 51gru1
140 la g u233t rc cu 5.9474335 5.0 5.9700000 4.6000000% 0 0.0000000 81ram1 0
140 la g u233t rc fi 0.0242168 10.4 0.0038000 0.0001000 140 ba g u233t 1.0000000 57gru1 0
140 ba g u233t rc cu 6.1126630 5.0 6.0800000 0.0900000 99 mo g u235t 6.2500000 66gor1 24
140 ba g u233t rc cu 6.0135762 5.8 5.9000000 0.3000000 99 mo g u233t 4.8000000 67gan1 0
140 ba g u233t rc fi su 0.0000000 0.0 0.2700000 0.0400000 140 u233t 1.0000000 70eic1 0
140 ba g u233t rc fi 1.7277597 14.9 0.2700000 0.0400000 140 u233t 1.0000000 71eic1 0
140 ba g u233t cm cu 0.0000000 0.0 6.3500000 0.0000000 0 0.0000000 73lam1 0
140 ba g u233t cm cu 0.0000000 0.0 6.4000000 2.0000000% 0 0.0000000 73net2 0
140 ba g u233t rc cu 5.9673579 5.0 5.9900000 4.4000000% 0 0.0000000 81ram1 0
140 ba g u233t rc cu rp 6.8898205 63.2 6.0000000 0.0000000 no. relative values = 1 47ste1
140 ba g u233t rc cu rp 6.0451476 19.2 5.4000000 0.0000000 no. relative values = 1 65bal1
140 ba g u233t rc re rp 6.3683874 18.3 5.4000000 0.0000000 no. relative values = 3 68lee1
140 ba g u233t rc re rp 6.1634804 16.1 1.0000000 0.0000000 no. relative values = 4 59bar1
140 ba g u233t rc cu rp 6.4211334 12.5 5.2100000 0.0000000 no. relative values = 7 60san1
140 ba g u233t rc cu rp 6.4832088 63.3 6.7000000 0.0000000 no. relative values = 1 48gru1
140 ba g u233t rc cu 6.2263751 5.0 6.2500000 0.0600000 0 0.0000000 65oka1 0
140 cs g u233t cm cu 0.0000000 0.0 4.9590000 10.0000000% 0 0.0000000 73net2 0
140 xe g u233t rc fc 1.4338890 5.7 22.5000000 0.6000000 140 ba g u233t 100.0000000 65wol1 0
140 xe g u233t cm cu 0.0000000 0.0 1.6160000 32.1000000% 0 0.0000000 73net2 0
140 xe g u233t sp cu 1.4744056 5.0 1.4800000 0.0500000 0 0.0000000 75bri1 0
140 xe g u233t sp in 1.4544812 5.0 1.4600000 0.0500000 0 0.0000000 75bri1 0
140 th232f cm cu es 0.0000000 0.0 7.7000000 0.0000000 0 0.0000000 65eng1 0
140 th232f es cu 7.3139516 30.0 7.3500000 0.0000000 0 0.0000000 72sid1 0
140 th232f es cu cm 8.2692432 30.0 8.3100000 0.0000000 0 0.0000000 73lam1 0
140 th232f cm cu 0.0000000 0.0 8.4800000 0.0000000 0 0.0000000 74lam1 0
140 th232f cm cu 0.0000000 0.0 7.6000000 3.8000000% 0 0.0000000 77cro1 0
140 th232f es cu 7.6622350 5.0 7.7000000 5.0000000% 0 0.0000000 74mee0 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

140 th232f sp cu 7.6823597 18.8 122.0000000 0.0000000 118 th232f 1.0000000 71hol1 0
140 la g th232f rc cu x1 0.0000000 0.0 9.3000000 1.2000000 140 ba g th232f 7.9700000 85chu1 0
140 la g th232f rc cu 8.0304203 5.0 8.0700000 0.2500000 0 0.0000000 86ric1 0
140 la g th232f rc in ul 0.0000000 0.0 0.0350000 0.0000000 0 0.0000000 82li 1 0
140 ba g th232f rc cu 6.8119921 60.1 5.5000000 0.0000000 89 sr g th232f 6.0000000 50nid1 0
140 ba g th232f rc cu 6.8766922 32.5 6.2000000 2.0000000 89 sr g th232f 6.7000000 51tur1 0
140 ba g th232f rc re x4 0.0000000 0.0 2.9200000 0.0800000 99 mo g u235t 0.0000000 63iye1 7
140 ba g th232f rc cu 8.4756606 10.4 7.9900000 10.0000000% 141 ce g th232f 7.0000000 67bre1 0
140 ba g th232f rc cu su 0.0000000 0.0 7.3100000 0.5000000 0 0.0000000 73dee1 0
140 ba g th232f rc re 8.1743906 15.5 1.1000000 0.0000000 89 sr g th232f 1.0000000 73dub1 0
140 ba g th232f cm cu 0.0000000 0.0 7.8070000 4.0000000% 0 0.0000000 73net2 0
140 ba g th232f rc cu 7.2741478 6.8 7.3100000 0.5000000 0 0.0000000 75dee1 0
140 ba g th232f rc cu lt 8.3230158 30.3 1.1200000 0.0000000 89 sr g th232f 1.0000000 57ale1 0
140 ba g th232f rc cu su 0.0000000 0.0 7.7200000 0.1100000 99 mo g th232f 2.7800000 64wyt1 0
140 ba g th232f rc cu 8.1354975 5.4 7.7200000 0.1100000 99 mo g th232f 2.7800000 65wyt1 0
140 ba g th232f rc cu x4 0.0000000 0.0 1.2000000 10.0000000% 89 sr g th232f 1.0000000 76lis1 0
140 ba g th232f cm cu x3 0.0000000 0.0 6.2000000 0.0000000 0 0.0000000 60kat1 0
140 ba g th232f rc re 7.8028273 10.8 1.0500000 10.0000000% 89 sr g th232f 1.0000000 76lis1 0
140 ba g th232f cm cu 0.0000000 0.0 7.8900000 0.0000000 0 0.0000000 79zij1 0
140 ba g th232f rc re 7.9574943 5.0 2.6700000 0.0300000 99 mo g u235t 0.0000000 81ert1 7
140 ba g th232f cm cu 0.0000000 0.0 7.9500000 0.2300000 0 0.0000000 81ert1 0
140 ba g th232f rc re rp 7.3791432 12.0 1.0000000 0.0000000 no. relative values = 7 63cro2
140 ba g th232f rc cu rp 8.7137213 21.7 7.6400000 0.0000000 no. relative values = 3 70kob1
140 ba g th232f rc cu rp 7.8029099 4.6 7.4000000 0.0000000 no. relative values = 14 73cha1
140 ba g th232f rc cu rp 8.0153693 8.6 7.9700000 0.0000000 no. relative values = 12 85chu1
140 ba g th232f rc cu 6.7338967 32.3 0.6901000 32.3000000% 89 sr g u235t 0.0000000 51tur1 7
140 cs g th232f cm cu 0.0000000 0.0 7.7420000 4.0000000% 0 0.0000000 73net2 0
140 cs g th232f rc in 1.1244579 46.6 1.1300000 46.6000000% 0 0.0000000 77iza1 0
140 cs g th232f ms fi 1.1441451 46.6 0.1460000 0.0680000 140 th232f 1.0000000 77iza1 0
140 cs g th232f rc cu x1 0.0000000 0.0 4.1400000 0.2600000 140 ba g th232f 7.9700000 85chu1 0
140 xe g th232f cm cu 0.0000000 0.0 6.3140000 8.1000000% 0 0.0000000 73net2 0
140 xe g th232f rc in 5.9705727 7.2 6.0000000 7.2000000% 0 0.0000000 77iza1 0
140 xe g th232f rc fc 6.6924654 5.4 0.8540000 0.0390000 140 th232f 1.0000000 78iza1 0
140 xe g th232f ms fi 6.0577000 7.5 0.7730000 0.0560000 140 th232f 1.0000000 77iza1 0
140 xe g th232f rc cu 6.5974829 5.6 6.6300000 0.3700000 0 0.0000000 82ert1 0
140 xe g th232f rc fc 6.9745834 5.4 0.8900000 0.0200000 140 th232f 1.0000000 89sri1 0

141 u235t cm cu 0.0000000 0.0 5.8100000 0.0000000 0 0.0000000 72sid1 0
141 pr g u235t cm cu 0.0000000 0.0 5.8500000 0.0000000 0 0.0000000 73lam1 0
141 u235t cm cu 0.0000000 0.0 5.8700000 0.1200000 0 0.0000000 73wal1 0
141 u235t ms cu 6.0130363 2.0 6.0190000 0.0530000 0 0.0000000 76dii1 0
141 pr g u235t ms cu 5.2395744 5.4 5.6000000 0.3000000 146 nd g u235t 3.2000000 57gor1 0
141 u235t cm cu 0.0000000 0.0 5.8100000 1.9000000% 0 0.0000000 77cro1 0
141 pr g u235t ms cu 5.6380437 5.4 5.6000000 0.3000000 142 ce g u235t 5.8000000 59ani1 0
141 u235t es re 6.1899008 2.4 1.0000000 2.0000000% 141 u235f 0.9600000 74mee4 0
141 ce g u235t rc cu 5.8016268 60.0 5.7000000 0.0000000 140 ba g u235t 6.1000000 51bur1 0
141 ce g u235t rc cu rp 5.7140134 7.9 6.0000000 0.0000000 no. relative values = 4 67bre1
141 ce g u235t rc cu 5.7542929 5.0 5.7600000 0.1700000 0 0.0000000 71mcl1 0
141 ce g u235t rc cu 5.9051870 5.0 5.7500000 0.0600000 144 ce g u235t 5.3500000 72deb1 0
141 ce g u235t cm cu 0.0000000 0.0 5.8500000 0.0000000 0 0.0000000 73lam1 0
141 ce g u235t cm cu 0.0000000 0.0 5.7000000 5.0000000% 0 0.0000000 73net2 0
141 ce g u235t rc cu su 0.0000000 0.0 5.6100000 3.1000000% 0 0.0000000 76gil4 0
141 ce g u235t bm cu 5.7143325 5.5 5.7200000 5.5000000% 0 0.0000000 77gil1 0
141 ce g u235t rc cu 6.2138371 5.0 6.2200000 0.0600000 0 0.0000000 79ram1 0
141 ce g u235t ms re 5.7634901 1.2 0.9870000 1.0000000% 142 ce g u235t 1.0000000 62far1 0
141 ce g u235t rc cu nr 5.4147191 6.2 5.5000000 0.3400000 137 cs g u235t 6.2800000 70lis1 0
141 ce g u235t rc cu 6.1339164 5.0 6.1400000 0.1900000 0 0.0000000 74bla1 0
141 ce g u235t rc cu 6.2438074 6.2 6.2500000 0.3900000 0 0.0000000 76thi1 0
141 ce g u235t rc cu 5.8941542 5.0 5.9000000 3.5000000% 0 0.0000000 81lau1 0
141 la g u235t rc cu 6.1891105 10.0 6.3000000 2.2000000% 140 ba g u235t 6.3200000 57bae1 0
141 la g u235t rc fi 0.0215918 35.1 0.0037000 0.0013000 141 u235t 1.0000000 62wah1 0
141 la g u235t cm cu 0.0000000 0.0 5.7000000 5.0000000% 0 0.0000000 73net2 0
141 la g u235t rc fi su 0.0000000 0.0 0.0036000 0.0017000 141 u235t 1.0000000 59net1 0
141 la g u235t rc in 0.0169832 20.0 0.0170000 0.0025000 0 0.0000000 53for1 0
141 la g u235t rc in 0.0219782 20.0 0.0220000 0.0025000 0 0.0000000 53for1 0
141 la g u235t cm in 0.0000000 0.0 0.0196800 35.0000000% 0 1.0000000 88wah1 0
141 ba g u235t rc cu x4 0.0000000 0.0 4.6000000 0.0000000 0 0.0000000 51gol1 0
141 ba g u235t rc cu 5.3497557 10.0 5.2600000 0.3200000 139 ba g u235t 6.3000000 58mal1 0
141 ba g u235t rc fi 1.5172612 19.3 0.2600000 0.0500000 141 u235t 1.0000000 62wah1 0
141 ba g u235t rc fc 5.8146118 10.0 0.9964000 0.0017000 141 u235t 1.0000000 62wah1 0
141 ba g u235t cm cu 0.0000000 0.0 5.6830000 5.0000000% 0 0.0000000 73net2 0
141 ba g u235t rc fi su 0.0000000 0.0 0.2700000 0.0600000 141 u235t 1.0000000 59net1 0
141 ba g u235t rc fi x1 0.0000000 0.0 13.2000000 2.0000000 141 u235t 100.0000000 78den2 0

141	ba	g	u235t	rc	fi		0.7703018	30.3	13.2000000	4.0000000	141		u235t	100.0000000	78fis1	36
141	ba	g	u235t	rc	cu		5.9540947	6.1	5.9600000	6.1000000%	0			0.0000000	80ram1	0
141	ba	g	u235t	sp	fi		2.1591794	8.1	0.3700000	8.0000000%	141		u235t	1.0000000	84den1	36
141	ba	g	u235t	cm	in		0.0000000	0.0	1.8160000	17.0000000%	0			1.0000000	88wah1	0
141	cs	g	u235t	rc	fc		4.2366601	11.3	0.7260000	0.0820000	141		u235t	1.0000000	62wah1	0
141	cs	g	u235t	rc	in		2.5774437	15.9	2.5800000	0.4100000	0			0.0000000	70for1	0
141	cs	g	u235t	ms	in		3.1568690	7.6	3.1600000	0.2400000	0			0.0000000	72bal1	0
141	cs	g	u235t	ms	in		3.2068195	2.5	3.2100000	0.0800000	0			0.0000000	72cha1	0
141	cs	g	u235t	rc	fi		3.1844978	7.7	0.5457000	0.0414000	141		u235t	1.0000000	72ree1	0
141	cs	g	u235t	cm	cu		0.0000000	0.0	4.3700000	11.0000000%	0			0.0000000	73net2	0
141	cs	g	u235t	es	fc		4.4875918	30.0	0.7690000	0.0000000	141		u235t	1.0000000	74wol1	0
141	cs	g	u235t	rc	fi	su	0.0000000	0.0	0.5200000	0.0800000	141		u235t	1.0000000	59net1	0
141	cs	g	u235t	sp	re		4.1747918	5.2	0.7300000	0.0100000	140	cs g	u235t	1.0000000	75ree1	0
141	cs	g	u235t	sp	in		3.1308948	5.0	3.1340000	0.0627000	0			0.0000000	75ree1	0
141	cs	g	u235t	sp	fi		3.1103855	5.1	53.3000000	1.8000000	141		u235t	100.0000000	79bal1	0
141	cs	g	u235t	ms	cu	x1	0.0000000	0.0	5.9500000	0.6000000	0			0.0000000	79shm1	0
141	cs	g	u235t	sp	fi		2.7427414	7.1	0.4700000	7.0000000%	141		u235t	1.0000000	84den1	36
141	cs	g	u235t	cm	in		0.0000000	0.0	3.0120000	3.0000000%	0			1.0000000	88wah1	0
141	cs	g	u235t	sp	in		3.1069186	5.0	3.1100000	0.1000000	0			0.0000000	90rud1	0
141	cs	g	u235t	sp	cu		4.2757593	11.0	4.2800000	0.4700000	0			0.0000000	90rud1	0
141	xe	g	u235t	rc	fc		1.2254802	10.0	0.2100000	0.0200000	141	ce g	u235t	1.0000000	58wah1	0
141	xe	g	u235t	es	in		1.1888209	14.3	1.1900000	0.1700000	0			0.0000000	72ehr1	0
141	xe	g	u235t	cm	cu		0.0000000	0.0	1.4000000	32.1000000%	0			0.0000000	73net2	0
141	xe	g	u235t	es	fc		1.4472338	30.0	0.2480000	0.0000000	141		u235t	1.0000000	74wol1	0
141	xe	g	u235t	rc	fc		1.1963021	10.0	0.2050000	0.0140000	141	pr g	u235t	1.0000000	60wol1	0
141	xe	g	u235t	sp	cu		1.3886228	5.0	1.3900000	0.0600000	0			0.0000000	75bri1	0
141	xe	g	u235t	sp	in		1.3586525	5.0	1.3600000	0.0600000	0			0.0000000	75bri1	0
141	xe	g	u235t	sp	fc		0.9336992	19.0	0.1600000	19.0000000%	141		u235t	1.0000000	84den1	36
141	xe	g	u235t	sp	fi		0.9161923	19.0	0.1570000	19.0000000%	141		u235t	1.0000000	84den1	36
141	xe	g	u235t	rc	cu		1.3486624	5.0	1.3500000	0.0500000	0			0.0000000	81mar1	0
141	xe	g	u235t	cm	in		0.0000000	0.0	1.1040000	9.0000000%	0			1.0000000	88wah1	0
141	xe	g	u235t	sp	in		1.1488606	37.4	1.1500000	0.4300000	0			0.0000000	90rud1	0
141	xe	g	u235t	sp	cu		1.5984147	21.9	1.6000000	0.3500000	0			0.0000000	90rud1	0
141	i	g	u235t	rc	fi	su	0.0000000	0.0	0.0100000	0.0080000	141		u235t	1.0000000	77kra1	0
141	i	g	u235t	rc	fi		0.0408493	35.7	0.7000000	0.2500000	141		u235t	100.0000000	78kra1	0
141	i	g	u235t	rc	in		0.0452388	28.4	0.0460000	0.0130000	138	i g	u235t	1.5100000	83eng1	0

141 i g u235t cm in 0.0000000 0.0 0.0399000 24.0000000% 0 1.0000000 88wah1 0
141 i g u235t sp cu 0.0379623 28.9 0.0380000 0.0110000 0 0.0000000 90rud1 0
141 pr g u235f sp cu 5.9604307 5.0 6.0500000 0.2100000 137 cs g u235f 6.3000000 69pil1 0
141 u235f es re 5.6001998 10.0 0.9600000 10.0000000% 141 u235t 1.0000000 74mee4 0
141 u235f cm cu 0.0000000 0.0 5.9300000 2.7000000% 0 0.0000000 77cro1 0
141 u235f es cu cm 5.7862514 30.0 5.8000000 0.0000000 0 0.0000000 72sid1 0
141 u235f es cu 5.4605814 20.0 5.6900000 1.1400000 148 nd g u235f 1.7500000 70lis1 0
141 pr g u235f ms cu 5.9558485 2.0 5.9700000 2.0000000% 0 0.0000000 72lar1 0
141 u235f rc cu 6.1361890 5.1 6.4000000 0.0500000 140 ba g u235f 6.2200000 77bla1 0
141 u235f es cu 5.8840191 4.7 5.8980000 0.2770000 0 0.0000000 81mae1 0
141 u235f es cu 5.8959907 4.6 5.9100000 0.2730000 0 0.0000000 81mae1 0
141 u235f es cu 5.9548508 4.6 5.9690000 0.2750000 0 0.0000000 81mae1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

141 u235f cm cu 0.0000000 0.0 5.9250000 0.2740000 0 0.0000000 81mae1 0
141 u235f es cu su 0.0000000 0.0 5.8500000 0.3500000 148 nd g u235f 1.6800000 74mae1 0
141 u235f rc cu 5.5567966 10.0 5.5700000 10.0000000% 0 0.0000000 81koc1 36
141 ce g u235f rc cu 5.9013797 5.1 5.6900000 0.1200000 140 ba g u235f 5.7500000 70bow1 0
141 ce g u235f sp cu 5.9636087 5.1 6.2800000 0.0500000 140 ba g u235f 6.2800000 71dya1 0
141 ce g u235f rc cu 6.3584826 5.3 6.2800000 0.3300000 140 ba g u235f 5.8900000 72cun2 0
141 ce g u235f rc cu 6.1559832 7.3 6.0800000 0.4400000 140 ba g u235f 5.8900000 72cun2 0
141 ce g u235f cm cu 0.0000000 0.0 5.6700000 4.9000000% 0 0.0000000 73net2 0
141 ce g u235f rc cu 5.7942270 5.0 1.0210000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
141 ce g u235f es fi 0.0000273 30.0 0.0000046 0.0000000 141 u235f 1.0000000 74wol1 0
141 ce g u235f rc cu 5.8161803 5.0 5.8300000 3.9000000% 0 0.0000000 81lau1 0
141 ce g u235f rc cu 6.1300841 10.1 6.1000000 0.6000000 99 mo g u235f 5.9000000 60bon1 0
141 ce g u235f rc cu x4 0.0000000 0.0 0.8980000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
141 ce g u235f rc re 5.8110166 10.3 2.1440000 0.2210000 137 cs g u235f 2.2900000 73rid3 0
141 la g u235f cm cu 0.0000000 0.0 5.6700000 4.9000000% 0 0.0000000 73net2 0
141 ba g u235f cm cu 0.0000000 0.0 5.6440000 4.9000000% 0 0.0000000 73net2 0
141 ba g u235f rc re 5.3023594 5.0 0.9480000 0.0260000 140 ba g u235t 0.0000000 75raj1 7
141 ba g u235f rc cu 5.7862514 5.0 5.8000000 0.2000000 0 0.0000000 81mar1 0
141 cs g u235f cm cu 0.0000000 0.0 4.0220000 11.0000000% 0 0.0000000 73net2 0
141 xe g u235f rc fc su 0.0000000 0.0 0.1400000 0.0150000 141 u235f 1.0000000 72wol1 0

141 xe g u235f cm cu 0.0000000 0.0 1.0960000 32.1000000% 0 0.0000000 73net2 0
141 xe g u235f rc fc 0.8307738 10.8 0.1400000 0.0150000 141 u235f 1.0000000 75wol1 0
141 xe g u235f rc cu 0.6285066 20.6 0.6300000 0.1300000 0 0.0000000 81mar1 0
141 xe g u235f rc in 0.6185303 21.0 0.6200000 0.1300000 0 0.0000000 81mar1 0
141 u235he cm cu es 0.0000000 0.0 4.3040000 0.0000000 0 0.0000000 63wea1 0
141 u235he ms cu 4.5785046 12.6 4.5600000 0.5600000 137 u235he 4.9000000 72boc1 0
141 u235he cm cu 0.0000000 0.0 3.9100000 10.0000000% 0 0.0000000 77cro1 0
141 u235he es cu 4.3494602 10.0 4.3750000 10.0000000% 0 0.0000000 74mee8 0
141 ce g u235he rc re 4.6430438 10.0 0.9500000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
141 ce g u235he cm cu 0.0000000 0.0 3.8000000 0.0000000 0 0.0000000 69gun2 0
141 ce g u235he cm cu 0.0000000 0.0 4.4500000 3.9000000% 0 0.0000000 73net2 0
141 ce g u235he rc cu 4.4737304 5.0 4.5000000 4.0000000% 0 0.0000000 81lau1 0
141 ce g u235he rc cu x4 0.0000000 0.0 3.8000000 0.4000000 99 mo g u235he 5.6500000 60bon1 0
141 la g u235he cm cu 0.0000000 0.0 4.4490000 3.9000000% 0 0.0000000 73net2 0
141 ba g u235he cm cu 0.0000000 0.0 4.3300000 3.9000000% 0 0.0000000 73net2 0
141 cs g u235he cm cu x3 0.0000000 0.0 1.8710000 22.0000000% 0 0.0000000 73net2 0
141 xe g u235he rc fc 0.2496314 13.4 5.6000000 0.4000000 141 la g u235he 100.0000000 65wol1 0
141 xe g u235he ms in 0.2485406 16.0 0.2500000 0.0400000 0 0.0000000 72boc1 0
141 xe g u235he cm cu x3 0.0000000 0.0 0.2178000 45.0000000% 0 0.0000000 73net2 0
141 i g u235he es cu 0.0025205 30.3 0.0026700 0.0000000 141 u235he 4.7240000 74mee2 0
141 u238f es cu 5.5057736 30.0 5.4600000 0.0000000 0 0.0000000 63wea1 0
141 u238f es cu cm 5.4452706 30.0 5.4000000 0.0000000 0 0.0000000 64wal1 0
141 u238f es re 5.5309052 20.0 1.4400000 20.0000000% 145 u238f 1.0000000 72mat1 0
141 u238f cm cu 0.0000000 0.0 5.5000000 0.0000000 0 0.0000000 72sid1 0
141 u238f cm cu x3 0.0000000 0.0 6.7600000 20.0000000% 0 0.0000000 77cro1 0
141 u238f rc cu 5.7175341 5.3 5.6700000 0.3000000 0 0.0000000 78nag1 0
141 u238f rc cu 5.5688403 5.0 5.8500000 0.0900000 140 ba g u238f 6.1600000 77bla1 0
141 u238f es cu 5.1155292 6.5 5.0730000 0.3310000 0 0.0000000 81mae1 0
141 u238f es cu 5.2002334 6.5 5.1570000 0.3360000 0 0.0000000 81mae1 0
141 u238f es cu 5.1588897 6.7 5.1160000 0.3440000 0 0.0000000 81mae1 0
141 u238f cm cu 0.0000000 0.0 5.1150000 0.3370000 0 0.0000000 81mae1 0
141 u238f es cu su 0.0000000 0.0 5.3100000 0.1600000 148 nd g u238f 2.0800000 74mae1 0
141 u238f rc cu 5.5259413 15.0 5.4800000 15.0000000% 0 0.0000000 81koc1 36
141 u238f rc cu 4.7192345 5.1 4.6800000 0.2400000 0 0.0000000 85li 1 0
141 u238f rc cu 5.5360251 5.0 5.4900000 0.1600000 0 0.0000000 85li 1 0
141 ce g u238f cm cu 0.0000000 0.0 5.0440000 5.0000000% 0 0.0000000 73net2 0

141	ce g	u238f	rc	cu		5.8082886	10.6	5.7600000	0.6100000	0			0.0000000	75har1	0
141	ce g	u238f	rc	cu		5.6997122	5.6	5.9000000	0.3300000	140	ba g	u238f	6.0700000	77har1	0
141	ce g	u238f	es	cu		5.7377018	3.9	5.6900000	0.2200000	0			0.0000000	78gin1	0
141	ce g	u238f	rc	cu		4.9473418	5.1	4.9000000	1.4000000%	141	ce g	u235t	5.8400000	74yur1	0
141	ce g	u238f	rc	cu		5.5965281	6.5	5.5500000	0.3600000	0			0.0000000	78nag1	0
141	ce g	u238f	rc	re	x4	0.0000000	0.0	3.5840000	0.3580000	140	ba g	u238f	3.5400000	72rid1	0
141	ce g	u238f	rc	re		5.2813797	10.0	2.7560000	0.2760000	140	ba g	u238f	3.0600000	72rid2	0
141	ce g	u238f	rc	cu		5.3141808	5.0	5.2700000	0.2600000	0			0.0000000	85chi1	0
141	ce g	u238f	rc	cu		4.6674760	5.0	0.7840000	3.0000000%	99	mo g	u235t	0.0000000	76for1	7
141	ce g	u238f	rc	cu	su	0.0000000	0.0	5.6900000	0.0000000	0			0.0000000	75fly4	0
141	ce g	u238f	rc	cu	su	0.0000000	0.0	5.6100000	0.0000000	0			0.0000000	75fly4	0
141	la g	u238f	cm	cu		0.0000000	0.0	5.0440000	5.0000000%	0			0.0000000	73net2	0
141	la g	u238f	rc	cu		4.5780608	20.0	4.5400000	20.0000000%	0			0.0000000	81nic1	36
141	ba g	u238f	cm	cu		0.0000000	0.0	5.0430000	5.0000000%	0			0.0000000	73net2	0
141	ba g	u238f	rc	cu		5.7780371	5.2	5.7300000	0.3000000	0			0.0000000	78nag1	0
141	ba g	u238f	rc	cu		4.7091507	10.9	4.6700000	10.9000000%	0			0.0000000	88afa1	0
141	ba g	u238f	rc	cu		5.0217496	13.1	4.9800000	13.1000000%	0			0.0000000	88afa1	0
141	cs g	u238f	ms	in	su	0.0000000	0.0	1.0000000	0.1100000	141	cs g	u238f	1.0000000	73bal1	0
141	cs g	u238f	cm	cu		0.0000000	0.0	4.8250000	5.0000000%	0			0.0000000	73net2	0
141	cs g	u238f	ms	in		1.7344195	22.1	1.7200000	0.3800000	0			0.0000000	74bal2	0
141	cs g	u238f	cm	fi		0.0000000	0.0	0.3200000	0.0700000	141		u238f	1.0000000	74wol1	0
141	cs g	u238f	rc	in		1.8755932	18.8	1.8600000	0.3500000	0			0.0000000	74wol4	0
141	xe g	u238f	rc	fc	su	0.0000000	0.0	0.5800000	0.0300000	141		u238f	1.0000000	72wol1	0
141	xe g	u238f	cm	cu		0.0000000	0.0	3.0290000	13.0000000%	0			0.0000000	73net2	0
141	xe g	u238f	rc	fc		3.1205975	5.5	0.5800000	0.0300000	141		u238f	1.0000000	75wol1	0
141		u238he	cm	cu	es	0.0000000	0.0	4.2840000	0.0000000	0			0.0000000	63wea1	0
141		u238he	ms	cu		4.7368767	11.6	4.6500000	0.5300000	137		u238he	5.0600000	72boc1	0
141		u238he	es	cu		4.2976359	15.0	4.2910000	15.0000000%	0			0.0000000	74mee9	0
141		u238he	cm	cu		0.0000000	0.0	4.4200000	5.2000000%	0			0.0000000	77cro1	0
141		u238he	rc	cu		4.2737616	6.6	4.2700000	0.2700000	137		u238he	5.1500000	77feu1	0
141	ce g	u238he	rc	cu		4.1849110	10.4	3.9000000	0.4000000	140	ba g	u238he	4.3000000	64men1	0
141	ce g	u238he	rc	re		4.3809826	5.0	1.1400000	0.0400000	143	ce g	u235t	0.0000000	68gor1	7
141	ce g	u238he	cm	cu	x3	0.0000000	0.0	5.8000000	0.0000000	0			0.0000000	69gun2	0
141	ce g	u238he	rc	cu		4.5370055	9.1	4.5300000	0.4100000	0			0.0000000	71com1	0
141	ce g	u238he	rc	cu	su	0.0000000	0.0	4.0400000	0.6600000	0			0.0000000	73dar2	0
141	ce g	u238he	rc	cu	su	0.0000000	0.0	4.2200000	0.3400000	0			0.0000000	73dar4	0

141 ce g u238he cm cu 0.0000000 0.0 4.2300000 3.9000000% 0 0.0000000 73net2 0
141 ce g u238he rc cu su 0.0000000 0.0 4.2200000 0.3400000 140 ba g u238he 4.4800000 74dar1 0
141 ce g u238he rc cu 4.3867736 5.0 4.3800000 0.1400000 0 0.0000000 75dar1 0
141 ce g u238he rc cu 4.0524121 5.6 4.0400000 0.2200000 140 ba g u238he 4.6000000 76raj1 0
141 ce g u238he es cu su 0.0000000 0.0 4.2200000 0.2300000 0 0.0000000 73dar1 0
141 ce g u238he rc cu 4.6734019 6.9 4.5800000 0.3100000 99 mo g u238he 5.6000000 75ada1 0
141 ce g u238he rc cu 4.5439176 14.2 4.5300000 0.6400000 140 ba g u238he 4.6000000 75cav1 0
141 ce g u238he rc cu su 0.0000000 0.0 4.5300000 0.6400000 140 ba g u238he 4.6000000 74bla1 0
141 ce g u238he rc cu 4.4468664 5.0 4.4400000 4.0000000% 0 0.0000000 81lau1 0
141 ce g u238he rc cu x4 0.0000000 0.0 5.8000000 0.6000000 99 mo g u238he 6.5000000 60bon1 0
141 ce g u238he rc cu 4.2565725 8.5 4.2500000 0.3600000 0 0.0000000 83li 2 0
141 ce g u238he rc cu 4.3366962 7.2 4.3300000 0.3100000 0 0.0000000 85liu1 0
141 ce g u238he rc cu 4.4668973 5.0 4.4600000 0.2000000 0 0.0000000 87ram1 0
141 la g u238he cm cu 0.0000000 0.0 4.2300000 3.9000000% 0 0.0000000 73net2 0
141 ba g u238he cm cu 0.0000000 0.0 4.2230000 3.9000000% 0 0.0000000 73net2 0
141 cs g u238he cm cu 0.0000000 0.0 3.4800000 8.1000000% 0 0.0000000 73net2 0
141 xe g u238he rc fc 1.2724088 8.0 29.0000000 2.0000000 141 la g u238he 100.0000000 65wol1 0
141 xe g u238he rc fc x4 0.0000000 0.0 19.1000000 1.8000000 141 la g u238he 100.0000000 66gra1 0
141 xe g u238he ms in 1.2819795 8.6 1.2800000 0.1100000 0 0.0000000 72boc1 0
141 xe g u238he cm cu x3 0.0000000 0.0 1.3150000 22.0000000% 0 0.0000000 73net2 0
141 xe g u238he rc fc 1.3382264 5.4 0.3050000 0.0140000 141 u238he 1.0000000 77feu1 0
141 pu239t cm cu 0.0000000 0.0 5.9900000 0.0000000 0 0.0000000 72sid1 0
141 pu239t cm cu 0.0000000 0.0 5.2700000 0.3500000 0 0.0000000 73wal1 0
141 pu239t cm cu 0.0000000 0.0 5.3400000 3.3000000% 0 0.0000000 77cro1 0
141 pr g pu239t ms cu x4 0.0000000 0.0 6.0200000 0.1800000 0 0.0000000 59ani1 0
141 ce g pu239t rc cu 4.8836023 60.0 4.9000000 0.0000000 140 ba g pu239t 5.3600000 51ste3 0
141 ce g pu239t rc cu 5.5732267 5.1 6.1100000 0.3100000 144 ce g pu239t 4.0900000 65mar1 0
141 ce g pu239t rc cu 5.0291598 5.0 5.1900000 0.1500000 144 ce g pu239t 3.8500000 71ram1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

141 ce g pu239t rc cu 5.6380627 5.0 5.9300000 0.0900000 99 mo g u235t 5.6600000 71ram1 31
141 ce g pu239t cm cu 0.0000000 0.0 5.2400000 0.0000000 0 0.0000000 73lam1 0
141 ce g pu239t cm cu 0.0000000 0.0 5.9610000 4.0000000% 0 0.0000000 73net2 0
141 ce g pu239t rc cu su 0.0000000 0.0 1.3200000 0.0200000 144 ce g pu239t 1.0000000 70sko1 0

141	ce g	pu239t	rc	cu		5.1678909	5.0	5.1800000	0.1300000	0			0.0000000	71sor1	0
141	ce g	pu239t	rc	cu		4.9322588	5.0	5.0900000	0.1400000	144	ce g	pu239t	3.8500000	71sor1	0
141	ce g	pu239t	rc	cu		5.2776337	7.0	5.2900000	0.3700000	0			0.0000000	80dic1	0
141	ce g	pu239t	rc	cu		5.5869091	5.0	5.6000000	0.0300000	0			0.0000000	79ram1	0
141	ce g	pu239t	rc	cu		5.1769494	5.0	1.0300000	0.0200000	140	ba g	u235t	0.0000000	86chi1	7
141	ce g	pu239t	rc	cu		4.7388961	5.0	4.7500000	0.1500000	0			0.0000000	84jai1	0
141	ce g	pu239t	rc	cu		5.1878441	5.0	5.2000000	0.0900000	0			0.0000000	84jai1	0
141	la g	pu239t	cm	cu		0.0000000	0.0	5.2400000	0.0000000	0			0.0000000	73lam1	0
141	la g	pu239t	cm	cu		0.0000000	0.0	5.9610000	4.0000000%	0			0.0000000	73net2	0
141	la g	pu239t	rc	re		5.3954836	10.1	1.0100000	2.0000000%	140	ba g	pu239t	1.0000000	59bar1	0
141	la g	pu239t	rc	cu	su	0.0000000	0.0	1.2200000	0.0400000	144	ce g	pu239t	1.0000000	70sko1	0
141	la g	pu239t	rc	cu	x4	0.0000000	0.0	4.7000000	0.2600000	144	ce g	pu239t	3.8500000	71sor1	0
141	la g	pu239t	cm	in		0.0000000	0.0	0.0709300	74.0000000%	0			1.0000000	88wah1	0
141	ba g	pu239t	cm	cu		0.0000000	0.0	5.8650000	4.0000000%	0			0.0000000	73net2	0
141	ba g	pu239t	rc	cu		5.5070961	5.0	5.5200000	4.0000000%	0			0.0000000	80ram1	0
141	ba g	pu239t	rc	cu		4.5792701	10.7	4.5900000	0.4900000	0			0.0000000	81dic1	0
141	ba g	pu239t	cm	in		0.0000000	0.0	2.1490000	24.0000000%	0			1.0000000	88wah1	0
141	cs g	pu239t	cm	cu		0.0000000	0.0	3.0680000	15.0000000%	0			0.0000000	73net2	0
141	cs g	pu239t	es	fc		3.7584524	15.2	0.7180000	0.1080000	141		pu239t	1.0000000	74wol1	0
141	cs g	pu239t	rc	in		2.5939221	19.2	2.6000000	0.5000000	0			0.0000000	75bal1	0
141	cs g	pu239t	cm	in		0.0000000	0.0	2.7410000	20.0000000%	0			1.0000000	88wah1	0
141	xe g	pu239t	rc	fc	su	0.0000000	0.0	7.9000000	0.4000000	141	ce g	pu239t	100.0000000	65wol1	0
141	xe g	pu239t	cm	cu	x3	0.0000000	0.0	0.4808000	45.0000000%	0			0.0000000	73net2	0
141	xe g	pu239t	es	fc		0.5915113	30.1	0.1130000	0.0000000	141		pu239t	1.0000000	74wol1	0
141	xe g	pu239t	ms	cu		0.4868592	6.1	0.4880000	0.0300000	0			0.0000000	76bri2	0
141	xe g	pu239t	ms	in		0.4808732	6.2	0.4820000	0.0300000	0			0.0000000	77bri1	0
141	xe g	pu239t	rc	cu		0.4981118	6.5	0.4880000	0.0300000	140	xe g	pu239t	1.5600000	77bri1	0
141	xe g	pu239t	cm	in		0.0000000	0.0	0.4481000	8.0000000%	0			1.0000000	88wah1	0
141	i g	pu239t	es	fc		0.0072238	30.1	0.0013800	0.0000000	141		pu239t	1.0000000	74wol1	0
141		pu239f	es	cu		5.1103817	30.0	5.2800000	0.0000000	148	nd g	pu239f	1.7000000	69lis1	0
141		pu239f	es	cu	cm	4.5060516	30.0	4.5500000	0.0000000	0			0.0000000	72sid1	0
141		pu239f	es	re		5.0923619	10.2	0.9800000	10.0000000%	141		pu239t	1.0000000	74mee4	0
141		pu239f	cm	cu		0.0000000	0.0	5.6200000	3.6000000%	0			0.0000000	77cro1	0
141		pu239f	es	cu		5.0256955	4.9	5.0520000	0.2450000	148	nd g	pu239f	1.6540000	77mae1	0
141		pu239f	es	cu		5.0269709	5.0	5.0760000	0.2520000	0			0.0000000	77mae1	0
141		pu239f	es	cu		5.0217623	20.1	5.2800000	1.0600000	148	nd g	pu239f	1.7300000	70lis1	0

141		pu239f	es	cu	su	0.0000000	0.0	5.1500000	0.1600000	148 nd g	pu239f	1.6500000	74mae1	0
141		pu239f	rc	cu		4.9715119	10.0	5.0200000	10.0000000%	0		0.0000000	81koc1	36
141	ce g	pu239f	rc	cu	x4	0.0000000	0.0	4.2300000	6.0000000%	137 cs g	pu239f	6.1500000	67sch1	0
141	ce g	pu239f	rc	cu		6.2857329	15.1	6.2000000	0.0000000	140 ba g	pu239f	5.2000000	71cun1	0
141	ce g	pu239f	rc	cu		6.1130814	10.2	6.1700000	0.6200000	99 mo g	pu239f	5.9800000	72cun1	0
141	ce g	pu239f	rc	cu		5.4882892	7.3	5.5800000	0.4000000	140 ba g	pu239f	5.3600000	72cun2	0
141	ce g	pu239f	rc	cu		5.6063169	6.3	5.7000000	0.3500000	140 ba g	pu239f	5.3600000	72cun2	0
141	ce g	pu239f	cm	cu		0.0000000	0.0	4.7000000	5.9000000%	0		0.0000000	73net2	0
141	ce g	pu239f	rc	cu		4.8827052	5.0	0.8610000	3.0000000%	99 mo g	u235t	0.0000000	76for1	7
141	ce g	pu239f	rc	cu		4.6615374	5.0	0.8220000	3.0000000%	99 mo g	u235t	0.0000000	76for1	7
141	ce g	pu239f	rc	re		5.2171604	10.1	0.9530000	0.0950000	140 ba g	pu239f	0.9630000	72rid2	0
141	ce g	pu239f	rc	cu		4.7932505	5.0	4.8400000	4.3000000%	0		0.0000000	81lau1	0
141	ce g	pu239f	rc	re		5.9502283	10.0	1.2820000	0.1280000	137 cs g	pu239f	1.4050000	73rid3	0
141	la g	pu239f	cm	cu		0.0000000	0.0	4.6990000	5.9000000%	0		0.0000000	73net2	0
141	ba g	pu239f	cm	cu		0.0000000	0.0	4.5910000	5.9000000%	0		0.0000000	73net2	0
141	ba g	pu239f	rc	re		5.6317450	5.0	1.1390000	0.0200000	140 ba g	u235t	0.0000000	75raj1	7
141	cs g	pu239f	cm	cu	x3	0.0000000	0.0	2.1100000	22.0000000%	0		0.0000000	73net2	0
141	xe g	pu239f	cm	cu	x3	0.0000000	0.0	0.2697000	45.0000000%	0		0.0000000	73net2	0
141		pu241t	cm	cu		0.0000000	0.0	5.0200000	0.0000000	0		0.0000000	72sid1	0
141		pu241t	rc	cu		5.1108296	15.1	5.4800000	0.0000000	131	pu241t	3.3300000	73chi1	0
141		pu241t	cm	cu		0.0000000	0.0	4.7900000	2.6000000%	0		0.0000000	77cro1	0
141		pu241t	cm	cu		0.0000000	0.0	4.9800000	0.0800000	0		0.0000000	73wal1	0
141		pu241t	cm	cu		0.0000000	0.0	4.7500000	0.0000000	0		0.0000000	79wal1	0
141		pu241t	es	cu		5.0338310	4.9	5.0260000	0.2440000	0		0.0000000	77mae1	0
141	ce g	pu241t	rc	cu		4.6865716	5.0	5.1100000	0.1900000	137 cs g	pu239t	5.7500000	69cro2	25
141	ce g	pu241t	rc	cu		4.8174945	5.0	4.8100000	0.1300000	0		0.0000000	73sko2	0
141	ce g	pu241t	rc	cu		4.9115624	5.1	1.1600000	0.0200000	144 ce g	pu241t	1.0000000	70sko1	0
141	ce g	pu241t	rc	cu		5.5085696	7.3	5.5000000	0.4000000	0		0.0000000	79dic1	0
141	ce g	pu241t	rc	cu		4.8174945	5.0	4.8100000	0.1400000	0		0.0000000	71sor1	0
141	ce g	pu241t	rc	cu		4.9605452	5.1	4.7800000	0.1800000	144 ce g	pu241t	4.0800000	71sor1	0
141	ce g	pu241t	rc	re		4.7874478	5.0	4.7800000	0.1800000	0		0.0000000	73sko2	0
141	ce g	pu241t	ms	re		4.9017535	2.6	1.0310000	0.0250000	142 ce g	pu241t	1.0000000	64far1	0
141	ce g	pu241t	rc	cu		5.1077115	5.0	0.9400000	0.0200000	140 ba g	u235t	0.0000000	86chi1	7
141	la g	pu241t	rc	cu		4.6575161	5.1	1.1000000	0.0200000	144 ce g	pu241t	1.0000000	70sko1	0
141	la g	pu241t	rc	cu		4.6699694	5.1	4.5000000	0.1700000	144 ce g	pu241t	4.0800000	71sor1	0
141	la g	pu241t	rc	cu	x4	0.0000000	0.0	3.9000000	0.0000000	0		0.0000000	63kir1	0

141	xe g	pu241t	ms	cu		1.4322281	4.9	1.4300000	0.0700000	0			0.0000000	76bri2	0
141	xe g	pu241t	ms	in		1.4021814	5.0	1.4000000	0.0700000	0			0.0000000	77bri1	0
141	xe g	pu241t	rc	cu		1.4533347	5.7	1.4300000	0.0700000	140	xe g	pu241t	3.2500000	77bri1	0
141		u233t	cm	cu		0.0000000	0.0	6.4000000	0.0000000	0			0.0000000	72sid1	0
141		u233t	cm	cu		0.0000000	0.0	6.5600000	0.0000000	0			0.0000000	73lam1	0
141		u233t	cm	cu		0.0000000	0.0	6.6200000	0.5000000	0			0.0000000	73wal1	0
141	pr g	u233t	ms	cu	su	0.0000000	0.0	5.5700000	0.1900000	137	cs g	u233t	6.1600000	59gor1	0
141		u233t	cm	cu		0.0000000	0.0	6.7400000	5.4000000%	0			0.0000000	77cro1	0
141	pr g	u233t	ms	cu		6.4369411	3.5	5.5700000	0.1900000	137	cs g	u233t	5.8000000	59ani1	0
141	ce g	u233t	rc	cu		6.9754595	5.0	7.5800000	0.1800000	99	mo g	u235t	6.4000000	65bun1	1
141	ce g	u233t	rc	cu		6.5679499	5.0	6.3900000	0.1500000	99	mo g	u235t	5.7300000	66gor1	24
141	ce g	u233t	rc	cu		6.1938352	7.1	6.1000000	0.4000000	99	mo g	u233t	4.8000000	67gan1	0
141	ce g	u233t	cm	cu		0.0000000	0.0	5.9190000	2.0000000%	0			0.0000000	73net2	0
141	ce g	u233t	rc	cu		6.4597784	10.4	5.3000000	0.1000000	140	ba g	u233t	5.2100000	60san1	0
141	ce g	u233t	rc	cu		6.6317805	5.0	1.1100000	0.0300000	140	ba g	u235t	0.0000000	86chi1	7
141	ce g	u233t	rc	cu		5.8553962	5.0	5.9000000	4.4000000%	0			0.0000000	81ram1	0
141	la g	u233t	cm	cu		0.0000000	0.0	5.9180000	2.0000000%	0			0.0000000	73net2	0
141	la g	u233t	rc	re		6.9850924	10.4	1.1000000	2.0000000%	140	ba g	u233t	1.0000000	59bar1	0
141	la g	u233t	rc	fi		0.1671787	23.2	0.0260000	0.0060000	141		u233t	1.0000000	81pal1	0
141	ba g	u233t	cm	cu		0.0000000	0.0	5.8110000	2.0000000%	0			0.0000000	73net2	0
141	ba g	u233t	sp	fi		2.6684288	14.3	0.4150000	14.0000000%	141		u233t	1.0000000	86lei1	0
141	cs g	u233t	cm	cu		0.0000000	0.0	2.9150000	21.0000000%	0			0.0000000	73net2	0
141	cs g	u233t	sp	fc		3.7615201	6.6	0.5850000	6.0000000%	141		u233t	1.0000000	86lei1	0
141	xe g	u233t	rc	fc		0.3279274	6.5	5.1000000	0.3000000	141	ce g	u233t	100.0000000	65wol1	0
141	xe g	u233t	cm	cu		0.0000000	0.0	0.4273000	45.0000000%	0			0.0000000	73net2	0
141	xe g	u233t	sp	cu		0.3672028	8.1	0.3700000	0.0300000	0			0.0000000	75bri1	0
141	xe g	u233t	sp	in		0.3672028	8.1	0.3700000	0.0300000	0			0.0000000	75bri1	0
141	i g	u233t	es	cu		0.0017665	30.0	0.0017800	0.0000000	0			0.0000000	74mee2	0
141		th232f	cm	cu	x3	0.0000000	0.0	8.4000000	0.0000000	0			0.0000000	65eng1	0
141		th232f	es	cu	cm	7.1997134	30.0	7.2500000	0.0000000	0			0.0000000	72sid1	0
141		th232f	es	cu	cm	7.2295053	30.0	7.2800000	0.0000000	0			0.0000000	73lam1	0
141		th232f	es	cu	cm	7.4281181	30.0	7.4800000	0.0000000	0			0.0000000	74lam1	0
141		th232f	cm	cu		0.0000000	0.0	7.0500000	4.1000000%	0			0.0000000	77cro1	0
141		th232f	es	cu		7.2493666	5.0	7.3000000	5.0000000%	0			0.0000000	74mee0	0
141	ce g	th232f	rc	cu	x4	0.0000000	0.0	9.0000000	3.0000000	89	sr g	th232f	6.7000000	51tur1	0
141	ce g	th232f	rc	re		7.4320424	10.4	0.9500000	0.0600000	140	ba g	th232f	1.0000000	63cro2	0

141 ce g th232f rc re x4 0.0000000 0.0 2.8600000 0.1300000 99 mo g u235t 0.0000000 63iye1 7
141 ce g th232f rc cu rp 6.9194949 14.2 7.0000000 0.0000000 no. relative values = 5 67bre1
141 ce g th232f rc cu su 0.0000000 0.0 6.3300000 0.4700000 0 0.0000000 73dee1 0
141 ce g th232f cm cu 0.0000000 0.0 7.2860000 4.0000000% 0 0.0000000 73net2 0
141 ce g th232f rc cu x4 0.0000000 0.0 6.3300000 0.4700000 0 0.0000000 75dee1 0
141 ce g th232f rc cu su 0.0000000 0.0 7.2600000 0.1100000 99 mo g th232f 2.7800000 64wyt1 0
141 ce g th232f rc cu 7.6351206 5.4 7.2600000 0.1100000 99 mo g th232f 2.7800000 65wyt1 0
141 ce g th232f rc cu 7.4160929 60.1 6.0000000 0.0000000 89 sr g th232f 6.0000000 50nid1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

141 ce g th232f rc cu 6.5542219 10.6 6.6000000 0.7000000 0 0.0000000 71swi3 0
141 ce g th232f rc re 6.6744836 30.3 0.9000000 30.0000000% 89 sr g th232f 1.0000000 76lis1 0
141 ce g th232f rc cu 7.6646241 5.7 7.2500000 0.2600000 140 ba g th232f 7.4000000 73cha1 0
141 ce g th232f rc re 7.2477799 5.0 2.5900000 0.0900000 99 mo g u235t 0.0000000 81ert1 7
141 ce g th232f cm cu 0.0000000 0.0 7.3200000 0.2400000 0 0.0000000 81ert1 0
141 ce g th232f rc cu x1 0.0000000 0.0 5.5400000 0.6800000 140 ba g th232f 7.9700000 85chu1 0
141 ce g th232f rc cu 7.9147194 5.0 7.9700000 0.3200000 0 0.0000000 86ric1 0
141 ce g th232f rc cu x4 0.0000000 0.0 1.0840000 33.3000000% 89 sr g u235t 0.0000000 51tur1 7
141 la g th232f cm cu 0.0000000 0.0 7.2860000 4.0000000% 0 0.0000000 73net2 0
141 ba g th232f cm cu 0.0000000 0.0 7.2860000 4.0000000% 0 0.0000000 73net2 0
141 ba g th232f rc cu x1 0.0000000 0.0 5.1800000 0.5500000 140 ba g th232f 7.9700000 85chu1 0
141 cs g th232f cm cu 0.0000000 0.0 6.9150000 6.0000000% 0 0.0000000 73net2 0
141 xe g th232f cm cu x3 0.0000000 0.0 4.1710000 15.0000000% 0 0.0000000 73net2 0
141 xe g th232f rc fc 4.0756790 9.5 0.5500000 0.0500000 141 th232f 1.0000000 89sri1 0
142 ce g u235t ms cu 5.8558944 6.0 5.8600000 0.0000000 0 0.0000000 55gle1 0
142 ce g u235t ms cu rp 6.0348232 11.2 6.0300000 0.0000000 no. relative values = 2 55pet2
142 u235t cm cu 0.0000000 0.0 5.7000000 0.0000000 0 0.0000000 72sid1 0
142 u235t cm cu 0.0000000 0.0 5.9100000 0.0000000 0 0.0000000 73lam1 0
142 u235t cm cu 0.0000000 0.0 5.9600000 0.1300000 0 0.0000000 73wal1 0
142 ce g u235t ms re 5.9556272 1.1 1.0000000 0.0100000 145 nd g u235t 0.6600000 59chu1 0
142 u235t ms cu 5.6350492 2.0 5.6390000 0.0510000 0 0.0000000 76dii1 0
142 u235t cm cu 0.0000000 0.0 5.9100000 1.6000000% 0 0.0000000 77cro1 0
142 ce g u235t ms cu rp 5.9112031 7.8 5.8000000 0.0000000 no. relative values = 3 59ani1
142 ce g u235t ms re rp 5.9270826 2.1 1.0000000 0.0000000 no. relative values = 3 62far1

142	ce g	u235t	ms	cu		5.7599617	2.0	5.7640000	0.0500000	0			0.0000000	78mae1	0				
142	ce g	u235t	ms	cu		5.8179210	2.0	5.8220000	0.0750000	0			0.0000000	78mae1	0				
142	ce g	u235t	ms	cu		5.7579631	2.0	5.7620000	0.0500000	0			0.0000000	78mae1	0				
142	ce g	u235t	ms	cu		5.8758804	2.0	5.8800000	0.0300000	0			0.0000000	70lis1	0				
142		u235t	es	re		5.7631290	2.2	1.0000000	2.0000000%	142		u235f	0.9610000	74mee4	0				
142	ce g	u235t	ms	cu	cm	5.7789483	6.0	5.7830000	0.0000000	0			0.0000000	80mae3	0				
142	ce g	u235t	ms	cu		5.8514393	0.8	5.8300000	0.0400000	140	ce g	u235t	6.1930000	86chi1	0				
142	ce g	u235t	ms	cu	x4	0.0000000	0.0	5.8000000	0.2100000	146	nd g	u235t	3.2000000	57gor1	36				
142	la g	u235t	rc	fi	su	0.0000000	0.0	0.0190000	0.0060000	142		u235t	1.0000000	59net1	0				
142	la g	u235t	rc	fi		0.0992987	23.5	0.0170000	0.0040000	142		u235t	1.0000000	62wah1	0				
142	la g	u235t	rc	cu		5.6960065	5.0	5.7000000	0.2100000	0			0.0000000	71mcl1	0				
142	la g	u235t	cm	cu		0.0000000	0.0	5.9560000	2.0000000%	0			0.0000000	73net2	0				
142	la g	u235t	rc	cu		5.6960065	7.0	5.7000000	0.4000000	0			0.0000000	77gud1	0				
142	la g	u235t	rc	cu		5.9957963	5.2	6.0000000	0.3100000	0			0.0000000	76thi1	0				
142	la g	u235t	rc	cu	x4	0.0000000	0.0	5.2200000	4.5000000%	0			0.0000000	80ram1	0				
142	la g	u235t	cm	in		0.0000000	0.0	0.0902200	24.0000000%	0			1.0000000	88wah1	0				
142	ba g	u235t	rc	cu	x4	0.0000000	0.0	4.9000000	0.5300000	139	ba g	u235t	6.3000000	58mal1	0				
142	ba g	u235t	rc	fc		5.7301178	10.0	0.9810000	0.0050000	142		u235t	1.0000000	62wah1	0				
142	ba g	u235t	sp	fi		3.6798922	11.0	0.6300000	11.0000000%	142		u235t	1.0000000	84den1	0				
142	ba g	u235t	sp	fi		3.1279083	15.0	0.5355000	15.0000000%	142		u235t	1.0000000	84den1	0				
142	ba g	u235t	cm	in		0.0000000	0.0	3.0850000	15.0000000%	0			1.0000000	88wah1	0				
142	cs g	u235t	rc	in	x4	0.0000000	0.0	1.4600000	0.3900000	0			0.0000000	70for1	0				
142	cs g	u235t	ms	in		2.9978982	8.0	3.0000000	0.2400000	0			0.0000000	72bal1	0				
142	cs g	u235t	ms	in		2.3783325	2.9	2.3800000	0.0700000	0			0.0000000	72cha1	0				
142	cs g	u235t	es	fc		2.8738206	30.0	0.4920000	0.0000000	142		u235t	1.0000000	74wol1	0				
142	cs g	u235t	sp	re		2.4026327	5.2	0.4200000	0.0100000	140	cs g	u235t	1.0000000	75ree1	0				
142	cs g	u235t	sp	in		2.4115093	5.0	2.4132000	0.0627000	0			0.0000000	75ree1	0				
142	cs g	u235t	sp	fi		2.6576999	5.0	45.5000000	1.2000000	142		u235t	100.0000000	79bal1	0				
142	cs g	u235t	ms	in		2.3383606	14.1	2.3400000	0.3300000	0			0.0000000	79shm1	0				
142	cs g	u235t	ms	cu		2.9279472	9.9	2.9300000	0.2900000	0			0.0000000	79shm1	0				
142	cs g	u235t	sp	cu		2.3383606	14.1	2.3400000	0.3300000	0			0.0000000	81shm1	0				
142	cs g	u235t	sp	fi		2.0735900	14.0	0.3550000	14.0000000%	142		u235t	1.0000000	84den1	0				
142	cs g	u235t	sp	fc		2.1612065	11.0	0.3700000	11.0000000%	142		u235t	1.0000000	84den1	0				
142	cs g	u235t	cm	in		0.0000000	0.0	2.4160000	4.0000000%	0			1.0000000	88wah1	0				
142	cs g	u235t	sp	in		2.2284376	17.0	2.2300000	0.3800000	0			0.0000000	90rud1	0				
142	cs g	u235t	sp	cu		2.6881153	11.5	2.6900000	0.3100000	0			0.0000000	90rud1	0				

142	xe g	u235t	rc	in	x1	0.0000000	0.0	0.6300000	0.0900000	0				0.0000000	72ehr1	0			
142	xe g	u235t	es	fc		0.4211432	30.0	0.0721000	0.0000000	142		u235t		1.0000000	74wol1	0			
142	xe g	u235t	rc	fc	su	0.0000000	0.0	0.0590000	0.0050000	142	ce g	u235t		1.0000000	60wol1	0			
142	xe g	u235t	sp	cu		0.4536819	5.0	0.4540000	0.0200000	0				0.0000000	75bri1	0			
142	xe g	u235t	sp	in		0.4466868	5.0	0.4470000	0.0200000	0				0.0000000	75bri1	0			
142	xe g	u235t	cm	in		0.0000000	0.0	0.3494000	9.0000000%	0				1.0000000	88wah1	0			
142	xe g	u235t	sp	cu		0.4496847	28.9	0.4500000	0.1300000	0				0.0000000	90rud1	0			
142		u235f	cm	cu	x3	0.0000000	0.0	5.8000000	0.0000000	0				0.0000000	72sid1	0			
142		u235f	cm	cu	x3	0.0000000	0.0	5.7400000	2.8000000%	0				0.0000000	77cro1	0			
142		u235f	ms	cu		5.8434984	4.2	6.0500000	0.2500000	148		u235f		1.7400000	77gab1	0			
142	ce g	u235f	ms	cu		5.5257225	2.0	5.5350000	0.0580000	0				0.0000000	80mae1	0			
142	ce g	u235f	ms	cu		5.5892269	2.0	5.8200000	0.1100000	148	nd g	u235f		1.7500000	70lis1	0			
142	ce g	u235f	ms	cu		5.2012672	2.0	5.2100000	2.0000000%	0				0.0000000	72lar1	0			
142		u235f	es	re		5.6116656	10.0	0.9610000	10.0000000%	142		u235t		1.0000000	74mee4	0			
142	ce g	u235f	ms	cu	cm	5.4847912	6.0	5.4940000	0.0000000	0				0.0000000	80mae3	0			
142		u235f	rc	cu	x4	0.0000000	0.0	6.4200000	0.0900000	140	ba g	u235f		6.2200000	77bla1	0			
142	ce g	u235f	ms	cu		5.5416957	2.0	5.5510000	0.0510000	0				0.0000000	81mae1	0			
142	ce g	u235f	ms	cu		5.7144057	2.0	5.7240000	0.0390000	0				0.0000000	81mae1	0			
142	ce g	u235f	ms	cu		5.5177359	2.0	5.5270000	0.0560000	0				0.0000000	81mae1	0			
142	ce g	u235f	cm	cu	x3	0.0000000	0.0	5.6010000	0.0710000	0				0.0000000	81mae1	0			
142	ce g	u235f	ms	cu	su	0.0000000	0.0	5.7800000	0.0500000	148	nd g	u235f		1.6800000	74mae1	0			
142		u235f	ms	cu		5.6155716	3.0	5.6250000	3.0000000%	0				0.0000000	81koc1	36			
142	la g	u235f	cm	cu		0.0000000	0.0	5.6580000	4.0000000%	0				0.0000000	73net2	0			
142	la g	u235f	rc	re		5.3131369	5.0	0.9460000	0.0150000	140	ba g	u235t		0.0000000	75raj1	7			
142	la g	u235f	rc	cu		5.5472652	5.2	0.9500000	0.0400000	142	la g	u235t		1.0000000	77deb1	0			
142	la g	u235f	rc	cu		5.6904459	7.0	5.7000000	0.4000000	0				0.0000000	77gud1	0			
142	la g	u235f	rc	cu		5.7902783	5.0	5.8000000	0.2800000	0				0.0000000	81mar1	0			
142	ba g	u235f	rc	cu		5.6305465	5.0	5.6400000	0.1000000	0				0.0000000	81mar1	0			
142	ba g	u235f	rc	in		2.9750051	5.0	2.9800000	0.1500000	0				0.0000000	81mar1	0			
142	cs g	u235f	rc	cu		2.6555414	5.0	2.6600000	0.1000000	0				0.0000000	81mar1	0			
142	cs g	u235f	rc	in		2.5357426	5.0	2.5400000	0.1200000	0				0.0000000	81mar1	0			
142		u235he	es	cu		3.9749110	30.0	4.0080000	0.0000000	0				0.0000000	63wea1	0			
142		u235he	cm	cu		0.0000000	0.0	4.3900000	20.0000000%	0				0.0000000	77cro1	0			
142		u235he	es	cu		4.2119379	5.0	4.2470000	5.0000000%	0				0.0000000	74mee8	0			
142	la g	u235he	cm	cu		0.0000000	0.0	4.1010000	4.1000000%	0				0.0000000	73net2	0			
142	xe g	u235he	ms	in		0.0902487	16.5	0.0910000	0.0150000	0				0.0000000	72boc1	0			

142 u238f es cu cm 5.1213778 30.0 5.1000000 0.0000000 0 0.0000000 64wal1 0
142 ce g u238f ms re rp 4.7384776 5.9 1.0000000 0.0000000 no. relative values = 2 72mat1
142 u238f es cu cm 5.8745216 30.0 5.8500000 0.0000000 0 0.0000000 72sid1 0
142 u238f cm cu 0.0000000 0.0 4.8600000 3.8000000% 0 0.0000000 77cro1 0
142 u238f rc cu 5.2518171 5.0 5.5400000 0.0900000 140 ba g u238f 6.1600000 77bla1 0
142 ce g u238f ms cu 4.5349298 2.0 4.5160000 0.0350000 0 0.0000000 81mae1 0
142 ce g u238f ms cu 4.6122526 2.0 4.5930000 0.0350000 0 0.0000000 81mae1 0
142 ce g u238f es cu 4.5740933 1.3 4.5550000 0.0590000 0 0.0000000 81mae1 0
142 ce g u238f cm cu 0.0000000 0.0 4.5540000 0.0490000 0 0.0000000 81mae1 0
142 ce g u238f ms cu su 0.0000000 0.0 4.6900000 0.0400000 148 nd g u238f 2.0800000 74mae1 0
142 u238f rc cu 5.1314197 15.0 5.1100000 15.0000000% 0 0.0000000 81koc1 36
142 u238f rc cu 4.2276471 5.0 4.2100000 0.1500000 0 0.0000000 85li 1 0
142 la g u238f cm cu 0.0000000 0.0 5.0400000 4.1000000% 0 0.0000000 73net2 0
142 la g u238f rc cu 4.1118263 5.7 4.2600000 0.2400000 140 ba g u238f 6.0500000 78deb1 0
142 la g u238f rc cu 4.4400002 5.0 4.6000000 0.1700000 140 ba g u238f 6.0500000 78deb1 0
142 la g u238f es cu 4.6895753 3.4 4.6700000 0.1600000 0 0.0000000 78gin1 0
142 la g u238f rc cu x4 0.0000000 0.0 3.7300000 0.3500000 0 0.0000000 77gud1 0
142 la g u238f rc cu 4.6795334 6.2 4.6600000 0.2900000 0 0.0000000 78nag1 0
142 la g u238f rc cu 4.2376891 11.6 4.2200000 0.4900000 0 0.0000000 84gud1 0
142 la g u238f rc cu 4.9707490 10.0 4.9500000 10.0000000% 0 0.0000000 81nic1 36
142 la g u238f rc cu 4.0569345 7.4 4.0400000 7.4000000% 0 0.0000000 87chu1 0
142 la g u238f rc cu su 0.0000000 0.0 4.5400000 0.0000000 0 0.0000000 75fly4 0
142 la g u238f rc cu 4.8100783 10.9 4.7900000 10.9000000% 0 0.0000000 88afa1 0
142 la g u238f rc cu 5.0611263 11.7 5.0400000 11.7000000% 0 0.0000000 88afa1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

142 cs g u238f ms in su 0.0000000 0.0 1.1000000 0.1400000 141 cs g u238f 1.0000000 73bal1 0
142 cs g u238f ms in 1.9079643 22.6 1.9000000 0.4300000 0 0.0000000 74bal2 0
142 cs g u238f cm fi 0.0000000 0.0 0.4100000 0.0900000 142 u238f 1.0000000 74wol1 0
142 cs g u238f rc in 2.0585930 20.0 2.0500000 0.4100000 0 0.0000000 74wol4 0
142 u238he es cu 3.9355885 30.0 3.9270000 0.0000000 0 0.0000000 63wea1 0
142 ce g u238he rc cu su 0.0000000 0.0 3.9000000 0.5000000 0 0.0000000 71bla1 0
142 u238he es cu 4.0087482 15.0 4.0000000 15.0000000% 0 0.0000000 74mee9 0
142 u238he cm cu 0.0000000 0.0 4.0000000 4.6000000% 0 0.0000000 77cro1 0

142 la g u238he rc cu su 0.0000000 0.0 4.3700000 0.3500000 0 0.0000000 73dar3 0
142 la g u238he cm cu 0.0000000 0.0 4.1200000 4.1000000% 0 0.0000000 73net2 0
142 la g u238he rc cu 4.1991637 5.0 4.1900000 0.1400000 0 0.0000000 75dar1 0
142 la g u238he rc cu 3.8843726 5.6 3.8700000 0.2100000 140 ba g u238he 4.6000000 76raj1 0
142 la g u238he es cu su 0.0000000 0.0 4.2000000 0.3100000 0 0.0000000 73dar1 0
142 la g u238he rc cu 3.8901855 7.5 3.8100000 0.2800000 99 mo g u238he 5.6000000 75ada1 0
142 la g u238he rc cu 4.4665267 9.1 4.4500000 0.4000000 140 ba g u238he 4.6000000 75cav1 0
142 la g u238he rc cu su 0.0000000 0.0 4.4500000 0.4000000 140 ba g u238he 4.6000000 74bla1 0
142 la g u238he rc cu 3.5076547 9.4 3.5000000 0.3300000 0 0.0000000 83li 2 0
142 la g u238he rc cu 3.9385951 5.3 3.9300000 0.2100000 0 0.0000000 85liu1 0
142 la g u238he rc cu 4.0433424 7.2 3.9600000 0.2800000 99 mo g u238he 5.6000000 80li 1 0
142 la g u238he rc cu 4.4163410 6.1 4.4000000 0.2600000 140 ba g u238he 4.6000000 80zhe1 0
142 xe g u238he rc fc 0.4476840 6.1 11.0000000 0.6000000 142 la g u238he 100.0000000 66gra1 0
142 xe g u238he ms in 0.6814872 13.2 0.6800000 0.0900000 0 0.0000000 72boc1 0
142 xe g u238he rc fc 0.4558426 10.2 0.1120000 0.0110000 142 u238he 1.0000000 77feu1 0
142 i g u238he es cu 0.0118411 30.1 0.0121000 0.0000000 142 u238he 4.1590000 74mee2 0
142 ce g pu239t ms cu 4.8225760 1.8 6.6200000 0.0000000 140 ce g pu239t 7.3600000 56wil1 0
142 ce g pu239t ms re rp 4.7790832 16.2 1.0000000 0.0000000 no. relative values = 1 57kri1
142 pu239t cm cu 0.0000000 0.0 4.9000000 0.0000000 0 0.0000000 72sid1 0
142 pu239t cm cu 0.0000000 0.0 4.9700000 0.0000000 0 0.0000000 73lam1 0
142 pu239t cm cu 0.0000000 0.0 5.0200000 0.0800000 0 0.0000000 73wal1 0
142 ce g pu239t ms cu 4.9371130 2.2 4.9400000 0.1100000 0 0.0000000 75mae1 0
142 ce g pu239t ms cu su 0.0000000 0.0 4.9300000 0.1000000 0 0.0000000 66rid2 0
142 pu239t cm cu 0.0000000 0.0 5.0000000 6.0000000% 0 0.0000000 77cro1 0
142 ce g pu239t ms cu aj 4.9271188 4.9 4.9300000 0.2400000 0 0.0000000 67rid1 0
142 ce g pu239t ms cu x4 0.0000000 0.0 6.6600000 0.1700000 0 0.0000000 59ani1 0
142 ce g pu239t ms cu 4.7562188 2.0 4.7590000 0.0700000 0 0.0000000 79mae2 0
142 ce g pu239t ms cu 4.9380074 2.2 5.0400000 0.1100000 137 cs g pu239t 6.7400000 70lis1 0
142 ce g pu239t ms re 5.0508725 1.6 4.9700000 0.0000000 133 cs g pu239t 6.9000000 59fic2 0
142 ce g pu239t ms re rp 4.7871924 3.3 1.0000000 0.0000000 no. relative values = 1 59fic2
142 ce g pu239t ms cu 4.9553194 1.3 5.0000000 0.0400000 140 ce g pu239t 5.4100000 86chi1 0
142 ce g pu239t es cu nr 4.9951361 1.4 4.7700000 1.0000000% 140 ce g pu239t 5.1200000 81mae2 0
142 la g pu239t rc cu x4 0.0000000 0.0 5.8500000 0.2100000 99 mo g u235t 5.8400000 71ram1 31
142 la g pu239t cm cu 0.0000000 0.0 4.9710000 2.0000000% 0 0.0000000 73net2 0
142 la g pu239t rc cu x4 0.0000000 0.0 4.1500000 8.0000000% 0 0.0000000 77gud1 36
142 la g pu239t rc cu 4.6672708 5.8 4.6700000 0.2700000 0 0.0000000 80dic1 0

142 la g pu239t rc cu x4 0.0000000 0.0 4.3700000 5.0000000% 0 0.0000000 80ram1 0
142 la g pu239t rc cu x4 0.0000000 0.0 5.3900000 0.1900000 0 0.0000000 84jai1 0
142 la g pu239t cm in 0.0000000 0.0 0.2874000 30.0000000% 0 1.0000000 88wah1 0
142 la g pu239t es fc 4.9228500 0.6 0.9993600 0.2600000% 142 pu239t 1.0000000 88wah1 0
142 la g pu239t es cu 4.9335151 1.4 4.9364000 1.4000000% 0 0.0000000 89rid1 0
142 ba g pu239t rc cu 4.5373468 11.7 4.5400000 0.5300000 0 0.0000000 81dic1 0
142 ba g pu239t cm in 0.0000000 0.0 3.2680000 11.0000000% 0 1.0000000 88wah1 0
142 cs g pu239t es fc 2.1969972 30.0 0.4460000 0.0000000 142 pu239t 1.0000000 74wol1 0
142 cs g pu239t rc in 1.1293396 21.2 1.1300000 0.2400000 0 0.0000000 75bal1 0
142 cs g pu239t cm in 0.0000000 0.0 1.2650000 21.0000000% 0 1.0000000 88wah1 0
142 xe g pu239t rc fc su 0.0000000 0.0 1.6500000 0.1000000 142 la g pu239t 100.0000000 65wol1 0
142 xe g pu239t es fc 0.1344799 30.0 0.0273000 0.0000000 142 pu239t 1.0000000 74wol1 0
142 xe g pu239t ms cu 0.1379194 6.5 0.1380000 0.0090000 0 0.0000000 76bri2 0
142 xe g pu239t ms in 0.1369199 7.3 0.1370000 0.0100000 0 0.0000000 77bri1 0
142 xe g pu239t rc cu 0.1411070 6.8 0.1380000 0.0090000 140 xe g pu239t 1.5600000 77bri1 0
142 xe g pu239t cm in 0.0000000 0.0 0.1083000 27.0000000% 0 1.0000000 88wah1 0
142 pu239f cm cu x3 0.0000000 0.0 5.9100000 0.0000000 0 0.0000000 72sid1 0
142 pu239f cm cu 0.0000000 0.0 4.9300000 3.8000000% 0 0.0000000 77cro1 0
142 pu239f ms cu 4.9428499 2.8 5.0400000 0.1400000 148 nd g pu239f 1.6900000 77gab1 0
142 ce g pu239f ms cu 4.8079322 0.9 4.7980000 0.0380000 148 nd g pu239f 1.6540000 77mae1 0
142 ce g pu239f ms cu 4.7844189 2.0 4.7960000 0.0550000 0 0.0000000 77mae1 0
142 ce g pu239f ms cu 4.7423400 1.9 4.9500000 0.0900000 148 nd g pu239f 1.7300000 70lis1 0
142 ce g pu239f ms cu su 0.0000000 0.0 4.8900000 0.0400000 148 nd g pu239f 1.6500000 74mae1 0
142 pu239f es re 4.8187265 10.0 0.9800000 10.0000000% 142 pu239t 1.0000000 74mee4 0
142 ce g pu239f ms cu 4.5963993 5.0 0.4635000 5.0000000% 140 ce g pu239f 0.5365000 80mae4 36
142 pu239f ms cu 4.6716917 3.0 4.6830000 3.0000000% 0 0.0000000 81koc1 36
142 ce g pu239f es cu nr 4.6313575 1.2 4.8400000 1.0000000% 140 ce g pu239f 5.5600000 81mae2 0
142 la g pu239f cm cu 0.0000000 0.0 4.8800000 4.0000000% 0 0.0000000 73net2 0
142 la g pu239f rc re 4.9978294 5.0 1.0000000 0.0170000 140 ba g u235t 0.0000000 75raj1 7
142 la g pu239f rc cu 4.1399788 5.0 4.1500000 0.1800000 0 0.0000000 77gud1 0
142 pu241t cm cu 0.0000000 0.0 4.7000000 0.0000000 0 0.0000000 72sid1 0
142 pu241t cm cu 0.0000000 0.0 4.7900000 4.5000000% 0 0.0000000 77cro1 0
142 pu241t cm cu 0.0000000 0.0 4.8400000 0.0700000 0 0.0000000 73wal1 0
142 ce g pu241t ms cu 4.6781485 2.0 4.6730000 0.0530000 0 0.0000000 77mae1 0
142 ce g pu241t ms cu 4.9871237 2.8 4.8000000 0.1300000 148 nd g pu241t 1.8616500 70lis1 0
142 ce g pu241t ms re rp 4.7884409 2.3 1.0000000 0.0000000 no. relative values = 3 64far1

142 ce g pu241t ms cu 4.7203102 1.1 4.7100000 0.0400000 148 nd g pu241t 1.9300000 86chi1 0
142 ce g pu241t ms cu 4.7482984 1.7 4.6800000 0.0400000 140 ce g pu241t 5.6900000 86chi1 0
142 xe g pu241t ms cu 0.5656225 8.8 0.5650000 0.0500000 0 0.0000000 76bri2 0
142 xe g pu241t ms in 0.5606170 8.9 0.5600000 0.0500000 0 0.0000000 77bri1 0
142 xe g pu241t rc cu 0.5739580 9.3 0.5650000 0.0500000 140 xe g pu241t 3.2500000 77bri1 0
142 u233t cm cu 0.0000000 0.0 6.7900000 0.0000000 0 0.0000000 72sid1 0
142 u233t cm cu 0.0000000 0.0 6.6100000 0.0000000 0 0.0000000 73lam1 0
142 u233t cm cu 0.0000000 0.0 6.6000000 0.1200000 0 0.0000000 73wal1 0
142 ce g u233t ms cu 6.6190435 4.0 6.0600000 0.2400000 137 cs g u233t 6.1600000 59gor1 0
142 ce g u233t ms cu 6.7672091 3.6 7.0000000 3.0000000% 144 ce g u233t 4.8700000 61bid1 0
142 ce g u233t ms cu 6.8041827 5.0 6.8300000 0.3400000 0 0.0000000 67rid1 0
142 ce g u233t ms cu su 0.0000000 0.0 5.6000000 0.1700000 148 nd g u233t 1.1500000 55kuk1 0
142 ce g u233t ms cu su 0.0000000 0.0 5.5000000 0.5000000 148 nd g u233t 1.0500000 57iva1 0
142 ce g u233t ms cu su 0.0000000 0.0 6.0600000 0.2400000 148 nd g u233t 1.0500000 57iva1 0
142 ce g u233t ms cu rp 6.9395565 10.4 6.0600000 0.0000000 no. relative values = 1 59gor1
142 u233t cm cu 0.0000000 0.0 6.7400000 3.6000000% 0 0.0000000 77cro1 0
142 ce g u233t ms cu 6.6190435 4.0 6.0600000 0.2400000 137 cs g u233t 6.1600000 59ani1 0
142 ce g u233t ms cu 6.3802547 9.1 5.5000000 0.5000000 137 cs g u233t 5.8000000 59ani1 0
142 ce g u233t ms cu 6.6846363 2.0 6.7100000 0.0500000 0 0.0000000 70lis1 0
142 ce g u233t ms cu 6.6553754 1.7 6.7900000 0.0600000 140 ce g u233t 6.5300000 86chi1 0
142 la g u233t cm cu 0.0000000 0.0 6.5710000 2.0000000% 0 0.0000000 73net2 0
142 la g u233t rc fi 0.4518489 14.8 0.0680000 0.0100000 142 u233t 1.0000000 81pal1 0
142 la g u233t rc cu 6.5551277 5.0 6.5800000 4.6000000% 0 0.0000000 81ram1 0
142 xe g u233t rc fc 0.0650859 9.1 0.9800000 0.0700000 142 la g u233t 100.0000000 65wol1 0
142 xe g u233t sp in 0.0876674 6.8 0.0880000 0.0060000 0 0.0000000 75bri1 0
142 xe g u233t sp cu 0.0876674 6.8 0.0880000 0.0060000 0 0.0000000 75bri1 0
142 i g u233t es cu 0.0000865 30.0 0.0000868 0.0000000 0 0.0000000 74mee2 0
142 th232f cm cu x3 0.0000000 0.0 8.3000000 15.0000000% 0 0.0000000 65eng1 0
142 th232f es cu cm 5.8193546 30.0 5.8600000 0.0000000 0 0.0000000 72sid1 0
142 th232f es cu cm 7.1699215 30.0 7.2200000 0.0000000 0 0.0000000 73lam1 0
142 th232f cm cu 0.0000000 0.0 6.5500000 6.2000000% 0 0.0000000 77cro1 0
142 th232f es cu 6.2761640 5.0 6.3200000 5.0000000% 0 0.0000000 74mee0 0
142 la g th232f rc re 6.8251610 7.4 0.9270000 7.4000000% 140 ba g u235t 0.0000000 73bra1 7
142 la g th232f cm cu 0.0000000 0.0 7.9780000 16.0000000% 0 0.0000000 73net2 0
142 la g th232f rc cu 6.4549155 10.8 6.5000000 0.7000000 0 0.0000000 77gud1 0
142 la g th232f rc cu 6.7660130 5.7 6.4000000 0.1100000 140 ba g th232f 7.4000000 73cha1 0

142 la g th232f rc cu 6.5442912 5.0 6.5900000 0.2000000 0 0.0000000 86ric1 0
142 xe g th232f rc fc 2.2735885 5.7 0.3500000 0.0100000 142 th232f 1.0000000 89sri1 0
143 nd g u235t ms cu 5.8223262 1.5 6.1600000 0.0000000 148 nd g u235t 1.7700000 55gle1 0
143 nd g u235t ms cu 5.7979682 6.0 5.8000000 0.0000000 0 0.0000000 55pet2 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

143 u235t cm cu 0.0000000 0.0 5.8800000 0.0000000 0 0.0000000 72sid1 0
143 u235t cm cu 0.0000000 0.0 5.9200000 0.0000000 0 0.0000000 73lam1 0
143 u235t cm cu 0.0000000 0.0 5.9500000 0.0800000 0 0.0000000 73wal1 0
143 nd g u235t ms re 5.9577150 1.1 1.0000000 0.0100000 145 nd g u235t 0.6600000 59chu1 0
143 nd g u235t ms cu 5.9779052 2.0 5.9800000 0.0750000 0 0.0000000 65rid1 0
143 nd g u235t ms re 6.1152511 1.9 3.6290000 0.0680000 148 nd g u235t 0.9928000 65rid2 0
143 u235t ms cu 6.0848677 2.0 6.0870000 0.0520000 0 0.0000000 76dii1 0
143 nd g u235t ms cu 5.7979682 3.0 5.8000000 3.0000000% 0 0.0000000 59bid1 0
143 nd g u235t ms re 6.0175149 0.9 3.5710000 0.0290000 148 nd g u235t 0.9928000 64rid1 0
143 u235t cm cu 0.0000000 0.0 5.9400000 1.2000000% 0 0.0000000 77cro1 0
143 nd g u235t ms cu 5.8471574 3.5 5.8000000 0.2000000 142 ce g u235t 5.8000000 59ani1 0
143 nd g u235t ms re 5.9613816 0.6 0.3243000 0.0003380 148 nd g u235t 0.0910100 76mae1 0
143 nd g u235t ms cu 6.0048957 2.0 6.0070000 0.0450000 0 0.0000000 78mae1 0
143 nd g u235t ms cu 5.9889013 2.0 5.9910000 0.0370000 0 0.0000000 78mae1 0
143 nd g u235t ms cu 6.0168915 2.0 6.0190000 0.0380000 0 0.0000000 78mae1 0
143 nd g u235t ms cu 5.8979332 2.0 5.9000000 0.0300000 0 0.0000000 70lis1 0
143 u235t es re 5.9493291 2.1 1.0000000 2.0000000% 143 u235f 0.9630000 74mee4 0
143 nd g u235t ms cu cm 6.0038961 6.0 6.0060000 0.0000000 0 0.0000000 80mae3 0
143 nd g u235t ms cu 5.8863886 0.9 5.8900000 0.0500000 148 nd g u235t 1.6740000 86chi1 0
143 nd g u235t ms cu rp 5.8114582 11.2 5.4000000 0.0000000 no. relative values = 2 50ing1
143 nd g u235t ms re rp 5.9300139 1.6 1.0000000 0.0000000 no. relative values = 5 55mel1
143 nd g u235t ms re rp 5.9313941 1.4 1.0000000 0.0000000 no. relative values = 6 62far1
143 nd g u235t ms cu x4 0.0000000 0.0 5.4000000 5.0000000% 0 0.0000000 50ing1 0
143 nd g u235t ms cu x4 0.0000000 0.0 5.8000000 0.2600000 146 nd g u235t 3.2000000 57gor1 36
143 pr g u235t rc cu 5.9256277 5.2 5.8800000 0.2300000 99 mo g u235t 6.0600000 65bun1 36
143 ce g u235t rc fi 0.0315566 10.0 0.0053000 0.0002600 143 u235t 1.0000000 62wah1 0
143 ce g u235t rc cu 5.6699934 5.1 5.8200000 0.1200000 141 ce g u235t 6.0000000 67bre1 0
143 ce g u235t rc fi x1 0.0000000 0.0 0.1200000 0.0000000 143 ce g u235t 1.0000000 67fas1 0

143	ce g	u235t	rc	cu		5.7979682	5.0	5.8000000	0.2000000	0			0.0000000	70ohy1	0		
143	ce g	u235t	rc	cu		5.7579822	8.3	5.7600000	0.4800000	0			0.0000000	71mcl1	0		
143	ce g	u235t	cm	cu		0.0000000	0.0	5.8500000	5.0000000%	0			0.0000000	73net2	0		
143	ce g	u235t	rc	cu	su	0.0000000	0.0	5.4800000	2.8000000%	0			0.0000000	76gil4	0		
143	ce g	u235t	bm	cu		5.3581224	9.2	5.3600000	9.2000000%	0			0.0000000	77gil1	0		
143	ce g	u235t	rc	cu		5.4980733	5.0	5.5000000	0.1200000	0			0.0000000	77gud1	0		
143	ce g	u235t	rc	cu		6.1478456	5.0	6.1500000	0.2900000	0			0.0000000	74bla1	0		
143	ce g	u235t	rc	cu		5.7879717	5.2	5.7900000	0.3000000	0			0.0000000	76thi1	0		
143	ce g	u235t	rc	cu		5.9179262	5.0	5.9200000	3.7000000%	0			0.0000000	81lau1	0		
143	ce g	u235t	rc	cu		5.4998019	60.0	5.4000000	0.0000000	140	ba g	u235t	6.1000000	51kat7	0		
143	ce g	u235t	rc	cu	x4	0.0000000	0.0	6.5500000	0.4000000	0			0.0000000	79ram1	36		
143	la g	u235t	rc	re	x4	0.0000000	0.0	0.7000000	0.0000000	143	ce g	u235t	1.0000000	51sch1	0		
143	la g	u235t	rc	fc		5.9278688	10.0	0.9956000	0.0030000	143		u235t	1.0000000	62wah1	0		
143	la g	u235t	cm	cu		0.0000000	0.0	5.8430000	5.0000000%	0			0.0000000	73net2	0		
143	la g	u235t	sp	fi		0.4763253	88.0	0.0800000	88.0000000%	143		u235t	1.0000000	84den1	0		
143	la g	u235t	cm	in		0.0000000	0.0	0.5441000	47.0000000%	0			1.0000000	88wah1	0		
143	ba g	u235t	rc	fc		5.2395783	7.0	0.8800000	0.0600000	143	ce g	u235t	1.0000000	69run1	0		
143	ba g	u235t	cm	cu		0.0000000	0.0	5.4140000	7.0000000%	0			0.0000000	73net2	0		
143	ba g	u235t	rc	fc		5.7337662	5.0	96.3000000	2.7000000	143		u235t	100.0000000	78den2	0		
143	ba g	u235t	rc	fc		5.7337662	5.0	96.3000000	2.7000000	143		u235t	100.0000000	78fis1	0		
143	ba g	u235t	ms	in		4.4184516	26.0	4.4200000	1.1500000	0			0.0000000	79shm1	0		
143	ba g	u235t	sp	cu		4.4184516	26.0	4.4200000	1.1500000	0			0.0000000	81shm1	0		
143	ba g	u235t	sp	fi		3.9892247	7.0	0.6700000	7.0000000%	143		u235t	1.0000000	84den1	0		
143	ba g	u235t	cm	in		0.0000000	0.0	3.9350000	7.0000000%	0			1.0000000	88wah1	0		
143	ba g	u235t	sp	in	x4	0.0000000	0.0	6.1000000	0.8000000	0			0.0000000	90rud1	0		
143	ba g	u235t	sp	cu	x4	0.0000000	0.0	7.3000000	0.9000000	0			0.0000000	90rud1	0		
143	cs g	u235t	rc	in	x1	0.0000000	0.0	0.9790000	0.1670000	0			0.0000000	70for1	0		
143	cs g	u235t	ms	in		1.7393905	8.6	1.7400000	0.1500000	0			0.0000000	72bal1	0		
143	cs g	u235t	ms	in		1.4494921	4.1	1.4500000	0.0600000	0			0.0000000	72cha1	0		
143	cs g	u235t	es	fi		1.7862200	8.7	0.3000000	0.0260000	143		u235t	1.0000000	72ree1	0		
143	cs g	u235t	cm	cu	x3	0.0000000	0.0	1.3740000	32.1000000%	0			0.0000000	73net2	0		
143	cs g	u235t	sp	re		1.4306399	5.2	0.2500000	0.0100000	140	cs g	u235t	1.0000000	75ree1	0		
143	cs g	u235t	sp	in		1.3471279	5.0	1.3476000	0.0313000	0			0.0000000	75ree1	0		
143	cs g	u235t	sp	fi		1.3563364	5.0	22.7800000	0.6300000	143		u235t	100.0000000	79bal1	0		
143	cs g	u235t	ms	in		1.4494921	11.7	1.4500000	0.1700000	0			0.0000000	79shm1	0		
143	cs g	u235t	sp	cu		1.4494921	11.7	1.4500000	0.1700000	0			0.0000000	81shm1	0		

143 cs g u235t sp fc 1.4885167 16.0 0.2500000 16.0000000% 143 u235t 1.0000000 84den1 0
143 cs g u235t sp fi 1.4289760 17.0 0.2400000 17.0000000% 143 u235t 1.0000000 84den1 0
143 cs g u235t cm in 0.0000000 0.0 1.4750000 3.0000000% 0 1.0000000 88wah1 0
143 cs g u235t sp cu 1.2195726 13.1 1.2200000 0.1600000 0 0.0000000 90rud1 0
143 xe g u235t rc fc 0.0506096 10.1 0.0085000 0.0005000 143 ce g u235t 1.0000000 58wah1 0
143 xe g u235t rc in x1 0.0000000 0.0 0.2700000 0.0770000 0 0.0000000 72ehr1 0
143 xe g u235t cm cu 0.0000000 0.0 0.0759000 50.0000000% 0 0.0000000 73net2 0
143 xe g u235t es fc 0.0774029 30.0 0.0130000 0.0000000 143 u235t 1.0000000 74wol1 0
143 xe g u235t cm in 0.0000000 0.0 0.0496000 13.0000000% 0 1.0000000 88wah1 0
143 nd g u235f ms cu 5.7477037 3.0 5.9800000 3.0000000% 148 nd g u235f 1.7500000 69dav1 0
143 nd g u235f rc cu 5.5266382 5.0 5.7500000 0.1200000 148 nd g u235f 1.7500000 70rid1 0
143 nd g u235f ms cu rp 5.9386132 4.6 5.9000000 0.0000000 no. relative values = 12 71cro2
143 nd g u235f ms re su 0.0000000 0.0 3.2800000 0.0000000 148 nd g u235f 1.0000000 71rob1 0
143 u235f es cu cm 5.8950553 30.0 5.9000000 0.0000000 0 0.0000000 72sid1 0
143 nd g u235f ms re 5.6684085 1.6 3.3700000 0.0000000 148 nd g u235f 1.0000000 73rob1 0
143 nd g u235f ms cu 5.5553403 2.0 5.5600000 0.0800000 0 0.0000000 74lar2 0
143 nd g u235f ms cu su 0.0000000 0.0 5.6700000 0.0000000 0 0.0000000 76koc1 0
143 u235f cm cu 0.0000000 0.0 5.7400000 2.1000000% 0 0.0000000 77cro1 0
143 nd g u235f ms cu 5.7108115 0.7 5.6700000 0.3000000% 148 nd g u235f 1.6700000 77koc1 0
143 u235f ms cu 5.7034022 3.1 5.9000000 0.1800000 148 u235f 1.7400000 77gab1 0
143 nd g u235f ms cu 5.7301936 2.0 5.7350000 0.0500000 0 0.0000000 80mae1 0
143 nd g u235f ms cu 5.5746959 2.1 5.8000000 0.1200000 148 nd g u235f 1.7500000 70lis1 0
143 u235f es re 5.7309957 10.0 0.9630000 10.0000000% 143 u235t 1.0000000 74mee4 0
143 nd g u235f ms cu cm 5.7611676 6.0 5.7660000 0.0000000 0 0.0000000 80mae3 0
143 u235f rc cu 5.6558856 5.1 5.8900000 0.0700000 140 ba g u235f 6.2200000 77bla1 0
143 nd g u235f ms cu 5.8580864 2.0 5.8630000 0.0270000 0 0.0000000 81mae1 0
143 nd g u235f ms cu 5.8670788 2.0 5.8720000 0.0360000 0 0.0000000 81mae1 0
143 nd g u235f ms cu 5.9080444 2.0 5.9130000 0.0320000 0 0.0000000 81mae1 0
143 nd g u235f cm cu 0.0000000 0.0 5.8820000 0.0340000 0 0.0000000 81mae1 0
143 nd g u235f ms cu 5.8069749 1.0 5.8000000 0.0500000 148 nd g u235f 1.6800000 74mae1 0
143 u235f ms cu 5.6652481 3.0 5.6700000 3.0000000% 0 0.0000000 81koc1 36
143 ce g u235f rc cu 5.2773095 5.1 5.1600000 3.0000000% 140 ba g u235f 5.8400000 72sch1 0
143 ce g u235f rc cu su 0.0000000 0.0 5.4700000 7.0000000% 0 0.0000000 73dud2 0
143 ce g u235f rc re 5.7935858 9.3 0.9700000 0.0900000 140 ba g u235f 1.0000000 73man1 0
143 ce g u235f cm cu 0.0000000 0.0 5.5570000 5.0000000% 0 0.0000000 73net2 0
143 ce g u235f rc cu 5.5153738 7.3 5.5200000 7.3000000% 0 0.0000000 75dud2 0

143 ce g u235f rc re 5.5065981 5.0 0.9620000 0.0300000 140 ba g u235t 0.0000000 75raj1 7
143 ce g u235f rc cu su 0.0000000 0.0 0.9000000 0.0060000 143 ce g u235t 1.0000000 76deb1 0
143 ce g u235f rc cu 5.5173958 5.0 0.9530000 0.8000000% 99 mo g u235t 0.0000000 76for1 7
143 ce g u235f rc cu 5.6737123 5.0 0.9800000 0.8000000% 99 mo g u235t 0.0000000 76for1 7
143 ce g u235f rc cu 5.6910808 5.0 0.9830000 0.8000000% 99 mo g u235t 0.0000000 76for1 7
143 ce g u235f rc cu 5.9573979 5.0 1.0290000 0.8000000% 99 mo g u235t 0.0000000 76for1 7
143 ce g u235f rc cu 6.0789775 5.0 1.0500000 0.8000000% 99 mo g u235t 0.0000000 76for1 7
143 ce g u235f rc cu 5.7547654 5.0 0.9940000 3.9000000% 99 mo g u235t 0.0000000 76for1 7
143 ce g u235f rc cu 5.7721339 5.0 0.9970000 0.8000000% 99 mo g u235t 0.0000000 76for1 7
143 ce g u235f rc cu 5.7373968 5.0 0.9910000 0.8000000% 99 mo g u235t 0.0000000 76for1 7
143 ce g u235f rc cu su 0.0000000 0.0 5.2560000 4.0000000% 0 0.0000000 76gil2 0
143 ce g u235f rc cu su 0.0000000 0.0 5.3240000 4.0000000% 0 0.0000000 76gil3 0
143 ce g u235f rc cu 5.3084608 5.2 0.8920000 0.0080000 143 ce g u235t 1.0000000 77deb1 0
143 ce g u235f bm cu 5.1656671 8.7 5.1700000 8.7000000% 0 0.0000000 77gil1 0
143 ce g u235f rc cu 5.6119714 5.2 0.9430000 0.0240000 143 ce g u235t 1.0000000 79yur1 36
143 ce g u235f rc cu 5.4054660 5.0 5.4100000 3.2000000% 0 0.0000000 81lau1 0
143 ce g u235f rc cu 5.9217195 7.8 5.8000000 0.4500000 140 ba g u235f 5.8500000 78bya1 0
143 ce g u235f rc cu 5.8051308 5.8 5.8100000 5.8000000% 0 0.0000000 86dho1 0
143 ce g u235f rc cu 5.2456001 5.3 5.2500000 0.2800000 0 0.0000000 81mar1 0
143 ce g u235f rc cu 5.4953906 5.0 5.5000000 0.1200000 0 0.0000000 77gud1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

143 ce g u235f rc cu 5.5637118 5.0 0.9610000 0.8000000% 99 mo g u235t 0.0000000 76for1 7
143 la g u235f cm cu 0.0000000 0.0 5.5450000 5.0000000% 0 0.0000000 73net2 0
143 ba g u235f cm cu 0.0000000 0.0 5.0170000 7.0000000% 0 0.0000000 73net2 0
143 ba g u235f rc cu 4.8059688 5.0 4.8100000 0.1000000 0 0.0000000 81mar1 0
143 ba g u235f rc in 3.5769997 5.0 3.5800000 0.1500000 0 0.0000000 81mar1 0
143 cs g u235f cm cu x3 0.0000000 0.0 1.0630000 32.1000000% 0 0.0000000 73net2 0
143 cs g u235f rc cu 1.2289692 9.8 1.2300000 0.1200000 0 0.0000000 81mar1 0
143 cs g u235f rc in 1.2089859 9.9 1.2100000 0.1200000 0 0.0000000 81mar1 0
143 xe g u235f rc fc su 0.0000000 0.0 0.0080000 0.0080000 143 u235f 1.0000000 72wol1 0
143 xe g u235f cm cu 0.0000000 0.0 0.0463300 90.0000000% 0 0.0000000 73net2 0
143 xe g u235f rc fc lt 0.0629905 15.0 0.0110000 0.0000000 143 u235f 1.0000000 75wol1 0
143 u235he cm cu es 0.0000000 0.0 3.7700000 0.0000000 0 0.0000000 63wea1 0

143 u235he cm cu 0.0000000 0.0 3.9300000 4.9000000% 0 0.0000000 77cro1 0
143 u235he es cu 3.7892935 10.0 3.8050000 10.0000000% 0 0.0000000 74mee8 0
143 ce g u235he rc re 3.8399104 10.0 0.7700000 0.0100000 99 mo g u235t 0.0000000 56for1 7
143 ce g u235he cm cu 0.0000000 0.0 3.8100000 0.0000000 0 0.0000000 69gun2 0
143 ce g u235he rc re 3.8053235 13.2 0.8500000 0.1100000 140 ba g u235he 1.0000000 73man1 0
143 ce g u235he cm cu 0.0000000 0.0 3.6900000 3.9000000% 0 0.0000000 73net2 0
143 ce g u235he cm cu 0.0000000 0.0 3.9000000 0.0000000 0 0.0000000 60kat1 0
143 ce g u235he rc cu 3.8906853 10.0 3.7200000 5.0000000% 99 mo g u235t 5.7000000 56for1 6
143 ce g u235he rc re su 0.0000000 0.0 0.7830000 0.5500000% 99 mo g u235t 0.0000000 64cow1 7
143 ce g u235he rc cu 3.9047400 5.0 0.7830000 0.8000000% 99 mo g u235t 0.0000000 76for1 7
143 ce g u235he rc cu 3.8399104 5.0 0.7700000 0.8000000% 99 mo g u235t 0.0000000 76for1 7
143 ce g u235he rc cu 3.7345205 5.0 3.7500000 4.1000000% 0 0.0000000 81lau1 0
143 ce g u235he rc cu 3.7643967 5.0 3.7800000 0.1800000 0 0.0000000 84chi1 0
143 la g u235he cm cu 0.0000000 0.0 3.6290000 3.9000000% 0 0.0000000 73net2 0
143 ba g u235he cm cu x3 0.0000000 0.0 2.7240000 10.0000000% 0 0.0000000 73net2 0
143 cs g u235he cm cu x3 0.0000000 0.0 0.2356000 45.0000000% 0 0.0000000 73net2 0
143 xe g u235he cm cu 0.0000000 0.0 0.0034070 90.0000000% 0 0.0000000 73net2 0
143 u238f es cu cm 4.8142272 30.0 4.8000000 0.0000000 0 0.0000000 64wal1 0
143 nd g u238f ms re su 0.0000000 0.0 2.1700000 0.0000000 148 nd g u238f 1.0000000 71rob1 0
143 nd g u238f ms re rp 4.5959673 2.6 1.0000000 0.0000000 no. relative values = 5 72mat1
143 u238f cm cu x3 0.0000000 0.0 4.3000000 0.0000000 0 0.0000000 72sid1 0
143 nd g u238f ms re 4.5764642 1.7 2.1600000 0.0000000 148 nd g u238f 1.0000000 73rob1 0
143 nd g u238f ms cu 4.7204942 7.0 4.3000000 0.3000000 148 nd g u238f 1.9300000 67rid1 0
143 u238f cm cu 0.0000000 0.0 4.6800000 3.9000000% 0 0.0000000 77cro1 0
143 nd g u238f ms re rp 4.3914555 7.5 1.2150000 0.0000000 no. relative values = 1 72mat1
143 u238f rc cu 4.5258111 5.0 4.7800000 0.0800000 140 ba g u238f 6.1600000 77bla1 0
143 nd g u238f ms cu 4.6246670 2.0 4.6110000 0.0310000 0 0.0000000 81mae1 0
143 nd g u238f ms cu 4.6186492 2.0 4.6050000 0.0350000 0 0.0000000 81mae1 0
143 nd g u238f ms cu 4.6367025 2.0 4.6230000 0.0720000 0 0.0000000 81mae1 0
143 nd g u238f cm cu 0.0000000 0.0 4.6130000 0.0470000 0 0.0000000 81mae1 0
143 nd g u238f ms cu 4.6449156 1.1 4.5600000 0.0400000 148 nd g u238f 2.0800000 74mae1 0
143 u238f ms cu 4.4431305 3.0 4.4300000 3.0000000% 0 0.0000000 81koc1 36
143 u238f rc cu 4.6738122 5.0 4.6600000 0.1400000 0 0.0000000 85li 1 0
143 pr g u238f rc cu 4.3815260 9.2 4.5600000 0.4200000 140 ba g u238f 6.0700000 77har1 0
143 ce g u238f rc cu 4.8142272 15.0 4.8000000 0.0000000 0 0.0000000 68bel1 0
143 ce g u238f rc cu su 0.0000000 0.0 4.3400000 7.0000000% 0 0.0000000 73dud2 0

143	ce g	u238f	cm	cu		0.0000000	0.0	4.7900000	4.1000000%	0		0.0000000	73net2	0
143	ce g	u238f	rc	cu		4.8757777	5.2	4.8400000	0.1400000	143	ce g	u235t	5.9300000	74yur1	0
143	ce g	u238f	rc	cu		4.3528637	7.3	4.3400000	7.3000000%	0		0.0000000	75dud2	0
143	ce g	u238f	rc	cu		4.5900268	5.0	0.7610000	0.8000000%	99	mo g	u235t	0.0000000	76for1	7
143	ce g	u238f	rc	cu		4.7589109	5.0	0.7890000	0.8000000%	99	mo g	u235t	0.0000000	76for1	7
143	ce g	u238f	rc	cu		4.6925636	5.0	0.7780000	0.8000000%	99	mo g	u235t	0.0000000	76for1	7
143	ce g	u238f	rc	cu		4.7649424	5.0	0.7900000	0.8000000%	99	mo g	u235t	0.0000000	76for1	7
143	ce g	u238f	rc	cu		4.4814585	5.0	0.7430000	3.9000000%	99	mo g	u235t	0.0000000	76for1	7
143	ce g	u238f	rc	cu		4.4583949	5.0	4.6400000	0.2000000	140	ba g	u238f	6.0700000	77har1	0
143	ce g	u238f	rc	cu		4.9398581	5.0	0.8190000	0.8000000%	99	mo g	u235t	0.0000000	76for1	7
143	ce g	u238f	rc	cu		4.9700159	5.0	0.8240000	0.8000000%	99	mo g	u235t	0.0000000	76for1	7
143	ce g	u238f	rc	cu	su	0.0000000	0.0	4.3410000	4.3000000%	0		0.0000000	76gil2	0
143	ce g	u238f	rc	cu	su	0.0000000	0.0	4.2760000	4.7000000%	0		0.0000000	76gil3	0
143	ce g	u238f	bm	cu		4.2224784	8.7	4.2100000	8.7000000%	0		0.0000000	77gil1	0
143	ce g	u238f	rc	cu		4.5598967	5.0	4.7300000	0.2300000	140	ba g	u238f	6.0500000	78deb1	0
143	ce g	u238f	rc	cu		4.4731334	5.0	4.6400000	0.1000000	140	ba g	u238f	6.0500000	78deb1	0
143	ce g	u238f	es	cu		4.6537529	3.4	4.6400000	0.1600000	0		0.0000000	78gin1	0
143	ce g	u238f	rc	cu		4.6336936	5.4	4.6200000	0.2500000	0		0.0000000	78nag1	0
143	ce g	u238f	rc	cu		5.0314197	5.2	5.1400000	0.1900000	99	mo g	u238f	6.3200000	70lyl1	0
143	ce g	u238f	rc	cu		4.8268587	10.6	0.8080000	0.0850000	143	ce g	u235t	1.0000000	79yur1	36
143	ce g	u238f	rc	cu	ae	5.4826996	15.0	0.9090000	15.0000000%	99	mo g	u235t	0.0000000	76for1	7
143	ce g	u238f	rc	cu		5.4661538	11.0	5.4500000	0.6000000	0		0.0000000	75har1	36
143	ce g	u238f	rc	cu		4.7640790	11.4	4.7500000	0.5400000	0		0.0000000	85chi1	0
143	ce g	u238f	rc	cu		4.1723302	10.0	4.1600000	10.0000000%	0		0.0000000	81nic1	36
143	ce g	u238f	rc	cu		4.6336936	5.0	4.6200000	0.2300000	0		0.0000000	84chi3	0
143	ce g	u238f	rc	cu		4.2325080	10.7	4.2200000	10.7000000%	0		0.0000000	87chu1	0
143	ce g	u238f	rc	cu	su	0.0000000	0.0	4.2800000	0.0000000	0		0.0000000	75fly4	0
143	ce g	u238f	rc	cu	su	0.0000000	0.0	4.9200000	0.0000000	0		0.0000000	75fly4	0
143	ce g	u238f	rc	cu		4.5033083	11.1	4.4900000	11.1000000%	0		0.0000000	88afa1	0
143	ce g	u238f	rc	cu		4.6136344	12.0	4.6000000	12.0000000%	0		0.0000000	88afa1	0
143	la g	u238f	cm	cu		0.0000000	0.0	4.7900000	4.1000000%	0		0.0000000	73net2	0
143	ba g	u238f	cm	cu		0.0000000	0.0	4.7330000	4.1000000%	0		0.0000000	73net2	0
143	cs g	u238f	ms	in	su	0.0000000	0.0	1.0600000	0.1700000	141	cs g	u238f	1.0000000	73bal1	0
143	cs g	u238f	cm	cu	x3	0.0000000	0.0	2.7140000	15.0000000%	0		0.0000000	73net2	0
143	cs g	u238f	ms	in		1.8253945	24.7	1.8200000	0.4500000	0		0.0000000	74bal2	0
143	cs g	u238f	cm	fi		0.0000000	0.0	0.4300000	0.0100000	143		u238f	1.0000000	74wol1	0

143	cs	g	u238f	rc	in		1.9758391	21.8	1.9700000	0.4300000	0		0.0000000	74wol4	0
143	xe	g	u238f	rc	fc	su	0.0000000	0.0	0.0880000	0.0110000	143	u238f	1.0000000	72wol1	0
143	xe	g	u238f	cm	cu	x3	0.0000000	0.0	0.4952000	32.1000000%	0		0.0000000	73net2	0
143	xe	g	u238f	rc	fc		0.4079408	8.0	0.0880000	0.0070000	143	u238f	1.0000000	75wol1	0
143			u238he	cm	cu	es	0.0000000	0.0	3.5800000	0.0000000	0		0.0000000	63wea1	0
143			u238he	es	cu		3.8509462	15.0	3.8450000	15.0000000%	0		0.0000000	74mee9	0
143			u238he	cm	cu		0.0000000	0.0	3.7000000	3.9000000%	0		0.0000000	77cro1	0
143	pr	g	u238he	rc	cu		3.2360004	10.1	3.1600000	0.1600000	99 mo g	u238he	5.5800000	57cun1	0
143	pr	g	u238he	cm	cu		0.0000000	0.0	3.2000000	0.0000000	0		0.0000000	69gun2	0
143	pr	g	u238he	cm	cu		0.0000000	0.0	3.2000000	0.0000000	0		0.0000000	60kat1	0
143	ce	g	u238he	rc	cu		4.0040384	10.1	3.9100000	0.2700000	99 mo g	u238he	5.5800000	57cun1	0
143	ce	g	u238he	rc	cu		3.6080569	20.1	3.5100000	0.7000000	139 ba g	u238he	4.9200000	64jam1	0
143	ce	g	u238he	rc	cu		4.6141326	11.7	4.3000000	0.5000000	140 ba g	u238he	4.3000000	64men1	0
143	ce	g	u238he	rc	re		4.5794525	9.2	0.8220000	0.0760000	99 mo g	u235t	0.0000000	68gor1	7
143	ce	g	u238he	cm	cu		0.0000000	0.0	3.6700000	0.0000000	0		0.0000000	69gun2	0
143	ce	g	u238he	rc	cu		4.6679406	16.1	4.6400000	16.0000000%	99 mo g	u238he	5.6800000	71bir2	36
143	ce	g	u238he	rc	cu	su	0.0000000	0.0	3.8600000	0.2500000	0		0.0000000	71bla1	0
143	ce	g	u238he	rc	cu		3.4553353	11.9	3.4500000	0.4100000	0		0.0000000	71com1	0
143	ce	g	u238he	rc	cu	su	0.0000000	0.0	3.0500000	0.3700000	0		0.0000000	73dar2	0
143	ce	g	u238he	rc	cu	su	0.0000000	0.0	3.7300000	0.3500000	0		0.0000000	73dar3	0
143	ce	g	u238he	rc	cu	su	0.0000000	0.0	3.5800000	0.1700000	0		0.0000000	73dar4	0
143	ce	g	u238he	rc	re		3.5990235	5.3	0.7800000	0.0400000	140 ba g	u238he	1.0000000	73man1	0
143	ce	g	u238he	cm	cu		0.0000000	0.0	3.8300000	3.9000000%	0		0.0000000	73net2	0
143	ce	g	u238he	rc	cu	su	0.0000000	0.0	3.5800000	0.1700000	140 ba g	u238he	4.4800000	74dar1	0
143	ce	g	u238he	rc	cu		3.6311218	5.4	3.6200000	0.1900000	140 ba g	u238he	4.6000000	76raj1	0
143	ce	g	u238he	cm	cu		0.0000000	0.0	3.6000000	0.0000000	0		0.0000000	60kat1	0
143	ce	g	u238he	rc	re	su	0.0000000	0.0	0.7210000	1.7600000%	99 mo g	u235t	0.0000000	64cow1	7
143	ce	g	u238he	rc	cu		3.8559539	5.0	3.8500000	0.0900000	0		0.0000000	75dar1	0
143	ce	g	u238he	rc	cu		4.0167704	5.0	0.7210000	0.8000000%	99 mo g	u235t	0.0000000	76for1	7
143	ce	g	u238he	es	cu	su	0.0000000	0.0	3.8600000	0.1200000	0		0.0000000	73dar1	0
143	ce	g	u238he	rc	cu		4.3366721	5.2	4.2500000	0.1000000	99 mo g	u238he	5.6000000	75ada1	0
143	ce	g	u238he	rc	cu		3.8417670	7.4	3.8300000	0.2800000	140 ba g	u238he	4.6000000	75cav1	0
143	ce	g	u238he	rc	cu	su	0.0000000	0.0	3.8300000	0.2800000	140 ba g	u238he	4.6000000	74bla1	0
143	ce	g	u238he	rc	cu		3.9460931	5.0	3.9400000	4.5000000%	0		0.0000000	81lau1	0
143	ce	g	u238he	rc	cu		3.9961704	8.3	3.9900000	0.3300000	0		0.0000000	83li 2	0
143	ce	g	u238he	rc	cu		3.6712447	5.9	3.6600000	0.2100000	140 ba g	u238he	4.6000000	80zhe1	0

1
0

measured nuclide	fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
143 ce g	u238he	rc	cu		4.2064952	5.0	4.2000000	0.1400000	0		0.0000000	85liu1	0
143 ce g	u238he	rc	cu		3.6055673	5.3	3.6000000	0.1900000	0		0.0000000	75dar1	0
143 ce g	u238he	rc	cu		3.8860003	5.0	3.8800000	0.1200000	0		0.0000000	75dar1	0
143 ce g	u238he	rc	cu		3.9861550	5.0	3.9800000	0.1700000	0		0.0000000	75dar1	0
143 la g	u238he	cm	cu		0.0000000	0.0	3.8270000	3.9000000%	0		0.0000000	73net2	0
143 ba g	u238he	cm	cu		0.0000000	0.0	3.6220000	6.0000000%	0		0.0000000	73net2	0
143 cs g	u238he	cm	cu		0.0000000	0.0	1.1120000	32.1000000%	0		0.0000000	73net2	0
143 xe g	u238he	cm	cu	x3	0.0000000	0.0	0.0793700	45.0000000%	0		0.0000000	73net2	0
143	pu239t	cm	cu		0.0000000	0.0	4.5000000	0.0000000	0		0.0000000	72sid1	0
143 nd g	pu239t	cm	cu		0.0000000	0.0	4.4800000	0.0000000	0		0.0000000	73lam1	0
143	pu239t	cm	cu		0.0000000	0.0	4.5300000	0.0600000	0		0.0000000	73wal1	0
143 nd g	pu239t	ms	cu		4.3874344	2.3	4.3900000	0.1000000	0		0.0000000	75mae1	0
143 nd g	pu239t	cm	cu		0.0000000	0.0	4.4900000	3.0000000%	0		0.0000000	59bid1	0
143 nd g	pu239t	ms	re		4.5148156	3.3	2.7400000	0.0880000	148 nd g	pu239t	0.9960000	65rid2	0
143 nd g	pu239t	ms	cu		4.5073643	2.0	4.5100000	0.0900000	0		0.0000000	66rid2	0
143 nd g	pu239t	ms	re		4.4847354	1.0	2.7130000	0.0220000	148 nd g	pu239t	0.9928000	64rid1	0
143	pu239t	cm	cu		0.0000000	0.0	4.4700000	5.4000000%	0		0.0000000	77cro1	0
143 nd g	pu239t	ms	cu		4.3347347	2.5	6.1000000	0.1500000	145 nd g	pu239t	4.2000000	59ani1	0
143 nd g	pu239t	ms	cu		4.4324081	2.0	4.4350000	0.0500000	0		0.0000000	79mae2	0
143 nd g	pu239t	ms	re		4.4152405	0.7	0.3244000	0.0001200	148 nd g	pu239t	0.1205800	76mae1	0
143 nd g	pu239t	ms	cu		4.3893399	2.3	4.4800000	0.1000000	137 cs g	pu239t	6.7400000	70lis1	0
143 nd g	pu239t	ms	re		4.6342009	5.0	4.5600000	5.0000000%	133 cs g	pu239t	6.9000000	59fic2	36
143 nd g	pu239t	ms	cu		4.3330415	0.9	4.3300000	0.0300000	148 nd g	pu239t	1.6400000	86chi1	0
143 nd g	pu239t	es	cu	cm	4.4174169	1.0	4.4200000	1.0000000%	0		0.0000000	81mae2	0
143 nd g	pu239t	ms	cu	rp	4.4090595	7.9	5.9800000	0.0000000	no. relative values =		4	56wil1	
143 nd g	pu239t	ms	re	rp	4.4444744	1.5	1.0000000	0.0000000	no. relative values =		5	57kri1	
143 nd g	pu239t	ms	re	rp	4.3771411	1.9	1.0000000	0.0000000	no. relative values =		5	59fic2	
143 pr g	pu239t	rc	cu	su	0.0000000	0.0	1.1000000	0.0200000	144 ce g	pu239t	1.0000000	70sko1	0
143 pr g	pu239t	rc	cu	rp	4.7201976	16.7	4.2700000	0.0000000	no. relative values =		1	71sor1	
143 ce g	pu239t	rc	cu	x4	0.0000000	0.0	5.1000000	0.0000000	140 ba g	pu239t	5.3600000	51ste3	0
143 ce g	pu239t	rc	cu		4.2774987	5.0	4.2800000	0.2100000	0		0.0000000	65mar1	0
143 ce g	pu239t	rc	cu		4.4652775	5.0	4.6000000	0.1500000	144 ce g	pu239t	3.8500000	71ram1	0

143	ce g	pu239t	cm	cu		0.0000000	0.0	4.4800000	0.0000000	0			0.0000000	73lam1	0
143	ce g	pu239t	cm	cu		0.0000000	0.0	4.4590000	2.0000000%	0			0.0000000	73net2	0
143	ce g	pu239t	rc	cu	su	0.0000000	0.0	1.0400000	0.0300000	144	ce g	pu239t	1.0000000	70sko1	0
143	ce g	pu239t	rc	cu		4.0788349	7.7	4.3900000	0.3400000	99	mo g	u235t	5.9100000	71ram1	31
143	ce g	pu239t	rc	cu		3.9576857	5.0	3.9600000	0.1800000	0			0.0000000	77gud1	0
143	ce g	pu239t	rc	cu		4.1214831	5.4	3.9900000	0.2100000	143	pr g	pu239t	4.2700000	71sor1	0
143	ce g	pu239t	rc	cu		4.3174753	5.3	4.3200000	0.2300000	0			0.0000000	80dic1	0
143	ce g	pu239t	rc	cu		4.7072474	5.0	4.7100000	0.0600000	0			0.0000000	79ram1	0
143	ce g	pu239t	rc	cu		4.1875513	7.2	4.1900000	0.3000000	0			0.0000000	84jai1	0
143	ce g	pu239t	rc	cu		4.1975455	5.0	4.2000000	0.1500000	0			0.0000000	84jai1	0
143	ce g	pu239t	rc	cu		4.5132232	5.0	0.8800000	0.0200000	140	ba g	u235t	0.0000000	86chi1	7
143	la g	pu239t	cm	cu		0.0000000	0.0	4.4200000	2.0000000%	0			0.0000000	73net2	0
143	la g	pu239t	cm	in		0.0000000	0.0	0.8592000	15.0000000%	0			1.0000000	88wah1	0
143	ba g	pu239t	cm	cu		0.0000000	0.0	3.5860000	7.0000000%	0			0.0000000	73net2	0
143	ba g	pu239t	rc	cu		3.4064986	23.7	3.4000000	0.8000000	139	xe g	pu239t	3.0780000	82gol1	0
143	ba g	pu239t	cm	in		0.0000000	0.0	2.9230000	11.0000000%	0			1.0000000	88wah1	0
143	cs g	pu239t	cm	cu	x3	0.0000000	0.0	0.4211000	45.0000000%	0			0.0000000	73net2	0
143	cs g	pu239t	es	fc		0.8909634	30.0	0.2020000	0.0000000	143		pu239t	1.0000000	74wol1	0
143	cs g	pu239t	rc	in		0.5996494	23.3	0.6000000	0.1400000	0			0.0000000	75bal1	0
143	cs g	pu239t	cm	in		0.0000000	0.0	0.6287000	23.0000000%	0			1.0000000	88wah1	0
143	xe g	pu239t	rc	fc		0.0114678	7.8	0.2600000	0.0200000	143	ce g	pu239t	100.0000000	65wol1	0
143	xe g	pu239t	cm	cu		0.0000000	0.0	0.0087840	90.0000000%	0			0.0000000	73net2	0
143	xe g	pu239t	es	fc		0.0193630	30.0	0.0043900	0.0000000	143		pu239t	1.0000000	74wol1	0
143	xe g	pu239t	cm	in		0.0000000	0.0	0.0117300	13.0000000%	0			1.0000000	88wah1	0
143	nd g	pu239f	ms	cu		4.3302282	2.5	4.4100000	2.5000000%	148	nd g	pu239f	1.6900000	69dav1	0
143	nd g	pu239f	ms	re	su	0.0000000	0.0	2.5200000	0.0000000	148	nd g	pu239f	1.0000000	71rob1	0
143		pu239f	es	cu	cm	4.6044340	30.0	4.6100000	0.0000000	0			0.0000000	72sid1	0
143	nd g	pu239f	ms	re		4.3477062	1.5	2.6200000	0.0000000	148	nd g	pu239f	1.0000000	73rob1	0
143	nd g	pu239f	ms	re	su	0.0000000	0.0	4.4600000	0.0000000	148	nd g	pu239f	1.7000000	73koc1	0
143	nd g	pu239f	ms	cu	su	0.0000000	0.0	4.3300000	0.0000000	0			0.0000000	76koc1	0
143		pu239f	cm	cu		0.0000000	0.0	4.3800000	2.3000000%	0			0.0000000	77cro1	0
143	nd g	pu239f	ms	cu		4.3205887	1.4	4.2700000	1.4000000%	148	nd g	pu239f	1.6400000	77koc1	0
143		pu239f	ms	cu		4.3400473	2.3	4.4200000	0.1000000	148	nd g	pu239f	1.6900000	77gab1	0
143	nd g	pu239f	ms	cu		4.3943790	0.9	4.3800000	0.0350000	148	nd g	pu239f	1.6540000	77mae1	0
143	nd g	pu239f	ms	cu		4.3137854	2.0	4.3190000	0.0470000	0			0.0000000	77mae1	0
143	nd g	pu239f	ms	cu		4.3578920	0.7	0.2687000	0.0003000	146	nd g	pu239f	0.1515000	80mae4	0

143 nd g pu239f ms cu su 0.0000000 0.0 4.3700000 0.0300000 148 nd g pu239f 1.6500000 74mae1 0
143 pu239f es re 4.3329979 10.0 0.9830000 10.0000000% 143 pu239t 1.0000000 74mee4 0
143 nd g pu239f es cu cm 4.3447479 1.0 4.3500000 1.0000000% 0 0.0000000 81mae2 0
143 pu239f ms cu 4.2678409 3.0 4.2730000 3.0000000% 0 0.0000000 81koc1 36
143 nd g pu239f ms cu 4.2948083 2.0 4.3000000 0.0800000 0 0.0000000 70lis1 0
143 ce g pu239f rc cu su 0.0000000 0.0 4.3100000 6.0000000% 0 0.0000000 73dud2 0
143 ce g pu239f cm cu 0.0000000 0.0 4.0950000 5.0000000% 0 0.0000000 73net2 0
143 ce g pu239f rc cu 4.3447479 5.8 4.3500000 5.8000000% 0 0.0000000 75dud2 0
143 ce g pu239f rc re 4.2751632 5.0 0.8390000 0.0220000 140 ba g u235t 0.0000000 75raj1 7
143 ce g pu239f rc cu 4.4101027 5.0 0.7570000 3.9000000% 99 mo g u235t 0.0000000 76for1 7
143 ce g pu239f rc cu 4.0780342 5.0 0.7000000 3.9000000% 99 mo g u235t 0.0000000 76for1 7
143 ce g pu239f rc cu su 0.0000000 0.0 4.0000000 4.0000000% 0 0.0000000 76gil2 0
143 ce g pu239f bm cu 3.8952912 8.7 3.9000000 8.7000000% 0 0.0000000 77gil1 0
143 ce g pu239f rc cu 4.3550044 5.2 0.9880000 0.0370000 143 ce g pu239t 1.0000000 79yur1 36
143 ce g pu239f rc cu 4.0750739 5.0 4.0800000 3.6000000% 0 0.0000000 81lau1 0
143 ce g pu239f rc cu 4.4005368 5.7 4.3700000 0.2400000 140 ba g pu239f 5.2800000 78bya1 0
143 ce g pu239f rc cu 3.9552188 5.0 3.9600000 0.1800000 0 0.0000000 77gud1 0
143 ce g pu239f rc cu x4 0.0000000 0.0 4.9000000 0.0000000 140 ba g pu239f 5.2000000 71cun1 0
143 ce g pu239f rc cu x4 0.0000000 0.0 4.8200000 0.3800000 99 mo g pu239f 5.9800000 72cun1 0
143 ce g pu239f es fc 4.3367493 0.4 0.9999900 0.0010000% 143 pu239f 1.0000000 89rid1 0
143 la g pu239f cm cu 0.0000000 0.0 4.0390000 5.0000000% 0 0.0000000 73net2 0
143 ba g pu239f cm cu 0.0000000 0.0 3.1120000 11.0000000% 0 0.0000000 73net2 0
143 cs g pu239f cm cu x3 0.0000000 0.0 0.2960000 45.0000000% 0 0.0000000 73net2 0
143 xe g pu239f cm cu 0.0000000 0.0 0.0047950 90.0000000% 0 0.0000000 73net2 0
143 pu241t cm cu 0.0000000 0.0 4.5000000 0.0000000 0 0.0000000 72sid1 0
143 pu241t rc cu 4.2215419 15.1 4.5300000 0.0000000 131 pu241t 3.3300000 73chi1 0
143 pu241t cm cu 0.0000000 0.0 4.5200000 0.0600000 0 0.0000000 73wal1 0
143 nd g pu241t ms cu 4.6739369 5.1 4.3800000 0.2200000 148 nd g pu241t 1.8120000 67rid1 0
143 pu241t cm cu 0.0000000 0.0 4.4200000 3.0000000% 0 0.0000000 77cro1 0
143 pu241t cm cu 0.0000000 0.0 4.3600000 0.0000000 0 0.0000000 79wal1 0
143 nd g pu241t ms cu 4.6035836 2.0 4.6000000 0.0330000 0 0.0000000 77mae1 0
143 nd g pu241t ms cu 4.6531484 2.8 4.4800000 0.1200000 148 nd g pu241t 1.8616500 70lis1 0
143 nd g pu241t ms re 4.5840508 1.2 1.4038000 0.0100000 145 nd g pu241t 1.0000000 64far1 0
143 nd g pu241t ms cu 4.5584901 1.1 4.5500000 0.0400000 148 nd g pu241t 1.9300000 86chi1 0
143 pr g pu241t rc cu 4.4423527 5.1 1.0500000 0.0100000 144 ce g pu241t 1.0000000 70sko1 0
143 pr g pu241t rc cu 4.4693138 5.1 4.3100000 0.1500000 144 ce g pu241t 4.0800000 71sor1 0

143 ce g pu241t rc cu 4.5595993 5.0 4.6500000 0.2100000 137 cs g pu239t 4.5200000 69cro2 25
143 ce g pu241t rc cu 4.0192715 5.1 0.9500000 0.0200000 144 ce g pu241t 1.0000000 70sko1 0
143 ce g pu241t rc cu 4.3333733 6.5 4.3300000 0.2800000 0 0.0000000 79dic1 0
143 ce g pu241t rc cu 4.0234193 5.1 3.8800000 0.1600000 144 ce g pu241t 4.0800000 71sor1 0
143 ce g pu241t rc cu 4.5350212 5.0 0.8200000 0.0200000 140 ba g u235t 0.0000000 86chi1 7
143 ce g pu241t rc cu x4 0.0000000 0.0 3.0000000 0.0000000 0 0.0000000 63kir1 0
143 u233t cm cu 0.0000000 0.0 5.9000000 0.0000000 0 0.0000000 72sid1 0
143 u233t cm cu 0.0000000 0.0 5.8800000 0.0000000 0 0.0000000 73lam1 0
143 u233t cm cu 0.0000000 0.0 5.8500000 0.1000000 0 0.0000000 73wal1 0
143 nd g u233t ms cu 6.0249076 3.1 6.2200000 3.0000000% 144 nd g u233t 4.8700000 61bid1 0
143 nd g u233t ms re 6.0763160 2.1 4.6520000 0.0880000 148 nd g u233t 0.9946000 65rid2 0
143 nd g u233t ms cu su 0.0000000 0.0 5.1500000 0.3000000 148 nd g u233t 1.1500000 55kuk1 0
143 nd g u233t ms cu su 0.0000000 0.0 5.0000000 0.3000000 148 nd g u233t 1.0500000 57iva1 0
143 nd g u233t ms cu su 0.0000000 0.0 5.1900000 0.1700000 148 nd g u233t 1.0500000 57iva1 0
143 nd g u233t ms cu 5.7022332 3.6 5.1900000 0.1700000 142 ce g u233t 6.0600000 59gor1 0
143 nd g u233t ms re 6.0598534 1.3 4.6310000 0.0370000 148 nd g u233t 0.9928000 64rid1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

143 u233t cm cu 0.0000000 0.0 5.9200000 2.6000000% 0 0.0000000 77cro1 0
143 nd g u233t ms cu x4 0.0000000 0.0 5.0000000 0.3000000 148 nd g u233t 1.0300000 59ani1 0
143 nd g u233t ms cu x4 0.0000000 0.0 5.1900000 0.1700000 148 nd g u233t 1.0700000 59ani1 0
143 nd g u233t ms cu su 0.0000000 0.0 6.4500000 3.0000000% 0 0.0000000 59bid1 0
143 nd g u233t ms re rp 5.9026641 9.1 1.0000000 0.0000000 no. relative values = 3 55mel1
143 nd g u233t ms cu 5.8389436 2.0 5.8500000 0.0500000 0 0.0000000 70lis1 0
143 nd g u233t ms cu 5.9078288 1.3 5.8800000 0.0500000 148 nd g u233t 1.2930000 86chi1 0
143 nd g u233t ms cu 5.9667016 2.3 5.9780000 0.1400000 0 0.0000000 66rid1 0
143 pr g u233t rc cu 5.9233455 5.1 5.9200000 0.3000000 99 mo g u235t 6.0300000 65bun1 1
143 ce g u233t rc cu 5.8854778 5.0 5.5700000 0.0900000 99 mo g u235t 5.7100000 66gor1 24
143 ce g u233t cm cu 0.0000000 0.0 5.9540000 2.0000000% 0 0.0000000 73net2 0
143 ce g u233t rc cu x4 0.0000000 0.0 6.9900000 0.3500000 0 0.0000000 60san1 0
143 ce g u233t rc cu 5.8756706 5.0 0.9600000 0.0300000 140 ba g u235t 0.0000000 86chi1 7
143 ce g u233t rc cu 5.9886601 5.0 6.0000000 4.6000000% 0 0.0000000 81ram1 0
143 la g u233t cm cu 0.0000000 0.0 5.8930000 2.0000000% 0 0.0000000 73net2 0
143 ba g u233t cm cu x3 0.0000000 0.0 4.7040000 10.0000000% 0 0.0000000 73net2 0

143 ba g u233t rc cu 3.9624967 18.4 3.9700000 0.7300000 0 0.0000000 81gud1 0
143 cs g u233t cm cu x3 0.0000000 0.0 0.5153000 45.0000000% 0 0.0000000 73net2 0
143 xe g u233t rc fc 0.0042873 7.2 0.0720000 0.0050000 143 ce g u233t 100.0000000 65wol1 0
143 xe g u233t cm cu 0.0000000 0.0 0.0098840 90.0000000% 0 0.0000000 73net2 0
143 th232f es cu cm 7.2144420 30.0 7.2500000 0.0000000 0 0.0000000 72sid1 0
143 th232f es cu cm 7.0850796 30.0 7.1200000 0.0000000 0 0.0000000 73lam1 0
143 th232f cm cu 0.0000000 0.0 7.2200000 0.0000000 0 0.0000000 74lam1 0
143 th232f cm cu 0.0000000 0.0 6.8200000 3.7000000% 0 0.0000000 77cro1 0
143 th232f es cu 6.4880224 5.0 6.5200000 5.0000000% 0 0.0000000 74mee0 0
143 nd g th232f ms re rp 6.5290451 3.3 1.0000000 0.0000000 no. relative values = 3 68har1
143 pr g th232f rc re 7.4472463 10.4 0.9500000 0.0600000 140 ba g th232f 1.0000000 63cro2 0
143 pr g th232f rc re 7.5976511 10.0 2.6600000 0.0900000 99 mo g u235t 0.0000000 63iye1 7
143 pr g th232f rc cu 6.5336897 5.4 6.2000000 0.1000000 99 mo g th232f 2.7800000 68lyl1 0
143 ce g th232f rc cu 6.9603963 10.4 6.5600000 10.0000000% 141 ce g th232f 7.0000000 67bre1 0
143 ce g th232f cm cu 0.0000000 0.0 6.3070000 8.0000000% 0 0.0000000 73net2 0
143 ce g th232f rc cu 5.9705727 10.0 6.0000000 0.6000000 0 0.0000000 71swi3 0
143 ce g th232f rc cu 6.3686109 10.9 6.4000000 0.7000000 0 0.0000000 77gud1 0
143 ce g th232f ms re x4 0.0000000 0.0 2.4600000 0.0500000 132 te g th232f 1.0000000 68har1 0
143 ce g th232f rc cu 6.2925524 5.7 5.9400000 0.2300000 140 ba g th232f 7.4000000 73cha1 0
143 ce g th232f rc re 6.7978978 5.0 2.3800000 0.0900000 99 mo g u235t 0.0000000 81ert1 7
143 ce g th232f cm cu 0.0000000 0.0 6.7800000 0.2700000 0 0.0000000 81ert1 0
143 ce g th232f rc cu 7.0452758 5.0 7.0800000 4.2000000% 0 0.0000000 81ram1 0
143 ce g th232f rc cu 6.9557172 5.0 6.9900000 4.9000000% 0 0.0000000 81ram1 0
143 ce g th232f rc cu 6.0004256 7.0 6.0300000 0.4200000 0 0.0000000 86ric1 0
143 la g th232f rc re 7.0772366 8.8 0.9470000 8.8000000% 140 ba g u235t 0.0000000 73bra1 7
143 la g th232f cm cu 0.0000000 0.0 6.3070000 8.0000000% 0 0.0000000 73net2 0
143 ba g th232f cm cu 0.0000000 0.0 6.2180000 8.0000000% 0 0.0000000 73net2 0
143 ba g th232f rc cu x1 0.0000000 0.0 2.4700000 0.1600000 140 ba g th232f 7.9700000 85chu1 0
143 cs g th232f cm cu 0.0000000 0.0 3.3860000 17.0000000% 0 0.0000000 73net2 0
143 xe g th232f cm cu x3 0.0000000 0.0 0.5669000 45.0000000% 0 0.0000000 73net2 0
143 xe g th232f rc fc ge 0.7276098 36.4 0.1100000 0.0400000 143 th232f 1.0000000 89sri1 0
144 nd g u235t ms cu x4 0.0000000 0.0 4.6400000 0.0000000 143 nd g u235t 5.4000000 50ing1 0
144 nd g u235t ms cu 5.6238379 1.5 5.9500000 0.0000000 148 nd g u235t 1.7700000 55gle1 0
144 u235t cm cu 0.0000000 0.0 5.4000000 0.0000000 0 0.0000000 72sid1 0
144 u235t cm cu 0.0000000 0.0 5.4400000 0.0000000 0 0.0000000 73lam1 0
144 u235t cm cu 0.0000000 0.0 5.4300000 0.1000000 0 0.0000000 73wal1 0

144 nd g u235t es fi 0.0000000 10.0 0.0000017 10.0000000% 144 u235t 1000.0000000 74wol1 0
144 nd g u235t ms re 5.3619435 2.3 0.9000000 0.0200000 145 nd g u235t 0.6600000 59chu1 0
144 nd g u235t ms cu 5.2881469 2.0 5.2900000 0.0660000 0 0.0000000 65rid1 0
144 nd g u235t ms re 5.3738042 1.3 3.1890000 0.0390000 148 nd g u235t 0.9928000 65rid2 0
144 u235t ms cu 5.5930400 2.0 5.5950000 0.0490000 0 0.0000000 76dii1 0
144 nd g u235t ms cu 5.2429338 5.4 5.6000000 0.3000000 146 nd g u235t 3.2000000 57gor1 0
144 nd g u235t ms re 5.3822298 1.0 3.1940000 0.0290000 148 nd g u235t 0.9928000 64rid1 0
144 u235t cm cu 0.0000000 0.0 5.3800000 1.0000000% 0 0.0000000 77cro1 0
144 nd g u235t ms cu 5.5109719 5.4 5.6000000 0.3000000 148 nd g u235t 1.7000000 59ani1 0
144 nd g u235t ms re 5.5110152 0.6 0.2998000 0.0002250 148 nd g u235t 0.0910100 76mae1 0
144 nd g u235t ms re 5.5373083 1.3 0.9300000 0.0120000 143 nd g u235t 1.0000000 55mel1 0
144 nd g u235t ms re 5.5283771 0.6 0.9285000 0.0020000 143 nd g u235t 1.0000000 62far1 0
144 nd g u235t ms cu 5.5540537 2.0 5.5560000 0.0390000 0 0.0000000 78mae1 0
144 nd g u235t ms cu 5.5370597 2.0 5.5390000 0.0330000 0 0.0000000 78mae1 0
144 nd g u235t ms cu 5.5220649 2.0 5.5240000 0.0340000 0 0.0000000 78mae1 0
144 u235t es re 5.4465387 2.1 1.0000000 2.0000000% 144 u235f 0.9670000 74mee4 0
144 nd g u235t ms cu cm 5.5380593 6.0 5.5400000 0.0000000 0 0.0000000 80mae3 0
144 nd g u235t ms cu 5.5665848 1.0 5.5700000 0.0500000 148 nd g u235t 1.6740000 86chi1 0
144 ce g u235t rc cu 5.2981434 60.0 5.3000000 0.0000000 0 0.0000000 51bur2 0
144 ce g u235t ms cu x4 0.0000000 0.0 6.2200000 10.0000000% 0 0.0000000 55gle1 0
144 ce g u235t ms cu 5.2265636 1.6 5.3900000 0.0000000 142 ce g u235t 6.0300000 55pet2 0
144 ce g u235t rc cu x4 0.0000000 0.0 5.7900000 0.4300000 0 0.0000000 71mcl1 0
144 ce g u235t rc cu rp 5.3476851 6.5 5.3500000 0.0000000 no. relative values = 6 72deb1
144 ce g u235t cm cu 0.0000000 0.0 5.4200000 5.0000000% 0 0.0000000 73net2 0
144 ce g u235t rc cu su 0.0000000 0.0 5.6400000 7.7000000% 0 0.0000000 76gil4 0
144 ce g u235t bm cu 5.7179962 2.9 5.7200000 2.9000000% 0 0.0000000 77gil1 0
144 ce g u235t ms re 5.3443019 1.1 0.9140000 1.0000000% 142 ce g u235t 1.0000000 62far1 0
144 ce g u235t ms cu 5.4181013 2.0 5.4200000 0.0200000 0 0.0000000 70lis1 0
144 ce g u235t rc cu 5.2581574 5.0 5.2600000 0.1800000 0 0.0000000 74bla1 0
144 ce g u235t rc cu 5.5780453 5.2 5.5800000 0.2900000 0 0.0000000 76thi1 0
144 ce g u235t rc cu 5.3381294 6.4 5.3400000 0.3400000 0 0.0000000 80chi1 0
144 ce g u235t rc fi ul 0.0000000 0.0 0.0230000 0.0000000 144 ce g u235t 1.0000000 69fas1 0
144 ce g u235t rc cu su 0.0000000 0.0 5.6400000 7.7000000% 0 0.0000000 76gil4 0
144 la g u235t cm cu 0.0000000 0.0 5.3620000 5.0000000% 0 0.0000000 73net2 0
144 la g u235t rc fi 0.9287735 47.1 17.0000000 8.0000000 144 la g u235t 100.0000000 77fis1 0
144 la g u235t rc cu x1 0.0000000 0.0 4.6300000 0.4700000 0 0.0000000 85has1 0

144 la g u235t rc cu 4.6283781 10.2 4.6300000 0.4700000 0 0.0000000 84chu1 0
144 la g u235t sp fi 1.1545650 19.0 0.2100000 19.0000000% 144 u235t 1.0000000 84den1 0
144 la g u235t rc in 1.0696252 5.0 1.0700000 0.0500000 0 0.0000000 81mar1 0
144 la g u235t cm in 0.0000000 0.0 0.9663000 7.0000000% 0 1.0000000 88wah1 0
144 ba g u235t rc fc 4.2883730 7.7 0.7800000 0.0600000 144 ce g u235t 1.0000000 69run1 0
144 ba g u235t cm cu 0.0000000 0.0 4.2560000 11.0000000% 0 0.0000000 73net2 0
144 ba g u235t rc fc 4.5346002 9.7 83.0000000 8.0000000 144 la g u235t 100.0000000 77fis1 0
144 ba g u235t rc fc 4.6182599 8.0 84.0000000 6.7000000 144 u235t 100.0000000 78den2 0
144 ba g u235t rc fc 4.6182599 8.0 84.0000000 6.7000000 144 u235t 100.0000000 78fis1 0
144 ba g u235t ms in 3.8986338 8.2 3.9000000 0.3200000 0 0.0000000 79shm1 0
144 ba g u235t sp cu 3.8986338 8.2 3.9000000 0.3200000 0 0.0000000 81shm1 0
144 ba g u235t sp fi 4.2334049 7.0 0.7700000 7.0000000% 144 u235t 1.0000000 84den1 36
144 ba g u235t rc cu 4.3584727 5.0 4.3600000 0.0500000 0 0.0000000 81mar1 0
144 ba g u235t cm in 0.0000000 0.0 3.9540000 6.0000000% 0 1.0000000 88wah1 0
144 ba g u235t sp in 3.9286233 5.0 3.9300000 0.0500000 0 0.0000000 90rud1 0
144 ba g u235t sp cu 4.3584727 11.0 4.3600000 0.4800000 0 0.0000000 90rud1 0
144 cs g u235t ms in x1 0.0000000 0.0 1.2000000 0.1500000 0 0.0000000 72bal1 0
144 cs g u235t ms in 0.2799019 28.6 0.2800000 0.0800000 0 0.0000000 72cha1 0
144 cs g u235t cm cu x3 0.0000000 0.0 0.4555000 45.0000000% 0 0.0000000 73net2 0
144 cs g u235t es fc 0.4645750 30.0 0.0845000 0.0000000 144 u235t 1.0000000 74wol1 0
144 cs g u235t sp re 0.4578048 12.6 0.0800000 0.0100000 140 cs g u235t 1.0000000 75ree1 0
144 cs g u235t sp in 0.2538111 12.3 0.2539000 0.0313000 0 0.0000000 75ree1 0
144 cs g u235t rc fi x1 0.0000000 0.0 0.2230000 0.0280000 144 u235t 1.0000000 72ree1 0
144 cs g u235t sp fi 0.4288384 5.0 7.8000000 0.1900000 144 u235t 100.0000000 79bal1 0
144 cs g u235t ms in 0.4298494 14.0 0.4300000 0.0600000 0 0.0000000 79shm1 0
144 cs g u235t sp cu 0.4298494 14.0 0.4300000 0.0600000 0 0.0000000 81shm1 0
144 cs g u235t sp fi 0.1044606 99.9 0.0190000 0.0300000 144 u235t 1.0000000 84den1 36
144 cs g u235t sp fc 0.1099586 99.9 0.0200000 0.0300000 144 u235t 1.0000000 84den1 36
144 cs g u235t cm in 0.0000000 0.0 0.4483000 3.0000000% 0 1.0000000 88wah1 0
144 cs g u235t sp cu 0.4198529 21.4 0.4200000 0.0900000 0 0.0000000 90rud1 0
144 xe g u235t rc fc 0.0060477 10.0 0.0011000 0.0001000 144 ce g u235t 1.0000000 58wah1 0
144 xe g u235t cm cu 0.0000000 0.0 0.0084940 90.0000000% 0 0.0000000 73net2 0
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0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

144 xe g u235t cm in 0.0000000 0.0 0.0058530 46.0000000% 0 1.0000000 88wah1 0
144 nd g u235f rc cu 5.1499980 5.0 5.3600000 0.2500000 148 nd g u235f 1.7500000 70rid1 0
144 nd g u235f ms cu x4 0.0000000 0.0 6.0300000 0.0000000 143 nd g u235f 5.9000000 71cro2 0
144 nd g u235f ms cu 5.3945350 1.6 5.5600000 0.0000000 143 nd g u235f 5.9000000 71cro2 0
144 u235f es cu cm 5.0340265 30.0 5.0400000 0.0000000 0 0.0000000 72sid1 0
144 nd g u235f ms cu 5.0340265 2.0 5.0400000 0.0800000 0 0.0000000 74lar2 0
144 nd g u235f ms cu su 0.0000000 0.0 5.1800000 0.0000000 0 0.0000000 76koc1 0
144 u235f cm cu 0.0000000 0.0 5.3400000 4.2000000% 0 0.0000000 77cro1 0
144 nd g u235f es fi 0.0000000 30.0 0.0000024 0.0000000 144 u235f 1000.0000000 74wol1 0
144 u235f ms cu 5.0829615 3.3 5.2600000 0.1700000 148 u235f 1.7400000 77gab1 0
144 nd g u235f ms cu 5.1418985 2.0 5.1480000 0.0420000 0 0.0000000 80mae1 0
144 u235f es re 5.3121557 10.0 0.9670000 10.0000000% 144 u235t 1.0000000 74mee4 0
144 nd g u235f ms cu cm 5.1678677 6.0 5.1740000 0.0000000 0 0.0000000 80mae3 0
144 u235f rc cu 5.6731189 5.1 5.9100000 0.0600000 140 ba g u235f 6.2200000 77bla1 0
144 nd g u235f ms cu 5.2967148 2.0 5.3030000 0.0240000 0 0.0000000 81mae1 0
144 nd g u235f ms cu 5.3366674 2.0 5.3430000 0.0560000 0 0.0000000 81mae1 0
144 nd g u235f ms cu 5.3856093 2.0 5.3920000 0.0500000 0 0.0000000 81mae1 0
144 nd g u235f cm cu 0.0000000 0.0 5.3460000 0.0440000 0 0.0000000 81mae1 0
144 nd g u235f ms cu 5.2745044 0.9 5.2700000 0.0400000 148 nd g u235f 1.6800000 74mae1 0
144 u235f ms cu 5.1688665 3.0 5.1750000 3.0000000% 0 0.0000000 81koc1 36
144 nd g u235f ms cu x4 0.0000000 0.0 5.9400000 12.0000000% 0 0.0000000 73cro3 36
144 ce g u235f rc cu 5.0154832 5.0 5.2200000 3.5000000% 148 nd g u235f 1.7500000 69dav1 0
144 ce g u235f rc cu x4 0.0000000 0.0 3.4500000 0.2100000 140 ba g u235f 5.8900000 72cun2 0
144 ce g u235f rc cu 5.5348027 8.3 5.4600000 0.4500000 140 ba g u235f 5.8900000 72cun2 0
144 ce g u235f rc re 5.3240483 7.0 1.9620000 0.1370000 137 cs g u235f 2.2900000 72rid3 0
144 ce g u235f cm cu 0.0000000 0.0 4.9100000 3.9000000% 0 0.0000000 73net2 0
144 ce g u235f rc cu 5.0603175 15.1 5.2000000 15.0000000% 99 mo g u235f 6.1000000 59bun2 0
144 ce g u235f es cu 4.9318280 30.0 5.0000000 0.0000000 137 cs g u235f 6.3000000 60kat1 0
144 ce g u235f rc re su 0.0000000 0.0 0.8530000 0.5600000% 99 mo g u235t 0.0000000 64cow1 7
144 ce g u235f rc cu 5.4203515 5.1 5.2200000 0.2000000 140 ba g u235f 5.7500000 70bow1 0
144 ce g u235f rc cu 4.9219852 5.0 0.9210000 4.5000000% 99 mo g u235t 0.0000000 76for1 7
144 ce g u235f rc cu 5.1517847 5.0 0.9640000 4.5000000% 99 mo g u235t 0.0000000 76for1 7
144 ce g u235f rc cu 5.1250638 5.0 0.9590000 4.5000000% 99 mo g u235t 0.0000000 76for1 7
144 ce g u235f rc cu 5.1638724 5.0 5.1700000 1.1000000% 0 0.0000000 77koc1 0
144 ce g u235f rc cu 5.5045003 5.0 1.0300000 4.5000000% 99 mo g u235t 0.0000000 76for1 7
144 ce g u235f rc cu 5.3227983 5.0 0.9960000 4.5000000% 99 mo g u235t 0.0000000 76for1 7

144	ce	g	u235f	rc	cu		5.2052265	5.0	0.9740000	4.5000000%	99	mo	g	u235t	0.0000000	76for1	7
144	ce	g	u235f	rc	cu		5.1731614	5.0	0.9680000	4.5000000%	99	mo	g	u235t	0.0000000	76for1	7
144	ce	g	u235f	rc	cu	su	0.0000000	0.0	5.7850000	10.1000000%	0				0.0000000	76gil3	0
144	ce	g	u235f	bm	cu		5.8230902	4.5	5.8300000	4.5000000%	0				0.0000000	77gil1	0
144	ce	g	u235f	ms	cu		5.0539160	2.2	5.2600000	0.1100000	148	nd	g	u235f	1.7500000	70lis1	0
144	ce	g	u235f	rc	cu		5.0639909	5.0	5.0700000	4.5000000%	0				0.0000000	81lau1	0
144	ce	g	u235f	rc	cu		5.2737420	5.0	5.2800000	0.2000000	0				0.0000000	80chi1	0
144	ce	g	u235f	rc	cu		4.5318604	5.0	0.8480000	4.5000000%	99	mo	g	u235t	0.0000000	76for1	7
144	ce	g	u235f	rc	cu		4.5585813	5.0	0.8530000	4.5000000%	99	mo	g	u235t	0.0000000	76for1	7
144	ce	g	u235f	rc	cu		4.5585813	5.0	0.8530000	4.5000000%	99	mo	g	u235t	0.0000000	76for1	7
144	ce	g	u235f	rc	cu		4.6120230	5.0	0.8630000	4.5000000%	99	mo	g	u235t	0.0000000	76for1	7
144	ce	g	u235f	rc	cu		4.6601206	5.0	0.8720000	4.4000000%	99	mo	g	u235t	0.0000000	76for1	7
144	ce	g	u235f	rc	cu		4.6708090	5.0	0.8740000	4.5000000%	99	mo	g	u235t	0.0000000	76for1	7
144	ce	g	u235f	rc	cu		4.6761531	5.0	0.8750000	4.5000000%	99	mo	g	u235t	0.0000000	76for1	7
144	ce	g	u235f	rc	cu		4.7776925	5.0	0.8940000	4.5000000%	99	mo	g	u235t	0.0000000	76for1	7
144	ce	g	u235f	rc	cu		4.8044133	5.0	0.8990000	4.5000000%	99	mo	g	u235t	0.0000000	76for1	7
144	ce	g	u235f	rc	cu		4.9326735	5.0	0.9230000	4.5000000%	99	mo	g	u235t	0.0000000	76for1	7
144	ce	g	u235f	rc	cu		5.0395570	5.0	0.9430000	4.5000000%	99	mo	g	u235t	0.0000000	76for1	7
144	ce	g	u235f	rc	cu		5.0716221	5.0	0.9490000	4.5000000%	99	mo	g	u235t	0.0000000	76for1	7
144	ce	g	u235f	rc	cu		5.0716221	5.0	0.9490000	4.5000000%	99	mo	g	u235t	0.0000000	76for1	7
144	la	g	u235f	cm	cu		0.0000000	0.0	4.8290000	3.9000000%	0				0.0000000	73net2	0
144	la	g	u235f	rc	in		1.8478073	6.5	1.8500000	0.1200000	0				0.0000000	81mar1	0
144	ba	g	u235f	cm	cu		0.0000000	0.0	3.6250000	10.0000000%	0				0.0000000	73net2	0
144	ba	g	u235f	rc	cu		3.3859821	5.9	3.3900000	0.2000000	0				0.0000000	81mar1	0
144	ba	g	u235f	rc	in		3.0064325	6.6	3.0100000	0.2000000	0				0.0000000	81mar1	0
144	cs	g	u235f	cm	cu	x3	0.0000000	0.0	0.3134000	45.0000000%	0				0.0000000	73net2	0
144	cs	g	u235f	rc	cu		0.3795496	7.9	0.3800000	0.0300000	0				0.0000000	81mar1	0
144	cs	g	u235f	rc	in		0.3795496	7.9	0.3800000	0.0300000	0				0.0000000	81mar1	0
144	xe	g	u235f	cm	cu		0.0000000	0.0	0.0045330	90.0000000%	0				0.0000000	73net2	0
144			u235he	cm	cu	es	0.0000000	0.0	3.1880000	0.0000000	0				0.0000000	63wea1	0
144			u235he	cm	cu		0.0000000	0.0	3.0900000	5.0000000%	0				0.0000000	77cro1	0
144			u235he	es	cu		3.1091128	10.0	3.1220000	10.0000000%	0				0.0000000	74mee8	0
144	ce	g	u235he	rc	re	x4	0.0000000	0.0	0.8600000	5.0000000%	99	mo	g	u235t	0.0000000	62hic1	7
144	ce	g	u235he	cm	cu		0.0000000	0.0	3.2000000	0.0000000	0				0.0000000	69gun2	0
144	ce	g	u235he	rc	re		3.2233328	12.8	0.7200000	0.0900000	140	ba	g	u235he	1.0000000	73man1	0
144	ce	g	u235he	cm	cu		0.0000000	0.0	3.2100000	3.9000000%	0				0.0000000	73net2	0

144	ce g	u235he	cm	cu		0.0000000	0.0	3.3000000	0.0000000	0		0.0000000	60kat1	0	
144	ce g	u235he	rc	re	su	0.0000000	0.0	0.6910000	0.7200000%	99	mo g	u235t	0.0000000	64cow1	7
144	ce g	u235he	rc	cu		3.1819896	5.0	0.6910000	4.5000000%	99	mo g	u235t	0.0000000	76for1	7
144	ce g	u235he	rc	cu		3.1773847	5.0	0.6900000	4.5000000%	99	mo g	u235t	0.0000000	76for1	7
144	ce g	u235he	rc	re	su	0.0000000	0.0	0.6900000	0.0200000	99	mo g	u235t	0.0000000	56for1	7
144	ce g	u235he	rc	cu		3.1369972	5.0	3.1500000	1.0000000%	0		0.0000000	81lau1	0	
144	ce g	u235he	rc	cu		3.1867908	5.0	3.2000000	0.1300000	0		0.0000000	84chi1	0	
144	la g	u235he	cm	cu		0.0000000	0.0	2.9330000	6.0000000%	0		0.0000000	73net2	0	
144	ba g	u235he	cm	cu	x3	0.0000000	0.0	1.5110000	22.0000000%	0		0.0000000	73net2	0	
144	cs g	u235he	cm	cu	x3	0.0000000	0.0	0.0474800	50.0000000%	0		0.0000000	73net2	0	
144	xe g	u235he	cm	cu		0.0000000	0.0	0.0002153	90.0000000%	0		0.0000000	73net2	0	
144		u238f	es	cu	cm	4.5133380	30.0	4.5000000	0.0000000	0		0.0000000	64wal1	0	
144	nd g	u238f	ms	re		4.6821161	2.0	1.0100000	0.0190000	143	nd g	u238f	1.0000000	72mat1	0
144		u238f	es	cu	cm	4.8142272	30.0	4.8000000	0.0000000	0		0.0000000	72sid1	0	
144	nd g	u238f	ms	cu		4.7204942	7.0	4.3000000	0.3000000	148	nd g	u238f	1.9300000	67rid1	0
144		u238f	cm	cu		0.0000000	0.0	4.6500000	5.6000000%	0		0.0000000	77cro1	0	
144		u238f	rc	cu		5.0086906	5.0	5.2900000	0.1000000	140	ba g	u238f	6.1600000	77bla1	0
144	nd g	u238f	ms	cu		4.5604773	2.0	4.5470000	0.0300000	0		0.0000000	81mae1	0	
144	nd g	u238f	ms	cu		4.5354032	2.0	4.5220000	0.0330000	0		0.0000000	81mae1	0	
144	nd g	u238f	ms	cu		4.5394150	3.5	4.5260000	0.1590000	0		0.0000000	81mae1	0	
144	nd g	u238f	cm	cu		0.0000000	0.0	4.5320000	0.0450000	0		0.0000000	81mae1	0	
144	nd g	u238f	ms	cu		4.5634259	1.1	4.4800000	0.0400000	148	nd g	u238f	2.0800000	74mae1	0
144		u238f	ms	cu		4.2826562	3.0	4.2700000	3.0000000%	0		0.0000000	81koc1	36	
144		u238f	rc	cu	x4	0.0000000	0.0	4.0600000	0.1200000	0		0.0000000	85li 1	0	
144	ce g	u238f	rc	cu		5.0138400	20.0	4.9000000	0.5000000	140	ba g	u238f	5.7000000	54kel1	0
144	ce g	u238f	ms	re		4.4153909	2.3	0.9600000	0.0200000	142	ce g	u238f	1.0000000	72mat1	0
144	ce g	u238f	rc	re		4.2782051	6.9	3.2870000	0.2240000	137	cs g	u238f	4.6640000	72rid3	0
144	ce g	u238f	cm	cu		0.0000000	0.0	4.8400000	4.1000000%	0		0.0000000	73net2	0	
144	ce g	u238f	rc	cu		4.1507327	15.1	4.2000000	15.0000000%	99	mo g	u235t	6.2000000	59bun2	0
144	ce g	u238f	cm	cu		0.0000000	0.0	4.5000000	0.0000000	0		0.0000000	60kat1	0	
144	ce g	u238f	rc	re	su	0.0000000	0.0	0.7690000	0.7900000%	99	mo g	u235t	0.0000000	64cow1	7
144	ce g	u238f	rc	cu		4.6283047	5.0	0.8310000	4.5000000%	99	mo g	u235t	0.0000000	76for1	7
144	ce g	u238f	rc	cu		4.5503309	5.0	0.8170000	4.5000000%	99	mo g	u235t	0.0000000	76for1	7
144	ce g	u238f	rc	cu		4.6951394	5.0	0.8430000	4.5000000%	99	mo g	u235t	0.0000000	76for1	7
144	ce g	u238f	rc	cu		4.6450134	5.0	0.8340000	4.5000000%	99	mo g	u235t	0.0000000	76for1	7
144	ce g	u238f	rc	cu		4.4252320	5.0	4.3400000	1.6000000%	144	ce g	u235t	5.4100000	74yur1	0

144 ce g u238f rc cu 4.8009611 5.0 0.8620000 4.5000000% 99 mo g u235t 0.0000000 76for1 7
144 ce g u238f rc cu 4.6840003 5.0 0.8410000 4.5000000% 99 mo g u235t 0.0000000 76for1 7
144 ce g u238f rc cu 4.3776745 5.0 0.7860000 4.5000000% 99 mo g u235t 0.0000000 76for1 7
144 ce g u238f rc cu 4.4779266 5.0 0.8040000 4.5000000% 99 mo g u235t 0.0000000 76for1 7
144 ce g u238f rc cu su 0.0000000 0.0 6.6420000 34.0000000% 0 0.0000000 76gil3 0
144 ce g u238f bm cu 4.9646718 4.3 4.9500000 4.3000000% 0 0.0000000 77gil1 0
144 ce g u238f rc cu 4.6637826 5.4 4.6500000 0.2500000 0 0.0000000 78nag1 0
144 ce g u238f rc cu 4.7339900 8.3 4.7200000 0.3900000 0 0.0000000 85chi1 0
144 ce g u238f rc cu 4.2662833 5.0 0.7660000 4.5000000% 99 mo g u235t 0.0000000 76for1 7
144 ce g u238f rc cu 4.2829920 5.0 0.7690000 4.5000000% 99 mo g u235t 0.0000000 76for1 7
144 ce g u238f rc cu 4.3052702 5.0 0.7730000 4.5000000% 99 mo g u235t 0.0000000 76for1 7
144 ce g u238f rc cu 4.3052702 5.0 0.7730000 4.5000000% 99 mo g u235t 0.0000000 76for1 7
1
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nuclide material tech. type value err. value nuclide material value no. treatment

144 ce g u238f rc cu 4.3219789 5.0 0.7760000 4.5000000% 99 mo g u235t 0.0000000 76for1 7
144 ce g u238f rc cu 4.3219789 5.0 0.7760000 4.5000000% 99 mo g u235t 0.0000000 76for1 7
144 ce g u238f rc cu su 0.0000000 0.0 4.8000000 0.0000000 0 0.0000000 75fly4 0
144 la g u238f cm cu 0.0000000 0.0 4.8370000 4.1000000% 0 0.0000000 73net2 0
144 la g u238f rc cu 4.9546421 7.7 4.9400000 7.7000000% 0 0.0000000 87chu1 0
144 ba g u238f cm cu 0.0000000 0.0 4.5770000 6.0000000% 0 0.0000000 73net2 0
144 cs g u238f cm cu x1 0.0000000 0.0 1.4050000 32.1000000% 0 0.0000000 73net2 0
144 xe g u238f rc fc su 0.0000000 0.0 0.0280000 0.0040000 144 u238f 1.0000000 72wol1 0
144 xe g u238f cm cu x1 0.0000000 0.0 0.1003000 45.0000000% 0 0.0000000 73net2 0
144 xe g u238f rc fc 0.1277219 14.3 0.0280000 0.0040000 144 u238f 1.0000000 75wol1 0
144 u238he cm cu es 0.0000000 0.0 3.2820000 0.0000000 0 0.0000000 63wea1 0
144 u238he es cu 3.6198996 15.0 3.6120000 15.0000000% 0 0.0000000 74mee9 0
144 u238he cm cu 0.0000000 0.0 3.8000000 6.1000000% 0 0.0000000 77cro1 0
144 ce g u238he rc re 3.8607443 10.0 0.7500000 0.0300000 99 mo g u235t 0.0000000 56for1 7
144 ce g u238he rc cu 2.7462113 10.1 2.6800000 0.1600000 99 mo g u238he 5.5800000 57cun1 0
144 ce g u238he rc cu 4.2949616 50.0 4.0000000 2.0000000 140 ba g u238he 4.3000000 64men1 0
144 ce g u238he cm cu 0.0000000 0.0 3.2000000 0.0000000 0 0.0000000 69gun2 0
144 ce g u238he rc re 3.3243003 9.8 0.7200000 0.0700000 140 ba g u238he 1.0000000 73man1 0
144 ce g u238he cm cu 0.0000000 0.0 3.6700000 3.9000000% 0 0.0000000 73net2 0
144 ce g u238he rc cu 3.3974141 6.5 3.3900000 0.2200000 0 0.0000000 75dar1 0

144	ce g	u238he	cm	cu		0.0000000	0.0	3.3000000	0.0000000	0		0.0000000	60kat1	0
144	ce g	u238he	rc	re	su	0.0000000	0.0	0.7260000	0.8900000%	99 mo g	u235t	0.0000000	64cow1	7
144	ce g	u238he	rc	cu		3.7372005	5.0	0.7260000	4.5000000%	99 mo g	u235t	0.0000000	76for1	7
144	ce g	u238he	rc	cu		3.8607443	5.0	0.7500000	4.5000000%	99 mo g	u235t	0.0000000	76for1	7
144	ce g	u238he	es	cu	su	0.0000000	0.0	3.0400000	0.3100000	0		0.0000000	73dar1	0
144	ce g	u238he	rc	cu		3.9616587	7.9	3.8800000	0.3000000	99 mo g	u238he	5.6000000	75ada1	0
144	ce g	u238he	rc	cu		3.7281358	7.0	3.7200000	7.0000000%	0		0.0000000	81lau1	0
144	ce g	u238he	rc	cu		3.6479609	13.2	3.6400000	0.4800000	0		0.0000000	83li 2	0
144	ce g	u238he	rc	cu		4.0187701	5.2	4.0100000	0.2100000	0		0.0000000	80chi2	0
144	la g	u238he	cm	cu		0.0000000	0.0	3.6460000	3.9000000%	0		0.0000000	73net2	0
144	ba g	u238he	cm	cu		0.0000000	0.0	3.0480000	8.1000000%	0		0.0000000	73net2	0
144	cs g	u238he	cm	cu		0.0000000	0.0	0.4104000	32.1000000%	0		0.0000000	73net2	0
144	xe g	u238he	cm	cu		0.0000000	0.0	0.0101100	90.0000000%	0		0.0000000	73net2	0
144	nd g	pu239t	ms	cu		3.6884928	1.6	5.0000000	0.0000000	143 nd g	pu239t	5.9800000	56wil1	0
144	nd g	pu239t	ms	re		3.7056074	0.9	0.8400000	0.0060000	143 nd g	pu239t	1.0000000	57kri1	0
144		pu239t	cm	cu		0.0000000	0.0	3.8200000	0.0000000	0		0.0000000	72sid1	0
144	nd g	pu239t	cm	cu		0.0000000	0.0	3.7600000	0.0000000	0		0.0000000	73lam1	0
144		pu239t	cm	cu		0.0000000	0.0	3.8100000	0.0800000	0		0.0000000	73wal1	0
144	nd g	pu239t	ms	cu		3.7084669	2.2	3.7100000	0.0800000	0		0.0000000	75mae1	0
144	nd g	pu239t	ms	re		3.6866323	3.9	2.2370000	0.0860000	148 nd g	pu239t	0.9960000	65rid2	0
144	nd g	pu239t	ms	cu		3.7684421	2.1	3.7700000	0.0800000	0		0.0000000	66rid2	0
144	nd g	pu239t	ms	re		3.7729152	1.0	2.2820000	0.0200000	148 nd g	pu239t	0.9928000	64rid1	0
144		pu239t	cm	cu		0.0000000	0.0	3.8200000	5.3000000%	0		0.0000000	77cro1	0
144	nd g	pu239t	ms	cu		3.9090368	3.1	5.5000000	0.1700000	145 nd g	pu239t	4.2000000	59ani1	0
144	nd g	pu239t	ms	cu		3.7724404	2.0	3.7740000	0.0410000	0		0.0000000	79mae2	0
144	nd g	pu239t	ms	re		3.7503301	0.7	0.2755000	0.0001200	148 nd g	pu239t	0.1205800	76mae1	0
144	nd g	pu239t	ms	re		3.7100189	1.3	0.8410000	0.0100000	143 nd g	pu239t	1.0000000	59fic2	0
144	nd g	pu239t	es	cu	cm	3.7684421	1.0	3.7700000	1.0000000%	0		0.0000000	81mae2	0
144	nd g	pu239t	ms	cu		3.7232506	0.9	3.7200000	0.0300000	148 nd g	pu239t	1.6400000	86chi1	0
144	ce g	pu239t	rc	cu		3.6947313	60.0	3.7000000	0.0000000	140 ba g	pu239t	5.3600000	51ste3	0
144	ce g	pu239t	ms	cu		3.6430529	1.8	5.0000000	0.0000000	140 ce g	pu239t	7.3600000	56wil1	0
144	ce g	pu239t	ms	re		3.8528618	5.1	0.7820000	0.0400000	142 ce g	pu239t	1.0000000	57kri1	0
144	ce g	pu239t	rc	cu		3.8222973	5.0	4.0700000	0.0800000	99 mo g	u235t	5.4000000	71ram1	31
144	ce g	pu239t	cm	cu	x3	0.0000000	0.0	3.7500000	0.0000000	0		0.0000000	73lam1	0
144	ce g	pu239t	cm	cu	x3	0.0000000	0.0	3.7740000	2.0000000%	0		0.0000000	73net2	0
144	ce g	pu239t	rc	cu		3.7508992	5.0	0.6710000	4.5000000%	99 mo g	u235t	0.0000000	76for1	7

144 ce g pu239t rc cu 3.6039187 10.1 3.6000000 0.2000000 99 mo g u235t 6.1000000 59bun1 0
144 ce g pu239t rc cu 3.8484090 5.0 3.8500000 0.0900000 0 0.0000000 71sor1 0
144 ce g pu239t rc cu 3.9083842 7.2 3.9100000 0.2800000 0 0.0000000 80dic1 0
144 ce g pu239t ms cu 3.7041398 2.2 3.7800000 0.0800000 137 cs g pu239t 6.7400000 70lis1 0
144 ce g pu239t ms re aw 3.7444692 0.9 0.7600000 0.0060000 142 ce g pu239t 1.0000000 59fic2 0
144 ce g pu239t rc cu x4 0.0000000 0.0 3.4900000 0.1000000 0 0.0000000 84jai1 0
144 ce g pu239t rc cu 3.7984297 5.0 3.8000000 0.0700000 0 0.0000000 84jai1 0
144 ce g pu239t rc cu 3.6945664 5.0 0.7800000 0.0200000 140 ba g u235t 0.0000000 86chi1 7
144 ce g pu239t rc cu rp 3.7910093 11.2 3.8500000 0.0000000 no. relative values = 2 71ram1
144 ce g pu239t rc cu rp 3.7895275 6.4 3.8500000 0.0000000 no. relative values = 7 71sor1
144 ce g pu239t cm in 0.0000000 0.0 0.1393000 46.0000000% 0 1.0000000 88wah1 0
144 la g pu239t cm cu 0.0000000 0.0 3.5750000 4.1000000% 0 0.0000000 73net2 0
144 la g pu239t rc cu 4.0983057 8.8 4.1000000 0.3600000 0 0.0000000 81dic1 0
144 la g pu239t rc cu 4.0083318 15.3 4.0000000 0.6000000 139 xe g pu239t 3.0780000 82gol1 0
144 la g pu239t cm in 0.0000000 0.0 1.3700000 11.0000000% 0 1.0000000 88wah1 0
144 ba g pu239t cm cu x3 0.0000000 0.0 2.1340000 15.0000000% 0 0.0000000 73net2 0
144 ba g pu239t cm in 0.0000000 0.0 2.0880000 11.0000000% 0 1.0000000 88wah1 0
144 cs g pu239t cm cu 0.0000000 0.0 0.0941600 45.0000000% 0 0.0000000 73net2 0
144 cs g pu239t es fc 0.2310238 30.0 0.0618000 0.0000000 144 pu239t 1.0000000 74wol1 0
144 cs g pu239t cm in 0.0000000 0.0 0.1377000 39.0000000% 0 1.0000000 88wah1 0
144 xe g pu239t rc fc 0.0010840 20.7 0.0290000 0.0060000 144 ce g pu239t 100.0000000 65wol1 0
144 xe g pu239t cm cu 0.0000000 0.0 0.0006253 90.0000000% 0 0.0000000 73net2 0
144 pu239f es cu cm 3.6411862 30.0 3.6500000 0.0000000 0 0.0000000 72sid1 0
144 pu239f es re 3.6934470 10.0 0.9900000 10.0000000% 144 pu239t 1.0000000 74mee4 0
144 nd g pu239f ms cu su 0.0000000 0.0 3.6600000 0.0000000 0 0.0000000 76koc1 0
144 pu239f cm cu 0.0000000 0.0 3.7300000 7.7000000% 0 0.0000000 77cro1 0
144 nd g pu239f es fi 0.0000001 30.0 0.0000155 0.0000000 144 pu239f 1000.0000000 74wol1 0
144 pu239f ms cu 3.6188723 2.2 3.6900000 0.0800000 148 nd g pu239f 1.6900000 77gab1 0
144 nd g pu239f ms cu 3.6998114 0.7 0.2284000 0.0001000 146 nd g pu239f 0.1515000 80mae4 0
144 nd g pu239f ms cu su 0.0000000 0.0 3.7000000 0.0300000 148 nd g pu239f 1.6500000 74mae1 0
144 pu239f ms cu 3.5743480 3.0 3.5830000 3.0000000% 0 0.0000000 81koc1 36
144 nd g pu239f es cu cm 3.6411862 1.0 3.6500000 1.0000000% 0 0.0000000 81mae2 0
144 ce g pu239f rc cu 3.8024374 6.0 3.5600000 6.0000000% 137 cs g pu239f 6.1500000 67sch1 0
144 ce g pu239f rc cu 3.4227274 5.0 3.4900000 3.0000000% 148 nd g pu239f 1.6900000 69dav1 0
144 ce g pu239f rc cu x4 0.0000000 0.0 2.6900000 0.1700000 140 ba g pu239f 5.3600000 72cun2 0
144 ce g pu239f rc cu 3.8243299 8.4 3.8600000 0.3200000 140 ba g pu239f 5.3600000 72cun2 0

144 ce g pu239f rc re 3.8992126 5.4 0.8340000 0.0450000 137 cs g pu239f 1.4050000 72rid3 0
144 ce g pu239f cm cu 0.0000000 0.0 3.3400000 3.9000000% 0 0.0000000 73net2 0
144 ce g pu239f rc cu 3.6160376 5.0 0.6730000 4.4000000% 99 mo g u235t 0.0000000 76for1 7
144 ce g pu239f rc cu 3.5300694 5.0 0.6570000 4.5000000% 99 mo g u235t 0.0000000 76for1 7
144 ce g pu239f rc cu 3.4763392 5.0 0.6470000 4.5000000% 99 mo g u235t 0.0000000 76for1 7
144 ce g pu239f rc cu 3.4172361 5.0 0.6360000 4.4000000% 99 mo g u235t 0.0000000 76for1 7
144 ce g pu239f rc cu 3.5085773 5.0 0.6530000 4.5000000% 99 mo g u235t 0.0000000 76for1 7
144 ce g pu239f rc cu 3.5713552 5.0 3.5800000 0.6000000% 0 0.0000000 77koc1 0
144 ce g pu239f bm cu 3.7808481 5.5 3.7900000 5.5000000% 0 0.0000000 77gil1 0
144 ce g pu239f ms cu 3.7256965 0.8 3.7180000 0.0280000 148 nd g pu239f 1.6540000 77mae1 0
144 ce g pu239f ms cu 3.6581451 2.0 3.6670000 0.0400000 0 0.0000000 77mae1 0
144 ce g pu239f ms cu 3.5256184 1.9 3.6800000 0.0700000 148 nd g pu239f 1.7300000 70lis1 0
144 ce g pu239f rc cu 3.5713552 5.0 3.5800000 4.0000000% 0 0.0000000 81lau1 0
144 ce g pu239f rc cu 3.2990298 5.0 0.6140000 4.5000000% 99 mo g u235t 1.0000000 76for1 7
144 ce g pu239f rc cu x4 0.0000000 0.0 4.2000000 0.0000000 140 ba g pu239f 5.2000000 71cun1 0
144 ce g pu239f rc cu x4 0.0000000 0.0 4.3800000 1.2300000 99 mo g pu239f 5.9800000 72cun1 0
144 la g pu239f cm cu 0.0000000 0.0 3.0910000 6.0000000% 0 0.0000000 73net2 0
144 ba g pu239f cm cu 0.0000000 0.0 1.6710000 15.0000000% 0 0.0000000 73net2 0
144 cs g pu239f cm cu x3 0.0000000 0.0 0.0583400 50.0000000% 0 0.0000000 73net2 0
144 xe g pu239f cm cu 0.0000000 0.0 0.0002976 90.0000000% 0 0.0000000 73net2 0
144 pu241t cm cu 0.0000000 0.0 4.0700000 0.0000000 0 0.0000000 72sid1 0
144 pu241t rc cu 4.1656274 15.1 4.4700000 0.0000000 131 pu241t 3.3300000 73chi1 0
144 pu241t cm cu 0.0000000 0.0 4.1800000 0.0600000 0 0.0000000 73wal1 0
144 nd g pu241t ms cu 4.3538042 5.0 4.0800000 0.2000000 148 nd g pu241t 1.8120000 67rid1 0
144 pu241t cm cu 0.0000000 0.0 4.0900000 2.8000000% 0 0.0000000 77cro1 0
144 pu241t cm cu 0.0000000 0.0 4.1500000 0.0000000 0 0.0000000 79wal1 0
144 nd g pu241t ms re 4.2072168 1.4 1.2884000 0.0130000 145 nd g pu241t 1.0000000 64far1 0
144 nd g pu241t ms cu 4.3280609 1.2 4.3200000 0.0400000 148 nd g pu241t 1.9300000 86chi1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

144 ce g pu241t rc cu rp 4.3323818 4.8 1.0000000 0.0000000 no. relative values = 12 70sko1
144 ce g pu241t ms cu 4.2062744 2.0 4.2030000 0.0280000 0 0.0000000 77mae1 0
144 ce g pu241t rc cu 4.0831785 5.0 4.0800000 0.1400000 0 0.0000000 71sor1 0
144 ce g pu241t rc cu rp 4.3501422 5.1 4.0800000 0.0000000 no. relative values = 10 71sor1

144 ce g pu241t ms cu 4.2896212 2.8 4.1300000 0.1100000 148 nd g pu241t 1.8616500 70lis1 0
144 ce g pu241t ms re 4.1174147 1.1 0.8667000 0.0020000 142 ce g pu241t 1.0000000 64far1 0
144 ce g pu241t rc cu 4.2897808 5.0 0.8400000 0.0200000 140 ba g u235t 0.0000000 86chi1 7
144 ce g pu241t rc cu x4 0.0000000 0.0 3.1000000 0.0000000 0 0.0000000 63kir1 0
144 u233t cm cu 0.0000000 0.0 4.7400000 0.0000000 0 0.0000000 72sid1 0
144 nd g u233t cm cu 0.0000000 0.0 4.6400000 0.0000000 0 0.0000000 73lam1 0
144 u233t cm cu 0.0000000 0.0 4.6200000 0.0900000 0 0.0000000 73wal1 0
144 nd g u233t ms cu rp 4.5857766 4.8 4.8700000 0.0000000 no. relative values = 4 61bid1
144 nd g u233t ms re 4.6408321 1.9 3.5530000 0.0590000 148 nd g u233t 0.9946000 65rid2 0
144 nd g u233t ms cu su 0.0000000 0.0 3.3700000 0.3000000 148 nd g u233t 1.1500000 55kuk1 0
144 nd g u233t ms cu su 0.0000000 0.0 3.8000000 0.4000000 148 nd g u233t 1.0500000 57iva1 0
144 nd g u233t ms cu su 0.0000000 0.0 3.8400000 0.1500000 148 nd g u233t 1.0500000 57iva1 0
144 nd g u233t ms re 4.8546871 1.5 3.7100000 0.0410000 148 nd g u233t 0.9928000 64rid1 0
144 u233t cm cu 0.0000000 0.0 4.5800000 3.4000000% 0 0.0000000 77cro1 0
144 nd g u233t ms cu 4.6622606 4.0 3.8400000 0.1500000 148 nd g u233t 1.0700000 59ani1 0
144 nd g u233t ms cu 4.7928681 10.6 3.8000000 0.4000000 148 nd g u233t 1.0300000 59ani1 0
144 nd g u233t ms re 4.6386096 1.7 0.7790000 0.0000000 143 nd g u233t 1.0000000 55mel1 0
144 nd g u233t ms cu 4.8026228 1.4 4.7800000 0.0500000 148 nd g u233t 1.2930000 86chi1 0
144 nd g u233t ms cu 4.6072758 2.4 4.6160000 0.1100000 0 0.0000000 66rid1 0
144 ce g u233t rc cu 4.6988871 6.3 4.7400000 0.3000000 99 mo g u235t 5.6200000 65bun1 1
144 ce g u233t rc cu 4.7618457 5.0 4.5300000 0.0700000 99 mo g u235t 5.3000000 66gor1 24
144 ce g u233t rc cu 4.6361748 7.2 4.5400000 0.3000000 99 mo g u233t 4.8000000 67gan1 0
144 ce g u233t cm cu 0.0000000 0.0 4.6000000 0.0000000 0 0.0000000 73lam1 0
144 ce g u233t cm cu 0.0000000 0.0 4.6840000 2.0000000% 0 0.0000000 73net2 0
144 ce g u233t rc cu 4.5231632 10.4 3.6900000 0.1800000 140 ba g u233t 5.2100000 60san1 0
144 ce g u233t ms cu rp 4.6397070 6.8 4.8700000 0.0000000 no. relative values = 2 61bid1
144 ce g u233t ms cu 4.6611737 2.0 4.6700000 0.0400000 0 0.0000000 70lis1 0
144 ce g u233t rc cu 4.6343669 5.0 0.8200000 0.0200000 140 ba g u235t 0.0000000 86chi1 7
144 ce g u233t rc cu x4 0.0000000 0.0 4.1000000 0.0000000 140 ba g u233t 6.0000000 47ste1 0
144 la g u233t cm cu 0.0000000 0.0 4.4060000 4.1000000% 0 0.0000000 73net2 0
144 la g u233t sp fi 1.3444165 10.0 0.2850000 10.0000000% 144 u233t 1.0000000 86lei1 0
144 la g u233t rc cu 4.5913060 5.0 4.6000000 0.2300000 0 0.0000000 81gud1 0
144 ba g u233t cm cu x3 0.0000000 0.0 2.5480000 15.0000000% 0 0.0000000 73net2 0
144 ba g u233t sp fc 3.3728343 5.0 0.7150000 3.0000000% 144 u233t 1.0000000 86lei1 0
144 cs g u233t cm cu x3 0.0000000 0.0 0.1040000 45.0000000% 0 0.0000000 73net2 0
144 xe g u233t rc fc 0.0007075 99.9 0.0150000 0.0150000 144 ce g u233t 100.0000000 65wol1 0

144 xe g u233t cm cu 0.0000000 0.0 0.0006328 90.0000000% 0 0.0000000 73net2 0
144 th232f cm cu es 0.0000000 0.0 7.5000000 0.0000000 0 0.0000000 65eng1 0
144 th232f es cu cm 7.7458986 30.0 7.8000000 0.0000000 0 0.0000000 72sid1 0
144 th232f es cu cm 7.6068696 30.0 7.6600000 0.0000000 0 0.0000000 73lam1 0
144 th232f es cu cm 7.8948582 30.0 7.9500000 0.0000000 0 0.0000000 74lam1 0
144 th232f cm cu 0.0000000 0.0 7.6200000 4.1000000% 0 0.0000000 77cro1 0
144 th232f es cu 7.7657599 5.0 7.8200000 5.0000000% 0 0.0000000 74mee0 0
144 ce g th232f rc cu 7.6632960 60.1 6.2000000 0.0000000 89 sr g th232f 6.0000000 50nid1 0
144 ce g th232f rc cu 7.8588447 20.4 7.1000000 1.0000000 89 sr g th232f 6.7000000 51tur1 0
144 ce g th232f rc re 8.1361307 10.4 1.0400000 0.0600000 140 ba g th232f 1.0000000 63cro2 0
144 ce g th232f rc re 7.5804149 10.0 2.8800000 0.0100000 99 mo g u235t 0.0000000 63iye1 7
144 ce g th232f rc cu 7.9415240 10.4 7.5000000 10.0000000% 141 ce g th232f 7.0000000 67bre1 0
144 ce g th232f rc cu rp 6.9587401 16.3 7.8000000 0.0000000 no. relative values = 1 73fud1
144 ce g th232f cm cu 0.0000000 0.0 7.5040000 4.0000000% 0 0.0000000 73net2 0
144 ce g th232f cm cu 0.0000000 0.0 7.1000000 0.0000000 0 0.0000000 60kat1 0
144 ce g th232f rc cu su 0.0000000 0.0 7.9800000 0.3000000 99 mo g th232f 2.7800000 64wyt1 0
144 ce g th232f rc cu 8.3923226 5.4 7.9800000 0.3000000 99 mo g th232f 2.7800000 65wyt1 0
144 ce g th232f cm cu 0.0000000 0.0 7.7000000 0.0000000 0 0.0000000 79zij1 0
144 ce g th232f rc re 7.7909820 5.0 2.9600000 0.0900000 99 mo g u235t 0.0000000 81ert1 7
144 ce g th232f cm cu 0.0000000 0.0 7.7600000 0.2700000 0 0.0000000 81ert1 0
144 ce g th232f rc cu 7.9273941 20.0 0.9199000 14.1000000% 89 sr g u235t 0.0000000 51tur1 7
144 la g th232f cm cu 0.0000000 0.0 7.4970000 4.0000000% 0 0.0000000 73net2 0
144 la g th232f rc cu x1 0.0000000 0.0 3.5800000 0.3800000 140 ba g th232f 7.9700000 85chu1 0
144 ba g th232f cm cu 0.0000000 0.0 7.0400000 6.0000000% 0 0.0000000 73net2 0
144 cs g th232f cm cu x3 0.0000000 0.0 2.0060000 32.1000000% 0 0.0000000 73net2 0
144 xe g th232f cm cu x3 0.0000000 0.0 0.1293000 50.0000000% 0 0.0000000 73net2 0
145 u235t cm cu 0.0000000 0.0 3.8800000 0.0000000 0 0.0000000 72sid1 0
145 u235t cm cu 0.0000000 0.0 3.9100000 0.0000000 0 0.0000000 73lam1 0
145 u235t cm cu 0.0000000 0.0 3.9300000 0.0600000 0 0.0000000 73wal1 0
145 u235t cm cu 0.0000000 0.0 3.9200000 1.1000000% 0 0.0000000 77cro1 0
145 u235t es re 3.8831336 2.1 1.0000000 2.0000000% 145 u235f 0.9720000 74mee4 0
145 u235t ms cu 4.1295529 5.0 4.1310000 5.0000000% 0 0.0000000 76dii1 36
145 nd g u235t ms cu 3.9914488 1.5 3.6200000 0.0000000 143 nd g u235t 5.4000000 50ing1 0
145 nd g u235t ms cu 3.8586478 2.0 3.8600000 0.0200000 0 0.0000000 70lis1 0
145 nd g u235t ms cu 3.9086303 2.0 3.9100000 0.0490000 0 0.0000000 65rid1 0
145 nd g u235t ms cu 3.9446177 2.0 3.9460000 0.0230000 0 0.0000000 78mae1 0

145	nd	g	u235t	ms	cu		3.9506156	2.0	3.9520000	0.0240000	0			0.0000000	78mae1	0		
145	nd	g	u235t	ms	cu		3.9806051	2.0	3.9820000	0.0280000	0			0.0000000	78mae1	0		
145	nd	g	u235t	ms	cu		3.9364085	2.5	4.0000000	0.1000000	148	nd	g	u235t	1.7000000	59ani1	0	
145	nd	g	u235t	ms	cu		3.8185386	1.5	4.0400000	0.0000000	148	nd	g	u235t	1.7700000	55gle1	0	
145	nd	g	u235t	ms	cu		3.9625528	5.0	3.8600000	5.0000000%	143	nd	g	u235t	5.8000000	55pet2	36	
145	nd	g	u235t	ms	cu		3.8776210	0.9	3.8800000	0.0300000	148	nd	g	u235t	1.6740000	86chi1	0	
145	nd	g	u235t	ms	cu	cm	3.9586128	6.0	3.9600000	0.0000000	0			0.0000000	80mae3	0		
145	nd	g	u235t	ms	cu	x4	0.0000000	0.0	4.0000000	0.1000000	146	nd	g	u235t	3.2000000	57gor1	0	
145	nd	g	u235t	ms	re		3.9594731	0.6	0.6650000	0.0010000	143	nd	g	u235t	1.0000000	55mel1	0	
145	nd	g	u235t	ms	re		3.9262979	0.9	2.3300000	0.0190000	148	nd	g	u235t	0.9928000	64rid1	0	
145	nd	g	u235t	ms	re		3.9819064	1.6	2.3630000	0.0370000	148	nd	g	u235t	0.9928000	65rid2	0	
145	nd	g	u235t	ms	re		3.9264604	0.6	0.2136000	0.0002250	148	nd	g	u235t	0.0910100	76mae1	0	
145	nd	g	u235t	ms	re		3.9594731	0.6	0.6650000	0.0020000	143	nd	g	u235t	1.0000000	62far1	0	
145	nd	g	u235t	ms	re	rp	3.9111483	1.1	0.6600000	0.0000000	no. relative values =			10		59chu1		
145	pr	g	u235t	cm	cu		0.0000000	0.0	3.9530000	2.0000000%	0			0.0000000	73net2	0		
145	ce	g	u235t	rc	fi	x4	0.0000000	0.0	0.6100000	0.0000000	145	la	g	u235t	1.0000000	67fas1	0	
145	ce	g	u235t	sp	fi	lt	0.0943702	99.9	0.0240000	0.0240000	145			u235t	1.0000000	84den1	36	
145	ce	g	u235t	cm	in		0.0000000	0.0	0.1748000	39.0000000%	0			1.0000000	88wah1	0		
145	la	g	u235t	rc	fc		3.6172181	11.3	92.0000000	9.0000000	145	ce	g	u235t	100.0000000	77fis1	0	
145	la	g	u235t	sp	fi		2.1626505	7.0	0.5500000	7.0000000%	145			u235t	1.0000000	84den1	0	
145	la	g	u235t	cm	in		0.0000000	0.0	1.6030000	11.0000000%	0			1.0000000	88wah1	0		
145	ba	g	u235t	rc	fc		2.2766812	6.2	57.9000000	3.6000000	145			u235t	100.0000000	78den2	0	
145	ba	g	u235t	rc	fc		2.2766812	6.2	57.9000000	3.6000000	145			u235t	100.0000000	78fis1	0	
145	ba	g	u235t	ms	in		2.5990892	23.1	2.6000000	0.6000000	0			0.0000000	79shm1	0		
145	ba	g	u235t	sp	cu		2.5990892	23.1	2.6000000	0.6000000	0			0.0000000	81shm1	0		
145	ba	g	u235t	sp	fc		1.7694414	7.0	0.4500000	7.0000000%	145			u235t	1.0000000	84den1	0	
145	ba	g	u235t	sp	fi		1.6514786	14.0	0.4200000	14.0000000%	145			u235t	1.0000000	84den1	0	
145	ba	g	u235t	cm	in		0.0000000	0.0	1.9130000	17.0000000%	0			1.0000000	88wah1	0		
145	ba	g	u235t	sp	in		2.2492118	24.4	2.2500000	0.5500000	0			0.0000000	90rud1	0		
145	ba	g	u235t	sp	cu		2.3391803	24.8	2.3400000	0.5800000	0			0.0000000	90rud1	0		
145	cs	g	u235t	ms	in	x1	0.0000000	0.0	0.2800000	0.0700000	0			0.0000000	72bal1	0		
145	cs	g	u235t	rc	fi		0.0668456	52.9	0.0170000	0.0090000	145			u235t	1.0000000	73for2	0	
145	cs	g	u235t	es	fc		0.0825739	30.0	0.0210000	0.0000000	145			u235t	1.0000000	74wol1	0	
145	cs	g	u235t	sp	in		0.0564802	16.6	0.0565000	0.0094000	0			0.0000000	75ree1	0		
145	cs	g	u235t	rc	in	su	0.0000000	0.0	0.1000000	0.0520000	0			0.0000000	70for1	0		
145	cs	g	u235t	sp	fi		0.0856016	5.0	2.1770000	0.0650000	145			u235t	100.0000000	79bal1	0	

145 cs g u235t ms in 0.0999650 28.0 0.1000000 0.0280000 0 0.0000000 79shm1 0
145 cs g u235t sp cu 0.0999650 28.0 0.1000000 0.0280000 0 0.0000000 81shm1 0
145 cs g u235t cm in 0.0000000 0.0 0.0984300 3.0000000% 0 1.0000000 88wah1 0
145 cs g u235t sp cu 0.0749737 36.0 0.0750000 0.0270000 0 0.0000000 90rud1 0
145 xe g u235t rc fc 0.0000790 22.4 0.0000201 0.0000045 145 u235t 1.0000000 71wol2 0
145 xe g u235t cm in 0.0000000 0.0 0.0008268 25.0000000% 0 10.0000000 88wah1 0
145 nd g u235f ms cu 3.7773371 3.0 3.9300000 3.0000000% 148 nd g u235f 1.7500000 69dav1 0
145 nd g u235f rc cu 3.7292793 5.0 3.8800000 0.0800000 148 nd g u235f 1.7500000 70rid1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

145 nd g u235f ms cu 3.7076054 1.6 3.8200000 0.0000000 143 nd g u235f 5.9000000 71cro2 0
145 nd g u235f ms cu 3.7270169 1.6 3.8400000 0.0000000 143 nd g u235f 5.9000000 71cro2 0
145 nd g u235f ms re su 0.0000000 0.0 2.1800000 0.0000000 148 nd g u235f 1.0000000 71rob1 0
145 u235f es cu cm 3.8967315 30.0 3.9000000 0.0000000 0 0.0000000 72sid1 0
145 nd g u235f ms cu 3.7768321 5.0 3.7800000 5.0000000% 0 0.0000000 73cro3 0
145 nd g u235f ms cu 3.7568488 5.0 3.7600000 5.0000000% 0 0.0000000 73cro3 0
145 nd g u235f ms re 3.7677255 1.6 2.2400000 0.0000000 148 nd g u235f 1.0000000 73rob1 0
145 nd g u235f ms cu 3.6569326 2.0 3.6600000 0.0500000 0 0.0000000 74lar2 0
145 nd g u235f ms cu su 0.0000000 0.0 3.7300000 0.0000000 0 0.0000000 76koc1 0
145 u235f cm cu 0.0000000 0.0 3.7800000 2.0000000% 0 0.0000000 77cro1 0
145 nd g u235f ms cu 3.7568478 0.7 3.7300000 0.4000000% 148 nd g u235f 1.6700000 77koc1 0
145 u235f ms cu 3.7313784 2.9 3.8600000 0.1100000 148 u235f 1.7400000 77gab1 0
145 nd g u235f ms cu 3.7848254 2.0 3.7880000 0.0280000 0 0.0000000 80mae1 0
145 nd g u235f ms cu 3.7004447 2.1 3.8500000 0.0800000 148 nd g u235f 1.7500000 70lis1 0
145 u235f es re 3.8203000 10.0 0.9720000 10.0000000% 145 u235t 1.0000000 74mee4 0
145 nd g u235f ms cu cm 3.7988136 6.0 3.8020000 0.0000000 0 0.0000000 80mae3 0
145 nd g u235f ms cu 3.8707533 2.0 3.8740000 0.0180000 0 0.0000000 81mae1 0
145 nd g u235f ms cu 3.8677558 2.0 3.8710000 0.0230000 0 0.0000000 81mae1 0
145 nd g u235f ms cu 3.8877390 2.0 3.8910000 0.0210000 0 0.0000000 81mae1 0
145 nd g u235f cm cu 0.0000000 0.0 3.8790000 0.0210000 0 0.0000000 81mae1 0
145 nd g u235f ms cu 3.8346058 0.9 3.8300000 0.0300000 148 nd g u235f 1.6800000 74mae1 0
145 u235f ms cu 3.7318698 3.0 3.7350000 3.0000000% 0 0.0000000 81koc1 36
145 pr g u235f cm cu 0.0000000 0.0 3.8290000 4.0000000% 0 0.0000000 73net2 0
145 ce g u235f rc cu 3.7568488 5.3 3.7600000 0.2000000 0 0.0000000 81mar1 0

145		u235he	cm	cu	x3	0.0000000	0.0	2.8990000	0.0000000	0				0.0000000	63wea1	0
145		u235he	cm	cu		0.0000000	0.0	2.7100000	20.0000000%	0				0.0000000	77cro1	0
145	pr g	u235he	es	cu		2.7272968	6.0	2.7500000	6.0000000%	0				0.0000000	73net2	0
145	pr g	u235he	es	cu		2.6588664	10.0	2.6810000	10.0000000%	0				0.0000000	74mee8	0
145		u238f	es	cu		3.7821772	30.0	3.7710000	0.0000000	0				0.0000000	63wea1	0
145		u238f	es	cu	cm	3.9115596	30.0	3.9000000	0.0000000	0				0.0000000	64wal1	0
145	nd g	u238f	ms	re	su	0.0000000	0.0	1.7700000	0.0000000	148	nd g	u238f		1.0000000	71rob1	0
145	nd g	u238f	ms	re		3.8152293	1.8	0.8230000	0.0140000	143	nd g	u238f		1.0000000	72mat1	0
145		u238f	es	cu	cm	3.5103740	30.0	3.5000000	0.0000000	0				0.0000000	72sid1	0
145	nd g	u238f	ms	re		3.7925329	1.7	1.7900000	0.0000000	148	nd g	u238f		1.0000000	73rob1	0
145	nd g	u238f	ms	cu		3.8422627	5.8	3.5000000	0.2000000	148	nd g	u238f		1.9300000	67rid1	0
145		u238f	cm	cu		0.0000000	0.0	3.9000000	3.6000000%	0				0.0000000	77cro1	0
145	nd g	u238f	ms	cu		3.8293165	2.0	3.8180000	0.0260000	0				0.0000000	81mae1	0
145	nd g	u238f	ms	cu		3.8212928	2.0	3.8100000	0.0290000	0				0.0000000	81mae1	0
145	nd g	u238f	ms	cu		3.7962187	2.0	3.7850000	0.0590000	0				0.0000000	81mae1	0
145	nd g	u238f	cm	cu		0.0000000	0.0	3.8050000	0.0390000	0				0.0000000	81mae1	0
145	nd g	u238f	ms	cu		3.8300181	1.1	3.7600000	0.0300000	148	nd g	u238f		2.0800000	74mae1	0
145		u238f	ms	cu		3.6207000	3.0	3.6100000	3.0000000%	0				0.0000000	81koc1	36
145	pr g	u238f	cm	cu		0.0000000	0.0	3.9400000	4.1000000%	0				0.0000000	73net2	0
145	pr g	u238f	rc	cu		4.0820635	9.3	4.0700000	0.3800000	0				0.0000000	75har1	0
145	pr g	u238f	rc	cu		3.9938118	5.2	4.0800000	0.1100000	99	mo g	u238f		6.3200000	70lyl1	0
145	ce g	u238f	rc	cu		3.6608186	10.7	3.6500000	10.7000000%	0				0.0000000	87chu1	0
145	cs g	u238f	ms	in	su	0.0000000	0.0	0.2980000	0.0340000	141	cs g	u238f		1.0000000	73bal1	0
145	cs g	u238f	ms	in		0.5115116	21.6	0.5100000	0.1100000	0				0.0000000	74bal2	0
145	cs g	u238f	cm	fi		0.0000000	0.0	0.1450000	0.0290000	145		u238f		1.0000000	74wol1	0
145	cs g	u238f	rc	in		0.5516302	20.0	0.5500000	0.1100000	0				0.0000000	74wol4	0
145		u238he	es	cu		2.8728582	30.0	2.8640000	0.0000000	0				0.0000000	63wea1	0
145		u238he	es	cu		2.9601273	15.0	2.9510000	15.0000000%	0				0.0000000	74mee9	0
145		u238he	cm	cu		0.0000000	0.0	2.9800000	4.2000000%	0				0.0000000	77cro1	0
145	pr g	u238he	rc	cu		3.1335585	5.3	3.1100000	0.1600000	99	mo g	u238he		5.6800000	71bir2	0
145	pr g	u238he	cm	cu		0.0000000	0.0	3.0400000	6.1000000%	0				0.0000000	73net2	0
145	pr g	u238he	es	cu	su	0.0000000	0.0	3.1200000	0.1600000	0				0.0000000	73dar1	0
145	pr g	u238he	rc	cu		2.9023920	5.2	2.8400000	0.0800000	99	mo g	u238he		5.6000000	75ada1	0
145	pr g	u238he	rc	cu		2.8186912	19.9	2.8100000	0.5600000	0				0.0000000	83li 2	0
145	nd g	pu239t	ms	cu		3.0024331	1.6	4.0700000	0.0000000	143	nd g	pu239t		5.9800000	56wil1	0
145	nd g	pu239t	ms	re		2.9380173	0.7	0.6660000	0.0020000	143	nd g	pu239t		1.0000000	57kri1	0

145 pu239t cm cu x3 0.0000000 0.0 3.0000000 0.0000000 0 0.0000000 72sid1 0
145 pu239t cm cu x3 0.0000000 0.0 3.0400000 0.0000000 0 0.0000000 73lam1 0
145 pu239t cm cu x3 0.0000000 0.0 3.0600000 0.0300000 0 0.0000000 73wal1 0
145 nd g pu239t ms cu 2.9687727 2.0 2.9700000 0.0600000 0 0.0000000 75mae1 0
145 nd g pu239t ms re 3.0373103 2.0 1.8430000 0.0350000 148 nd g pu239t 0.9960000 65rid2 0
145 nd g pu239t ms cu 3.0387437 2.6 3.0400000 0.0800000 0 0.0000000 66rid2 0
145 nd g pu239t ms re 3.0322202 1.0 1.8340000 0.0150000 148 nd g pu239t 0.9928000 64rid1 0
145 pu239t cm cu x3 0.0000000 0.0 3.1200000 6.2000000% 0 0.0000000 77cro1 0
145 nd g pu239t ms cu rp 2.9960771 3.2 4.2000000 0.0000000 no. relative values = 4 59ani1
145 nd g pu239t ms cu 3.0207512 2.0 3.0220000 0.0330000 0 0.0000000 79mae2 0
145 nd g pu239t ms re 2.9975415 0.7 0.2202000 0.0001200 148 nd g pu239t 0.1205800 76mae1 0
145 nd g pu239t ms cu 2.9691915 2.0 3.0300000 0.0600000 137 cs g pu239t 6.7400000 70lis1 0
145 nd g pu239t ms re 3.0218346 1.3 0.6850000 0.0080000 143 nd g pu239t 1.0000000 59fic2 0
145 nd g pu239t ms cu 2.9525777 1.1 2.9500000 0.0300000 148 nd g pu239t 1.6400000 86chi1 0
145 nd g pu239t cm cu x3 0.0000000 0.0 3.0200000 1.0000000% 0 0.0000000 81mae2 0
145 pr g pu239t cm cu 0.0000000 0.0 3.0160000 2.0000000% 0 0.0000000 73net2 0
145 pr g pu239t rc cu su 0.0000000 0.0 0.9190000 0.0200000 144 ce g pu239t 1.0000000 70sko1 0
145 pr g pu239t rc cu x4 0.0000000 0.0 3.5400000 15.0000000% 144 ce g pu239t 3.8500000 71sor1 36
145 ce g pu239t cm in 0.0000000 0.0 0.4150000 20.0000000% 0 1.0000000 88wah1 0
145 ce g pu239t rc cu x1 0.0000000 0.0 2.7500000 0.3100000 0 0.0000000 81dic1 0
145 la g pu239t cm in 0.0000000 0.0 1.7260000 11.0000000% 0 1.0000000 88wah1 0
145 ba g pu239t cm in 0.0000000 0.0 0.8211000 14.0000000% 0 1.0000000 88wah1 0
145 cs g pu239t rc in 0.0509789 99.9 0.0510000 0.0620000 0 0.0000000 75bal1 0
145 nd g pu239f ms cu 2.9933295 2.5 3.0500000 2.5000000% 148 nd g pu239f 1.6900000 69dav1 0
145 nd g pu239f ms re su 0.0000000 0.0 1.7500000 0.0000000 148 nd g pu239f 1.0000000 71rob1 0
145 nd g pu239f ms re 2.9854781 1.5 1.8000000 0.0000000 148 nd g pu239f 1.0000000 73rob1 0
145 nd g pu239f ms re su 0.0000000 0.0 3.0900000 0.0000000 148 nd g pu239f 1.7000000 73koc1 0
145 pu239f es re 2.9513984 10.0 0.9900000 10.0000000% 145 pu239t 1.0000000 74mee4 0
145 nd g pu239f ms cu su 0.0000000 0.0 3.0100000 0.0000000 0 0.0000000 76koc1 0
145 pu239f cm cu 0.0000000 0.0 3.0500000 2.8000000% 0 0.0000000 77cro1 0
145 nd g pu239f ms cu 3.0036823 1.6 2.9700000 1.6000000% 148 nd g pu239f 1.6400000 77koc1 0
145 pu239f ms cu 3.0031437 2.3 3.0600000 0.0700000 148 nd g pu239f 1.6900000 77gab1 0
145 nd g pu239f ms cu 3.0193721 0.8 3.0110000 0.0220000 148 nd g pu239f 1.6540000 77mae1 0
145 nd g pu239f ms cu 2.9429663 2.0 2.9480000 0.0310000 0 0.0000000 77mae1 0
145 nd g pu239f ms cu 2.9145323 1.7 3.0400000 0.0500000 148 nd g pu239f 1.7300000 70lis1 0
145 nd g pu239f ms cu 3.0232226 0.7 0.1865000 0.0001000 146 nd g pu239f 0.1515000 80mae4 0

145 nd g pu239f ms cu su 0.0000000 0.0 3.0100000 0.0200000 148 nd g pu239f 1.6500000 74mae1 0
145 pu239f ms cu 2.9649288 3.0 2.9700000 3.0000000% 0 0.0000000 81koc1 36
145 nd g pu239f es cu cm 3.0048605 1.0 3.0100000 1.0000000% 0 0.0000000 81mae2 0
145 pu239f cm cu x3 0.0000000 0.0 3.1500000 0.0000000 0 0.0000000 72sid1 0
145 pr g pu239f cm cu 0.0000000 0.0 3.0160000 4.0000000% 0 0.0000000 73net2 0
145 ce g pu239f rc cu x1 0.0000000 0.0 2.1000000 0.1000000 137 xe g pu239f 4.2000000 69moo1 0
145 pu241t cm cu 0.0000000 0.0 3.1600000 0.0000000 0 0.0000000 72sid1 0
145 pu241t cm cu 0.0000000 0.0 3.2200000 0.0400000 0 0.0000000 73wal1 0
145 nd g pu241t ms cu 3.3197787 5.2 3.1100000 0.1600000 148 nd g pu241t 1.8120000 67rid1 0
145 pu241t cm cu 0.0000000 0.0 3.1400000 3.3000000% 0 0.0000000 77cro1 0
145 pu241t cm cu 0.0000000 0.0 3.1600000 0.0000000 0 0.0000000 79wal1 0
145 nd g pu241t ms cu 3.2776071 2.0 3.2740000 0.0210000 0 0.0000000 77mae1 0
145 nd g pu241t ms cu 3.3143593 2.6 3.1900000 0.0800000 148 nd g pu241t 1.8616500 70lis1 0
145 nd g pu241t ms cu rp 3.2348995 1.5 1.0000000 0.0000000 no. relative values = 6 64far1
145 nd g pu241t ms cu 3.2671361 1.4 3.2600000 0.0400000 148 nd g pu241t 1.9300000 86chi1 0
145 pr g pu241t rc cu 3.1147783 5.1 0.7360000 0.0220000 144 ce g pu241t 1.0000000 70sko1 0
145 pr g pu241t rc cu 3.1221636 5.1 3.0100000 0.1400000 144 ce g pu241t 4.0800000 71sor1 0
145 pr g pu241t rc cu x4 0.0000000 0.0 1.7000000 0.0000000 0 0.0000000 63kir1 0
145 u233t cm cu 0.0000000 0.0 3.4600000 0.0000000 0 0.0000000 72sid1 0
145 u233t cm cu 0.0000000 0.0 3.3900000 0.0000000 0 0.0000000 73lam1 0
145 u233t cm cu 0.0000000 0.0 3.3800000 0.0600000 0 0.0000000 73wal1 0
145 nd g u233t ms cu 3.5423851 3.1 3.6600000 3.0000000% 144 nd g u233t 4.8700000 61bid1 0
145 nd g u233t ms cu su 0.0000000 0.0 3.0000000 0.2000000 148 nd g u233t 1.1500000 55kuk1 0
145 nd g u233t ms cu su 0.0000000 0.0 2.8200000 0.2500000 148 nd g u233t 1.0500000 57iva1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

145 nd g u233t ms cu su 0.0000000 0.0 2.8800000 0.0800000 148 nd g u233t 1.0500000 57iva1 0
145 nd g u233t ms re 3.4779890 1.3 2.6600000 0.0210000 148 nd g u233t 0.9928000 64rid1 0
145 u233t cm cu 0.0000000 0.0 3.3800000 3.0000000% 0 0.0000000 77cro1 0
145 nd g u233t ms cu nr 3.5540229 8.9 2.8200000 0.2500000 148 nd g u233t 1.0300000 59ani1 0
145 nd g u233t ms cu nr 3.4939529 3.0 2.8800000 0.0800000 148 nd g u233t 1.0700000 59ani1 0
145 nd g u233t ms re 3.4925907 5.0 0.5870000 5.0000000% 143 nd g u233t 1.0000000 55mel1 36
145 nd g u233t ms cu 3.3609925 2.0 3.3700000 0.0300000 0 0.0000000 70lis1 0
145 nd g u233t ms cu 3.4234516 1.5 3.4100000 0.0400000 148 nd g u233t 1.2930000 86chi1 0

145	nd g	u233t	ms	cu		3.3839310	2.4	3.3930000	0.0800000	0			0.0000000	66rid1	0
145	pr g	u233t	cm	cu		0.0000000	0.0	3.4130000	2.0000000%	0			0.0000000	73net2	0
145		th232f	es	cu	cm	6.5676300	30.0	6.6000000	0.0000000	0			0.0000000	65eng1	0
145		th232f	es	cu	cm	5.9705727	30.0	6.0000000	0.0000000	0			0.0000000	72sid1	0
145		th232f	es	cu	cm	5.7516517	30.0	5.7800000	0.0000000	0			0.0000000	73lam1	0
145		th232f	cm	cu		0.0000000	0.0	5.8600000	0.0000000	0			0.0000000	74lam1	0
145		th232f	cm	cu		0.0000000	0.0	5.3200000	7.0000000%	0			0.0000000	77cro1	0
145		th232f	es	cu		5.2541040	5.0	5.2800000	5.0000000%	0			0.0000000	74mee0	0
145	nd g	th232f	ms	re		5.3710373	2.5	0.8120000	0.0120000	143	nd g	th232f	1.0000000	68har1	0
145	pr g	th232f	cm	cu		0.0000000	0.0	5.3670000	8.0000000%	0			0.0000000	73net2	0
145	pr g	th232f	rc	cu		5.2058754	5.4	4.9400000	0.1900000	99	mo g	th232f	2.7800000	68lyl1	0
145	pr g	th232f	rc	cu		4.6769486	10.6	4.7000000	0.5000000	0			0.0000000	71swi3	0
145	ce g	th232f	rc	cu	x1	0.0000000	0.0	4.2000000	0.2600000	140	ba g	th232f	7.9700000	85chu1	0
146	pm g	u235t	rc	fi	x1	0.0000000	0.0	0.0000004	0.0000001	146		u235t	1.0000000	63rob1	0
146	pm g	u235t	rc	in	lt	0.0000000	15.0	0.0000045	0.0000000	0			10000.0000000	77aum1	0
146	nd g	u235t	ms	cu		3.0434887	1.5	3.2200000	0.0000000	148	nd g	u235t	1.7700000	55gle1	0
146		u235t	cm	cu		0.0000000	0.0	2.9600000	0.0000000	0			0.0000000	72sid1	0
146		u235t	cm	cu		0.0000000	0.0	2.9600000	0.0000000	0			0.0000000	73lam1	0
146		u235t	cm	cu		0.0000000	0.0	2.9800000	0.0400000	0			0.0000000	73wal1	0
146	nd g	u235t	ms	re		2.9789913	1.1	0.5000000	0.0050000	145	nd g	u235t	0.6600000	59chu1	0
146	nd g	u235t	ms	cu		2.9489666	2.0	2.9500000	0.0370000	0			0.0000000	65rid1	0
146	nd g	u235t	ms	re		2.9994894	1.7	1.7800000	0.0290000	148	nd g	u235t	0.9928000	65rid2	0
146		u235t	ms	cu		2.9989491	2.0	3.0000000	0.0350000	0			0.0000000	76dii1	0
146		u235t	cm	cu		0.0000000	0.0	2.9600000	1.2000000%	0			0.0000000	77cro1	0
146	nd g	u235t	ms	re		2.9624170	0.9	1.7580000	0.0140000	148	nd g	u235t	0.9928000	64rid1	0
146	nd g	u235t	ms	cu		3.0983346	1.5	2.8100000	0.0000000	143	nd g	u235t	5.4000000	50ing1	0
146	nd g	u235t	ms	re		2.9834482	0.6	0.1623000	0.0002250	148	nd g	u235t	0.0910100	76mae1	0
146	nd g	u235t	ms	re		3.0068179	0.6	0.5050000	0.0020000	143	nd g	u235t	1.0000000	55mel1	0
146	nd g	u235t	ms	re		3.0068179	0.7	0.5050000	0.0030000	143	nd g	u235t	1.0000000	62far1	0
146	nd g	u235t	ms	cu		3.0279389	2.0	3.0290000	0.0230000	0			0.0000000	78mae1	0
146	nd g	u235t	ms	cu		2.9969498	2.0	2.9980000	0.0190000	0			0.0000000	78mae1	0
146	nd g	u235t	ms	cu		2.9999487	2.0	3.0010000	0.0200000	0			0.0000000	78mae1	0
146	nd g	u235t	ms	cu		2.9489666	2.0	2.9500000	0.0100000	0			0.0000000	70lis1	0
146		u235t	es	re		3.0106674	2.1	1.0000000	2.0000000%	146		u235f	0.9700000	74mee4	0
146	nd g	u235t	ms	cu	cm	3.0079459	6.0	3.0090000	0.0000000	0			0.0000000	80mae3	0
146	nd g	u235t	ms	cu		2.9881667	1.1	2.9900000	0.0300000	148	nd g	u235t	1.6740000	86chi1	0

146 nd g u235t ms cu rp 3.1870215 4.8 3.2000000 0.0000000 no. relative values = 7 57gor1
146 nd g u235t ms cu rp 2.9850997 45.1 3.2000000 0.0000000 no. relative values = 1 59ani1
146 nd g u235t ms cu 3.0078445 5.0 2.9300000 5.0000000% 143 nd g u235t 5.8000000 55pet2 36
146 pr g u235t sp fi ul 0.0000000 0.0 0.0120000 0.0200000 146 u235t 1.0000000 84den1 36
146 ce g u235t rc fc 2.9360398 5.0 98.0000000 2.0000000 146 pr g u235t 100.0000000 76fis1 0
146 ce g u235t rc fi 0.5392726 27.8 18.0000000 5.0000000 146 pr g u235t 100.0000000 76fis1 0
146 ce g u235t rc cu 2.9389701 5.0 2.9400000 0.1200000 0 0.0000000 76thi1 0
146 ce g u235t sp fi 0.5991924 15.0 0.2000000 15.0000000% 146 u235t 1.0000000 84den1 36
146 ce g u235t cm in 0.0000000 0.0 0.5882000 12.0000000% 0 1.0000000 88wah1 0
146 la g u235t rc fc 2.3967672 5.0 80.0000000 4.0000000 146 pr g u235t 100.0000000 76fis1 0
146 la g u235t sp fi 1.5579003 15.0 0.5200000 15.0000000% 146 u235t 1.0000000 84den1 0
146 la g u235t cm in 0.0000000 0.0 1.4350000 15.0000000% 0 1.0000000 88wah1 0
146 la g u235t rc in x6 0.0000000 0.0 0.1040000 0.0180000 0 0.0000000 87lee1 0
146 la m u235t rc cu x6 0.0000000 0.0 2.6400000 0.2600000 0 0.0000000 87lee1 0
146 ba g u235t rc fc 0.9587079 6.3 32.0000000 2.0000000 146 u235t 100.0000000 78den2 0
146 ba g u235t rc fc 0.9587079 6.3 32.0000000 2.0000000 146 u235t 100.0000000 78fis1 0
146 ba g u235t ms in 0.7997198 22.5 0.8000000 0.1800000 0 0.0000000 79shm1 0
146 ba g u235t sp cu 0.7997198 35.0 0.8000000 0.2800000 0 0.0000000 81shm1 0
146 ba g u235t sp fc 0.8388694 11.0 0.2800000 11.0000000% 146 u235t 1.0000000 84den1 0
146 ba g u235t sp fi 0.8178977 12.0 0.2730000 12.0000000% 146 u235t 1.0000000 84den1 0
146 ba g u235t cm in 0.0000000 0.0 0.8165000 12.0000000% 0 1.0000000 88wah1 0
146 ba g u235t sp in 0.7997198 32.5 0.8000000 0.2600000 0 0.0000000 90rud1 0
146 ba g u235t sp cu 0.8097163 32.1 0.8100000 0.2600000 0 0.0000000 90rud1 0
146 cs g u235t rc in 0.0072974 99.9 0.0073000 0.0073000 0 0.0000000 70for1 0
146 cs g u235t es fc 0.0091676 30.0 0.0030600 0.0000000 146 u235t 1.0000000 74wol1 0
146 cs g u235t sp fi 0.0076397 8.2 0.2550000 0.0210000 146 u235t 100.0000000 79bal1 0
146 cs g u235t ms in ul 0.0000000 0.0 0.0380000 0.0076000 0 0.0000000 79shm1 0
146 cs g u235t sp cu ul 0.0000000 0.0 0.0380000 0.0076000 0 0.0000000 81shm1 0
146 cs g u235t cm in 0.0000000 0.0 0.0082310 8.0000000% 0 1.0000000 88wah1 0
146 cs g u235t sp cu 0.0089968 20.0 0.0090000 0.0018000 0 0.0000000 90rud1 0
146 cs g u235t sp in x4 0.0000000 0.0 0.0188000 0.0062700 0 0.0000000 75ree1 0
146 xe g u235t es cu 0.0000106 30.0 0.0000106 0.0000000 0 0.0000000 74mee2 0
146 nd g u235f ms cu 2.9411327 3.0 3.0600000 3.0000000% 148 nd g u235f 1.7500000 69dav1 0
146 nd g u235f rc cu 2.9122980 5.0 3.0300000 0.0600000 148 nd g u235f 1.7500000 70rid1 0
146 nd g u235f ms cu 2.8632031 1.6 2.9500000 0.0000000 143 nd g u235f 5.9000000 71cro2 0
146 nd g u235f ms cu 2.8534973 1.6 2.9400000 0.0000000 143 nd g u235f 5.9000000 71cro2 0

146 nd g u235f ms re su 0.0000000 0.0 1.6800000 0.0000000 148 nd g u235f 1.0000000 71rob1 0
146 u235f es cu cm 2.9575193 30.0 2.9600000 0.0000000 0 0.0000000 72sid1 0
146 nd g u235f ms cu 2.8975696 5.0 2.9000000 5.0000000% 0 0.0000000 73cro3 0
146 nd g u235f ms re 2.9267153 1.6 1.7400000 0.0000000 148 nd g u235f 1.0000000 73rob1 0
146 nd g u235f ms cu 2.8376199 2.0 2.8400000 0.0400000 0 0.0000000 74lar2 0
146 nd g u235f ms cu su 0.0000000 0.0 2.9100000 0.0000000 0 0.0000000 76koc1 0
146 u235f cm cu 0.0000000 0.0 2.9000000 2.0000000% 0 0.0000000 77cro1 0
146 nd g u235f ms cu 2.9309456 0.7 2.9100000 0.4000000% 148 nd g u235f 1.6700000 77koc1 0
146 u235f ms cu 2.8903682 3.1 2.9900000 0.0900000 148 nd g u235f 1.7400000 77gab1 0
146 nd g u235f ms cu 2.8855796 2.0 2.8880000 0.0260000 0 0.0000000 80mae1 0
146 nd g u235f ms cu 2.8834634 2.1 3.0000000 0.0600000 148 nd g u235f 1.7500000 70lis1 0
146 u235f es re 2.9287199 10.0 0.9780000 10.0000000% 146 u235t 1.0000000 74mee4 0
146 nd g u235f ms cu cm 2.9165537 6.0 2.9190000 0.0000000 0 0.0000000 80mae3 0
146 nd g u235f ms cu 2.9775025 2.0 2.9800000 0.0140000 0 0.0000000 81mae1 0
146 nd g u235f ms cu 2.9705084 2.0 2.9730000 0.0180000 0 0.0000000 81mae1 0
146 nd g u235f ms cu 2.9775025 2.0 2.9800000 0.0160000 0 0.0000000 81mae1 0
146 nd g u235f cm cu 0.0000000 0.0 2.9770000 0.0160000 0 0.0000000 81mae1 0
146 nd g u235f ms cu 2.9435356 0.8 2.9400000 0.0200000 148 nd g u235f 1.6800000 74mae1 0
146 u235f ms cu 2.9125570 3.0 2.9150000 3.0000000% 0 0.0000000 81koc1 36
146 pr g u235f rc re x1 0.0000000 0.0 0.9260000 0.0390000 140 ba g u235t 0.0000000 75raj1 7
146 u235he es cu 2.3928276 30.0 2.4330000 0.0000000 0 0.0000000 63wea1 0
146 u235he cm cu 0.0000000 0.0 2.1400000 20.0000000% 0 0.0000000 77cro1 0
146 u235he es cu 2.1774436 10.0 2.2140000 10.0000000% 0 0.0000000 74mee8 0
146 u238f es cu cm 3.3097812 30.0 3.3000000 0.0000000 0 0.0000000 64wal1 0
146 nd g u238f ms re su 0.0000000 0.0 1.6400000 0.0000000 148 nd g u238f 1.0000000 71rob1 0
146 nd g u238f ms re 3.4490043 1.8 0.7440000 0.0120000 143 nd g u238f 1.0000000 72mat1 0
146 u238f es cu cm 3.2094848 30.0 3.2000000 0.0000000 0 0.0000000 72sid1 0
146 nd g u238f ms re 3.4323482 1.7 1.6200000 0.0000000 148 nd g u238f 1.0000000 73rob1 0
146 nd g u238f ms cu 3.5129259 6.3 3.2000000 0.2000000 148 nd g u238f 1.9300000 67rid1 0
146 u238f cm cu 0.0000000 0.0 3.5400000 4.4000000% 0 0.0000000 77cro1 0
146 nd g u238f ms cu 3.4782791 2.0 3.4680000 0.0240000 0 0.0000000 81mae1 0
146 nd g u238f ms cu 3.4602258 2.0 3.4500000 0.0260000 0 0.0000000 81mae1 0
146 nd g u238f ms cu 3.4080716 2.0 3.3980000 0.0530000 0 0.0000000 81mae1 0
146 nd g u238f cm cu 0.0000000 0.0 3.4390000 0.0360000 0 0.0000000 81mae1 0
146 nd g u238f ms cu 3.4633143 1.4 3.4000000 0.0400000 148 nd g u238f 2.0800000 74mae1 0
146 u238f ms cu 3.2897219 3.0 3.2800000 3.0000000% 0 0.0000000 81koc1 36

146 u238f rc cu 3.6307297 5.0 3.6200000 0.1500000 0 0.0000000 85li 1 0
146 ce g u238f es cu 3.6708482 4.9 3.6600000 0.1800000 0 0.0000000 78gin1 0
146 ce g u238f rc cu 3.7310261 7.3 3.7200000 0.2700000 0 0.0000000 78nag1 0
146 ce g u238f rc cu 3.5504925 13.0 3.5400000 13.0000000% 0 0.0000000 88afa1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

146 ce g u238f rc cu 3.2997515 11.8 3.2900000 11.8000000% 0 0.0000000 88afa1 0
146 cs g u238f ms in su 0.0000000 0.0 0.0650000 0.0140000 141 cs g u238f 1.0000000 73bal1 0
146 cs g u238f ms in 0.1123320 29.5 0.1120000 0.0330000 0 0.0000000 74bal2 0
146 cs g u238f cm fi 0.0000000 0.0 0.0353000 0.0096000 146 u238f 1.0000000 74wol1 0
146 cs g u238f rc in 0.1213586 27.3 0.1210000 0.0330000 0 0.0000000 74wol4 0
146 u238he es cu 2.3080517 30.0 2.2980000 0.0000000 0 0.0000000 63wea1 0
146 u238he es cu 2.5912852 30.0 2.5800000 0.0000000 0 0.0000000 73dar1 0
146 u238he es cu 2.4607165 15.0 2.4500000 15.0000000% 0 0.0000000 74mee9 0
146 u238he es cu 2.6917226 20.0 2.6800000 20.0000000% 0 0.0000000 77cro1 0
146 ce g u238he rc cu x1 0.0000000 0.0 1.9190000 0.2340000 0 0.0000000 75dar1 0
146 ce g u238he rc cu x1 0.0000000 0.0 2.0100000 0.1300000 0 0.0000000 85liu1 0
146 ce g u238he es fc 2.4083824 5.9 0.9840000 0.0160000 146 u238he 1.0000000 89rid1 0
146 nd g pu239t ms cu 2.4786672 1.6 3.3600000 0.0000000 143 nd g pu239t 5.9800000 56wil1 0
146 nd g pu239t ms re 2.4571706 0.7 0.5570000 0.0020000 143 nd g pu239t 1.0000000 57kri1 0
146 pu239t cm cu 0.0000000 0.0 2.5000000 0.0000000 0 0.0000000 72sid1 0
146 pu239t cm cu 0.0000000 0.0 2.4900000 0.0000000 0 0.0000000 73lam1 0
146 pu239t cm cu 0.0000000 0.0 2.5300000 0.0300000 0 0.0000000 73wal1 0
146 nd g pu239t ms cu 2.4389917 2.0 2.4400000 0.0500000 0 0.0000000 75mae1 0
146 nd g pu239t ms re 2.4621496 1.9 1.4940000 0.0270000 148 nd g pu239t 0.9960000 65rid2 0
146 nd g pu239t ms cu 2.4889710 2.0 2.4900000 0.0500000 0 0.0000000 66rid2 0
146 nd g pu239t ms re 2.4667789 0.9 1.4920000 0.0120000 148 nd g pu239t 0.9928000 64rid1 0
146 pu239t cm cu 0.0000000 0.0 2.5300000 10.1000000% 0 0.0000000 77cro1 0
146 nd g pu239t ms cu rp 2.4296101 4.5 3.3600000 0.0000000 no. relative values = 1 56wil1
146 nd g pu239t ms cu 2.5088849 2.6 3.5300000 0.0900000 145 nd g pu239t 4.2000000 59ani1 0
146 nd g pu239t ms cu 2.4659805 2.0 2.4670000 0.0270000 0 0.0000000 79mae2 0
146 nd g pu239t ms re 2.4489451 0.7 0.1799000 0.0001200 148 nd g pu239t 0.1205800 76mae1 0
146 nd g pu239t ms cu 2.4400286 2.1 2.4900000 0.0500000 137 cs g pu239t 6.7400000 70lis1 0
146 nd g pu239t ms re 2.4836393 1.5 0.5630000 0.0080000 143 nd g pu239t 1.0000000 59fic2 0

146 nd g pu239t es cu cm 2.4689793 1.0 2.4700000 1.0000000% 0 0.0000000 81mae2 0
146 nd g pu239t ms cu 2.4321234 1.0 2.4300000 0.0200000 148 nd g pu239t 1.6400000 86chi1 0
146 pr g pu239t rc cu x1 0.0000000 0.0 1.6700000 30.0000000% 97 zr g pu239t 5.4600000 74jen1 0
146 pr g pu239t cm in 0.0000000 0.0 0.0322200 71.0000000% 0 1.0000000 88wah1 0
146 ce g pu239t cm in 0.0000000 0.0 0.9509000 12.0000000% 0 1.0000000 88wah1 0
146 ce g pu239t rc cu x4 0.0000000 0.0 2.2600000 0.3500000 0 0.0000000 80dic1 0
146 ce g pu239t rc cu x4 0.0000000 0.0 2.0400000 0.4600000 0 0.0000000 81dic1 0
146 ce g pu239t rc cu x4 0.0000000 0.0 2.7400000 0.3600000 0 0.0000000 81dic1 0
146 ce g pu239t es fc 2.4244550 1.3 0.9867000 1.2000000% 146 pu239t 1.0000000 88wah1 0
146 la g pu239t cm in 0.0000000 0.0 1.2010000 11.0000000% 0 1.0000000 88wah1 0
146 ba g pu239t cm in 0.0000000 0.0 0.2454000 26.0000000% 0 1.0000000 88wah1 0
146 cs g pu239t es fc 0.0036611 30.0 0.0014900 0.0000000 146 pu239t 1.0000000 74wol1 0
146 nd g pu239f ms cu 2.4829913 2.5 2.5300000 2.5000000% 148 nd g pu239f 1.6900000 69dav1 0
146 nd g pu239f ms re su 0.0000000 0.0 1.4500000 0.0000000 148 nd g pu239f 1.0000000 71rob1 0
146 nd g pu239f ms re 2.4713125 1.5 1.4900000 0.0000000 148 nd g pu239f 1.0000000 73rob1 0
146 nd g pu239f ms re su 0.0000000 0.0 2.5600000 0.0000000 148 nd g pu239f 1.7000000 73koc1 0
146 pu239f es re 2.4294094 10.0 0.9900000 10.0000000% 146 pu239t 1.0000000 74mee4 0
146 nd g pu239f ms cu su 0.0000000 0.0 2.4700000 0.0000000 0 0.0000000 76koc1 0
146 nd g pu239f ms cu 2.4676716 1.3 2.4400000 1.3000000% 148 nd g pu239f 1.6400000 77koc1 0
146 pu239f ms cu 2.4535488 2.0 2.5000000 0.0500000 148 nd g pu239f 1.6900000 77gab1 0
146 nd g pu239f ms cu 2.4728567 0.8 2.4660000 0.0190000 148 nd g pu239f 1.6540000 77mae1 0
146 nd g pu239f ms cu 2.4038884 2.0 2.4080000 0.0260000 0 0.0000000 77mae1 0
146 nd g pu239f ms cu 2.4159939 1.6 2.5200000 0.0400000 148 nd g pu239f 1.7300000 70lis1 0
146 nd g pu239f ms cu rp 2.4372613 1.4 0.1515000 0.0000000 no. relative values = 5 80mae4
146 pu239f cm cu x3 0.0000000 0.0 2.5400000 2.8000000% 0 0.0000000 77cro1 0
146 nd g pu239f ms cu su 0.0000000 0.0 2.4600000 0.0200000 148 nd g pu239f 1.6500000 74mae1 0
146 nd g pu239f es cu cm 2.4757654 1.0 2.4800000 1.0000000% 0 0.0000000 81mae2 0
146 pu239f ms cu 2.4388286 3.0 2.4430000 3.0000000% 0 0.0000000 81koc1 36
146 pu239f cm cu x3 0.0000000 0.0 2.6300000 0.0000000 0 0.0000000 72sid1 0
146 pr g pu239f rc cu x1 0.0000000 0.0 0.9500000 50.0000000% 97 zr g pu239f 4.9000000 74jen1 0
146 pu241t cm cu 0.0000000 0.0 2.6600000 0.0000000 0 0.0000000 72sid1 0
146 pu241t cm cu 0.0000000 0.0 2.7200000 0.0400000 0 0.0000000 73wal1 0
146 nd g pu241t ms cu 2.7744831 5.0 2.6000000 0.1300000 148 nd g pu241t 1.8120000 67rid1 0
146 pu241t cm cu 0.0000000 0.0 2.6600000 2.9000000% 0 0.0000000 77cro1 0
146 nd g pu241t ms cu 2.7401330 2.0 2.7380000 0.0180000 0 0.0000000 77mae1 0
146 nd g pu241t ms cu 2.7835798 2.7 2.6800000 0.0700000 148 nd g pu241t 1.8616500 70lis1 0

146	nd g	pu241t	ms	re		2.8030651	1.2	0.8584000	0.0060000	145 nd g	pu241t	1.0000000	64far1	0
146	nd g	pu241t	ms	cu		2.7451127	1.0	2.7400000	0.0200000	148 nd g	pu241t	1.9300000	86chi1	0
146	pm g	u233t	rc	in	lt	0.0000000	15.0	0.0000011	0.0000000	0		100.0000000	77aum1	0
146		u233t	cm	cu		0.0000000	0.0	2.6000000	0.0000000	0		0.0000000	72sid1	0
146		u233t	cm	cu		0.0000000	0.0	2.5300000	0.0000000	0		0.0000000	73lam1	0
146		u233t	cm	cu		0.0000000	0.0	2.5500000	0.0400000	0		0.0000000	73wal1	0
146	nd g	u233t	ms	cu		2.6540311	3.1	2.7400000	3.0000000%	144 nd g	u233t	4.8700000	61bid1	0
146	nd g	u233t	ms	re		2.5849160	1.4	1.9790000	0.0190000	148 nd g	u233t	0.9946000	65rid2	0
146	nd g	u233t	ms	cu	su	0.0000000	0.0	2.3400000	0.1500000	148 nd g	u233t	1.1500000	55kuk1	0
146	nd g	u233t	ms	cu	su	0.0000000	0.0	2.2000000	0.1500000	148 nd g	u233t	1.0500000	57iva1	0
146	nd g	u233t	ms	cu	su	0.0000000	0.0	2.2400000	0.0700000	148 nd g	u233t	1.0500000	57iva1	0
146	nd g	u233t	ms	re		2.5869856	1.3	1.9770000	0.0160000	148 nd g	u233t	0.9928000	64rid1	0
146		u233t	cm	cu		0.0000000	0.0	2.5100000	2.3000000%	0		0.0000000	77cro1	0
146	nd g	u233t	ms	cu	nr	2.7196520	3.3	2.2400000	0.0700000	148 nd g	u233t	1.0700000	59ani1	0
146	nd g	u233t	ms	cu		2.7748184	6.9	2.2000000	0.1500000	148 nd g	u233t	1.0300000	59ani1	0
146	nd g	u233t	ms	re		2.6259651	1.7	0.4410000	0.0000000	143 nd g	u233t	1.0000000	55mel1	0
146	nd g	u233t	ms	cu		2.5252183	2.0	2.5300000	0.0200000	0		0.0000000	70lis1	0
146	nd g	u233t	ms	cu		2.5620686	1.5	2.5500000	0.0300000	148 nd g	u233t	1.2930000	86chi1	0
146	nd g	u233t	ms	cu		2.5112448	2.4	2.5160000	0.0600000	0		0.0000000	66rid1	0
146		th232f	es	cu	cm	5.4618516	30.0	5.5000000	0.0000000	0		0.0000000	65eng1	0
146		th232f	es	cu	cm	4.5680940	30.0	4.6000000	0.0000000	0		0.0000000	72sid1	0
146		th232f	es	cu	cm	4.9156664	30.0	4.9500000	0.0000000	0		0.0000000	73lam1	0
146		th232f	cm	cu		0.0000000	0.0	5.0200000	0.0000000	0		0.0000000	74lam1	0
146		th232f	cm	cu		0.0000000	0.0	4.5800000	7.0000000%	0		0.0000000	77cro1	0
146		th232f	es	cu		4.4787183	5.0	4.5100000	5.0000000%	0		0.0000000	74mee0	0
146	nd g	th232f	ms	re		4.5943475	3.5	0.6960000	0.0200000	143 nd g	th232f	1.0000000	68har1	0
146	pr g	th232f	rc	cu		3.5055156	12.2	3.5300000	0.4300000	0		0.0000000	86ric1	0
146	ce g	th232f	rc	cu	x1	0.0000000	0.0	6.2200000	0.3600000	140 ba g	th232f	7.9700000	85chu1	0
147	sm g	u235t	es	cu		2.1124532	30.0	2.1500000	0.0000000	149 sm g	u235t	1.1000000	50ing1	0
147		u235t	cm	cu		0.0000000	0.0	2.1500000	0.0000000	0		0.0000000	72sid1	0
147	sm g	u235t	cm	cu		0.0000000	0.0	2.2200000	0.0000000	0		0.0000000	73lam1	0
147		u235t	cm	cu		0.0000000	0.0	2.2600000	0.0400000	0		0.0000000	73wal1	0
147	sm g	u235t	ms	re		2.2632400	1.1	0.3800000	0.0040000	145 nd g	u235t	0.6600000	59chu1	0
147		u235t	ms	cu		2.2933921	2.0	2.2950000	0.0310000	0		0.0000000	76dii1	0
147		u235t	cm	cu		0.0000000	0.0	2.3100000	3.0000000%	0		0.0000000	77cro1	0
147		u235t	cm	cu		0.0000000	0.0	2.2150000	0.0150000	0		0.0000000	78wal1	0

147 sm g u235t ms cu 2.1185147 5.0 2.1200000 5.0000000% 0 0.0000000 70lis1 36
147 sm g u235t ms cu 2.2344334 2.0 2.2360000 0.0210000 0 0.0000000 78mae1 0
147 sm g u235t ms cu 2.2174453 2.0 2.2190000 0.0210000 0 0.0000000 78mae1 0
147 sm g u235t ms cu 2.2124488 2.0 2.2140000 0.0320000 0 0.0000000 78mae1 0
147 u235t es re 2.1676626 2.1 1.0000000 2.0000000% 147 u235f 0.9860000 74mee4 0
147 sm g u235t ms cu cm 2.2214425 6.0 2.2230000 0.0000000 0 0.0000000 80mae3 0
147 sm g u235t ms cu aw 2.3442335 7.0 2.1690000 0.1500000 149 sm g u235t 1.0000000 55mel1 36
147 sm g u235t ms re 2.2891133 5.1 2.1180000 5.0000000% 149 sm g u235t 1.0000000 62far1 0
147 sm g u235t ms cu 2.2763542 5.1 2.3800000 5.0000000% 149 sm g u235t 1.1300000 55pet2 36
147 pm g u235t ms cu 2.3783325 3.0 2.3800000 3.0000000% 0 0.0000000 59bid1 0
147 pm g u235t ms cu 2.0895274 13.9 2.9000000 0.4000000 149 pm g u235t 1.5000000 59ani1 0
147 pm g u235t ms cu x4 0.0000000 0.0 2.9000000 0.4000000 146 nd g u235t 3.2000000 57gor1 0
147 nd g u235t rc cu x4 0.0000000 0.0 2.6000000 0.2000000 140 ba g u235t 6.1000000 51mar1 0
147 nd g u235t rc cu 2.2883956 5.0 2.2900000 0.0900000 0 0.0000000 71mcl1 0
147 nd g u235t cm cu 0.0000000 0.0 2.2200000 0.0000000 0 0.0000000 73lam1 0
147 nd g u235t cm cu 0.0000000 0.0 2.2300000 5.0000000% 0 0.0000000 73net2 0
147 nd g u235t rc cu 2.2883956 5.0 2.2900000 0.0700000 0 0.0000000 79ram1 0
147 nd g u235t ms re 2.2510496 1.4 0.3782000 0.0050000 143 nd g u235t 1.0000000 62far1 0
147 nd g u235t rc cu 2.3083816 5.6 2.3100000 0.1300000 0 0.0000000 74bla1 0
147 nd g u235t rc cu 2.2084516 5.0 2.2100000 0.1100000 0 0.0000000 76thi1 0
1
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nuclide material tech. type value err. value nuclide material value no. treatment

147 nd g u235t rc cu 2.2584166 5.0 2.2600000 3.7000000% 0 0.0000000 81lau1 0
147 nd g u235t rc cu 2.2263687 5.2 2.2100000 0.0600000 99 mo g u235t 6.0600000 65bun1 36
147 nd g u235t rc cu x4 0.0000000 0.0 2.4800000 0.0600000 141 ce g u235t 6.0000000 67bre1 0
147 pr g u235t sp fi 0.4041193 44.0 0.1800000 44.0000000% 147 u235t 1.0000000 84den1 0
147 pr g u235t cm in 0.0000000 0.0 0.1695000 77.0000000% 0 1.0000000 88wah1 0
147 ce g u235t rc fc 2.1620380 6.6 0.9630000 0.0630000 147 u235t 1.0000000 66run1 0
147 ce g u235t sp fi 0.9204938 20.0 0.4100000 20.0000000% 147 u235t 1.0000000 84den1 0
147 ce g u235t cm in 0.0000000 0.0 0.9199000 12.0000000% 0 1.0000000 88wah1 0
147 la g u235t sp fc 0.9204938 7.0 0.4100000 7.0000000% 147 u235t 1.0000000 84den1 36
147 la g u235t sp fi 0.8643662 15.0 0.3850000 15.0000000% 147 u235t 1.0000000 84den1 36
147 la g u235t cm in 0.0000000 0.0 0.9115000 11.0000000% 0 1.0000000 88wah1 0
147 ba g u235t ms in 0.3697408 24.3 0.3700000 0.0900000 0 0.0000000 79shm1 0

147	ba g	u235t	sp	cu		0.3697408	37.8	0.3700000	0.1400000	0		0.0000000	81shm1	0
147	ba g	u235t	cm	in		0.0000000	0.0	0.1388000	30.0000000%	0		1.0000000	88wah1	0
147	ba g	u235t	sp	cu		0.1998599	20.0	0.2000000	0.0400000	0		0.0000000	90rud1	0
147	cs g	u235t	sp	cu	x6	0.0000000	0.0	0.0078000	0.0019000	0		0.0000000	81shm1	0
147	cs g	u235t	ms	in	x6	0.0000000	0.0	0.0078000	0.0019000	0		0.0000000	79shm1	0
147		u235f	es	cu	cm	2.0975110	30.0	2.1000000	0.0000000	0		0.0000000	72sid1	0
147	sm g	u235f	ms	cu	su	0.0000000	0.0	2.1200000	0.0000000	0		0.0000000	76koc1	0
147		u235f	cm	cu		0.0000000	0.0	2.2200000	3.1000000%	0		0.0000000	77cro1	0
147	sm g	u235f	ms	cu		2.1624340	2.0	2.1650000	0.0140000	0		0.0000000	80mae1	0
147		u235f	cm	cu	es	0.0000000	0.0	2.1900000	0.0000000	148	nd g	u235f	1.7500000	70lis1	0
147		u235f	es	re		2.2128027	10.0	0.9860000	10.0000000%	147		u235t	1.0000000	74mee4	0
147	sm g	u235f	ms	cu	cm	2.1274755	6.0	2.1300000	0.0000000	0		0.0000000	80mae3	0
147	sm g	u235f	ms	cu		2.1164885	2.0	2.1190000	0.0120000	0		0.0000000	81mae1	0
147	sm g	u235f	ms	cu		2.1424577	2.0	2.1450000	0.0160000	0		0.0000000	81mae1	0
147	sm g	u235f	ms	cu		2.1404601	2.0	2.1430000	0.0120000	0		0.0000000	81mae1	0
147	sm g	u235f	cm	cu		0.0000000	0.0	2.1360000	0.0140000	0		0.0000000	81mae1	0
147	sm g	u235f	ms	cu		2.1118035	1.1	2.1100000	0.0200000	148	nd g	u235f	1.6800000	74mae1	0
147		u235f	ms	cu		2.1124933	3.0	2.1150000	3.0000000%	0		0.0000000	81koc1	36
147		u235f	rc	cu	x4	0.0000000	0.0	1.9300000	12.0000000%	140	ba g	u235f	6.2200000	77bla1	36
147	nd g	u235f	cm	cu		0.0000000	0.0	2.1800000	3.9000000%	0		0.0000000	73net2	0
147	nd g	u235f	rc	re		2.1672252	5.6	1.0040000	0.0560000	140	ba g	u235t	0.0000000	75raj1	7
147	nd g	u235f	rc	cu		2.0707827	15.0	2.4500000	15.0000000%	99	mo g	u235t	2.6000000	59bun2	11
147	nd g	u235f	es	cu		2.2686409	30.0	2.3000000	0.0000000	137	cs g	u235f	6.3000000	60kat1	0
147	nd g	u235f	rc	re	su	0.0000000	0.0	0.9760000	0.8600000%	99	mo g	u235t	0.0000000	64cow1	7
147	nd g	u235f	rc	cu		2.1570499	5.0	0.9880000	2.7000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd g	u235f	rc	cu		2.1395840	5.0	0.9800000	3.3000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd g	u235f	rc	cu		2.1614164	5.0	0.9900000	2.7000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd g	u235f	rc	cu		2.1723327	5.0	0.9950000	2.7000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd g	u235f	rc	cu		2.1635997	5.0	0.9910000	2.7000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd g	u235f	rc	cu		2.1461337	5.0	0.9830000	2.7000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd g	u235f	rc	cu		2.1768952	5.3	0.9700000	0.0500000	147	nd g	u235t	1.0000000	77deb1	0
147	nd g	u235f	rc	cu		2.1544529	5.2	0.9600000	0.0450000	147	nd g	u235t	1.0000000	79yur1	36
147	nd g	u235f	rc	cu		2.4670725	8.9	2.4700000	0.2200000	0		0.0000000	74cun1	36
147	nd g	u235f	rc	cu		2.2673095	5.0	2.2700000	4.5000000%	0		0.0000000	81lau1	0
147	nd g	u235f	rc	cu		2.3472147	5.0	2.3500000	0.1000000	0		0.0000000	82chi1	0
147	nd g	u235f	rc	cu		2.3472147	5.0	2.3500000	0.1000000	0		0.0000000	82wan1	0

147	nd	g	u235f	rc	cu		2.3572029	5.0	2.3600000	0.1100000	0		0.0000000	80chi1	0
147	nd	g	u235f	rc	cu		2.2373451	5.0	2.2400000	4.7000000%	0		0.0000000	86dho1	0
147	nd	g	u235f	rc	cu		2.2573214	5.0	2.2600000	0.1000000	0		0.0000000	81mar1	0
147	nd	g	u235f	rc	cu		2.0326048	5.0	0.9310000	3.3000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.0566205	5.0	0.9420000	3.3000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.0675367	5.0	0.9470000	2.7000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.0675367	5.0	0.9470000	3.3000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.0828195	5.0	0.9540000	3.3000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.0893692	5.0	0.9570000	3.3000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.0959190	5.0	0.9600000	3.3000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.0981022	5.0	0.9610000	3.3000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.1002855	5.0	0.9620000	2.7000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.1002855	5.0	0.9620000	3.3000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.1068352	5.0	0.9650000	2.7000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.1068352	5.0	0.9650000	3.3000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.1133850	5.0	0.9680000	2.7000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.1177515	5.0	0.9700000	3.3000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.1177515	5.0	0.9700000	3.3000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.1177515	5.0	0.9700000	3.3000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.1221180	5.0	0.9720000	2.7000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.1264845	5.0	0.9740000	3.3000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.1308510	5.0	0.9760000	2.7000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.1374007	5.0	0.9790000	2.7000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.1745159	5.0	0.9960000	2.7000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.1876154	5.0	1.0020000	2.7000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.1941652	5.0	1.0050000	2.7000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235f	rc	cu		2.2028982	5.0	1.0090000	3.3000000%	99	mo g	u235t	0.0000000	76for1	7
147			u235he	cm	cu		0.0000000	0.0	1.6700000	5.0000000%	0		0.0000000	77cro1	0
147			u235he	es	cu		1.6192881	10.0	1.6260000	10.0000000%	0		0.0000000	74mee8	0
147	nd	g	u235he	rc	re		1.6931125	10.0	0.9000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
147	nd	g	u235he	rc	re		1.6332303	6.7	0.0164000	0.0011000	0		0.0100000	69net1	0
147	nd	g	u235he	rc	re	x4	0.0000000	0.0	0.4400000	0.0300000	140	ba g	u235he	1.0000000	73man1	0
147	nd	g	u235he	cm	cu		0.0000000	0.0	1.6900000	3.9000000%	0		0.0000000	73net2	0
147	nd	g	u235he	rc	re	su	0.0000000	0.0	0.8700000	1.0700000%	99	mo g	u235t	0.0000000	64cow1	7
147	nd	g	u235he	rc	cu		1.6366754	5.0	0.8700000	2.7000000%	99	mo g	u235t	0.0000000	76for1	7
147	nd	g	u235he	rc	cu		1.6133129	5.0	1.6200000	4.8000000%	0		0.0000000	81lau1	0

147 nd g u235he rc cu 1.5834367 6.3 1.5900000 0.1000000 0 0.0000000 84chi1 0
147 u238f cm cu es 0.0000000 0.0 2.8000000 0.0000000 0 0.0000000 64wal1 0
147 u238f es re 2.7123936 20.0 0.7100000 20.0000000% 145 u238f 1.0000000 72mat1 0
147 u238f es cu cm 2.9085956 30.0 2.9000000 0.0000000 0 0.0000000 72sid1 0
147 u238f cm cu 0.0000000 0.0 2.5600000 4.3000000% 0 0.0000000 77cro1 0
147 u238f rc cu 2.5090794 5.0 2.6500000 0.0400000 140 ba g u238f 6.1600000 77bla1 0
147 sm g u238f ms cu 2.5695937 2.0 2.5620000 0.0180000 0 0.0000000 81mae1 0
147 sm g u238f ms cu 2.5665849 2.0 2.5590000 0.0180000 0 0.0000000 81mae1 0
147 sm g u238f ms cu 2.5314811 2.0 2.5240000 0.0230000 0 0.0000000 81mae1 0
147 sm g u238f cm cu 0.0000000 0.0 2.5480000 0.0250000 0 0.0000000 81mae1 0
147 sm g u238f ms cu 2.5669271 1.4 2.5200000 0.0300000 148 nd g u238f 2.0800000 74mae1 0
147 u238f ms cu 2.6478249 3.0 2.6400000 3.0000000% 0 0.0000000 81koc1 36
147 u238f rc cu 2.5876471 5.0 2.5800000 0.0700000 0 0.0000000 85li 1 0
147 u238f rc cu 2.7080028 5.0 2.7000000 0.1300000 0 0.0000000 85li 1 0
147 nd g u238f rc re x4 0.0000000 0.0 0.3900000 0.0100000 140 ba g u238f 1.0000000 73man1 0
147 nd g u238f cm cu 0.0000000 0.0 2.6310000 5.0000000% 0 0.0000000 73net2 0
147 nd g u238f rc cu 2.3833045 15.0 2.7500000 15.0000000% 99 mo g u235t 2.6000000 59bun2 13
147 nd g u238f cm cu 0.0000000 0.0 2.6000000 0.0000000 0 0.0000000 60kat1 0
147 nd g u238f rc re 2.4687280 10.0 1.0850000 5.0000000% 99 mo g u235t 0.0000000 61lev1 7
147 nd g u238f rc re su 0.0000000 0.0 1.1500000 1.0300000% 99 mo g u235t 0.0000000 64cow1 7
147 nd g u238f rc cu 2.7235644 5.0 1.1970000 3.3000000% 99 mo g u235t 0.0000000 76for1 7
147 nd g u238f rc cu 2.6393774 5.0 1.1600000 2.7000000% 99 mo g u235t 0.0000000 76for1 7
147 nd g u238f rc cu 2.6757826 5.0 1.1760000 2.7000000% 99 mo g u235t 0.0000000 76for1 7
147 nd g u238f rc cu 2.6348267 5.0 1.1580000 2.7000000% 99 mo g u235t 0.0000000 76for1 7
147 nd g u238f rc cu 2.5847160 9.3 2.6900000 0.2500000 140 ba g u238f 6.0700000 77har1 0
147 nd g u238f rc cu 2.6166241 5.0 1.1500000 2.7000000% 99 mo g u235t 0.0000000 76for1 7
147 nd g u238f rc cu 2.5938709 5.0 1.1400000 2.7000000% 99 mo g u235t 0.0000000 76for1 7
147 nd g u238f rc cu 2.6097982 5.0 1.1470000 2.7000000% 99 mo g u235t 0.0000000 76for1 7
147 nd g u238f rc cu 2.3426108 6.6 2.4300000 0.1600000 140 ba g u238f 6.0500000 78deb1 0
147 nd g u238f rc cu 2.5836201 5.6 2.6800000 0.1500000 140 ba g u238f 6.0500000 78deb1 0
147 nd g u238f es cu 3.0189216 5.6 3.0100000 0.1700000 0 0.0000000 78gin1 0
147 nd g u238f rc cu 2.8283585 13.1 2.8200000 0.3700000 0 0.0000000 78nag1 0
147 nd g u238f rc cu 2.6077064 5.0 2.6000000 0.0800000 0 0.0000000 84chi3 0
147 nd g u238f rc cu 2.5915956 5.0 1.1390000 3.3000000% 99 mo g u235t 0.0000000 76for1 7
147 nd g u238f rc cu 2.5984215 5.0 1.1420000 2.7000000% 99 mo g u235t 0.0000000 76for1 7
147 nd g u238f rc cu 2.6006969 5.0 1.1430000 2.7000000% 99 mo g u235t 0.0000000 76for1 7

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0

measured nuclide	fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
147 nd g	u238f	rc	cu		2.6393774	5.0	1.1600000	2.7000000%	99 mo g	u235t	0.0000000	76for1	7
147 nd g	u238f	rc	cu		2.6393774	5.0	1.1600000	2.7000000%	99 mo g	u235t	0.0000000	76for1	7
147 nd g	u238f	rc	cu		2.6393774	5.0	1.1600000	2.7000000%	99 mo g	u235t	0.0000000	76for1	7
147 nd g	u238f	rc	cu		2.6621306	5.0	1.1700000	3.3000000%	99 mo g	u235t	0.0000000	76for1	7
147 nd g	u238f	rc	cu		2.6621306	5.0	1.1700000	2.7000000%	99 mo g	u235t	0.0000000	76for1	7
147 nd g	u238f	rc	cu		2.6712319	5.0	1.1740000	2.7000000%	99 mo g	u235t	0.0000000	76for1	7
147 nd g	u238f	rc	cu		2.6780579	5.0	1.1770000	2.7000000%	99 mo g	u235t	0.0000000	76for1	7
147 nd g	u238f	rc	cu		2.6826086	5.0	1.1790000	2.7000000%	99 mo g	u235t	0.0000000	76for1	7
147 nd g	u238f	rc	cu		2.6848839	5.0	1.1800000	2.7000000%	99 mo g	u235t	0.0000000	76for1	7
147 nd g	u238f	rc	cu	su	0.0000000	0.0	2.2500000	0.0000000	0		0.0000000	75fly4	0
147 nd g	u238f	rc	cu		2.7380917	16.1	2.7300000	16.1000000%	0		0.0000000	88afa1	0
147 nd g	u238f	rc	cu		2.6478249	15.9	2.6400000	15.9000000%	0		0.0000000	88afa1	0
147 nd g	u238f	rc	cu	x4	0.0000000	0.0	1.0300000	2.7000000%	99 mo g	u235t	0.0000000	76for1	7
147 nd g	u238f	rc	cu	x4	0.0000000	0.0	3.5000000	0.6700000	0		0.0000000	75har1	36
147 nd g	u238f	rc	cu	x4	0.0000000	0.0	3.1400000	0.3000000	147 nd g	u235t	2.2300000	74yur1	36
147 nd g	u238f	rc	cu	x4	0.0000000	0.0	2.8700000	0.2500000	0		0.0000000	85chi1	0
147	u238he	cm	cu	es	0.0000000	0.0	1.9600000	0.0000000	0		0.0000000	63wea1	0
147 sm g	u238he	rc	cu	su	0.0000000	0.0	2.1200000	0.1700000	0		0.0000000	71bla1	0
147 sm g	u238he	rc	cu		2.0531703	11.7	2.0500000	0.2400000	0		0.0000000	71com1	0
147 sm g	u238he	rc	cu	su	0.0000000	0.0	2.7800000	0.6400000	0		0.0000000	73dar2	0
147	u238he	es	cu		2.0221223	15.0	2.0190000	15.0000000%	0		0.0000000	74mee9	0
147	u238he	cm	cu		0.0000000	0.0	2.0800000	3.6000000%	0		0.0000000	77cro1	0
147 pm g	u238he	es	fi		0.0000001	30.1	0.0000289	0.0000000	147	u238he	1000.0000000	74wol1	0
147 pm g	u238he	rc	cu	x4	0.0000000	0.0	2.3000000	0.3000000	140 ba g	u238he	4.3000000	64men1	0
147 nd g	u238he	rc	cu		2.0378610	10.1	1.9900000	0.1000000	99 mo g	u238he	5.5800000	57cun1	0
147 nd g	u238he	rc	re		1.8607173	5.6	1.2600000	0.0700000	143 ce g	u235t	0.0000000	68gor1	7
147 nd g	u238he	cm	cu		0.0000000	0.0	2.0000000	0.0000000	0		0.0000000	69gun2	0
147 nd g	u238he	rc	re		2.2034022	6.8	0.0220000	0.0015000	0		0.0100000	69net1	0
147 nd g	u238he	es	cu	su	0.0000000	0.0	2.1500000	0.0000000	0		0.0000000	73dar1	0
147 nd g	u238he	rc	cu	su	0.0000000	0.0	2.7800000	0.6400000	0		0.0000000	73dar2	0
147 nd g	u238he	rc	cu	su	0.0000000	0.0	2.9000000	0.6100000	0		0.0000000	73dar4	0
147 nd g	u238he	rc	re		1.9840770	5.2	0.4300000	0.0100000	140 ba g	u238he	1.0000000	73man1	0

147	nd g	u238he	cm	cu		0.0000000	0.0	2.0800000	3.9000000%	0			0.0000000	73net2	0
147	nd g	u238he	rc	cu	su	0.0000000	0.0	2.9000000	0.6100000	140 ba g	u238he		4.4800000	74dar1	0
147	nd g	u238he	rc	cu		2.0161754	7.1	2.0100000	0.1400000	140 ba g	u238he		4.6000000	76raj1	0
147	nd g	u238he	cm	cu		0.0000000	0.0	2.0000000	0.0000000	0			0.0000000	60kat1	0
147	nd g	u238he	rc	re	su	0.0000000	0.0	1.0300000	1.0000000%	99 mo g	u235t		0.0000000	64cow1	7
147	nd g	u238he	rc	cu		2.3035569	5.0	2.3000000	0.1000000	0			0.0000000	75dar1	0
147	nd g	u238he	rc	cu		2.1646710	5.0	1.0300000	2.7000000%	99 mo g	u235t		0.0000000	76for1	7
147	nd g	u238he	rc	cu		2.0101750	5.2	1.9700000	0.0900000	99 mo g	u238he		5.6000000	75ada1	0
147	nd g	u238he	rc	cu		2.1164826	7.7	2.1100000	0.1600000	140 ba g	u238he		4.6000000	75cav1	0
147	nd g	u238he	rc	cu	su	0.0000000	0.0	2.1100000	0.1600000	140 ba g	u238he		4.6000000	74bla1	0
147	nd g	u238he	rc	cu		2.0832167	5.0	2.0800000	4.7000000%	0			0.0000000	81lau1	0
147	nd g	u238he	rc	cu		2.1332940	5.2	2.1300000	0.1100000	0			0.0000000	80chi2	0
147	nd g	u238he	rc	cu		2.1833713	9.6	2.1800000	0.2100000	0			0.0000000	83li 2	0
147	nd g	u238he	rc	cu		2.1032476	5.0	2.1000000	0.1000000	0			0.0000000	85liu1	0
147	sm g	pu239t	ms	re		1.8713093	2.7	1.5400000	0.0400000	149 sm g	pu239t		1.0000000	57kri1	0
147		pu239t	cm	cu		0.0000000	0.0	1.9700000	0.0000000	0			0.0000000	72sid1	0
147	sm g	pu239t	cm	cu		0.0000000	0.0	2.0900000	0.0000000	0			0.0000000	73lam1	0
147		pu239t	cm	cu		0.0000000	0.0	2.1600000	0.0700000	0			0.0000000	73wal1	0
147	sm g	pu239t	ms	cu		2.1075338	3.8	2.1100000	0.0800000	0			0.0000000	75mae1	0
147	sm g	pu239t	ms	cu	aj	2.0207509	1.7	3.0100000	0.0000000	149 sm g	pu239t		1.8100000	56wil1	0
147		pu239t	cm	cu		0.0000000	0.0	2.1100000	5.1000000%	0			0.0000000	77cro1	0
147		pu239t	cm	cu		0.0000000	0.0	2.0650000	0.0340000	0			0.0000000	78wal1	0
147	sm g	pu239t	ms	cu		1.9916693	2.0	1.9940000	0.0250000	0			0.0000000	79mae2	0
147	sm g	pu239t	ms	cu		2.1052595	3.8	2.1500000	0.0800000	137 cs g	pu239t		6.7400000	70lis1	0
147	sm g	pu239t	ms	re	aw	2.0041200	1.5	1.9940000	0.0270000	149 sm g	pu239t		1.2090000	59fic2	0
147	sm g	pu239t	es	cu	cm	1.9976623	1.0	2.0000000	1.0000000%	0			0.0000000	81mae2	0
147	pm g	pu239t	cm	cu		0.0000000	0.0	2.0700000	3.0000000%	0			0.0000000	59bid1	0
147	pm g	pu239t	rc	cu	su	0.0000000	0.0	0.5560000	0.0220000	144 ce g	pu239t		1.0000000	70sko1	0
147	pm g	pu239t	ms	cu	x4	0.0000000	0.0	2.5800000	0.0500000	145 nd g	pu239t		4.2000000	59ani1	0
147	pm g	pu239t	rc	cu		2.0761048	6.1	2.1400000	0.1300000	144 ce g	pu239t		3.8500000	71sor1	0
147	nd g	pu239t	rc	cu	x4	0.0000000	0.0	1.4600000	0.0800000	137 cs g	pu239t		5.4000000	65mar1	0
147	nd g	pu239t	rc	cu		2.0513209	5.0	2.1700000	0.0800000	99 mo g	u235t		2.1900000	71ram1	31
147	nd g	pu239t	cm	cu		0.0000000	0.0	2.0900000	0.0000000	0			0.0000000	73lam1	0
147	nd g	pu239t	cm	cu		0.0000000	0.0	1.9470000	2.0000000%	0			0.0000000	73net2	0
147	nd g	pu239t	rc	cu		1.9308849	10.0	2.2000000	0.1000000	99 mo g	u235t		2.6000000	59bun1	7
147	nd g	pu239t	rc	cu	su	0.0000000	0.0	0.5530000	0.0110000	144 ce g	pu239t		1.0000000	70sko1	0

147 nd g pu239t rc cu 2.0664033 5.0 2.1300000 0.0900000 144 ce g pu239t 3.8500000 71sor1 0
147 nd g pu239t rc cu 2.0476039 5.0 2.0500000 0.0600000 0 0.0000000 80dic1 0
147 nd g pu239t rc cu 2.1774519 5.0 2.1800000 0.0900000 0 0.0000000 79ram1 0
147 nd g pu239t rc cu 1.7982331 5.0 0.9300000 0.0300000 140 ba g u235t 0.0000000 86chi1 7
147 nd g pu239t rc cu 2.0476039 5.0 2.0500000 0.0700000 0 0.0000000 84jai1 0
147 pr g pu239t cm in 0.0000000 0.0 0.1360000 28.0000000% 0 1.0000000 88wah1 0
147 ce g pu239t cm in 0.0000000 0.0 1.1510000 11.0000000% 0 1.0000000 88wah1 0
147 la g pu239t cm in 0.0000000 0.0 0.6489000 12.0000000% 0 1.0000000 88wah1 0
147 ba g pu239t cm in 0.0000000 0.0 0.0382300 65.0000000% 0 1.0000000 88wah1 0
147 pu239f es cu cm 2.0151222 30.0 2.0200000 0.0000000 0 0.0000000 72sid1 0
147 pu239f cm cu 0.0000000 0.0 1.9700000 4.1000000% 0 0.0000000 77cro1 0
147 sm g pu239f ms cu 1.9921153 1.1 1.9880000 0.0210000 148 nd g pu239f 1.6540000 77mae1 0
147 sm g pu239f ms cu 1.9642454 2.0 1.9690000 0.0310000 0 0.0000000 77mae1 0
147 sm g pu239f ms cu rp 2.0260910 1.9 0.4085000 0.0000000 no. relative values = 3 80mae4
147 sm g pu239f ms cu su 0.0000000 0.0 1.9900000 0.0200000 148 nd g pu239f 1.6500000 74mae1 0
147 pu239f es re 1.9941483 10.0 0.9980000 10.0000000% 147 pu239t 1.0000000 74mee4 0
147 pu239f ms cu 2.0280908 3.0 2.0330000 3.0000000% 0 0.0000000 81koc1 36
147 sm g pu239f es cu cm 1.9851947 1.0 1.9900000 1.0000000% 0 0.0000000 81mae2 0
147 pu239f es cu x4 0.0000000 0.0 2.1800000 0.4400000 148 nd g pu239f 1.7300000 70lis1 0
147 nd g pu239f cm cu 0.0000000 0.0 1.9730000 3.9000000% 0 0.0000000 73net2 0
147 nd g pu239f rc re 1.8987801 5.0 0.9890000 0.0210000 140 ba g u235t 0.0000000 75raj1 7
147 nd g pu239f rc cu 1.9667468 5.0 0.8960000 3.3000000% 99 mo g u235t 0.0000000 76for1 7
147 nd g pu239f rc cu 2.0391828 5.0 0.9290000 2.7000000% 99 mo g u235t 0.0000000 76for1 7
147 nd g pu239f rc cu 2.0347928 5.0 0.9270000 2.7000000% 99 mo g u235t 0.0000000 76for1 7
147 nd g pu239f rc cu 1.9645518 5.0 0.8950000 2.7000000% 99 mo g u235t 0.0000000 76for1 7
147 nd g pu239f rc cu 2.0347928 5.0 0.9270000 3.3000000% 99 mo g u235t 0.0000000 76for1 7
147 nd g pu239f rc cu 1.9513816 5.0 0.8890000 3.3000000% 99 mo g u235t 0.0000000 76for1 7
147 nd g pu239f rc cu 1.9623568 5.0 0.8940000 3.3000000% 99 mo g u235t 0.0000000 76for1 7
147 nd g pu239f rc cu 2.0128425 5.0 0.9170000 3.3000000% 99 mo g u235t 0.0000000 76for1 7
147 nd g pu239f rc cu 1.9182182 6.9 0.9600000 0.0600000 147 nd g pu239t 1.0000000 79yur1 36
147 nd g pu239f rc cu 1.9951705 5.0 2.0000000 4.0000000% 0 0.0000000 81lau1 0
147 nd g pu239f rc cu 1.9382115 5.0 0.8830000 3.3000000% 99 mo g u235t 1.0000000 76for1 7
147 nd g pu239f rc cu 1.9711369 5.0 0.8980000 3.3000000% 99 mo g u235t 1.0000000 76for1 7
147 nd g pu239f rc cu 1.9733319 5.0 0.8990000 3.3000000% 99 mo g u235t 1.0000000 76for1 7
147 nd g pu239f rc cu 1.9930872 5.0 0.9080000 3.3000000% 99 mo g u235t 1.0000000 76for1 7
147 nd g pu239f rc cu 1.9974773 5.0 0.9100000 3.3000000% 99 mo g u235t 1.0000000 76for1 7

147 nd g pu239f rc cu x4 0.0000000 0.0 2.0100000 6.0000000% 137 cs g pu239f 6.1500000 67sch1 0
147 nd g pu239f rc cu x4 0.0000000 0.0 0.9680000 3.3000000% 99 mo g u235t 0.0000000 76for1 7
147 pu241t cm cu 0.0000000 0.0 2.2800000 0.0000000 0 0.0000000 72sid1 0
147 pu241t rc cu 2.2569722 15.1 2.4200000 0.0000000 131 pu241t 3.3300000 73chi1 0
147 pu241t cm cu 0.0000000 0.0 2.2700000 3.8000000% 0 0.0000000 77cro1 0
147 pu241t cm cu 0.0000000 0.0 2.3300000 0.0320000 0 0.0000000 78wal1 0
147 pu241t cm cu 0.0000000 0.0 2.2000000 0.0600000 0 0.0000000 73wal1 0
147 pu241t cm cu 0.0000000 0.0 2.3000000 0.0000000 0 0.0000000 79wal1 0
147 sm g pu241t ms cu 2.2434902 2.0 2.2400000 0.0170000 0 0.0000000 77mae1 0
147 sm g pu241t ms cu 2.3075962 2.8 2.2200000 0.0600000 148 nd g pu241t 1.8616500 70lis1 0
147 sm g pu241t ms re 2.2942973 1.7 1.5540000 0.0160000 149 sm g pu241t 1.0000000 64far1 0
147 pm g pu241t rc cu 2.4133600 5.1 0.5700000 0.0230000 144 ce g pu241t 1.0000000 70sko1 0
147 pm g pu241t rc cu 2.2825639 5.8 2.3500000 0.1200000 149 pm g pu241t 1.5200000 71sor1 0
147 nd g pu241t rc cu 2.4218279 14.0 0.5720000 0.0800000 144 ce g pu241t 1.0000000 70sko1 0
147 nd g pu241t rc cu 2.4283034 5.1 2.3400000 0.0900000 144 ce g pu241t 4.0800000 71sor1 0
147 nd g pu241t rc cu 2.2549665 5.0 1.0800000 0.0400000 140 ba g u235t 0.0000000 86chi1 7
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0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

147 nd g pu241t rc cu x4 0.0000000 0.0 0.9600000 0.0000000 0 0.0000000 63kir1 0
147 u233t cm cu 0.0000000 0.0 1.9200000 0.0000000 0 0.0000000 72sid1 0
147 u233t cm cu 0.0000000 0.0 1.8000000 0.0000000 0 0.0000000 73lam1 0
147 u233t cm cu 0.0000000 0.0 1.8700000 3.7000000% 0 0.0000000 77cro1 0
147 u233t cm cu 0.0000000 0.0 1.7210000 0.0330000 0 0.0000000 78wal1 0
147 u233t es cu cm 1.5382820 30.0 1.5500000 0.0000000 0 0.0000000 61her1 0
147 u233t cm cu 0.0000000 0.0 1.7000000 0.0500000 0 0.0000000 73wal1 0
147 sm g u233t ms cu aw 1.9382855 12.3 2.5100000 12.0000000% 149 sm g u233t 1.0000000 55mel1 36
147 sm g u233t ms cu aw 1.6871481 6.0 1.7000000 0.0000000 0 0.0000000 70lis1 0
147 pm g u233t ms cu 1.6878639 4.8 1.5300000 0.0600000 149 sm g u233t 0.7000000 59ani1 0
147 pm g u233t ms cu su 0.0000000 0.0 2.0700000 3.0000000% 0 0.0000000 59bid1 0
147 nd g u233t rc cu 1.8123882 5.0 1.8900000 0.0800000 99 mo g u235t 2.3600000 65bun1 1
147 nd g u233t rc cu 1.8335203 5.0 1.7500000 0.0300000 99 mo g u235t 2.1600000 66gor1 24
147 nd g u233t cm cu 0.0000000 0.0 1.8690000 2.0000000% 0 0.0000000 73net2 0
147 nd g u233t rc cu 1.6529416 5.0 0.7200000 0.0200000 140 ba g u235t 0.0000000 86chi1 7
147 th232f cm cu 0.0000000 0.0 3.8200000 0.0000000 0 0.0000000 65eng1 0

147		th232f	es	cu	cm	3.7736429	30.0	3.8000000	0.0000000	0			0.0000000	72sid1	0
147		th232f	es	cu	cm	2.9493998	30.0	2.9700000	0.0000000	0			0.0000000	73lam1	0
147		th232f	cm	cu		0.0000000	0.0	3.0000000	0.0000000	0			0.0000000	74lam1	0
147		th232f	cm	cu		0.0000000	0.0	3.0200000	5.0000000%	0			0.0000000	77cro1	0
147		th232f	es	cu		2.9891224	5.0	3.0100000	5.0000000%	0			0.0000000	74mee0	0
147	nd g	th232f	rc	re		3.0510490	10.4	0.3900000	0.0300000	140	ba g	th232f	1.0000000	63cro2	0
147	nd g	th232f	rc	re		3.3118739	10.0	3.0800000	0.1600000	99	mo g	u235t	0.0000000	63iye1	7
147	nd g	th232f	rc	cu		3.1660209	10.4	2.9900000	10.0000000%	141	ce g	th232f	7.0000000	67bre1	0
147	nd g	th232f	cm	cu		0.0000000	0.0	3.0480000	8.0000000%	0			0.0000000	73net2	0
147	nd g	th232f	rc	cu		2.5689706	8.3	2.4300000	0.1900000	140	ba g	th232f	7.4000000	73cha1	0
147	nd g	th232f	rc	re		2.9462774	5.0	2.7400000	0.1100000	99	mo g	u235t	0.0000000	81ert1	7
147	nd g	th232f	cm	cu		0.0000000	0.0	3.0400000	0.1000000	0			0.0000000	81ert1	0
147	nd g	th232f	rc	cu		2.9891224	10.3	3.0100000	0.3100000	0			0.0000000	86ric1	0
147	nd g	th232f	rc	cu	x4	0.0000000	0.0	2.2000000	0.5500000	0			0.0000000	71swi3	36
148	pm g	u235t	rc	fi	ul	0.0000000	0.0	0.0000035	0.0000000	148		u235t	1.0000000	66ume1	0
148	pm g	u235t	rc	in		0.0000000	25.0	0.0000028	25.0000000%	0			1000.0000000	77aum1	0
148	pm g	u235t	rc	fi	ul	0.0000000	0.0	0.0000050	0.0000050	148		u235t	1.0000000	68bac1	0
148	pm g	u235t	rc	in	ul	0.0000000	0.0	0.0000300	0.0000300	0			0.0000000	55coo1	18
148	pm g	u235t	rc	fi		0.0000000	99.9	0.0000002	0.0000002	148		u235t	10.0000000	76ume1	0
148	pm m	u235t	rc	in		0.0000000	9.0	0.0000067	9.0000000%	0			1000.0000000	77aum1	0
148	pm m	u235t	rc	in	ul	0.0000000	0.0	0.0000700	0.0000700	0			0.0000000	55coo1	18
148	pm m	u235t	rc	fi	ul	0.0000000	0.0	0.0000670	0.0000200	148		u235t	1.0000000	68bac1	0
148	pm m	u235t	rc	fi		0.0000001	60.0	0.0000005	0.0000003	148		u235t	10.0000000	76ume1	0
148	nd g	u235t	ms	cu		1.6394255	15.0	1.6400000	15.0000000%	0			0.0000000	50ing1	36
148	nd g	u235t	ms	cu		1.6894080	2.0	1.6900000	0.0100000	0			0.0000000	72ebe1	0
148		u235t	es	cu		1.6794115	30.0	1.6800000	0.0000000	0			0.0000000	72sid1	0
148	nd g	u235t	ms	cu		1.6794115	2.0	1.6800000	0.0150000	0			0.0000000	73rob1	0
148	nd g	u235t	ms	cu		1.6543603	1.4	1.6700000	0.0230000	0			1.0091000	65rid1	0
148		u235t	ms	cu		1.6444237	2.0	1.6450000	0.0260000	0			0.0000000	76dii1	0
148	nd g	u235t	ms	cu		1.6994045	5.9	1.7000000	0.1000000	0			0.0000000	57gor1	0
148		u235t	cm	cu		0.0000000	0.0	1.6700000	1.3000000%	0			0.0000000	77cro1	0
148	nd g	u235t	ms	cu	su	0.0000000	0.0	1.6500000	0.0300000	0			0.0000000	71rob1	0
148		u235t	cm	cu		0.0000000	0.0	1.6700000	0.0000000	0			0.0000000	73lam1	0
148		u235t	cm	cu		0.0000000	0.0	1.6800000	0.0300000	0			0.0000000	73wal1	0
148	nd g	u235t	ms	cu		1.6994045	5.9	1.7000000	0.1000000	0			0.0000000	59ani1	0
148	nd g	u235t	ms	re		1.6744132	2.0	1.6750000	0.7000000%	0			0.0000000	55mel1	36

148	nd	g	u235t	ms	cu		1.6684153	2.0	1.6690000	0.0130000	0		0.0000000	78mae1	0
148	nd	g	u235t	ms	cu		1.6874087	2.0	1.6880000	0.0150000	0		0.0000000	78mae1	0
148	nd	g	u235t	ms	cu		1.6744132	2.0	1.6750000	0.0130000	0		0.0000000	78mae1	0
148	nd	g	u235t	ms	cu		1.6640669	2.0	1.6646500	0.0100000	0		0.0000000	70lis1	0
148	nd	g	u235t	ms	cu	cm	1.6764125	6.0	1.6770000	0.0000000	0		0.0000000	80mae3	0
148	nd	g	u235t	ms	cu	rp	1.6275145	15.8	1.6400000	0.0000000	no. relative values =	1		50ing1	
148	nd	g	u235t	ms	cu	rp	1.6790224	7.9	1.7700000	0.0000000	no. relative values =	4		55gle1	
148	nd	g	u235t	ms	cu	rp	1.6625666	3.9	1.6900000	0.0000000	no. relative values =	1		71lis1	
148	nd	g	u235t	ms	re	rp	1.6673815	1.6	0.9928000	0.0000000	no. relative values =	7		65rid2	
148	nd	g	u235t	ms	cu	rp	1.6708258	7.2	1.7000000	0.0000000	no. relative values =	2		59ani1	
148	nd	g	u235t	ms	re	rp	1.6842545	1.5	0.9928000	0.0000000	no. relative values =	5		64rid1	
148	nd	g	u235t	ms	re	rp	1.6742539	0.8	0.0910100	0.0000000	no. relative values =	15		76mae1	
148	nd	g	u235t	ms	cu	rp	1.6818697	3.2	1.0000000	0.0000000	no. relative values =	1		70lis1	
148	nd	g	u235t	ms	cu	rp	1.6818146	1.4	1.6740000	0.0000000	no. relative values =	5		86chi1	
148	nd	g	u235t	ms	cu	rp	1.6625666	1.6	1.6900000	0.0000000	no. relative values =	1		71lis1	
148	nd	g	u235t	ms	re		1.6731007	0.6	0.2810000	0.0010000	143	nd	g u235t	1.0000000	55mel1 0
148	nd	g	u235t	ms	re		1.6801511	0.8	0.2820000	0.0020000	145	nd	g u235t	0.6600000	59chu1 0
148	nd	g	u235t	ms	re		1.6731007	0.8	0.2810000	0.0020000	143	nd	g u235t	1.0000000	62far1 0
148	nd	g	u235t	ms	cu	x4	0.0000000	0.0	1.7700000	12.0000000%	0		0.0000000	55gle1	36
148	pr	g	u235t	cm	in		0.0000000	0.0	0.0765800	25.0000000%	0		1.0000000	88wah1	0
148	ce	g	u235t	rc	fc		1.5716619	9.6	94.0000000	9.0000000	148	pr	g u235t	100.0000000	77fis1 0
148	ce	g	u235t	rc	cu		2.4191523	50.0	2.4200000	50.0000000%	0		0.0000000	84chu1	36
148	ce	g	u235t	rc	cu		2.4191523	50.0	2.4200000	50.0000000%	0		0.0000000	85has1	36
148	ce	g	u235t	cm	in		0.0000000	0.0	1.2110000	11.0000000%	0		1.0000000	88wah1	0
148	la	g	u235t	cm	in		0.0000000	0.0	0.3099000	12.0000000%	0		1.0000000	88wah1	0
148	ba	g	u235t	sp	cu	ul	0.0000000	0.0	0.1900000	0.0700000	0		0.0000000	81shm1	0
148	ba	g	u235t	ms	in	ul	0.0000000	0.0	0.1900000	0.0400000	0		0.0000000	79shm1	0
148	ba	g	u235t	sp	cu	ul	0.0000000	0.0	0.1900000	0.0700000	0		0.0000000	81shm1	0
148	ba	g	u235t	cm	in		0.0000000	0.0	0.0186700	77.0000000%	0		1.0000000	88wah1	0
148	ba	g	u235t	sp	cu		0.0229919	39.1	0.0230000	0.0090000	0		0.0000000	90rud1	0
148	cs	g	u235t	sp	cu	ul	0.0000000	0.0	0.0019000	0.0007000	0		0.0000000	81shm1	0
148	cs	g	u235t	ms	in	ul	0.0000000	0.0	0.0019000	0.0007000	0		0.0000000	79shm1	0
148	cs	g	u235t	sp	cu	ul	0.0000000	0.0	0.0019000	0.0007000	0		0.0000000	81shm1	0
148	xe	g	u235t	es	cu	ul	0.0000000	0.0	0.0000000	99.0000000%	0		0.0000000	75mee1	0
148	nd	g	u235f	rc	cu		1.7485334	5.0	1.7500000	5.0000000%	0		0.0000000	69dav1	36
148	nd	g	u235f	rc	cu		1.7485334	5.0	1.7500000	5.0000000%	0		0.0000000	70rid1	36

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 148 nd g   u235f    ms    cu        1.6885836  5.0   1.6900000  5.0000000%    0                  0.0000000   71cro2     36
 148 nd g   u235f    ms    re        1.6985753  2.4   1.7000000  0.0400000     0                  0.0000000   72ebe1      0
 148 nd g   u235f    ms    re        1.7485334  3.0   1.7500000  3.0000000%    0                  0.0000000   72kry1     36
 148 nd g   u235f    ms    cu        1.6586088  5.0   1.6600000  5.0000000%    0                  0.0000000   73cro3      0
 148 nd g   u235f    ms    cu        1.5986591  5.0   1.6000000  5.0000000%    0                  0.0000000   73cro3      0
 148 nd g   u235f    es    cu        1.6186423  8.0   1.6200000  8.0000000%    0                  0.0000000   73lar1      0
 148        u235f    cm    cu        0.0000000  0.0   1.6400000  0.0000000     0                  0.0000000   73lar3      0
 148 nd g   u235f    cm    cu        0.0000000  0.0   1.6200000  0.0000000     0                  0.0000000   73las1      0
 148 nd g   u235f    ms    cu        1.5986591  6.9   1.6000000  0.1100000     0                  0.0000000   73mce1      0
 148 nd g   u235f    ms    cu        1.6985753  2.0   1.7000000  0.0150000     0                  0.0000000   73rob1      0
 148 nd g   u235f    ms    cu        1.6586088  2.0   1.6600000  0.0300000     0                  0.0000000   74lar2      0
 148 nd g   u235f    rc    cu        1.6686004  5.0   1.6700000  0.0400000     0                  0.0000000   75zim1      0
 148 nd g   u235f    ms    cu    su  0.0000000  0.0   1.6700000  0.0000000     0                  0.0000000   76koc1      0
 148        u235f    cm    cu        0.0000000  0.0   1.6800000  2.0000000%    0                  0.0000000   77cro1      0
 148 nd g   u235f    ms    cu        1.6686004  2.0   1.6700000  0.6000000%    0                  0.0000000   77koc1      0
 148        u235f    cm    cu    x3  0.0000000  0.0   1.7500000  0.0000000     0                  0.0000000   72sid1      0
 148        u235f    ms    cu        1.7385417  3.4   1.7400000  0.0600000     0                  0.0000000   77gab1      0
 148 nd g   u235f    ms    re        1.6286609  2.3   0.2620000  2.2000000%  137 cs g      u235f       1.0000000   77kel1      0
 148 nd g   u235f    ms    cu        1.6785920  2.0   1.6800000  0.0130000     0                  0.0000000   80mae1      0
 148 nd g   u235f    ms    cu        1.7485334  5.0   1.7500000  5.0000000%    0                  0.0000000   70lis1     36
 148 nd g   u235f    ms    cu    cm  1.6885836  6.0   1.6900000  0.0000000     0                  0.0000000   80mae3      0
 148 nd g   u235f    ms    cu        1.7005736  2.0   1.7020000  0.0080000     0                  0.0000000   81mae1      0
 148 nd g   u235f    ms    cu        1.6945786  2.0   1.6960000  0.0110000     0                  0.0000000   81mae1      0
 148 nd g   u235f    ms    cu        1.6975761  2.0   1.6990000  0.0090000     0                  0.0000000   81mae1      0
 148 nd g   u235f    cm    cu        0.0000000  0.0   1.6990000  0.0090000     0                  0.0000000   81mae1      0
 148 nd g   u235f    ms    cu        1.6785920  2.0   1.6800000  0.6000000%    0                  0.0000000   74mae1      0
 148 nd g   u235f    rc    cu    rp  1.6781676  4.2   1.7500000  0.0000000  no. relative values =    7          69dav1
 148 nd g   u235f    rc    cu    rp  1.7013451  6.5   1.7500000  0.0000000  no. relative values =    6          70rid1
 148 nd g   u235f    ms    re    rp  1.6767517  2.3   1.0000000  0.0000000  no. relative values =    2          72ebe1
 148 nd g   u235f    ms    re    rp  1.5839417  4.7   1.7500000  0.0000000  no. relative values =    4          72kry1
 148 nd g   u235f    ms    re    rp  1.6731113  7.9   1.0000000  0.0000000  no. relative values =    4          73rob1
 148 nd g   u235f    ms    cu    rp  1.6831296  1.4   1.6700000  0.0000000  no. relative values =    5          77koc1
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type        value   err.     value                nuclide     material       value       no.   treatment
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148 nd g u235f ms cu rp 1.6783249 3.6 1.7400000 0.0000000 no. relative values = 10 77gab1
148 nd g u235f ms cu rp 1.6939431 1.4 1.7500000 0.0000000 no. relative values = 24 70lis1
148 nd g u235f ms cu rp 1.6811455 0.6 1.6800000 0.0000000 no. relative values = 30 74mae1
148 pm g u235he rc fi 0.0000012 16.8 0.0000010 0.0000001 148 u235he 1.0000000 80net1 0
148 pm g u235he rc fi 0.0000012 16.8 0.0000010 0.0000001 148 u235he 1.0000000 81net1 0
148 pm m u235he rc fi 0.0000094 13.6 0.0000080 0.0000006 148 u235he 1.0000000 80net1 0
148 pm m u235he rc fi 0.0000094 13.6 0.0000080 0.0000006 148 u235he 1.0000000 81net1 0
148 u235he es cu 1.3316435 30.0 1.3540000 0.0000000 0 0.0000000 63wea1 0
148 u235he cm cu 0.0000000 0.0 1.2000000 20.0000000% 0 0.0000000 77cro1 0
148 u235he es cu 1.1831367 10.0 1.2030000 10.0000000% 0 0.0000000 74mee8 0
148 nd g u238f ms re 2.1324489 2.1 0.4600000 0.0090000 143 nd g u238f 1.0000000 72mat1 0
148 nd g u238f ms cu 2.1664022 6.9 2.1600000 0.1500000 0 0.0000000 73mce1 0
148 nd g u238f ms cu 1.9357205 5.0 1.9300000 5.0000000% 0 0.0000000 67rid1 36
148 u238f cm cu 0.0000000 0.0 2.1300000 4.9000000% 0 0.0000000 77cro1 0
148 u238f es cu 1.9357205 30.0 1.9300000 0.0000000 0 0.0000000 72sid1 0
148 nd g u238f ms re 2.1246553 2.9 0.3500000 2.7000000% 137 cs g u238f 1.0000000 77kel1 0
148 nd g u238f ms cu 2.1312985 2.0 2.1250000 0.0140000 0 0.0000000 81mae1 0
148 nd g u238f ms cu 2.1172570 2.0 2.1110000 0.0160000 0 0.0000000 81mae1 0
148 nd g u238f ms cu 2.0751325 2.0 2.0690000 0.0320000 0 0.0000000 81mae1 0
148 nd g u238f cm cu 0.0000000 0.0 2.1020000 0.0250000 0 0.0000000 81mae1 0
148 nd g u238f ms cu 2.0861651 2.0 2.0800000 0.7000000% 0 0.0000000 74mae1 36
148 u238f ms cu 2.0059280 3.0 2.0000000 3.0000000% 0 0.0000000 81koc1 36
148 nd g u238f ms cu 2.1461845 1.7 1.0000000 0.0000000 143 nd g u238f 2.1600000 73rob1 0
148 nd g u238f ms cu 2.1342305 1.7 1.0000000 0.0000000 145 nd g u238f 1.7900000 73rob1 0
148 nd g u238f ms cu 2.1332350 1.7 1.0000000 0.0000000 146 nd g u238f 1.6200000 73rob1 0
148 nd g u238f ms cu 2.0937941 1.8 1.0000000 0.0000000 150 nd g u238f 0.6100000 73rob1 0
148 nd g u238f ms cu su 0.0000000 0.0 2.4000000 0.2000000 0 0.0000000 71rob1 0
148 ce g u238f rc cu 1.7652166 7.4 1.7600000 7.4000000% 0 0.0000000 87chu1 0
148 pm g u238he rc fi ul 0.0000000 0.0 0.0000001 0.0000000 148 u238he 1.0000000 81net1 0
148 pm m u238he rc fi ul 0.0000000 0.0 0.0000002 0.0000000 148 u238he 1.0000000 80net1 0
148 pm m u238he rc fi ul 0.0000000 0.0 0.0000001 0.0000000 148 u238he 1.0000000 80net1 0
148 pm m u238he rc fi ul 0.0000000 0.0 0.0000002 0.0000000 148 u238he 1.0000000 81net1 0
148 nd g u238he es cu 1.8121456 30.0 1.7900000 0.0000000 0 0.0000000 63wea1 0
148 u238he es cu su 0.0000000 0.0 1.6200000 0.0000000 0 0.0000000 73dar1 0
148 u238he es cu 1.7098960 15.0 1.6890000 15.0000000% 0 0.0000000 74mee9 0
148 u238he cm cu 0.0000000 0.0 1.8700000 20.0000000% 0 0.0000000 77cro1 0

148 pm g pu239t rc in su 0.0000000 0.0 0.0000013 0.0000013 0 0.0000000 78zwi1 0
148 pm g pu239t rc in 0.0000012 16.7 0.0000012 0.0000002 0 0.0000000 80zwi1 0
148 pm g pu239t cm in 0.0000000 0.0 0.0001776 7.0000000% 0 100.0000000 88wah1 0
148 pm m pu239t rc in su 0.0000000 0.0 0.0000043 0.0000007 0 0.0000000 78zwi1 0
148 pm m pu239t rc in 0.0000043 7.0 0.0000043 0.0000003 0 0.0000000 80zwi1 0
148 pm m pu239t cm in 0.0000000 0.0 0.0004145 7.0000000% 0 100.0000000 88wah1 0
148 pu239t cm cu 0.0000000 0.0 1.6800000 0.0000000 0 0.0000000 73lam1 0
148 pu239t cm cu 0.0000000 0.0 1.6900000 0.0300000 0 0.0000000 73wal1 0
148 pu239t cm cu x4 0.0000000 0.0 1.7100000 7.5000000% 0 0.0000000 77cro1 0
148 pu239t es cu 1.6890123 3.0 1.6900000 0.0500000 0 0.0000000 72sid1 36
148 nd g pu239t es cu cm 1.6490357 1.0 1.6500000 1.0000000% 0 0.0000000 81mae2 0
148 nd g pu239t ms cu 1.6290474 2.0 1.6300000 0.0300000 0 0.0000000 75mae1 0
148 nd g pu239t ms cu 1.6390416 2.0 1.6400000 2.0000000% 0 0.0000000 76mae1 36
148 nd g pu239t ms cu 1.6460375 2.0 1.6470000 0.0200000 0 0.0000000 79mae2 0
148 nd g pu239t ms cu 1.6524990 1.8 1.6700000 0.0300000 0 1.0100000 66rid2 0
148 nd g pu239t ms cu 1.6990065 4.1 1.7000000 0.0700000 0 0.0000000 70lis1 36
148 nd g pu239t ms cu 1.7090006 4.1 1.7100000 0.0700000 0 0.0000000 73rob1 36
148 nd g pu239t ms cu 1.6597413 1.5 2.2700000 0.0000000 146 nd g pu239t 3.3600000 56wil1 0
148 nd g pu239t ms cu 1.6344043 2.2 2.3000000 0.0500000 145 nd g pu239t 4.2000000 59ani1 0
148 nd g pu239t ms cu rp 1.6542744 1.4 1.6400000 0.0000000 no. relative values = 5 86chi1
148 nd g pu239t ms cu x4 0.0000000 0.0 1.7100000 0.0200000 0 0.0000000 73rob1 0
148 nd g pu239t ms re 1.5966669 1.5 0.3620000 0.0050000 143 nd g pu239t 1.0000000 57kri1 0
148 nd g pu239t ms re 1.6540057 1.7 0.3750000 0.0060000 143 nd g pu239t 1.0000000 59fic2 0
148 nd g pu239t ms re rp 1.6376030 0.8 0.1205800 0.0000000 no. relative values = 17 76mae1
148 nd g pu239t ms re rp 1.6255382 1.5 0.9928000 0.0000000 no. relative values = 5 64rid1
148 nd g pu239t ms re rp 1.6418612 2.4 0.9960000 0.0000000 no. relative values = 6 65rid2
148 pr g pu239t cm in 0.0000000 0.0 0.0907000 14.0000000% 0 1.0000000 88wah1 0
148 pr m pu239t cm in 0.0000000 0.0 0.2115000 14.0000000% 0 1.0000000 88wah1 0
148 ce g pu239t rc cu 0.8594974 41.9 0.8600000 0.3600000 0 0.0000000 81dic1 0
148 ce g pu239t cm in 0.0000000 0.0 1.0930000 11.0000000% 0 1.0000000 88wah1 0
148 la g pu239t cm in 0.0000000 0.0 0.1871000 19.0000000% 0 1.0000000 88wah1 0
148 pu239f cm cu 0.0000000 0.0 1.6600000 0.0000000 0 0.0000000 73lar3 0
148 pu239f cm cu 0.0000000 0.0 1.6900000 2.8000000% 0 0.0000000 77cro1 0
148 pu239f cm cu x3 0.0000000 0.0 1.7100000 0.0000000 0 0.0000000 72sid1 0
148 pu239f es re 1.6614529 0.7 1.0130000 0.5000000% 148 pu239t 1.0000000 74mee4 0
148 pu239f ms cu 1.6350235 3.0 1.6370000 3.0000000% 0 0.0000000 81koc1 36

148 nd g pu239f cm cu 0.0000000 0.0 1.6400000 0.0000000 0 0.0000000 73las1 0
148 nd g pu239f es cu 1.6380199 5.0 1.6400000 5.0000000% 0 0.0000000 73lar1 0
148 nd g pu239f es cu cm 1.6679837 1.0 1.6700000 1.0000000% 0 0.0000000 81mae2 0
148 nd g pu239f ms cu 1.6704902 0.7 0.1030000 0.0001000 146 nd g pu239f 0.1515000 80mae4 0
148 nd g pu239f ms cu 1.6230380 2.0 1.6250000 0.0190000 0 0.0000000 77mae1 0
148 nd g pu239f ms cu 1.6879595 2.0 1.6900000 0.0300000 0 0.0000000 77gab1 0
148 nd g pu239f ms cu 1.7279112 2.0 1.7300000 0.0300000 0 0.0000000 70lis1 0
148 nd g pu239f ms cu 1.7378992 2.9 1.7400000 0.0500000 0 0.0000000 73rob1 0
148 nd g pu239f ms cu 1.6968060 2.2 0.2580000 2.1000000% 137 cs g pu239f 1.0000000 77kel1 0
148 nd g pu239f ms cu 1.6380199 2.0 1.6400000 1.3000000% 0 0.0000000 77koc1 0
148 nd g pu239f ms cu rp 1.6509890 0.6 1.6540000 0.0000000 no. relative values = 40 77mae1
148 nd g pu239f ms cu rp 1.6565994 4.1 1.6900000 0.0000000 no. relative values = 4 69dav1
148 nd g pu239f ms cu rp 1.6499407 1.0 1.7300000 0.0000000 no. relative values = 37 70lis1
148 nd g pu239f ms cu rp 1.6616089 2.0 1.6400000 0.0000000 no. relative values = 5 77koc1
148 nd g pu239f ms cu rp 1.6528550 2.5 1.6900000 0.0000000 no. relative values = 9 77gab1
148 nd g pu239f ms cu su 0.0000000 0.0 1.6600000 0.0000000 0 0.0000000 76koc1 0
148 nd g pu239f ms re rp 1.6553783 7.9 1.0000000 0.0000000 no. relative values = 4 73rob1
148 nd g pu239f rc cu 1.6879595 5.0 1.6900000 4.0000000% 0 0.0000000 69dav1 0
148 nd g pu239f rc cu rp 1.7380613 9.1 1.6900000 0.0000000 no. relative values = 3 69dav1
148 pu241t es cu 1.8714568 30.0 1.8700000 0.0000000 0 0.0000000 72sid1 0
148 nd g pu241t ms cu 1.8114101 6.0 1.8100000 6.0000000% 0 0.0000000 67rid1 36
148 pu241t cm cu 0.0000000 0.0 1.8800000 2.9000000% 0 0.0000000 77cro1 0
148 pu241t cm cu 0.0000000 0.0 1.9200000 0.0300000 0 0.0000000 73wal1 0
148 nd g pu241t ms cu 1.9094864 2.0 1.9080000 0.0150000 0 0.0000000 77mae1 0
148 nd g pu241t ms cu 1.8914724 2.6 1.8900000 0.0500000 0 0.0000000 70lis1 0
148 nd g pu241t ms re 1.9772320 1.2 0.6055000 0.0040000 145 nd g pu241t 1.0000000 64far1 0
148 nd g pu241t ms cu rp 1.9215729 6.0 1.8120000 0.0000000 no. relative values = 7 67rid1
148 nd g pu241t ms cu rp 1.8966750 1.7 1.8616500 0.0000000 no. relative values = 29 70lis1
148 nd g pu241t ms cu rp 1.9280784 1.0 1.9300000 0.0000000 no. relative values = 12 86chi1
148 pm g u233t rc fi su 0.0000000 0.0 0.0000042 0.0000042 148 u233t 1.0000000 66ume1 0
148 pm g u233t rc fi 0.0000002 27.8 0.0000180 0.0000050 148 u233t 100.0000000 73ume1 0
148 pm g u233t rc in 0.0000004 24.3 0.0000037 24.3000000% 0 10.0000000 77aum1 0
148 pm g u233t rc in su 0.0000000 0.0 0.0000018 0.0000004 0 10.0000000 78zwi1 0
148 pm g u233t rc in 0.0000003 25.8 0.0000031 0.0000008 0 10.0000000 80zwi1 0
148 pm m u233t rc fi 0.0000010 5.1 0.0000750 0.0000030 148 u233t 100.0000000 73ume1 0
148 pm m u233t rc in 0.0000011 11.5 0.0000113 11.5000000% 0 10.0000000 77aum1 0

148 pm m u233t rc in su 0.0000000 0.0 0.0000078 0.0000014 0 10.0000000 78zwi1 0
148 pm m u233t rc in 0.0000009 12.8 0.0000086 0.0000011 0 10.0000000 80zwi1 0
148 u233t cm cu x3 0.0000000 0.0 1.3000000 0.0000000 0 0.0000000 73lam1 0
148 u233t cm cu x3 0.0000000 0.0 1.3000000 0.0220000 0 0.0000000 73wal1 0
148 u233t cm cu x3 0.0000000 0.0 1.3300000 0.0000000 0 0.0000000 72sid1 0
148 u233t cm cu x3 0.0000000 0.0 1.2800000 3.1000000% 0 0.0000000 77cro1 0
148 nd g u233t ms cu 1.2770774 2.0 1.2805000 0.0100000 0 0.0000000 70lis1 0
148 nd g u233t ms cu 1.2955280 2.3 1.2990000 0.0300000 0 0.0000000 66rid1 0
148 nd g u233t ms cu 1.3550107 3.1 1.4000000 3.0000000% 144 nd g u233t 4.8700000 61bid1 0
148 nd g u233t ms cu rp 1.3016163 1.6 1.2930000 0.0000000 no. relative values = 5 86chi1
148 nd g u233t ms cu su 0.0000000 0.0 1.1500000 0.1000000 148 nd g u233t 1.1500000 55kuk1 0
148 nd g u233t ms cu su 0.0000000 0.0 1.0300000 0.1000000 148 nd g u233t 1.0500000 57iva1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

148 nd g u233t ms cu su 0.0000000 0.0 1.0700000 0.0400000 148 nd g u233t 1.0500000 57iva1 0
148 nd g u233t ms re 1.3327774 1.7 0.2240000 0.0000000 143 nd g u233t 1.0000000 55mel1 0
148 nd g u233t ms re rp 1.2802257 1.6 0.9928000 0.0000000 no. relative values = 5 64rid1
148 nd g u233t ms re rp 1.2959512 1.9 0.9946000 0.0000000 no. relative values = 5 65rid2
148 th232f es cu cm 1.7875151 30.0 1.8000000 0.0000000 0 0.0000000 65eng1 0
148 th232f es cu 1.8371683 30.0 1.8500000 0.0000000 0 0.0000000 72sid1 0
148 th232f es cu cm 2.1648793 30.0 2.1800000 0.0000000 0 0.0000000 73lam1 0
148 th232f cm cu 0.0000000 0.0 2.0500000 7.0000000% 0 0.0000000 77cro1 0
148 th232f cm cu 0.0000000 0.0 2.2100000 0.0000000 0 0.0000000 74lam1 0
148 th232f es cu 1.9563359 5.0 1.9700000 5.0000000% 0 0.0000000 74mee0 0
148 nd g th232f ms re 2.0199287 2.4 0.3060000 0.0040000 143 nd g th232f 1.0000000 68har1 0
148 ce g th232f rc cu 1.8748202 9.3 1.9100000 0.1700000 140 ba g th232f 7.9700000 85chu1 0
149 u235t cm cu 0.0000000 0.0 1.0300000 0.0090000 0 0.0000000 78wal1 0
149 u235t cm cu 0.0000000 0.0 1.0500000 0.0000000 0 0.0000000 72sid1 0
149 u235t cm cu 0.0000000 0.0 1.0500000 0.0000000 0 0.0000000 73lam1 0
149 u235t cm cu 0.0000000 0.0 1.0800000 0.0700000 0 0.0000000 73wal1 0
149 u235t cm cu 0.0000000 0.0 1.0800000 5.1000000% 0 0.0000000 77cro1 0
149 u235t es re 1.0196141 2.1 1.0000000 2.0000000% 149 u235f 1.0160000 74mee4 0
149 u235t ms cu x4 0.0000000 0.0 0.9670000 0.0470000 0 0.0000000 76dii1 36
149 sm g u235t ms cu 0.9990092 3.0 1.0000000 3.0000000% 0 0.0000000 70lis1 36

149 sm g u235t ms cu 1.0269814 2.0 1.0280000 0.0140000 0 0.0000000 78mae1 0
149 sm g u235t ms cu 1.0289795 2.0 1.0300000 0.0100000 0 0.0000000 78mae1 0
149 sm g u235t ms cu 1.0369715 2.0 1.0380000 0.0100000 0 0.0000000 78mae1 0
149 sm g u235t ms cu 1.1288804 6.0 1.1300000 0.0000000 0 0.0000000 55pet2 0
149 sm g u235t ms cu 1.1288804 3.0 1.1300000 3.0000000% 0 0.0000000 59bid1 0
149 sm g u235t ms cu cm 1.0309775 6.0 1.0320000 0.0000000 0 0.0000000 80mae3 0
149 sm g u235t ms cu rp 1.0511409 15.8 1.1000000 0.0000000 no. relative values = 1 50ing1
149 sm g u235t ms cu rp 1.0611488 3.2 1.0000000 0.0000000 no. relative values = 3 55mel1
149 sm g u235t ms cu su 0.0000000 0.0 1.5000000 0.3000000 142 ce g u235t 5.8000000 57gor1 0
149 sm g u235t ms re 1.1074747 0.6 0.1860000 0.0010000 145 nd g u235t 0.6600000 59chu1 0
149 sm g u235t ms re rp 1.0578289 4.2 1.0000000 0.0000000 no. relative values = 3 62far1
149 sm g u235t sp cu 0.9990092 7.0 1.0000000 0.0700000 0 0.0000000 55lit1 0
149 pm g u235t cm cu x4 0.0000000 0.0 1.3000000 0.2000000 140 ba g u235t 6.1000000 51mar2 0
149 pm g u235t cm cu 0.0000000 0.0 1.0710000 2.0000000% 0 0.0000000 73net2 0
149 pm g u235t ms cu rp 1.1610303 43.6 1.5000000 0.0000000 no. relative values = 1 59ani1
149 pm g u235t rc cu 1.0473987 5.2 1.0400000 0.0300000 99 mo g u235t 6.0600000 65bun1 36
149 nd g u235t rc cu 1.0789299 5.6 1.0800000 0.0600000 0 0.0000000 71mcl1 0
149 nd g u235t rc cu 1.0859230 5.2 1.0870000 0.0560000 0 0.0000000 76thi1 0
149 nd g u235t cm in 0.0000000 0.0 0.0061910 98.0000000% 0 1.0000000 88wah1 0
149 pr g u235t cm in 0.0000000 0.0 0.2469000 19.0000000% 0 1.0000000 88wah1 0
149 ce g u235t rc fc 0.7725377 7.5 71.5000000 5.0000000 149 nd g u235t 100.0000000 77fis1 0
149 ce g u235t cm in 0.0000000 0.0 0.6994000 11.0000000% 0 1.0000000 88wah1 0
149 la g u235t cm in 0.0000000 0.0 0.0787800 21.0000000% 0 1.0000000 88wah1 0
149 ba g u235t sp cu ul 0.0000000 0.0 0.0600000 0.2500000 0 0.0000000 81shm1 0
149 ba g u235t ms in ul 0.0000000 0.0 0.0600000 0.0170000 0 0.0000000 79shm1 0
149 u235f es cu cm 1.1286607 30.0 1.1300000 0.0000000 0 0.0000000 72sid1 0
149 sm g u235f ms cu su 0.0000000 0.0 1.0100000 0.0000000 0 0.0000000 76koc1 0
149 u235f cm cu 0.0000000 0.0 1.0700000 2.5000000% 0 0.0000000 77cro1 0
149 sm g u235f ms cu 1.0357264 1.2 1.0200000 1.0000000% 149 sm g u235f 1.0200000 77koc1 0
149 sm g u235f ms cu rp 1.0392753 3.2 1.0200000 0.0000000 no. relative values = 2 77koc1
149 sm g u235f ms cu 1.0327745 2.0 1.0340000 0.0070000 0 0.0000000 80mae1 0
149 sm g u235f ms cu 1.0473009 1.9 1.0900000 0.0200000 148 nd g u235f 1.7500000 70lis1 0
149 u235f es re 1.0977099 2.2 1.0160000 2.0000000% 149 u235t 1.0000000 74mee4 0
149 sm g u235f ms cu cm 1.0347721 6.0 1.0360000 0.0000000 0 0.0000000 80mae3 0
149 u235f rc cu 1.1806999 7.4 1.2300000 0.0900000 140 ba g u235f 6.2200000 77bla1 0
149 sm g u235f ms cu 1.0417638 2.0 1.0430000 0.0070000 0 0.0000000 81mae1 0

149 sm g u235f ms cu 1.0327745 2.0 1.0340000 0.0080000 0 0.0000000 81mae1 0
149 sm g u235f ms cu 1.0357709 2.0 1.0370000 0.0060000 0 0.0000000 81mae1 0
149 sm g u235f cm cu 0.0000000 0.0 1.0380000 0.0060000 0 0.0000000 81mae1 0
149 sm g u235f ms cu 1.0208782 1.1 1.0200000 0.0100000 148 nd g u235f 1.6800000 74mae1 0
149 u235f ms cu 1.0137970 3.0 1.0150000 3.0000000% 0 0.0000000 81koc1 36
149 pm g u235f cm cu 0.0000000 0.0 1.0720000 8.0000000% 0 0.0000000 73net2 0
149 pm g u235f rc cu 1.0579616 15.0 1.3000000 15.0000000% 99 mo g u235t 1.3000000 59bun2 11
149 pm g u235f es cu 1.0850022 30.0 1.1000000 0.0000000 137 cs g u235f 6.3000000 60kat1 0
149 nd g u235f rc re 1.0080187 5.0 0.9700000 0.0170000 140 ba g u235t 0.0000000 75raj1 7
149 u235he cm cu x3 0.0000000 0.0 0.5412000 0.0000000 0 0.0000000 63wea1 0
149 u235he es cu 0.8242920 20.0 0.8440000 20.0000000% 0 0.0000000 77cro1 0
149 pm g u235he cm cu x3 0.0000000 0.0 0.6700000 8.1000000% 0 0.0000000 73net2 0
149 pm g u235he es fc 0.7943031 25.6 1.0000000 20.0000000% 149 u235he 1.0000000 89rid1 0
149 sm g u238f ms re rp 1.6187656 5.8 1.0000000 0.0000000 no. relative values = 3 72mat1
149 u238f cm cu x3 0.0000000 0.0 2.2000000 0.0000000 0 0.0000000 72sid1 0
149 u238f cm cu 0.0000000 0.0 1.6700000 3.7000000% 0 0.0000000 77cro1 0
149 u238f ms re 1.7228694 2.5 0.4510000 0.0106000 143 nd g u238f 1.2150000 72mat1 0
149 sm g u238f ms cu 1.6438618 2.0 1.6370000 0.0110000 0 0.0000000 81mae1 0
149 sm g u238f ms cu 1.6247822 2.0 1.6180000 0.0110000 0 0.0000000 81mae1 0
149 sm g u238f ms cu 1.5816020 2.0 1.5750000 0.0150000 0 0.0000000 81mae1 0
149 sm g u238f cm cu 0.0000000 0.0 1.6100000 0.0230000 0 0.0000000 81mae1 0
149 sm g u238f ms cu 1.6216008 1.4 1.5900000 0.0200000 148 nd g u238f 2.0800000 74mae1 0
149 u238f ms cu 1.5464552 3.0 1.5400000 3.0000000% 0 0.0000000 81koc1 36
149 pm g u238f cm cu 0.0000000 0.0 1.7800000 4.1000000% 0 0.0000000 73net2 0
149 pm g u238f rc cu 1.8376708 12.0 1.8300000 0.2200000 0 0.0000000 75har1 0
149 pm g u238f rc cu 1.7545087 15.0 2.1000000 15.0000000% 99 mo g u235t 1.3000000 59bun2 13
149 pm g u238f cm cu 0.0000000 0.0 1.8000000 0.0000000 0 0.0000000 60kat1 0
149 pm g u238f rc cu 1.6547039 8.2 1.7200000 0.1400000 140 ba g u238f 6.0700000 77har1 0
149 pm g u238f rc cu 1.7272098 11.6 1.7200000 0.2000000 0 0.0000000 78nag1 0
149 pm g u238f rc cu su 0.0000000 0.0 2.1500000 0.3700000 0 0.0000000 75fly4 36
149 nd g u238f es cu 1.8175870 7.7 1.8100000 0.1400000 0 0.0000000 78gin1 0
149 nd g u238f rc cu 1.3757427 20.0 1.3700000 20.0000000% 0 0.0000000 81nic1 36
149 nd g u238f rc cu x4 0.0000000 0.0 4.0000000 1.8000000 0 0.0000000 84gud1 0
149 nd g u238f rc cu su 0.0000000 0.0 1.6700000 0.0000000 0 0.0000000 75fly4 0
149 nd g u238f rc cu 1.6870421 15.5 1.6800000 15.5000000% 0 0.0000000 88afa1 0
149 nd g u238f rc cu 1.6569163 15.2 1.6500000 15.2000000% 0 0.0000000 88afa1 0

149 u238he es cu 1.3388307 30.0 1.3330000 0.0000000 0 0.0000000 63wea1 0
149 sm g u238he rc cu su 0.0000000 0.0 1.3900000 0.1500000 0 0.0000000 71bla1 0
149 u238he es cu su 0.0000000 0.0 1.2200000 0.0000000 0 0.0000000 73dar1 0
149 u238he es cu 1.3980887 15.0 1.3920000 15.0000000% 0 0.0000000 74mee9 0
149 u238he cm cu 0.0000000 0.0 1.4500000 5.6000000% 0 0.0000000 77cro1 0
149 pm g u238he cm cu 0.0000000 0.0 1.4000000 8.1000000% 0 0.0000000 73net2 0
149 pm g u238he rc cu 1.6884025 11.6 1.6500000 0.1900000 99 mo g u238he 5.6000000 75ada1 0
149 pm g u238he rc cu 1.7777422 13.0 1.7700000 0.2300000 0 0.0000000 83li 2 0
149 nd g u238he rc cu 1.2956426 10.6 1.2900000 0.1370000 0 0.0000000 75dar1 0
149 nd g u238he rc cu 1.3680298 8.9 1.3600000 0.1200000 140 ba g u238he 4.6000000 76raj1 0
149 nd g u238he rc cu 1.3780888 13.2 1.3700000 0.1800000 140 ba g u238he 4.6000000 75cav1 0
149 nd g u238he rc cu su 0.0000000 0.0 1.3700000 0.1800000 140 ba g u238he 4.6000000 74bla1 0
149 nd g u238he rc cu 1.4462987 8.3 1.4400000 0.1200000 0 0.0000000 83li 2 0
149 pu239t cm cu 0.0000000 0.0 1.3000000 0.0000000 0 0.0000000 72sid1 0
149 pu239t cm cu 0.0000000 0.0 1.2400000 0.0000000 0 0.0000000 73lam1 0
149 pu239t cm cu 0.0000000 0.0 1.3000000 0.0500000 0 0.0000000 73wal1 0
149 sm g pu239t ms cu 1.2189917 2.5 1.2200000 0.0300000 0 0.0000000 75mae1 0
149 sm g pu239t cm cu 0.0000000 0.0 1.3200000 3.0000000% 0 0.0000000 59bid1 0
149 pu239t cm cu 0.0000000 0.0 1.2800000 6.1000000% 0 0.0000000 77cro1 0
149 pu239t cm cu 0.0000000 0.0 1.2330000 0.0210000 0 0.0000000 78wal1 0
149 sm g pu239t ms cu 1.2159942 2.0 1.2170000 0.0150000 0 0.0000000 79mae2 0
149 sm g pu239t ms cu 1.2146123 2.5 1.2400000 0.0300000 137 cs g pu239t 6.7400000 70lis1 0
149 sm g pu239t es cu cm 1.2189917 1.0 1.2200000 1.0000000% 0 0.0000000 81mae2 0
149 sm g pu239t ms cu rp 1.1973497 9.1 1.8100000 0.0000000 no. relative values = 3 56wil1
149 sm g pu239t ms re rp 1.2117058 3.6 1.0000000 0.0000000 no. relative values = 4 57kri1
149 sm g pu239t ms cu rp 1.2468995 3.9 1.6800000 0.0000000 no. relative values = 3 59ani1
149 sm g pu239t ms re rp 1.2005190 2.0 1.2090000 0.0000000 no. relative values = 3 59fic2
149 pm g pu239t cm cu 0.0000000 0.0 1.2450000 2.0000000% 0 0.0000000 73net2 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

149 pm g pu239t rc cu 1.1835011 10.0 1.4000000 0.0500000 99 mo g u235t 1.3000000 59bun1 7
149 pm g pu239t rc cu su 0.0000000 0.0 0.3370000 0.0060000 144 ce g pu239t 1.0000000 70sko1 0
149 pm g pu239t rc cu 1.2616174 5.0 1.3000000 0.0500000 144 ce g pu239t 3.8500000 71sor1 0
149 nd g pu239t rc cu su 0.0000000 0.0 0.2970000 0.0100000 144 ce g pu239t 1.0000000 70sko1 0

149 nd g pu239t rc cu 1.1063414 7.1 1.1400000 0.0800000 144 ce g pu239t 3.8500000 71sor1 0
149 nd g pu239t cm in 0.0000000 0.0 0.0514800 43.0000000% 0 1.0000000 88wah1 0
149 pr g pu239t cm in 0.0000000 0.0 0.5220000 11.0000000% 0 1.0000000 88wah1 0
149 ce g pu239t cm in 0.0000000 0.0 0.5910000 11.0000000% 0 1.0000000 88wah1 0
149 la g pu239t cm in 0.0000000 0.0 0.0432000 42.0000000% 0 1.0000000 88wah1 0
149 pu239f cm cu 0.0000000 0.0 1.2900000 3.5000000% 0 0.0000000 77cro1 0
149 pu239f es cu cm 1.3976095 30.0 1.4000000 0.0000000 0 0.0000000 72sid1 0
149 pu239f es re 1.2448459 10.0 1.0250000 10.0000000% 149 pu239t 1.0000000 74mee4 0
149 pu239f ms cu 1.2478656 3.0 1.2500000 3.0000000% 0 0.0000000 81koc1 36
149 sm g pu239f es cu cm 1.2478656 1.0 1.2500000 1.0000000% 0 0.0000000 81mae2 0
149 sm g pu239f ms cu 1.2336945 0.9 0.2536000 0.0005000 147 sm g pu239f 0.4085000 80mae4 0
149 sm g pu239f ms cu 1.2039408 2.0 1.2060000 0.0190000 0 0.0000000 77mae1 0
149 sm g pu239f ms cu 1.2304136 1.0 1.2270000 0.0120000 148 nd g pu239f 1.6540000 77mae1 0
149 sm g pu239f ms cu 1.2389968 0.7 1.2500000 0.5000000% 149 sm g pu239f 1.2500000 77koc1 0
149 sm g pu239f ms cu 1.3038717 1.5 1.3600000 0.0200000 148 nd g pu239f 1.7300000 70lis1 0
149 sm g pu239f ms cu rp 1.2311322 2.3 1.2500000 0.0000000 no. relative values = 2 77koc1
149 sm g pu239f ms cu su 0.0000000 0.0 1.2300000 0.0200000 148 nd g pu239f 1.6500000 74mae1 0
149 sm g pu239f ms cu su 0.0000000 0.0 1.2800000 0.0000000 0 0.0000000 76koc1 0
149 pm g pu239f cm cu 0.0000000 0.0 1.3300000 4.0000000% 0 0.0000000 73net2 0
149 nd g pu239f rc re 1.3087875 18.3 1.4150000 0.2590000 140 ba g u235t 0.0000000 75raj1 7
149 pu241t cm cu 0.0000000 0.0 1.4900000 0.0000000 0 0.0000000 72sid1 0
149 pu241t cm cu 0.0000000 0.0 1.4400000 0.0400000 0 0.0000000 73wal1 0
149 pu241t cm cu 0.0000000 0.0 1.4600000 3.8000000% 0 0.0000000 77cro1 0
149 pu241t cm cu 0.0000000 0.0 1.5150000 0.0220000 0 0.0000000 78wal1 0
149 pu241t cm cu 0.0000000 0.0 1.5000000 0.0000000 0 0.0000000 79wal1 0
149 sm g pu241t ms cu 1.4572670 2.0 1.4550000 0.0100000 0 0.0000000 77mae1 0
149 sm g pu241t ms cu 1.4864300 2.9 1.4300000 0.0400000 148 nd g pu241t 1.8616500 70lis1 0
149 sm g pu241t ms re rp 1.4720141 1.9 1.0000000 0.0000000 no. relative values = 4 64far1
149 pm g pu241t rc cu 1.5623330 5.1 0.3690000 0.0140000 144 ce g pu241t 1.0000000 70sko1 0
149 pm g pu241t rc cu rp 1.4802275 16.3 1.5200000 0.0000000 no. relative values = 1 71sor1
149 pm g pu241t rc cu x4 0.0000000 0.0 0.3900000 0.0000000 0 0.0000000 63kir1 0
149 nd g pu241t rc cu 1.5242274 5.1 0.3600000 0.0100000 144 ce g pu241t 1.0000000 70sko1 0
149 nd g pu241t rc cu 1.5254726 5.1 1.4700000 0.0600000 144 ce g pu241t 4.0800000 71sor1 0
149 u233t cm cu 0.0000000 0.0 0.8000000 0.0000000 0 0.0000000 72sid1 0
149 u233t cm cu 0.0000000 0.0 0.7600000 0.0000000 0 0.0000000 73lam1 0
149 u233t cm cu 0.0000000 0.0 0.7660000 0.0210000 0 0.0000000 73wal1 0

149 sm g u233t ms cu rp 0.7476405 6.9 0.7900000 0.0000000 no. relative values = 2 61bid1
149 sm g u233t ms cu su 0.0000000 0.0 0.6600000 0.1300000 148 nd g u233t 1.0500000 57iva1 0
149 sm g u233t ms cu su 0.0000000 0.0 0.7000000 0.0300000 148 nd g u233t 1.0500000 57iva1 0
149 sm g u233t ms cu 0.7939520 3.0 0.8000000 3.0000000% 0 0.0000000 59bid1 0
149 u233t cm cu 0.0000000 0.0 0.7690000 3.5000000% 0 0.0000000 77cro1 0
149 u233t cm cu 0.0000000 0.0 0.7720000 0.0150000 0 0.0000000 78wal1 0
149 sm g u233t ms cu 0.7627255 19.7 0.6600000 0.1300000 137 cs g u233t 5.8000000 59ani1 0
149 sm g u233t ms cu rp 0.7893340 12.7 0.7000000 0.0000000 no. relative values = 1 59ani1
149 sm g u233t ms cu rp 0.7497794 5.4 1.0000000 0.0000000 no. relative values = 2 55mel1
149 sm g u233t ms cu aw 0.7651713 6.0 0.7710000 0.0000000 0 0.0000000 70lis1 0
149 pm g u233t rc cu 0.7857940 5.0 0.8150000 0.0370000 99 mo g u235t 1.1300000 65bun1 1
149 pm g u233t cm cu 0.0000000 0.0 0.7659000 2.0000000% 0 0.0000000 73net2 0
149 th232f es cu 0.9357304 30.0 0.9450000 0.0000000 0 0.0000000 65eng1 0
149 th232f es cu 0.8911718 30.0 0.9000000 0.0000000 0 0.0000000 72sid1 0
149 th232f es cu x3 0.0000000 0.0 1.4400000 0.0000000 0 0.0000000 73lam1 0
149 th232f cm cu x3 0.0000000 0.0 1.4800000 0.0000000 0 0.0000000 74lam1 0
149 th232f cm cu 0.0000000 0.0 1.0500000 25.5000000% 0 0.0000000 77cro1 0
149 th232f es cu 0.8713680 20.0 0.8800000 20.0000000% 0 0.0000000 74mee0 0
149 pm g th232f rc re 0.9394297 30.0 1.8200000 0.0000000 99 mo g u235t 0.0000000 63iye1 7
149 pm g th232f cm cu 0.0000000 0.0 1.2350000 16.0000000% 0 0.0000000 73net2 0
149 pm g th232f rc cu 0.9901909 10.0 1.0000000 0.1000000 0 0.0000000 71swi3 0
149 pm g th232f rc re 1.1252510 5.0 2.1800000 0.0600000 99 mo g u235t 0.0000000 81ert1 7
149 pm g th232f cm cu 0.0000000 0.0 1.1000000 0.1000000 0 0.0000000 81ert1 0
149 nd g th232f rc cu x4 0.0000000 0.0 1.4550000 15.0000000% 141 ce g th232f 7.0000000 67bre1 0
149 nd g th232f rc cu 1.1255527 13.3 1.1500000 0.1500000 140 ba g th232f 7.9700000 85chu1 0
149 nd g th232f rc cu 1.1486214 14.7 1.1600000 0.1700000 0 0.0000000 86ric1 0
150 sm g u235t ms re x1 0.0000000 0.0 0.0002300 0.0000100 145 nd g u235t 0.6600000 59chu1 0
150 sm g u235t ms re ul 0.0000000 0.0 0.0002000 0.0000000 149 sm g u235t 1.0000000 62far1 0
150 pm g u235t rc in 0.0000300 33.3 0.0000300 0.0000100 0 0.0000000 76gae1 0
150 pm g u235t cm in 0.0000000 0.0 0.0003158 33.0000000% 0 10.0000000 88wah1 0
150 nd g u235t ms cu 0.6711722 1.5 0.6580000 0.0000000 148 nd g u235t 1.6400000 50ing1 0
150 u235t es cu 0.6396829 30.0 0.6400000 0.0000000 0 0.0000000 72sid1 0
150 u235t cm cu 0.0000000 0.0 0.6440000 0.0000000 0 0.0000000 73lam1 0
150 u235t cm cu 0.0000000 0.0 0.6520000 0.0090000 0 0.0000000 73wal1 0
150 nd g u235t ms re 0.6523044 1.8 0.1095000 0.0019000 145 nd g u235t 0.6600000 59chu1 0
150 nd g u235t ms cu 0.6296879 2.0 0.6300000 0.0070000 0 0.0000000 65rid1 0

150 nd g u235t ms re 0.6554503 1.3 0.3890000 0.0050000 148 nd g u235t 0.9928000 65rid2 0
150 u235t ms cu 0.6666696 2.7 0.6670000 0.0180000 0 0.0000000 76dii1 0
150 nd g u235t ms cu 0.6552937 14.3 0.7000000 0.1000000 146 nd g u235t 3.2000000 57gor1 0
150 nd g u235t ms re 0.6436556 1.6 0.3820000 0.0060000 148 nd g u235t 0.9928000 64rid1 0
150 u235t cm cu 0.0000000 0.0 0.6450000 1.5000000% 0 0.0000000 77cro1 0
150 nd g u235t ms cu 0.6552937 14.3 0.7000000 0.1000000 146 nd g u235t 3.2000000 59ani1 0
150 nd g u235t ms re 0.6521484 0.6 0.0354800 0.0001500 148 nd g u235t 0.0910100 76mae1 0
150 nd g u235t ms re 0.6548554 1.9 0.1100000 0.0020000 143 nd g u235t 1.0000000 55mel1 0
150 nd g u235t ms re 0.6548554 1.9 0.1100000 0.0020000 143 nd g u235t 1.0000000 62far1 0
150 nd g u235t ms cu 0.6646706 2.0 0.6650000 0.0100000 0 0.0000000 78mae1 0
150 nd g u235t ms cu 0.6516770 2.0 0.6520000 0.0070000 0 0.0000000 78mae1 0
150 nd g u235t ms cu 0.6566745 2.0 0.6570000 0.0080000 0 0.0000000 78mae1 0
150 nd g u235t ms cu 0.6376839 2.0 0.6380000 0.0040000 0 0.0000000 70lis1 0
150 u235t es re 0.6578323 2.1 1.0000000 2.0000000% 150 u235f 1.0420000 74mee4 0
150 nd g u235t ms cu cm 0.6576740 6.0 0.6580000 0.0000000 0 0.0000000 80mae3 0
150 nd g u235t ms cu nr 0.6691322 1.5 0.7080000 0.0000000 148 nd g u235t 1.7700000 55gle1 0
150 nd g u235t ms cu 0.6455487 1.1 0.6460000 0.0070000 148 nd g u235t 1.6740000 86chi1 0
150 nd g u235t cm in 0.0000000 0.0 0.0320900 38.0000000% 0 1.0000000 88wah1 0
150 nd g u235t ms cu 0.6569082 5.0 0.6400000 5.0000000% 143 nd g u235t 5.8000000 55pet2 36
150 pr g u235t cm in 0.0000000 0.0 0.2076000 11.0000000% 0 1.0000000 88wah1 0
150 ce g u235t cm in 0.0000000 0.0 0.3717000 11.0000000% 0 1.0000000 88wah1 0
150 la g u235t cm in 0.0000000 0.0 0.0100100 48.0000000% 0 1.0000000 88wah1 0
150 nd g u235f ms cu 0.7016471 3.0 0.7300000 3.0000000% 148 nd g u235f 1.7500000 69dav1 0
150 nd g u235f rc cu 0.7208703 5.0 0.7500000 0.0200000 148 nd g u235f 1.7500000 70rid1 0
150 nd g u235f ms cu x4 0.0000000 0.0 0.6300000 0.0000000 143 nd g u235f 5.9000000 71cro2 0
150 nd g u235f ms cu 0.6891099 1.6 0.7100000 0.0000000 143 nd g u235f 5.9000000 71cro2 0
150 nd g u235f ms re su 0.0000000 0.0 0.4200000 0.0000000 148 nd g u235f 1.0000000 71rob1 0
150 u235f es cu 0.7016471 30.0 0.7300000 0.0000000 148 nd g u235f 1.7500000 72sid1 0
150 nd g u235f ms cu 0.7004125 5.0 0.7010000 5.0000000% 0 0.0000000 73cro3 0
150 nd g u235f ms cu x4 0.0000000 0.0 0.6200000 5.0000000% 0 0.0000000 73cro3 0
150 nd g u235f ms re 0.7064529 1.6 0.4200000 0.0000000 148 nd g u235f 1.0000000 73rob1 0
150 nd g u235f ms cu 0.6824276 2.0 0.6830000 0.0100000 0 0.0000000 74lar2 0
150 nd g u235f ms cu su 0.0000000 0.0 0.6800000 0.0000000 0 0.0000000 76koc1 0
150 u235f cm cu x3 0.0000000 0.0 0.6870000 3.0000000% 0 0.0000000 77cro1 0
150 nd g u235f ms cu 0.6848988 0.9 0.6800000 0.8000000% 148 nd g u235f 1.6700000 77koc1 0
150 u235f ms cu 0.7008462 3.9 0.7250000 0.0280000 148 nd g u235f 1.7400000 77gab1 0

150 nd g u235f ms cu 0.6924192 2.0 0.6930000 0.0060000 0 0.0000000 80mae1 0
150 nd g u235f ms cu x4 0.0000000 0.0 0.7670000 0.0300000 148 nd g u235f 1.7500000 70lis1 0
150 u235f es re 0.6788578 2.1 1.0400000 2.0000000% 150 u235t 1.0000000 74mee4 0
150 nd g u235f ms cu cm 0.6903210 6.0 0.6909000 0.0000000 0 0.0000000 80mae3 0
150 nd g u235f ms cu 0.6834268 2.0 0.6840000 0.0040000 0 0.0000000 81mae1 0
150 nd g u235f ms cu 0.6804293 2.0 0.6810000 0.0050000 0 0.0000000 81mae1 0
150 nd g u235f ms cu 0.6774318 2.0 0.6780000 0.0040000 0 0.0000000 81mae1 0
150 nd g u235f cm cu x3 0.0000000 0.0 0.6810000 0.0040000 0 0.0000000 81mae1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

150 nd g u235f ms cu 0.6728123 1.3 0.6720000 0.0080000 148 nd g u235f 1.6800000 74mae1 0
150 u235f ms cu 0.6794301 3.0 0.6800000 3.0000000% 0 0.0000000 81koc1 36
150 pm g u235he rc fi 0.0008995 14.1 0.0017900 0.0001500 150 u235he 1.0000000 80net1 0
150 pm g u235he rc fi 0.0008995 14.1 0.0017900 0.0001500 150 u235he 1.0000000 81net1 0
150 nd g u235he es cu x4 0.0000000 0.0 0.2743000 0.0000000 0 0.0000000 63wea1 0
150 u235he es cu 0.5084636 10.0 0.5170000 10.0000000% 0 0.0000000 74mee8 0
150 u235he cm cu x3 0.0000000 0.0 0.6130000 20.0000000% 0 0.0000000 77cro1 0
150 u238f es cu cm 1.3054492 30.0 1.3000000 0.0000000 0 0.0000000 64wal1 0
150 nd g u238f ms re su 0.0000000 0.0 0.6200000 0.0000000 148 nd g u238f 1.0000000 71rob1 0
150 nd g u238f ms re 1.3088841 2.2 0.2820000 0.0060000 143 nd g u238f 1.0000000 72mat1 0
150 u238f cm cu x3 0.0000000 0.0 0.8600000 0.0000000 0 0.0000000 72sid1 0
150 nd g u238f ms re 1.2940171 1.7 0.6100000 0.0000000 148 nd g u238f 1.0000000 73rob1 0
150 u238f cm cu 0.0000000 0.0 1.3200000 5.1000000% 0 0.0000000 77cro1 0
150 nd g u238f ms cu aj 1.2750020 4.4 1.1600000 0.0500000 148 nd g u238f 1.9300000 67rid1 0
150 nd g u238f ms cu 1.2903864 2.0 1.2850000 0.0090000 0 0.0000000 81mae1 0
150 nd g u238f ms cu 1.2763277 2.0 1.2710000 0.0100000 0 0.0000000 81mae1 0
150 nd g u238f ms cu 1.2281265 2.0 1.2230000 0.0190000 0 0.0000000 81mae1 0
150 nd g u238f cm cu 0.0000000 0.0 1.2600000 0.0230000 0 0.0000000 81mae1 0
150 nd g u238f ms cu 1.2748434 1.7 1.2500000 0.0200000 148 nd g u238f 2.0800000 74mae1 0
150 u238f ms cu 1.1949881 3.0 1.1900000 3.0000000% 0 0.0000000 81koc1 36
150 pm g u238he rc fi 0.0000252 34.4 0.0000230 0.0000070 150 u238he 1.0000000 80net1 0
150 pm g u238he rc fi 0.0000252 34.4 0.0000230 0.0000070 150 u238he 1.0000000 81net1 0
150 u238he es cu 1.1480297 30.0 1.1340000 0.0000000 0 0.0000000 63wea1 0
150 u238he es cu su 0.0000000 0.0 0.9300000 0.0000000 0 0.0000000 73dar1 0

150		u238he	es	cu		1.0640028	15.0	1.0510000	15.0000000%	0			0.0000000	74mee9	0
150		u238he	cm	cu		0.0000000	0.0	1.0200000	20.0000000%	0			0.0000000	77cro1	0
150	pm g	pu239t	rc	in		0.0011493	6.1	0.0011500	0.0000700	0			0.0000000	76gae1	0
150	pm g	pu239t	cm	in		0.0000000	0.0	0.0012390	6.0000000%	0			1.0000000	88wah1	0
150	nd g	pu239t	ms	cu		0.9662196	1.6	1.3100000	0.0000000	143	nd g	pu239t	5.9800000	56wil1	0
150	nd g	pu239t	ms	re		0.9703500	1.0	0.2200000	0.0020000	143	nd g	pu239t	1.0000000	57kri1	0
150		pu239t	es	cu		0.9594390	30.0	0.9600000	0.0000000	0			0.0000000	72sid1	0
150		pu239t	cm	cu		0.0000000	0.0	0.9700000	0.0000000	0			0.0000000	73lam1	0
150		pu239t	cm	cu		0.0000000	0.0	0.9890000	0.0180000	0			0.0000000	73wal1	0
150	nd g	pu239t	ms	cu		0.9464466	2.1	0.9470000	0.0200000	0			0.0000000	75mae1	0
150	nd g	pu239t	ms	re		0.9705219	1.6	0.5890000	0.0090000	148	nd g	pu239t	0.9960000	65rid2	0
150	nd g	pu239t	ms	cu		0.9594390	2.1	0.9600000	0.0200000	0			0.0000000	66rid2	0
150	nd g	pu239t	ms	re		0.9587725	1.6	0.5800000	0.0090000	148	nd g	pu239t	0.9928000	64rid1	0
150		pu239t	cm	cu		0.0000000	0.0	0.9910000	7.7000000%	0			0.0000000	77cro1	0
150	nd g	pu239t	ms	cu		0.9593242	1.5	1.3500000	0.0200000	145	nd g	pu239t	4.2000000	59ani1	0
150	nd g	pu239t	ms	cu		0.9654355	2.0	0.9660000	0.0130000	0			0.0000000	79mae2	0
150	nd g	pu239t	ms	re		0.9638956	0.7	0.0708200	0.0003200	148	nd g	pu239t	0.1205800	76mae1	0
150	nd g	pu239t	ms	cu		0.9454716	2.1	0.9650000	0.0200000	137	cs g	pu239t	6.7400000	70lis1	0
150	nd g	pu239t	ms	re		0.9835821	1.4	0.2230000	0.0030000	143	nd g	pu239t	1.0000000	59fic2	0
150	nd g	pu239t	ms	cu		0.9686812	1.0	0.9680000	0.0080000	148	nd g	pu239t	1.6400000	86chi1	0
150	nd g	pu239t	es	cu	cm	0.9684337	1.0	0.9690000	1.0000000%	0			0.0000000	81mae2	0
150	nd g	pu239t	cm	in		0.0000000	0.0	0.1693000	19.0000000%	0			1.0000000	88wah1	0
150	pr g	pu239t	cm	in		0.0000000	0.0	0.5227000	11.0000000%	0			1.0000000	88wah1	0
150	ce g	pu239t	cm	in		0.0000000	0.0	0.2717000	14.0000000%	0			1.0000000	88wah1	0
150	nd g	pu239f	ms	cu		0.9912352	3.0	1.0100000	3.0000000%	148	nd g	pu239f	1.6900000	69dav1	0
150		pu239f	es	cu		0.9990407	30.0	1.0300000	0.0000000	148	nd g	pu239f	1.7100000	72sid1	0
150	nd g	pu239f	ms	re		0.9984781	1.5	0.6020000	0.0000000	148	nd g	pu239f	1.0000000	73rob1	0
150	nd g	pu239f	ms	re	su	0.0000000	0.0	1.0200000	0.0000000	148	nd g	pu239f	1.7000000	73koc1	0
150	nd g	pu239f	ms	re	su	0.0000000	0.0	0.6100000	0.0000000	148	nd g	pu239f	1.0000000	71rob1	0
150	nd g	pu239f	ms	cu	su	0.0000000	0.0	0.9900000	0.0000000	0			0.0000000	76koc1	0
150		pu239f	cm	cu		0.0000000	0.0	1.0200000	2.8000000%	0			0.0000000	77cro1	0
150	nd g	pu239f	ms	cu		0.9810021	1.6	0.9700000	1.6000000%	148	nd g	pu239f	1.6400000	77koc1	0
150		pu239f	ms	cu		0.9912352	3.0	1.0100000	0.0300000	148	nd g	pu239f	1.6900000	77gab1	0
150	nd g	pu239f	ms	cu		0.9847320	1.2	0.9820000	0.0110000	148	nd g	pu239f	1.6540000	77mae1	0
150	nd g	pu239f	ms	cu		0.9553659	2.0	0.9570000	0.0130000	0			0.0000000	77mae1	0
150	nd g	pu239f	ms	cu		1.0162530	1.9	1.0600000	0.0200000	148	nd g	pu239f	1.7300000	70lis1	0

150 nd g pu239f ms cu 1.0017923 0.7 0.0618000 0.0001000 146 nd g pu239f 0.1515000 80mae4 0
150 nd g pu239f ms cu su 0.0000000 0.0 0.9810000 0.0110000 148 nd g pu239f 1.6500000 74mae1 0
150 pu239f es re 0.9955263 10.0 1.0320000 10.0000000% 150 pu239t 1.0000000 74mee4 0
150 pu239f ms cu 0.9713386 3.0 0.9730000 3.0000000% 0 0.0000000 81koc1 36
150 nd g pu239f es cu cm 0.9982925 1.0 1.0000000 1.0000000% 0 0.0000000 81mae2 0
150 pu241t es cu 1.1712890 30.0 1.1700000 0.0000000 0 0.0000000 72sid1 0
150 pu241t cm cu 0.0000000 0.0 1.1700000 0.0400000 0 0.0000000 73wal1 0
150 nd g pu241t ms cu 1.1742026 4.6 1.1000000 0.0500000 148 nd g pu241t 1.8120000 67rid1 0
150 pu241t cm cu 0.0000000 0.0 1.1600000 3.2000000% 0 0.0000000 77cro1 0
150 nd g pu241t ms cu 1.1933133 2.0 1.1920000 0.0120000 0 0.0000000 77mae1 0
150 nd g pu241t ms cu 1.2052260 2.7 1.1600000 0.0300000 148 nd g pu241t 1.8616500 70lis1 0
150 nd g pu241t ms re 1.2347394 1.5 0.3780000 0.0040000 145 nd g pu241t 1.0000000 64far1 0
150 nd g pu241t ms cu 1.2026312 1.1 1.2000000 0.0100000 148 nd g pu241t 1.9300000 86chi1 0
150 pm g u233t rc in x1 0.0000000 0.0 0.0002600 0.0000200 0 0.0000000 76gae1 0
150 u233t es cu 0.5578832 30.0 0.5600000 0.0000000 0 0.0000000 72sid1 0
150 u233t cm cu 0.0000000 0.0 0.5010000 0.0000000 0 0.0000000 73lam1 0
150 u233t cm cu 0.0000000 0.0 0.5080000 0.0200000 0 0.0000000 73wal1 0
150 nd g u233t ms cu 0.5481701 3.1 0.5670000 3.0000000% 144 nd g u233t 4.8700000 61bid1 0
150 nd g u233t ms re 0.5045334 1.4 0.3870000 0.0040000 148 nd g u233t 0.9946000 65rid2 0
150 nd g u233t ms cu su 0.0000000 0.0 0.5100000 0.0400000 148 nd g u233t 1.1500000 55kuk1 0
150 nd g u233t ms cu su 0.0000000 0.0 0.5100000 0.0800000 148 nd g u233t 1.0500000 57iva1 0
150 nd g u233t ms cu su 0.0000000 0.0 0.4900000 0.0200000 148 nd g u233t 1.0500000 57iva1 0
150 nd g u233t ms re 0.5041421 2.3 0.3860000 0.0080000 148 nd g u233t 0.9928000 64rid1 0
150 u233t cm cu 0.0000000 0.0 0.4960000 2.2000000% 0 0.0000000 77cro1 0
150 nd g u233t ms cu 0.4881478 4.1 0.4900000 0.0200000 0 0.0000000 59ani1 0
150 nd g u233t ms cu 0.5080722 15.7 0.5100000 0.0800000 0 0.0000000 59ani1 0
150 nd g u233t ms re 0.5289532 1.7 0.0890000 0.0000000 143 nd g u233t 1.0000000 55mel1 0
150 nd g u233t ms cu 0.4981100 2.0 0.5000000 0.0040000 0 0.0000000 70lis1 0
150 nd g u233t ms cu 0.4964026 1.4 0.4950000 0.0050000 148 nd g u233t 1.2930000 86chi1 0
150 nd g u233t ms cu 0.4821705 2.1 0.4840000 0.0100000 0 0.0000000 66rid1 0
150 th232f cm cu x3 0.0000000 0.0 0.4000000 0.0000000 0 0.0000000 65eng1 0
150 th232f cm cu su 0.0000000 0.0 1.0900000 0.0000000 0 0.0000000 73lam1 0
150 th232f cm cu x3 0.0000000 0.0 1.1000000 0.0000000 0 0.0000000 74lam1 0
150 th232f cm cu x3 0.0000000 0.0 1.0300000 7.0000000% 0 0.0000000 77cro1 0
150 th232f cm cu x3 0.0000000 0.0 0.3460000 20.0000000% 0 0.0000000 74mee0 0
150 nd g th232f ms re x4 0.0000000 0.0 0.1530000 0.0120000 143 nd g th232f 1.0000000 68har1 0

```
 150        th232f   es    cu        0.5572616 30.0   0.5900000  0.0000000     0                    0.0000000   72sid1      0
 150        th232f   es    cu        0.5667068 30.0   0.6000000  0.0000000     0                    0.0000000   89rid1      0
 151        u235t    cm    cu         0.0000000  0.0   0.4200000  0.0000000     0                    0.0000000   72sid1      0
 151        u235t    cm    cu         0.0000000  0.0   0.4070000  0.0000000     0                    0.0000000   73lam1      0
 151        u235t    cm    cu         0.0000000  0.0   0.4190000  0.0270000     0                    0.0000000   73wal1      0
 151 eu g   u235t    es    fi         0.0000000 30.0   0.0000057  0.0000000   151          u235t   10000.0000000   74wol1      0
 151        u235t    ms    cu         0.4165868  3.6   0.4170000  0.0150000     0                    0.0000000   76dii1      0
 151        u235t    cm    cu         0.0000000  0.0   0.4240000  2.8000000%    0                    0.0000000   77cro1      0
 151 eu g   u235t    ms    re         0.4267228  3.4   2.7000000  0.0500000   153 eu g      u235t       1.0000000   62far1      0
 151 eu g   u235t    cm    cu         0.0000000  0.0   0.4159000  1.4000000%    0                    0.0000000   91jam2      0
 151 eu g   u235t    cm    cu         0.0000000  0.0   0.4170000  1.0000000%    0                    0.0000000   89rid1      0
 151 sm g   u235t    es    cu         0.4371653 30.0   0.4450000  0.0000000   149 sm g      u235t       1.1000000   50ing1      0
 151 sm g   u235t    cm    cu         0.0000000  0.0   0.4351000  2.0000000%    0                    0.0000000   73net2      0
 151 sm g   u235t    ms    re         0.4167916  0.8   0.0700000  0.0005000   145 nd g      u235t       0.6600000   59chu1      0
 151 sm g   u235t    ms    cu         0.4495541  3.0   0.4500000  3.0000000%    0                    0.0000000   59bid1      0
 151 sm g   u235t    ms    cu         0.4300921  1.8   0.3980000  0.0000000   149 sm g      u235t       1.0000000   55mel1      0
 151 sm g   u235t    ms    re         0.4225277  2.1   0.3910000  1.9000000%  149 sm g      u235t       1.0000000   62far1      0
 151 sm g   u235t    ms    cu         0.4006027  3.5   0.4010000  0.0140000     0                    0.0000000   78mae1      0
 151 sm g   u235t    ms    cu         0.3976057  3.5   0.3980000  0.0140000     0                    0.0000000   78mae1      0
 151 sm g   u235t    ms    cu         0.3966066  6.3   0.3970000  0.0250000     0                    0.0000000   78mae1      0
 151 sm g   u235t    ms    cu         0.4075957  2.9   0.4080000  0.0120000     0                    0.0000000   70lis1      0
 151 sm g   u235t    ms    cu    cm   0.3986047  6.0   0.3990000  0.0000000     0                    0.0000000   80mae3      0
 151 sm g   u235t    ms    cu         0.4303407  5.1   0.4500000  5.0000000%  149 sm g      u235t       1.1300000   55pet2     36
 151 pm g   u235t    rc    cu         0.3696334  8.1   0.3700000  0.0300000     0                    0.0000000   74bla1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type          value   err.     value                nuclide     material       value       no.   treatment

 151 pm g   u235t    rc    cu         0.4055977  6.9   0.4060000  0.0280000     0                    0.0000000   76thi1      0
 151 nd g   u235t    cm    in         0.0000000  0.0   0.0773800 17.0000000%    0                    1.0000000   88wah1      0
 151 pr g   u235t    cm    in         0.0000000  0.0   0.2114000 11.0000000%    0                    1.0000000   88wah1      0
 151 ce g   u235t    cm    in         0.0000000  0.0   0.0981000 15.0000000%    0                    1.0000000   88wah1      0
 151        u235f    es    cu    cm   0.4396312 30.0   0.4400000  0.0000000     0                    0.0000000   72sid1      0
 151        u235f    cm    cu         0.0000000  0.0   0.4350000  3.9000000%    0                    0.0000000   77cro1      0
 151 eu g   u235f    ms    cu         0.4116489  2.5   0.4100000  2.5000000%  151 eu g      u235f       0.4100000   77koc1      0
 151 eu g   u235f    ms    cu    rp   0.4129950  7.6   0.4100000  0.0000000  no. relative values =    2            77koc1
```

151 eu g u235f es fi 0.0000000 30.0 0.0000023 0.0000000 151 u235f 1000.0000000 74wol1 0
151 u235f es re 0.4477373 2.2 1.0700000 2.0000000% 151 u235t 1.0000000 74mee4 0
151 u235f ms cu 0.4096564 3.0 0.4100000 3.0000000% 0 0.0000000 81koc1 36
151 u235f rc cu x4 0.0000000 0.0 0.3700000 0.0500000 140 ba g u235f 6.2200000 77bla1 0
151 sm g u235f cm cu 0.0000000 0.0 0.4311000 8.0000000% 0 0.0000000 73net2 0
151 sm g u235f ms cu su 0.0000000 0.0 0.4100000 0.0000000 0 0.0000000 76koc1 0
151 sm g u235f ms cu 0.4126539 2.0 0.4130000 0.0030000 0 0.0000000 80mae1 0
151 sm g u235f ms cu 0.4209883 2.1 0.4380000 0.0090000 148 nd g u235f 1.7500000 70lis1 0
151 sm g u235f ms cu cm 0.4162509 6.0 0.4166000 0.0000000 0 0.0000000 80mae3 0
151 sm g u235f ms cu 0.4136530 2.0 0.4140000 0.0050000 0 0.0000000 81mae1 0
151 sm g u235f ms cu 0.4076581 2.0 0.4080000 0.0030000 0 0.0000000 81mae1 0
151 sm g u235f ms cu 0.4116547 2.0 0.4120000 0.0030000 0 0.0000000 81mae1 0
151 sm g u235f cm cu 0.0000000 0.0 0.4120000 0.0030000 0 0.0000000 81mae1 0
151 sm g u235f ms cu 0.4064908 1.1 0.4060000 0.0040000 148 nd g u235f 1.6800000 74mae1 0
151 pm g u235f rc re 0.4105289 5.0 1.0200000 0.0320000 140 ba g u235t 0.0000000 75raj1 7
151 pm g u235f rc cu x4 0.0000000 0.0 1.2600000 0.1800000 151 pm g u235t 1.0000000 77deb1 36
151 pm g u235f rc cu x4 0.0000000 0.0 0.4900000 0.0200000 0 0.0000000 81mar1 0
151 pm g u235f es fc 0.4116448 0.6 0.9999900 0.3000000% 151 u235f 1.0000000 89rid1 0
151 u235he es cu x4 0.0000000 0.0 0.2011000 0.0000000 0 0.0000000 63wea1 0
151 u235he cm cu x3 0.0000000 0.0 0.4270000 20.0000000% 0 0.0000000 77cro1 0
151 sm g u235he es cu 0.3656801 10.0 0.3700000 10.0000000% 0 0.0000000 73net2 0
151 sm g u235he es cu 0.3498669 10.0 0.3540000 10.0000000% 0 0.0000000 74mee8 0
151 pm g u235he rc re x4 0.0000000 0.0 0.0450000 0.0100000 140 ba g u235he 1.0000000 73man1 0
151 u238f es cu 0.9529779 30.0 0.9490000 0.0000000 0 0.0000000 63wea1 0
151 u238f es cu cm 0.9037725 30.0 0.9000000 0.0000000 0 0.0000000 64wal1 0
151 u238f es cu cm 0.9539821 30.0 0.9500000 0.0000000 0 0.0000000 72sid1 0
151 u238f cm cu 0.0000000 0.0 0.8310000 5.7000000% 0 0.0000000 77cro1 0
151 u238f ms cu 0.7330600 3.0 0.7300000 3.0000000% 0 0.0000000 81koc1 36
151 u238f rc cu 0.7099635 5.0 0.7070000 0.0240000 0 0.0000000 85li 1 0
151 u238f rc cu 0.8043576 5.0 0.8010000 1.8000000% 0 0.0000000 77bla1 0
151 sm g u238f ms re 0.8160448 2.2 0.5000000 0.0100000 149 sm g u238f 1.0000000 72mat1 0
151 sm g u238f cm cu 0.0000000 0.0 0.8900000 6.1000000% 0 0.0000000 73net2 0
151 sm g u238f ms cu 0.8174121 2.0 0.8140000 0.0060000 0 0.0000000 81mae1 0
151 sm g u238f ms cu 0.8254456 2.0 0.8220000 0.0060000 0 0.0000000 81mae1 0
151 sm g u238f ms cu 0.7742318 2.0 0.7710000 0.0070000 0 0.0000000 81mae1 0
151 sm g u238f cm cu 0.0000000 0.0 0.8020000 0.0170000 0 0.0000000 81mae1 0

151	sm g	u238f	ms	cu		0.8097805	2.4	0.7940000	0.0180000	148 nd g	u238f	2.0800000	74mae1	0
151	pm g	u238f	rc	re		0.8116996	5.0	0.1390000	0.0060000	140 ba g	u238f	1.0000000	73man1	0
151	pm g	u238f	rc	cu		0.6928923	11.6	0.6900000	0.0800000	0		0.0000000	75har1	0
151	pm g	u238f	rc	cu		0.8465927	9.1	0.8800000	0.0800000	140 ba g	u238f	6.0700000	77har1	0
151	pm g	u238f	rc	cu		0.7721740	5.0	0.8000000	0.0400000	140 ba g	u238f	6.0500000	78deb1	0
151	pm g	u238f	rc	cu		0.8686957	5.6	0.9000000	0.0500000	140 ba g	u238f	6.0500000	78deb1	0
151	pm g	u238f	es	cu		0.8736468	5.7	0.8700000	0.0500000	0		0.0000000	78gin1	0
151	pm g	u238f	rc	cu		0.8234372	8.5	0.8200000	0.0700000	0		0.0000000	78nag1	0
151	pm g	u238f	rc	cu	su	0.0000000	0.0	0.6400000	0.0000000	0		0.0000000	75fly4	0
151	pm g	u238f	rc	cu	su	0.0000000	0.0	0.9200000	0.0000000	0		0.0000000	75fly4	0
151		u238he	es	cu		0.8584470	30.0	0.8558000	0.0000000	0		0.0000000	63wea1	0
151	eu g	u238he	rc	cu	su	0.0000000	0.0	0.6600000	0.0700000	0		0.0000000	71bla1	0
151		u238he	es	cu	su	0.0000000	0.0	0.7100000	0.0000000	0		0.0000000	73dar1	0
151		u238he	es	cu		0.7984620	15.0	0.7960000	15.0000000%	0		0.0000000	74mee9	0
151		u238he	cm	cu		0.0000000	0.0	0.7340000	5.9000000%	0		0.0000000	77cro1	0
151	sm g	u238he	cm	cu		0.0000000	0.0	0.8400000	10.1000000%	0		0.0000000	73net2	0
151	pm g	u238he	rc	re	x4	0.0000000	0.0	0.1870000	0.0070000	140 ba g	u238he	1.0000000	73man1	0
151	pm g	u238he	rc	cu		0.7936507	6.5	0.7900000	0.0500000	140 ba g	u238he	4.6000000	76raj1	0
151	pm g	u238he	rc	cu	x4	0.0000000	0.0	0.6400000	0.1000000	99 mo g	u238he	5.6000000	75ada1	0
151	pm g	u238he	rc	cu	x4	0.0000000	0.0	0.6800000	0.0700000	140 ba g	u238he	4.6000000	75cav1	0
151	pm g	u238he	rc	cu	su	0.0000000	0.0	0.6800000	0.0700000	140 ba g	u238he	4.6000000	74bla1	0
151	pm g	u238he	rc	cu		0.7623506	11.8	0.7600000	0.0900000	0		0.0000000	83li 2	0
151	pm g	u238he	rc	cu	x4	0.0000000	0.0	0.6310000	0.0220000	0		0.0000000	85liu1	0
151	pm g	u238he	rc	cu	x4	0.0000000	0.0	0.8900000	0.0400000	0		0.0000000	87ram1	0
151	pm g	u238he	es	cu		0.8150130	11.0	0.8125000	11.0000000%	0		0.0000000	74mee1	0
151	pm g	u238he	es	cu		0.8120037	5.9	0.8095000	5.9000000%	0		0.0000000	91jam2	0
151		pu239t	cm	cu		0.0000000	0.0	0.7700000	0.0000000	0		0.0000000	72sid1	0
151		pu239t	cm	cu		0.0000000	0.0	0.7600000	0.0000000	0		0.0000000	73lam1	0
151		pu239t	cm	cu		0.0000000	0.0	0.8140000	0.0310000	0		0.0000000	73wal1	0
151		pu239t	cm	cu		0.0000000	0.0	0.8010000	5.9000000%	0		0.0000000	77cro1	0
151		pu239t	es	cu		0.7435849	20.0	0.7442000	20.0000000%	0		0.0000000	87wah1	36
151	sm g	pu239t	ms	cu		0.7387354	1.7	1.1000000	0.0000000	149 sm g	pu239t	1.8100000	56wil1	0
151	sm g	pu239t	ms	re	x4	0.0000000	0.0	0.6020000	0.0200000	149 sm g	pu239t	1.0000000	57kri1	0
151	sm g	pu239t	cm	cu		0.0000000	0.0	0.7651000	2.0000000%	0		0.0000000	73net2	0
151	sm g	pu239t	ms	cu		0.7953421	5.5	0.7960000	0.0440000	0		0.0000000	75mae1	0
151	sm g	pu239t	cm	cu		0.0000000	0.0	0.7900000	3.0000000%	0		0.0000000	59bid1	0

151 sm g pu239t ms cu 0.7307804 2.1 1.0100000 0.0200000 149 sm g pu239t 1.6800000 59ani1 0
151 sm g pu239t ms cu 0.7283975 2.1 0.7290000 0.0150000 0 0.0000000 79mae2 0
151 sm g pu239t ms cu 0.7943956 5.4 0.8110000 0.0440000 137 cs g pu239t 6.7400000 70lis1 0
151 sm g pu239t ms re 0.7450179 1.2 0.7410000 0.0074000 149 sm g pu239t 1.2090000 59fic2 0
151 sm g pu239t ms re x4 0.0000000 0.0 0.8020000 0.0000000 133 cs g pu239t 6.9000000 59fic2 0
151 sm g pu239t es cu cm 0.7343925 1.0 0.7350000 1.0000000% 0 0.0000000 81mae2 0
151 sm g pu239t es cu 0.7573735 30.0 0.7580000 0.0000000 0 0.0000000 89rid1 0
151 pm g pu239t rc cu su 0.0000000 0.0 0.1910000 0.0050000 144 ce g pu239t 1.0000000 70sko1 0
151 pm g pu239t rc cu 0.7191219 5.0 0.7410000 0.0360000 144 ce g pu239t 3.8500000 71sor1 0
151 pm g pu239t rc cu 0.6984223 6.3 0.6990000 0.0440000 0 0.0000000 80dic1 0
151 pm g pu239t cm in 0.0000000 0.0 0.0113600 71.0000000% 0 1.0000000 88wah1 0
151 nd g pu239t cm in 0.0000000 0.0 0.2853000 12.0000000% 0 1.0000000 88wah1 0
151 pr g pu239t cm in 0.0000000 0.0 0.4031000 11.0000000% 0 1.0000000 88wah1 0
151 ce g pu239t cm in 0.0000000 0.0 0.0659600 26.0000000% 0 1.0000000 88wah1 0
151 pu239f cm cu x3 0.0000000 0.0 0.8900000 0.0000000 0 0.0000000 72sid1 0
151 pu239f cm cu 0.0000000 0.0 0.7950000 3.5000000% 0 0.0000000 77cro1 0
151 eu g pu239f ms cu 0.7830425 3.2 0.7900000 3.1000000% 151 eu g pu239f 0.7900000 77koc1 0
151 pu239f es re 0.7867349 10.0 1.0680000 10.0000000% 151 pu239t 1.0000000 74mee4 0
151 pu239f ms cu 0.7970706 3.0 0.7990000 3.0000000% 0 0.0000000 81koc1 36
151 sm g pu239f cm cu x3 0.0000000 0.0 0.8203000 4.0000000% 0 0.0000000 73net2 0
151 sm g pu239f ms cu 0.7776076 1.2 0.7760000 0.0090000 148 nd g pu239f 1.6540000 77mae1 0
151 sm g pu239f ms cu x4 0.0000000 0.0 0.7560000 0.0120000 0 0.0000000 77mae1 0
151 sm g pu239f ms cu 0.8038039 1.8 0.8390000 0.0150000 148 nd g pu239f 1.7300000 70lis1 0
151 sm g pu239f ms cu x4 0.0000000 0.0 0.1547000 0.0001000 147 sm g pu239f 0.4085000 80mae4 0
151 sm g pu239f ms cu su 0.0000000 0.0 0.7760000 0.0110000 148 nd g pu239f 1.6500000 74mae1 0
151 sm g pu239f es cu cm 0.7831044 1.0 0.7850000 1.0000000% 0 0.0000000 81mae2 0
151 sm g pu239f es fc 0.7830417 10.0 0.9999990 10.0000000% 151 pu239f 1.0000000 89rid1 0
151 sm g pu239f es cu 0.7850996 10.0 0.7870000 10.0000000% 0 0.0000000 89rid1 0
151 pm g pu239f rc re 0.7482638 7.4 2.0910000 0.1550000 140 ba g u235t 0.0000000 75raj1 7
151 pu241t cm cu 0.0000000 0.0 0.9600000 0.0000000 0 0.0000000 72sid1 0
151 pu241t cm cu 0.0000000 0.0 0.8980000 7.1000000% 0 0.0000000 77cro1 0
151 pu241t cm cu 0.0000000 0.0 0.8820000 0.0240000 0 0.0000000 73wal1 0
151 pu241t cm cu 0.0000000 0.0 0.9000000 0.0000000 0 0.0000000 79wal1 0
151 sm g pu241t ms cu 0.9154241 2.0 0.9140000 0.0070000 0 0.0000000 77mae1 0
151 sm g pu241t ms re 0.9134317 1.6 0.6187000 0.0040000 149 sm g pu241t 1.0000000 64far1 0
151 pm g pu241t rc cu 0.8764307 5.1 0.2070000 0.0100000 144 ce g pu241t 1.0000000 70sko1 0

151 pm g pu241t rc cu 0.8779251 6.0 0.8460000 0.0500000 144 ce g pu241t 4.0800000 71sor1 0
151 pm g pu241t rc cu x4 0.0000000 0.0 0.7700000 0.0630000 0 0.0000000 79dic1 36
151 u233t cm cu 0.0000000 0.0 0.3400000 0.0000000 0 0.0000000 72sid1 0
151 u233t cm cu 0.0000000 0.0 0.3200000 0.0000000 0 0.0000000 73lam1 0
1
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151 u233t cm cu 0.0000000 0.0 0.3140000 0.0080000 0 0.0000000 73wal1 0
151 u233t cm cu 0.0000000 0.0 0.3480000 8.3000000% 0 0.0000000 77cro1 0
151 u233t es cu 0.3154049 20.0 0.3171000 20.0000000% 0 0.0000000 87wah1 36
151 sm g u233t cm cu 0.0000000 0.0 0.3378000 2.0000000% 0 0.0000000 73net2 0
151 sm g u233t ms cu 0.3272247 4.1 0.3340000 3.0000000% 149 sm g u233t 0.7900000 61bid1 0
151 sm g u233t ms cu su 0.0000000 0.0 0.5400000 0.0300000 148 nd g u233t 1.0500000 57iva1 0
151 sm g u233t ms cu 0.2983963 3.0 0.3000000 3.0000000% 0 0.0000000 59bid1 0
151 sm g u233t ms cu 0.3282359 9.1 0.3300000 0.0300000 0 0.0000000 59ani1 0
151 sm g u233t ms cu aw 0.3227474 3.2 0.4170000 0.0000000 149 sm g u233t 1.0000000 55mel1 0
151 sm g u233t ms cu aw 0.3252520 6.0 0.3270000 0.0000000 0 0.0000000 70lis1 0
151 pm g u233t rc cu 0.3237940 5.0 0.3370000 0.0100000 99 mo g u235t 0.4400000 65bun1 1
151 th232f es cu 0.1972256 30.0 0.2000000 0.0000000 0 0.0000000 65eng1 0
151 th232f es cu x3 0.0000000 0.0 0.3700000 0.0000000 0 0.0000000 72sid1 0
151 th232f es cu x3 0.0000000 0.0 0.4100000 0.0000000 0 0.0000000 73lam1 0
151 th232f es cu 0.1686279 20.0 0.1710000 20.0000000% 0 0.0000000 74mee0 0
151 th232f cm cu x3 0.0000000 0.0 0.3590000 13.3000000% 0 0.0000000 77cro1 0
151 th232f cm cu x3 0.0000000 0.0 0.4200000 0.0000000 0 0.0000000 74lam1 0
151 sm g th232f cm cu x3 0.0000000 0.0 0.4002000 16.0000000% 0 0.0000000 73net2 0
151 pm g th232f rc cu x4 0.0000000 0.0 0.4220000 15.0000000% 141 ce g th232f 7.0000000 67bre1 0
151 pm g th232f rc cu x1 0.0000000 0.0 0.1000000 0.0200000 0 0.0000000 71swi3 0
151 pm g th232f rc cu x1 0.0000000 0.0 0.3200000 0.0040000 140 ba g th232f 7.4000000 73cha1 0
151 pm g th232f rc re 0.3821225 5.2 1.9200000 0.1000000 99 mo g u235t 0.0000000 81ert1 7
151 pm g th232f cm cu 0.0000000 0.0 0.3880000 0.0200000 0 0.0000000 81ert1 0
152 sm g u235t ms cu 0.2740879 1.8 0.2790000 0.0000000 149 sm g u235t 1.1000000 50ing1 0
152 u235t cm cu 0.0000000 0.0 0.2400000 0.0000000 0 0.0000000 72sid1 0
152 u235t cm cu 0.0000000 0.0 0.2620000 0.0000000 0 0.0000000 73lam1 0
152 sm g u235t ms re 0.2679374 0.8 0.0450000 0.0003000 145 nd g u235t 0.6600000 59chu1 0
152 u235t ms cu 0.2747275 4.7 0.2750000 0.0130000 0 0.0000000 76dii1 0

152 sm g u235t ms cu 0.2807009 33.3 0.3000000 0.1000000 146 nd g u235t 3.2000000 57gor1 0
152 u235t cm cu 0.0000000 0.0 0.2660000 3.9000000% 0 0.0000000 77cro1 0
152 u235t cm cu 0.0000000 0.0 0.2680000 0.0170000 0 0.0000000 73wal1 0
152 sm g u235t ms cu 0.2712390 1.1 0.2510000 0.0010000 149 sm g u235t 1.0000000 55mel1 0
152 sm g u235t ms re 0.2755615 2.1 0.2550000 1.9000000% 149 sm g u235t 1.0000000 62far1 0
152 sm g u235t ms cu 0.2517503 2.8 0.2520000 0.0070000 0 0.0000000 78mae1 0
152 sm g u235t ms cu 0.2507513 2.8 0.2510000 0.0070000 0 0.0000000 78mae1 0
152 sm g u235t ms cu 0.2497523 4.8 0.2500000 0.0120000 0 0.0000000 78mae1 0
152 u235t es re 0.2405196 2.4 1.0000000 2.0000000% 152 u235f 1.1250000 74mee4 0
152 sm g u235t ms cu cm 0.2507513 6.0 0.2510000 0.0000000 0 0.0000000 80mae3 0
152 u235t es cu 0.2540480 20.0 0.2543000 20.0000000% 0 0.0000000 87wah1 36
152 u235t ms cu x4 0.0000000 0.0 0.2120000 0.0060000 0 0.0000000 70lis1 0
152 sm g u235t ms cu 0.2677676 5.1 0.2800000 5.0000000% 149 sm g u235t 1.1300000 55pet2 36
152 pm g u235t cm in 0.0000000 0.0 0.0015510 60.0000000% 0 1.0000000 88wah1 0
152 pm m u235t cm in 0.0000000 0.0 0.0015510 60.0000000% 0 1.0000000 88wah1 0
152 nd g u235t cm in 0.0000000 0.0 0.1349000 12.0000000% 0 1.0000000 88wah1 0
152 pr g u235t cm in 0.0000000 0.0 0.0966000 11.0000000% 0 1.0000000 88wah1 0
152 ce g u235t cm in 0.0000000 0.0 0.0195900 30.0000000% 0 1.0000000 88wah1 0
152 u235f cm cu x3 0.0000000 0.0 0.3100000 0.0000000 0 0.0000000 72sid1 0
152 u235f cm cu x3 0.0000000 0.0 0.3120000 5.3000000% 0 0.0000000 77cro1 0
152 u235f es cu 0.2663671 4.0 0.2670000 4.0000000% 0 0.0000000 89rid1 36
152 u235f es re su 0.0000000 0.0 1.1250000 2.0000000% 152 u235t 1.0000000 74mee4 0
152 u235f ms cu x4 0.0000000 0.0 0.2450000 3.0000000% 0 0.0000000 81koc1 36
152 sm g u235f ms cu 0.2633742 4.0 0.2640000 4.0000000% 0 0.0000000 81mae1 36
152 sm g u235f ms cu 0.2643718 4.0 0.2650000 4.0000000% 0 0.0000000 81mae1 36
152 sm g u235f ms cu 0.2673647 4.0 0.2680000 4.0000000% 0 0.0000000 81mae1 36
152 sm g u235f ms cu 0.2763434 2.0 0.2770000 0.4000000% 0 0.0000000 81mae1 36
152 sm g u235f ms cu su 0.0000000 0.0 0.2400000 0.0000000 0 0.0000000 76koc1 0
152 sm g u235f ms cu su 0.0000000 0.0 0.2650000 0.0050000 0 0.0000000 74mae1 0
152 sm g u235f ms cu su 0.0000000 0.0 0.2824000 0.0000000 0 0.0000000 80mae3 0
152 sm g u235f ms cu su 0.0000000 0.0 0.2920000 0.0020000 0 0.0000000 80mae1 0
152 sm g u235f ms cu su 0.0000000 0.0 0.3090000 0.0060000 148 nd g u235f 1.7500000 70lis1 0
152 sm g u235f ms cu x4 0.0000000 0.0 0.2400000 5.7000000% 149 sm g u235f 1.0200000 77koc1 0
152 u235he es cu x4 0.0000000 0.0 0.1509000 0.0000000 0 0.0000000 63wea1 0
152 u235he es cu 0.2576740 10.0 0.2620000 10.0000000% 0 0.0000000 74mee8 0
152 u238f cm cu 0.0000000 0.0 0.5370000 3.8000000% 0 0.0000000 77cro1 0

152	sm g	u238f	ms	cu		0.5292090	2.0	0.5270000	0.0040000	0			0.0000000	81mae1	0		
152	sm g	u238f	ms	cu		0.5282048	2.0	0.5260000	0.0040000	0			0.0000000	81mae1	0		
152	sm g	u238f	ms	cu		0.5292090	2.0	0.5270000	0.0050000	0			0.0000000	81mae1	0		
152	sm g	u238f	cm	cu		0.0000000	0.0	0.5260000	0.0060000	0			0.0000000	81mae1	0		
152	sm g	u238f	ms	cu		0.5313547	1.2	0.5210000	0.0050000	148 nd g	u238f	2.0800000	74mae1	0			
152		u238f	ms	cu		0.5322216	3.0	0.5300000	3.0000000%	0			0.0000000	81koc1	36		
152		u238f	es	cu	x3	0.0000000	0.0	0.6400000	0.0000000	0			0.0000000	72sid1	0		
152		u238f	es	cu	x3	0.0000000	0.0	0.6000000	0.0000000	0			0.0000000	64wal1	0		
152	sm g	u238f	ms	re	x4	0.0000000	0.0	0.3150000	0.0150000	149 sm g	u238f	1.0000000	72mat1	0			
152		u238he	es	cu		0.6141048	30.0	0.6066000	0.0000000	0			0.0000000	63wea1	0		
152		u238he	es	cu	su	0.0000000	0.0	0.5400000	0.0000000	0			0.0000000	73dar1	0		
152		u238he	es	cu		0.5699653	15.0	0.5630000	15.0000000%	0			0.0000000	74mee9	0		
152		u238he	cm	cu		0.0000000	0.0	0.5260000	20.0000000%	0			0.0000000	77cro1	0		
152	sm g	pu239t	ms	cu		0.5907858	0.9	0.8800000	0.5000000%	149 sm g	pu239t	1.8100000	56wil1	36			
152	sm g	pu239t	ms	re		0.5650397	4.4	0.4650000	0.0200000	149 sm g	pu239t	1.0000000	57kri1	0			
152		pu239t	cm	cu		0.0000000	0.0	0.5800000	0.0000000	0			0.0000000	72sid1	0		
152		pu239t	cm	cu		0.0000000	0.0	0.5800000	0.0000000	0			0.0000000	73lam1	0		
152		pu239t	cm	cu		0.0000000	0.0	0.6190000	0.0230000	0			0.0000000	73wal1	0		
152	sm g	pu239t	ms	cu		0.5693338	5.4	0.5700000	0.0310000	0			0.0000000	75mae1	0		
152		pu239t	cm	cu		0.0000000	0.0	0.5930000	9.6000000%	0			0.0000000	77cro1	0		
152	sm g	pu239t	ms	cu		0.5424728	2.1	0.7500000	0.0150000	149 sm g	pu239t	1.6800000	59ani1	0			
152	sm g	pu239t	ms	cu		0.5933057	2.5	0.5940000	0.0150000	0			0.0000000	79mae2	0		
152	sm g	pu239t	ms	cu		0.5689096	5.4	0.5810000	0.0310000	137 cs g	pu239t	6.7400000	70lis1	0			
152	sm g	pu239t	ms	re		0.5713867	1.1	0.5685000	0.0045000	149 sm g	pu239t	1.2090000	59fic2	0			
152	sm g	pu239t	es	cu	cm	0.5673361	1.0	0.5680000	1.0000000%	0			0.0000000	81mae2	0		
152		pu239t	es	cu		0.5807204	20.0	0.5814000	20.0000000%	0			0.0000000	87wah1	36		
152	pm g	pu239t	cm	in		0.0000000	0.0	0.0173700	29.0000000%	0			1.0000000	88wah1	0		
152	pm m	pu239t	cm	in		0.0000000	0.0	0.0173800	29.0000000%	0			1.0000000	88wah1	0		
152	nd g	pu239t	cm	in		0.0000000	0.0	0.3758000	11.0000000%	0			1.0000000	88wah1	0		
152	pr g	pu239t	cm	in		0.0000000	0.0	0.1728000	12.0000000%	0			1.0000000	88wah1	0		
152	ce g	pu239t	cm	in		0.0000000	0.0	0.0122600	63.0000000%	0			1.0000000	88wah1	0		
152		pu239f	cm	cu		0.0000000	0.0	0.6290000	2.4000000%	0			0.0000000	77cro1	0		
152	sm g	pu239f	ms	cu		0.6323837	1.0	0.6400000	0.9000000%	149 sm g	pu239f	1.2500000	77koc1	0			
152	sm g	pu239f	ms	cu		0.6527642	1.8	0.6830000	0.0120000	148 nd g	pu239f	1.7300000	70lis1	0			
152	sm g	pu239f	ms	cu		0.6144332	0.9	0.1267000	0.0001000	147 sm g	pu239f	0.4085000	80mae4	0			
152	sm g	pu239f	ms	cu	su	0.0000000	0.0	0.5890000	0.0070000	148 nd g	pu239f	1.6500000	74mae1	0			

152 pu239f es re 0.6136813 10.0 1.0700000 10.0000000% 152 pu239t 1.0000000 74mee4 0
152 pu239f ms cu 0.6538270 3.0 0.6570000 3.0000000% 0 0.0000000 81koc1 36
152 pu239f cm cu x3 0.0000000 0.0 0.7000000 0.0000000 0 0.0000000 72sid1 0
152 sm g pu239f ms cu su 0.0000000 0.0 0.5760000 0.0090000 0 0.0000000 77mae1 0
152 sm g pu239f ms cu su 0.0000000 0.0 0.5580000 0.0780000 148 nd g pu239f 1.6540000 77mae1 36
152 sm g pu239f cm cu 0.0000000 0.0 0.6080000 1.0000000% 0 0.0000000 81mae2 0
152 pu241t cm cu 0.0000000 0.0 0.7400000 0.0000000 0 0.0000000 72sid1 0
152 pu241t cm cu 0.0000000 0.0 0.7310000 4.5000000% 0 0.0000000 77cro1 0
152 pu241t cm cu 0.0000000 0.0 0.6970000 0.0190000 0 0.0000000 73wal1 0
152 sm g pu241t ms cu 0.7060985 2.0 0.7050000 0.0060000 0 0.0000000 77mae1 0
152 sm g pu241t ms cu 0.7536096 4.7 0.7250000 0.0340000 148 nd g pu241t 1.8616500 70lis1 0
152 sm g pu241t ms re 0.7210604 1.6 0.4884000 0.0040000 149 sm g pu241t 1.0000000 64far1 0
152 u233t cm cu 0.0000000 0.0 0.2100000 0.0000000 0 0.0000000 72sid1 0
152 u233t cm cu 0.0000000 0.0 0.2200000 0.0000000 0 0.0000000 73lam1 0
152 u233t cm cu 0.0000000 0.0 0.2130000 0.0060000 0 0.0000000 73wal1 0
152 sm g u233t ms cu 0.2170125 4.1 0.2220000 3.0000000% 149 sm g u233t 0.7900000 61bid1 0
152 u233t cm cu 0.0000000 0.0 0.1960000 3.8000000% 0 0.0000000 77cro1 0
152 sm g u233t ms cu 0.2084124 9.5 0.2100000 0.0200000 0 0.0000000 59ani1 0
152 sm g u233t ms cu aw 0.2185472 3.4 0.2830000 1.8000000% 149 sm g u233t 1.0000000 55mel1 0
152 sm g u233t ms cu aw 0.1925334 6.0 0.1940000 0.0000000 0 0.0000000 70lis1 0
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152 u233t es cu 0.2171459 20.0 0.2188000 20.0000000% 0 0.0000000 87wah1 36
152 th232f es cu cm 0.0816649 30.0 0.0850000 0.0000000 0 0.0000000 65eng1 0
152 th232f es cu x3 0.0000000 0.0 0.2400000 0.0000000 0 0.0000000 72sid1 0
152 th232f cm cu x3 0.0000000 0.0 0.3200000 0.0000000 0 0.0000000 73lam1 0
152 th232f es cu 0.0728259 20.0 0.0758000 20.0000000% 0 0.0000000 74mee0 0
152 th232f cm cu x3 0.0000000 0.0 0.2560000 20.0000000% 0 0.0000000 77cro1 0
153 u235t cm cu 0.0000000 0.0 0.1600000 0.0000000 0 0.0000000 72sid1 0
153 u235t cm cu 0.0000000 0.0 0.1630000 0.0000000 0 0.0000000 73lam1 0
153 u235t cm cu 0.0000000 0.0 0.1670000 0.0110000 0 0.0000000 73wal1 0
153 eu g u235t es fi 0.0000002 30.1 0.0000015 0.0000000 153 u235t 1.0000000 74wol1 0
153 eu g u235t ms re 0.1640369 2.9 0.0276000 0.0008000 145 nd g u235t 0.6600000 59chu1 0
153 u235t ms cu x4 0.0000000 0.0 0.1050000 0.0110000 0 0.0000000 76dii1 0

153 u235t cm cu 0.0000000 0.0 0.1590000 3.1000000% 0 0.0000000 77cro1 0
153 eu g u235t ms re rp 0.1546753 5.9 1.0000000 0.0000000 no. relative values = 1 62far1
153 u235t es cu 0.1529701 20.0 0.1534000 20.0000000% 0 0.0000000 87wah1 36
153 sm g u235t rc cu 0.1523975 60.0 0.1500000 0.0000000 140 ba g u235t 6.1000000 51eng2 0
153 sm g u235t rc cu 0.1495796 60.0 0.1500000 0.0000000 0 0.0000000 51win1 0
153 sm g u235t rc cu rp 0.1549620 63.7 0.1500000 0.0000000 no. relative values = 1 51win1
153 sm g u235t rc cu 0.1549375 60.0 0.1600000 0.0000000 140 ba g u235t 6.4000000 52eng1 0
153 sm g u235t rc cu 0.1277364 60.0 0.1300000 0.0000000 99 mo g u235t 6.2000000 54pet1 0
153 sm g u235t cm cu 0.0000000 0.0 0.1500000 5.0000000% 0 0.0000000 73net2 0
153 sm g u235t rc cu 0.1425992 11.2 0.1430000 0.0160000 0 0.0000000 76thi1 0
153 sm g u235t rc cu 0.1438317 5.1 0.1480000 0.0030000 141 ce g u235t 6.0000000 67bre1 0
153 sm g u235t rc cu 0.1598408 5.2 0.1590000 0.0070000 99 mo g u235t 6.0600000 65bun1 36
153 pm g u235t cm in 0.0000000 0.0 0.0101300 25.0000000% 0 1.0000000 88wah1 0
153 nd g u235t cm in 0.0000000 0.0 0.1063000 11.0000000% 0 1.0000000 88wah1 0
153 pr g u235t cm in 0.0000000 0.0 0.0352200 12.0000000% 0 1.0000000 88wah1 0
153 ce g u235t cm in 0.0000000 0.0 0.0016970 75.0000000% 0 1.0000000 88wah1 0
153 u235f es cu cm 0.1990518 30.0 0.2000000 0.0000000 0 0.0000000 72sid1 0
153 u235f es cu 0.1950708 15.0 0.1960000 15.0000000% 0 0.0000000 77cro1 0
153 eu g u235f ms cu 0.1600146 8.2 0.1600000 8.2000000% 151 eu g u235f 0.4100000 77koc1 0
153 u235f cm cu es 0.0000000 0.0 0.1750000 0.0350000 148 nd g u235f 1.7500000 70lis1 0
153 u235f es cu 0.1423221 9.8 0.1430000 0.0140000 0 0.0000000 81mae1 0
153 u235f es cu 0.1512794 9.9 0.1520000 0.0150000 0 0.0000000 81mae1 0
153 u235f es cu 0.1502841 9.9 0.1510000 0.0150000 0 0.0000000 81mae1 0
153 u235f cm cu 0.0000000 0.0 0.1490000 0.0150000 0 0.0000000 81mae1 0
153 u235f es cu 0.1675461 5.4 0.1680000 0.0090000 148 nd g u235f 1.6800000 74mae1 0
153 eu g u235f ms cu su 0.0000000 0.0 0.1600000 0.0000000 0 0.0000000 76koc1 0
153 sm g u235f cm cu 0.0000000 0.0 0.1830000 5.0000000% 0 0.0000000 73net2 0
153 sm g u235f rc cu 0.2038493 15.0 0.1850000 15.0000000% 99 mo g u235t 0.1400000 59bun2 11
153 sm g u235f es cu 0.2063994 30.0 0.2100000 0.0000000 137 cs g u235f 6.3000000 60kat1 0
153 sm g u235f rc cu 0.1869765 5.0 1.2200000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
153 sm g u235f rc cu 0.1716505 5.0 1.1200000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
153 sm g u235f rc cu 0.1578572 5.0 1.0300000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
153 sm g u235f rc cu 0.1915742 5.0 1.2500000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
153 sm g u235f rc cu 0.1582462 9.0 0.1590000 9.0000000% 0 0.0000000 74cun1 36
153 sm g u235f rc cu 0.1530402 31.3 0.1600000 0.0500000 140 ba g u235f 6.2200000 77bla1 0
153 sm g u235f rc cu 0.1532594 5.0 1.0000000 3.0000000% 99 mo g u235t 0.0000000 76for1 7

153 sm g u235f rc cu 0.1532594 5.0 1.0000000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
153 sm g u235f rc cu 0.1946394 5.0 1.2700000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
153 u235he es cu 0.1986647 10.0 0.2020000 10.0000000% 0 0.0000000 74mee8 0
153 u235he cm cu x3 0.0000000 0.0 0.2200000 10.0000000% 0 0.0000000 77cro1 0
153 sm g u235he rc re x4 0.0000000 0.0 1.9300000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
153 sm g u235he rc re 0.2163675 15.0 0.0022000 0.0000000 0 0.0100000 69net1 36
153 sm g u235he cm cu x3 0.0000000 0.0 0.2200000 9.9000000% 0 0.0000000 73net2 0
153 u238f cm cu es 0.0000000 0.0 0.3800000 0.0000000 0 0.0000000 64wal1 0
153 u238f es re 0.3572051 20.0 0.0930000 20.0000000% 145 u238f 1.0000000 72mat1 0
153 u238f es cu cm 0.4235210 30.0 0.4200000 0.0000000 0 0.0000000 72sid1 0
153 u238f cm cu 0.0000000 0.0 0.4390000 15.0000000% 0 0.0000000 77cro1 0
153 u238f es cu 0.3741103 10.0 0.3710000 0.0370000 0 0.0000000 81mae1 0
153 u238f cm cu 0.0000000 0.0 0.3710000 0.0370000 0 0.0000000 81mae1 0
153 u238f es cu 0.3758564 5.2 0.3670000 0.0190000 148 nd g u238f 2.0800000 74mae1 0
153 u238f rc cu 0.4376384 5.0 0.4340000 0.0130000 0 0.0000000 85li 1 0
153 u238f rc cu x4 0.0000000 0.0 0.3100000 0.0000000 140 ba g u238f 6.1600000 77bla1 0
153 sm g u238f cm cu 0.0000000 0.0 0.4320000 5.0000000% 0 0.0000000 73net2 0
153 sm g u238f rc cu 0.4332003 15.0 0.3800000 15.0000000% 99 mo g u235t 0.1400000 59bun2 13
153 sm g u238f cm cu 0.0000000 0.0 0.4100000 0.0000000 0 0.0000000 60kat1 0
153 sm g u238f rc re 0.4117631 10.0 2.5550000 5.0000000% 99 mo g u235t 0.0000000 61lev1 7
153 sm g u238f rc cu 0.3900065 5.0 2.4200000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
153 sm g u238f rc cu 0.4093457 5.0 2.5400000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
153 sm g u238f rc cu 0.4238501 5.0 2.6300000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
153 sm g u238f rc cu 0.4174037 5.0 2.5900000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
153 sm g u238f rc cu 0.4637054 8.4 0.4800000 0.0400000 140 ba g u238f 6.0700000 77har1 0
153 sm g u238f es cu 0.4638564 15.2 0.4600000 0.0700000 0 0.0000000 78gin1 0
153 sm g u238f rc cu 0.4336049 32.6 0.4300000 0.1400000 0 0.0000000 78nag1 0
153 sm g u238f rc cu 0.4063785 99.9 0.4030000 0.4100000 0 0.0000000 85chi1 0
153 sm g u238f rc cu 0.4093457 5.0 2.5400000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
153 sm g u238f rc cu 0.4335196 5.0 2.6900000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
153 sm g u238f rc cu x4 0.0000000 0.0 1.6800000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
153 sm g u238f rc cu x4 0.0000000 0.0 2.1700000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
153 sm g u238f rc cu su 0.0000000 0.0 0.3800000 0.0000000 0 0.0000000 75fly4 0
153 u238he es cu 0.3840727 30.0 0.3824000 0.0000000 0 0.0000000 63wea1 0
153 eu g u238he rc cu 0.3354609 14.7 0.3340000 0.0490000 0 0.0000000 71com1 0
153 u238he cm cu su 0.0000000 0.0 0.4080000 0.0120000 0 0.0000000 73dar1 0

153 u238he es cu 0.3806578 15.0 0.3790000 15.0000000% 0 0.0000000 74mee9 0
153 u238he cm cu 0.0000000 0.0 0.3990000 4.6000000% 0 0.0000000 77cro1 0
153 sm g u238he rc cu 0.4005073 10.1 0.3900000 0.0200000 99 mo g u238he 5.5800000 57cun1 0
153 sm g u238he cm cu 0.0000000 0.0 0.3900000 0.0000000 0 0.0000000 69gun2 0
153 sm g u238he rc re 0.4218371 9.5 0.0042000 0.0004000 0 0.0100000 69net1 0
153 sm g u238he cm cu 0.0000000 0.0 0.4200000 9.9000000% 0 0.0000000 73net2 0
153 sm g u238he cm cu 0.0000000 0.0 0.3900000 0.0000000 0 0.0000000 60kat1 0
153 sm g u238he rc cu 0.3683787 19.5 0.3600000 0.0700000 99 mo g u238he 5.6000000 75ada1 0
153 sm g u238he rc cu x4 0.0000000 0.0 0.7700000 0.1800000 0 0.0000000 83li 2 0
153 pu239t cm cu 0.0000000 0.0 0.3600000 0.0000000 0 0.0000000 72sid1 0
153 pu239t cm cu 0.0000000 0.0 0.4400000 0.0000000 0 0.0000000 73lam1 0
153 pu239t cm cu 0.0000000 0.0 0.3800000 0.0100000 0 0.0000000 73wal1 0
153 pu239t cm cu 0.0000000 0.0 0.3950000 23.5000000% 0 0.0000000 77cro1 0
153 pu239t es cu 0.3627853 20.0 0.3652000 20.0000000% 0 0.0000000 87wah1 36
153 sm g pu239t rc cu 0.3870296 60.0 0.3900000 0.0000000 140 ba g pu239t 5.3600000 51ste3 0
153 sm g pu239t cm cu 0.0000000 0.0 0.3840000 16.0000000% 0 0.0000000 73net2 0
153 sm g pu239t rc cu 0.3768708 10.0 0.3300000 0.0200000 99 mo g u235t 0.1400000 59bun1 7
153 sm g pu239t rc cu su 0.0000000 0.0 0.0442000 0.0018000 144 ce g pu239t 1.0000000 70sko1 0
153 sm g pu239t rc cu 0.3569966 5.0 0.3700000 0.0150000 144 ce g pu239t 3.8500000 71sor1 0
153 pm g pu239t cm in 0.0000000 0.0 0.0715300 15.0000000% 0 1.0000000 88wah1 0
153 nd g pu239t cm in 0.0000000 0.0 0.2447000 11.0000000% 0 1.0000000 88wah1 0
153 pr g pu239t cm in 0.0000000 0.0 0.0522100 17.0000000% 0 1.0000000 88wah1 0
153 pu239f es cu 0.4665599 30.0 0.4840000 0.0000000 148 nd g pu239f 1.7000000 69lis1 0
153 pu239f es cu cm 0.4734433 30.0 0.4800000 0.0000000 0 0.0000000 72sid1 0
153 pu239f cm cu 0.0000000 0.0 0.5150000 15.0000000% 0 0.0000000 77cro1 0
153 eu g pu239f ms cu 0.4606101 6.4 0.4700000 6.4000000% 151 eu g pu239f 0.7900000 77koc1 0
153 pu239f es cu 0.4220705 5.2 0.4260000 0.0220000 148 nd g pu239f 1.6540000 77mae1 0
153 pu239f es cu 0.4103175 5.3 0.4160000 0.0220000 0 0.0000000 77mae1 0
153 pu239f es cu 0.4584692 20.0 0.4840000 0.0970000 148 nd g pu239f 1.7300000 70lis1 0
153 pu239f es cu su 0.0000000 0.0 0.4440000 0.0300000 148 nd g pu239f 1.6500000 74mae1 0
153 pu239f es re 0.3826922 11.5 1.0740000 10.0000000% 153 pu239t 1.0000000 74mee4 0
153 sm g pu239f rc cu 0.5040583 60.0 0.4800000 0.0000000 140 ba g pu239f 5.0000000 51ste3 0
153 sm g pu239f cm cu 0.0000000 0.0 0.4230000 10.0000000% 0 0.0000000 73net2 0
153 sm g pu239f es cu 0.4584544 30.0 0.4800000 0.0000000 137 cs g pu239f 6.8000000 60kat1 0
153 pu241t es cu 0.5383622 30.0 0.5360000 0.0000000 0 0.0000000 68lis3 0
153 pu241t cm cu 0.0000000 0.0 0.5220000 0.0220000 0 0.0000000 73wal1 0

1
0

measured nuclide	fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
153	pu241t	cm	cu		0.0000000	0.0	0.5210000	10.0000000%	0		0.0000000	77cro1	0
153	pu241t	cm	cu		0.0000000	0.0	0.5600000	0.0000000	0		0.0000000	72sid1	0
153	pu241t	es	cu		0.5393666	5.0	0.5370000	0.0270000	0		0.0000000	77mae1	0
153 sm g	pu241t	rc	cu		0.5392430	5.1	0.1270000	0.0030000	144 ce g	pu241t	1.0000000	70sko1	0
153 sm g	pu241t	rc	cu		0.5432393	5.1	0.5220000	0.0220000	144 ce g	pu241t	4.0800000	71sor1	0
153	u233t	cm	cu		0.0000000	0.0	0.1300000	0.0000000	0		0.0000000	72sid1	0
153	u233t	cm	cu		0.0000000	0.0	0.1070000	0.0000000	0		0.0000000	73lam1	0
153	u233t	cm	cu		0.0000000	0.0	0.1050000	0.0050000	0		0.0000000	73wal1	0
153	u233t	cm	cu		0.0000000	0.0	0.1040000	12.7000000%	0		0.0000000	77cro1	0
153 eu g	u233t	ms	cu		0.1280344	15.4	0.1300000	0.0200000	0		0.0000000	59ani1	0
153	u233t	es	cu		0.1042003	20.0	0.1058000	20.0000000%	0		0.0000000	87wah1	36
153 sm g	u233t	rc	cu		0.0997771	60.1	0.0950000	0.0000000	140 ba g	u233t	6.0000000	47ste1	0
153 sm g	u233t	rc	cu		0.1011091	5.0	0.1080000	0.0020000	99 mo g	u235t	0.1690000	65bun1	1
153 sm g	u233t	cm	cu		0.0000000	0.0	0.1258000	16.0000000%	0		0.0000000	73net2	0
153	th232f	es	cu	cm	0.0369457	30.0	0.0380000	0.0000000	0		0.0000000	65eng1	0
153	th232f	cm	cu	x3	0.0000000	0.0	0.1500000	0.0000000	0		0.0000000	72sid1	0
153	th232f	cm	cu	x3	0.0000000	0.0	0.2100000	0.0000000	0		0.0000000	73lam1	0
153	th232f	es	cu		0.0322789	20.0	0.0332000	20.0000000%	0		0.0000000	74mee0	0
153	th232f	cm	cu	x3	0.0000000	0.0	0.2070000	10.0000000%	0		0.0000000	77cro1	0
153	th232f	cm	cu	x3	0.0000000	0.0	0.2400000	0.0000000	0		0.0000000	74lam1	0
153 sm g	th232f	rc	cu		0.0291677	13.3	0.0300000	0.0040000	0		0.0000000	71swi3	0
153 sm g	th232f	rc	cu	x4	0.0000000	0.0	0.1980000	10.0000000%	141 ce g	th232f	7.0000000	67bre1	0
153 sm g	th232f	cm	cu	x3	0.0000000	0.0	0.0560000	25.1000000%	0		0.0000000	73net2	0
153 sm g	th232f	rc	re	x1	0.0000000	0.0	1.3300000	0.1300000	99 mo g	u235t	0.0000000	81ert1	7
153 sm g	th232f	cm	cu	x3	0.0000000	0.0	0.1060000	0.0120000	0		0.0000000	81ert1	0
154 sm g	u235t	ms	cu	x4	0.0000000	0.0	0.0908000	0.0000000	149 sm g	u235t	1.1000000	50ing1	0
154	u235t	cm	cu		0.0000000	0.0	0.0770000	0.0000000	0		0.0000000	72sid1	0
154	u235t	cm	cu		0.0000000	0.0	0.0720000	0.0000000	0		0.0000000	73lam1	0
154	u235t	cm	cu		0.0000000	0.0	0.0743000	0.0051000	0		0.0000000	73wal1	0
154 sm g	u235t	ms	re		0.0744271	0.9	0.0125000	0.0001000	145 nd g	u235t	0.6600000	59chu1	0
154	u235t	cm	cu		0.0000000	0.0	0.0753000	5.4000000%	0		0.0000000	77cro1	0
154 sm g	u235t	ms	cu		0.0734831	1.8	0.0680000	0.0000000	149 sm g	u235t	1.0000000	55mel1	0

154	sm g	u235t	ms	re		0.0767250	2.9	0.0710000	2.7000000%	149	sm g	u235t	1.0000000	62far1	0
154	sm g	u235t	ms	cu		0.0708179	7.1	0.0563000	7.0000000%	152	sm g	u235t	0.2120000	70lis1	36
154	sm g	u235t	ms	cu		0.0759247	3.9	0.0760000	0.0030000	0			0.0000000	78mae1	0
154	sm g	u235t	ms	cu		0.0749257	6.7	0.0750000	0.0050000	0			0.0000000	78mae1	0
154		u235t	es	cu		0.0741764	20.0	0.0742500	20.0000000%	0			0.0000000	87wah1	36
154		u235t	ms	cu	x4	0.0000000	0.0	0.0560000	0.0090000	0			0.0000000	76dii1	0
154	pm g	u235t	cm	in		0.0000000	0.0	0.0060900	14.0000000%	0			1.0000000	88wah1	0
154	pm m	u235t	cm	in		0.0000000	0.0	0.0060900	14.0000000%	0			1.0000000	88wah1	0
154	nd g	u235t	cm	in		0.0000000	0.0	0.0565700	11.0000000%	0			1.0000000	88wah1	0
154	pr g	u235t	cm	in		0.0000000	0.0	0.0048670	20.0000000%	0			1.0000000	88wah1	0
154		u235f	es	cu	x3	0.0000000	0.0	0.0980000	0.0000000	0	0 g		0.0000070	2sid1	0
154		u235f	es	cu	x4	0.0000000	0.0	0.0840000	22.2000000%	0			0.0000000	77cro1	0
154	sm g	u235f	ms	cu		0.0710457	1.7	0.0700000	0.0000000	149	sm g	u235f	1.0200000	77koc1	0
154	sm g	u235f	ms	cu	su	0.0000000	0.0	0.0870000	0.0010000	0			0.0000000	80mae1	0
154	sm g	u235f	ms	cu	su	0.0000000	0.0	0.0980000	0.0030000	148	nd g	u235f	1.7500000	70lis1	0
154	sm g	u235f	ms	cu		0.0708810	2.8	0.0710000	0.0020000	0			0.0000000	81mae1	0
154	sm g	u235f	ms	cu		0.0728776	2.0	0.0730000	0.0010000	0			0.0000000	81mae1	0
154	sm g	u235f	ms	cu		0.0748743	2.0	0.0750000	0.0010000	0			0.0000000	81mae1	0
154	sm g	u235f	cm	cu		0.0000000	0.0	0.0730000	0.0010000	0			0.0000000	81mae1	0
154	sm g	u235f	ms	cu		0.0720266	1.5	0.0720000	0.0010000	148	nd g	u235f	1.6800000	74mae1	0
154		u235he	cm	cu	x3	0.0000000	0.0	0.0899000	0.0000000	0			0.0000000	63wea1	0
154		u235he	cm	cu		0.0000000	0.0	0.1400000	20.0000000%	0			0.0000000	73cro2	0
154		u235he	es	cu		0.1266740	20.0	0.1310000	20.0000000%	0			0.0000000	77cro1	0
154		u238f	es	cu	cm	0.2209222	30.0	0.2200000	0.0000000	0			0.0000000	64wal1	0
154	sm g	u238f	ms	re		0.2187000	7.5	0.1340000	0.0100000	149	sm g	u238f	1.0000000	72mat1	0
154		u238f	cm	cu		0.0000000	0.0	0.2230000	16.0000000%	0			0.0000000	77cro1	0
154	sm g	u238f	ms	cu		0.2098761	2.0	0.2090000	0.0020000	0			0.0000000	81mae1	0
154	sm g	u238f	ms	cu		0.2148970	2.0	0.2140000	0.0020000	0			0.0000000	81mae1	0
154	sm g	u238f	ms	cu		0.2229306	2.0	0.2220000	0.0020000	0			0.0000000	81mae1	0
154	sm g	u238f	cm	cu		0.0000000	0.0	0.2150000	0.0040000	0			0.0000000	81mae1	0
154	sm g	u238f	ms	cu		0.2172333	2.0	0.2130000	0.0040000	148	nd g	u238f	2.0800000	74mae1	0
154		u238f	cm	cu	x3	0.0000000	0.0	0.2400000	0.0000000	0			0.0000000	72sid1	0
154		u238he	es	cu		0.2579523	30.0	0.2548000	0.0000000	0			0.0000000	63wea1	0
154		u238he	es	cu	su	0.0000000	0.0	0.2700000	0.0000000	0			0.0000000	73dar1	0
154		u238he	es	cu		0.2506633	15.0	0.2476000	15.0000000%	0			0.0000000	74mee9	0
154		u238he	cm	cu		0.0000000	0.0	0.2630000	20.0000000%	0			0.0000000	77cro1	0

154	sm g	pu239t	ms	cu		0.2684089	1.7	0.4000000	0.0000000	149	sm g	pu239t	1.8100000	56wil1	0
154	sm g	pu239t	ms	re		0.2672010	1.5	0.2200000	0.0030000	149	sm g	pu239t	1.0000000	57kri1	0
154		pu239t	cm	cu		0.0000000	0.0	0.2700000	0.0000000	0			0.0000000	72sid1	0
154		pu239t	cm	cu		0.0000000	0.0	0.2730000	0.0000000	0			0.0000000	73lam1	0
154		pu239t	cm	cu	x3	0.0000000	0.0	0.2860000	0.0110000	0			0.0000000	73wal1	0
154	sm g	pu239t	ms	cu		0.2645620	2.3	0.2650000	0.0060000	0			0.0000000	75mae1	0
154		pu239t	cm	cu		0.0000000	0.0	0.2780000	11.4000000%	0			0.0000000	77cro1	0
154	sm g	pu239t	ms	cu		0.2602607	2.6	0.3600000	0.0090000	149	sm g	pu239t	1.6800000	59ani1	0
154	sm g	pu239t	ms	cu		0.2642533	2.3	0.2700000	0.0060000	137	cs g	pu239t	6.7400000	70lis1	0
154	sm g	pu239t	ms	re	x4	0.0000000	0.0	0.2719000	0.0035000	149	sm g	pu239t	1.2090000	59fic2	0
154	sm g	pu239t	ms	cu	su	0.0000000	0.0	0.2500000	0.0040000	0			0.0000000	79mae2	0
154		pu239t	cm	cu	x3	0.0000000	0.0	0.2764000	20.0000000%	0			0.0000000	87wah1	36
154	sm g	pu239t	es	cu	cm	0.2515834	1.0	0.2520000	1.0000000%	0			0.0000000	81mae2	0
154	sm g	pu239t	cm	in		0.0000000	0.0	0.0104000	49.0000000%	0			1.0000000	88wah1	0
154	pm g	pu239t	cm	in		0.0000000	0.0	0.0494200	11.0000000%	0			1.0000000	88wah1	0
154	pm m	pu239t	cm	in		0.0000000	0.0	0.0494200	11.0000000%	0			1.0000000	88wah1	0
154	nd g	pu239t	cm	in		0.0000000	0.0	0.1594000	11.0000000%	0			1.0000000	88wah1	0
154	pr g	pu239t	cm	in		0.0000000	0.0	0.0107500	36.0000000%	0			1.0000000	88wah1	0
154		pu239f	es	cu	cm	0.3582614	30.0	0.3600000	0.0000000	0			0.0000000	72sid1	0
154		pu239f	cm	cu		0.0000000	0.0	0.2890000	10.2000000%	0			0.0000000	77cro1	0
154	sm g	pu239f	ms	cu		0.3063108	14.0	0.3100000	14.0000000%	149	sm g	pu239f	1.2500000	77koc1	0
154	sm g	pu239f	ms	cu		0.2629069	1.2	0.2630000	0.0030000	148	nd g	pu239f	1.6540000	77mae1	0
154	sm g	pu239f	ms	cu		0.2557588	2.0	0.2570000	0.0040000	0			0.0000000	77mae1	0
154	sm g	pu239f	ms	cu	su	0.0000000	0.0	0.2640000	0.0030000	148	nd g	pu239f	1.6500000	74mae1	0
154	sm g	pu239f	ms	cu		0.2744824	5.0	0.0566000	5.0000000%	147	sm g	pu239f	0.4085000	80mae4	36
154	sm g	pu239f	ms	cu		0.3096568	5.0	0.3240000	5.0000000%	148	nd g	pu239f	1.7300000	70lis1	36
154		pu239f	es	re		0.2789270	10.1	1.0790000	10.0000000%	154		pu239t	1.0000000	74mee4	0
154	sm g	pu239f	es	cu	cm	0.2706864	1.0	0.2720000	1.0000000%	0			0.0000000	81mae2	0
154		pu241t	cm	cu		0.0000000	0.0	0.3900000	0.0000000	0			0.0000000	72sid1	0
154		pu241t	cm	cu		0.0000000	0.0	0.3760000	4.9000000%	0			0.0000000	77cro1	0
154		pu241t	cm	cu		0.0000000	0.0	0.3780000	0.0100000	0			0.0000000	73wal1	0
154	sm g	pu241t	ms	cu		0.3708153	2.0	0.3700000	0.0050000	0			0.0000000	77mae1	0
154	sm g	pu241t	ms	cu		0.3848486	2.8	0.3700000	0.0100000	148	nd g	pu241t	1.8616500	70lis1	0
154	sm g	pu241t	ms	re		0.3885362	2.7	0.2630000	0.0059000	149	sm g	pu241t	1.0000000	64far1	0
154		u233t	cm	cu		0.0000000	0.0	0.0480000	0.0000000	0			0.0000000	72sid1	0
154		u233t	cm	cu		0.0000000	0.0	0.0449000	0.0000000	0			0.0000000	73lam1	0

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 154        u233t    cm    cu         0.0000000  0.0   0.0456000  0.0012000     0                    0.0000000   73wal1      0
 154 sm g   u233t    ms    cu         0.0469216  4.1   0.0480000  3.0000000%  149 sm g      u233t       0.7900000   61bid1      0
 154        u233t    cm    cu         0.0000000  0.0   0.0463000  4.3000000%    0                    0.0000000   77cro1      0
 154 sm g   u233t    ms    cu    aw   0.0471073  3.2   0.0610000  0.0000000   149 sm g      u233t       1.0000000   55mel1      0
 154 sm g   u233t    ms    cu    aw   0.0446598  6.0   0.0450000  0.0000000     0                    0.0000000   70lis1      0
 154        u233t    es    cu         0.0473493 20.0   0.0477100 20.0000000%    0                    0.0000000   87wah1     36
 154        th232f   cm    cu    x3   0.0000000  0.0   0.0180000  0.0000000     0                    0.0000000   65eng1      0
 154        th232f   cm    cu    x3   0.0000000  0.0   0.0830000  0.0000000     0                    0.0000000   72sid1      0
 154        th232f   cm    cu    x3   0.0000000  0.0   0.0600000  0.0000000     0                    0.0000000   73lam1      0
 154        th232f   es    cu         0.0068760 20.0   0.0072800 20.0000000%    0                    0.0000000   74mee0      0
 154        th232f   cm    cu    x3   0.0000000  0.0   0.0974000 20.0000000%    0                    0.0000000   77cro1      0
 155 gd g   u235t    es    cu         0.0284357 30.1   0.0500000  0.0000000   156 gd g      u235t       0.0260000   50ing1      0
 155        u235t    cm    cu         0.0000000  0.0   0.0330000  0.0000000     0                    0.0000000   72sid1      0
 155        u235t    cm    cu         0.0000000  0.0   0.0320000  0.0000000     0                    0.0000000   73lam1      0
 155        u235t    cm    cu         0.0000000  0.0   0.0321000  0.0022000     0                    0.0000000   73wal1      0
 155        u235t    cm    cu         0.0000000  0.0   0.0324000  2.9000000%    0                    0.0000000   77cro1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type          value   err.     value                nuclide     material       value       no.   treatment

 155 gd g   u235t    ms    re    rp   0.0284357 16.1   0.0500000  0.0000000  no. relative values =    1            50ing1
 155        u235t    es    cu         0.0326700 20.0   0.0328000 20.0000000%    0                    0.0000000   87wah1     36
 155 eu g   u235t    es    cu         0.0298811 56.7   0.0300000  0.0170000     0                    0.0000000   51win4      0
 155 eu g   u235t    cm    cu         0.0000000  0.0   0.0332800  4.0000000%    0                    0.0000000   73net2      0
 155 eu g   u235t    ms    re         0.0322943  3.0   0.0054400  0.0001600   145 nd g      u235t       0.6600000   59chu1      0
 155 sm g   u235t    rc    cu         0.0325836 60.1   0.0310000  0.0000000   153 sm g      u235t       0.1500000   51win1      0
 155 sm g   u235t    cm    in         0.0000000  0.0   0.0014810 40.0000000%    0                    1.0000000   88wah1      0
 155 pm g   u235t    cm    in         0.0000000  0.0   0.0137300 11.0000000%    0                    1.0000000   88wah1      0
 155 nd g   u235t    cm    in         0.0000000  0.0   0.0169800 11.0000000%    0                    1.0000000   88wah1      0
 155 pr g   u235t    cm    in         0.0000000  0.0   0.0006221 45.0000000%    0                    1.0000000   88wah1      0
 155        u235f    es    cu         0.0648745 30.0   0.0711000  0.0000000   148 nd g      u235f       1.8100000   63wea1      0
 155        u235f    es    cu    cm   0.0676915 30.0   0.0690000  0.0000000     0                    0.0000000   72sid1      0
 155        u235f    es    cu         0.0421846 20.0   0.0430000 20.0000000%    0                    0.0000000   77cro1      0
 155        u235f    es    cu         0.0578503 30.0   0.0613000  0.0000000   148 nd g      u235f       1.7500000   70lis1      0
 155        u235f    es    cu         0.0333552 14.7   0.0340000  0.0050000     0                    0.0000000   81mae1      0
 155        u235f    es    cu         0.0372794 15.8   0.0380000  0.0060000     0                    0.0000000   81mae1      0
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155		u235f	es	cu		0.0372794	15.8	0.0380000	0.0060000	0			0.0000000	81mae2	0		
155		u235f	cm	cu		0.0000000	0.0	0.0370000	0.0060000	0			0.0000000	81mae1	0		
155	eu g	u235f	cm	cu		0.0000000	0.0	0.0662400	32.0000000%	0			0.0000000	73net2	0		
155	eu g	u235f	rc	cu		0.0354154	13.6	0.0361000	13.6000000%	0			0.0000000	86dic2	0		
155		u235he	cm	cu	x3	0.0000000	0.0	0.0715000	0.0000000	0			0.0000000	63wea1	0		
155		u235he	es	cu		0.0749418	20.0	0.0762000	20.0000000%	0			0.0000000	77cro1	0		
155		u235he	es	cu	x3	0.0000000	0.0	0.0640000	10.0000000%	0			0.0000000	74mee8	0		
155	eu g	u235he	es	cu		0.0796626	10.0	0.0810000	10.0000000%	0			0.0000000	73net2	0		
155		u238f	es	cu		0.1541808	30.0	0.1472000	0.0000000	0			0.0000000	63wea1	0		
155		u238f	es	cu	cm	0.1361651	30.0	0.1300000	0.0000000	0			0.0000000	64wal1	0		
155		u238f	es	re		0.1276678	20.0	0.0320000	20.0000000%	145		u238f	1.0000000	72mat1	0		
155		u238f	es	cu	cm	0.1571136	30.0	0.1500000	0.0000000	0			0.0000000	72sid1	0		
155		u238f	cm	cu		0.0000000	0.0	0.1160000	20.0000000%	0			0.0000000	77cro1	0		
155		u238f	es	cu		0.1402501	30.0	0.1339000	0.0000000	0			0.0000000	74mae1	0		
155	eu g	u238f	cm	cu		0.0000000	0.0	0.1390000	32.0000000%	0			0.0000000	73net2	0		
155	eu g	u238f	rc	cu		0.1434971	13.3	0.1370000	13.3000000%	0			0.0000000	86dic2	0		
155		u238he	es	cu		0.1591449	30.0	0.1572000	0.0000000	0			0.0000000	63wea1	0		
155		u238he	es	cu	su	0.0000000	0.0	0.1800000	0.0000000	0			0.0000000	73dar1	0		
155		u238he	es	cu		0.1542855	15.0	0.1524000	15.0000000%	0			0.0000000	74mee9	0		
155		u238he	cm	cu		0.0000000	0.0	0.1660000	20.0000000%	0			0.0000000	77cro1	0		
155	eu g	u238he	cm	cu		0.0000000	0.0	0.1600000	10.1000000%	0			0.0000000	73net2	0		
155		pu239t	cm	cu		0.0000000	0.0	0.2300000	0.0000000	0			0.0000000	72sid1	0		
155		pu239t	cm	cu	x3	0.0000000	0.0	0.1700000	0.0000000	0			0.0000000	73lam1	0		
155		pu239t	cm	cu		0.0000000	0.0	0.2180000	15.0000000%	0			0.0000000	77cro1	0		
155		pu239t	es	cu		0.1703176	20.0	0.1726000	20.0000000%	0			0.0000000	87wah1	36		
155	eu g	pu239t	cm	cu		0.0000000	0.0	0.2067000	32.0000000%	0			0.0000000	73net2	0		
155	eu g	pu239t	cm	cu		0.0000000	0.0	0.1700000	0.0200000	0			0.0000000	73wal1	0		
155	eu g	pu239t	rc	cu		0.1638922	11.1	0.1710000	0.0190000	144	ce g	pu239t	3.8500000	71sor1	0		
155	sm g	pu239t	rc	cu	nr	0.1970017	60.3	0.2100000	0.0000000	153	sm g	pu239t	0.3800000	51win1	0		
155	sm g	pu239t	cm	in		0.0000000	0.0	0.0229300	22.0000000%	0			1.0000000	88wah1	0		
155	pm g	pu239t	cm	in		0.0000000	0.0	0.0972600	11.0000000%	0			1.0000000	88wah1	0		
155	nd g	pu239t	cm	in		0.0000000	0.0	0.0518300	13.0000000%	0			1.0000000	88wah1	0		
155	pr g	pu239t	cm	in		0.0000000	0.0	0.0015170	90.0000000%	0			1.0000000	88wah1	0		
155		pu239f	es	cu		0.2424057	30.0	0.2580000	0.0000000	148	nd g	pu239f	1.7000000	69lis1	0		
155		pu239f	es	cu	cm	0.2499546	30.0	0.2600000	0.0000000	0			0.0000000	72sid1	0		
155		pu239f	es	re		0.1911858	15.1	1.2000000	10.0000000%	155		pu239t	1.0000000	74mee4	0		

155		pu239f	cm	cu		0.0000000	0.0	0.2070000	20.0000000%	0			0.0000000	77cro1	0
155		pu239f	es	cu		0.2298928	30.0	0.2490000	0.0000000	148	nd g	pu239f	1.7300000	70lis1	0
155		pu239f	es	cu		0.1826592	30.0	0.1900000	0.0000000	0			0.0000000	74mae1	0
155	eu g	pu239f	cm	cu		0.0000000	0.0	0.2579000	32.0000000%	0			0.0000000	73net2	0
155		pu241t	cm	cu		0.0000000	0.0	0.2310000	0.0220000	0			0.0000000	73wal1	0
155		pu241t	cm	cu		0.0000000	0.0	0.2320000	10.0000000%	0			0.0000000	77cro1	0
155		pu241t	cm	cu	x3	0.0000000	0.0	0.2900000	0.0000000	0			0.0000000	72sid1	0
155	eu g	pu241t	rc	cu		0.2413785	9.1	0.0566000	0.0051000	144	ce g	pu241t	1.0000000	70sko1	0
155	eu g	pu241t	rc	cu		0.2414538	9.6	0.2310000	0.0220000	144	ce g	pu241t	4.0800000	71sor1	0
155		u233t	cm	cu		0.0000000	0.0	0.0220000	0.0000000	0			0.0000000	72sid1	0
155		u233t	cm	cu		0.0000000	0.0	0.0260000	0.0000000	0			0.0000000	73lam1	0
155		u233t	es	cu		0.0220164	21.7	0.0230000	0.0050000	0			0.0000000	73wal1	0
155		u233t	cm	cu		0.0000000	0.0	0.0230000	20.0000000%	0			0.0000000	77cro1	0
155		u233t	es	cu		0.0209347	20.0	0.0218700	20.0000000%	0			0.0000000	87wah1	36
155	eu g	u233t	cm	cu		0.0000000	0.0	0.0299000	64.0000000%	0			0.0000000	73net2	0
155		th232f	cm	cu	x3	0.0000000	0.0	0.0090000	0.0000000	0			0.0000000	65eng1	0
155		th232f	cm	cu	x3	0.0000000	0.0	0.0460000	0.0000000	0			0.0000000	72sid1	0
155		th232f	es	cu	x3	0.0000000	0.0	0.0100000	0.0000000	0			0.0000000	73lam1	0
155		th232f	es	cu		0.0036175	20.0	0.0038300	20.0000000%	0			0.0000000	74mee0	0
155		th232f	cm	cu	x3	0.0000000	0.0	0.0468000	20.0000000%	0			0.0000000	77cro1	0
155	eu g	th232f	cm	cu		0.0000000	0.0	0.0086510	32.0000000%	0			0.0000000	73net2	0
156		u235t	cm	cu		0.0000000	0.0	0.0140000	0.0000000	0			0.0000000	72sid1	0
156		u235t	cm	cu		0.0000000	0.0	0.0140000	0.0000000	0			0.0000000	73lam1	0
156		u235t	cm	cu		0.0000000	0.0	0.0131000	0.0007000	0			0.0000000	73wal1	0
156		u235t	cm	cu		0.0000000	0.0	0.0127000	4.7000000%	0			0.0000000	77cro1	0
156	gd g	u235t	ms	re		0.0166648	4.3	0.0260000	0.0000000	155	gd g	u235t	0.0500000	50ing1	0
156		u235t	es	cu		0.0155762	20.0	0.0156200	20.0000000%	0			0.0000000	87wah1	36
156	eu g	u235t	rc	cu		0.0135570	60.0	0.0140000	0.0000000	140	ba g	u235t	6.4000000	52eng1	0
156	eu g	u235t	rc	cu		0.0117911	60.0	0.0120000	0.0000000	99	mo g	u235t	6.2000000	54pet1	0
156	eu g	u235t	rc	cu		0.0124650	8.0	0.0125000	0.0010000	0			0.0000000	66dan1	0
156	eu g	u235t	es	cu	cm	0.0132627	5.0	0.0133000	5.0000000%	0			0.0000000	73net2	0
156	eu g	u235t	rc	cu		0.0137724	7.4	0.0137000	0.0010000	99	mo g	u235t	6.0600000	65bun1	36
156	sm g	u235t	rc	cu		0.0142238	60.0	0.0140000	0.0000000	140	ba g	u235t	6.1000000	51eng2	0
156	sm g	u235t	rc	cu		0.0132078	60.0	0.0130000	0.0000000	140	ba g	u235t	6.1000000	51win3	0
156	sm g	u235t	cm	in		0.0000000	0.0	0.0033470	18.0000000%	0			1.0000000	88wah1	0
156	pm g	u235t	cm	in		0.0000000	0.0	0.0077690	11.0000000%	0			1.0000000	88wah1	0

156 nd g u235t cm in 0.0000000 0.0 0.0044500 15.0000000% 0 1.0000000 88wah1 0
156 u235f cm cu x3 0.0000000 0.0 0.0150000 0.0020000 0 0.0000000 81mae1 0
156 u235f es cu 0.0169430 11.8 0.0170000 0.0020000 0 0.0000000 81mae1 0
156 u235f es cu 0.0169430 17.6 0.0170000 0.0030000 0 0.0000000 81mae1 0
156 u235f cm cu 0.0000000 0.0 0.0160000 0.0020000 0 0.0000000 81mae1 0
156 eu g u235f rc cu x4 0.0000000 0.0 0.0130000 0.0010000 140 ba g u235f 5.8900000 72cun2 0
156 eu g u235f es cu cm 0.0229229 30.0 0.0230000 0.0000000 0 0.0000000 72sid1 0
156 eu g u235f es cu cm 0.0204313 15.1 0.0205000 15.1000000% 0 0.0000000 73net2 0
156 eu g u235f rc cu x4 0.0000000 0.0 0.0230000 15.0000000% 99 mo g u235t 0.0130000 59bun2 11
156 eu g u235f es cu 0.0246056 30.0 0.0250000 0.0000000 137 cs g u235f 6.3000000 60kat1 0
156 eu g u235f rc re 0.0246281 10.0 1.7100000 1.0300000% 99 mo g u235t 0.0000000 64cow1 7
156 eu g u235f rc cu 0.0212148 5.0 1.4730000 1.7000000% 99 mo g u235t 0.0000000 76for1 7
156 eu g u235f es cu 0.0203316 12.8 0.0204000 12.8000000% 0 0.0000000 77cro1 0
156 sm g u235f rc cu x4 0.0000000 0.0 1.0780000 1.7000000% 99 mo g u235t 0.0000000 76for1 7
156 sm g u235f rc cu x4 0.0000000 0.0 1.1530000 1.7000000% 99 mo g u235t 0.0000000 76for1 7
156 sm g u235f rc cu x4 0.0000000 0.0 1.2100000 3.1000000% 99 mo g u235t 0.0000000 76for1 7
156 sm g u235f rc cu x4 0.0000000 0.0 1.2520000 1.7000000% 99 mo g u235t 0.0000000 76for1 7
156 sm g u235f rc cu 0.0182711 5.0 1.2700000 1.7000000% 99 mo g u235t 0.0000000 76for1 7
156 sm g u235f rc cu 0.0188466 5.0 1.3100000 1.7000000% 99 mo g u235t 0.0000000 76for1 7
156 sm g u235f rc cu 0.0189185 5.0 1.3150000 1.7000000% 99 mo g u235t 0.0000000 76for1 7
156 sm g u235f rc cu 0.0198537 5.0 1.3800000 1.7000000% 99 mo g u235t 0.0000000 76for1 7
156 sm g u235f rc cu 0.0202133 5.0 1.4050000 1.7000000% 99 mo g u235t 0.0000000 76for1 7
156 sm g u235f rc cu 0.0216808 5.0 1.5070000 1.7000000% 99 mo g u235t 0.0000000 76for1 7
156 sm g u235f rc cu 0.0218678 5.0 1.5200000 1.7000000% 99 mo g u235t 0.0000000 76for1 7
156 sm g u235f es fc 0.0201314 10.2 0.9976000 10.0000000% 156 u235f 1.0000000 89rid1 0
156 sm g u235f es cu 0.0197336 10.0 0.0198000 10.0000000% 0 0.0000000 89rid1 0
156 sm g u235f rc cu x4 0.0000000 0.0 1.6600000 1.7000000% 99 mo g u235t 0.0000000 76for1 7
156 sm g u235f rc cu x4 0.0000000 0.0 1.7100000 1.7000000% 99 mo g u235t 0.0000000 76for1 7
156 sm g u235f rc cu x4 0.0000000 0.0 1.7400000 1.7000000% 99 mo g u235t 0.0000000 76for1 7
156 sm g u235f rc cu x4 0.0000000 0.0 1.9500000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
156 u235he cm cu es 0.0000000 0.0 0.0532000 0.0000000 0 0.0000000 63wea1 0
156 u235he cm cu 0.0000000 0.0 0.0519000 4.9000000% 0 0.0000000 77cro1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

156		u235he	es	cu		0.0524825	10.0	0.0527000	10.0000000%	0			0.0000000	74mee8	0
156	eu g	u235he	rc	re		0.0572106	10.0	4.6000000	0.2000000	99 mo g	u235t		0.0000000	56for1	7
156	eu g	u235he	rc	re		0.0634292	10.0	5.1000000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7
156	eu g	u235he	rc	cu		0.0497936	24.0	0.0500000	0.0120000	0			0.0000000	65for2	0
156	eu g	u235he	es	cu	cm	0.0559680	5.9	0.0562000	5.9000000%	0			0.0000000	73net2	0
156	eu g	u235he	cm	cu		0.0000000	0.0	0.0550000	0.0000000	0			0.0000000	60kat1	0
156	eu g	u235he	rc	re	su	0.0000000	0.0	4.8500000	1.3200000%	99 mo g	u235t		0.0000000	64cow1	7
156	eu g	u235he	rc	cu		0.0603199	5.0	4.8500000	1.7000000%	99 mo g	u235t		0.0000000	76for1	7
156	eu g	u235he	rc	cu		0.0572106	5.0	4.6000000	1.7000000%	99 mo g	u235t		0.0000000	76for1	7
156		u238f	cm	cu	es	0.0000000	0.0	0.0750000	0.0000000	0			0.0000000	64wal1	0
156		u238f	es	cu	cm	0.0756288	30.0	0.0750000	0.0000000	0			0.0000000	72sid1	0
156		u238f	cm	cu		0.0000000	0.0	0.0663000	9.1000000%	0			0.0000000	77cro1	0
156		u238f	es	cu		0.0710910	30.0	0.0705000	0.0000000	0			0.0000000	74mae1	0
156		u238f	rc	cu		0.0912587	7.3	0.0905000	0.0066000	0			0.0000000	85li 1	0
156	eu g	u238f	rc	cu		0.0605620	60.0	0.0630000	0.0000000	140 ba g	u238f		6.1000000	51eng3	0
156	eu g	u238f	rc	cu		0.0586394	60.0	0.0640000	0.0000000	140 ba g	u238f		6.4000000	52eng1	0
156	eu g	u238f	rc	cu		0.0750996	20.0	0.0730000	0.0100000	140 ba g	u238f		5.7000000	54kel1	0
156	eu g	u238f	es	cu	cm	0.0705868	15.1	0.0700000	15.1000000%	0			0.0000000	73net2	0
156	eu g	u238f	rc	cu		0.0800714	15.0	0.0695000	15.0000000%	99 mo g	u235t		0.0130000	59bun2	13
156	eu g	u238f	cm	cu		0.0000000	0.0	0.0710000	0.0000000	0			0.0000000	60kat1	0
156	eu g	u238f	rc	re		0.0826513	10.0	5.4650000	5.0000000%	99 mo g	u235t		0.0000000	61lev1	7
156	eu g	u238f	rc	re	su	0.0000000	0.0	5.0000000	1.0100000%	99 mo g	u235t		0.0000000	64cow1	7
156	eu g	u238f	rc	cu		0.0728964	5.0	4.8200000	1.7000000%	99 mo g	u235t		0.0000000	76for1	7
156	eu g	u238f	rc	cu		0.0756036	5.0	4.9990000	1.7000000%	99 mo g	u235t		0.0000000	76for1	7
156	eu g	u238f	rc	cu		0.0751801	5.0	4.9710000	1.7000000%	99 mo g	u235t		0.0000000	76for1	7
156	eu g	u238f	rc	cu		0.0753919	5.0	4.9850000	1.7000000%	99 mo g	u235t		0.0000000	76for1	7
156	eu g	u238f	rc	cu		0.0765261	5.0	5.0600000	1.7000000%	99 mo g	u235t		0.0000000	76for1	7
156	eu g	u238f	rc	cu		0.0756187	5.0	5.0000000	1.7000000%	99 mo g	u235t		0.0000000	76for1	7
156	eu g	u238f	rc	cu		0.0721554	5.0	4.7710000	1.7000000%	99 mo g	u235t		0.0000000	76for1	7
156	eu g	u238f	rc	cu		0.0625198	14.5	0.0620000	0.0090000	0			0.0000000	85chi1	0
156	eu g	u238f	rc	cu	x4	0.0000000	0.0	0.0420000	0.0079000	140 ba g	u238f		6.0300000	72cun2	36
156	eu g	u238f	rc	cu		0.0750138	5.0	4.9600000	1.7000000%	99 mo g	u235t		0.0000000	76for1	7
156	eu g	u238f	rc	cu		0.0751650	5.0	4.9700000	1.7000000%	99 mo g	u235t		0.0000000	76for1	7
156	eu g	u238f	rc	cu		0.0801558	5.0	5.3000000	3.0000000%	99 mo g	u235t		0.0000000	76for1	7
156	eu g	u238f	rc	cu	su	0.0000000	0.0	0.0910000	0.0000000	0			0.0000000	75fly4	0
156		u238he	cm	cu	es	0.0000000	0.0	0.1174000	0.0000000	0			0.0000000	63wea1	0

156	gd g	u238he	rc	cu		0.1302843	30.8	0.1300000	0.0400000	0		0.0000000	71com1	0
156		u238he	cm	cu	su	0.0000000	0.0	0.1200000	0.0100000	0		0.0000000	73dar1	0
156		u238he	es	cu		0.1080358	15.0	0.1078000	15.0000000%	0		0.0000000	74mee9	0
156		u238he	cm	cu		0.0000000	0.0	0.1110000	7.4000000%	0		0.0000000	77cro1	0
156	eu g	u238he	rc	re		0.1126141	10.0	8.1000000	0.3000000	99 mo g	u235t	0.0000000	56for1	7
156	eu g	u238he	rc	cu		0.1332117	10.1	0.1300000	0.0100000	99 mo g	u238he	5.5800000	57cun1	0
156	eu g	u238he	rc	cu		0.1092384	7.3	0.1090000	0.0080000	0		0.0000000	65for2	0
156	eu g	u238he	cm	cu	x3	0.0000000	0.0	0.1700000	0.0000000	0		0.0000000	69gun2	0
156	eu g	u238he	es	cu	cm	0.1072340	5.9	0.1070000	5.9000000%	0		0.0000000	73net2	0
156	eu g	u238he	cm	cu		0.0000000	0.0	0.1200000	0.0000000	0		0.0000000	60kat1	0
156	eu g	u238he	rc	re	su	0.0000000	0.0	8.9500000	1.5000000%	99 mo g	u235t	0.0000000	64cow1	7
156	eu g	u238he	rc	cu		0.1244316	5.0	8.9500000	1.7000000%	99 mo g	u235t	0.0000000	76for1	7
156	eu g	u238he	rc	cu		0.1126141	5.0	8.1000000	1.7000000%	99 mo g	u235t	0.0000000	76for1	7
156	eu g	u238he	rc	cu		0.1123151	18.2	0.1100000	0.0200000	99 mo g	u238he	5.6000000	75ada1	0
156	eu g	u238he	rc	cu		0.1202624	25.0	0.1200000	0.0300000	0		0.0000000	83li 2	0
156	eu g	u238he	rc	cu		0.1092384	5.0	0.1090000	0.0050000	0		0.0000000	65for2	0
156	sm g	u238he	rc	cu		0.1403062	14.3	0.1400000	0.0200000	0		0.0000000	83li 2	0
156		pu239t	cm	cu		0.0000000	0.0	0.1200000	0.0000000	0		0.0000000	73lam1	0
156		pu239t	cm	cu		0.0000000	0.0	0.1200000	0.0100000	0		0.0000000	73wal1	0
156		pu239t	cm	cu	x3	0.0000000	0.0	0.0800000	0.0000000	0		0.0000000	72sid1	0
156		pu239t	cm	cu		0.0000000	0.0	0.1120000	11.1000000%	0		0.0000000	77cro1	0
156		pu239t	es	cu		0.1333735	20.0	0.1340000	20.0000000%	0		0.0000000	87wah1	36
156	eu g	pu239t	rc	cu		0.1193182	60.0	0.1200000	0.0000000	140 ba g	pu239t	5.3600000	51ste3	0
156	eu g	pu239t	rc	cu	x4	0.0000000	0.0	0.0620000	0.0040000	137 cs g	pu239t	5.4000000	65mar1	0
156	eu g	pu239t	rc	cu		0.1156410	10.0	0.1000000	0.0050000	99 mo g	u235t	0.0130000	59bun1	7
156	eu g	pu239t	rc	cu	su	0.0000000	0.0	0.0322000	0.0005000	144 ce g	pu239t	1.0000000	70sko1	0
156	eu g	pu239t	rc	cu		0.1365026	5.0	9.0800000	1.7000000%	99 mo g	u235t	0.0000000	76for1	7
156	eu g	pu239t	cm	cu	x3	0.0000000	0.0	0.0825000	8.0000000%	0		0.0000000	73net2	0
156	eu g	pu239t	rc	cu		0.1198753	5.0	0.1240000	0.0050000	144 ce g	pu239t	3.8500000	71sor1	0
156	eu g	pu239t	cm	in		0.0000000	0.0	0.0011660	88.0000000%	0		1.0000000	88wah1	0
156	sm g	pu239t	rc	cu	su	0.0000000	0.0	0.0248000	0.0008000	144 ce g	pu239t	1.0000000	70sko1	0
156	sm g	pu239t	rc	cu		0.1169751	5.0	0.1210000	0.0050000	144 ce g	pu239t	3.8500000	71sor1	0
156	sm g	pu239t	cm	in		0.0000000	0.0	0.0492800	13.0000000%	0		1.0000000	88wah1	0
156	pm g	pu239t	cm	in		0.0000000	0.0	0.0676800	11.0000000%	0		1.0000000	88wah1	0
156	nd g	pu239t	cm	in		0.0000000	0.0	0.0167200	22.0000000%	0		1.0000000	88wah1	0
156		pu239f	cm	cu	es	0.0000000	0.0	0.1780000	0.0000000	148 nd g	pu239f	1.7000000	69lis1	0

156		pu239f	es	cu	cm	0.1775412	10.0	0.1800000	10.0000000%	0			0.0000000	72sid1	36
156		pu239f	es	re		0.1590210	10.8	1.3000000	10.0000000%	156		pu239t	1.0000000	74mee4	0
156		pu239f	cm	cu		0.0000000	0.0	0.1070000	8.3000000%	0			0.0000000	77cro1	0
156	gd g	pu239f	es	fi		0.0000013	30.3	0.0000084	0.0000000	156		pu239f	1.0000000	74wol1	0
156		pu239f	es	cu		0.1619798	30.0	0.1710000	0.0000000	148	nd g	pu239f	1.7300000	70lis1	0
156		pu239f	es	cu		0.1282242	30.0	0.1300000	0.0000000	0			0.0000000	74mae1	0
156	eu g	pu239f	rc	cu		0.1262165	15.1	0.1250000	0.0000000	140	ba g	pu239f	5.2000000	71cun1	0
156	eu g	pu239f	rc	cu		0.1193994	15.1	0.1210000	0.0000000	99	mo g	pu239f	5.9800000	72cun1	36
156	eu g	pu239f	rc	cu		0.1038366	15.1	0.1060000	0.0000000	140	ba g	pu239f	5.3600000	72cun2	36
156	eu g	pu239f	es	cu	cm	0.1403562	5.0	0.1423000	5.0000000%	0			0.0000000	73net2	0
156	eu g	pu239f	rc	cu		0.1384586	5.0	9.6500000	3.0000000%	99	mo g	u235t	0.0000000	76for1	7
156	eu g	pu239f	rc	cu		0.1578284	5.0	11.0000000	1.7000000%	99	mo g	u235t	0.0000000	76for1	7
156	eu g	pu239f	rc	cu		0.1720330	5.0	11.9900000	3.0000000%	99	mo g	u235t	0.0000000	76for1	7
156		pu241t	cm	cu		0.0000000	0.0	0.1670000	0.0050000	0			0.0000000	73wal1	0
156		pu241t	cm	cu		0.0000000	0.0	0.1650000	7.1000000%	0			0.0000000	77cro1	0
156		pu241t	cm	cu	x3	0.0000000	0.0	0.2100000	0.0000000	0			0.0000000	72sid1	0
156	eu g	pu241t	rc	cu		0.1764069	5.1	0.0416000	0.0007000	144	ce g	pu241t	1.0000000	70sko1	0
156	eu g	pu241t	rc	cu		0.1766897	5.1	0.1700000	0.0060000	144	ce g	pu241t	4.0800000	71sor1	0
156	sm g	pu241t	rc	cu		0.1641093	5.1	0.0387000	0.0010000	144	ce g	pu241t	1.0000000	70sko1	0
156	sm g	pu241t	rc	cu		0.1694142	5.1	0.1630000	0.0070000	144	ce g	pu241t	4.0800000	71sor1	0
156		u233t	cm	cu		0.0000000	0.0	0.0120000	0.0000000	0			0.0000000	72sid1	0
156		u233t	cm	cu	x3	0.0000000	0.0	0.0120000	0.0000000	0			0.0000000	73lam1	0
156		u233t	cm	cu		0.0000000	0.0	0.0116000	0.0003000	0			0.0000000	73wal1	0
156		u233t	cm	cu		0.0000000	0.0	0.0112000	10.0000000%	0			0.0000000	77cro1	0
156		u233t	es	cu		0.0121830	20.0	0.0123700	20.0000000%	0			0.0000000	87wah1	36
156	eu g	u233t	rc	cu		0.0128326	5.0	0.0121000	0.0003000	99	mo g	u235t	0.0140000	65bun1	1
156	eu g	u233t	cm	cu	x3	0.0000000	0.0	0.0120100	16.0000000%	0			0.0000000	73net2	0
156		th232f	es	cu		0.0026470	30.0	0.0027000	0.0000000	0			0.0000000	65eng1	0
156		th232f	es	cu	cm	0.0029411	30.0	0.0030000	0.0000000	0			0.0000000	72sid1	0
156		th232f	es	cu	cm	0.0025490	30.0	0.0026000	0.0000000	0			0.0000000	73lam1	0
156		th232f	cm	cu		0.0000000	0.0	0.0026000	0.0000000	0			0.0000000	74lam1	0
156		th232f	cm	cu		0.0000000	0.0	0.0024500	11.0000000%	0			0.0000000	77cro1	0
156		th232f	es	cu		0.0025098	20.0	0.0025600	20.0000000%	0			0.0000000	74mee0	0
156	eu g	th232f	rc	re		0.0028774	12.4	0.4100000	0.0510000	99	mo g	u235t	0.0000000	63iye1	7
156	eu g	th232f	cm	cu		0.0000000	0.0	0.0024540	16.0000000%	0			0.0000000	73net2	0
156	sm g	th232f	rc	cu	x4	0.0000000	0.0	0.0013000	0.0005000	0			0.0000000	71swi3	0

156 sm g th232f es fc 0.0026373 8.0 0.9999600 0.5000000% 156 th232f 1.0000000 89rid1 0
157 u235t cm cu 0.0000000 0.0 0.0060000 0.0000000 0 0.0000000 72sid1 0
157 u235t cm cu 0.0000000 0.0 0.0062000 0.0000000 0 0.0000000 73lam1 0
157 u235t cm cu 0.0000000 0.0 0.0061000 0.0004000 0 0.0000000 73wal1 0
157 u235t cm cu 0.0000000 0.0 0.0063100 7.6000000% 0 0.0000000 77cro1 0
157 gd g u235t ms cu rp 0.0058122 64.2 0.0150000 0.0000000 no. relative values = 1 50ing1
157 u235t es cu 0.0066806 20.0 0.0067340 20.0000000% 0 0.0000000 87wah1 36
157 gd g u235t es cu x4 0.0000000 0.0 0.0150000 0.0000000 156 gd g u235t 0.0260000 50ing1 0
157 eu g u235t rc cu 0.0074796 60.0 0.0074000 0.0000000 140 ba g u235t 6.1000000 51win2 0
157 eu g u235t rc cu 0.0059524 11.7 0.0060000 0.0007000 0 0.0000000 66dan1 0
157 eu g u235t cm cu 0.0000000 0.0 0.0064260 8.0000000% 0 0.0000000 73net2 0
157 eu g u235t cm in 0.0000000 0.0 0.0005462 67.0000000% 0 10.0000000 88wah1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

157 eu g u235t rc cu 0.0061407 7.9 0.0061400 0.0004800 99 mo g u235t 6.0600000 65bun1 36
157 sm g u235t cm in 0.0000000 0.0 0.0029930 12.0000000% 0 1.0000000 88wah1 0
157 pm g u235t cm in 0.0000000 0.0 0.0032080 11.0000000% 0 1.0000000 88wah1 0
157 nd g u235t cm in 0.0000000 0.0 0.0004771 28.0000000% 0 1.0000000 88wah1 0
157 u235f cm cu x3 0.0000000 0.0 0.0172800 0.0000000 148 nd g u235f 1.8100000 63wea1 0
157 u235f cm cu x3 0.0000000 0.0 0.0470000 0.0000000 0 0.0000000 72sid1 0
157 u235f es cu 0.0105828 20.0 0.0110000 20.0000000% 0 0.0000000 77cro1 0
157 u235f cm cu x3 0.0000000 0.0 0.0210000 0.0000000 148 nd g u235f 1.7500000 70lis1 0
157 u235f es cu x1 0.0000000 0.0 0.0060000 0.0010000 0 0.0000000 81mae1 0
157 u235f es cu x1 0.0000000 0.0 0.0060000 0.0010000 0 0.0000000 81mae2 0
157 u235f es cu x1 0.0000000 0.0 0.0080000 0.0070000 0 0.0000000 81mae1 0
157 u235f cm cu x3 0.0000000 0.0 0.0060000 0.0010000 0 0.0000000 81mae1 0
157 eu g u235f cm cu 0.0000000 0.0 0.0191500 32.0000000% 0 0.0000000 73net2 0
157 u235he es cu 0.0416016 30.0 0.0423000 0.0000000 0 0.0000000 63wea1 0
157 u235he cm cu 0.0000000 0.0 0.0310000 20.0000000% 0 0.0000000 77cro1 0
157 u235he es cu 0.0372742 10.0 0.0379000 10.0000000% 0 0.0000000 74mee8 0
157 eu g u235he cm cu 0.0000000 0.0 0.0334500 10.0000000% 0 0.0000000 73net2 0
157 u238f es cu 0.0433229 30.0 0.0406000 0.0000000 0 0.0000000 63wea1 0
157 u238f es cu cm 0.0373474 30.0 0.0350000 0.0000000 0 0.0000000 64wal1 0
157 u238f es cu cm 0.0437498 30.0 0.0410000 0.0000000 0 0.0000000 72sid1 0

157 u238f cm cu 0.0000000 0.0 0.0311000 20.0000000% 0 0.0000000 77cro1 0
157 u238f es cu 0.0410821 30.0 0.0385000 0.0000000 0 0.0000000 74mae1 0
157 eu g u238f cm cu 0.0000000 0.0 0.0379200 32.0000000% 0 0.0000000 73net2 0
157 u238he es cu 0.0838270 30.0 0.0831000 0.0000000 0 0.0000000 63wea1 0
157 u238he es cu su 0.0000000 0.0 0.0720000 0.0000000 0 0.0000000 73dar1 0
157 u238he es cu 0.0817086 15.0 0.0810000 15.0000000% 0 0.0000000 74mee9 0
157 u238he cm cu 0.0000000 0.0 0.0825000 25.0000000% 0 0.0000000 77cro1 0
157 eu g u238he cm cu x3 0.0000000 0.0 0.0650000 10.1000000% 0 0.0000000 73net2 0
157 eu g u238he rc cu 0.0822185 25.0 0.0800000 0.0200000 99 mo g u238he 5.6000000 75ada1 0
157 eu g u238he rc cu 0.0776736 14.3 0.0770000 0.0110000 0 0.0000000 83li 2 0
157 eu g u238he rc cu x1 0.0000000 0.0 0.1100000 0.0100000 0 0.0000000 87ram1 0
157 pu239t cm cu 0.0000000 0.0 0.0630000 0.0000000 0 0.0000000 72sid1 0
157 pu239t cm cu 0.0000000 0.0 0.0800000 0.0000000 0 0.0000000 73lam1 0
157 pu239t cm cu 0.0000000 0.0 0.0760000 0.0040000 0 0.0000000 73wal1 0
157 pu239t cm cu 0.0000000 0.0 0.0760000 10.0000000% 0 0.0000000 77cro1 0
157 pu239t es cu 0.0805638 20.0 0.0811000 20.0000000% 0 0.0000000 87wah1 36
157 eu g pu239t cm cu 0.0000000 0.0 0.0754400 64.0000000% 0 0.0000000 73net2 0
157 eu g pu239t rc cu su 0.0000000 0.0 0.0198000 0.0005000 144 ce g pu239t 1.0000000 70sko1 0
157 eu g pu239t rc cu 0.0737150 5.0 0.0764000 0.0037000 144 ce g pu239t 3.8500000 71sor1 0
157 eu g pu239t cm in 0.0000000 0.0 0.0035490 36.0000000% 0 1.0000000 88wah1 0
157 sm g pu239t cm in 0.0000000 0.0 0.0458100 11.0000000% 0 1.0000000 88wah1 0
157 pm g pu239t cm in 0.0000000 0.0 0.0300200 11.0000000% 0 1.0000000 88wah1 0
157 nd g pu239t cm in 0.0000000 0.0 0.0023270 50.0000000% 0 1.0000000 88wah1 0
157 pu239f es cu 0.1131234 30.0 0.1190000 0.0000000 148 nd g pu239f 1.7000000 69lis1 0
157 pu239f es cu cm 0.1167216 30.0 0.1200000 0.0000000 0 0.0000000 72sid1 0
157 pu239f es re 0.1081890 11.5 1.5000000 10.0000000% 157 pu239t 1.0000000 74mee4 0
157 pu239f cm cu 0.0000000 0.0 0.1050000 4.2000000% 0 0.0000000 77cro1 0
157 pu239f es cu 0.1148982 30.0 0.1230000 0.0000000 148 nd g pu239f 1.7300000 70lis1 0
157 pu239f es cu 0.0914319 30.0 0.0940000 0.0000000 0 0.0000000 74mae1 0
157 eu g pu239f rc cu 0.1055493 15.1 0.1060000 0.0000000 140 ba g pu239f 5.2000000 71cun1 0
157 eu g pu239f rc cu 0.1041224 8.6 0.1070000 0.0090000 99 mo g pu239f 5.9800000 72cun1 0
157 eu g pu239f cm cu 0.0000000 0.0 0.1141000 32.0000000% 0 0.0000000 73net2 0
157 pu241t cm cu 0.0000000 0.0 0.1500000 0.0000000 0 0.0000000 72sid1 0
157 pu241t cm cu 0.0000000 0.0 0.1300000 0.0060000 0 0.0000000 73wal1 0
157 pu241t cm cu 0.0000000 0.0 0.1310000 10.0000000% 0 0.0000000 77cro1 0
157 eu g pu241t rc cu 0.1354477 5.1 0.0319000 0.0008000 144 ce g pu241t 1.0000000 70sko1 0

157 eu g pu241t rc cu 0.1352895 5.1 0.1300000 0.0060000 144 ce g pu241t 4.0800000 71sor1 0
157 u233t cm cu 0.0000000 0.0 0.0060000 0.0000000 0 0.0000000 72sid1 0
157 u233t cm cu 0.0000000 0.0 0.0072000 0.0000000 0 0.0000000 73lam1 0
157 u233t cm cu 0.0000000 0.0 0.0065000 0.0005000 0 0.0000000 73wal1 0
157 u233t cm cu 0.0000000 0.0 0.0066900 10.0000000% 0 0.0000000 77cro1 0
157 u233t es cu 0.0059265 20.0 0.0060560 20.0000000% 0 0.0000000 87wah1 36
157 eu g u233t cm cu 0.0000000 0.0 0.0077290 16.0000000% 0 0.0000000 73net2 0
157 eu g u233t rc cu 0.0063588 7.9 0.0063500 0.0005000 99 mo g u235t 0.0061000 65bun1 1
157 th232f es cu x3 0.0000000 0.0 0.0120000 0.0000000 0 0.0000000 72sid1 0
157 th232f cm cu x3 0.0000000 0.0 0.0006100 20.0000000% 0 0.0000000 77cro1 0
157 eu g th232f es cu 0.0011891 64.0 0.0012590 64.0000000% 0 0.0000000 73net2 0
157 eu g th232f es cu 0.0009067 20.0 0.0009600 20.0000000% 0 0.0000000 74mee0 0
158 u235t cm cu 0.0000000 0.0 0.0031000 0.0000000 0 0.0000000 73lam1 0
158 u235t cm cu 0.0000000 0.0 0.0031000 0.0006000 0 0.0000000 73wal1 0
158 u235t cm cu x3 0.0000000 0.0 0.0020000 0.0000000 0 0.0000000 72sid1 0
158 u235t cm cu 0.0000000 0.0 0.0028200 20.4000000% 0 0.0000000 77cro1 0
158 gd g u235t ms cu 0.0034057 21.5 0.0084000 20.0000000% 157 gd g u235t 0.0150000 50ing1 0
158 u235t es cu 0.0034509 20.0 0.0034900 20.0000000% 0 0.0000000 87wah1 36
158 eu g u235t rc cu 0.0020148 60.0 0.0020000 0.0000000 140 ba g u235t 6.1000000 51win2 0
158 eu g u235t rc cu 0.0030652 19.4 0.0031000 0.0006000 0 0.0000000 66dan1 0
158 eu g u235t cm in 0.0000000 0.0 0.0001105 28.0000000% 0 1.0000000 88wah1 0
158 sm g u235t cm in 0.0000000 0.0 0.0025740 11.0000000% 0 1.0000000 88wah1 0
158 pm g u235t cm in 0.0000000 0.0 0.0007559 12.0000000% 0 1.0000000 88wah1 0
158 nd g u235t cm in 0.0000000 0.0 0.0004786 66.0000000% 0 10.0000000 88wah1 0
158 u235f es cu 0.0076031 30.0 0.0084000 0.0000000 148 nd g u235f 1.8100000 63wea1 0
158 u235f es cu cm 0.0081747 30.0 0.0084000 0.0000000 0 0.0000000 72sid1 0
158 u235f es cu 0.0052552 20.0 0.0054000 20.0000000% 0 0.0000000 77cro1 0
158 u235he es cu 0.0295047 30.0 0.0300000 0.0000000 0 0.0000000 63wea1 0
158 u235he es cu 0.0206533 30.0 0.0002100 0.0000000 0 0.0100000 69net1 0
158 u235he cm cu 0.0000000 0.0 0.0195000 20.0000000% 0 0.0000000 77cro1 0
158 u235he es cu 0.0231120 10.0 0.0235000 10.0000000% 0 0.0000000 74mee8 0
158 u238f es cu 0.0188871 30.0 0.0177000 0.0000000 0 0.0000000 63wea1 0
158 u238f es cu cm 0.0181402 30.0 0.0170000 0.0000000 0 0.0000000 64wal1 0
158 u238f es cu cm 0.0192072 30.0 0.0180000 0.0000000 0 0.0000000 72sid1 0
158 u238f cm cu 0.0000000 0.0 0.0150000 20.0000000% 0 0.0000000 77cro1 0
158 u238f es cu 0.0177133 30.0 0.0166000 0.0000000 0 0.0000000 74mae1 0

158 u238he es cu 0.0435320 30.0 0.0004300 0.0000000 0 0.0100000 69net1 0
158 u238he cm cu su 0.0000000 0.0 0.0430000 0.0000000 0 0.0000000 73dar1 0
158 u238he es cu 0.0423576 15.0 0.0418400 15.0000000% 0 0.0000000 74mee9 0
158 u238he cm cu 0.0000000 0.0 0.0381000 20.0000000% 0 0.0000000 77cro1 0
158 pu239t cm cu 0.0000000 0.0 0.0360000 0.0000000 0 0.0000000 72sid1 0
158 pu239t cm cu 0.0000000 0.0 0.0450000 0.0000000 0 0.0000000 73lam1 0
158 pu239t es cu 0.0402332 19.5 0.0410000 0.0080000 0 0.0000000 73wal1 0
158 pu239t cm cu 0.0000000 0.0 0.0400000 20.0000000% 0 0.0000000 77cro1 0
158 pu239t es cu 0.0427061 20.0 0.0435200 20.0000000% 0 0.0000000 87wah1 36
158 eu g pu239t cm in 0.0000000 0.0 0.0053050 17.0000000% 0 1.0000000 88wah1 0
158 sm g pu239t cm in 0.0000000 0.0 0.0313500 11.0000000% 0 1.0000000 88wah1 0
158 pm g pu239t cm in 0.0000000 0.0 0.0068250 15.0000000% 0 1.0000000 88wah1 0
158 pu239f es cu 0.0655981 30.0 0.0710000 0.0000000 148 nd g pu239f 1.7000000 69lis1 0
158 pu239f es cu cm 0.0680659 30.0 0.0720000 0.0000000 0 0.0000000 72sid1 0
158 pu239f es re 0.0665971 18.9 1.7000000 10.0000000% 158 pu239t 1.0000000 74mee4 0
158 pu239f cm cu 0.0000000 0.0 0.0681000 15.0000000% 0 0.0000000 77cro1 0
158 pu239f es cu 0.0708158 30.0 0.0780000 0.0000000 148 nd g pu239f 1.7300000 70lis1 0
158 pu239f es cu 0.0557763 30.0 0.0590000 0.0000000 0 0.0000000 74mae1 0
158 pu241t cm cu 0.0000000 0.0 0.1000000 0.0000000 0 0.0000000 72sid1 0
158 pu241t es cu 0.0922437 20.0 0.0900000 0.0180000 0 0.0000000 73wal1 0
158 pu241t cm cu 0.0000000 0.0 0.0800000 20.0000000% 0 0.0000000 77cro1 0
158 u233t cm cu 0.0000000 0.0 0.0024000 0.0000000 0 0.0000000 73lam1 0
158 u233t cm cu 0.0000000 0.0 0.0023000 20.0000000% 0 0.0000000 77cro1 0
158 u233t es cu 0.0020547 20.0 0.0021870 20.0000000% 0 0.0000000 87wah1 36
158 u233t cm cu x3 0.0000000 0.0 0.0008000 0.0000000 0 0.0000000 72sid1 0
158 th232f es cu x3 0.0000000 0.0 0.0053000 0.0000000 0 0.0000000 72sid1 0
158 th232f es cu 0.0004644 30.0 0.0005040 0.0000000 0 0.0000000 74mee0 0
159 u235t cm cu 0.0000000 0.0 0.0011000 0.0000000 0 0.0000000 72sid1 0
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159 u235t cm cu 0.0000000 0.0 0.0010500 0.0000000 0 0.0000000 73lam1 0
159 u235t cm cu 0.0000000 0.0 0.0010000 0.0001000 0 0.0000000 73wal1 0
159 u235t cm cu 0.0000000 0.0 0.0010600 6.0000000% 0 0.0000000 77cro1 0
159 u235t es cu 0.0010948 20.0 0.0011010 20.0000000% 0 0.0000000 87wah1 36

159	gd g	u235t	rc	cu		0.0011170	20.0	0.0011400	0.0001300	99 mo g	u235t	6.2000000	54fre1	0
159	gd g	u235t	rc	cu		0.0010288	60.0	0.0010500	0.0000000	99 mo g	u235t	6.2000000	54pet1	0
159	gd g	u235t	cm	cu		0.0000000	0.0	0.0010920	8.0000000%	0		0.0000000	73net2	0
159	gd g	u235t	rc	cu		0.0009954	5.2	0.0009930	0.0000300	99 mo g	u235t	6.0600000	65bun1	36
159	eu g	u235t	rc	cu		0.0010938	27.3	0.0011000	0.0003000	0		0.0000000	66dan1	0
159	eu g	u235t	cm	in		0.0000000	0.0	0.0001378	15.0000000%	0		1.0000000	88wah1	0
159	sm g	u235t	cm	in		0.0000000	0.0	0.0008423	11.0000000%	0		1.0000000	88wah1	0
159	pm g	u235t	cm	in		0.0000000	0.0	0.0001156	18.0000000%	0		1.0000000	88wah1	0
159		u235f	es	cu	cm	0.0024526	30.0	0.0025000	0.0000000	0		0.0000000	72sid1	0
159		u235f	es	cu		0.0030903	15.0	0.0031500	15.0000000%	0		0.0000000	77cro1	0
159	gd g	u235f	cm	cu		0.0000000	0.0	0.0032400	16.0000000%	0		0.0000000	73net2	0
159	gd g	u235f	rc	cu		0.0029962	15.0	0.0034000	15.0000000%	99 mo g	u235t	0.0011000	59bun2	11
159	gd g	u235f	es	cu		0.0032940	30.0	0.0034000	0.0000000	137 cs g	u235f	6.3000000	60kat1	0
159		u235he	es	cu		0.0117611	10.0	0.0119000	10.0000000%	0		0.0000000	74mee8	0
159		u235he	cm	cu	x3	0.0000000	0.0	0.0127000	10.0000000%	0		0.0000000	77cro1	0
159	gd g	u235he	rc	re		0.0125517	10.2	0.0001270	0.0000130	0		0.0100000	69net1	0
159	gd g	u235he	cm	cu	x3	0.0000000	0.0	0.0127000	9.9000000%	0		0.0000000	73net2	0
159		u238f	cm	cu	es	0.0000000	0.0	0.0080000	0.0000000	0		0.0000000	64wal1	0
159		u238f	es	cu	cm	0.0097103	30.0	0.0091000	0.0000000	0		0.0000000	72sid1	0
159		u238f	cm	cu		0.0000000	0.0	0.0083100	15.0000000%	0		0.0000000	77cro1	0
159		u238f	es	cu		0.0083551	30.0	0.0078300	0.0000000	0		0.0000000	74mae1	0
159	gd g	u238f	cm	cu		0.0000000	0.0	0.0087600	16.0000000%	0		0.0000000	73net2	0
159	gd g	u238f	rc	cu		0.0084175	15.0	0.0086000	15.0000000%	99 mo g	u235t	0.0011000	59bun2	13
159	gd g	u238f	cm	cu		0.0000000	0.0	0.0084000	0.0000000	0		0.0000000	60kat1	0
159		u238he	cm	cu	su	0.0000000	0.0	0.0260000	0.0030000	0		0.0000000	73dar1	0
159		u238he	es	cu		0.0256626	15.0	0.0254400	15.0000000%	0		0.0000000	74mee9	0
159		u238he	cm	cu		0.0000000	0.0	0.0190000	26.5000000%	0		0.0000000	77cro1	0
159	gd g	u238he	rc	re		0.0262275	11.5	0.0002600	0.0000300	0		0.0100000	69net1	0
159	gd g	u238he	cm	cu	x3	0.0000000	0.0	0.0260000	9.9000000%	0		0.0000000	73net2	0
159		pu239t	cm	cu		0.0000000	0.0	0.0210000	0.0000000	0		0.0000000	72sid1	0
159		pu239t	cm	cu		0.0000000	0.0	0.0210000	0.0010000	0		0.0000000	73wal1	0
159		pu239t	cm	cu	x3	0.0000000	0.0	0.0220000	0.0000000	0		0.0000000	73lam1	0
159		pu239t	cm	cu		0.0000000	0.0	0.0212000	8.3000000%	0		0.0000000	77cro1	0
159		pu239t	es	cu		0.0224605	20.0	0.0226100	20.0000000%	0		0.0000000	87wah1	36
159	gd g	pu239t	rc	cu		0.0194585	10.0	0.0210000	0.0020000	99 mo g	u235t	0.0011000	59bun1	7
159	gd g	pu239t	rc	cu	su	0.0000000	0.0	0.0056100	0.0000700	144 ce g	pu239t	1.0000000	70sko1	0

159	gd g	pu239t	cm	cu		0.0000000	0.0	0.0224400	32.0000000%	0			0.0000000	73net2	0
159	gd g	pu239t	rc	cu		0.0208409	5.0	0.0216000	0.0007000	144	ce g	pu239t	3.8500000	71sor1	0
159	gd g	pu239t	cm	in		0.0000000	0.0	0.0003621	64.0000000%	0			1.0000000	88wah1	0
159	eu g	pu239t	cm	in		0.0000000	0.0	0.0070920	12.0000000%	0			1.0000000	88wah1	0
159	sm g	pu239t	cm	in		0.0000000	0.0	0.0138400	11.0000000%	0			1.0000000	88wah1	0
159	pm g	pu239t	cm	in		0.0000000	0.0	0.0013940	29.0000000%	0			1.0000000	88wah1	0
159		pu239f	es	cu		0.0413405	30.0	0.0440000	0.0000000	148	nd g	pu239f	1.7000000	69lis1	0
159		pu239f	es	cu	cm	0.0432614	30.0	0.0450000	0.0000000	0			0.0000000	72sid1	0
159		pu239f	es	re		0.0377246	11.5	1.9000000	10.0000000%	159		pu239t	1.0000000	74mee4	0
159		pu239f	cm	cu		0.0000000	0.0	0.0371000	20.0000000%	0			0.0000000	77cro1	0
159		pu239f	es	cu		0.0415469	30.0	0.0450000	0.0000000	148	nd g	pu239f	1.7300000	70lis1	0
159		pu239f	es	cu		0.0336477	30.0	0.0350000	0.0000000	0			0.0000000	74mae1	0
159	gd g	pu239f	cm	cu		0.0000000	0.0	0.0439800	64.0000000%	0			0.0000000	73net2	0
159		pu241t	cm	cu		0.0000000	0.0	0.0460000	0.0020000	0			0.0000000	73wal1	0
159		pu241t	cm	cu		0.0000000	0.0	0.0463000	10.0000000%	0			0.0000000	77cro1	0
159		pu241t	cm	cu	x3	0.0000000	0.0	0.0680000	0.0000000	0			0.0000000	72sid1	0
159	gd g	pu241t	rc	cu		0.0479799	5.1	0.0113000	0.0002000	144	ce g	pu241t	1.0000000	70sko1	0
159	gd g	pu241t	rc	cu		0.0480798	5.1	0.0462000	0.0018000	144	ce g	pu241t	4.0800000	71sor1	0
159		u233t	cm	cu		0.0000000	0.0	0.0009510	10.0000000%	0			0.0000000	77cro1	0
159		u233t	cm	cu	x3	0.0000000	0.0	0.0005000	0.0000000	0			0.0000000	72sid1	0
159		u233t	es	cu		0.0008000	99.0	0.0081230	99.0000000%	0			10.0000000	87wah1	36
159	gd g	u233t	cm	cu		0.0000000	0.0	0.0009100	0.0000000	0			0.0000000	73lam1	0
159	gd g	u233t	cm	cu		0.0000000	0.0	0.0009820	8.0000000%	0			0.0000000	73net2	0
159	gd g	u233t	rc	cu		0.0008862	5.0	0.0009050	0.0000250	99	mo g	u235t	0.0010300	65bun1	1
159		th232f	es	cu	x3	0.0000000	0.0	0.0019000	0.0000000	0			0.0000000	72sid1	0
159		th232f	es	cu		0.0000977	30.0	0.0001060	0.0000000	0			0.0000000	74mee0	0
159	gd g	th232f	cm	cu		0.0000000	0.0	0.0001970	32.0000000%	0			0.0000000	73net2	0
160	tb g	u235t	rc	in		0.0000000	66.7	0.0000030	0.0000020	140	ba g	u235t	635.0000000	70fah1	0
160	tb g	u235t	cm	in		0.0000000	0.0	0.0002642	74.0000000%	0			10000.0000000	88wah1	0
160	tb g	u235t	cm	cu	x3	0.0000000	0.0	0.0003711	90.0000000%	0			10000.0000000	73net2	0
160	gd g	u235t	ms	cu	x4	0.0000000	0.0	0.0027000	0.0000000	156	gd g	u235t	0.0260000	50ing1	0
160		u235t	es	cu		0.0003195	30.0	0.0003300	0.0000000	0			0.0000000	63wea1	0
160		u235t	cm	cu	x3	0.0000000	0.0	0.0001000	0.0000000	0			0.0000000	72sid1	0
160		u235t	cm	cu	x3	0.0000000	0.0	0.0003500	0.0000000	0			0.0000000	73lam1	0
160		u235t	es	cu		0.0003191	99.0	0.0032960	99.0000000%	0			10.0000000	87wah1	36
160	gd g	u235t	cm	in		0.0000000	0.0	0.0008117	47.0000000%	0			100.0000000	88wah1	0

160		u235t	cm	cu	x3	0.0000000	0.0	0.0003300	20.0000000%	0		0.0000000	77cro1	0
160	eu g	u235t	cm	in		0.0000000	0.0	0.0008052	11.0000000%	0		10.0000000	88wah1	0
160	sm g	u235t	cm	in		0.0000000	0.0	0.0002327	11.0000000%	0		1.0000000	88wah1	0
160	pm g	u235t	cm	in		0.0000000	0.0	0.0008200	38.0000000%	0		100.0000000	88wah1	0
160	tb g	u235f	cm	cu		0.0000000	0.0	0.0000003	90.0000000%	0		0.0000000	73net2	0
160		u235f	es	cu		0.0012581	30.0	0.0013900	0.0000000	148	nd g	u235f	1.8100000	63wea1 0
160		u235f	es	cu	cm	0.0013625	30.0	0.0014000	0.0000000	0		0.0000000	72sid1	0
160		u235f	es	cu		0.0009732	20.0	0.0010000	20.0000000%	0		0.0000000	77cro1	0
160	tb g	u235he	rc	fi		0.0000191	15.9	0.0027000	0.0003000	160		u235he	1.0000000	72net2 0
160	tb g	u235he	rc	in		0.0000216	9.1	0.0000002	0.0000000	0		0.0100000	72net2	0
160	tb g	u235he	cm	cu		0.0000000	0.0	0.0000220	9.9000000%	0		0.0000000	73net2	0
160		u235he	es	cu		0.0078679	30.0	0.0000800	0.0000000	0		0.0100000	69net1	0
160		u235he	cm	cu		0.0000000	0.0	0.0078000	20.0000000%	0		0.0000000	77cro1	0
160		u235he	es	cu		0.0070811	10.0	0.0072000	10.0000000%	0		0.0000000	74mee8	0
160	tb g	u238f	cm	cu		0.0000000	0.0	0.0000008	90.0000000%	0		100.0000000	73net2	0
160		u238f	es	cu		0.0037115	30.0	0.0033900	0.0000000	0		0.0000000	63wea1	0
160		u238f	es	cu	cm	0.0037225	30.0	0.0034000	0.0000000	0		0.0000000	72sid1	0
160		u238f	cm	cu		0.0000000	0.0	0.0028000	20.0000000%	0		0.0000000	77cro1	0
160		u238f	es	cu		0.0031970	30.0	0.0029200	0.0000000	0		0.0000000	74mae1	0
160	tb g	u238he	rc	fi		0.0000204	19.8	0.0012900	0.0001500	160		u238he	1.0000000	72net2 0
160	tb g	u238he	rc	in		0.0000213	9.5	0.0000002	0.0000000	0		0.0100000	72net2	0
160	tb g	u238he	cm	cu		0.0000000	0.0	0.0000210	9.9000000%	0		0.0000000	73net2	0
160		u238he	es	cu		0.0161979	30.0	0.0001600	0.0000000	0		0.0100000	69net1	0
160		u238he	cm	cu	su	0.0000000	0.0	0.0145000	0.0000000	0		0.0000000	73dar1	0
160		u238he	es	cu		0.0155197	15.0	0.0153300	15.0000000%	0		0.0000000	74mee9	0
160		u238he	cm	cu		0.0000000	0.0	0.0130000	20.0000000%	0		0.0000000	77cro1	0
160	tb g	pu239t	cm	cu		0.0000000	0.0	0.0000160	50.0000000%	0		0.0000000	73net2	0
160		pu239t	es	cu		0.0096167	30.0	0.0098000	0.0000000	0		0.0000000	63wea1	0
160		pu239t	cm	cu		0.0000000	0.0	0.0100000	0.0000000	0		0.0000000	72sid1	0
160		pu239t	cm	cu		0.0000000	0.0	0.0110000	0.0000000	0		0.0000000	73lam1	0
160		pu239t	es	cu		0.0097011	20.0	0.0098860	20.0000000%	0		0.0000000	87wah1	36
160		pu239t	cm	cu	x3	0.0000000	0.0	0.0035000	20.0000000%	0		0.0000000	77cro1	0
160	gd g	pu239t	cm	in		0.0000000	0.0	0.0007623	27.0000000%	0		1.0000000	88wah1	0
160	eu g	pu239t	cm	in		0.0000000	0.0	0.0046420	11.0000000%	0		1.0000000	88wah1	0
160	sm g	pu239t	cm	in		0.0000000	0.0	0.0043400	12.0000000%	0		1.0000000	88wah1	0
160	pm g	pu239t	cm	in		0.0000000	0.0	0.0001354	68.0000000%	0		1.0000000	88wah1	0

160 tb g pu239f cm cu 0.0000000 0.0 0.0000530 50.0000000% 0 0.0000000 73net2 0
160 pu239f cm cu x3 0.0000000 0.0 0.0250000 0.0000000 148 nd g pu239f 1.7000000 69lis1 0
160 pu239f cm cu x3 0.0000000 0.0 0.0260000 0.0000000 0 0.0000000 72sid1 0
160 pu239f cm cu x3 0.0000000 0.0 0.0245000 20.0000000% 0 0.0000000 77cro1 0
160 pu239f cm cu su 0.0000000 0.0 0.0280000 0.0000000 148 nd g pu239f 1.7300000 70lis1 0
160 pu239f cm cu x3 0.0000000 0.0 0.0220000 0.0000000 0 0.0000000 74mae1 0
160 pu239f es cu 0.0160330 30.0 0.0180000 30.0000000% 0 0.0000000 89rid1 0
160 pu241t es cu 0.0204986 20.0 0.0200000 0.0040000 0 0.0000000 73wal1 0
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160 pu241t cm cu 0.0000000 0.0 0.0180000 20.0000000% 0 0.0000000 77cro1 0
160 pu241t cm cu x3 0.0000000 0.0 0.0450000 0.0000000 0 0.0000000 72sid1 0
160 tb g u233t cm cu 0.0000000 0.0 0.0000003 90.0000000% 0 0.0000000 73net2 0
160 u233t cm cu 0.0000000 0.0 0.0003000 20.0000000% 0 0.0000000 77cro1 0
160 u233t es cu 0.0003201 30.0 0.0003500 0.0000000 0 0.0000000 73lam1 0
160 u233t es cu 0.0002758 99.0 0.0030160 99.0000000% 0 10.0000000 87wah1 36
160 th232f es cu x3 0.0000000 0.0 0.0009000 0.0000000 0 0.0000000 72sid1 0
160 th232f es cu 0.0000692 30.0 0.0000751 0.0000000 0 0.0000000 74mee0 0
161 dy g u235t es cu 0.0000757 30.0 0.0000760 0.0000000 0 0.0000000 63wea1 0
161 u235t cm cu 0.0000000 0.0 0.0000900 0.0000000 0 0.0000000 72sid1 0
161 u235t cm cu 0.0000000 0.0 0.0000900 0.0000000 0 0.0000000 73lam1 0
161 u235t cm cu 0.0000000 0.0 0.0000798 14.0000000% 0 0.0000000 77cro1 0
161 u235t es cu 0.0000805 99.0 0.0080810 99.0000000% 0 100.0000000 87wah1 36
161 tb g u235t rc cu 0.0000815 20.0 0.0000830 0.0000090 99 mo g u235t 6.2000000 54fre1 0
161 tb g u235t rc cu 0.0000712 60.0 0.0000725 0.0000000 99 mo g u235t 6.2000000 54pet1 0
161 tb g u235t es cu cm 0.0000835 5.0 0.0000838 5.0000000% 0 0.0000000 73net2 0
161 tb g u235t rc cu x4 0.0000000 0.0 0.0001320 0.0000520 0 0.0000000 74rao1 0
161 tb g u235t cm cu 0.0000000 0.0 0.0000760 0.0000000 0 0.0000000 60kat1 0
161 tb g u235t rc cu 0.0000880 5.2 0.0000876 0.0000014 99 mo g u235t 6.0600000 65bun1 36
161 gd g u235t cm in 0.0000000 0.0 0.0009132 21.0000000% 0 100.0000000 88wah1 0
161 eu g u235t cm in 0.0000000 0.0 0.0003968 11.0000000% 0 10.0000000 88wah1 0
161 sm g u235t cm in 0.0000000 0.0 0.0003148 13.0000000% 0 10.0000000 88wah1 0
161 pm g u235t cm in 0.0000000 0.0 0.0004642 95.0000000% 0 1000.0000000 88wah1 0
161 u235f es re 0.0003311 11.5 1.0000000 10.0000000% 161 tb g u235f 1.0000000 89rid1 0

161 u235f cm cu x3 0.0000000 0.0 0.0004100 0.0000000 0 0.0000000 72sid1 0
161 u235f cm cu x3 0.0000000 0.0 0.0003980 14.3000000% 0 0.0000000 77cro1 0
161 tb g u235f es cu cm 0.0002940 15.1 0.0002960 15.1000000% 0 0.0000000 73net2 0
161 tb g u235f es cu x3 0.0000000 0.0 0.0004600 0.0000000 137 cs g u235f 6.3000000 60kat1 0
161 tb g u235f rc re su 0.0000000 0.0 4.4000000 3.0000000% 99 mo g u235t 0.0000000 64cow1 7
161 tb g u235f rc cu x4 0.0000000 0.0 3.2860000 5.6000000% 99 mo g u235t 0.0000000 76for1 7
161 tb g u235f rc cu 0.0003631 5.6 4.4050000 5.6000000% 99 mo g u235t 0.0000000 76for1 7
161 tb g u235f rc cu 0.0003668 5.6 4.4500000 5.6000000% 99 mo g u235t 0.0000000 76for1 7
161 tb g u235f rc cu 0.0002957 5.6 3.5870000 5.6000000% 99 mo g u235t 0.0000000 76for1 7
161 tb g u235f rc cu x4 0.0000000 0.0 5.2000000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
161 tb g u235f rc cu x4 0.0000000 0.0 0.0004550 15.0000000% 99 mo g u235t 0.0000780 59bun2 11
161 tb g u235f rc cu x4 0.0000000 0.0 2.8080000 5.6000000% 99 mo g u235t 0.0000000 76for1 7
161 tb g u235f es cu 0.0003124 7.2 0.0003145 7.2000000% 0 0.0000000 91jam2 0
161 tb g u235f es cu 0.0003218 8.0 0.0003240 8.0000000% 0 0.0000000 89rid1 0
161 u235he cm cu 0.0000000 0.0 0.0051000 11.3000000% 0 0.0000000 77cro1 0
161 u235he es cu 0.0051393 10.0 0.0052000 10.0000000% 0 0.0000000 74mee8 0
161 tb g u235he rc re 0.0066630 10.0 94.0000000 10.0000000% 99 mo g u235t 0.0000000 62hic1 7
161 tb g u235he rc re 0.0055346 7.1 0.0000560 0.0000040 0 0.0100000 69net1 0
161 tb g u235he es cu cm 0.0054556 7.9 0.0055200 7.9000000% 0 0.0000000 73net2 0
161 tb g u235he rc re su 0.0000000 0.0 66.2000000 3.3600000% 99 mo g u235t 0.0000000 64cow1 7
161 tb g u235he rc cu 0.0046925 5.6 66.2000000 5.6000000% 99 mo g u235t 0.0000000 76for1 7
161 u238f es cu cm 0.0018213 30.0 0.0018000 0.0000000 0 0.0000000 72sid1 0
161 u238f es cu 0.0009350 20.0 0.0009240 20.0000000% 0 0.0000000 74mee1 0
161 u238f cm cu 0.0000000 0.0 0.0009680 25.5000000% 0 0.0000000 77cro1 0
161 u238f rc cu x4 0.0000000 0.0 0.0040000 0.0003000 0 0.0000000 85li 1 0
161 tb g u238f es cu cm 0.0010119 15.1 0.0010000 15.1000000% 0 0.0000000 73net2 0
161 tb g u238f rc cu x4 0.0000000 0.0 0.0006450 0.0002580 0 0.0000000 74rao1 0
161 tb g u238f rc cu x4 0.0000000 0.0 0.0016000 15.0000000% 99 mo g u235t 0.0000780 59bun2 13
161 tb g u238f cm cu 0.0000000 0.0 0.0016000 0.0000000 0 0.0000000 60kat1 0
161 tb g u238f rc re x4 0.0000000 0.0 22.6500000 0.5000000 99 mo g u235t 0.0000000 61lev1 7
161 tb g u238f rc re 0.0011853 10.0 13.6000000 3.0000000% 99 mo g u235t 0.0000000 64cow1 7
161 tb g u238f rc cu 0.0011853 5.6 13.6000000 5.6000000% 99 mo g u235t 0.0000000 76for1 7
161 tb g u238f rc cu 0.0012977 5.0 14.8900000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
161 tb g u238f rc cu 0.0011853 5.6 13.6000000 5.6000000% 99 mo g u235t 0.0000000 76for2 7
161 tb g u238f rc cu x4 0.0000000 0.0 0.0006450 0.0001290 0 0.0000000 79rao1 0
161 tb g u238f rc cu ul 0.0000000 0.0 0.0100000 99.0000000% 0 0.0000000 85chi1 0

161 tb g u238f es cu 0.0011707 6.8 0.0011570 6.8000000% 0 0.0000000 91jam2 0
161 tb g u238f es cu 0.0013134 11.0 0.0012980 11.0000000% 0 0.0000000 89rid1 0
161 u238he cm cu su 0.0000000 0.0 0.0085000 0.0004000 0 0.0000000 73dar1 0
161 u238he es cu 0.0082755 15.0 0.0082500 15.0000000% 0 0.0000000 74mee9 0
161 u238he cm cu 0.0000000 0.0 0.0078400 20.9000000% 0 0.0000000 77cro1 0
161 tb g u238he rc re 0.0089275 5.6 0.0000890 0.0000050 0 0.0100000 69net1 0
161 tb g u238he rc cu 0.0085263 5.0 0.0085000 0.0004000 0 0.0000000 72pri1 0
161 tb g u238he es cu cm 0.0082655 7.9 0.0082400 7.9000000% 0 0.0000000 73net2 0
161 tb g u238he rc re su 0.0000000 0.0 101.0000000 3.1500000% 99 mo g u235t 0.0000000 64cow1 7
161 tb g u238he rc cu 0.0080715 5.6 101.0000000 5.6000000% 99 mo g u235t 0.0000000 76for1 7
161 pu239t cm cu 0.0000000 0.0 0.0040000 0.0000000 0 0.0000000 72sid1 0
161 pu239t cm cu 0.0000000 0.0 0.0051000 0.0000000 0 0.0000000 73lam1 0
161 pu239t cm cu x3 0.0000000 0.0 0.0004600 14.0000000% 0 0.0000000 77cro1 0
161 pu239t es cu 0.0049650 20.0 0.0049980 20.0000000% 0 0.0000000 87wah1 36
161 tb g pu239t rc cu 0.0043083 10.0 0.0039000 0.0002500 99 mo g u235t 0.0000780 59bun1 7
161 tb g pu239t cm cu 0.0000000 0.0 0.0039000 0.0000000 0 0.0000000 60kat1 0
161 tb g pu239t rc cu su 0.0000000 0.0 0.0013400 0.0000200 144 ce g pu239t 1.0000000 70sko1 0
161 tb g pu239t cm cu 0.0000000 0.0 0.0045050 32.0000000% 0 0.0000000 73net2 0
161 tb g pu239t rc cu 0.0049690 5.0 0.0051500 0.0002000 144 ce g pu239t 3.8500000 71sor1 0
161 tb g pu239t rc cu x4 0.0000000 0.0 0.0066200 5.0000000% 0 0.0000000 84hic1 36
161 gd g pu239t cm in 0.0000000 0.0 0.0010510 15.0000000% 0 1.0000000 88wah1 0
161 eu g pu239t cm in 0.0000000 0.0 0.0029720 11.0000000% 0 1.0000000 88wah1 0
161 sm g pu239t cm in 0.0000000 0.0 0.0009156 18.0000000% 0 1.0000000 88wah1 0
161 pu239f es cu 0.0131099 30.0 0.0140000 0.0000000 148 nd g pu239f 1.7500000 65and1 0
161 pu239f es cu cm 0.0138088 30.0 0.0140000 0.0000000 0 0.0000000 72sid1 0
161 pu239f es re 0.0133699 11.5 2.8000000 10.0000000% 161 pu239t 1.0000000 74mee4 0
161 pu239f cm cu 0.0000000 0.0 0.0110000 20.0000000% 0 0.0000000 77cro1 0
161 tb g pu239f es cu x3 0.0000000 0.0 0.0083000 10.1000000% 0 0.0000000 73net2 0
161 tb g pu239f rc cu 0.0075807 5.6 92.0000000 5.6000000% 99 mo g u235t 0.0000000 76for1 7
161 tb g pu239f rc cu 0.0083388 5.0 101.2000000 3.0000000% 99 mo g u235t 0.0000000 76for1 7
161 pu241t es cu 0.0085375 20.0 0.0085000 20.0000000% 0 0.0000000 74mee1 0
161 pu241t cm cu 0.0000000 0.0 0.0081600 10.0000000% 0 0.0000000 77cro1 0
161 pu241t cm cu x3 0.0000000 0.0 0.0150000 0.0000000 0 0.0000000 72sid1 0
161 tb g pu241t rc cu 0.0084496 5.1 0.0019900 0.0000400 144 ce g pu241t 1.0000000 70sko1 0
161 tb g pu241t rc cu 0.0084816 5.1 0.0081500 0.0003200 144 ce g pu241t 4.0800000 71sor1 0
161 u233t cm cu 0.0000000 0.0 0.0001000 0.0000000 0 0.0000000 72sid1 0

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 161        u233t    cm    cu        0.0000000  0.0   0.0001180  0.0000000     0                    0.0000000   73lam1      0
 161        u233t    cm    cu        0.0000000  0.0   0.0001170 10.0000000%    0                    0.0000000   77cro1      0
 161        u233t    es    cu        0.0001092 99.0   0.0011090 99.0000000%    0                   10.0000000   87wah1     36
 161 tb g   u233t    rc    cu        0.0001217  5.0   0.0001170  0.0000035    99 mo g      u235t      0.0000820   65bun1      1
 161 tb g   u233t    cm    cu        0.0000000  0.0   0.0001320 16.0000000%    0                    0.0000000   73net2      0
 161        th232f   es    cu    x3  0.0000000  0.0   0.0004000  0.0000000     0                    0.0000000   72sid1      0
 161 tb g   th232f   es    cu        0.0000132 32.0   0.0000140 32.0000000%    0                    0.0000000   73net2      0
 161 tb g   th232f   es    cu        0.0000156 30.0   0.0000165  0.0000000     0                    0.0000000   74mee0      0
 162        u235t    es    cu        0.0000162 99.0   0.0016720 99.0000000%    0                  100.0000000   87wah1     36
 162        u235t    es    cu        0.0000159 30.0   0.0000164  0.0000000     0                    0.0000000   87rid1      0
 162        u235t    cm    cu    x3  0.0000000  0.0   0.0000900  0.0000000     0                    0.0000000   72sid1      0
 162 tb g   u235t    cm    in        0.0000000  0.0   0.0004925 83.0000000%    0                10000.0000000   88wah1      0
 162 tb m   u235t    cm    in        0.0000000  0.0   0.0004925 83.0000000%    0                10000.0000000   88wah1      0
 162 gd g   u235t    cm    in        0.0000000  0.0   0.0006426 13.0000000%    0                  100.0000000   88wah1      0
 162 eu g   u235t    cm    in        0.0000000  0.0   0.0007462 11.0000000%    0                  100.0000000   88wah1      0
 162 sm g   u235t    cm    in        0.0000000  0.0   0.0002721 23.0000000%    0                  100.0000000   88wah1      0
 162        u235f    es    cu        0.0000577 20.0   0.0000600 20.0000000%    0                    0.0000000   74mee1      0
 162        u235he   es    cu        0.0030488 30.0   0.0000310  0.0000000     0                    0.0100000   69net1      0
 162        u235he   es    cu        0.0027538 10.0   0.0028000 10.0000000%    0                    0.0000000   74mee8      0
 162        u238f    es    cu        0.0003402 30.0   0.0003000  0.0000000     0                    0.0000000   79rao1      0
 162        u238he   es    cu        0.0060742 30.0   0.0000600  0.0000000     0                    0.0100000   69net1      0
 162        u238he   cm    cu    su  0.0000000  0.0   0.0051000  0.0000000     0                    0.0000000   73dar1      0
 162        u238he   es    cu        0.0059021 15.0   0.0058300 15.0000000%    0                    0.0000000   74mee9      0
 162        pu239t   es    cu        0.0023747 30.0   0.0024200  0.0000000     0                    0.0000000   63wea1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value       no.   treatment

 162        pu239t   cm    cu        0.0000000  0.0   0.0024000  0.0000000     0                    0.0000000   72sid1      0
 162        pu239t   cm    cu        0.0000000  0.0   0.0025000  0.0000000     0                    0.0000000   73lam1      0
 162        pu239t   es    cu        0.0021667 20.0   0.0022080 20.0000000%    0                    0.0000000   87wah1     36
 162 tb g   pu239t   cm    in        0.0000000  0.0   0.0002518 47.0000000%    0                   10.0000000   88wah1      0
 162 tb m   pu239t   cm    in        0.0000000  0.0   0.0002518 47.0000000%    0                   10.0000000   88wah1      0
 162 gd g   pu239t   cm    in        0.0000000  0.0   0.0010300 11.0000000%    0                    1.0000000   88wah1      0
 162 eu g   pu239t   cm    in        0.0000000  0.0   0.0009659 11.0000000%    0                    1.0000000   88wah1      0
 162 sm g   pu239t   cm    in        0.0000000  0.0   0.0001355 39.0000000%    0                    1.0000000   88wah1      0
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162		pu239f	es	cu	cm	0.0056722	30.0	0.0060000	0.0000000	0		0.0000000	72sid1	0	
162		pu239f	es	re		0.0063265	18.9	3.0000000	10.0000000%	162	pu239t	1.0000000	74mee4	0	
162		pu241t	es	cu		0.0000127	30.0	0.0000123	0.0000000	0		0.0000000	87rid1	0	
162		u233t	es	cu		0.0000127	99.0	0.0014460	99.0000000%	0		100.0000000	87wah1	36	
162		th232f	es	cu		0.0000080	30.0	0.0000087	0.0000000	0		0.0000000	74mee0	0	
163		u235t	es	cu		0.0000062	99.0	0.0064320	99.0000000%	0		1000.0000000	87wah1	36	
163		u235t	es	cu		0.0000061	30.0	0.0000063	0.0000000	0		0.0000000	87rid1	0	
163	tb g	u235t	cm	in		0.0000000	0.0	0.0002418	34.0000000%	0		1000.0000000	88wah1	0	
163	gd g	u235t	cm	in		0.0000000	0.0	0.0003855	11.0000000%	0		100.0000000	88wah1	0	
163	eu g	u235t	cm	in		0.0000000	0.0	0.0002137	11.0000000%	0		100.0000000	88wah1	0	
163	sm g	u235t	cm	in		0.0000000	0.0	0.0001962	53.0000000%	0		1000.0000000	88wah1	0	
163		u235f	es	cu		0.0000096	20.0	0.0000100	20.0000000%	0		0.0000000	74mee1	0	
163		u235he	es	cu		0.0017703	30.0	0.0000180	0.0000000	0		0.0100000	69net1	0	
163		u235he	es	cu		0.0015637	10.0	0.0015900	10.0000000%	0		0.0000000	74mee8	0	
163		u238f	es	cu		0.0002041	30.0	0.0001800	0.0000000	0		0.0000000	79rao1	0	
163		u238he	es	cu		0.0034421	30.0	0.0000340	0.0000000	0		0.0100000	69net1	0	
163		u238he	cm	cu	su	0.0000000	0.0	0.0029000	0.0000000	0		0.0000000	73dar1	0	
163		u238he	es	cu		0.0033813	15.0	0.0033400	15.0000000%	0		0.0000000	74mee9	0	
163		pu239t	es	cu		0.0009541	30.0	0.0009800	0.0000000	0		0.0000000	63wea1	0	
163		pu239t	cm	cu		0.0000000	0.0	0.0010000	0.0000000	0		0.0000000	72sid1	0	
163		pu239t	es	cu		0.0008287	99.0	0.0085120	99.0000000%	0		10.0000000	87wah1	36	
163		pu239t	es	cu		0.0008859	30.0	0.0009100	0.0000000	0		0.0000000	87rid1	0	
163	tb g	pu239t	cm	in		0.0000000	0.0	0.0008024	21.0000000%	0		10.0000000	88wah1	0	
163	gd g	pu239t	cm	in		0.0000000	0.0	0.0005181	11.0000000%	0		1.0000000	88wah1	0	
163	eu g	pu239t	cm	in		0.0000000	0.0	0.0002322	13.0000000%	0		1.0000000	88wah1	0	
163	sm g	pu239t	cm	in		0.0000000	0.0	0.0009940	95.0000000%	0		100.0000000	88wah1	0	
163		pu239f	es	re	gt	0.0031611	37.6	3.7400000	0.0000000	163	pu239t	1.0000000	74mee4	0	
163		pu239f	es	cu		0.0031373	30.0	0.0034000	0.0000000	0		0.0000000	87rid1	0	
163		pu241t	es	cu		0.0000059	30.0	0.0000057	0.0000000	0		0.0000000	87rid1	0	
163		u233t	es	cu		0.0000059	99.0	0.0067450	99.0000000%	0		1000.0000000	87wah1	36	
163		th232f	es	cu		0.0000046	30.0	0.0000050	0.0000000	0		0.0000000	74mee0	0	
164		u235t	es	cu		0.0000019	99.0	0.0019940	99.0000000%	0		1000.0000000	87wah1	36	
164		u235t	es	cu		0.0000019	30.0	0.0000019	0.0000000	0		0.0000000	87rid1	0	
164	tb g	u235t	cm	in		0.0000000	0.0	0.0002148	17.0000000%	0		1000.0000000	88wah1	0	
164	gd g	u235t	cm	in		0.0000000	0.0	0.0001534	11.0000000%	0		100.0000000	88wah1	0	
164	eu g	u235t	cm	in		0.0000000	0.0	0.0002315	16.0000000%	0		1000.0000000	88wah1	0	

164		u235f	es	cu		0.0000058	20.0	0.0000060	20.0000000%	0		0.0000000	74mee1	0
164		u235he	es	cu		0.0010818	30.0	0.0000110	0.0000000	0		0.0100000	69net1	0
164		u235he	es	cu		0.0009638	10.0	0.0009800	10.0000000%	0		0.0000000	74mee8	0
164		u238f	es	cu		0.0001248	30.0	0.0001100	0.0000000	0		0.0000000	79rao1	0
164		u238he	es	cu		0.0020247	30.0	0.0000200	0.0000000	0		0.0100000	69net1	0
164		u238he	cm	cu	su	0.0000000	0.0	0.0018000	0.0000000	0		0.0000000	73dar1	0
164		u238he	es	cu		0.0019842	15.0	0.0019600	15.0000000%	0		0.0000000	74mee9	0
164		pu239t	es	cu		0.0003602	30.0	0.0003700	0.0000000	0		0.0000000	63wea1	0
164		pu239t	cm	cu		0.0000000	0.0	0.0003700	0.0000000	0		0.0000000	72sid1	0
164		pu239t	es	cu		0.0002992	99.0	0.0030730	99.0000000%	0		10.0000000	87wah1	36
164		pu239t	es	cu		0.0003018	30.0	0.0003100	0.0000000	0		0.0000000	87rid1	0
164	dy g	pu239t	cm	in		0.0000000	0.0	0.0003767	84.0000000%	0		100.0000000	88wah1	0
164	tb g	pu239t	cm	in		0.0000000	0.0	0.0006713	13.0000000%	0		10.0000000	88wah1	0
164	gd g	pu239t	cm	in		0.0000000	0.0	0.0002035	11.0000000%	0		1.0000000	88wah1	0
164	eu g	pu239t	cm	in		0.0000000	0.0	0.0002975	23.0000000%	0		10.0000000	88wah1	0
164		pu239f	es	re	gt	0.0018552	37.6	6.1000000	0.0000000	164	pu239t	1.0000000	74mee4	0
164		pu239f	es	cu		0.0017532	30.0	0.0019000	0.0000000	0		0.0000000	87rid1	0
164		pu241t	es	cu		0.0000020	30.0	0.0000019	0.0000000	0		0.0000000	87rid1	0
164		u233t	es	cu		0.0000019	99.0	0.0022170	99.0000000%	0		1000.0000000	87wah1	36
164		th232f	es	cu		0.0000020	30.0	0.0000022	0.0000000	0		0.0000000	74mee0	0
165		u235t	es	cu		0.0000010	99.0	0.0098310	99.0000000%	0		10000.0000000	87wah1	36
165	dy g	u235t	cm	in		0.0000000	0.0	0.0001630	58.0000000%	0		10000.0000000	88wah1	0
165	dy m	u235t	cm	in		0.0000000	0.0	0.0000244	58.0000000%	0		10000.0000000	88wah1	0
165	tb g	u235t	cm	in		0.0000000	0.0	0.0003141	11.0000000%	0		1000.0000000	88wah1	0
165	gd g	u235t	cm	in		0.0000000	0.0	0.0006086	11.0000000%	0		1000.0000000	88wah1	0
165	eu g	u235t	cm	in		0.0000000	0.0	0.0004137	31.0000000%	0		10000.0000000	88wah1	0
165		u235f	es	cu		0.0000023	20.0	0.0000024	20.0000000%	0		0.0000000	74mee1	0
165		u235he	es	cu		0.0005901	30.0	0.0000060	0.0000000	0		0.0100000	69net1	0
165		u235he	es	cu		0.0005321	10.0	0.0005410	10.0000000%	0		0.0000000	74mee8	0
165		u238f	es	cu		0.0000766	30.0	0.0000700	0.0000000	0		0.0000000	79rao1	0
165		u238he	es	cu		0.0011136	30.0	0.0000110	0.0000000	0		0.0100000	69net1	0
165		u238he	cm	cu	su	0.0000000	0.0	0.0010500	0.0000000	0		0.0000000	73dar1	0
165		u238he	es	cu		0.0010934	15.0	0.0010800	15.0000000%	0		0.0000000	74mee9	0
165		pu239t	es	cu		0.0001363	30.0	0.0001400	0.0000000	0		0.0000000	63wea1	0
165		pu239t	es	cu		0.0001128	99.0	0.0011590	99.0000000%	0		10.0000000	87wah1	36
165		pu239t	cm	cu	x3	0.0000000	0.0	0.0001400	0.0000000	0		0.0000000	72sid1	0

165 dy g pu239t cm in 0.0000000 0.0 0.0005783 35.0000000% 0 100.0000000 88wah1 0
165 dy m pu239t cm in 0.0000000 0.0 0.0000864 35.0000000% 0 100.0000000 88wah1 0
165 tb g pu239t cm in 0.0000000 0.0 0.0005209 11.0000000% 0 10.0000000 88wah1 0
165 gd g pu239t cm in 0.0000000 0.0 0.0005273 11.0000000% 0 10.0000000 88wah1 0
165 eu g pu239t cm in 0.0000000 0.0 0.0003468 52.0000000% 0 100.0000000 88wah1 0
165 pu239f es re gt 0.0008973 37.6 7.5000000 0.0000000 165 pu239t 1.0000000 74mee4 0
165 pu241t es cu 0.0000006 30.0 0.0000006 0.0000000 0 0.0000000 87rid1 0
165 u233t es cu 0.0000006 99.0 0.0069140 99.0000000% 0 10000.0000000 87wah1 36
165 th232f es cu 0.0000004 30.0 0.0000374 0.0000000 0 100.0000000 74mee0 0
166 u235t es cu 0.0000004 99.0 0.0045790 99.0000000% 0 10000.0000000 87wah1 36
166 dy g u235t rc cu 0.0000003 50.0 0.0000060 50.0000000% 143 ce g u235t 100.0000000 69mun1 0
166 dy g u235t cm cu 0.0000000 0.0 0.0000003 16.0000000% 0 0.0000000 73net2 0
166 dy g u235t cm in 0.0000000 0.0 0.0005028 25.0000000% 0 10000.0000000 88wah1 0
166 tb g u235t cm in 0.0000000 0.0 0.0002102 11.0000000% 0 1000.0000000 88wah1 0
166 gd g u235t cm in 0.0000000 0.0 0.0001941 12.0000000% 0 1000.0000000 88wah1 0
166 eu g u235t cm in 0.0000000 0.0 0.0003235 76.0000000% 0 100000.0000000 88wah1 0
166 u235f es cu 0.0000010 20.0 0.0000010 20.0000000% 0 0.0000000 74mee1 0
166 dy g u235f cm cu 0.0000000 0.0 0.0000009 50.0000000% 0 0.0000000 73net2 0
166 u235he es cu 0.0002678 10.0 0.0002710 10.0000000% 0 0.0000000 74mee8 0
166 dy g u235he rc re 0.0002767 7.1 0.0000028 0.0000002 0 0.0100000 69net1 0
166 dy g u235he cm cu x3 0.0000000 0.0 0.0002800 7.9000000% 0 0.0000000 73net2 0
166 u238f es cu 0.0000567 30.0 0.0000500 0.0000000 0 0.0000000 79rao1 0
166 dy g u238f cm cu 0.0000000 0.0 0.0000037 50.1000000% 0 0.0000000 73net2 0
166 u238he cm cu su 0.0000000 0.0 0.0006300 0.0000600 0 0.0000000 73dar1 0
166 u238he es cu 0.0006198 15.0 0.0006160 15.0000000% 0 0.0000000 74mee9 0
166 dy g u238he rc re 0.0006339 9.5 0.0000063 0.0000006 0 0.0100000 69net1 0
166 dy g u238he cm cu x3 0.0000000 0.0 0.0006300 9.9000000% 0 0.0000000 73net2 0
166 pu239t cm cu x3 0.0000000 0.0 0.0000760 0.0000000 0 0.0000000 73lam1 0
166 pu239t es cu 0.0000557 99.0 0.0056770 99.0000000% 0 100.0000000 87wah1 36
166 dy g pu239t cm cu x3 0.0000000 0.0 0.0000681 16.0000000% 0 0.0000000 73net2 0
166 dy g pu239t rc cu 0.0000667 14.7 0.0000680 0.0000100 0 0.0000000 59bun1 0
166 dy g pu239t cm in 0.0000000 0.0 0.0001187 17.0000000% 0 10.0000000 88wah1 0
166 dy g pu239t cm cu x3 0.0000000 0.0 0.0000680 0.0000000 0 0.0000000 60kat1 0
166 tb g pu239t cm in 0.0000000 0.0 0.0002979 11.0000000% 0 10.0000000 88wah1 0
166 gd g pu239t cm in 0.0000000 0.0 0.0001434 15.0000000% 0 10.0000000 88wah1 0
166 pu239f es re gt 0.0006346 34.0 10.7000000 0.0000000 166 pu239t 1.0000000 74mee4 0

166 pu241t es cu 0.0000004 30.0 0.0000004 0.0000000 0 0.0000000 87rid1 0
166 u233t es cu 0.0000004 99.0 0.0041880 99.0000000% 0 10000.0000000 87wah1 36
166 dy g u233t cm cu 0.0000000 0.0 0.0000005 32.0000000% 0 0.0000000 73net2 0
166 th232f es cu 0.0000001 30.0 0.0000150 0.0000000 0 100.0000000 74mee0 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

166 dy g th232f cm cu 0.0000000 0.0 0.0000027 50.1000000% 0 100.0000000 73net2 0
167 u235t es cu 0.0000003 99.0 0.0026080 99.0000000% 0 10000.0000000 87wah1 36
167 u235t es cu 0.0000002 30.0 0.0000003 0.0000000 0 0.0000000 87rid1 0
167 dy g u235t cm in 0.0000000 0.0 0.0007662 14.0000000% 0 10000.0000000 88wah1 0
167 tb g u235t cm in 0.0000000 0.0 0.0001465 11.0000000% 0 1000.0000000 88wah1 0
167 gd g u235t cm in 0.0000000 0.0 0.0003631 20.0000000% 0 10000.0000000 88wah1 0
167 u235f es cu 0.0000004 20.0 0.0000004 20.0000000% 0 0.0000000 74mee1 0
167 u235he es cu 0.0002065 30.0 0.0000021 0.0000000 0 0.0100000 69net1 0
167 u235he es cu 0.0001829 10.0 0.0001860 10.0000000% 0 0.0000000 74mee8 0
167 ho g u238f rc cu 0.0000435 19.6 0.0000408 0.0000080 0 0.0000000 79rao1 0
167 u238he es cu 0.0003746 30.0 0.0000037 0.0000000 0 0.0100000 69net1 0
167 u238he es cu su 0.0000000 0.0 0.0003700 0.0000000 0 0.0000000 73dar1 0
167 u238he es cu 0.0003675 15.0 0.0003630 15.0000000% 0 0.0000000 74mee9 0
167 pu239t es cu 0.0000153 99.0 0.0015890 99.0000000% 0 100.0000000 87wah1 36
167 pu239t es cu 0.0000152 30.0 0.0000158 0.0000000 0 0.0000000 87rid1 0
167 ho g pu239t cm in 0.0000000 0.0 0.0003270 61.0000000% 0 1000.0000000 88wah1 0
167 dy g pu239t cm in 0.0000000 0.0 0.0006533 12.0000000% 0 100.0000000 88wah1 0
167 tb g pu239t cm in 0.0000000 0.0 0.0007766 11.0000000% 0 100.0000000 88wah1 0
167 gd g pu239t cm in 0.0000000 0.0 0.0001205 30.0000000% 0 100.0000000 88wah1 0
167 pu239f es cu 0.0002672 30.0 0.0003000 0.0000000 0 0.0000000 74mee1 0
167 pu241t es cu 0.0000001 30.0 0.0000001 0.0000000 0 0.0000000 87rid1 0
167 u233t es cu 0.0000001 99.0 0.0057890 99.0000000% 0 100000.0000000 87wah1 36
167 th232f es cu 0.0000001 30.0 0.0000106 0.0000000 0 100.0000000 74mee0 0
168 u235t es cu 0.0000001 99.0 0.0060170 99.0000000% 0 100000.0000000 87wah1 36
168 u235t es cu 0.0000001 30.0 0.0000001 0.0000000 0 0.0000000 87rid1 0
168 ho g u235t cm in 0.0000000 0.0 0.0001295 42.0000000% 0 100000.0000000 88wah1 0
168 dy g u235t cm in 0.0000000 0.0 0.0003723 11.0000000% 0 10000.0000000 88wah1 0
168 tb g u235t cm in 0.0000000 0.0 0.0001951 11.0000000% 0 10000.0000000 88wah1 0

168	gd	g	u235t	cm	in		0.0000000	0.0	0.0002131	43.0000000%	0	100000.0000000	88wah1	0
168			u235f	es	cu		0.0000001	20.0	0.0000001	20.0000000%	0	0.0000000	74mee1	0
168			u235he	es	cu		0.0001180	30.0	0.0000012	0.0000000	0	0.0100000	69net1	0
168			u235he	es	cu		0.0001052	10.0	0.0001070	10.0000000%	0	0.0000000	74mee8	0
168			u238f	es	cu		0.0000284	30.0	0.0000250	0.0000000	0	0.0000000	79rao1	0
168			u238he	es	cu		0.0002025	30.0	0.0000020	0.0000000	0	0.0100000	69net1	0
168			u238he	cm	cu	su	0.0000000	0.0	0.0002200	0.0000000	0	0.0000000	73dar1	0
168			u238he	es	cu		0.0001994	15.0	0.0001970	15.0000000%	0	0.0000000	74mee9	0
168			pu239t	es	cu		0.0000043	99.0	0.0044840	99.0000000%	0	1000.0000000	87wah1	36
168			pu239t	es	cu		0.0000043	30.0	0.0000044	0.0000000	0	0.0000000	87rid1	0
168	ho	g	pu239t	cm	in		0.0000000	0.0	0.0003263	26.0000000%	0	1000.0000000	88wah1	0
168	dy	g	pu239t	cm	in		0.0000000	0.0	0.0002911	11.0000000%	0	100.0000000	88wah1	0
168	tb	g	pu239t	cm	in		0.0000000	0.0	0.0001156	12.0000000%	0	100.0000000	88wah1	0
168	gd	g	pu239t	cm	in		0.0000000	0.0	0.0007948	71.0000000%	0	10000.0000000	88wah1	0
168			pu239f	es	cu		0.0000766	30.0	0.0000860	0.0000000	0	0.0000000	74mee1	0
168			pu241t	es	cu		0.0000095	30.0	0.0000918	0.0000000	0	10.0000000	87rid1	0
168			u233t	es	cu		0.0000000	99.0	0.0014680	99.0000000%	0	100000.0000000	87wah1	36
168			th232f	es	cu		0.0000001	30.0	0.0000058	0.0000000	0	100.0000000	74mee0	0
169			u235t	es	cu		0.0000000	30.0	0.0002463	0.0000000	0	10000.0000000	87rid1	0
169	ho	g	u235t	cm	in		0.0000000	0.0	0.0002410	19.0000000%	0	100000.0000000	88wah1	0
169	dy	g	u235t	cm	in		0.0000000	0.0	0.0001768	11.0000000%	0	10000.0000000	88wah1	0
169	tb	g	u235t	cm	in		0.0000000	0.0	0.0004392	14.0000000%	0	100000.0000000	88wah1	0
169			u235f	es	cu		0.0000001	20.0	0.0000060	20.0000000%	0	100.0000000	74mee1	0
169	er	g	u235f	cm	cu		0.0000000	0.0	0.0000024	50.0000000%	0	1.0000000	73net2	0
169			u235he	es	cu		0.0000761	10.0	0.0000770	10.0000000%	0	0.0000000	74mee8	0
169	er	g	u235he	rc	re		0.0000791	7.5	0.0000008	0.0000001	0	0.0100000	69net1	0
169	er	g	u235he	cm	cu	x3	0.0000000	0.0	0.0000800	7.9000000%	0	0.0000000	73net2	0
169			u238f	es	cu		0.0000170	30.0	0.0000150	0.0000000	0	0.0000000	79rao1	0
169	er	g	u238f	cm	cu		0.0000000	0.0	0.0000110	90.1000000%	0	100.0000000	73net2	0
169			u238he	cm	cu	su	0.0000000	0.0	0.0001290	0.0000900	0	0.0000000	73dar1	0
169			u238he	es	cu		0.0001268	15.0	0.0001260	15.0000000%	0	0.0000000	74mee9	0
169	er	g	u238he	rc	re		0.0001298	7.0	0.0000013	0.0000001	0	0.0100000	69net1	0
169	er	g	u238he	cm	cu	x3	0.0000000	0.0	0.0001290	7.9000000%	0	0.0000000	73net2	0
169			pu239t	es	cu		0.0000015	99.0	0.0015440	99.0000000%	0	1000.0000000	87wah1	36
169			pu239t	es	cu		0.0000015	30.0	0.0000015	0.0000000	0	0.0000000	87rid1	0
169	er	g	pu239t	cm	cu	x3	0.0000000	0.0	0.0000050	50.0000000%	0	0.0000000	73net2	0

169	ho g	pu239t	cm	in		0.0000000	0.0	0.0003454	14.0000000%	0	1000.0000000	88wah1	0
169	dy g	pu239t	cm	in		0.0000000	0.0	0.0009993	11.0000000%	0	1000.0000000	88wah1	0
169	tb g	pu239t	cm	in		0.0000000	0.0	0.0001873	19.0000000%	0	1000.0000000	88wah1	0
169		pu239f	es	cu		0.0000258	30.0	0.0000290	0.0000000	0	0.0000000	74mee1	0
169		pu241t	es	cu		0.0000040	30.0	0.0000388	0.0000000	0	10.0000000	87rid1	0
169		u233t	es	cu		0.0000000	99.0	0.0050070	99.0000000%	0	1000000.0000000	87wah1	36
169		th232f	es	cu		0.0000000	30.0	0.0000029	0.0000000	0	100.0000000	74mee0	0
170		u235t	es	cu		0.0000000	30.0	0.0051710	0.0000000	0	1000000.0000000	87rid1	0
170	er g	u235t	cm	in		0.0000000	0.0	0.0000503	73.0000000%	0	1000000.0000000	88wah1	0
170	ho g	u235t	cm	in		0.0000000	0.0	0.0000552	12.0000000%	0	100000.0000000	88wah1	0
170	ho m	u235t	cm	in		0.0000000	0.0	0.0000552	12.0000000%	0	100000.0000000	88wah1	0
170	dy g	u235t	cm	in		0.0000000	0.0	0.0003769	11.0000000%	0	100000.0000000	88wah1	0
170	tb g	u235t	cm	in		0.0000000	0.0	0.0002468	26.0000000%	0	1000000.0000000	88wah1	0
170		u235f	es	cu		0.0000000	20.0	0.0000020	20.0000000%	0	100.0000000	74mee1	0
170		u235he	es	cu		0.0000354	30.0	0.0000004	0.0000000	0	0.0100000	69net1	0
170		u235he	es	cu		0.0000321	10.0	0.0000326	10.0000000%	0	0.0000000	74mee8	0
170		u238f	es	cu		0.0000102	30.0	0.0000090	0.0000000	0	0.0000000	79rao1	0
170		u238he	es	cu		0.0000607	30.0	0.0000006	0.0000000	0	0.0100000	69net1	0
170		u238he	cm	cu	su	0.0000000	0.0	0.0000710	0.0000000	0	0.0000000	73dar1	0
170		u238he	es	cu		0.0000592	15.0	0.0000585	15.0000000%	0	0.0000000	74mee9	0
170		pu239t	es	cu		0.0000003	99.0	0.0033270	99.0000000%	0	10000.0000000	87wah1	36
170		pu239t	es	cu		0.0000003	30.0	0.0000003	0.0000000	0	0.0000000	87rid1	0
170	er g	pu239t	cm	in		0.0000000	0.0	0.0001602	45.0000000%	0	10000.0000000	88wah1	0
170	ho g	pu239t	cm	in		0.0000000	0.0	0.0000648	11.0000000%	0	1000.0000000	88wah1	0
170	ho m	pu239t	cm	in		0.0000000	0.0	0.0000649	11.0000000%	0	1000.0000000	88wah1	0
170	dy g	pu239t	cm	in		0.0000000	0.0	0.0001789	11.0000000%	0	1000.0000000	88wah1	0
170	tb g	pu239t	cm	in		0.0000000	0.0	0.0001066	40.0000000%	0	10000.0000000	88wah1	0
170		pu239f	es	cu		0.0000077	30.0	0.0000086	0.0000000	0	0.0000000	74mee1	0
170		pu241t	es	cu		0.0000016	20.0	0.0000016	20.0000000%	0	0.0000000	74mee1	0
170		u233t	es	cu		0.0000000	30.0	0.0000002	0.0000000	0	100.0000000	74mee1	0
170		u233t	es	cu		0.0000000	99.0	0.0014870	99.0000000%	0	1000000.0000000	87wah1	36
170		th232f	es	cu		0.0000000	30.0	0.0000012	0.0000000	0	100.0000000	74mee0	0
171		u235t	es	cu		0.0000000	30.0	0.0002426	0.0000000	0	100000.0000000	87rid1	0
171	er g	u235t	cm	in		0.0000000	0.0	0.0001252	30.0000000%	0	1000000.0000000	88wah1	0
171	ho g	u235t	cm	in		0.0000000	0.0	0.0001170	11.0000000%	0	100000.0000000	88wah1	0
171	dy g	u235t	cm	in		0.0000000	0.0	0.0001100	12.0000000%	0	100000.0000000	88wah1	0

171 tb g u235t cm in 0.0000000 0.0 0.0000310 61.0000000% 0 1000000.0000000 88wah1 0
171 u235f es cu 0.0000000 20.0 0.0000007 20.0000000% 0 100.0000000 74mee1 0
171 u235he es cu 0.0000197 30.0 0.0000002 0.0000000 0 0.0100000 69net1 0
171 u235he es cu 0.0000174 10.0 0.0000177 10.0000000% 0 0.0000000 74mee8 0
171 er g u238f rc cu 0.0000057 39.7 0.0000050 0.0000020 0 0.0000000 79rao1 0
171 u238he es cu 0.0000334 30.0 0.0000003 0.0000000 0 0.0100000 69net1 0
171 u238he cm cu su 0.0000000 0.0 0.0000380 0.0000000 0 0.0000000 73dar1 0
171 u238he es cu 0.0000329 15.0 0.0000325 15.0000000% 0 0.0000000 74mee9 0
171 pu239t es cu 0.0000002 99.0 0.0016400 99.0000000% 0 10000.0000000 87wah1 36
171 pu239t es cu 0.0000002 30.0 0.0000002 0.0000000 0 0.0000000 87rid1 0
171 er g pu239t cm in 0.0000000 0.0 0.0002601 21.0000000% 0 10000.0000000 88wah1 0
171 ho g pu239t cm in 0.0000000 0.0 0.0009540 11.0000000% 0 10000.0000000 88wah1 0
171 dy g pu239t cm in 0.0000000 0.0 0.0004388 13.0000000% 0 10000.0000000 88wah1 0
171 tb g pu239t cm in 0.0000000 0.0 0.0001141 99.0000000% 0 100000.0000000 88wah1 0
171 pu239f es cu 0.0000026 30.0 0.0000029 0.0000000 0 0.0000000 74mee1 0
171 pu241t es cu 0.0000002 30.0 0.0000212 0.0000000 0 100.0000000 87rid1 0
171 u233t es cu 0.0000000 99.0 0.0005080 99.0000000% 0 1000000.0000000 87wah1 36
171 th232f es cu 0.0000000 30.0 0.0000050 0.0000000 0 1000.0000000 74mee0 0
172 u235t es cu 0.0000000 30.0 0.0007949 0.0000000 0 1000000.0000000 87rid1 0
172 er g u235t rc cu x1 0.0000000 0.0 0.0000009 0.0000004 0 0.0000000 74rao1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

172 ho g u235t cm in 0.0000000 0.0 0.0001757 15.0000000% 0 1000000.0000000 88wah1 0
172 dy g u235t cm in 0.0000000 0.0 0.0004281 11.0000000% 0 1000000.0000000 88wah1 0
172 tb g u235t cm in 0.0000000 0.0 0.0001887 17.0000000% 0 1000000.0000000 88wah1 0
172 u235f es cu 0.0000000 20.0 0.0000002 20.0000000% 0 100.0000000 74mee1 0
172 tm g u235f cm cu 0.0000000 0.0 0.0000001 50.0000000% 0 100.0000000 73net2 0
172 u235he es re 0.0000110 30.0 0.0000001 0.0000000 0 0.0100000 69net1 0
172 u235he es cu 0.0000159 10.0 0.0000161 10.0000000% 0 0.0000000 74mee8 0
172 tm g u235he cm cu 0.0000000 0.0 0.0000180 19.9000000% 0 0.0000000 73net2 0
172 er g u235he rc re 0.0000178 11.1 0.0000002 0.0000000 0 0.0100000 69net1 0
172 tm g u238f cm cu x3 0.0000000 0.0 0.0000003 90.1000000% 0 100.0000000 73net2 0
172 er g u238f rc cu x1 0.0000000 0.0 0.0000094 0.0000038 0 0.0000000 74rao1 0
172 er g u238f rc cu 0.0000107 40.0 0.0000094 0.0000038 0 0.0000000 79rao1 0

172		u238he	cm	cu	su	0.0000000	0.0	0.0000210	0.0000070	0	0.0000000	73dar1	0
172		u238he	es	cu		0.0000213	15.0	0.0000210	15.0000000%	0	0.0000000	74mee9	0
172	tm g	u238he	cm	cu	x3	0.0000000	0.0	0.0000210	32.9000000%	0	0.0000000	73net2	0
172	er g	u238he	rc	re		0.0000213	33.3	0.0000002	0.0000001	0	0.0100000	69net1	0
172		pu239t	es	cu		0.0000000	30.0	0.0005136	0.0000000	0	10000.0000000	87rid1	0
172	tm g	pu239t	cm	cu	x3	0.0000000	0.0	0.0000380	90.0000000%	0	100.0000000	73net2	0
172	tm g	pu239t	cm	in		0.0000000	0.0	0.0006403	81.0000000%	0	1000000.0000000	88wah1	0
172	er g	pu239t	cm	in		0.0000000	0.0	0.0002059	12.0000000%	0	10000.0000000	88wah1	0
172	ho g	pu239t	cm	in		0.0000000	0.0	0.0002477	11.0000000%	0	10000.0000000	88wah1	0
172	dy g	pu239t	cm	in		0.0000000	0.0	0.0005319	24.0000000%	0	100000.0000000	88wah1	0
172		pu239f	es	cu		0.0000008	30.0	0.0000009	0.0000000	0	0.0000000	74mee1	0
172		pu241t	es	cu		0.0000001	30.0	0.0000706	0.0000000	0	1000.0000000	87rid1	0
172		u233t	es	cu		0.0000000	99.0	0.0001716	99.0000000%	0	1000000.0000000	87wah1	36
172		th232f	es	cu		0.0000000	30.0	0.0000026	0.0000000	0	1000.0000000	74mee0	0

1 Appendix B

Set B Yields Evaluated and Compiled
for
Los Alamos report LA-UR-94-3106 (ENDF-349)

T. R. England and B. F. Rider
October, 1994

Set B Contains yields for:
u233f, u233he, u236f, pu239h, pu240f, pu241f, pu242f, th232h, np237f, cf252sf

Note: print landscape with page control parameter set
1

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    mass number     66                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide      24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g
half life                                 0.23s    54.6 h    5.10 m    stable     9.49h     2.27h
lambda           0.0       0.0       0.0 3.014e+00 3.526e-06 2.265e-03       0.0 2.029e-05 8.482e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u233f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  3.99e-07n      0.0       0.0
zp 26.98 ri 2.05e-12p 1.11e-09p 1.08e-07p 1.91e-07p 9.80e-08p 9.07e-10p 1.50e-12p       0.0       0.0
sig0.553 cc 2.05e-12p 1.11e-09p 1.09e-07p 3.00e-07p 3.98e-07p 3.99e-07p 3.99e-07p       0.0       0.0
         rc 2.05e-12p 1.11e-09p 1.09e-07p 3.00e-07p 3.98e-07o 3.99e-07o 3.99e-07n       0.0       0.0
 u233he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0  0.000667k      0.0       0.0       0.0       0.0
zp 26.83 ri 9.38e-08p 1.26e-05p 0.000190p 0.000367p 9.66e-05p 3.12e-06p 1.08e-08p 3.67e-12p       0.0
sig0.642 cc 9.38e-08p 1.27e-05p 0.000203p 0.000570p 0.000667p 0.000670p 0.000670p 3.67e-12p       0.0
         rc 9.38e-08p 1.27e-05p 0.000203p 0.000570o 0.000667k 0.000670k 0.000670k 3.67e-12p       0.0
 u236f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  8.30e-07n      0.0       0.0
zp 26.60 ri 6.25e-11p 1.34e-08p 4.38e-07p 3.25e-07p 5.31e-08p 1.52e-10p       0.0       0.0       0.0
```

sig0.545 cc 6.25e-11p 1.35e-08p 4.52e-07p 7.77e-07p 8.30e-07p 8.30e-07p 8.30e-07p 0.0 0.0
rc 6.25e-11p 1.35e-08p 4.52e-07p 7.77e-07p 8.30e-07o 8.30e-07o 8.30e-07n 0.0 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 6.23e-05l 0.0 0.0
zp 26.91 ri 8.71e-09p 1.03e-06p 1.56e-05p 3.39e-05p 1.12e-05p 5.18e-07p 3.01e-09p 2.02e-12p 0.0
sig0.664 cc 8.71e-09p 1.04e-06p 1.67e-05p 5.06e-05p 6.17e-05p 6.23e-05p 6.23e-05p 2.02e-12p 0.0
rc 8.71e-09p 1.04e-06p 1.67e-05p 5.06e-05p 6.17e-05o 6.23e-05n 6.23e-05l 2.02e-12p 0.0
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 8.88e-07n 0.0 0.0
zp 26.84 ri 1.48e-11p 5.96e-09p 2.92e-07p 4.56e-07p 1.32e-07p 1.11e-09p 1.07e-12p 0.0 0.0
sig0.558 cc 1.48e-11p 5.98e-09p 2.98e-07p 7.55e-07p 8.87e-07p 8.88e-07p 8.88e-07p 0.0 0.0
rc 1.48e-11p 5.98e-09p 2.98e-07p 7.55e-07p 8.87e-07o 8.88e-07o 8.88e-07n 0.0 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.88e-07n 0.0 0.0
zp 26.74 ri 5.55e-12p 1.89e-09p 7.47e-08p 9.14e-08p 1.95e-08p 1.10e-10p 0.0 0.0 0.0
sig0.551 cc 5.55e-12p 1.90e-09p 7.66e-08p 1.68e-07p 1.88e-07p 1.88e-07p 1.88e-07p 0.0 0.0
rc 5.55e-12p 1.90e-09p 7.66e-08p 1.68e-07p 1.88e-07o 1.88e-07o 1.88e-07n 0.0 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.90e-06n 0.0 0.0
zp 26.61 ri 2.89e-10p 6.06e-08p 1.33e-06p 1.31e-06p 1.88e-07p 9.67e-10p 0.0 0.0 0.0
sig0.562 cc 2.89e-10p 6.09e-08p 1.39e-06p 2.71e-06p 2.90e-06p 2.90e-06p 2.90e-06p 0.0 0.0
rc 2.89e-10p 6.09e-08p 1.39e-06p 2.71e-06p 2.90e-06o 2.90e-06o 2.90e-06n 0.0 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.000120j 0.0 0.000138k 0.0 0.0
zp 26.18 ri 3.24e-07p 1.61e-05p 7.39e-05p 3.65e-05p 1.79e-06p 7.72e-09p 2.20e-12p 0.0 0.0
sig0.600 cc 3.24e-07p 1.64e-05p 9.03e-05p 0.000127p 0.000129p 0.000129p 0.000129p 0.0 0.0
rc 3.24e-07p 1.64e-05p 9.03e-05p 0.000127l 0.000129j 0.000129j 0.000129i 0.0 0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.87e-07l 0.0 0.0
zp 26.78 ri 5.45e-12p 2.23e-09p 5.56e-08p 1.10e-07p 1.90e-08p 2.32e-10p 0.0 0.0 0.0
sig0.568 cc 5.45e-12p 2.24e-09p 5.78e-08p 1.68e-07p 1.87e-07p 1.87e-07p 1.87e-07p 0.0 0.0
rc 5.45e-12p 2.24e-09p 5.78e-08p 1.68e-07p 1.87e-07o 1.87e-07n 1.87e-07l 0.0 0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.26e-08n 0.0 0.0
zp 26.57 ri 1.52e-11p 1.83e-09p 2.30e-08p 2.44e-08p 3.35e-09p 3.30e-11p 0.0 0.0 0.0
sig0.600 cc 1.52e-11p 1.85e-09p 2.48e-08p 4.92e-08p 5.26e-08p 5.26e-08p 5.26e-08p 0.0 0.0

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        rc 1.52e-11p 1.85e-09p 2.48e-08p 4.92e-08p 5.26e-08o 5.26e-08o 5.26e-08n      0.0       0.0

  co, ni, cu half lives from 89wal1; ga half life 90bur1.
1

    mass number     67                    LA-UR-94-3106 (ENDF-349)                        percent yields
 nuclide      24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g
 half life                                          21. s    2.580d    stable    3.261d    19.0 m
 lambda           0.0       0.0       0.0       0.0 3.301e-02 3.110e-06       0.0 2.460e-06 6.080e-04
  z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
  z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
  z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
  u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.60e-06n      0.0       0.0
 zp 27.36 ri      0.0  5.01e-10p 1.15e-07p 7.13e-07p 7.41e-07p 2.60e-08p 1.07e-10p      0.0       0.0
 sig0.553 cc      0.0  5.02e-10p 1.15e-07p 8.29e-07p 1.57e-06p 1.60e-06p 1.60e-06p      0.0       0.0
        rc      0.0  5.02e-10p 1.15e-07p 8.29e-07p 1.57e-06p 1.60e-06o 1.60e-06n      0.0       0.0
  u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.001515l      0.0       0.0       0.0
 zp 27.21 ri 1.81e-08p 5.78e-06p 0.000197p 0.000817p 0.000461p 3.36e-05p 2.75e-07p 2.28e-10p      0.0
 sig0.642 cc 1.81e-08p 5.80e-06p 0.000203p 0.001020p 0.001481p 0.001515p 0.001515p 2.28e-10p      0.0
        rc 1.81e-08p 5.80e-06p 0.000203p 0.001020p 0.001481n 0.001515l 0.001515l 2.28e-10p      0.0
  u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.08e-06n      0.0       0.0
 zp 26.98 ri 6.76e-12p 5.96e-09p 4.75e-07p 1.16e-06p 4.28e-07p 4.79e-09p 4.79e-12p      0.0       0.0
 sig0.545 cc 6.76e-12p 5.97e-09p 4.80e-07p 1.64e-06p 2.07e-06p 2.08e-06p 2.08e-06p      0.0       0.0
        rc 6.76e-12p 5.97e-09p 4.80e-07p 1.64e-06p 2.07e-06o 2.08e-06o 2.08e-06n      0.0       0.0
  pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  9.82e-05l      0.0       0.0
 zp 27.29 ri 1.28e-09p 3.40e-07p 1.11e-05p 4.98e-05p 3.37e-05p 3.33e-06p 4.32e-08p 6.61e-11p      0.0
 sig0.664 cc 1.28e-09p 3.41e-07p 1.14e-05p 6.12e-05p 9.49e-05p 9.82e-05p 9.82e-05p 6.61e-11p      0.0
        rc 1.28e-09p 3.41e-07p 1.14e-05p 6.12e-05p 9.49e-05o 9.82e-05n 9.82e-05l 6.61e-11p      0.0
  pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.33e-06n      0.0       0.0
 zp 27.22 ri      0.0  1.20e-09p 1.47e-07p 7.13e-07p 4.58e-07p 1.33e-08p 3.43e-11p      0.0       0.0
 sig0.558 cc      0.0  1.20e-09p 1.49e-07p 8.61e-07p 1.32e-06p 1.33e-06p 1.33e-06p      0.0       0.0
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        rc      0.0  1.20e-09p 1.49e-07p 8.61e-07p 1.32e-06p 1.33e-06o 1.33e-06n      0.0       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.31e-06n      0.0       0.0
zp 27.11 ri 1.63e-12p 2.06e-09p 2.01e-07p 7.48e-07p 3.56e-07p 6.96e-09p 1.09e-11p      0.0       0.0
sig0.551 cc 1.63e-12p 2.06e-09p 2.03e-07p 9.51e-07p 1.31e-06p 1.31e-06p 1.31e-06p      0.0       0.0
        rc 1.63e-12p 2.06e-09p 2.03e-07p 9.51e-07p 1.31e-06o 1.31e-06o 1.31e-06n      0.0       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.79e-06n      0.0       0.0
zp 26.99 ri 2.99e-11p 2.18e-08p 1.20e-06p 3.41e-06p 1.14e-06p 1.95e-08p 2.52e-11p      0.0       0.0
sig0.562 cc 2.99e-11p 2.18e-08p 1.22e-06p 4.63e-06p 5.77e-06p 5.79e-06p 5.79e-06p      0.0       0.0
        rc 2.99e-11p 2.18e-08p 1.22e-06p 4.63e-06p 5.77e-06o 5.79e-06o 5.79e-06n      0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.000192k 0.000238k      0.0       0.0
zp 26.56 ri 6.57e-08p 8.52e-06p 9.42e-05p 0.000108p 1.31e-05p 1.38e-07p 1.24e-10p      0.0       0.0
sig0.600 cc 6.57e-08p 8.58e-06p 0.000103p 0.000211p 0.000224p 0.000224p 0.000224p      0.0       0.0
        rc 6.57e-08p 8.58e-06p 0.000103p 0.000211o 0.000224m 0.000224k 0.000224j      0.0       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.73e-07l      0.0       0.0
zp 27.16 ri      0.0  6.36e-10p 4.47e-08p 2.25e-07p 9.95e-08p 3.44e-09p 7.15e-12p      0.0       0.0
sig0.568 cc      0.0  6.37e-10p 4.54e-08p 2.70e-07p 3.69e-07p 3.73e-07p 3.73e-07p      0.0       0.0
        rc      0.0  6.37e-10p 4.54e-08p 2.70e-07p 3.69e-07o 3.73e-07n 3.73e-07l      0.0       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.44e-07n      0.0       0.0
zp 26.96 ri 3.07e-12p 1.01e-09p 3.25e-08p 8.23e-08p 2.76e-08p 7.18e-10p 1.79e-12p      0.0       0.0
sig0.600 cc 3.07e-12p 1.02e-09p 3.35e-08p 1.16e-07p 1.43e-07p 1.44e-07p 1.44e-07p      0.0       0.0
        rc 3.07e-12p 1.02e-09p 3.35e-08p 1.16e-07p 1.43e-07o 1.44e-07o 1.44e-07n      0.0       0.0

  ni, cu half lives from 89wal1; ga half life from 90bur1.
1

    mass number     68                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide      24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu m   29 cu g   30 zn g   31 ga g   32 ge g
half life                                   19. s     3.79m     31. s    stable    68.06m    287. d
lambda          0.0       0.0       0.0       0.0 3.648e-02 3.048e-03 2.236e-02       0.0 1.697e-04 2.795e-08
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0   50.0000       0.0       0.0
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 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0   50.0000       0.0       0.0       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.88e-06n      0.0       0.0
zp 27.74 ri      0.0  7.96e-11p 7.43e-08p 1.01e-06p 3.52e-06p 1.95e-07p 7.23e-08p 4.42e-09p      0.0       0.0
sig0.553 cc      0.0  7.96e-11p 7.44e-08p 1.09e-06p 4.61e-06p 1.95e-07p 4.78e-06p 4.88e-06p      0.0       0.0
         rc      0.0  7.96e-11p 7.44e-08p 1.09e-06p 4.61e-06p 1.95e-07p 4.78e-06o 4.88e-06n      0.0       0.0
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001803n      0.0       0.0
zp 27.59 ri 1.31e-09p 1.01e-06p 7.91e-05p 0.000719p 0.000862p 0.000114p 2.50e-05p 2.65e-06p 5.29e-09p 1.02e-12p
sig0.642 cc 1.31e-09p 1.01e-06p 8.02e-05p 0.000799p 0.001661p 0.000114p 0.001743p 0.001803p 5.29e-09p 1.02e-12p
         rc 1.31e-09p 1.01e-06p 8.02e-05p 0.000799p 0.001661p 0.000114p 0.001743o 0.001803n 5.29e-09p 1.02e-12p
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.15e-06n      0.0       0.0
zp 27.36 ri      0.0  1.00e-09p 3.10e-07p 1.71e-06p 2.08e-06p 4.16e-08p 1.54e-08p 2.34e-10p      0.0       0.0
sig0.545 cc      0.0  1.00e-09p 3.11e-07p 2.02e-06p 4.09e-06p 4.16e-08p 4.13e-06p 4.15e-06p      0.0       0.0
         rc      0.0  1.00e-09p 3.11e-07p 2.02e-06p 4.09e-06p 4.16e-08p 4.13e-06o 4.15e-06n      0.0       0.0
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000217l      0.0       0.0
zp 27.67 ri 1.93e-10p 1.16e-07p 8.31e-06p 7.81e-05p 0.000108p 1.84e-05p 4.04e-06p 6.38e-07p 2.22e-09p      0.0
sig0.664 cc 1.93e-10p 1.16e-07p 8.43e-06p 8.65e-05p 0.000194p 1.84e-05p 0.000208p 0.000217p 2.22e-09p      0.0
         rc 1.93e-10p 1.16e-07p 8.43e-06p 8.65e-05p 0.000194o 1.84e-05p 0.000208n 0.000217l 2.22e-09p      0.0
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.11e-06n      0.0       0.0
zp 27.60 ri      0.0  1.98e-10p 8.74e-08p 9.83e-07p 1.91e-06p 9.58e-08p 3.54e-08p 1.24e-09p      0.0       0.0
sig0.558 cc      0.0  1.98e-10p 8.76e-08p 1.07e-06p 2.98e-06p 9.58e-08p 3.06e-06p 3.11e-06p      0.0       0.0
         rc      0.0  1.98e-10p 8.76e-08p 1.07e-06p 2.98e-06p 9.58e-08p 3.06e-06o 3.11e-06n      0.0       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.82e-06n      0.0       0.0
zp 27.49 ri      0.0  3.40e-10p 1.21e-07p 1.06e-06p 1.56e-06p 5.49e-08p 2.03e-08p 4.48e-10p      0.0       0.0
sig0.551 cc      0.0  3.40e-10p 1.22e-07p 1.18e-06p 2.74e-06p 5.49e-08p 2.79e-06p 2.82e-06p      0.0       0.0
         rc      0.0  3.40e-10p 1.22e-07p 1.18e-06p 2.74e-06p 5.49e-08p 2.79e-06o 2.82e-06n      0.0       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  8.69e-06n      0.0       0.0
zp 27.36 ri 1.80e-12p 3.54e-09p 6.29e-07p 4.07e-06p 3.83e-06p 1.17e-07p 4.33e-08p 7.01e-10p      0.0       0.0
sig0.562 cc 1.80e-12p 3.54e-09p 6.33e-07p 4.70e-06p 8.53e-06p 1.17e-07p 8.63e-06p 8.69e-06p      0.0       0.0
         rc 1.80e-12p 3.54e-09p 6.33e-07p 4.70e-06p 8.53e-06p 1.17e-07p 8.63e-06o 8.69e-06n      0.0       0.0
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 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000760j      0.0       0.0
zp 26.93 ri 1.91e-08p 6.42e-06p 0.000173p 0.000450p 0.000127p 2.78e-06p 6.11e-07p 7.07e-09p 1.03e-12p       0.0
sig0.600 cc 1.91e-08p 6.44e-06p 0.000179p 0.000629p 0.000756p 2.78e-06p 0.000758p 0.000760p 1.03e-12p       0.0
         rc 1.91e-08p 6.44e-06p 0.000179p 0.000629p 0.000756n 2.78e-06p 0.000758l 0.000760j 1.03e-12p       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.88e-06l      0.0       0.0
zp 27.54 ri       0.0  3.03e-10p 6.21e-08p 8.21e-07p 9.09e-07p 6.25e-08p 2.31e-08p 5.31e-10p       0.0       0.0
sig0.568 cc       0.0  3.03e-10p 6.24e-08p 8.84e-07p 1.79e-06p 6.25e-08p 1.85e-06p 1.88e-06p       0.0       0.0
         rc       0.0  3.03e-10p 6.24e-08p 8.84e-07p 1.79e-06o 6.25e-08p 1.85e-06n 1.88e-06l       0.0       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.84e-07n      0.0       0.0
zp 27.34 ri       0.0  3.88e-10p 3.19e-08p 1.92e-07p 1.50e-07p 6.86e-09p 2.94e-09p 6.55e-11p       0.0       0.0
sig0.600 cc       0.0  3.88e-10p 3.23e-08p 2.24e-07p 3.74e-07p 6.86e-09p 3.80e-07p 3.84e-07p       0.0       0.0
         rc       0.0  3.88e-10p 3.23e-08p 2.24e-07p 3.74e-07p 6.86e-09p 3.80e-07o 3.84e-07n       0.0       0.0

  ni, cu half lives from 89wal1; ga, ge half lives from 90bur1.
1

    mass number     69                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn m   30 zn g   31 ga g   32 ge g   33 as g
half life                                 10. s     2.8 m    13.76h     56. m    stable    39.2 h     15. m
lambda            0.0       0.0       0.0 6.931e-02 4.126e-03 1.399e-05 2.063e-04       0.0 4.912e-06 7.702e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.33e-05n      0.0       0.0
zp 28.12 ri 1.08e-11p 2.53e-08p 1.32e-06p 9.39e-06p 2.47e-06p 7.91e-08p 1.62e-08p 8.67e-11p       0.0       0.0
sig0.553 cc 1.08e-11p 2.53e-08p 1.35e-06p 1.07e-05p 1.32e-05p 7.91e-08p 1.33e-05p 1.33e-05p       0.0       0.0
         rc 1.08e-11p 2.53e-08p 1.35e-06p 1.07e-05p 1.32e-05p 7.91e-08p 1.33e-05o 1.33e-05n       0.0       0.0
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.002900n      0.0       0.0
zp 27.98 ri 1.60e-07p 3.02e-05p 0.000626p 0.001635p 0.000582p 2.31e-05p 2.86e-06p 1.27e-07p 6.12e-11p       0.0
sig0.642 cc 1.60e-07p 3.04e-05p 0.000657p 0.002292p 0.002874p 2.31e-05p 0.002900p 0.002900p 6.12e-11p       0.0
         rc 1.60e-07p 3.04e-05p 0.000657p 0.002292p 0.002874o 2.31e-05p 0.002900o 0.002900n 6.12e-11p       0.0
```

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 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.34e-06n      0.0       0.0
zp 27.74 ri 1.47e-10p 1.20e-07p 2.38e-06p 6.22e-06p 6.07e-07p 5.43e-09p 1.11e-09p 1.53e-12p      0.0       0.0
sig0.545 cc 1.47e-10p 1.20e-07p 2.50e-06p 8.73e-06p 9.33e-06p 5.43e-09p 9.34e-06p 9.34e-06p      0.0       0.0
         rc 1.47e-10p 1.20e-07p 2.50e-06p 8.73e-06p 9.33e-06p 5.43e-09p 9.34e-06o 9.34e-06n      0.0       0.0
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000371l      0.0       0.0
zp 28.05 ri 2.24e-08p 3.57e-06p 7.16e-05p 0.000203p 8.72e-05p 4.77e-06p 5.90e-07p 4.19e-08p 3.81e-11p      0.0
sig0.664 cc 2.24e-08p 3.60e-06p 7.52e-05p 0.000278p 0.000365p 4.77e-06p 0.000371p 0.000371p 3.81e-11p      0.0
         rc 2.24e-08p 3.60e-06p 7.52e-05p 0.000278p 0.000365o 4.77e-06p 0.000371n 0.000371l 3.81e-11p      0.0
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.88e-06n      0.0       0.0
zp 27.98 ri 1.77e-11p 2.07e-08p 7.87e-07p 3.34e-06p 7.24e-07p 1.44e-08p 2.95e-09p 1.34e-11p      0.0       0.0
sig0.558 cc 1.77e-11p 2.07e-08p 8.07e-07p 4.14e-06p 4.87e-06p 1.44e-08p 4.88e-06p 4.88e-06p      0.0       0.0
         rc 1.77e-11p 2.07e-08p 8.07e-07p 4.14e-06p 4.87e-06p 1.44e-08p 4.88e-06o 4.88e-06n      0.0       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.03e-05n      0.0       0.0
zp 27.87 ri 7.38e-11p 7.18e-08p 2.15e-06p 6.98e-06p 1.10e-06p 1.44e-08p 2.95e-09p 7.98e-12p      0.0       0.0
sig0.551 cc 7.38e-11p 7.19e-08p 2.22e-06p 9.20e-06p 1.03e-05p 1.44e-08p 1.03e-05p 1.03e-05p      0.0       0.0
         rc 7.38e-11p 7.19e-08p 2.22e-06p 9.20e-06p 1.03e-05p 1.44e-08p 1.03e-05o 1.03e-05n      0.0       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.16e-05n      0.0       0.0
zp 27.74 ri 3.52e-10p 1.68e-07p 3.37e-06p 7.12e-06p 9.15e-07p 8.84e-09p 1.81e-09p 4.71e-12p      0.0       0.0
sig0.562 cc 3.52e-10p 1.68e-07p 3.54e-06p 1.07e-05p 1.16e-05p 8.84e-09p 1.16e-05p 1.16e-05p      0.0       0.0
         rc 3.52e-10p 1.68e-07p 3.54e-06p 1.07e-05p 1.16e-05p 8.84e-09p 1.16e-05o 1.16e-05n      0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001515j      0.0       0.0
zp 27.31 ri 1.91e-06p 0.000131p 0.000811p 0.000535p 3.59e-05p 1.79e-07p 2.21e-08p 8.10e-11p      0.0       0.0
sig0.600 cc 1.91e-06p 0.000133p 0.000944p 0.001479p 0.001515p 1.79e-07p 0.001515p 0.001515p      0.0       0.0
         rc 1.91e-06p 0.000133p 0.000944p 0.001479o 0.001515n 1.79e-07p 0.001515l 0.001515j      0.0       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.89e-08l      0.0       0.0
zp 27.92 ri      0.0  4.21e-10p 1.53e-08p 4.25e-08p 1.04e-08p 1.56e-10p 3.19e-11p      0.0       0.0       0.0
sig0.568 cc      0.0  4.22e-10p 1.57e-08p 5.82e-08p 6.87e-08p 1.56e-10p 6.89e-08p 6.89e-08p      0.0       0.0
         rc      0.0  4.22e-10p 1.57e-08p 5.82e-08p 6.87e-08o 1.56e-10p 6.89e-08n 6.89e-08l      0.0       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

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        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.91e-07n      0.0       0.0
zp 27.72 ri 9.82e-11p 2.13e-08p 3.12e-07p 5.65e-07p 8.98e-08p 1.28e-09p 2.99e-10p 1.71e-12p      0.0       0.0
sig0.600 cc 9.82e-11p 2.14e-08p 3.34e-07p 8.99e-07p 9.89e-07p 1.28e-09p 9.91e-07p 9.91e-07p      0.0       0.0
        rc 9.82e-11p 2.14e-08p 3.34e-07p 8.99e-07p 9.89e-07o 1.28e-09p 9.91e-07o 9.91e-07n      0.0       0.0

  ni, cu, zn half lives from 89wal1.
1

    mass number     70                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide      24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu m   29 cu g   30 zn g   31 ga g   32 ge g
half life                                                 47. s      5. s    stable    21.1 m    stable
lambda          0.0       0.0       0.0       0.0       0.0 1.475e-02 1.386e-01       0.0 5.475e-04       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000   50.0000   50.0000  100.0000       0.0  100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u233f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.32e-05n      0.0       0.0
zp 28.50 ri      0.0  1.04e-12p 1.02e-08p 1.28e-06p 3.23e-05p 1.33e-05p 3.76e-06p 2.46e-06p 5.52e-09p 2.03e-12p
sig0.553 cc      0.0  1.04e-12p 1.02e-08p 1.29e-06p 3.36e-05p 3.02e-05p 2.06e-05p 5.32e-05p 5.52e-09p 5.52e-09p
        rc      0.0  1.04e-12p 1.02e-08p 1.29e-06p 3.36e-05p 3.02e-05p 2.06e-05p 5.32e-05n 5.52e-09p 5.52e-09p
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.004702n      0.0       0.0
zp 28.36 ri 4.19e-12p 1.94e-08p 8.74e-06p 0.000413p 0.002331p 0.001506p 0.000266p 0.000177p 2.03e-06p 2.38e-09p
sig0.642 cc 4.19e-12p 1.94e-08p 8.76e-06p 0.000422p 0.002753p 0.002883p 0.001642p 0.004702p 2.03e-06p 2.03e-06p
        rc 4.19e-12p 1.94e-08p 8.76e-06p 0.000422p 0.002753p 0.002883p 0.001642p 0.004702n 2.03e-06p 2.03e-06p
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.08e-05n      0.0       0.0
zp 28.13 ri      0.0  9.73e-12p 3.40e-08p 1.73e-06p 1.54e-05p 2.67e-06p 7.54e-07p 1.47e-07p 9.64e-11p      0.0
sig0.545 cc      0.0  9.73e-12p 3.40e-08p 1.76e-06p 1.72e-05p 1.13e-05p 9.34e-06p 2.08e-05p 9.64e-11p 9.64e-11p
        rc      0.0  9.73e-12p 3.40e-08p 1.76e-06p 1.72e-05p 1.13e-05p 9.34e-06p 2.08e-05n 9.64e-11p 9.64e-11p
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000669l      0.0       0.0
zp 28.43 ri 1.06e-12p 3.36e-09p 1.21e-06p 5.25e-05p 0.000309p 0.000231p 4.07e-05p 3.54e-05p 6.14e-07p 1.27e-09p
sig0.664 cc 1.06e-12p 3.36e-09p 1.21e-06p 5.37e-05p 0.000362p 0.000412p 0.000222p 0.000669p 6.14e-07p 6.15e-07p
        rc 1.06e-12p 3.36e-09p 1.21e-06p 5.37e-05p 0.000362p 0.000412p 0.000222p 0.000669l 6.14e-07p 6.15e-07p
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

```
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.19e-05n      0.0       0.0
zp 28.36 ri      0.0  1.33e-12p 5.84e-09p 5.63e-07p 7.50e-06p 2.79e-06p 7.86e-07p 2.91e-07p 5.98e-10p       0.0
sig0.558 cc      0.0  1.33e-12p 5.84e-09p 5.69e-07p 8.07e-06p 6.82e-06p 4.82e-06p 1.19e-05p 5.98e-10p 5.99e-10p
        rc      0.0  1.33e-12p 5.84e-09p 5.69e-07p 8.07e-06p 6.82e-06p 4.82e-06p 1.19e-05n 5.98e-10p 5.99e-10p
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.28e-05n      0.0       0.0
zp 28.25 ri      0.0  7.47e-12p 2.80e-08p 2.17e-06p 2.23e-05p 6.18e-06p 1.74e-06p 4.41e-07p 5.60e-10p       0.0
sig0.551 cc      0.0  7.47e-12p 2.80e-08p 2.19e-06p 2.45e-05p 1.84e-05p 1.40e-05p 3.28e-05p 5.60e-10p 5.60e-10p
        rc      0.0  7.47e-12p 2.80e-08p 2.19e-06p 2.45e-05p 1.84e-05p 1.40e-05p 3.28e-05n 5.60e-10p 5.60e-10p
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.90e-05n      0.0       0.0
zp 28.12 ri      0.0  3.75e-11p 6.28e-08p 3.20e-06p 1.96e-05p 4.55e-06p 1.28e-06p 2.23e-07p 2.73e-10p       0.0
sig0.562 cc      0.0  3.75e-11p 6.28e-08p 3.26e-06p 2.29e-05p 1.60e-05p 1.27e-05p 2.90e-05p 2.73e-10p 2.73e-10p
        rc      0.0  3.75e-11p 6.28e-08p 3.26e-06p 2.29e-05p 1.60e-05p 1.27e-05p 2.90e-05n 2.73e-10p 2.73e-10p
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.002783j      0.0       0.0
zp 27.68 ri 1.57e-10p 3.82e-07p 6.74e-05p 0.000992p 0.001483p 0.000201p 3.55e-05p 3.39e-06p 3.66e-09p       0.0
sig0.600 cc 1.57e-10p 3.82e-07p 6.78e-05p 0.001059p 0.002543p 0.001473p 0.001307p 0.002783p 3.66e-09p 3.66e-09p
        rc 1.57e-10p 3.82e-07p 6.78e-05p 0.001059p 0.002543p 0.001473o 0.001307p 0.002783j 3.66e-09p 3.66e-09p
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.44e-05l      0.0       0.0
zp 28.30 ri      0.0  9.76e-12p 1.83e-08p 1.90e-06p 1.36e-05p 6.59e-06p 1.86e-06p 4.25e-07p 1.33e-09p       0.0
sig0.568 cc      0.0  9.77e-12p 1.83e-08p 1.92e-06p 1.55e-05p 1.44e-05p 9.62e-06p 2.44e-05p 1.33e-09p 1.33e-09p
        rc      0.0  9.77e-12p 1.83e-08p 1.92e-06p 1.55e-05p 1.44e-05p 9.62e-06p 2.44e-05l 1.33e-09p 1.33e-09p
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.39e-06n      0.0       0.0
zp 28.11 ri      0.0  1.48e-11p 8.87e-09p 3.36e-07p 1.46e-06p 4.20e-07p 1.40e-07p 2.57e-08p 7.77e-11p       0.0
sig0.600 cc      0.0  1.48e-11p 8.89e-09p 3.45e-07p 1.80e-06p 1.32e-06p 1.04e-06p 2.39e-06p 7.77e-11p 7.77e-11p
        rc      0.0  1.48e-11p 8.89e-09p 3.45e-07p 1.80e-06p 1.32e-06p 1.04e-06p 2.39e-06m 7.77e-11p 7.77e-11p

  cu half life from 89wal1.
1

    mass number     71                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide      25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn m   30 zn g   31 ga g   32 ge m   32 ge g   33 as g
half life                                   20. s    3.97 h     2.4 m    stable    11.8 d    0.020s     64. h
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```
lambda          0.0       0.0       0.0       0.0 3.466e-02 4.850e-05 4.814e-03       0.0 6.799e-07 3.466e+01 3.008e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000       0.0 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0   99.9500       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0    0.0500       0.0       0.0  100.0000       0.0
 u233f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000231n      0.0       0.0       0.0
zp 28.89 ri     0.0  2.19e-09p 1.16e-06p 6.75e-05p 0.000123p 3.21e-05p 6.57e-06p 3.56e-07p 1.72e-10p 1.72e-10p       0.0
sig0.553 cc     0.0  2.19e-09p 1.16e-06p 6.86e-05p 0.000192p 3.21e-05p 0.000198p 0.000231p 1.72e-10p 3.43e-10p       0.0
         rc     0.0  2.19e-09p 1.16e-06p 6.86e-05p 0.000192p 3.21e-05p 0.000198o 0.000231n 1.72e-10p 3.43e-10p       0.0
 u233he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.007445n      0.0       0.0       0.0
zp 28.74 ri 1.64e-09p 1.78e-06p 0.000196p 0.002432p 0.003932p 0.000766p 9.47e-05p 2.29e-05p 3.22e-08p 3.22e-08p 1.77e-11p
sig0.642 cc 1.64e-09p 1.78e-06p 0.000197p 0.002630p 0.006561p 0.000766p 0.006656p 0.007445p 3.22e-08p 6.43e-08p 1.77e-11p
         rc 1.64e-09p 1.78e-06p 0.000197p 0.002630p 0.006561p 0.000766p 0.006656o 0.007445n 3.22e-08p 6.43e-08p 1.77e-11p
 u236f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.19e-05n      0.0       0.0       0.0
zp 28.51 ri     0.0  6.81e-09p 1.37e-06p 2.80e-05p 2.04e-05p 1.74e-06p 3.57e-07p 5.61e-09p       0.0       0.0       0.0
sig0.545 cc     0.0  6.81e-09p 1.37e-06p 2.94e-05p 4.98e-05p 1.74e-06p 5.01e-05p 5.19e-05p       0.0  1.24e-12p       0.0
         rc     0.0  6.81e-09p 1.37e-06p 2.94e-05p 4.98e-05p 1.74e-06p 5.01e-05o 5.19e-05n       0.0  1.24e-12p       0.0
 pu239h  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001196l      0.0       0.0       0.0
zp 28.82 ri 3.36e-10p 2.80e-07p 2.75e-05p 0.000348p 0.000637p 0.000157p 1.94e-05p 6.83e-06p 1.64e-08p 1.64e-08p 1.80e-11p
sig0.664 cc 3.36e-10p 2.81e-07p 2.78e-05p 0.000375p 0.001012p 0.000157p 0.001032p 0.001196p 1.64e-08p 3.27e-08p 1.80e-11p
         rc 3.36e-10p 2.81e-07p 2.78e-05p 0.000375p 0.001012o 0.000157p 0.001032n 0.001196l 1.64e-08p 3.27e-08p 1.80e-11p
 pu240f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.41e-05n      0.0       0.0       0.0
zp 28.74 ri     0.0  1.13e-09p 3.95e-07p 1.24e-05p 1.78e-05p 2.81e-06p 5.76e-07p 2.52e-08p 7.58e-12p 7.58e-12p       0.0
sig0.558 cc     0.0  1.13e-09p 3.96e-07p 1.28e-05p 3.07e-05p 2.81e-06p 3.13e-05p 3.41e-05p 7.58e-12p 1.52e-11p       0.0
         rc     0.0  1.13e-09p 3.96e-07p 1.28e-05p 3.07e-05p 2.81e-06p 3.13e-05o 3.41e-05n 7.58e-12p 1.52e-11p       0.0
 pu241f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  8.45e-05n      0.0       0.0       0.0
zp 28.62 ri     0.0  5.65e-09p 1.57e-06p 3.76e-05p 4.00e-05p 4.37e-06p 8.94e-07p 2.43e-08p 4.12e-12p 4.12e-12p       0.0
sig0.551 cc     0.0  5.65e-09p 1.58e-06p 3.92e-05p 7.92e-05p 4.37e-06p 8.01e-05p 8.45e-05p 4.12e-12p 8.24e-12p       0.0
         rc     0.0  5.65e-09p 1.58e-06p 3.92e-05p 7.92e-05p 4.37e-06p 8.01e-05o 8.45e-05n 4.12e-12p 8.24e-12p       0.0
 pu242f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.79e-05n      0.0       0.0       0.0
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zp 28.49 ri 2.74e-12p 1.24e-08p 2.07e-06p 2.93e-05p 2.43e-05p 1.86e-06p 3.82e-07p 9.21e-09p 1.31e-12p 1.31e-12p       0.0
sig0.562 cc 2.74e-12p 1.24e-08p 2.08e-06p 3.14e-05p 5.57e-05p 1.86e-06p 5.60e-05p 5.79e-05p 1.31e-12p 2.63e-12p       0.0
        rc 2.74e-12p 1.24e-08p 2.08e-06p 3.14e-05p 5.57e-05p 1.86e-06p 5.60e-05o 5.79e-05n 1.31e-12p 2.63e-12p       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.005304j      0.0       0.0       0.0
zp 28.06 ri 5.15e-08p 2.44e-05p 0.000900p 0.003145p 0.001191p 3.89e-05p 4.81e-06p 1.28e-07p 1.32e-11p 1.32e-11p       0.0
sig0.600 cc 5.15e-08p 2.44e-05p 0.000925p 0.004070p 0.005260p 3.89e-05p 0.005265p 0.005304p 1.32e-11p 2.64e-11p       0.0
        rc 5.15e-08p 2.44e-05p 0.000925p 0.004070p 0.005260n 3.89e-05p 0.005265l 0.005304j 1.32e-11p 2.64e-11p       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.19e-05l      0.0       0.0       0.0
zp 28.68 ri      0.0  3.75e-09p 1.15e-06p 2.20e-05p 3.41e-05p 3.81e-06p 7.81e-07p 4.23e-08p 1.08e-11p 1.08e-11p       0.0
sig0.568 cc      0.0  3.75e-09p 1.15e-06p 2.31e-05p 5.72e-05p 3.81e-06p 5.80e-05p 6.19e-05p 1.08e-11p 2.15e-11p       0.0
        rc      0.0  3.75e-09p 1.15e-06p 2.31e-05p 5.72e-05o 3.81e-06p 5.80e-05n 6.19e-05l 1.08e-11p 2.15e-11p       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.02e-06n      0.0       0.0       0.0
zp 28.49 ri 1.73e-12p 2.81e-09p 2.77e-07p 2.88e-06p 2.57e-06p 2.37e-07p 5.55e-08p 2.35e-09p       0.0       0.0       0.0
sig0.600 cc 1.73e-12p 2.82e-09p 2.80e-07p 3.16e-06p 5.73e-06p 2.37e-07p 5.78e-06p 6.02e-06p       0.0  1.70e-12p       0.0
        rc 1.73e-12p 2.82e-09p 2.80e-07p 3.16e-06p 5.73e-06p 2.37e-07p 5.78e-06o 6.02e-06n       0.0  1.70e-12p       0.0

  cu, zn half lives from 89wal1.
1

    mass number     72                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g   33 as g   34 se g
half life              0.124s    3.83 s     6.6 s    46.5 h    14.10h    stable    26.0 h    8.40 d
lambda            0.0 5.590e+00 1.810e-01 1.050e-01 4.141e-06 1.366e-05       0.0 7.405e-06 9.551e-07
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000683n      0.0       0.0
zp 29.27 ri 2.53e-10p 3.38e-07p 7.66e-05p 0.000289p 0.000310p 6.55e-06p 2.64e-08p 1.31e-12p       0.0
sig0.553 cc 2.53e-10p 3.38e-07p 7.69e-05p 0.000366p 0.000676p 0.000683p 0.000683p 1.31e-12p       0.0
        rc 2.53e-10p 3.38e-07p 7.69e-05p 0.000366p 0.000676p 0.000683o 0.000683n 1.31e-12p       0.0
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.012824j      0.0       0.0       0.0       0.0
```

zp 29.12 ri 2.87e-07p 7.47e-05p 0.002092p 0.007243p 0.003414p 0.000206p 1.37e-06p 9.22e-10p 0.0
sig0.642 cc 2.87e-07p 7.50e-05p 0.002167p 0.009411p 0.012824p 0.013030p 0.013031p 9.22e-10p 0.0
rc 2.87e-07p 7.50e-05p 0.002167p 0.009411p 0.012824j 0.013030j 0.013031j 9.22e-10p 0.0
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000187n 0.0 0.0
zp 28.90 ri 1.35e-09p 7.48e-07p 5.80e-05p 9.34e-05p 3.44e-05p 2.45e-07p 2.35e-10p 0.0 0.0
sig0.545 cc 1.35e-09p 7.50e-07p 5.88e-05p 0.000152p 0.000187p 0.000187p 0.000187p 0.0 0.0
rc 1.35e-09p 7.50e-07p 5.88e-05p 0.000152p 0.000187o 0.000187o 0.000187n 0.0 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.002184l 0.0 0.0
zp 29.20 ri 5.13e-08p 1.13e-05p 0.000306p 0.001154p 0.000658p 5.46e-05p 5.85e-07p 7.37e-10p 0.0
sig0.664 cc 5.13e-08p 1.13e-05p 0.000317p 0.001471p 0.002129p 0.002184p 0.002184p 7.38e-10p 0.0
rc 5.13e-08p 1.13e-05p 0.000317p 0.001471p 0.002129o 0.002184n 0.002184l 7.38e-10p 0.0
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.000108j 0.0 0.000108n 0.0 0.0
zp 29.11 ri 1.92e-10p 1.75e-07p 1.84e-05p 5.69e-05p 3.27e-05p 5.91e-07p 1.29e-09p 0.0 0.0
sig0.558 cc 1.92e-10p 1.75e-07p 1.86e-05p 7.55e-05p 0.000108p 0.000109p 0.000109p 0.0 0.0
rc 1.92e-10p 1.75e-07p 1.86e-05p 7.55e-05p 0.000108j 0.000109j 0.000109j 0.0 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000150n 0.0 0.0
zp 29.00 ri 5.37e-10p 4.10e-07p 3.41e-05p 8.10e-05p 3.42e-05p 4.13e-07p 5.44e-10p 0.0 0.0
sig0.551 cc 5.37e-10p 4.10e-07p 3.45e-05p 0.000116p 0.000150p 0.000150p 0.000150p 0.0 0.0
rc 5.37e-10p 4.10e-07p 3.45e-05p 0.000116p 0.000150o 0.000150o 0.000150n 0.0 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000125n 0.0 0.0
zp 28.87 ri 1.83e-09p 8.24e-07p 3.67e-05p 6.86e-05p 1.91e-05p 2.07e-07p 2.11e-10p 0.0 0.0
sig0.562 cc 1.83e-09p 8.26e-07p 3.75e-05p 0.000106p 0.000125p 0.000125p 0.000125p 0.0 0.0
rc 1.83e-09p 8.26e-07p 3.75e-05p 0.000106p 0.000125o 0.000125o 0.000125n 0.0 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.007236k 0.0 0.008404k 0.0 0.0
zp 28.44 ri 4.74e-06p 0.000453p 0.003781p 0.003328p 0.000304p 2.57e-06p 1.46e-09p 0.0 0.0
sig0.600 cc 4.74e-06p 0.000458p 0.004239p 0.007567p 0.007871p 0.007873p 0.007873p 0.0 0.0
rc 4.74e-06p 0.000458p 0.004239p 0.007567l 0.007871j 0.007873j 0.007873j 0.0 0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000150l 0.0 0.0
zp 29.06 ri 4.82e-10p 4.46e-07p 2.38e-05p 9.31e-05p 3.23e-05p 8.52e-07p 1.33e-09p 0.0 0.0

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sig0.568 cc 4.82e-10p 4.46e-07p 2.42e-05p 0.000117p 0.000150p 0.000150p 0.000150p       0.0        0.0
         rc 4.82e-10p 4.46e-07p 2.42e-05p 0.000117p 0.000150o 0.000150n 0.000150l       0.0        0.0
 cf252s  xi      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
         xc      0.0        0.0        0.0        0.0        0.0        0.0  1.41e-05n      0.0        0.0
zp 28.88 ri 5.29e-10p 1.42e-07p 3.75e-06p 7.92e-06p 2.22e-06p 4.74e-08p 9.59e-11p       0.0        0.0
sig0.600 cc 5.29e-10p 1.43e-07p 3.89e-06p 1.18e-05p 1.40e-05p 1.41e-05p 1.41e-05p       0.0        0.0
         rc 5.29e-10p 1.43e-07p 3.89e-06p 1.18e-05p 1.40e-05o 1.41e-05o 1.41e-05n       0.0        0.0

  co, ni half lives from 80eng2; cu, zn, ga half lives from 89wal1; as, se half lives 90bur1.

1

    mass number     73                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge m   32 ge g   33 as g   34 se m   34 se g
half life              0.129s    0.491s     3.9 s     24. s    4.87 h    0.53 s    stable    80.30d    39.8 m    7.15 h
lambda            0.0 5.373e+00 1.412e+00 1.777e-01 2.888e-02 3.954e-05 1.308e+00       0.0 9.991e-08 2.903e-04 2.693e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000 -100.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001564n      0.0       0.0       0.0
zp 29.65 ri 1.08e-11p 6.14e-08p 3.37e-05p 0.000462p 0.000991p 7.67e-05p 1.28e-07p 6.23e-07p 1.59e-10p       0.0        0.0
sig0.553 cc 1.08e-11p 6.14e-08p 3.38e-05p 0.000495p 0.001487p 0.001563p 0.001563p 0.001564p 1.59e-10p       0.0        0.0
         rc 1.08e-11p 6.14e-08p 3.38e-05p 0.000495p 0.001487p 0.001563o 0.001563n 0.001564m 1.59e-10p       0.0        0.0
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.018747m      0.0       0.0       0.0
zp 29.51 ri 2.53e-08p 1.61e-05p 0.001061p 0.008159p 0.008352p 0.001141p 2.01e-06p 1.62e-05p 3.03e-08p       0.0  4.32e-12p
sig0.642 cc 2.53e-08p 1.61e-05p 0.001077p 0.009236p 0.017588p 0.018729p 0.018731p 0.018747p 3.03e-08p       0.0  4.32e-12p
         rc 2.53e-08p 1.61e-05p 0.001077p 0.009236p 0.017588p 0.018729o 0.018731n 0.018747l 3.03e-08p       0.0  4.32e-12p
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000719n      0.0       0.0       0.0
zp 29.30 ri 1.19e-10p 2.92e-07p 6.10e-05p 0.000352p 0.000297p 8.49e-06p 3.98e-09p 1.94e-08p 1.32e-12p       0.0        0.0
sig0.545 cc 1.19e-10p 2.92e-07p 6.13e-05p 0.000413p 0.000710p 0.000719p 0.000719p 0.000719p 1.32e-12p       0.0        0.0
         rc 1.19e-10p 2.92e-07p 6.13e-05p 0.000413p 0.000710p 0.000719o 0.000719n 0.000719m 1.32e-12p       0.0        0.0
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.003759l      0.0       0.0       0.0
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zp 29.58 ri 6.47e-09p 3.21e-06p 0.000191p 0.001501p 0.001751p 0.000306p 7.95e-07p 6.44e-06p 2.07e-08p       0.0  6.00e-12p
sig0.664 cc 6.47e-09p 3.22e-06p 0.000194p 0.001695p 0.003446p 0.003752p 0.003752p 0.003759p 2.07e-08p       0.0  6.00e-12p
        rc 6.47e-09p 3.22e-06p 0.000194p 0.001695p 0.003446p 0.003752o 0.003752m 0.003759k 2.07e-08p       0.0  6.00e-12p
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000309n      0.0       0.0       0.0
zp 29.49 ri 1.39e-11p 4.78e-08p 1.29e-05p 0.000127p 0.000159p 9.66e-06p 9.49e-09p 4.64e-08p 9.63e-12p       0.0       0.0
sig0.558 cc 1.39e-11p 4.79e-08p 1.30e-05p 0.000140p 0.000300p 0.000309p 0.000309p 0.000309p 9.63e-12p       0.0       0.0
        rc 1.39e-11p 4.79e-08p 1.30e-05p 0.000140p 0.000300p 0.000309o 0.000309n 0.000309m 9.63e-12p       0.0       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000478n      0.0       0.0       0.0
zp 29.38 ri 4.60e-11p 1.36e-07p 2.96e-05p 0.000226p 0.000213p 8.96e-06p 5.50e-09p 2.69e-08p 3.17e-12p       0.0       0.0
sig0.551 cc 4.60e-11p 1.36e-07p 2.97e-05p 0.000256p 0.000469p 0.000478p 0.000478p 0.000478p 3.17e-12p       0.0       0.0
        rc 4.60e-11p 1.36e-07p 2.97e-05p 0.000256p 0.000469p 0.000478o 0.000478n 0.000478m 3.17e-12p       0.0       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000241n      0.0       0.0       0.0
zp 29.24 ri 1.43e-10p 2.21e-07p 2.46e-05p 0.000132p 8.19e-05p 2.80e-06p 1.29e-09p 6.31e-09p       0.0       0.0       0.0
sig0.562 cc 1.43e-10p 2.21e-07p 2.48e-05p 0.000157p 0.000239p 0.000241p 0.000241p 0.000241p       0.0       0.0       0.0
        rc 1.43e-10p 2.21e-07p 2.48e-05p 0.000157p 0.000239p 0.000241o 0.000241o 0.000241n       0.0       0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.015221k      0.0  0.016767j      0.0       0.0       0.0
zp 28.83 ri 8.21e-07p 0.000213p 0.004500p 0.009389p 0.002115p 4.41e-05p 8.17e-09p 6.61e-08p 8.27e-12p       0.0       0.0
sig0.600 cc 8.21e-07p 0.000214p 0.004714p 0.014104p 0.016219p 0.016263p 0.016263p 0.016263p 7.86e-12p       0.0       0.0
        rc 8.21e-07p 0.000214p 0.004714p 0.014104o 0.016219m 0.016263k 0.016263k 0.016263j 8.27e-12p       0.0       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000369l      0.0       0.0       0.0
zp 29.44 ri 4.05e-11p 1.15e-07p 1.78e-05p 0.000181p 0.000158p 1.15e-05p 9.09e-09p 4.44e-08p 1.34e-11p       0.0       0.0
sig0.568 cc 4.05e-11p 1.15e-07p 1.79e-05p 0.000199p 0.000357p 0.000369p 0.000369p 0.000369p 1.34e-11p       0.0       0.0
        rc 4.05e-11p 1.15e-07p 1.79e-05p 0.000199p 0.000357p 0.000369o 0.000369m 0.000369k 1.34e-11p       0.0       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.21e-05n      0.0       0.0       0.0
zp 29.26 ri 6.95e-11p 5.05e-08p 3.40e-06p 1.70e-05p 1.11e-05p 6.00e-07p 6.21e-10p 2.65e-09p 1.05e-12p       0.0       0.0
sig0.600 cc 6.95e-11p 5.06e-08p 3.45e-06p 2.04e-05p 3.15e-05p 3.21e-05p 3.21e-05p 3.21e-05p 1.05e-12p       0.0       0.0
        rc 6.95e-11p 5.06e-08p 3.45e-06p 2.04e-05p 3.15e-05p 3.21e-05o 3.21e-05o 3.21e-05n 1.05e-12p       0.0       0.0
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co, ni half lives from 80eng2; cu, zn, ga half lives from 89wal1; as half life 73bro1; se half life 90bur1.

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    mass number     74                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g   33 as m   33 as g   34 se g
half life              0.092s    0.900s    0.648s    1.60 m     8.1 m    stable    8.0  s    17.76d    stable
lambda            0.0 7.534e+00 7.702e-01 1.070e+00 7.220e-03 1.426e-03       0.0 8.664e-02 4.517e-07       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  -67.3000   32.7000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 u233f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.003725n      0.0       0.0       0.0
zp 30.03 ri      0.0  5.51e-09p 1.25e-05p 0.000391p 0.002844p 0.000460p 1.77e-05p 6.90e-09p 2.55e-09p       0.0
sig0.553 cc      0.0  5.51e-09p 1.26e-05p 0.000403p 0.003247p 0.003707p 0.003725p 6.90e-09p 9.46e-09p 3.09e-09p
         rc      0.0  5.51e-09p 1.26e-05p 0.000403p 0.003247p 0.003707o 0.003725n 6.90e-09p 9.46e-09p 3.09e-09o
 u233he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.028082m      0.0       0.0       0.0
zp 29.89 ri 1.77e-09p 2.72e-06p 0.000420p 0.007182p 0.015657p 0.004649p 0.000171p 5.56e-07p 1.22e-07p 2.66e-10p
sig0.642 cc 1.77e-09p 2.73e-06p 0.000423p 0.007605p 0.023262p 0.027911p 0.028083p 5.56e-07p 6.78e-07p 2.22e-07p
         rc 1.77e-09p 2.73e-06p 0.000423p 0.007605p 0.023262p 0.027911n 0.028083l 5.56e-07p 6.78e-07p 2.22e-07p
 u236f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.003113n      0.0       0.0       0.0
zp 29.69 ri 8.97e-12p 6.32e-08p 5.46e-05p 0.000759p 0.002150p 0.000148p 1.69e-06p 1.99e-10p 7.37e-11p       0.0
sig0.545 cc 8.97e-12p 6.32e-08p 5.46e-05p 0.000814p 0.002963p 0.003112p 0.003113p 1.99e-10p 2.73e-10p 8.93e-11p
         rc 8.97e-12p 6.32e-08p 5.46e-05p 0.000814p 0.002963p 0.003112o 0.003113n 1.99e-10p 2.73e-10p 8.93e-11o
 pu239h  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.005881l      0.0       0.0       0.0
zp 29.96 ri 5.41e-10p 6.13e-07p 8.07e-05p 0.001350p 0.003222p 0.001167p 5.99e-05p 3.17e-07p 6.96e-08p 2.89e-10p
sig0.664 cc 5.41e-10p 6.13e-07p 8.13e-05p 0.001431p 0.004653p 0.005821p 0.005881p 3.17e-07p 3.87e-07p 1.27e-07p
         rc 5.41e-10p 6.13e-07p 8.13e-05p 0.001431p 0.004653p 0.005821n 0.005881l 3.17e-07p 3.87e-07p 1.27e-07p
 pu240f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.000784n      0.0       0.0       0.0
zp 29.87 ri      0.0  6.23e-09p 6.17e-06p 0.000146p 0.000553p 7.70e-05p 1.59e-06p 5.45e-10p 2.01e-10p       0.0
sig0.558 cc      0.0  6.23e-09p 6.17e-06p 0.000152p 0.000706p 0.000783p 0.000784p 5.45e-10p 7.46e-10p 2.44e-10p
         rc      0.0  6.23e-09p 6.17e-06p 0.000152p 0.000706p 0.000783o 0.000784n 5.45e-10p 7.46e-10p 2.44e-10o
 pu241f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.001126n      0.0       0.0       0.0
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zp 29.75 ri 2.34e-12p 1.90e-08p 1.50e-05p 0.000271p 0.000765p 7.46e-05p 9.70e-07p 1.90e-10p 7.01e-11p       0.0
sig0.551 cc 2.34e-12p 1.90e-08p 1.50e-05p 0.000286p 0.001051p 0.001125p 0.001126p 1.90e-10p 2.60e-10p 8.50e-11p
         rc 2.34e-12p 1.90e-08p 1.50e-05p 0.000286p 0.001051p 0.001125o 0.001126n 1.90e-10p 2.60e-10p 8.50e-11o
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000772n      0.0       0.0       0.0
zp 29.62 ri 1.22e-11p 5.28e-08p 2.00e-05p 0.000257p 0.000457p 3.81e-05p 3.55e-07p 7.05e-11p 2.61e-11p       0.0
sig0.562 cc 1.22e-11p 5.28e-08p 2.01e-05p 0.000277p 0.000734p 0.000772p 0.000772p 7.05e-11p 9.66e-11p 3.16e-11p
         rc 1.22e-11p 5.28e-08p 2.01e-05p 0.000277p 0.000734p 0.000772o 0.000772n 7.05e-11p 9.66e-11p 3.16e-11o
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.030213j      0.0       0.0       0.0
zp 29.23 ri 7.92e-08p 5.85e-05p 0.003299p 0.016958p 0.009376p 0.000519p 2.36e-06p 6.31e-10p 1.39e-10p       0.0
sig0.600 cc 7.92e-08p 5.86e-05p 0.003357p 0.020315p 0.029692p 0.030211p 0.030213p 6.31e-10p 7.70e-10p 2.52e-10p
         rc 7.92e-08p 5.86e-05p 0.003357p 0.020315p 0.029692n 0.030211l 0.030213j 6.31e-10p 7.70e-10p 2.52e-10p
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000663l      0.0       0.0       0.0
zp 29.82 ri 1.62e-12p 1.43e-08p 6.57e-06p 0.000182p 0.000397p 7.61e-05p 1.04e-06p 5.83e-10p 2.16e-10p       0.0
sig0.568 cc 1.62e-12p 1.43e-08p 6.59e-06p 0.000189p 0.000586p 0.000662p 0.000663p 5.83e-10p 7.98e-10p 2.61e-10p
         rc 1.62e-12p 1.43e-08p 6.59e-06p 0.000189p 0.000586p 0.000662n 0.000663l 5.83e-10p 7.98e-10p 2.61e-10o
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  7.06e-05n      0.0       0.0       0.0
zp 29.64 ri 5.92e-12p 1.18e-08p 2.08e-06p 2.52e-05p 3.82e-05p 5.05e-06p 7.24e-08p 4.46e-11p 1.91e-11p       0.0
sig0.600 cc 5.92e-12p 1.18e-08p 2.09e-06p 2.73e-05p 6.55e-05p 7.05e-05p 7.06e-05p 4.46e-11p 6.38e-11p 2.09e-11p
         rc 5.92e-12p 1.18e-08p 2.09e-06p 2.73e-05p 6.55e-05p 7.05e-05o 7.06e-05n 4.46e-11p 6.38e-11p 2.09e-11o

  co, ni, cu half lives 80eng2; zn, ga half lives 89wal1.
1

    mass number     75                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge m   32 ge g   33 as g   34 se g   35 br g
half life     0.082s    0.231s     1.3 s    10.2 s    2.10 m    48.9 s    1.380h    stable    119.8d     97. m
lambda      8.453e+00 3.001e+00 5.332e-01 6.796e-02 5.501e-03 1.417e-02 1.395e-04       0.0 6.697e-08 1.191e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000    4.0000   96.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.011085n      0.0       0.0
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zp 30.42 ri 5.57e-10p 3.31e-06p 0.000421p 0.006623p 0.003706p 0.000292p 3.98e-05p 7.54e-07p 1.67e-10p       0.0
sig0.553 cc 5.57e-10p 3.31e-06p 0.000424p 0.007048p 0.010753p 0.000722p 0.011085p 0.011085p 1.67e-10p       0.0
        rc 5.57e-10p 3.31e-06p 0.000424p 0.007048p 0.010753p 0.000722o 0.011085o 0.011085n 1.67e-10p       0.0
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.043497m      0.0       0.0
zp 30.27 ri 3.42e-07p 0.000125p 0.004859p 0.022807p 0.014496p 0.001104p 9.60e-05p 1.12e-05p 1.07e-08p       0.0
sig0.642 cc 3.42e-07p 0.000126p 0.004984p 0.027791p 0.042287p 0.002795p 0.043486p 0.043497p 1.07e-08p       0.0
        rc 3.42e-07p 0.000126p 0.004984p 0.027791p 0.042287o 0.002795o 0.043486n 0.043497l 1.07e-08p       0.0
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.008302n      0.0       0.0
zp 30.08 ri 7.15e-09p 1.72e-05p 0.000930p 0.005893p 0.001420p 3.73e-05p 5.09e-06p 2.94e-08p 1.60e-12p       0.0
sig0.545 cc 7.15e-09p 1.72e-05p 0.000947p 0.006840p 0.008260p 0.000368p 0.008302p 0.008302p 1.60e-12p       0.0
        rc 7.15e-09p 1.72e-05p 0.000947p 0.006840p 0.008260p 0.000368o 0.008302o 0.008302n 1.60e-12p       0.0
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.010230l      0.0       0.0
zp 30.34 ri 9.52e-08p 2.82e-05p 0.001019p 0.005031p 0.003737p 0.000376p 3.27e-05p 5.87e-06p 1.00e-08p 1.92e-12p
sig0.664 cc 9.52e-08p 2.83e-05p 0.001047p 0.006078p 0.009815p 0.000769p 0.010224p 0.010230p 1.00e-08p 1.92e-12p
        rc 9.52e-08p 2.83e-05p 0.001047p 0.006078p 0.009815o 0.000769p 0.010224n 0.010230l 1.00e-08p 1.92e-12p
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001705n      0.0       0.0
zp 30.25 ri 5.83e-10p 1.56e-06p 0.000128p 0.001087p 0.000464p 2.09e-05p 2.85e-06p 4.14e-08p 5.50e-12p       0.0
sig0.558 cc 5.83e-10p 1.56e-06p 0.000130p 0.001217p 0.001681p 8.81e-05p 0.001705p 0.001705p 5.50e-12p       0.0
        rc 5.83e-10p 1.56e-06p 0.000130p 0.001217p 0.001681p 8.81e-05o 0.001705o 0.001705n 5.50e-12p       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.002816n      0.0       0.0
zp 30.13 ri 2.15e-09p 4.69e-06p 0.000299p 0.001904p 0.000588p 1.74e-05p 2.37e-06p 2.04e-08p 1.46e-12p       0.0
sig0.551 cc 2.15e-09p 4.69e-06p 0.000304p 0.002208p 0.002796p 0.000129p 0.002816p 0.002816p 1.46e-12p       0.0
        rc 2.15e-09p 4.69e-06p 0.000304p 0.002208p 0.002796p 0.000129o 0.002816o 0.002816n 1.46e-12p       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001158n      0.0       0.0
zp 29.99 ri 4.88e-09p 4.90e-06p 0.000196p 0.000767p 0.000186p 3.87e-06p 5.27e-07p 4.12e-09p       0.0       0.0
sig0.562 cc 4.88e-09p 4.90e-06p 0.000201p 0.000968p 0.001154p 5.00e-05p 0.001158p 0.001158p       0.0       0.0
        rc 4.88e-09p 4.90e-06p 0.000201p 0.000968p 0.001154p 5.00e-05o 0.001158o 0.001158n       0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.053042j      0.0       0.0
zp 29.64 ri 9.42e-06p 0.001499p 0.020044p 0.027441p 0.003997p 4.76e-05p 4.14e-06p 5.02e-08p 3.35e-12p       0.0
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sig0.600 cc 9.42e-06p 0.001509p 0.021553p 0.048993p 0.052990p 0.002167p 0.053042p 0.053042p 3.35e-12p       0.0
         rc 9.42e-06p 0.001509p 0.021553p 0.048993o 0.052990n 0.002167o 0.053042l 0.053042j 3.35e-12p       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001318l      0.0       0.0
zp 30.20 ri 1.28e-09p 1.79e-06p 0.000141p 0.000780p 0.000381p 1.29e-05p 1.76e-06p 3.43e-08p 4.18e-12p       0.0
sig0.568 cc 1.28e-09p 1.79e-06p 0.000142p 0.000923p 0.001303p 6.50e-05p 0.001318p 0.001318p 4.18e-12p       0.0
         rc 1.28e-09p 1.79e-06p 0.000142p 0.000923p 0.001303o 6.50e-05o 0.001318n 0.001318l 4.18e-12p       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000152n      0.0       0.0
zp 30.03 ri 1.72e-09p 8.33e-07p 2.59e-05p 9.38e-05p 3.01e-05p 9.90e-07p 1.48e-07p 2.79e-09p       0.0       0.0
sig0.600 cc 1.72e-09p 8.35e-07p 2.68e-05p 0.000121p 0.000151p 7.02e-06p 0.000152p 0.000152p       0.0       0.0
         rc 1.72e-09p 8.35e-07p 2.68e-05p 0.000121p 0.000151p 7.02e-06o 0.000152o 0.000152n       0.0       0.0

  co, ni half lives 80eng2; cu, zn, ga, ge half lives 89wal1; se, br half lives 90bur1.

1

    mass number     76                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g   33 as g   34 se g
half life                     0.305s     0.6 s     5.7 s     29. s    stable    26.3 h    stable
lambda            0.0       0.0 2.273e+00 1.155e+00 1.216e-01 2.390e-02       0.0 7.321e-06       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.019688n      0.0       0.0
zp 30.80 ri       0.0  1.71e-11p 4.35e-07p 0.000135p 0.007873p 0.008840p 0.002839p 1.55e-05p 1.46e-08p
sig0.553 cc       0.0  1.71e-11p 4.35e-07p 0.000136p 0.008009p 0.016849p 0.019688p 1.55e-05p 1.55e-05p
         rc       0.0  1.71e-11p 4.35e-07p 0.000136p 0.008009p 0.016849p 0.019688n 1.55e-05p 1.55e-05p
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.066835m      0.0       0.0
zp 30.65 ri 3.31e-12p 3.04e-08p 2.68e-05p 0.002409p 0.024789p 0.033505p 0.006106p 0.000133p 3.05e-07p
sig0.642 cc 3.31e-12p 3.04e-08p 2.68e-05p 0.002435p 0.027224p 0.060729p 0.066835p 0.000133p 0.000133p
         rc 3.31e-12p 3.04e-08p 2.68e-05p 0.002435p 0.027224p 0.060729n 0.066835l 0.000133p 0.000133p
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.022831n      0.0       0.0
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zp 30.47 ri 0.0 4.12e-10p 4.29e-06p 0.000617p 0.013938p 0.007428p 0.000843p 1.61e-06p 3.86e-10p
sig0.545 cc 0.0 4.12e-10p 4.29e-06p 0.000621p 0.014559p 0.021987p 0.022830p 1.61e-06p 1.61e-06p
rc 0.0 4.12e-10p 4.29e-06p 0.000621p 0.014559p 0.021987o 0.022830n 1.61e-06p 1.61e-06p
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.016358l 0.0 0.0
zp 30.72 ri 1.66e-12p 9.97e-09p 6.70e-06p 0.000533p 0.005521p 0.008378p 0.001919p 6.05e-05p 2.34e-07p
sig0.664 cc 1.66e-12p 9.97e-09p 6.71e-06p 0.000539p 0.006061p 0.014439p 0.016358p 6.05e-05p 6.07e-05p
rc 1.66e-12p 9.97e-09p 6.71e-06p 0.000539p 0.006061p 0.014439o 0.016358l 6.05e-05p 6.07e-05p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.004091n 0.0 0.0
zp 30.63 ri 0.0 3.24e-11p 3.28e-07p 7.03e-05p 0.001930p 0.001790p 0.000300p 1.37e-06p 6.96e-10p
sig0.558 cc 0.0 3.24e-11p 3.28e-07p 7.06e-05p 0.002001p 0.003791p 0.004091p 1.37e-06p 1.37e-06p
rc 0.0 3.24e-11p 3.28e-07p 7.06e-05p 0.002001p 0.003791o 0.004091n 1.37e-06p 1.37e-06p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.005631n 0.0 0.0
zp 30.51 ri 0.0 1.04e-10p 8.86e-07p 0.000149p 0.003108p 0.002129p 0.000244p 6.87e-07p 1.94e-10p
sig0.551 cc 0.0 1.04e-10p 8.86e-07p 0.000150p 0.003258p 0.005387p 0.005631p 6.87e-07p 6.87e-07p
rc 0.0 1.04e-10p 8.86e-07p 0.000150p 0.003258p 0.005387o 0.005631n 6.87e-07p 6.87e-07p
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.002413n 0.0 0.0
zp 30.37 ri 0.0 3.33e-10p 1.18e-06p 0.000123p 0.001439p 0.000790p 5.98e-05p 1.53e-07p 3.42e-11p
sig0.562 cc 0.0 3.33e-10p 1.19e-06p 0.000125p 0.001564p 0.002354p 0.002413p 1.53e-07p 1.53e-07p
rc 0.0 3.33e-10p 1.19e-06p 0.000125p 0.001564p 0.002354o 0.002413n 1.53e-07p 1.53e-07p
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.090640j 0.0 0.0
zp 30.06 ri 1.30e-10p 8.80e-07p 0.000416p 0.015384p 0.053748p 0.020345p 0.000747p 2.18e-06p 4.51e-10p
sig0.600 cc 1.30e-10p 8.80e-07p 0.000417p 0.015801p 0.069549p 0.089894p 0.090640p 2.18e-06p 2.18e-06p
rc 1.30e-10p 8.80e-07p 0.000417p 0.015801p 0.069549p 0.089894l 0.090640j 2.18e-06p 2.18e-06p
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.006010l 0.0 0.0
zp 30.58 ri 0.0 1.71e-10p 7.37e-07p 0.000170p 0.002489p 0.003034p 0.000317p 2.20e-06p 8.33e-10p
sig0.568 cc 0.0 1.71e-10p 7.37e-07p 0.000170p 0.002660p 0.005694p 0.006010p 2.20e-06p 2.20e-06p
rc 0.0 1.71e-10p 7.37e-07p 0.000170p 0.002660p 0.005694n 0.006010l 2.20e-06p 2.20e-06p
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000317n 0.0 0.0
zp 30.41 ri 0.0 1.79e-10p 2.36e-07p 1.90e-05p 0.000164p 0.000122p 1.15e-05p 7.56e-08p 4.42e-11p

sig0.600 cc 0.0 1.79e-10p 2.37e-07p 1.92e-05p 0.000183p 0.000306p 0.000317p 7.56e-08p 7.56e-08p
rc 0.0 1.79e-10p 2.37e-07p 1.92e-05p 0.000183p 0.000306o 0.000317n 7.56e-08p 7.56e-08p

ni half lives 80eng2; cu, zn, ga half lives 89wal1.
1

mass number 77 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 28 ni g 29 cu g 30 zn g 31 ga g 32 ge m 32 ge g 33 as g 34 se m 34 se g 35 br m 35 br g 36 kr g
half life 0.103s 0.305s 2.1 s 13.0 s 53. s 11.30h 38.8 h 17.45s stable 4.3 m 57.04h 74.4 m
lambda 6.730e+00 2.273e+00 3.301e-01 5.332e-02 1.308e-02 1.704e-05 4.962e-06 3.972e-02 0.0 2.687e-03 3.376e-06 1.553e-04
z - 1 g 100.0000 100.0000 100.0000 100.0000 88.0000 12.0000 100.0000 0.3000 99.7000 0.0 -99.0000 -80.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 79.0000 0.0 0.0 0.0 -1.0000 -20.0000
z - 0 m 0.0 0.0 0.0 0.0 0.0 21.0000 0.0 0.0 100.0000 0.0 100.0000 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.037259n 0.0 0.0 0.0
zp 31.19 ri 2.60e-08p 3.49e-05p 0.004840p 0.019136p 0.001556p 0.011409p 0.000283p 6.06e-07p 8.27e-08p 2.70e-11p 7.19e-12p 0.0
sig0.553 cc 2.60e-08p 3.49e-05p 0.004875p 0.024011p 0.022685p 0.019054p 0.037258p 0.000112p 0.037259p 2.70e-11p 3.42e-11p 0.0
rc 2.60e-08p 3.49e-05p 0.004875p 0.024011p 0.022685p 0.019054p 0.037258n 0.000112o 0.037259m 2.70e-11p 3.42e-11p 0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.101957m 0.0 0.0 0.0
zp 31.04 ri 3.82e-06p 0.000827p 0.019489p 0.057408p 0.001614p 0.021439p 0.001171p 6.01e-06p 5.22e-07p 3.12e-09p 5.09e-10p 0.0
sig0.642 cc 3.82e-06p 0.000831p 0.020320p 0.077728p 0.070014p 0.045469p 0.101951p 0.000312p 0.101957p 3.12e-09p 3.63e-09p 0.0
rc 3.82e-06p 0.000831p 0.020320p 0.077728p 0.070014p 0.045469p 0.101951n 0.000312n 0.101957l 3.12e-09p 3.63e-09p 0.0
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.045175n 0.0 0.0 0.0
zp 30.86 ri 4.08e-07p 0.000246p 0.013722p 0.024572p 0.000790p 0.005793p 5.14e-05p 3.08e-08p 4.21e-09p 0.0 0.0 0.0
sig0.545 cc 4.08e-07p 0.000246p 0.013968p 0.038540p 0.034706p 0.017706p 0.045174p 0.000136p 0.045174p 0.0 0.0 0.0
rc 4.08e-07p 0.000246p 0.013968p 0.038540p 0.034706p 0.017706o 0.045174n 0.000136n 0.045174m 0.0 0.0 0.0

pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.023704l 0.0 0.0 0.0
zp 31.10 ri 1.05e-06p 0.000186p 0.004134p 0.012880p 0.000426p 0.005659p 0.000413p 3.30e-06p 2.87e-07p 3.13e-09p 5.10e-10p 0.0
sig0.664 cc 1.05e-06p 0.000188p 0.004322p 0.017201p 0.015563p 0.010992p 0.023700p 7.44e-05p 0.023704p 3.13e-09p 3.64e-09p 0.0
rc 1.05e-06p 0.000188p 0.004322p 0.017201p 0.015563p 0.010992p 0.023700m 7.44e-05n 0.023704k 3.13e-09p 3.64e-09p 0.0
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.010786m 0.0 0.0 0.0
zp 31.01 ri 4.12e-08p 3.26e-05p 0.002189p 0.006181p 0.000282p 0.002064p 3.78e-05p 4.56e-08p 6.22e-09p 1.59e-12p 0.0 0.0
sig0.558 cc 4.12e-08p 3.27e-05p 0.002221p 0.008402p 0.007676p 0.004684p 0.010786p 3.24e-05p 0.010786p 1.59e-12p 2.01e-12p 0.0
rc 4.12e-08p 3.27e-05p 0.002221p 0.008402p 0.007676p 0.004684o 0.010786n 3.24e-05n 0.010786m 1.59e-12p 2.02e-12p 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.009693l 0.0 0.0 0.0
zp 30.89 ri 7.97e-08p 5.09e-05p 0.002616p 0.005523p 0.000179p 0.001309p 1.53e-05p 1.07e-08p 1.46e-09p 0.0 0.0 0.0
sig0.551 cc 7.97e-08p 5.10e-05p 0.002667p 0.008190p 0.007386p 0.003843p 0.009693p 2.91e-05p 0.009693p 0.0 0.0 0.0
rc 7.97e-08p 5.10e-05p 0.002667p 0.008190p 0.007386p 0.003843o 0.009693m 2.91e-05n 0.009693l 0.0 0.0 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.006828n 0.0 0.0 0.0
zp 30.75 ri 2.33e-07p 8.31e-05p 0.002361p 0.003705p 8.08e-05p 0.000593p 5.86e-06p 3.23e-09p 4.41e-10p 0.0 0.0 0.0
sig0.562 cc 2.33e-07p 8.33e-05p 0.002444p 0.006149p 0.005492p 0.002484p 0.006828p 2.05e-05p 0.006828p 0.0 0.0 0.0
rc 2.33e-07p 8.33e-05p 0.002444p 0.006149p 0.005492p 0.002484o 0.006828n 2.05e-05n 0.006828m 0.0 0.0 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.137642k 0.0 0.128446j 0.0 0.0 0.0
zp 30.48 ri 6.23e-05p 0.006587p 0.060389p 0.058056p 0.000408p 0.005417p 5.03e-05p 2.82e-08p 2.45e-09p 1.14e-12p 0.0 0.0
sig0.600 cc 6.23e-05p 0.006650p 0.067039p 0.125095p 0.110492p 0.043632p 0.130970p 0.000393p 0.130970p 1.19e-12p 1.38e-12p 0.0
rc 6.23e-05p 0.006650p 0.067039p 0.125095o 0.110492o 0.043632n 0.130970k 0.000393k 0.130970j 1.14e-12p 1.33e-12p 0.0

np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.010440k 0.0 0.0 0.0
zp 30.96 ri 7.56e-08p 5.22e-05p 0.002117p 0.006477p 0.000211p 0.001548p 3.53e-05p 3.61e-08p 4.92e-09p 1.92e-12p 0.0
0.0
sig0.568 cc 7.56e-08p 5.23e-05p 0.002169p 0.008646p 0.007820p 0.004227p 0.010440p 3.14e-05p 0.010440p 1.92e-12p 2.43e-12p
0.0
rc 7.56e-08p 5.23e-05p 0.002169p 0.008646p 0.007820p 0.004227o 0.010440m 3.14e-05n 0.010440k 1.92e-12p 2.43e-12p
0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000625n 0.0 0.0 0.0
zp 30.80 ri 4.08e-08p 8.90e-06p 0.000193p 0.000342p 1.04e-05p 6.94e-05p 1.40e-06p 2.00e-09p 2.98e-10p 0.0 0.0 0.0
sig0.600 cc 4.08e-08p 8.94e-06p 0.000202p 0.000544p 0.000489p 0.000237p 0.000625p 1.88e-06p 0.000625p 0.0 0.0
0.0
rc 4.08e-08p 8.94e-06p 0.000202p 0.000544p 0.000489p 0.000237o 0.000625n 1.88e-06n 0.000625m 0.0 0.0 0.0

ni, cu half lives from 80eng2; zn, ga, ge, as half lives from 89wal1; kr, br, se half lives 90bur1.

1

mass number 78 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 28 ni g 29 cu g 30 zn g 31 ga d 31 ga g 32 ge d 32 ge g 33 as g 34 se g 35 br g 36 kr g
half life 0.132s 0.118s 1.5 s 0.313s 5.09 s 3.0 s 1.45 h 1.512h stable 6.4 m stable
lambda 5.251e+00 5.874e+00 4.621e-01 2.215e+00 1.362e-01 2.310e-01 1.328e-04 1.273e-04 0.0 1.805e-03 0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 100.0000 0.0 100.0000 100.0000 100.0000 -100.0000 0.0
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 1.1460 100.0000 0.0890 100.0000 0.0 0.0 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.062078n 0.0 0.0
zp 31.58 ri 9.88e-10p 3.48e-06p 0.001998p 0.0 0.017433p 0.0 0.040593p 0.002014p 2.07e-05p 2.72e-09p 0.0
sig0.553 cc 9.88e-10p 3.48e-06p 0.002001p 0.0 0.019434p 0.0 0.060027p 0.062040p 0.062061p 2.72e-09p 0.0
rc 9.88e-10p 3.48e-06p 0.002001p 4.90e-06o 0.019439p 1.33e-05o 0.060045p 0.062058o 0.062079n 2.72e-09p 0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.154922m 0.0 0.0
zp 31.43 ri 3.81e-07p 0.000202p 0.011143p 0.0 0.072612p 0.0 0.063420p 0.007337p 9.83e-05p 1.35e-07p 1.80e-11p
sig0.642 cc 3.81e-07p 0.000202p 0.011346p 0.0 0.083958p 0.0 0.147378p 0.154715p 0.154813p 1.35e-07p 1.80e-11p
rc 3.81e-07p 0.000202p 0.011346p 4.83e-05o 0.084006p 6.10e-05o 0.147488o 0.154824n 0.154923l 1.35e-07p 1.80e-11p

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 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.058114n      0.0       0.0
zp 31.25 ri 1.74e-08p 2.95e-05p 0.006526p      0.0  0.026599p      0.0  0.024414p 0.000489p 1.42e-06p 5.51e-11p      0.0
sig0.545 cc 1.74e-08p 2.95e-05p 0.006555p      0.0  0.033154p      0.0  0.057568p 0.058057p 0.058058p 5.51e-11p      0.0
         rc 1.74e-08p 2.95e-05p 0.006555p 2.72e-05o 0.033181p 3.34e-05o 0.057629p 0.058118o 0.058119n 5.51e-11p      0.0
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.041512l      0.0       0.0
zp 31.48 ri 1.46e-07p 5.86e-05p 0.002826p      0.0  0.018303p      0.0  0.017688p 0.002545p 4.89e-05p 1.13e-07p 2.95e-11p
sig0.664 cc 1.46e-07p 5.87e-05p 0.002885p      0.0  0.021188p      0.0  0.038876p 0.041421p 0.041470p 1.13e-07p 2.95e-11p
         rc 1.46e-07p 5.87e-05p 0.002885p 1.99e-05o 0.021208p 2.24e-05o 0.038918o 0.041463n 0.041512l 1.13e-07p 2.95e-11p
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.022210m      0.0       0.0
zp 31.39 ri 2.89e-09p 6.21e-06p 0.001470p      0.0  0.009420p      0.0  0.010869p 0.000427p 2.16e-06p 2.32e-10p      0.0
sig0.558 cc 2.89e-09p 6.21e-06p 0.001477p      0.0  0.010897p      0.0  0.021766p 0.022193p 0.022195p 2.32e-10p      0.0
         rc 2.89e-09p 6.21e-06p 0.001477p 5.84e-06o 0.010903p 1.00e-05o 0.021782o 0.022209n 0.022211m 2.32e-10p      0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.018416l      0.0       0.0
zp 31.26 ri 6.18e-09p 1.06e-05p 0.001904p      0.0  0.008948p      0.0  0.007346p 0.000187p 5.51e-07p 3.13e-11p      0.0
sig0.551 cc 6.18e-09p 1.06e-05p 0.001915p      0.0  0.010863p      0.0  0.018209p 0.018396p 0.018397p 3.13e-11p      0.0
         rc 6.18e-09p 1.06e-05p 0.001915p 8.68e-06o 0.010872p 1.12e-05o 0.018229o 0.018416n 0.018416l 3.13e-11p      0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.013515n      0.0       0.0
zp 31.12 ri 2.48e-08p 2.36e-05p 0.002119p      0.0  0.007401p      0.0  0.003860p 8.41e-05p 1.81e-07p 1.07e-11p      0.0
sig0.562 cc 2.48e-08p 2.37e-05p 0.002143p      0.0  0.009544p      0.0  0.013404p 0.013488p 0.013488p 1.07e-11p      0.0
         rc 2.48e-08p 2.37e-05p 0.002143p 1.57e-05o 0.009560p 1.40e-05o 0.013433o 0.013517o 0.013517n 1.07e-11p      0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.249311j      0.0       0.0
zp 30.90 ri 7.72e-06p 0.002407p 0.060115p      0.0  0.146460p      0.0  0.038718p 0.000959p 1.85e-06p 2.48e-10p      0.0
sig0.600 cc 7.72e-06p 0.002413p 0.062486p      0.0  0.209016p      0.0  0.247708p 0.248667p 0.248668p 2.48e-10p      0.0
         rc 7.72e-06p 0.002415p 0.062529p 0.000415o 0.209404o 0.000228o 0.248350n 0.249310l 0.249312j 2.48e-10p      0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.024370k      0.0       0.0
zp 31.34 ri 6.78e-09p 1.43e-05p 0.001665p      0.0  0.013155p      0.0  0.009004p 0.000503p 1.76e-06p 3.26e-10p      0.0
sig0.568 cc 6.78e-09p 1.43e-05p 0.001679p      0.0  0.014834p      0.0  0.023838p 0.024341p 0.024343p 3.26e-10p      0.0
         rc 6.78e-09p 1.43e-05p 0.001679p 1.01e-05o 0.014844p 1.74e-05o 0.023866o 0.024369m 0.024370k 3.26e-10p      0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.002071k 0.001973n 0.0 0.0
zp 31.18 ri 8.40e-09p 4.94e-06p 0.000272p 0.0 0.001133p 0.0 0.000621p 2.77e-05p 1.20e-07p 3.09e-11p 0.0
sig0.600 cc 8.40e-09p 4.95e-06p 0.000277p 0.0 0.001410p 0.0 0.002031p 0.002058p 0.002059p 3.17e-11p 0.0
rc 8.40e-09p 4.95e-06p 0.000277p 1.57e-06o 0.001412p 1.34e-06o 0.002034m 0.002061k 0.002061k 3.09e-11p 0.0

ni, cu half lives from 80eng2; zn, ga, ge, as half lives from 89wal1.

1

mass number 79 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 29 cu g 30 zn g 31 ga g 32 ge d 32 ge g 33 as g 34 se m 34 se g 35 br m 35 br g 36 kr g 37 rb g
half life 0.135s 1.0 s 2.85 s 1.66s 19.1s 9.0 m 3.89 m 6.5e4y 4.86 s stable 35.04h 22.9 m
lambda 5.134e+00 6.931e-01 2.432e-01 4.176e-01 3.629e-02 1.284e-03 2.970e-03 3.381e-13 1.426e-01 0.0 5.495e-06
5.045e-04
z - 1 g 100.0000 100.0000 98.8540 0.0 99.9110 100.0000 100.0000 0.0 0.0 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.8300 100.0000 0.0 0.0 100.0000 0.0 100.0000 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.097551n 0.0 0.0
zp 31.97 ri 2.92e-07p 0.000427p 0.014465p 0.0 0.069798p 0.012502p 3.76e-05p 0.000276p 1.42e-07p 3.77e-08p 9.59e-12p
0.0
sig0.553 cc 2.92e-07p 0.000428p 0.014888p 0.0 0.084672p 0.097174p 0.097212p 0.097487p 1.42e-07p 0.097488p 9.59e-12p
0.0
rc 2.92e-07p 0.000428p 0.014888p 6.77e-05o 0.084740p 0.097242p 0.097279o 0.097555o 1.42e-07p 0.097555n 9.59e-12p
0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.230837m 0.0 0.0
zp 31.84 ri 3.04e-05p 0.004188p 0.064339p 0.0 0.126872p 0.034067p 7.87e-05p 0.001045p 3.42e-06p 5.57e-07p 1.39e-09p
0.0
sig0.642 cc 3.04e-05p 0.004217p 0.068489p 0.0 0.195330p 0.229387p 0.229466p 0.230511p 3.42e-06p 0.230515p 1.38e-09p
0.0
rc 3.04e-05p 0.004218p 0.068509p 0.000329o 0.195649p 0.229715o 0.229794n 0.230839m 3.42e-06p 0.230843l 1.39e-09p
0.0
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.114153n 0.0 0.0
zp 31.64 ri 3.96e-06p 0.002367p 0.035233p 0.0 0.071124p 0.005282p 5.03e-06p 3.69e-05p 5.61e-09p 1.49e-09p 0.0 0.0

sig0.545 cc 3.96e-06p 0.002371p 0.037577p 0.0 0.108668p 0.113949p 0.113955p 0.113991p 5.61e-09p 0.113991p 0.0
0.0
rc 3.96e-06p 0.002371p 0.037577p 0.000175o 0.108842p 0.114124p 0.114129o 0.114166o 5.61e-09p 0.114166n 0.0
0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.086285l 0.0 0.0
zp 31.86 ri 1.61e-05p 0.001717p 0.023500p 0.0 0.046434p 0.013905p 4.08e-05p 0.000542p 2.62e-06p 4.26e-07p 1.83e-09p
0.0
sig0.664 cc 1.61e-05p 0.001733p 0.025213p 0.0 0.071625p 0.085529p 0.085570p 0.086112p 2.62e-06p 0.086115p 1.83e-09p
0.0
rc 1.61e-05p 0.001733p 0.025213p 0.000171o 0.071796p 0.085700o 0.085741n 0.086283m 2.62e-06p 0.086286k 1.83e-09p
0.0
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.041691m 0.0 0.0
zp 31.77 ri 8.19e-07p 0.000509p 0.010752p 0.0 0.026934p 0.003414p 5.38e-06p 3.94e-05p 1.44e-08p 3.84e-09p 0.0 0.0
sig0.558 cc 8.19e-07p 0.000510p 0.011256p 0.0 0.038180p 0.041594p 0.041599p 0.041639p 1.44e-08p 0.041639p 0.0
0.0
rc 8.19e-07p 0.000510p 0.011256p 5.44e-05o 0.038234p 0.041648p 0.041654o 0.041693n 1.44e-08p 0.041693m 0.0
0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.035863l 0.0 0.0
zp 31.64 ri 1.58e-06p 0.000756p 0.011802p 0.0 0.021406p 0.001833p 1.75e-06p 1.28e-05p 2.57e-09p 6.82e-10p 0.0 0.0
sig0.551 cc 1.58e-06p 0.000758p 0.012551p 0.0 0.033946p 0.035779p 0.035781p 0.035794p 2.57e-09p 0.035794p 0.0
0.0
rc 1.58e-06p 0.000758p 0.012551p 7.04e-05o 0.034016p 0.035849o 0.035851n 0.035864m 2.57e-09p 0.035864l 0.0
0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.033787n 0.0 0.0
zp 31.50 ri 5.76e-06p 0.001362p 0.014355p 0.0 0.016841p 0.001158p 8.09e-07p 5.94e-06p 1.14e-09p 3.02e-10p 0.0 0.0
sig0.562 cc 5.76e-06p 0.001368p 0.015707p 0.0 0.032534p 0.033692p 0.033693p 0.033699p 1.14e-09p 0.033699p 0.0
0.0
rc 5.76e-06p 0.001368p 0.015707p 9.66e-05o 0.032631p 0.033789o 0.033790o 0.033796o 1.14e-09p 0.033796n 0.0
0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.413496k 0.0 0.0
zp 31.31 ri 0.000519p 0.035706p 0.220580p 0.0 0.145468p 0.009771p 3.82e-06p 5.08e-05p 1.89e-08p 3.08e-09p 0.0 0.0

sig0.600 cc 0.000518p 0.036210p 0.256289p 0.0 0.401633p 0.411400p 0.411404p 0.411455p 1.89e-08p 0.411455p 0.0
0.0
rc 0.000519p 0.036224p 0.256389p 0.002050o 0.403679o 0.413451o 0.413454n 0.413505l 1.89e-08p 0.413505j 0.0
0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.056444k 0.0 0.0
zp 31.72 ri 2.56e-06p 0.000880p 0.018707p 0.0 0.031938p 0.004762p 5.89e-06p 4.32e-05p 2.22e-08p 5.91e-09p 0.0 0.0
sig0.568 cc 2.56e-06p 0.000883p 0.019580p 0.0 0.051500p 0.056263p 0.056269p 0.056312p 2.22e-08p 0.056312p 0.0
0.0
rc 2.56e-06p 0.000883p 0.019580p 0.000132o 0.051633p 0.056395o 0.056401n 0.056444m 2.22e-08p 0.056444k 0.0
0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.003435n 0.0 0.0
zp 31.56 ri 9.46e-07p 0.000136p 0.001366p 0.0 0.001735p 0.000190p 2.90e-07p 1.94e-06p 1.22e-09p 3.66e-10p 0.0 0.0
sig0.600 cc 9.46e-07p 0.000137p 0.001501p 0.0 0.003235p 0.003426p 0.003426p 0.003428p 1.22e-09p 0.003428p 0.0
0.0
rc 9.46e-07p 0.000137p 0.001501p 8.30e-06o 0.003243p 0.003434o 0.003434o 0.003436o 1.22e-09p 0.003436n 0.0
0.0

cu half life 80eng2; zn, ga, ge, as, se half lives 89wal1; kr, rb half lives 90bur1.

1

mass number 80 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 28 ni g 29 cu g 30 zn g 31 ga g 32 ge d 32 ge g 33 as g 34 se g 35 br m 35 br g 36 kr g
half life 0.090s 0.55 s 1.68 s 1.23s 29.5 s 16.0 s stable 4.42 h 17.68m stable
lambda 0.0 7.702e+00 1.260e+00 4.126e-01 5.635e-01 2.350e-02 4.332e-02 0.0 4.356e-05 6.534e-04 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 99.1700 100.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 11.9000 100.0000 0.0 0.0 0.0 100.0000 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.211807l 0.0 0.0 0.0
zp 32.37 ri 0.0 1.45e-08p 9.52e-05p 0.008059p 0.0 0.143116p 0.054717p 0.005510p 6.50e-06p 1.83e-06p 2.04e-09p
sig0.553 cc 0.0 1.45e-08p 9.51e-05p 0.008149p 0.0 0.151238p 0.205923p 0.211430p 6.50e-06p 8.33e-06p 8.33e-06p
rc 0.0 1.45e-08p 9.52e-05p 0.008154p 0.000381o 0.151583p 0.206300n 0.211810l 6.50e-06p 8.33e-06p 8.34e-06p
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

```
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.337537m      0.0       0.0       0.0
zp 32.26 ri 7.75e-10p 2.84e-06p 0.001016p 0.038589p       0.0  0.176903p 0.110370p 0.008960p 6.98e-05p 1.23e-05p 7.63e-08p
sig0.642 cc 7.73e-10p 2.83e-06p 0.001017p 0.039517p       0.0  0.216253p 0.326574p 0.335513p 6.96e-05p 8.19e-05p 8.20e-05p
        rc 7.75e-10p 2.84e-06p 0.001019p 0.039607p 0.002046o 0.218228p 0.328598n 0.337558l 6.98e-05p 8.21e-05p 8.22e-05p
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.186796n      0.0       0.0       0.0
zp 32.03 ri 1.00e-11p 2.15e-07p 0.000544p 0.020488p       0.0  0.139990p 0.024043p 0.000765p 2.86e-07p 8.06e-08p 2.09e-11p
sig0.545 cc 1.00e-11p 2.14e-07p 0.000543p 0.020990p       0.0  0.160898p 0.184893p 0.185657p 2.85e-07p 3.66e-07p 3.66e-07p
        rc 1.00e-11p 2.15e-07p 0.000544p 0.021032p 0.001206o 0.162054p 0.186097o 0.186862n 2.86e-07p 3.66e-07p 3.66e-07p
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.157350l      0.0       0.0       0.0
zp 32.24 ri 1.35e-09p 2.83e-06p 0.000676p 0.019912p       0.0  0.081086p 0.049897p 0.004479p 4.44e-05p 7.83e-06p 7.18e-08p
sig0.664 cc 1.35e-09p 2.83e-06p 0.000679p 0.020590p       0.0  0.101505p 0.151402p 0.155881p 4.44e-05p 5.22e-05p 5.23e-05p
        rc 1.35e-09p 2.83e-06p 0.000679p 0.020590p 0.001479o 0.102984p 0.152881n 0.157360l 4.44e-05p 5.22e-05p 5.23e-05p
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.071098m      0.0       0.0       0.0
zp 32.15 ri 2.33e-12p 5.30e-08p 0.000123p 0.006430p       0.0  0.049565p 0.014008p 0.000639p 5.47e-07p 1.54e-07p 8.04e-11p
sig0.558 cc 2.33e-12p 5.30e-08p 0.000123p 0.006553p       0.0  0.056064p 0.070072p 0.070711p 5.47e-07p 7.01e-07p 7.01e-07p
        rc 2.33e-12p 5.30e-08p 0.000123p 0.006553p 0.000396o 0.056460p 0.070469o 0.071107m 5.47e-07p 7.01e-07p 7.01e-07p
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.064942l      0.0       0.0       0.0
zp 32.02 ri 6.00e-12p 1.15e-07p 0.000211p 0.008270p       0.0  0.046570p 0.009208p 0.000265p 1.29e-07p 3.63e-08p 9.80e-12p
sig0.551 cc 6.00e-12p 1.15e-07p 0.000211p 0.008481p       0.0  0.054981p 0.064189p 0.064454p 1.29e-07p 1.65e-07p 1.65e-07p
        rc 6.00e-12p 1.15e-07p 0.000211p 0.008481p 0.000490o 0.055471p 0.064679n 0.064944l 1.29e-07p 1.65e-07p 1.65e-07p
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.055115m      0.0       0.0       0.0
zp 31.87 ri 5.98e-11p 5.57e-07p 0.000441p 0.011194p       0.0  0.036750p 0.005832p 0.000111p 5.01e-08p 1.41e-08p 3.10e-12p
sig0.562 cc 5.98e-11p 5.57e-07p 0.000442p 0.011636p       0.0  0.048290p 0.054122p 0.054233p 5.01e-08p 6.42e-08p 6.43e-08p
        rc 5.98e-11p 5.57e-07p 0.000442p 0.011636p 0.000906o 0.049195p 0.055027o 0.055138m 5.01e-08p 6.42e-08p 6.43e-08p
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.691621j      0.0       0.0       0.0
zp 31.71 ri 2.92e-08p 7.71e-05p 0.014705p 0.232260p       0.0  0.362350p 0.063558p 0.000981p 9.74e-07p 1.72e-07p 9.23e-11p
sig0.600 cc 2.88e-08p 7.62e-05p 0.014589p 0.243816p       0.0  0.608212p 0.670940p 0.671908p 9.61e-07p 1.13e-06p 1.13e-06p
        rc 2.92e-08p 7.72e-05p 0.014782p 0.247042p 0.019754o 0.627096n 0.690654l 0.691635j 9.74e-07p 1.15e-06p 1.15e-06p
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.111388k      0.0       0.0       0.0
```

zp 32.10 ri 1.24e-11p 2.53e-07p 0.000263p 0.015689p 0.0 0.067804p 0.025953p 0.000763p 1.04e-06p 2.93e-07p 1.20e-10p
sig0.568 cc 1.24e-11p 2.53e-07p 0.000264p 0.015953p 0.0 0.083624p 0.109577p 0.110340p 1.04e-06p 1.33e-06p 1.33e-06p
rc 1.24e-11p 2.53e-07p 0.000264p 0.015953p 0.001050o 0.084674p 0.110627m 0.111390k 1.04e-06p 1.33e-06p 1.33e-06p
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.004777n 0.0 0.0 0.0
zp 31.95 ri 2.10e-11p 9.56e-08p 3.76e-05p 0.000963p 0.0 0.002910p 0.000780p 2.42e-05p 3.62e-08p 1.21e-08p 8.23e-12p
sig0.600 cc 2.10e-11p 9.56e-08p 3.77e-05p 0.001000p 0.0 0.003902p 0.004682p 0.004706p 3.62e-08p 4.82e-08p 4.82e-08p
rc 2.10e-11p 9.56e-08p 3.77e-05p 0.001000p 7.75e-05o 0.003979p 0.004759o 0.004784n 3.62e-08p 4.82e-08p 4.82e-08p

ga, cu half lives 80eng2; zn, ga, ge, as half lives 89wal1; br half life 90bur1.

1

mass number 81 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 29 cu g 30 zn g 31 ga g 32 ge d 32 ge g 33 as g 34 se m 34 se g 35 br g 36 kr m 36 kr g 37 rb g
half life 0.074s 0.123s 1.22 s 0.60s 7.6 s 33. s 57.3 m 18.5 m stable 13. s 2.3e5y 4.576h
lambda 9.367e+00 5.635e+00 5.682e-01 1.155e+00 9.120e-02 2.100e-02 2.016e-04 6.245e-04 0.0 5.332e-02 9.556e-14 4.208e-05
z - 1 g 100.0000 100.0000 100.0000 0.0 88.1000 100.0000 0.0 100.0000 100.0000 0.0 -100.0000 -25.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -75.0000
z - 0 m 0.0 0.0 0.0 21.1000 100.0000 0.0 0.0 100.0000 0.0 0.0 100.0000 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.369982i 0.0 0.0 0.0
zp 32.78 ri 4.56e-10p 8.44e-06p 0.003191p 0.0 0.135591p 0.187076p 0.038814p 0.005293p 0.000294p 2.42e-08p 1.77e-07p 2.72e-12p
sig0.553 cc 4.56e-10p 8.44e-06p 0.003199p 0.0 0.138425p 0.325491p 0.038809p 0.369592p 0.369886p 2.42e-08p 2.02e-07p 2.72e-12p
rc 4.56e-10p 8.44e-06p 0.003199p 9.67e-05o 0.138506p 0.325582m 0.038814p 0.369688k 0.369983i 2.42e-08p 2.02e-07p 2.72e-12p
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.541346m 0.0 0.0 0.0
zp 32.69 ri 1.79e-07p 0.000173p 0.017017p 0.0 0.190150p 0.278651p 0.050717p 0.004410p 0.001311p 2.30e-07p 3.06e-06p 8.06e-10p
sig0.642 cc 1.79e-07p 0.000173p 0.017177p 0.0 0.205459p 0.483988p 0.050680p 0.539075p 0.540389p 2.31e-07p 3.29e-06p 8.05e-10p

rc 1.79e-07p 0.000173p 0.017190p 0.000974o 0.206269p 0.484919o 0.050717p 0.540047n 0.541361m 2.31e-07p 3.29e-06p 8.06e-10p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.269816n 0.0 0.0 0.0
zp 32.42 ri 9.21e-09p 6.62e-05p 0.010067p 0.0 0.160183p 0.092813p 0.006524p 0.000890p 1.50e-05p 2.97e-10p 2.18e-09p 0.0
sig0.545 cc 9.21e-09p 6.62e-05p 0.010127p 0.0 0.169171p 0.261928p 0.006520p 0.269337p 0.269352p 2.97e-10p 2.47e-09p 0.0
rc 9.21e-09p 6.63e-05p 0.010133p 0.000488o 0.169598p 0.262411o 0.006524p 0.269825o 0.269840n 2.97e-10p 2.47e-09p 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.272001l 0.0 0.0 0.0
zp 32.62 ri 3.50e-07p 0.000190p 0.012238p 0.0 0.103926p 0.130920p 0.022754p 0.001979p 0.000635p 1.39e-07p 1.84e-06p 7.04e-10p
sig0.664 cc 3.50e-07p 0.000190p 0.012412p 0.0 0.114998p 0.245827p 0.022726p 0.270530p 0.271166p 1.39e-07p 1.98e-06p 7.03e-10p
rc 3.50e-07p 0.000190p 0.012428p 0.000841o 0.115715p 0.246635o 0.022754p 0.271368n 0.272005l 1.39e-07p 1.98e-06p 7.04e-10p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.117764m 0.0 0.0 0.0
zp 32.53 ri 2.80e-09p 1.77e-05p 0.003313p 0.0 0.058876p 0.050271p 0.004831p 0.000659p 2.21e-05p 8.36e-10p 6.13e-09p 0.0
sig0.558 cc 2.80e-09p 1.77e-05p 0.003331p 0.0 0.061810p 0.112081p 0.004831p 0.117571p 0.117593p 8.36e-10p 6.97e-09p 0.0
rc 2.80e-09p 1.77e-05p 0.003331p 0.000174o 0.061984p 0.112255o 0.004831p 0.117745n 0.117767m 8.36e-10p 6.97e-09p 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.092375k 0.0 0.0 0.0
zp 32.40 ri 5.61e-09p 2.87e-05p 0.004089p 0.0 0.053421p 0.032703p 0.002070p 0.000282p 5.58e-06p 1.13e-10p 8.30e-10p 0.0
sig0.551 cc 5.61e-09p 2.87e-05p 0.004118p 0.0 0.057048p 0.089752p 0.002070p 0.092104p 0.092110p 1.13e-10p 9.43e-10p 0.0
rc 5.61e-09p 2.87e-05p 0.004118p 0.000266o 0.057314p 0.090017o 0.002070p 0.092370m 0.092375k 1.13e-10p 9.43e-10p 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.091696m 0.0 0.0 0.0

zp 32.25 ri 4.11e-08p 9.02e-05p 0.007520p 0.0 0.056923p 0.026289p 0.001121p 0.000153p 2.58e-06p 4.26e-11p 3.12e-10p
0.0
sig0.562 cc 4.11e-08p 9.03e-05p 0.007610p 0.0 0.063627p 0.089916p 0.001121p 0.091189p 0.091192p 4.26e-11p 3.55e-10p
0.0
rc 4.11e-08p 9.03e-05p 0.007610p 0.000514o 0.064141p 0.090430o 0.001121p 0.091703n 0.091706m 4.26e-11p 3.55e-10p
0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.281129m 1.029870j 0.0 0.0 0.0
zp 32.11 ri 7.19e-06p 0.003877p 0.162118p 0.0 0.630979p 0.252733p 0.010239p 0.000890p 3.17e-05p 5.24e-10p 6.97e-09p
0.0
sig0.600 cc 7.06e-06p 0.003816p 0.163089p 0.0 0.766755p 1.030497p 0.010059p 1.041431p 1.041468p 6.03e-10p 8.61e-09p
0.0
rc 7.19e-06p 0.003884p 0.166002p 0.014285o 0.791512o 1.044245n 0.010239p 1.055375l 1.055407j 5.25e-10p 7.49e-09p
0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.235745j 0.0 0.0 0.0
zp 32.51 ri 1.33e-08p 4.66e-05p 0.008779p 0.0 0.107252p 0.110562p 0.008482p 0.001157p 5.49e-05p 2.03e-09p 1.49e-08p
0.0
sig0.568 cc 1.33e-08p 4.66e-05p 0.008817p 0.0 0.115073p 0.225599p 0.008474p 0.235229p 0.235284p 2.02e-09p 1.69e-08p
0.0
rc 1.33e-08p 4.66e-05p 0.008825p 0.000462o 0.115490p 0.226052n 0.008482p 0.235690l 0.235745j 2.03e-09p 1.69e-08p
0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.008336l 0.0 0.0 0.0
zp 32.33 ri 9.15e-09p 9.76e-06p 0.000641p 0.0 0.004597p 0.002877p 0.000195p 2.92e-05p 1.20e-06p 7.34e-11p 4.91e-10p
0.0
sig0.600 cc 9.15e-09p 9.77e-06p 0.000651p 0.0 0.005170p 0.008047p 0.000195p 0.008271p 0.008273p 7.34e-11p 5.65e-10p
0.0
rc 9.15e-09p 9.77e-06p 0.000651p 6.38e-05o 0.005234p 0.008111o 0.000195p 0.008335n 0.008336l 7.34e-11p 5.65e-10p
0.0

cu, zn half lives 80eng2; ga, ge, as, se half lives 89wal1; kr, rb half lives 90bur1.

1

nuclide 28 ni g 29 cu g 30 zn g 31 ga g 32 ge d 32 ge g 33 as m 33 as g 34 se g 35 br m 35 br g 36 kr g
half life 0.127s 0.607s 0.31 s 4.6 s 13.7 s 19. s stable 6.1 m 35.3 h stable
lambda 0.0 0.0 5.458e+00 1.142e+00 2.236e+00 1.507e-01 5.059e-02 3.648e-02 0.0 1.894e-03 5.454e-06 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 78.9000 0.0 100.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 2.4000
z - 0 m 0.0 0.0 0.0 0.0 56.2000 100.0000 0.0240 0.0 0.0 0.0 97.6000 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.588064j 0.0 0.0 0.0
zp 33.20 ri 0.0 4.71e-12p 4.27e-07p 0.000458p 0.0 0.084425p 0.132573p 0.132574p 0.238093p 0.001116p 0.003018p
1.34e-05p
sig0.553 cc 0.0 4.71e-12p 4.27e-07p 0.000458p 0.0 0.084785p 0.132575p 0.217361p 0.588026p 0.001116p 0.004107p
0.004147p
rc 0.0 4.71e-12p 4.27e-07p 0.000458p 3.17e-05o 0.084818p 0.132580p 0.217392p 0.588065j 0.001116p 0.004107p
0.004147p
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.824028m 0.0 0.0 0.0
zp 33.13 ri 0.0 6.41e-09p 1.73e-05p 0.004599p 0.0 0.131477p 0.232464p 0.232441p 0.223548p 0.002476p 0.011280p
9.41e-05p
sig0.642 cc 0.0 6.40e-09p 1.73e-05p 0.004616p 0.0 0.135243p 0.232419p 0.367661p 0.823577p 0.002475p 0.013693p
0.013846p
rc 0.0 6.41e-09p 1.73e-05p 0.004617p 0.000457o 0.135577p 0.232479p 0.368019p 0.824046m 0.002476p 0.013696p
0.013850p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.383969n 0.0 0.0 0.0
zp 32.82 ri 0.0 1.65e-10p 5.37e-06p 0.002309p 0.0 0.141590p 0.092651p 0.092651p 0.055037p 8.33e-05p 0.000225p
2.28e-07p
sig0.545 cc 0.0 1.65e-10p 5.37e-06p 0.002314p 0.0 0.143463p 0.092633p 0.236096p 0.383756p 8.33e-05p 0.000306p
0.000309p
rc 0.0 1.65e-10p 5.37e-06p 0.002315p 0.000217o 0.143633p 0.092667p 0.236285p 0.383988n 8.33e-05p 0.000306p
0.000309p
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.345438l 0.0 0.0 0.0
zp 33.01 ri 1.88e-12p 2.14e-08p 2.70e-05p 0.003958p 0.0 0.073169p 0.096040p 0.096040p 0.076525p 0.000781p 0.003560p
3.12e-05p
sig0.664 cc 1.88e-12p 2.14e-08p 2.70e-05p 0.003985p 0.0 0.076314p 0.096040p 0.172353p 0.344917p 0.000781p 0.004322p
0.004372p

rc 1.88e-12p 2.14e-08p 2.70e-05p 0.003985p 0.000529o 0.076843p 0.096049p 0.172882p 0.345456l 0.000781p 0.004322p 0.004372p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.172788m 0.0 0.0 0.0
zp 32.91 ri 0.0 6.85e-11p 1.66e-06p 0.000823p 0.0 0.049053p 0.045665p 0.045665p 0.031686p 8.80e-05p 0.000238p 3.89e-07p
sig0.558 cc 0.0 6.85e-11p 1.66e-06p 0.000825p 0.0 0.049704p 0.045665p 0.095368p 0.172719p 8.80e-05p 0.000324p 0.000326p
rc 0.0 6.85e-11p 1.66e-06p 0.000825p 6.95e-05o 0.049773p 0.045669p 0.095438p 0.172793m 8.80e-05p 0.000324p 0.000326p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.142754j 0.0 0.0 0.0
zp 32.77 ri 0.0 1.72e-10p 3.36e-06p 0.001255p 0.0 0.053949p 0.035594p 0.035594p 0.016477p 2.73e-05p 7.38e-05p 6.49e-08p
sig0.551 cc 0.0 1.72e-10p 3.36e-06p 0.001259p 0.0 0.054942p 0.035594p 0.090536p 0.142607p 2.73e-05p 0.000100p 0.000101p
rc 0.0 1.72e-10p 3.36e-06p 0.001259p 0.000141o 0.055083p 0.035601p 0.090678o 0.142755j 2.73e-05p 0.000100p 0.000101p
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.125493n 0.0 0.0 0.0
zp 32.63 ri 0.0 1.39e-09p 1.09e-05p 0.002425p 0.0 0.056234p 0.029120p 0.029120p 0.008767p 1.29e-05p 3.49e-05p 2.36e-08p
sig0.562 cc 0.0 1.39e-09p 1.09e-05p 0.002436p 0.0 0.058156p 0.029120p 0.087277p 0.125164p 1.29e-05p 4.75e-05p 4.78e-05p
rc 0.0 1.39e-09p 1.09e-05p 0.002436p 0.000358o 0.058514p 0.029129p 0.087634p 0.125530n 1.29e-05p 4.75e-05p 4.78e-05p
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000106m 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.371540j 0.0 0.0 0.0
zp 32.49 ri 1.95e-11p 4.20e-07p 0.000618p 0.067085p 0.0 0.626325p 0.309325p 0.308707p 0.063555p 0.000101p 0.000106p 3.67e-07p
sig0.600 cc 1.94e-11p 4.19e-07p 0.000617p 0.067492p 0.0 0.680844p 0.308410p 0.989254p 1.361020p 0.000101p 0.000558p 0.000561p
rc 1.95e-11p 4.20e-07p 0.000618p 0.067704p 0.010345o 0.690088o 0.309431p 0.998795n 1.371780j 0.000101p 0.000205p 0.000208p
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.356503l 0.0 0.0 0.0

zp 32.92 ri 0.0 2.99e-10p 3.56e-06p 0.002188p 0.0 0.079571p 0.110377p 0.110365p 0.054297p 0.000263p 0.000712p 1.01e-06p
sig0.568 cc 0.0 2.99e-10p 3.56e-06p 0.002191p 0.0 0.081296p 0.110375p 0.191671p 0.356340p 0.000263p 0.000970p 0.000977p
rc 0.0 2.99e-10p 3.56e-06p 0.002191p 0.000159o 0.081459p 0.110385p 0.191824p 0.356506k 0.000263p 0.000970p 0.000977p
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.015252l 0.0 0.0 0.0
zp 32.72 ri 0.0 5.64e-10p 1.70e-06p 0.000301p 0.0 0.005393p 0.003997p 0.003997p 0.001551p 6.68e-06p 1.56e-05p 2.96e-08p
sig0.600 cc 0.0 5.64e-10p 1.70e-06p 0.000303p 0.0 0.005632p 0.003997p 0.009629p 0.015177p 6.68e-06p 2.21e-05p 2.23e-05p
rc 0.0 5.64e-10p 1.70e-06p 0.000303p 7.58e-05o 0.005708p 0.003998p 0.009705p 0.015254l 6.68e-06p 2.21e-05p 2.23e-05p

zn half life estimated by 80eng2; ga, ge, as half lives from 89wal1; br half life 90bur1.

1

mass number 83 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 30 zn g 31 ga g 32 ge g 33 as d 33 as g 34 se m 34 se g 35 br g 36 kr m 36 kr g 37 rb g 38 sr g
half life 0.084s 0.31s 1.9 s 1.2 s 13.4 s 1.17m 22.3m 2.40h 1.83 h stable 86.2 d 32.4 h
lambda 8.252e+00 2.236e+00 3.648e-01 5.776e-01 5.173e-02 9.874e-03 5.180e-04 8.023e-05 1.052e-04 0.0 9.307e-08 5.943e-06
z - 1 g 100.0000 100.0000 43.8000 0.0 99.9760 64.0000 36.0000 100.0000 100.0000 0.0 -23.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 -77.0000 0.0
z - 0 m 0.0 0.0 0.0 5.2060 100.0000 0.0860 0.0 0.0 0.0 100.0000 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.548055l 0.0 0.0 0.992810e 0.0 0.0
zp 33.61 ri 1.13e-08p 5.64e-05p 0.027431p 0.0 0.335932p 0.118641p 0.464494m 0.045363p 6.70e-05p 0.000327p 7.36e-08p 1.25e-12p
sig0.553 cc 1.05e-08p 5.27e-05p 0.025654p 0.0 0.339636p 0.321047p 0.628473p 0.991907p 0.991970p 0.992275p 6.88e-08p 1.16e-12p
rc 1.13e-08p 5.64e-05p 0.027455p 0.000301o 0.363682p 0.351397n 0.595420k 0.992180h 0.992247f 0.992574d 7.36e-08p 1.25e-12p
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.304663j 0.0 1.304663j 0.0 0.0
zp 33.57 ri 1.11e-06p 0.000813p 0.061154p 0.0 0.532319p 0.067554p 0.546367p 0.094943p 0.000191p 0.001543p 3.30e-06p 6.09e-10p
sig0.642 cc 1.11e-06p 0.000814p 0.061488p 0.0 0.593867p 0.447604p 0.760167p 1.302679p 1.302873p 1.304417p 3.30e-06p 6.10e-10p
rc 1.11e-06p 0.000814p 0.061511p 0.000915o 0.594731o 0.448182o 0.760470n 1.303595j 1.303788j 1.305332i 3.30e-06p 6.09e-10p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.564683n 0.0 0.0
zp 33.22 ri 2.04e-07p 0.000387p 0.063286p 0.0 0.293215p 0.034351p 0.167687p 0.004578p 1.67e-06p 8.15e-06p 4.25e-10p 0.0
sig0.545 cc 2.03e-07p 0.000387p 0.063415p 0.0 0.356755p 0.262653p 0.296042p 0.563271p 0.563273p 0.563281p 4.25e-10p 0.0
rc 2.04e-07p 0.000387p 0.063455p 0.001224o 0.357879p 0.263394o 0.296523p 0.564495n 0.564497n 0.564505m 4.25e-10p 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.473575l 0.0 0.0
zp 33.41 ri 2.73e-06p 0.000939p 0.039189p 0.0 0.221274p 0.020646p 0.167017p 0.023547p 4.31e-05p 0.000348p 7.78e-07p 1.74e-10p
sig0.664 cc 2.73e-06p 0.000941p 0.039579p 0.0 0.260960p 0.187649p 0.260894p 0.472076p 0.472120p 0.472468p 7.78e-07p 1.74e-10p
rc 2.73e-06p 0.000941p 0.039601p 0.000873o 0.261738p 0.188158o 0.261243p 0.472948n 0.472992m 0.473341k 7.78e-07p 1.74e-10p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.225842f 0.0 0.0
zp 33.30 ri 6.44e-08p 0.000124p 0.019109p 0.0 0.113756p 0.015167p 0.074049p 0.003227p 1.80e-06p 8.80e-06p 1.02e-09p 0.0
sig0.558 cc 6.44e-08p 0.000124p 0.019155p 0.0 0.132955p 0.100251p 0.121881p 0.225358p 0.225360p 0.225369p 1.02e-09p 0.0
rc 6.44e-08p 0.000124p 0.019163p 0.000352o 0.133267p 0.100458o 0.122025p 0.225710o 0.225712h 0.225721f 1.02e-09p 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.203573f 0.0 0.0
zp 33.15 ri 1.75e-07p 0.000251p 0.027531p 0.0 0.113819p 0.010206p 0.049831p 0.001317p 3.99e-07p 1.95e-06p 1.10e-10p 0.0

sig0.551 cc 1.75e-07p 0.000251p 0.027620p 0.0 0.141501p 0.100759p 0.100733p 0.202808p 0.202808p 0.202810p 1.10e-10p
0.0
rc 1.75e-07p 0.000251p 0.027641p 0.000614o 0.142068p 0.101130o 0.100976p 0.203422n 0.203423g 0.203425e 1.10e-10p
0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.178749f 0.0 0.0
zp 33.00 ri 8.47e-07p 0.000636p 0.036005p 0.0 0.104633p 0.006113p 0.029846p 0.000634p 1.43e-07p 7.00e-07p 3.90e-11p
0.0
sig0.562 cc 8.45e-07p 0.000635p 0.036215p 0.0 0.140977p 0.096327p 0.080542p 0.177502p 0.177502p 0.177503p 3.89e-11p
0.0
rc 8.47e-07p 0.000637p 0.036283p 0.001063o 0.141970p 0.096974o 0.080956o 0.178564n 0.178564h 0.178565f 3.90e-11p
0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.758909i 0.0 1.706454i 0.0 0.0
zp 32.88 ri 6.20e-05p 0.018346p 0.436449p 0.0 1.016867n 0.028261p 0.228615p 0.006059p 1.20e-06p 9.70e-06p 1.39e-09p
0.0
sig0.600 cc 6.20e-05p 0.018394p 0.444187p 0.0 1.461426p 0.963553p 0.754606p 1.724213p 1.724215p 1.724225p 1.41e-09p
0.0
rc 6.20e-05p 0.018408p 0.444511p 0.006082o 1.467353m 0.967367m 0.756862n 1.730288i 1.730289i 1.730299h 1.39e-09p
0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.473777i 0.0 0.483923f 0.0 0.0
zp 33.34 ri 1.34e-07p 0.000283p 0.032896p 0.0 0.259777p 0.030244p 0.149015p 0.009937p 5.98e-06p 2.92e-05p 6.52e-09p
0.0
sig0.568 cc 1.34e-07p 0.000284p 0.033103p 0.0 0.293670p 0.218269p 0.253755p 0.481986p 0.481992p 0.482021p 6.46e-09p
0.0
rc 1.34e-07p 0.000283p 0.033020p 0.000503o 0.293292p 0.217951o 0.254600o 0.482489i 0.482495h 0.482524f 6.52e-09p
0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.041668i 0.0 0.039601l 0.0 0.0
zp 33.12 ri 2.68e-07p 0.000135p 0.006393p 0.0 0.023202p 0.002114p 0.009012p 0.000429p 3.01e-07p 1.28e-06p 3.49e-10p
0.0
sig0.600 cc 2.68e-07p 0.000135p 0.006452p 0.0 0.029652p 0.021091p 0.019687p 0.041207p 0.041207p 0.041209p 3.58e-10p
0.0
rc 2.68e-07p 0.000135p 0.006452p 0.000126o 0.029778p 0.021172p 0.019732p 0.041333i 0.041333i 0.041334i 3.49e-10p
0.0

as-to-se branching to fit data; zn half life from 80eng2; ga, ge, as, se half lives 89wal1; kr, rb, sr 90bur1.

1

mass number 84 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	30 zn g	31 ga g	32 ge g	33 as d	33 as g	34 se d	34 se g	35 br m	35 br g	36 kr g	37 rb g	38 sr g
half life	0.098s	1.2 s	0.250s	5.5 s	2.03 s	3.3 m	6.0 m	31.8 m	stable	32.87d	stable	
lambda	0.0	7.073e+00	5.776e-01	2.773e+00	1.260e-01	3.415e-01	3.501e-03	1.925e-03	3.633e-04	0.0	2.441e-07	0.0
z - 1 g	100.0000	100.0000	100.0000	0.0	94.7940	0.0	99.8700	0.0	100.0000	100.0000	-97.0000	3.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	0.0
z - 0 m	0.0	0.0	0.0	16.4540	100.0000	50.0000	100.0000	0.0	0.0	0.0	0.0	0.0
u233f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.646905d	0.0	0.0

zp 34.02 ri 1.85e-10p 2.62e-06p 0.005783p 0.0 0.174954p 0.0 1.223862m 0.132962p 0.062571p 0.007321p 3.79e-06p 3.06e-10p
sig0.553 cc 1.83e-10p 2.59e-06p 0.005726p 0.0 0.178601p 0.0 1.406172p 0.131585p 1.468094p 1.606928p 3.75e-06p 1.13e-07p
rc 1.85e-10p 2.62e-06p 0.005785p 9.94e-05o 0.180538p 0.039811o 1.443976l 0.132962p 1.506546k 1.646833d 3.79e-06p 1.14e-07p

u233he xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.981518i	1.981518i	0.0	0.0

zp 34.02 ri 4.05e-08p 8.45e-05p 0.017495p 0.0 0.394767p 0.0 1.120215m 0.336197p 0.094825p 0.020969p 0.000112p 5.93e-08p
sig0.642 cc 4.06e-08p 8.46e-05p 0.017605p 0.0 0.412132p 0.0 1.530478p 0.336667p 1.625435p 1.983209p 0.000112p 3.42e-06p
rc 4.05e-08p 8.45e-05p 0.017580p 0.000389o 0.411821p 0.072086o 1.603587l 0.336197p 1.698411i 2.055686i 0.000112p 3.41e-06p

u236f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.026696n	0.0	0.0

zp 33.62 ri 6.04e-09p 3.38e-05p 0.023481p 0.0 0.267243p 0.0 0.612328p 0.024516p 0.011537p 0.000332p 4.27e-08p 0.0
sig0.545 cc 5.91e-09p 3.31e-05p 0.023002p 0.0 0.283423p 0.0 0.902313p 0.023981p 0.913599p 0.937905p 4.18e-08p 1.25e-09p
rc 6.04e-09p 3.39e-05p 0.023514p 0.000733o 0.290266p 0.102294o 1.004510n 0.024516p 1.016047n 1.040895m 4.27e-08p 1.28e-09p

pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.796631l 0.0 0.0
zp 33.83 ri 1.94e-07p 0.000166p 0.016595p 0.0 0.213775p 0.0 0.382975p 0.088117p 0.024853p 0.004454p 2.18e-05p 1.23e-08p
sig0.664 cc 1.90e-07p 0.000162p 0.016386p 0.0 0.224718p 0.0 0.614997p 0.086143p 0.639294p 0.729812p 2.13e-05p 6.52e-07p
rc 1.94e-07p 0.000166p 0.016761p 0.000702o 0.230366p 0.067008o 0.680049o 0.088117p 0.704903n 0.797497l 2.18e-05p 6.67e-07p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.387259f 0.0 0.0
zp 33.70 ri 2.03e-09p 1.14e-05p 0.006758p 0.0 0.099828p 0.0 0.231818o 0.015106p 0.007109p 0.000280p 7.83e-08p 2.20e-12p
sig0.558 cc 1.95e-09p 1.09e-05p 0.006481p 0.0 0.101764p 0.0 0.338905p 0.014462p 0.345710p 0.360441p 7.49e-08p 2.25e-09p
rc 2.03e-09p 1.14e-05p 0.006770p 0.000157o 0.106402p 0.026635o 0.364718l 0.015106p 0.371826j 0.387212f 7.83e-08p 2.35e-09p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.356864e 0.0 0.0
zp 33.54 ri 6.79e-09p 2.83e-05p 0.011775p 0.0 0.118047p 0.0 0.172145o 0.007398p 0.003481p 7.54e-05p 1.04e-08p 0.0
sig0.551 cc 6.30e-09p 2.63e-05p 0.010952p 0.0 0.120013p 0.0 0.302060p 0.006864p 0.305290p 0.312225p 9.65e-09p 2.90e-10p
rc 6.79e-09p 2.83e-05p 0.011803p 0.000389o 0.129625p 0.044251o 0.345852j 0.007398p 0.349334h 0.356807e 1.04e-08p 3.12e-10p
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.344098f 0.0 0.0
zp 33.39 ri 4.87e-08p 0.000105p 0.020312p 0.0 0.141785p 0.0 0.123443p 0.004442p 0.002091p 3.12e-05p 4.21e-09p 0.0
sig0.562 cc 4.55e-08p 9.79e-05p 0.019076p 0.0 0.150741p 0.0 0.284887p 0.004151p 0.286840p 0.291020p 3.94e-09p 1.18e-10p
rc 4.87e-08p 0.000105p 0.020417p 0.000743o 0.161882p 0.052348o 0.337462j 0.004442p 0.339553h 0.344027f 4.21e-09p 1.26e-10p
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.383326i 2.329353j 0.0 0.0
zp 33.27 ri 2.25e-06p 0.001846p 0.114979p 0.0 0.644234n 0.0 0.391455p 0.018620p 0.005252p 0.000120p 4.36e-08p 1.07e-12p

sig0.600 cc 2.24e-06p 0.001843p 0.116467p 0.0 0.756278p 0.0 1.145544p 0.018562p 1.150779p 1.169461p 4.35e-08p 1.31e-09p
rc 2.25e-06p 0.001848p 0.116827p 0.027037o 0.782016o 1.208522l 2.380977k 0.018620p 2.386228i 2.404968h 4.36e-08p 1.31e-09p
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.764155f 0.0 0.0
zp 33.76 ri 3.38e-09p 2.49e-05p 0.009635p 0.0 0.227658p 0.0 0.397950o 0.048038p 0.022606p 0.000814p 5.25e-07p 1.70e-11p
sig0.568 cc 3.24e-09p 2.39e-05p 0.009261p 0.0 0.227122p 0.0 0.637437p 0.046057p 0.659111p 0.705949p 5.04e-07p 1.51e-08p
rc 3.38e-09p 2.50e-05p 0.009660p 0.000254o 0.237068p 0.057882o 0.692592m 0.048038p 0.715199k 0.764052f 5.25e-07p 1.58e-08p
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.065678l 0.0 0.0
zp 33.52 ri 1.28e-08p 1.85e-05p 0.002398p 0.0 0.021897p 0.0 0.025475p 0.001630p 0.000917p 2.70e-05p 1.73e-08p 0.0
sig0.600 cc 1.28e-08p 1.85e-05p 0.002416p 0.0 0.024187p 0.0 0.049631p 0.001630p 0.050548p 0.052205p 1.73e-08p 5.19e-10p
rc 1.28e-08p 1.85e-05p 0.002416p 0.000176o 0.024363p 0.013433o 0.063240o 0.001630p 0.064157n 0.065813l 1.73e-08p 5.19e-10p

ga half life from 80eng2; ge, as, se, br half lives from 89wal1; rb half life 90bur1.

1

mass number 85 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 31 ga g 32 ge g 33 as d 33 as g 34 se m 34 se g 35 br g 36 kr m 36 kr g 37 rb g 38 sr g 39 y g
half life 0.087s 0.250s 0.247s 2.03 s 19. s 39. s 2.87m 4.48 h 10.73y stable 64.84d 5.0 h
lambda 7.967e+00 2.773e+00 2.806e+00 3.415e-01 3.648e-02 1.777e-02 4.025e-03 4.298e-05 2.048e-09 0.0 1.237e-07 3.851e-05
z - 1 g 100.0000 100.0000 0.0 83.5460 0.0 50.0000 100.0000 100.0000 0.0 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 80.0210 0.0 0.0
z - 0 m 0.0 0.0 15.2150 100.0000 8.5030 0.0 0.0 0.0 19.9790 0.0 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.120474d 0.0 0.0
zp 34.43 ri 9.85e-08p 0.000604p 0.0 0.079111p 0.638793p 0.639453p 0.733469p 0.011469p 0.055997p 0.000158p 3.62e-08p 0.0

sig0.553 cc 9.84e-08p 0.000604p 0.0 0.079585p 0.639204p 0.678997p 2.051564p 2.063029p 0.468148p 2.119163p 3.62e-08p 0.0
rc 9.85e-08p 0.000604p 6.72e-06o 0.079623p 0.640117o 0.679264o 2.052850l 2.064319k 0.468427l 2.120474d 3.62e-08p 0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.924710k 0.0 2.296418m 0.0 0.0
zp 34.47 ri 4.06e-06p 0.002359p 0.0 0.142161p 0.501584p 0.503095p 0.924794n 0.013157p 0.108828p 0.001751p 2.65e-06p 3.86e-10p
sig0.642 cc 4.02e-06p 0.002336p 0.0 0.142476p 0.497265p 0.568504p 2.006161p 2.019165p 0.508624p 2.126114p 2.62e-06p 3.82e-10p
rc 4.06e-06p 0.002363p 3.66e-05o 0.144172p 0.504830o 0.575181o 2.004805l 2.017962k 0.511996m 2.128544j 2.65e-06p 3.86e-10p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.365863i 0.0 1.501643j 0.0 0.0
zp 34.02 ri 2.24e-06p 0.004451p 0.0 0.200794p 0.540634p 0.542870p 0.207996p 0.000951p 0.004645p 3.20e-06p 1.43e-10p 0.0
sig0.545 cc 2.21e-06p 0.004401p 0.0 0.202134p 0.536497p 0.637564p 1.395023p 1.395963p 0.283490p 1.400557p 1.42e-10p 0.0
rc 2.24e-06p 0.004453p 6.89e-05o 0.204584p 0.545410o 0.645162o 1.398568k 1.399519i 0.284255i 1.404167h 1.43e-10p 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.927808g 0.0 1.036978l 0.0 0.0
zp 34.26 ri 1.70e-05p 0.004249p 0.0 0.130375p 0.274314p 0.275906p 0.311667p 0.003622p 0.029305p 0.000400p 5.75e-07p 9.23e-11p
sig0.664 cc 1.64e-05p 0.004096p 0.0 0.128647p 0.264960p 0.329284p 0.932853p 0.936331p 0.215212p 0.964859p 5.52e-07p 8.86e-11p
rc 1.70e-05p 0.004266p 7.73e-05o 0.134016p 0.277637p 0.342914p 0.932219i 0.935841g 0.216277l 0.965547h 5.75e-07p 9.23e-11p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.433496g 0.0 0.0
zp 34.11 ri 5.47e-07p 0.000952p 0.0 0.052458p 0.154085p 0.154799p 0.093302p 0.000549p 0.002679p 3.70e-06p 3.18e-10p 0.0
sig0.558 cc 5.47e-07p 0.000951p 0.0 0.053171p 0.154559p 0.181144p 0.428860p 0.429408p 0.088466p 0.432086p 3.18e-10p 0.0
rc 5.47e-07p 0.000953p 1.71e-05o 0.053271p 0.155528p 0.181435p 0.430265l 0.430814j 0.088751j 0.433496g 3.18e-10p 0.0

pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.446553f 0.0 0.0
zp 33.94 ri 1.95e-06p 0.002361p 0.0 0.086487p 0.166912p 0.168087p 0.063683p 0.000209p 0.001022p 7.05e-07p 2.75e-11p
0.0
sig0.551 cc 1.95e-06p 0.002357p 0.0 0.088248p 0.167685p 0.211808p 0.443023p 0.443232p 0.089573p 0.444252p 2.74e-11p
0.0
rc 1.95e-06p 0.002363p 4.07e-05o 0.088502p 0.169299p 0.212338p 0.445320k 0.445530i 0.090035i 0.446553f 2.75e-11p
0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.369198k 0.0 0.322773f 0.0 0.0
zp 33.78 ri 8.38e-06p 0.004507p 0.0 0.100805p 0.115385p 0.117387p 0.033452p 7.42e-05p 0.000362p 2.18e-07p 7.05e-12p
0.0
sig0.562 cc 8.34e-06p 0.004491p 0.0 0.104042p 0.116749p 0.168770p 0.318787p 0.318861p 0.064066p 0.319222p 7.01e-12p
0.0
rc 8.38e-06p 0.004516p 0.000118o 0.104695p 0.119533p 0.169735p 0.322720k 0.322794i 0.064853i 0.323157f 7.05e-12p
0.0
th232h xi 0.0 0.0 0.0 1.463277n 0.0 0.0 0.211509n 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 1.511070m 0.0 0.0 0.0 4.629199i 0.0 4.422210h 0.0 0.0
zp 33.67 ri 0.000950p 0.163370p 0.0 2.276239m 1.432157p 1.432157p 0.347518p 0.000937p 0.007578p 8.95e-06p 6.47e-10p
0.0
sig0.600 cc 0.000829p 0.143452p 0.0 2.167452p 1.497814p 2.581540p 4.547048p 4.547767p 0.914409p 4.553584p 4.96e-10p
0.0
rc 0.000950o 0.164320p 0.003522o 2.417044j 1.508232o 2.640679m 4.496429m 4.497366i 0.906107i 4.504953h 6.47e-10o
0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.742648j 0.0 0.965190g 0.0 0.0
zp 34.18 ri 1.17e-06p 0.001540p 0.0 0.114453p 0.300410p 0.301921p 0.269963p 0.001741p 0.008500p 2.26e-05p 2.59e-09p
0.0
sig0.568 cc 1.16e-06p 0.001522p 0.0 0.114335p 0.298236p 0.355404p 0.930996p 0.932716p 0.194744p 0.941135p 2.56e-09p
0.0
rc 1.17e-06p 0.001541p 2.39e-05o 0.115765p 0.303498p 0.359804p 0.933265j 0.935006h 0.195305j 0.943806f 2.59e-09p
0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.107827m 0.0 0.109096j 0.0 0.0
zp 33.93 ri 2.85e-06p 0.001065p 0.0 0.025953p 0.037501p 0.037501p 0.019222p 0.000108p 0.000460p 1.07e-06p 1.74e-10p
0.0

sig0.600 cc 2.85e-06p 0.001068p 0.0 0.026845p 0.037501p 0.050923p 0.107646p 0.107754p 0.021988p 0.108215p 1.74e-10p 0.0
rc 2.85e-06p 0.001068p 2.17e-05o 0.026867p 0.038306p 0.050934p 0.108462m 0.108570k 0.022152k 0.109031i 1.74e-10p 0.0

kr branching to fit data; ga half life from 80eng2; as, se, br, kr half lives from 89wal1.

1

mass number 86 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 30 zn g 31 ga g 32 ge g 33 as g 34 se d 34 se g 35 br m 35 br g 36 kr d 36 kr g 37 rb g 38 sr g
half life 0.247s 0.9 s 0.30 s 15.0 s 4.5 s 55.5 s 55.7 s stable 18.66d stable
lambda 0.0 0.0 2.806e+00 7.702e-01 2.310e+00 4.621e-02 1.540e-01 1.249e-02 1.244e-02 0.0 4.299e-07 0.0
z - 1 g 100.0000 100.0000 100.0000 84.7850 0.0 91.4970 0.0 100.0000 0.0 100.0000 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 44.3600 100.0000 0.1880 0.0 2.5400 100.0000 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.788354d 0.0 0.0
zp 34.84 ri 0.0 1.53e-09p 4.42e-05p 0.015532p 0.0 1.010753n 0.627670p 0.628024p 0.0 0.447892p 0.002757p 2.94e-06p
sig0.553 cc 0.0 1.53e-09p 4.41e-05p 0.015566p 0.0 1.025058p 0.627880p 1.652938p 0.0 2.728586p 0.002756p 0.002759p
rc 0.0 1.53e-09p 4.42e-05p 0.015570p 0.001145o 1.026144m 0.628452o 1.654168n 0.058012k 2.788523d 0.002757p 0.002760p
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.649128m 0.0 0.0
zp 34.90 ri 9.21e-12p 1.53e-07p 0.000241p 0.037970p 0.0 0.661978p 0.736873p 0.737016p 0.0 0.446694p 0.016784p 6.81e-05p
sig0.642 cc 9.20e-12p 1.53e-07p 0.000241p 0.038157p 0.0 0.697424p 0.736795p 1.434219p 0.0 2.617498p 0.016776p 0.016844p
rc 9.21e-12p 1.53e-07p 0.000241p 0.038175p 0.002933o 0.699840o 0.737417o 1.436855n 0.044659m 2.665625l 0.016784p 0.016852p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.735116n 0.0 0.0
zp 34.42 ri 0.0 5.10e-08p 0.000453p 0.055781p 0.0 1.094400n 0.256409p 0.257093p 0.0 0.050700p 8.30e-05p 1.69e-08p

sig0.545 cc 0.0 5.10e-08p 0.000452p 0.056070p 0.0 1.145977p 0.256705p 1.402682p 0.0 1.710000p 8.29e-05p 8.29e-05p
rc 0.0 5.10e-08p 0.000453p 0.056166p 0.007452o 1.153242m 0.257904p 1.410335n 0.050296m 1.769235m 8.30e-05p 8.30e-05p
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.129638l 0.0 0.0
zp 34.70 ri 1.37e-10p 7.88e-07p 0.000507p 0.038657p 0.0 0.384233p 0.281309p 0.278676p 0.0 0.124050p 0.003752p 1.39e-05p
sig0.664 cc 1.37e-10p 7.85e-07p 0.000506p 0.038946p 0.0 0.419492p 0.280482p 0.699974p 0.0 1.104057p 0.003738p 0.003752p
rc 1.37e-10p 7.88e-07p 0.000508p 0.039088p 0.003725o 0.423722p 0.281703p 0.702397o 0.023173o 1.131323k 0.003752p 0.003766p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.626184f 0.0 0.0
zp 34.51 ri 0.0 1.61e-08p 0.000113p 0.016879p 0.0 0.334204p 0.115306p 0.112933p 0.0 0.028184p 9.06e-05p 3.17e-08p
sig0.558 cc 0.0 1.60e-08p 0.000112p 0.016875p 0.0 0.348484p 0.114831p 0.463315p 0.0 0.606167p 9.00e-05p 9.01e-05p
rc 0.0 1.61e-08p 0.000113p 0.016974p 0.001836o 0.351571p 0.115714p 0.464503n 0.017799m 0.626201f 9.06e-05p 9.06e-05p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.599298e 0.0 0.0
zp 34.35 ri 0.0 5.20e-08p 0.000267p 0.027853p 0.0 0.367779p 0.085796p 0.085796p 0.0 0.012653p 2.18e-05p 3.71e-09p
sig0.551 cc 0.0 5.14e-08p 0.000264p 0.027750p 0.0 0.395668p 0.084786p 0.480454p 0.0 0.577744p 2.16e-05p 2.16e-05p
rc 0.0 5.20e-08p 0.000268p 0.028080p 0.003438o 0.396909o 0.086319p 0.482705m 0.017627k 0.599304e 2.18e-05p 2.18e-05p
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.541038f 0.0 0.0
zp 34.19 ri 1.50e-11p 3.74e-07p 0.000774p 0.048125p 0.0 0.343853p 0.062242p 0.062242p 0.0 0.005780p 8.70e-06p 1.12e-09p
sig0.562 cc 1.48e-11p 3.68e-07p 0.000761p 0.047961p 0.0 0.390751p 0.061195p 0.451946p 0.0 0.518823p 8.55e-06p 8.55e-06p
rc 1.50e-11p 3.74e-07p 0.000774p 0.048782p 0.007057o 0.395544o 0.062823p 0.457786m 0.014655m 0.541044f 8.70e-06p 8.70e-06p

th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.50e-05m 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.369626j 0.0 0.0
zp 34.07 ri 6.85e-09p 4.76e-05p 0.023102p 0.875064p 0.0 3.104411n 0.603183p 0.597684p 0.0 0.045528p 1.46e-05p 2.90e-08p
sig0.600 cc 6.81e-09p 4.73e-05p 0.023008p 0.889219p 0.0 3.921502p 0.601518p 4.523021p 0.0 5.169789p 0.000136p 0.000136p
rc 6.85e-09p 4.76e-05p 0.023150p 0.894692o 0.103476o 4.026504m 0.607410o 4.624188l 0.110753k 5.387879j 1.46e-05p 1.46e-05p
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.311511g 0.0 0.0
zp 34.58 ri 0.0 3.65e-08p 0.000157p 0.036179p 0.0 0.530253p 0.323402p 0.315499p 0.0 0.067571p 0.000469p 1.78e-07p
sig0.568 cc 0.0 3.62e-08p 0.000156p 0.036042p 0.0 0.560286p 0.321312p 0.881597p 0.0 1.269976p 0.000466p 0.000466p
rc 0.0 3.65e-08p 0.000157p 0.036312p 0.003618o 0.567095o 0.324066p 0.882594n 0.037443l 1.311674g 0.000469p 0.000470p
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.79e-06m 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.127250l 0.0 0.0
zp 34.33 ri 1.05e-11p 1.33e-07p 0.000142p 0.009350p 0.0 0.067021p 0.020972p 0.020972p 0.0 0.003271p 5.50e-06p 8.24e-09p
sig0.600 cc 1.05e-11p 1.33e-07p 0.000142p 0.009470p 0.0 0.075680p 0.020970p 0.096650p 0.0 0.120891p 1.74e-05p 1.75e-05p
rc 1.05e-11p 1.33e-07p 0.000142p 0.009471p 0.001686o 0.077373p 0.021110p 0.098345o 0.004660o 0.127385l 5.50e-06p 5.51e-06p

ge half life from 80eng2; as, se, br half lives from 89wal1; rb half life 90bur1.

1

mass number 87 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 32 ge g 33 as g 34 se g 35 br d 35 br g 36 kr d 36 kr g 37 rb g 38 sr m 38 sr g 39 y g 40 zr g
half life 0.134s 0.8 s 5.6 s 1.50s 55.9 s 16.0 s 1.27 h 10.67l 2.81 h stable 80.3 h 1.6 h
lambda 5.173e+00 8.664e-01 1.238e-01 4.621e-01 1.240e-02 4.332e-02 1.516e-04 4.699e-19 6.852e-05 0.0 2.398e-06 1.203e-04
z - 1 g 100.0000 100.0000 55.6400 0.0 99.8120 0.0 97.4600 100.0000 -0.3000 100.0000 0.0 0.0
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -100.0000 -100.0000

z - 0 m 0.0 0.0 0.0 0.9660 100.0000 6.2600 100.0000 0.0 0.0 99.7000 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.301830k 0.0 4.027705k 3.839374d 9.24e-06n 0.0 0.0 0.0
zp 35.24 ri 1.64e-06p 0.002580p 0.414330p 0.0 1.867718l 0.0 1.487780l 0.037227p 1.80e-05p 8.77e-05p 6.15e-09p 0.0
sig0.553 cc 1.67e-06p 0.002617p 0.421537p 0.0 2.315075p 0.0 3.712311p 3.748882p 1.77e-05p 3.748985p 6.04e-09p
0.0
rc 1.64e-06p 0.002582p 0.415766p 0.001216o 2.283919j 0.088950m 3.802638g 3.839864d 1.80e-05l 3.839970d 6.15e-09p
0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 1.873614l 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.216802i 0.0 5.56e-06n 3.333922k 0.0 0.0
zp 35.32 ri 1.60e-05p 0.006596p 0.285651p 0.0 1.468403n 0.0 1.484023l 0.097032p 0.000112p 0.000905p 1.09e-06p
1.11e-10p
sig0.642 cc 1.84e-05p 0.007578p 0.331606p 0.0 2.032952p 0.0 3.176130p 3.285964p 0.000128p 3.287116p 1.23e-06p
1.26e-10p
rc 1.60e-05p 0.006612p 0.289330p 0.001035o 1.758223m 0.089345m 3.286932i 3.383965i 0.000113i 3.384983i 1.09e-06p
1.11e-10p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.296887h 0.0 1.15e-07n 0.0 0.0 0.0
zp 34.80 ri 3.37e-05p 0.016766p 0.786183p 0.0 1.182215n 0.0 0.257025p 0.001789p 1.71e-07p 8.36e-07p 1.10e-11p 0.0
sig0.545 cc 3.31e-05p 0.016500p 0.781318p 0.0 1.963523p 0.0 2.183593p 2.185351p 1.68e-07p 2.185352p 1.08e-11p
0.0
rc 3.37e-05p 0.016800p 0.795530o 0.003870o 1.980120m 0.111736m 2.298586h 2.300375h 1.71e-07m 2.300376h 1.10e-11p
0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.283184g 0.0 4.65e-06n 0.0 0.0 0.0
zp 35.15 ri 4.24e-05p 0.008354p 0.204941p 0.0 0.702200p 0.0 0.341861p 0.027381p 2.91e-05p 0.000235p 2.99e-07p
3.76e-11p
sig0.664 cc 4.16e-05p 0.008248p 0.205908p 0.0 0.895533p 0.0 1.231095p 1.257992p 2.88e-05p 1.258252p 2.93e-07p
3.70e-11p
rc 4.24e-05p 0.008397p 0.209613p 0.000918o 0.912337o 0.052943o 1.283967g 1.311349h 2.94e-05j 1.311613h 2.99e-07p
3.76e-11p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.910901l 0.0 0.966277l 0.854465g 5.04e-07n 0.0 0.0 0.0
zp 34.92 ri 6.85e-06p 0.004131p 0.214883p 0.0 0.483187n 0.0 0.138473p 0.001464p 2.60e-07p 1.27e-06p 4.49e-11p 0.0
sig0.558 cc 6.78e-06p 0.004098p 0.215081p 0.0 0.693515p 0.0 0.820504p 0.822307p 3.20e-07p 0.822309p 5.52e-11p
0.0

rc 6.85e-06p 0.004138p 0.217186p 0.000782o 0.700746m 0.032661o 0.854081i 0.855546g 2.60e-07p 0.855547g 4.49e-11p
0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.757081j 0.0 0.0 0.876620n 5.15e-08n 0.801908f 0.0 0.0
zp 34.76 ri 1.81e-05p 0.007732p 0.274055p 0.0 0.414789o 0.0 0.084373p 0.000593p 4.87e-08p 2.38e-07p 3.87e-12p 0.0
sig0.551 cc 1.82e-05p 0.007792p 0.279867p 0.0 0.697120p 0.0 0.759309p 0.759870p 5.03e-08p 0.759870p 3.99e-12p
0.0
rc 1.81e-05p 0.007750p 0.278367p 0.001341o 0.693974j 0.040680o 0.801400j 0.801992h 4.87e-08n 0.801993f 3.87e-12p
0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.796533m 0.0 0.625425h 0.0 2.45e-08n 0.0 0.0 0.0
zp 34.60 ri 6.90e-05p 0.015840p 0.300158p 0.0 0.266817p 0.0 0.032512p 0.000184p 1.24e-08p 6.08e-08p 0.0 0.0
sig0.562 cc 6.22e-05p 0.014344p 0.278623p 0.0 0.572231p 0.0 0.593953p 0.594158p 1.39e-08p 0.594158p 1.10e-12p
0.0
rc 6.90e-05p 0.015909p 0.309009p 0.001714o 0.576960l 0.038339o 0.633156h 0.633340h 1.24e-08p 0.633340h 0.0
0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.465487m 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 4.125931l 0.0 4.985044g 0.0 7.87e-08n 0.0 0.0 0.0
zp 34.48 ri 0.002184p 0.231082p 2.118405n 0.0 2.105806m 0.0 0.498264m 0.002084p 1.46e-07p 1.18e-06p 5.72e-11p
0.0
sig0.600 cc 0.002356p 0.251721p 2.426066p 0.0 4.619200p 0.0 4.722369p 4.724272p 1.33e-07p 4.724273p 5.23e-11p
0.0
rc 0.002184p 0.233265p 2.248194m 0.010563n 4.360336j 0.222374m 4.970221g 4.972305g 1.46e-07m 4.972307g 5.72e-11p
0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.505638k 0.0 1.740209g 0.0 6.92e-07n 1.744945k 0.0 0.0
zp 34.98 ri 1.11e-05p 0.008144p 0.348773p 0.0 1.120242m 0.0 0.226714p 0.006572p 1.38e-06p 6.72e-06p 5.10e-10p
0.0
sig0.568 cc 1.05e-05p 0.007731p 0.334945p 0.0 1.396883p 0.0 1.664492p 1.670917p 1.35e-06p 1.670924p 4.98e-10p
0.0
rc 1.11e-05p 0.008155p 0.353311p 0.001244o 1.474133k 0.078070n 1.741474g 1.748046g 1.38e-06l 1.748054g 5.10e-10p
0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.61e-07n 0.214618l 0.0 0.0
zp 34.74 ri 2.02e-05p 0.003779p 0.071073p 0.0 0.109965p 0.0 0.022376p 0.000338p 8.99e-08p 3.83e-07p 3.75e-11p 0.0

sig0.600 cc 2.02e-05p 0.003797p 0.073133p 0.0 0.183033p 0.0 0.200743p 0.201080p 8.99e-08p 0.201081p 3.75e-11p 0.0
rc 2.02e-05p 0.003800p 0.073187p 0.000435o 0.183450p 0.013445o 0.214611o 0.214949n 8.99e-08p 0.214949l 3.75e-11p 0.0

ge half life from 80eng2; as, se, br, kr half lives from 89wal1; sr half life 90bur1.

1

mass number 88 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	32 ge g	33 as g	34 se g	35 br d	35 br g	36 kr d	36 kr g	37 rb g	38 sr g	39 y g	40 zr g
half life	0.129s	0.135s	1.50 s	0.41 s	16.4 s	4.38 s	2.84 h	17.7 m	stable	106.6d	85. d
lambda	5.373e+00	5.134e+00	4.621e-01	1.691e+00	4.227e-02	1.583e-01	6.780e-05	6.527e-04	0.0	7.526e-08	9.438e-08
z - 1 g	100.0000	100.0000	100.0000	0.0	99.0340	0.0	93.7400	100.0000	100.0000	-100.0000	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	7.7000	100.0000	14.0000	100.0000	0.0	0.0	0.0	0.0
u233f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.074509d	0.0	0.0

zp 35.64 ri 4.29e-08p 0.000183p 0.125746p 0.0 1.294862n 0.0 3.432399l 0.203531p 0.002509p 3.98e-07p 9.59e-12p
sig0.553 cc 4.23e-08p 0.000180p 0.124118p 0.0 1.399552p 0.0 4.766582p 4.967946p 4.970419p 3.92e-07p 9.46e-12p
rc 4.29e-08p 0.000183p 0.125929p 0.001352o 1.420926m 0.104094o 4.868470j 5.072000f 5.074510d 3.98e-07p 9.59e-12p

u233he xi	0.0	0.0	0.0	0.0	0.0	0.0	2.500760l	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	4.081845k	0.0	3.733833j	0.0	0.0

zp 35.74 ri 8.89e-07p 0.000965p 0.106141p 0.0 1.319357n 0.0 2.101669l 0.422585p 0.011215p 3.16e-05p 8.69e-09p
sig0.642 cc 8.72e-07p 0.000947p 0.105036p 0.0 1.398322p 0.0 3.402973p 3.861220p 3.873415p 3.42e-05p 9.43e-09p
rc 8.89e-07p 0.000966p 0.107107p 0.001811o 1.427240m 0.099031o 3.538595j 3.961180l 3.972432j 3.16e-05p 8.69e-09p

u236f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	2.856327i	0.0	2.926124i	0.0	0.0

zp 35.19 ri 1.55e-06p 0.002161p 0.398477p 0.0 1.379382n 0.0 1.003494n 0.018469p 4.45e-05p 1.42e-09p 0.0
sig0.545 cc 1.50e-06p 0.002099p 0.388947p 0.0 1.726165p 0.0 2.672431p 2.690170p 2.690213p 1.36e-09p 0.0
rc 1.55e-06p 0.002162p 0.400639p 0.008735o 1.784886m 0.208182m 2.884828i 2.903297i 2.903341h 1.42e-09p 0.0

pu239h xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	1.616226g	0.0	2.049022l	0.0	0.0

zp 35.59 ri 3.04e-06p 0.001542p 0.093477p 0.0 0.749833p 0.0 0.854264n 0.189744p 0.004431p 1.30e-05p 4.31e-09p
sig0.664 cc 3.03e-06p 0.001540p 0.094699p 0.0 0.841610p 0.0 1.677559p 1.835877p 1.839708p 1.12e-05p 3.72e-09p
rc 3.04e-06p 0.001545p 0.095022p 0.001793o 0.845731o 0.064121o 1.711173f 1.900917k 1.905361j 1.30e-05p 4.31e-09p

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 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.974526h      0.0       0.0
zp 35.33 ri 2.27e-07p 0.000405p 0.080524p       0.0  0.439958p       0.0  0.411642p 0.014597p 6.18e-05p 5.51e-09p       0.0
sig0.558 cc 2.21e-07p 0.000394p 0.078697p       0.0  0.506181p       0.0  0.900487p 0.914681p 0.914741p 5.36e-09p       0.0
         rc 2.27e-07p 0.000405p 0.080930p 0.001642o 0.521747p 0.059139o 0.959868l 0.974465j 0.974526h 5.51e-09p       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.988938e      0.0       0.0
zp 35.17 ri 7.75e-07p 0.001006p 0.137812p       0.0  0.509567p       0.0  0.301471p 0.006568p 1.47e-05p 6.25e-10p       0.0
sig0.551 cc 7.49e-07p 0.000973p 0.134255p       0.0  0.626416p       0.0  0.909562p 0.915914p 0.915928p 6.04e-10p       0.0
         rc 7.75e-07p 0.001006p 0.138819p 0.002796o 0.649840o 0.071725o 0.982356i 0.988923g 0.988938e 6.25e-10p       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.834913f      0.0       0.0
zp 35.01 ri 3.88e-06p 0.002657p 0.174780p       0.0  0.431984p       0.0  0.176659p 0.002947p 4.56e-06p 1.93e-10p       0.0
sig0.562 cc 3.70e-06p 0.002540p 0.169376p       0.0  0.609404p       0.0  0.746433p 0.749246p 0.749250p 1.84e-10p       0.0
         rc 3.88e-06p 0.002661p 0.177441p 0.004736o 0.612447o 0.081195o 0.831962j 0.834908h 0.834913f 1.93e-10p       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0  2.013404l      0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  5.126048i      0.0  5.327204i      0.0       0.0
zp 34.88 ri 0.000149p 0.044104p 1.049247n       0.0  2.427604n       0.0  1.528161l 0.015134p 2.76e-05p 3.52e-09p       0.0
sig0.600 cc 0.000181p 0.053702p 1.327002p       0.0  4.284359p       0.0  4.765699p 4.783375p 4.783407p 4.11e-09p       0.0
         rc 0.000149p 0.044253p 1.093500n 0.041755o 3.552296m 0.471728m 5.329811i 5.344945i 5.344973h 3.52e-09p       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.731492j      0.0  2.177634g      0.0       0.0
zp 35.38 ri 4.13e-07p 0.000981p 0.127779p       0.0  1.117437p       0.0  0.825004o 0.064060p 0.000252p 5.26e-08p       0.0
sig0.568 cc 4.11e-07p 0.000979p 0.128362p       0.0  1.241842p       0.0  2.004192p 2.056331p 2.056535p 4.28e-08p       0.0
         rc 4.13e-07p 0.000982p 0.128761p 0.002172o 1.247127n 0.101936o 2.095997i 2.160057h 2.160309g 5.26e-08p       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.310883k      0.0  0.316453j      0.0       0.0
zp 35.15 ri 1.59e-06p 0.000864p 0.044207p       0.0  0.168949p       0.0  0.088058p 0.003662p 1.50e-05p 3.58e-09p       0.0
sig0.600 cc 1.58e-06p 0.000858p 0.044665p       0.0  0.214431p       0.0  0.288270p 0.291886p 0.291901p 3.54e-09p       0.0
         rc 1.59e-06p 0.000866p 0.045072p 0.001188o 0.214774p 0.023044o 0.312431k 0.316093k 0.316108j 3.58e-09p       0.0

  ge, as half lives from 80eng2; se, br, kr, rb half lives from 89wal1.
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nuclide 33 as g 34 se g 35 br d 35 br g 36 kr d 36 kr g 37 rb g 38 sr g 39 y m 39 y g 40 zr g 41 nb g
half life 0.121s 0.41 s 0.427s 4.37 s 1.80 s 3.15 m 15.4 m 50.52d 15.7 s stable 78.5 h 2.0 h
lambda 5.728e+00 1.691e+00 1.623e+00 1.586e-01 3.851e-01 3.667e-03 7.502e-04 1.588e-07 4.415e-02 0.0 2.453e-06
9.627e-05
z - 1 g 100.0000 100.0000 0.0 92.3000 0.0 86.0000 100.0000 100.0000 0.0100 99.9900 -0.2000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -99.8000 0.0
z - 0 m 0.0 0.0 9.1320 100.0000 24.6000 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.125120k 0.0 5.736995h 0.0 0.0
zp 36.04 ri 9.65e-06p 0.017550p 0.0 0.727152p 0.0 4.182391n 0.855135p 0.027637p 1.54e-05p 3.16e-06p 1.24e-09p 0.0
sig0.553 cc 9.55e-06p 0.017369p 0.0 0.735334p 0.0 4.787501p 5.678254p 5.705591p 0.000587p 5.705610p 1.30e-09p
0.0
rc 9.65e-06p 0.017560p 0.000168o 0.743528o 0.047730o 4.869555m 5.724691k 5.752328i 0.000591j 5.752346g 1.24e-09p
0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 3.109610l 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.728177k 0.0 4.570831j 0.0 0.0
zp 36.14 ri 8.61e-05p 0.023436p 0.0 0.685337p 0.0 2.699140n 1.179899n 0.076170p 0.000465p 5.75e-05p 3.67e-07p
2.45e-11p
sig0.642 cc 8.99e-05p 0.024557p 0.0 0.738255p 0.0 3.214133p 4.479267p 4.558787p 0.000951p 4.559344p 3.91e-07p
2.61e-11p
rc 8.61e-05p 0.023522p 0.000315o 0.707362o 0.060457o 3.367929m 4.547828k 4.623998j 0.000928p 4.624521i 3.67e-07p
2.45e-11p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.863614i 0.0 3.905895n 0.0 0.0
zp 35.57 ri 0.000235p 0.113208p 0.0 1.380408n 0.0 2.281617n 0.142651p 0.000913p 1.03e-07p 2.11e-08p 1.27e-12p
0.0
sig0.545 cc 0.000232p 0.112026p 0.0 1.467147p 0.0 3.563237p 3.704105p 3.705006p 0.000371p 3.705006p 1.24e-12p
0.0
rc 0.000235p 0.113444p 0.001917o 1.487034m 0.162738o 3.723205l 3.865856k 3.866768i 0.000387i 3.866768i 1.27e-12p
0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.644838f 0.0 2.057329i 0.0 2.133781l 0.0 0.0
zp 36.02 ri 0.000155p 0.023131p 0.0 0.436177p 0.0 1.147334m 0.459458p 0.026702p 0.000173p 2.13e-05p 1.65e-07p
1.56e-11p
sig0.664 cc 0.000152p 0.022900p 0.0 0.450191p 0.0 1.535091p 2.001185p 2.028163p 0.000379p 2.028361p 1.69e-07p
1.59e-11p

rc 0.000155p 0.023286p 0.000335o 0.458005p 0.040963o 1.582181g 2.041639n 2.068341i 0.000380o 2.068536h 1.65e-07p 1.56e-11p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.401663j 0.0 1.414316j 0.0 0.0
zp 35.73 ri 3.86e-05p 0.021281p 0.0 0.402439p 0.0 0.898287o 0.104167p 0.001219p 3.67e-07p 7.51e-08p 1.16e-11p 0.0
sig0.558 cc 3.82e-05p 0.021099p 0.0 0.417844p 0.0 1.262879p 1.366103p 1.367310p 0.000137p 1.367310p 1.14e-11p 0.0
rc 3.86e-05p 0.021319p 0.000308o 0.422425p 0.042972o 1.304544n 1.408712l 1.409931j 0.000141j 1.409931i 1.16e-11p 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.282159i 0.0 0.0
zp 35.58 ri 9.08e-05p 0.036216p 0.0 0.478215p 0.0 0.729576p 0.054318p 0.000360p 5.52e-08p 1.13e-08p 0.0 0.0
sig0.551 cc 8.97e-05p 0.035847p 0.0 0.505437p 0.0 1.171268p 1.224899p 1.225255p 0.000123p 1.225255p 0.0 0.0
rc 9.08e-05p 0.036306p 0.000594o 0.512320p 0.057323o 1.227494n 1.281812m 1.282172k 0.000128n 1.282172i 0.0 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.098560j 0.0 0.0
zp 35.42 ri 0.000327p 0.061177p 0.0 0.521909p 0.0 0.489912p 0.028021p 0.000129p 1.79e-08p 3.68e-09p 0.0 0.0
sig0.562 cc 0.000322p 0.060705p 0.0 0.571537p 0.0 0.989001p 1.016658p 1.016786p 0.000102p 1.016786p 0.0 0.0
rc 0.000327p 0.061504p 0.001287o 0.579965o 0.082032o 1.070713n 1.098734m 1.098864l 0.000110n 1.098864j 0.0 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 2.732209k 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.735638j 0.0 6.256195j 0.0 5.895120g 0.0 0.0
zp 35.28 ri 0.008360p 0.533916p 0.0 2.854011n 0.0 2.294235k 0.126502p 0.000654p 2.07e-07p 2.56e-08p 5.85e-12p 0.0
sig0.600 cc 0.008621p 0.559190p 0.0 3.690502p 0.0 5.134836p 5.257317p 5.257950p 0.000526p 5.257950p 5.93e-12p 0.0
rc 0.008360p 0.542276o 0.014953o 3.369484m 0.615954m 5.807946i 5.934448i 5.935102h 0.000594i 5.935102g 5.86e-12p 0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.142606i 0.0 2.775333i 0.0 0.0
zp 35.78 ri 6.88e-05p 0.028143p 0.0 0.701570p 0.0 1.423550n 0.387896p 0.002929p 1.94e-06p 3.97e-07p 8.06e-11p 0.0
sig0.568 cc 7.42e-05p 0.030436p 0.0 0.785148p 0.0 2.169531p 2.428734p 2.431894p 0.000245p 2.431896p 7.45e-11p 0.0
rc 6.88e-05p 0.028212p 0.000505o 0.728115o 0.099532o 2.149261l 2.537157j 2.540086h 0.000257i 2.540090h 8.06e-11p 0.0

cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.360602g 0.0 0.000 0.0 0.0
zp 35.55 ri 0.000109p 0.015316p 0.0 0.149984p 0.0 0.173700p 0.020002p 0.000229p 1.34e-07p 3.15e-08p 9.62e-12p
0.0
sig0.600 cc 0.000105p 0.014886p 0.0 0.158596p 0.0 0.316466p 0.335770p 0.335990p 3.37e-05p 0.335990p 8.87e-12p
0.0
rc 0.000109p 0.015425p 0.000379o 0.164601p 0.027745o 0.343002l 0.363004i 0.363233g 3.65e-05g 0.363233g 9.62e-12p
0.0

as half life from 80eng2; se, br, kr, rb, sr half lives 89wal1.
1

mass number 90 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 34 se g 35 br d 35 br g 36 kr d 36 kr g 37 rb m 37 rb g 38 sr g 39 y g 40 zr g 41 nb g 42 mo g
half life 0.427s 0.27s 1.9 s 0.60 s 32.3 s 4.3 m 2.6 m 29.1 y 2.67 d stable 14.59h 5.7 h
lambda 1.623e+00 2.567e+00 3.648e-01 1.155e+00 2.146e-02 2.687e-03 4.443e-03 7.553e-10 3.005e-06 0.0 1.320e-05
3.378e-05
z - 1 g 100.0000 0.0 90.8680 0.0 75.4000 11.0000 89.0000 100.0000 100.0000 100.0000 -3.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 97.4000 0.0 0.0 -97.0000 0.0
z - 0 m 0.0 24.4380 100.0000 18.1000 100.0000 0.0 2.6000 0.0 0.0 0.0 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.443132e 0.0 6.343984e 0.0 0.0
zp 36.44 ri 0.001842p 0.0 0.192330p 0.0 4.125831n 1.559483n 0.316350p 0.231371p 0.000426p 1.30e-07p 0.0 0.0
sig0.553 cc 0.001841p 0.0 0.193898p 0.0 4.272063p 2.028575p 4.174121p 6.379336p 6.379765p 6.379765p 0.0 0.0
rc 0.001842p 2.08e-05o 0.194025p 0.007222o 4.279347m 2.030211m 4.177754l 6.386551f 6.386976e 6.386977d 0.0
0.0
u233he xi 0.0 0.0 0.0 0.0 2.238035l 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.748012j 0.0 0.0
zp 36.54 ri 0.003446p 0.0 0.242540p 0.0 2.091524n 1.915395n 0.236745p 0.312168p 0.005358p 9.52e-06p 1.64e-09p
0.0
sig0.642 cc 0.003521p 0.0 0.250994p 0.0 2.216745p 2.204322p 2.272522p 4.739637p 4.745111p 4.745120p 1.67e-09p
0.0
rc 0.003446p 9.05e-05o 0.245762p 0.011626o 2.288455m 2.167125m 2.329815m 4.752764l 4.758122k 4.758131j 1.64e-09p
0.0
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.717399n 0.0 0.0

zp 35.96 ri 0.020994p 0.0 0.641956p 0.0 3.645229n 0.432505p 0.088642p 0.013471p 5.16e-06p 2.34e-10p 0.0 0.0
sig0.545 cc 0.020929p 0.0 0.659164p 0.0 4.145487p 0.887451p 3.800926p 4.678733p 4.678739p 4.678739p 0.0 0.0
rc 0.020994p 0.000527o 0.661561o 0.048152o 4.192198m 0.893647o 3.842933m 4.726817l 4.726822l 4.726822l 0.0
0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.102576l 0.0 0.0
zp 36.44 ri 0.003672p 0.0 0.163082p 0.0 0.974825p 0.779565p 0.096363p 0.116526p 0.002062p 4.37e-06p 1.04e-09p
0.0
sig0.664 cc 0.003668p 0.0 0.166250p 0.0 1.101416p 0.899883p 1.099904p 2.092803p 2.094863p 2.094867p 1.04e-09p
0.0
rc 0.003672p 9.67e-05o 0.166515p 0.007856o 1.108234o 0.901470o 1.106130n 2.100688m 2.102750l 2.102754k 1.04e-09p
0.0
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.839260j 0.0 1.797986f 0.0 0.0
zp 36.14 ri 0.003368p 0.0 0.171552p 0.0 1.285720n 0.294797p 0.060398p 0.015752p 1.65e-05p 1.84e-09p 0.0 0.0
sig0.558 cc 0.003362p 0.0 0.174321p 0.0 1.418026p 0.450340p 1.334042p 1.788397p 1.788414p 1.788414p 0.0 0.0
rc 0.003368p 7.05e-05o 0.174682p 0.010428o 1.427859m 0.451862p 1.342941m 1.798807i 1.798823h 1.798823f 0.0
0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.550923f 0.0 0.0
zp 35.98 ri 0.006504p 0.0 0.226942p 0.0 1.147780n 0.170479p 0.034940p 0.005266p 2.90e-06p 1.51e-10p 0.0 0.0
sig0.551 cc 0.006483p 0.0 0.232166p 0.0 1.324078p 0.315698p 1.221467p 1.534206p 1.534209p 1.534209p 0.0 0.0
rc 0.006504p 0.000168o 0.233019p 0.016759o 1.340235m 0.317905o 1.236016m 1.550921j 1.550924h 1.550924f 0.0
0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.360012f 0.0 0.0
zp 35.83 ri 0.014097p 0.0 0.320167p 0.0 0.941262o 0.113246p 0.023215p 0.002321p 1.19e-06p 5.08e-11p 0.0 0.0
sig0.562 cc 0.013983p 0.0 0.330428p 0.0 1.193993p 0.243763p 1.092018p 1.331745p 1.331746p 1.331746p 0.0 0.0
rc 0.014097p 0.000485o 0.333462p 0.028537o 1.221229n 0.247581o 1.116546m 1.360010j 1.360012h 1.360012f 0.0
0.0
th232h xi 0.0 0.0 0.0 0.0 3.663184k 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.049450l 0.0 6.084542g 0.0 0.0
zp 35.67 ri 0.163741p 0.0 2.348934n 0.0 3.479430n 0.475305p 0.059064p 0.007496p 7.93e-06p 5.74e-10p 0.0 0.0
sig0.600 cc 0.164643p 0.0 2.513353p 0.0 5.353207p 1.069368p 4.851547p 5.900650p 5.900657p 5.900657p 0.0 0.0
rc 0.163741p 0.006158o 2.503880m 0.175530n 5.542885m 1.085023o 5.020442l 6.084751j 6.084759i 6.084759g 0.0
0.0

np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.341144f 0.0 0.0
zp 36.17 ri 0.005526p 0.0 0.399455p 0.0 2.049372n 0.774060p 0.158566p 0.033124p 7.10e-05p 7.91e-09p 0.0 0.0
sig0.568 cc 0.005516p 0.0 0.403761p 0.0 2.356080p 1.032008p 2.282036p 3.320274p 3.320345p 3.320345p 0.0 0.0
rc 0.005526p 0.000126o 0.404602p 0.020882o 2.375323m 1.035346o 2.299523m 3.341073j 3.341144h 3.341144f 0.0
0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.522334l 0.0 0.0
zp 35.96 ri 0.004153p 0.0 0.108866p 0.0 0.334605p 0.074773p 0.017539p 0.002939p 6.01e-06p 1.05e-09p 0.0 0.0
sig0.600 cc 0.004137p 0.0 0.112258p 0.0 0.419992p 0.120689p 0.394404p 0.514882p 0.514888p 0.514888p 0.0 0.0
rc 0.004153p 0.000143o 0.112783p 0.007565o 0.427208p 0.121766p 0.400920p 0.522459o 0.522465n 0.522465l 0.0
0.0

kr-rb branching from 70bal1; se half lives from 80eng2; br, kr, rb, sr, y half lives from 89wal1.

1

mass number 91 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 34 se g 35 br g 36 kr d 36 kr g 37 rb d 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb g 42 mo g
half life 0.27s 0.54 s 0.360s 8.6 s 1.84 s 58.0 s 4.53 s 9.5 h 58.5 d stable long 15.5 m
lambda 2.567e+00 1.284e+00 1.925e+00 8.060e-02 3.767e-01 1.195e-02 1.530e-01 2.027e-05 1.371e-07 0.0 0.0 7.453e-
04
z - 1 g 100.0000 75.5620 0.0 81.9000 0.0 100.0000 0.0 100.0000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 42.7300 100.0000 0.0330 100.0000 0.0100 100.0000 0.0 0.0 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.514697l 6.449265d 0.0 0.0
zp 36.85 ri 8.50e-05p 0.039835p 0.0 2.063966n 0.0 3.399269n 0.0 0.943502p 0.007886p 6.65e-06p 1.12e-10p 0.0
sig0.553 cc 8.47e-05p 0.039777p 0.0 2.090666p 0.0 5.479628p 0.0 6.439461p 6.447323p 6.447329p 1.13e-10p 0.0
rc 8.50e-05p 0.039900p 0.001392o 2.098036m 0.000237o 5.497542m 0.000336m 6.441380h 6.449266f 6.449272d 1.12e-10p
0.0
u233he xi 0.0 0.0 0.0 1.177139l 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.294912i 0.0 4.878361j 0.0 0.0
zp 36.94 ri 0.000370p 0.063954p 0.0 1.178005n 0.0 2.937610n 0.0 0.966989p 0.037730p 0.000168p 7.38e-08p 3.07e-
12p

sig0.642 cc 0.000368p 0.063895p 0.0 1.261870p 0.0 4.176489p 0.0 5.133783p 5.172997p 5.173171p 7.67e-08p 3.19e-12p
rc 0.000370p 0.064234p 0.004804o 1.235417m 0.000163o 4.173190m 0.000325m 5.140504i 5.178234i 5.178402i 7.38e-08p 3.07e-12p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.474631h 0.0 5.575562i 0.0 0.0
zp 36.35 ri 0.002158p 0.264397p 0.0 3.465091n 0.0 1.685460n 0.0 0.109970p 0.000180p 2.37e-08p 0.0 0.0
sig0.545 cc 0.002158p 0.265974p 0.0 3.688894p 0.0 5.368462p 0.0 5.478409p 5.478588p 5.478588p 0.0 0.0
rc 0.002158p 0.266028p 0.020982o 3.703950m 0.000795m 5.390205j 0.000496m 5.500671h 5.500851h 5.500851g 0.0 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.313494k 0.0 2.103702l 0.0 0.0
zp 36.87 ri 0.000396p 0.043106p 0.0 0.600518p 0.0 1.211698n 0.0 0.369605p 0.015052p 8.03e-05p 4.93e-08p 3.34e-12p
sig0.664 cc 0.000395p 0.043350p 0.0 0.636658p 0.0 1.847155p 0.0 2.216628p 2.232429p 2.232513p 5.17e-08p 3.51e-12p
rc 0.000396p 0.043404p 0.004511o 0.640578o 0.000113o 1.852389m 0.000182m 2.222177k 2.237229k 2.237309j 4.93e-08p 3.34e-12p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.210924j 2.239514j 2.187677f 0.0 0.0
zp 36.55 ri 0.000288p 0.057396p 0.0 1.075051n 0.0 0.950954o 0.0 0.112073p 0.000476p 1.58e-07p 1.46e-12p 0.0
sig0.558 cc 0.000286p 0.057219p 0.0 1.115905p 0.0 2.074880p 0.0 2.185341p 2.185811p 2.185811p 1.46e-12p 0.0
rc 0.000288p 0.057614p 0.004190o 1.126426m 0.000224o 2.077604l 0.000210m 2.189886i 2.190363h 2.190363f 1.46e-12p 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.928825f 0.0 0.0
zp 36.38 ri 0.000686p 0.092073p 0.0 1.136809n 0.0 0.661912o 0.0 0.045126p 0.000101p 1.60e-08p 0.0 0.0
sig0.551 cc 0.000684p 0.092396p 0.0 1.212762p 0.0 1.874684p 0.0 1.919715p 1.919816p 1.919816p 0.0 0.0
rc 0.000686p 0.092591p 0.008541o 1.221182m 0.000295o 1.883389l 0.000209m 1.928724j 1.928825h 1.928825f 0.0 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.764577j 0.0 1.802572g 0.0 0.0
zp 36.23 ri 0.001984p 0.156166p 0.0 1.118069n 0.0 0.514292p 0.0 0.022649p 4.39e-05p 5.67e-09p 0.0 0.0
sig0.562 cc 0.002001p 0.159030p 0.0 1.263002p 0.0 1.761042p 0.0 1.783886p 1.783930p 1.783930p 0.0 0.0
rc 0.001984p 0.157665p 0.016714o 1.263911m 0.000306o 1.778509l 0.000198m 1.801356j 1.801399i 1.801399g 0.0 0.0

th232h xi 0.0 0.0 0.0 3.167339j 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 3.759148j 0.0 0.0 0.0 5.865512i 6.156479k 6.095858h 0.0 0.0
zp 36.06 ri 0.025200p 0.950737o 0.0 3.336576i 0.0 1.698436n 0.0 0.053572p 0.000160p 3.30e-08p 0.0 0.0
sig0.600 cc 0.027853p 1.050380p 0.0 4.456417p 0.0 5.817643p 0.0 5.867609p 5.867755p 5.867755p 0.0 0.0
rc 0.025200p 0.969778n 0.107389o 4.238213i 0.000779k 5.937428j 0.000505m 5.991506h 5.991665h 5.991665g 0.0
0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.865650i 3.945987j 3.930925f 0.0 0.0
zp 36.57 ri 0.000514p 0.114979p 0.0 1.641983n 0.0 1.983160m 0.0 0.196424p 0.001361p 5.01e-07p 9.15e-12p 0.0
sig0.568 cc 0.000517p 0.115981p 0.0 1.748543p 0.0 3.715845p 0.0 3.915951p 3.917302p 3.917303p 9.07e-12p 0.0
rc 0.000514p 0.115368p 0.008760o 1.745229m 0.000286o 3.728674k 0.000356m 3.925454h 3.926815g 3.926816f 9.16e-12p
0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.574897h 0.627733i 0.583695k 0.0 0.0
zp 36.36 ri 0.000584p 0.041352p 0.0 0.316106p 0.0 0.223564p 0.0 0.017792p 0.000108p 5.39e-08p 1.53e-12p 0.0
sig0.600 cc 0.000593p 0.042468p 0.0 0.357596p 0.0 0.573490p 0.0 0.591570p 0.591674p 0.591674p 1.51e-12p 0.0
rc 0.000584p 0.041793p 0.005145o 0.355479p 8.04e-05o 0.579124k 5.93e-05m 0.596976h 0.597083g 0.597083g 1.53e-12p
0.0

y half life from 80eng2; se,br,kr,rb,sr,y half lives from 89wal1.
1

mass number 92 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 34 se g 35 br g 36 kr d 36 kr g 37 rb d 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb g 42 mo g
half life 0.168s 0.34 s 0.176s 1.84 s 1.29 s 4.48 s 5.86s 2.71 h 3.54 h stable 2.e7y stable
lambda 4.126e+00 2.039e+00 3.938e+00 3.767e-01 5.373e-01 1.547e-01 1.183e-01 7.105e-05 5.439e-05 0.0 1.099e-15
0.0
z - 1 g 100.0000 100.0000 0.0 57.2700 0.0 99.9670 0.0 99.9900 100.0000 100.0000 -100.0000 0.0
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 25.0890 100.0000 2.0100 100.0000 1.3500 100.0000 0.0 0.0 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.879134k 0.0 6.541928d 0.0 0.0
zp 37.26 ri 2.52e-06p 0.003256p 0.0 0.716825p 0.0 2.636397n 0.0 3.093143m 0.061851p 0.000241p 1.16e-08p 0.0
sig0.553 cc 2.66e-06p 0.003439p 0.0 0.758646p 0.0 3.542103p 0.0 6.449624p 6.509408p 6.509641p 1.12e-08p 0.0
rc 2.52e-06p 0.003258p 6.34e-05o 0.718754o 0.002880o 3.357795m 0.029094m 6.479695h 6.541547f 6.541788d 1.16e-08p
0.0

u233he xi 0.0 0.0 0.0 0.461046m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.185550i 0.0 5.601222j 0.0 0.0
zp 37.34 ri 2.61e-05p 0.011218p 0.0 0.487399p 0.0 2.753893n 0.0 1.999603n 0.201232p 0.002198p 2.46e-06p 2.64e-10p
sig0.642 cc 2.60e-05p 0.011212p 0.0 0.512611p 0.0 3.253929p 0.0 5.256206p 5.448180p 5.450287p 2.35e-06p 2.53e-10p
rc 2.61e-05p 0.011244p 0.000227o 0.494066p 0.002017o 3.249813m 0.023361m 5.272453i 5.473685j 5.475885i 2.46e-06p 2.64e-10p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.523836j 4.877844j 6.154497i 0.0 0.0
zp 36.74 ri 0.000147p 0.048957p 0.0 2.380337n 0.0 2.531645n 0.0 0.600227p 0.002515p 1.58e-06p 1.15e-11p 0.0
sig0.545 cc 0.000146p 0.049028p 0.0 2.405293p 0.0 4.934049p 0.0 5.538931p 5.541591p 5.541593p 1.11e-11p 0.0
rc 0.000147p 0.049104p 0.001647o 2.410106m 0.016547o 4.957503l 0.051261m 5.608495i 5.611010h 5.611012h 1.15e-11p 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.912860l 0.0 0.0
zp 37.28 ri 4.04e-05p 0.010516p 0.0 0.336104p 0.0 1.477984n 0.0 0.978731p 0.095311p 0.001208p 1.81e-06p 3.04e-10p
sig0.664 cc 4.03e-05p 0.010545p 0.0 0.341908p 0.0 1.818837p 0.0 2.798679p 2.893888p 2.895096p 1.81e-06p 3.04e-10p
rc 4.04e-05p 0.010557p 0.000385o 0.342535p 0.002329o 1.822735m 0.016680m 2.817964m 2.913275l 2.914485k 1.81e-06p 3.04e-10p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.680321f 0.0 0.0
zp 36.96 ri 1.69e-05p 0.009788p 0.0 0.671581p 0.0 1.417349n 0.0 0.548419p 0.006629p 9.21e-06p 2.60e-10p 0.0
sig0.558 cc 1.69e-05p 0.009762p 0.0 0.674358p 0.0 2.086303p 0.0 2.642581p 2.649181p 2.649190p 2.59e-10p 0.0
rc 1.69e-05p 0.009805p 0.000313o 0.677509o 0.004777o 2.099412m 0.026062m 2.673684j 2.680313h 2.680322f 2.60e-10p 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.394421f 0.0 0.0
zp 36.78 ri 5.17e-05p 0.019937p 0.0 0.881183p 0.0 1.188628n 0.0 0.277418p 0.001792p 1.19e-06p 1.45e-11p 0.0
sig0.551 cc 5.15e-05p 0.019899p 0.0 0.888860p 0.0 2.076176p 0.0 2.358222p 2.360007p 2.360008p 1.44e-11p 0.0
rc 5.17e-05p 0.019989p 0.000750o 0.893380o 0.007237o 2.088951m 0.026469m 2.392628j 2.394421h 2.394422f 1.45e-11p 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.924086j 2.143412l 2.172504g 0.0 0.0

zp 36.63 ri 0.000175p 0.038940p 0.0 0.902349p 0.0 1.044976o 0.0 0.140780p 0.000823p 4.17e-07p 5.46e-12p 0.0
sig0.562 cc 0.000185p 0.041229p 0.0 0.975440p 0.0 1.960909p 0.0 2.109099p 2.109909p 2.109909p 5.23e-12p 0.0
rc 0.000175p 0.039116p 0.002042o 0.926793o 0.010200o 1.981663l 0.028111m 2.150355i 2.151179h 2.151179g 5.46e-12p
0.0
th232h xi 0.0 0.0 0.0 2.054216k 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 2.120995j 0.0 0.0 0.0 5.457403i 5.861953j 5.466795h 0.0 0.0
zp 36.45 ri 0.002537p 0.248782p 0.0 2.107397j 0.0 2.669931n 0.0 0.402929p 0.001982p 1.14e-06p 4.54e-11p 0.0
sig0.600 cc 0.003083p 0.305428p 0.0 2.758972p 0.0 5.083021p 0.0 5.299892p 5.301630p 5.301631p 4.06e-11p 0.0
rc 0.002537p 0.251319p 0.109162o 2.360490i 0.021240m 5.050882l 0.060479m 5.513785i 5.515767h 5.515768g 4.54e-11p
0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.907510i 3.363117j 4.476675f 0.0 0.0
zp 36.97 ri 2.88e-05p 0.020471p 0.0 0.852867p 0.0 2.688285n 0.0 0.771415p 0.014503p 2.00e-05p 1.22e-09p 0.0
sig0.568 cc 2.90e-05p 0.020686p 0.0 0.872682p 0.0 3.571728p 0.0 4.322595p 4.338087p 4.338105p 1.13e-09p 0.0
rc 2.88e-05p 0.020500p 0.000589o 0.865196o 0.006178o 3.559374l 0.040206m 4.370638h 4.385141g 4.385161f 1.22e-09p
0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.731693i 0.671609i 0.638283i 0.0 0.0
zp 36.76 ri 6.09e-05p 0.011980p 0.0 0.236158p 0.0 0.346511p 0.0 0.081435p 0.001237p 1.75e-06p 1.47e-10p 0.0
sig0.600 cc 5.78e-05p 0.011424p 0.0 0.230795p 0.0 0.593933p 0.0 0.671138p 0.672365p 0.672366p 1.52e-10p 0.0
rc 6.09e-05p 0.012041p 0.000635o 0.243688p 0.002642o 0.592760m 0.008563o 0.682700i 0.683937h 0.683939g 1.47e-10p
0.0

se half life from 80eng2; br, kr, rb, sr, y half lives from 89wal1.

1

mass number 93 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 35 br g 36 kr g 37 rb d 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb m 41 nb g 42 mo g 43 tc g
half life 0.176s 1.29 s 0.210s 5.85 s 2.76 s 7.4 m 10.2 h 1.5e6y 12. y stable 3.e3 y 2.73 h
lambda 3.938e+00 5.373e-01 3.301e+00 1.185e-01 2.511e-01 1.561e-03 1.888e-05 1.465e-14 1.832e-09 0.0 7.327e-39
7.053e-05
z - 1 g 100.0000 74.9110 0.0 97.9900 0.0 98.6500 100.0000 100.0000 95.0000 5.0000 -15.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -85.0000 0.0
z - 0 m 0.0 0.0 6.1300 100.0000 10.0000 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.938873d 6.595591n 0.0 0.0 0.0
zp 37.66 ri 0.000253p 0.143116p 0.0 2.013555n 0.0 4.391968l 0.351364p 0.003554p 1.32e-07p 6.44e-07p 1.54e-11p 0.0
sig0.553 cc 0.000251p 0.142412p 0.0 2.140888p 0.0 6.518310p 6.868450p 6.871982p 6.528383p 6.871983p 1.53e-11p
0.0
rc 0.000253p 0.143305p 0.001126o 2.155106m 0.065979o 6.583960j 6.935324f 6.938878d 6.591934d 6.938879d 1.54e-11p
0.0
u233he xi 0.0 0.098095n 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.372289i 0.0 5.020500n 0.0 0.0 0.0
zp 37.74 ri 0.000906p 0.099667p 0.0 1.630396n 0.0 2.905641n 0.665284p 0.016897p 5.23e-06p 4.23e-05p 1.31e-08p
0.0
sig0.642 cc 0.001270p 0.140688p 0.0 1.875427p 0.0 4.658817p 5.274002p 5.290328p 5.025817p 5.290374p 1.27e-08p
0.0
rc 0.000906p 0.100345p 0.001720o 1.730444m 0.082635o 4.695359l 5.360644i 5.377541i 5.108669i 5.377588i 1.31e-08p
0.0
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.656151i 5.376661i 0.0 5.441559n 0.0 0.0 0.0
zp 37.13 ri 0.006565p 0.818308p 0.0 2.978178n 0.0 1.567004n 0.027542p 4.44e-05p 2.44e-10p 1.19e-09p 0.0 0.0
sig0.545 cc 0.006490p 0.813866p 0.0 3.744522p 0.0 5.301055p 5.329058p 5.329103p 5.062648p 5.329103p 0.0 0.0
rc 0.006565p 0.823226o 0.012221o 3.797077m 0.189721m 5.502542i 5.530085h 5.530129h 5.253623h 5.530129h 0.0
0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.210395l 0.0 3.065595n 0.0 0.0 0.0
zp 37.69 ri 0.001536p 0.114702p 0.0 1.120288n 0.0 1.595406n 0.339923p 0.010294p 4.11e-06p 3.33e-05p 1.55e-08p
0.0
sig0.664 cc 0.001527p 0.115133p 0.0 1.226625p 0.0 2.807422p 3.152663p 3.162893p 3.004753p 3.162931p 1.54e-08p
0.0
rc 0.001536p 0.115853p 0.001717o 1.235529m 0.064387o 2.878642l 3.218565k 3.228859k 3.067420k 3.228897k 1.55e-08p
0.0
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.739898j 3.500349f 3.558937n 0.0 0.0 0.0
zp 37.37 ri 0.001249p 0.236733p 0.0 1.694605n 0.0 1.441495n 0.069191p 0.000265p 5.36e-09p 2.62e-08p 0.0 0.0
sig0.558 cc 0.001200p 0.228444p 0.0 1.853435p 0.0 3.346849p 3.413354p 3.413623p 3.242942p 3.413623p 0.0 0.0
rc 0.001249p 0.237668p 0.003022o 1.930518m 0.095387o 3.441338j 3.510529h 3.510794f 3.335255f 3.510794f 0.0
0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.135910l 2.806182n 2.978517f 0.0 0.0

zp 37.18 ri 0.002988p 0.357820p 0.0 1.601673n 0.0 0.903338p 0.021779p 4.26e-05p 3.61e-10p 1.76e-09p 0.0 0.0
sig0.551 cc 0.002978p 0.358882p 0.0 1.949463p 0.0 2.831611p 2.853319p 2.853361p 2.710693p 2.853361p 0.0 0.0
rc 0.002988p 0.360058p 0.006148o 1.960641m 0.121667m 2.959178n 2.980956m 2.980999k 2.831949h 2.980999f 0.0
0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.309827m 2.806998g 2.274011n 0.0 0.0 0.0
zp 37.03 ri 0.008139p 0.501366p 0.0 1.573819n 0.0 0.581857p 0.011155p 1.39e-05p 1.20e-10p 5.84e-10p 0.0 0.0
sig0.562 cc 0.008133p 0.507086p 0.0 2.071530p 0.0 2.624988p 2.636135p 2.636151p 2.504343p 2.636151p 0.0 0.0
rc 0.008139p 0.507463p 0.011211o 2.082293m 0.158647m 2.794686k 2.805841i 2.805855g 2.665562g 2.805855g 0.0
0.0
th232h xi 0.0 0.708350l 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 1.130095l 0.0 0.0 0.0 0.0 5.583439g 0.0 5.362213n 0.0 0.0 0.0
zp 36.84 ri 0.435100p 0.730783l 0.0 3.419998n 0.0 0.791519p 0.016766p 2.76e-05p 3.47e-10p 2.81e-09p 0.0 0.0
sig0.600 cc 0.067846p 1.515785p 0.0 4.610997p 0.0 5.269050p 5.284432p 5.284457p 5.020234p 5.284457p 0.0 0.0
rc 0.435100p 1.056720m 0.024442o 4.479921m 0.356107m 5.567068i 5.583834g 5.583862g 5.304669g 5.583862g 0.0
0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.280621i 5.110540g 4.888994n 5.079604i 0.0 0.0
zp 37.38 ri 0.002347p 0.305605p 0.0 2.673319n 0.0 1.893931n 0.125047p 0.000478p 1.68e-08p 8.22e-08p 1.02e-12p
0.0
sig0.568 cc 0.002290p 0.300010p 0.0 2.904316p 0.0 4.832341p 4.954434p 4.954914p 4.707168p 4.954914p 1.03e-12p
0.0
rc 0.002347p 0.307363p 0.003689o 2.978193m 0.159439m 4.991356j 5.116404h 5.116882f 4.861038f 5.116882f 1.02e-12p
0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.926673h 0.0 0.925488n 0.872290k 0.0 0.0
zp 37.15 ri 0.002531p 0.129527p 0.0 0.502521p 0.0 0.236202p 0.010691p 4.25e-05p 1.93e-09p 8.22e-09p 0.0 0.0
sig0.600 cc 0.002468p 0.128150p 0.0 0.616267p 0.0 0.859533p 0.869958p 0.870001p 0.826501p 0.870001p 0.0 0.0
rc 0.002531p 0.131423p 0.003017o 0.634320o 0.050083o 0.912042j 0.922733h 0.922775h 0.876637h 0.922775h 0.0
0.0

kr, rb half lives from 80eng2; br, kr, rb, sr, y, zr half lives from 89wal1.

nuclide 34 se g 35 br g 36 kr g 37 rb d 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb m 41 nb g 42 mo g
half life 0.111s 0.21 s 0.78 s 2.73 s 0.38 s 1.25 m 18.7 m stable 6.26 m 2.0e4y stable
lambda 0.0 6.245e+00 3.301e+00 8.887e-01 2.539e-01 1.824e+00 9.242e-03 6.178e-04 0.0 1.845e-03 1.099e-12 0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 93.8700 0.0 90.0000 100.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.2000
z - 0 m 0.0 0.0 0.0 7.5050 100.0000 8.6200 100.0000 0.0 0.0 0.0 99.8000 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.754029d 0.0 0.0 0.0
zp 38.07 ri 4.28e-10p 7.12e-06p 0.018366p 0.0 0.642453p 0.0 5.176012m 0.927359p 0.040125p 8.97e-06p 1.53e-05p 2.30e-09p
sig0.553 cc 4.28e-10p 7.12e-06p 0.018352p 0.0 0.658992p 0.0 5.770014p 6.697218p 6.737298p 8.96e-06p 2.42e-05p 2.42e-05p
rc 4.28e-10p 7.12e-06p 0.018373p 9.51e-05o 0.659795o 0.016717o 5.786544l 6.713904g 6.754029d 8.97e-06p 2.42e-05p 2.42e-05p
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.023881m 0.0 0.0 0.0
zp 38.13 ri 3.89e-08p 0.000105p 0.027946p 0.0 0.799725p 0.0 2.818912n 1.357882n 0.083582p 0.000149p 0.000423p 3.92e-07p
sig0.642 cc 3.89e-08p 0.000105p 0.028014p 0.0 0.825062p 0.0 3.563924p 4.920458p 5.003930p 0.000148p 0.000570p 0.000571p
rc 3.89e-08p 0.000105p 0.028051p 0.000294o 0.826351o 0.023548o 3.586176m 4.944058l 5.027640l 0.000149p 0.000571p 0.000572p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.994760i 5.778308n 0.0 0.0 0.0
zp 37.52 ri 9.67e-08p 0.000392p 0.198972p 0.0 1.707476n 0.0 3.080677m 0.134175p 0.000986p 3.39e-08p 5.78e-08p 0.0
sig0.545 cc 9.57e-08p 0.000388p 0.197361p 0.0 1.876335p 0.0 4.788298p 4.922042p 4.922946p 3.11e-08p 8.41e-08p 8.42e-08p
rc 9.67e-08p 0.000392p 0.199364p 0.002591o 1.897209m 0.099645m 4.887811k 5.021986i 5.022972i 3.39e-08p 9.17e-08p 9.17e-08p
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.487102l 0.0 0.0 0.0
zp 38.10 ri 1.02e-07p 0.000157p 0.027848p 0.0 0.617197p 0.0 1.917662n 0.907042p 0.061735p 0.000139p 0.000397p 5.44e-07p
sig0.664 cc 1.02e-07p 0.000157p 0.027948p 0.0 0.642278p 0.0 2.497321p 3.404094p 3.465702p 0.000139p 0.000535p 0.000535p

rc 1.02e-07p 0.000157p 0.028006p 0.000379o 0.643865o 0.022307o 2.519447m 3.426490l 3.488224k 0.000139p 0.000536p 0.000537p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.931238f 0.0 0.0 0.0
zp 37.78 ri 9.09e-09p 6.52e-05p 0.049233p 0.0 0.907134p 0.0 2.729594m 0.302171p 0.004826p 6.37e-07p 1.08e-06p 6.22e-11p
sig0.558 cc 9.05e-09p 6.49e-05p 0.049081p 0.0 0.949357p 0.0 3.588486p 3.890275p 3.895079p 6.34e-07p 1.71e-06p 1.71e-06p
rc 9.09e-09p 6.52e-05p 0.049298p 0.000461o 0.953871o 0.036166o 3.624244l 3.926415h 3.931241f 6.37e-07p 1.72e-06p 1.72e-06p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.305799f 0.0 0.0 0.0
zp 37.58 ri 4.50e-08p 0.000213p 0.100077p 0.0 1.121346n 0.0 2.027440m 0.126887p 0.000995p 5.77e-08p 9.82e-08p 2.25e-12p
sig0.551 cc 4.45e-08p 0.000211p 0.099263p 0.0 1.203389p 0.0 3.123496p 3.249550p 3.250535p 5.71e-08p 1.54e-07p 1.54e-07p
rc 4.50e-08p 0.000213p 0.100290p 0.001182o 1.216670m 0.055485o 3.177928j 3.304815h 3.305810f 5.77e-08p 1.56e-07p 1.56e-07p
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.126792g 0.0 0.0 0.0
zp 37.43 ri 3.44e-07p 0.000836p 0.182057p 0.0 1.412280n 0.0 1.542271m 0.079784p 0.000428p 2.42e-08p 4.12e-08p 0.0
sig0.562 cc 3.40e-07p 0.000827p 0.180855p 0.0 1.567011p 0.0 2.970552p 3.049446p 3.049869p 2.39e-08p 6.46e-08p 6.46e-08p
rc 3.44e-07p 0.000837p 0.182893p 0.002507o 1.586469m 0.076550o 3.046644k 3.126428i 3.126856g 2.42e-08p 6.53e-08p 6.54e-08p
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.387501p 0.0 0.0 0.0 0.0 0.0 5.371176j 0.0 0.0 0.0
zp 37.23 ri 9.40e-06p 0.006952p 0.391764p 0.0 3.175255n 0.0 1.869953n 0.102545p 0.000466p 3.95e-08p 1.12e-07p 3.33e-12p
sig0.600 cc 1.45e-05p 0.010761p 0.616349p 0.0 3.691941p 0.0 5.044164p 5.139534p 5.139968p 3.67e-08p 1.41e-07p 1.41e-07p
rc 9.40e-06p 0.006961p 0.398725p 0.011529o 3.561068m 0.177113m 5.252027l 5.354572k 5.355038j 3.95e-08p 1.52e-07p 1.52e-07p
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.135914f 0.0 0.0 0.0

zp 37.79 ri 1.77e-08p 0.000143p 0.060032p 0.0 1.537318n 0.0 3.091003n 0.549833p 0.006932p 1.81e-06p 3.08e-06p 1.74e-10p
sig0.568 cc 1.76e-08p 0.000142p 0.059928p 0.0 1.587465p 0.0 4.525165p 5.075936p 5.082840p 1.80e-06p 4.86e-06p 4.87e-06p
rc 1.77e-08p 0.000143p 0.060174p 0.000583o 1.594386m 0.053210o 4.579161l 5.128993h 5.135926f 1.81e-06p 4.88e-06p 4.89e-06p
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.523083l 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.087191l 1.081434j 0.0 0.0 0.0
zp 37.54 ri 2.35e-07p 0.000358p 0.048862p 0.0 0.453797p 0.0 0.547214o 0.059559p 0.000661p 1.83e-07p 2.63e-07p 2.52e-11p
sig0.600 cc 2.27e-07p 0.000347p 0.047698p 0.0 0.498027p 0.0 0.999362p 1.057081p 1.057724p 1.78e-07p 4.34e-07p 4.34e-07p
rc 2.35e-07p 0.000358p 0.049219p 0.000826o 0.500825o 0.023991o 1.021948l 1.081507j 1.082168i 1.83e-07p 4.46e-07p 4.46e-07p

br, kr, rb, sr, y half lives from 89wal1.
1

mass number 95 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 36 kr g 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb m 41 nb g 42 mo g 43 tc m 43 tc g 44 ru g
half life 0.78 s 0.377s 0.204s 25.1s 10.3 m 64.02d 3.61 d 34.97d stable 61. d 20.0 h 1.64 h
lambda 8.887e-01 1.839e+00 3.398e+00 2.762e-02 1.122e-03 1.253e-07 2.222e-06 2.294e-07 0.0 1.315e-07 9.627e-06 1.174e-04
z - 1 g 100.0000 92.4950 0.0 91.3800 100.0000 100.0000 1.0000 99.0000 100.0000 -96.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 14.0000 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0 4.0000 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 6.377366i 0.0 0.0 6.282143d 0.0 0.0 0.0
zp 38.48 ri 0.001267p 0.192765p 0.0 3.567352n 2.288235n 0.245128p 0.000112p 0.000547p 1.76e-07p 0.0 0.0 0.0
sig0.553 cc 0.001260p 0.192943p 0.0 3.726623p 6.034602p 6.278016p 0.062893p 6.278680p 6.278680p 0.0 0.0 0.0
rc 0.001267p 0.193937p 0.003752o 3.748324m 6.036559k 6.281687h 0.062929i 6.282345f 6.282346d 0.0 0.0 0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.026424h 0.0 0.0 5.129952j 0.0 0.0 0.0
zp 38.53 ri 0.003916p 0.269559p 0.0 2.157434n 2.307089n 0.325208p 0.000608p 0.004923p 9.60e-06p 1.77e-10p 1.44e-09p 0.0

sig0.642 cc 0.003917p 0.273242p 0.0 2.410408p 4.711813p 5.039411p 0.050997p 5.044890p 5.044900p 1.76e-10p 1.43e-09p 0.0
rc 0.003916p 0.273181p 0.009053o 2.416119m 4.723209k 5.048416h 0.051093h 5.053948h 5.053958h 1.77e-10p 1.44e-09p 0.0
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.356755i 0.0 0.0 0.0
zp 37.91 ri 0.034517p 1.124036n 0.0 4.542997n 0.701390p 0.012645p 8.66e-07p 4.23e-06p 1.59e-10p 0.0 0.0 0.0
sig0.545 cc 0.034451p 1.153756p 0.0 5.600675p 6.300924p 6.313545p 0.063136p 6.313550p 6.313550p 0.0 0.0 0.0
rc 0.034517p 1.155962m 0.043700o 5.643015m 6.344405m 6.357050l 0.063571l 6.357055k 6.357055i 0.0 0.0 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.943726i 0.0 0.0 3.801314l 0.0 0.0 0.0
zp 38.50 ri 0.005053p 0.254107p 0.0 1.707687n 1.710585n 0.258275p 0.000555p 0.004493p 1.22e-05p 3.65e-10p 2.96e-09p 0.0
sig0.664 cc 0.005043p 0.258266p 0.0 1.943450p 3.656713p 3.912979p 0.039695p 3.918114p 3.918126p 3.72e-10p 3.02e-09p 0.0
rc 0.005053p 0.258781p 0.010645o 1.954806m 3.665391l 3.923666i 0.039792i 3.928714i 3.928726i 3.65e-10p 2.97e-09p 0.0
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.278901j 0.0 0.0 4.441758f 0.0 0.0 0.0
zp 38.18 ri 0.006143p 0.413874p 0.0 2.919867n 1.076693n 0.044153p 1.09e-05p 5.32e-05p 6.85e-09p 0.0 0.0 0.0
sig0.558 cc 0.006174p 0.421685p 0.0 3.324408p 4.379542p 4.423919p 0.044250p 4.423982p 4.423982p 0.0 0.0 0.0
rc 0.006143p 0.419556p 0.014042o 3.317300m 4.393993k 4.438146i 0.044392j 4.438210h 4.438210f 0.0 0.0 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.876057k 0.0 0.0 3.791708f 0.0 0.0 0.0
zp 37.97 ri 0.015744p 0.629109p 0.0 2.634119n 0.530309p 0.011421p 1.20e-06p 5.85e-06p 3.03e-10p 0.0 0.0 0.0
sig0.551 cc 0.015670p 0.640635p 0.0 3.214557p 3.752937p 3.764304p 0.037644p 3.764311p 3.764311p 0.0 0.0 0.0
rc 0.015744p 0.643672o 0.027938o 3.250245m 3.780554l 3.791975j 0.037921k 3.791982h 3.791982f 0.0 0.0 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.232980l 0.0 0.0 3.625336f 0.0 0.0 0.0
zp 37.83 ri 0.033406p 0.857153p 0.0 2.258340n 0.500248p 0.005499p 5.98e-07p 2.92e-06p 1.33e-10p 0.0 0.0 0.0
sig0.562 cc 0.034696p 0.922323p 0.0 3.187306p 3.566827p 3.572539p 0.035726p 3.572542p 3.572542p 0.0 0.0 0.0
rc 0.033406p 0.888052o 0.049153o 3.118994m 3.619243l 3.624742j 0.036248k 3.624745h 3.624745f 0.0 0.0 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.017508m 0.177025m 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.813330j 0.0 0.0 4.851995j 0.0 0.0 0.0
zp 37.61 ri 0.153623p 1.912583n 0.0 2.430621n 0.326675p 0.003996p 0.016968p 0.171566p 2.26e-10p 0.0 0.0 0.0
sig0.600 cc 0.158767p 2.123469p 0.0 4.472811p 4.816940p 4.821070p 0.048211p 4.821074p 4.821074p 0.0 0.0 0.0

rc 0.153623p 2.054677m 0.110617o 4.418802l 4.745477l 4.749473j 0.064463n 4.938007j 4.938007i 0.0 0.0 0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.689886f 0.0 0.0 5.648777f 0.0 0.0 0.0
zp 38.20 ri 0.007763p 0.610110p 0.0 3.378173n 1.643215n 0.063570p 2.52e-05p 0.000123p 1.80e-08p 0.0 0.0 0.0
sig0.568 cc 0.007744p 0.615731p 0.0 3.938170p 5.585764p 5.649173p 0.056517p 5.649321p 5.649321p 0.0 0.0 0.0
rc 0.007763p 0.617291o 0.020112o 3.962364m 5.605579h 5.669149f 0.056717f 5.669297f 5.669297e 0.0 0.0 0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.243471g 0.0 1.279886i 1.214247i 0.0 0.0 0.0
zp 37.93 ri 0.011002p 0.268145p 0.0 0.766795o 0.197750p 0.005872p 2.14e-06p 9.12e-06p 1.78e-09p 0.0 0.0 0.0
sig0.600 cc 0.010924p 0.276339p 0.0 1.021911p 1.219093p 1.224924p 0.012251p 1.224935p 1.224935p 0.0 0.0 0.0
rc 0.011002p 0.278322p 0.018077o 1.039202n 1.236951i 1.242824g 0.012430g 1.242835f 1.242835f 0.0 0.0 0.0

rb half life from 80eng2; kr, rb, sr, y, zr, nb half lives 89wal; tc half life 90bur1.

1

mass number 96 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 34 se g 35 br g 36 kr g 37 rb g 38 sr d 38 sr g 39 y m 39 y g 40 zr d 40 zr g 41 nb g 42 mo g
half life 0.089s 0.293s 0.199s 0.170s 1.06 s 9.6 s 6.2 s 3.7 s stable 23.4 h stable
lambda 0.0 7.788e+00 2.366e+00 3.483e+00 4.077e+00 6.539e-01 7.220e-02 1.118e-01 1.873e-01 0.0 8.228e-06 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 86.0000 0.0 100.0000 0.0 100.0000 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 26.6000 100.0000 0.0050 100.0000 0.0540 100.0000 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.717458d 0.0 0.0
zp 38.88 ri 0.0 2.05e-09p 6.72e-05p 0.026731p 0.0 1.949592n 2.439850n 0.241305p 0.0 1.061114n 0.007342p 8.88e-06p
sig0.553 cc 0.0 2.05e-09p 6.72e-05p 0.026797p 0.0 1.972822p 2.439735p 4.653849p 0.0 5.714908p 0.007342p 0.007351p
rc 0.0 2.05e-09p 6.72e-05p 0.026798p 0.000820o 1.973459m 2.439877m 4.654640l 0.001718m 5.717473d 0.007342p 0.007351p
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.018859k 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.787352m 0.0 0.0
zp 38.92 ri 1.36e-11p 2.36e-07p 0.000389p 0.064272p 0.0 1.169787n 2.548092m 0.162637p 0.0 0.855122p 0.018879p 0.000142p

sig0.642 cc 1.35e-11p 2.35e-07p 0.000388p 0.064452p 0.0 1.222501p 2.539750p 3.924363p 0.0 4.776715p 0.033440p 0.033583p
rc 1.36e-11p 2.36e-07p 0.000390p 0.064661p 0.003216o 1.228612m 2.548118m 3.939367l 0.001622m 4.796111l 0.018879p 0.019021p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.041939n 0.0 0.0
zp 38.29 ri 1.28e-11p 6.40e-07p 0.003734p 0.308419p 0.0 4.235285m 1.297366n 0.128315p 0.0 0.096983p 0.000106p 1.41e-08p
sig0.545 cc 1.27e-11p 6.39e-07p 0.003731p 0.311822p 0.0 4.505336p 1.296050p 5.929567p 0.0 6.026447p 0.000106p 0.000106p
rc 1.28e-11p 6.40e-07p 0.003735p 0.312153p 0.018845o 4.522583m 1.297486m 5.948383l 0.002697m 6.048063l 0.000106p 0.000106p
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.338050l 0.0 0.0
zp 38.90 ri 7.31e-11p 6.54e-07p 0.000650p 0.075387p 0.0 1.116319n 2.238939m 0.142910p 0.0 0.769821p 0.034983p 0.000199p
sig0.664 cc 7.31e-11p 6.54e-07p 0.000650p 0.076014p 0.0 1.182679p 2.238265p 3.563813p 0.0 4.333396p 0.034973p 0.035171p
rc 7.31e-11p 6.54e-07p 0.000650p 0.076037p 0.004036o 1.185748m 2.238965m 3.567623l 0.001521m 4.338965k 0.034983p 0.035182p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.002211j 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.731666f 0.0 0.0
zp 38.58 ri 0.0 6.22e-08p 0.000541p 0.099762p 0.0 2.389489n 1.783561n 0.176235p 0.0 0.288165p 0.002208p 4.94e-07p
sig0.558 cc 0.0 6.22e-08p 0.000541p 0.100283p 0.0 2.477071p 1.783240p 4.436675p 0.0 4.724784p 0.001138p 0.001138p
rc 0.0 6.22e-08p 0.000541p 0.100302p 0.005159o 2.480909m 1.783620m 4.440764k 0.002233m 4.731162f 0.002208p 0.002209p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.293253f 0.0 0.0
zp 38.36 ri 6.05e-12p 3.47e-07p 0.001843p 0.197713p 0.0 2.726171m 1.167687n 0.115322p 0.0 0.097304p 0.000173p 3.04e-08p
sig0.551 cc 6.04e-12p 3.47e-07p 0.001840p 0.199264p 0.0 2.899644p 1.166017p 4.180982p 0.0 4.278143p 0.000173p 0.000173p
rc 6.05e-12p 3.47e-07p 0.001843p 0.199556p 0.012898o 2.910687l 1.167769m 4.193779i 0.002188m 4.293271f 0.000173p 0.000173p

pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.281074g 0.0 0.0
zp 38.23 ri 7.56e-11p 2.13e-06p 0.004965p 0.346122p 0.0 2.801114m 0.995827p 0.098493p 0.0 0.056684p 9.60e-05p 1.40e-08p
sig0.562 cc 7.55e-11p 2.13e-06p 0.004957p 0.350309p 0.0 3.105669p 0.993663p 4.197607p 0.0 4.254164p 9.58e-05p 9.58e-05p
rc 7.56e-11p 2.13e-06p 0.004968p 0.351089p 0.024713o 3.127764l 0.995926o 4.222183i 0.002231m 4.281098g 9.60e-05p 9.60e-05p
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.75e-05p 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.772442j 0.0 0.0
zp 37.99 ri 1.12e-08p 6.24e-05p 0.024602p 0.765457p 0.0 2.265353n 0.694563p 0.044337p 0.0 0.022854p 5.67e-05p 9.54e-09p
sig0.600 cc 1.11e-08p 6.21e-05p 0.024543p 0.786225p 0.0 2.949115p 0.691185p 3.684417p 0.0 3.707159p 5.54e-05p 5.54e-05p
rc 1.12e-08p 6.24e-05p 0.024665p 0.790122o 0.066315o 3.011173l 0.694660o 3.750170k 0.001757k 3.774781j 5.67e-05p 5.68e-05p
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.486064f 0.0 0.0
zp 38.60 ri 1.38e-12p 1.28e-07p 0.000587p 0.143067p 0.0 2.211829n 2.576176n 0.254493p 0.0 0.311015p 0.002287p 9.19e-07p
sig0.568 cc 1.38e-12p 1.28e-07p 0.000587p 0.143592p 0.0 2.336442p 2.575069p 5.166188p 0.0 5.477066p 0.002286p 0.002286p
rc 1.38e-12p 1.28e-07p 0.000587p 0.143655p 0.006320o 2.341693m 2.576232m 5.172418k 0.002666m 5.486099f 0.002287p 0.002287p
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.595179k 0.0 0.0
zp 38.32 ri 1.55e-10p 1.91e-06p 0.001985p 0.127131p 0.0 0.887634p 0.490564p 0.054509p 0.0 0.041504p 0.000216p 9.92e-08p
sig0.600 cc 1.54e-10p 1.91e-06p 0.001983p 0.128889p 0.0 0.999730p 0.489711p 1.543854p 0.0 1.585285p 0.000215p 0.000215p
rc 1.55e-10p 1.91e-06p 0.001986p 0.129118p 0.009201o 1.007876o 0.490595p 1.552980m 0.000809m 1.595293k 0.000216p 0.000216p

br, kr half lives from 80eng2; rb, sr, y half lives from 89wal1.

mass number 97 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 36 kr g 37 rb g 38 sr d 38 sr g 39 y g 40 zr d 40 zr g 41 nb m 41 nb g 42 mo g 43 tc g 44 ru g

half life 0.1 s 0.169s 0.110s 0.42 s 3.76 s 2.0 s 16.8 h 58.1 s 1.23 h stable 2.6e6y 2.9 d

lambda 6.931e+00 4.101e+00 6.301e+00 1.650e+00 1.843e-01 3.466e-01 1.146e-05 1.193e-02 1.565e-04 0.0 8.454e-15 2.766e-06

z - 1 g 100.0000 100.0000 0.0 73.4000 99.9950 0.0 99.9460 94.0000 6.0000 100.0000 -100.0000 -99.9600

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -0.0400

z - 0 m 0.0 0.0 13.3000 100.0000 0.0 0.2280 100.0000 0.0 100.0000 0.0 0.0 0.0

u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 5.490513i 0.0 0.0 5.427067d 0.0 0.0

zp 39.27 ri 1.79e-06p 0.003081p 0.0 0.540642p 2.639279n 0.0 2.187052m 0.010048p 0.049060p 0.000184p 1.18e-08p 0.0

sig0.553 cc 1.79e-06p 0.003082p 0.0 0.542769p 3.181332p 0.0 5.366833p 5.054983p 5.426597p 5.426783p 1.19e-08p 0.0

rc 1.79e-06p 0.003083p 1.93e-05o 0.542924o 3.182175m 0.001645o 5.369154i 5.057054h 5.428263f 5.428447d 1.18e-08p 0.0

u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 4.716397h 0.0 0.0 4.745206j 0.0 0.0

zp 39.30 ri 3.07e-05p 0.012060p 0.0 0.499837p 2.494600n 0.0 1.682269n 0.016114p 0.130377p 0.001468p 1.50e-06p 1.46e-10p

sig0.642 cc 3.07e-05p 0.012084p 0.0 0.508486p 3.001690p 0.0 4.682142p 4.417523p 4.830409p 4.831897p 1.51e-06p 1.48e-10p

rc 3.07e-05p 0.012091p 0.000167o 0.508879o 3.003454m 0.001859o 4.685960h 4.420916h 4.832451i 4.833920h 1.50e-06p 1.46e-10p

u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 5.579070h 0.0 0.0 4.993764i 0.0 0.0

zp 38.68 ri 0.000207p 0.070639p 0.0 2.341648n 2.599367n 0.0 0.450432p 0.000316p 0.001541p 7.11e-07p 5.25e-12p 0.0

sig0.545 cc 0.000206p 0.070573p 0.0 2.384846p 5.010851p 0.0 5.440599p 5.114495p 5.442552p 5.442553p 5.52e-12p 0.0

rc 0.000207p 0.070846p 0.001319o 2.394968m 4.994215l 0.006286m 5.448236h 5.121657h 5.450093h 5.450093g 5.25e-12p 0.0

pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 4.400810g 0.0 0.0 4.572674l 0.0 0.0

zp 39.30 ri 5.56e-05p 0.015119p 0.0 0.503474p 2.301449n 0.0 1.584674n 0.017645p 0.142773p 0.002120p 3.32e-06p 5.83e-10p

sig0.664 cc 5.56e-05p 0.015171p 0.0 0.514611p 2.815607p 0.0 4.399396p 4.153056p 4.559611p 4.561732p 3.32e-06p 5.82e-10p
rc 5.56e-05p 0.015174p 0.000294o 0.514906o 2.816329m 0.002299o 4.401781g 4.155320g 4.562199h 4.564323h 3.32e-06p 5.83e-10p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.031759j 0.0 0.0 5.171116f 0.0 0.0
zp 38.97 ri 2.76e-05p 0.019369p 0.0 1.160019n 2.960912n 0.0 1.013961p 0.002514p 0.012272p 1.80e-05p 6.16e-10p 0.0
sig0.558 cc 2.76e-05p 0.019391p 0.0 1.174018p 4.134068p 0.0 5.147026p 4.840686p 5.161626p 5.161644p 6.09e-10p 0.0
rc 2.76e-05p 0.019396p 0.000249o 1.174505m 4.135359m 0.003673m 5.150760j 4.844228i 5.165546h 5.165564f 6.16e-10p 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.085250i 0.0 0.0 4.498224f 0.0 0.0
zp 38.74 ri 0.000120p 0.048367p 0.0 1.619589n 2.396526n 0.0 0.400767p 0.000500p 0.002443p 1.46e-06p 1.85e-11p 0.0
sig0.551 cc 0.000121p 0.048912p 0.0 1.670009p 4.025281p 0.0 4.450220p 4.183687p 4.453045p 4.453047p 1.77e-11p 0.0
rc 0.000120p 0.048488p 0.000872o 1.656050m 4.052494l 0.004646m 4.455718i 4.188876h 4.458662g 4.458663f 1.85e-11p 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.769643j 0.0 0.0 4.442434f 0.0 0.0
zp 38.63 ri 0.000369p 0.092537p 0.0 1.899851n 2.162554n 0.0 0.318832p 0.000299p 0.001460p 7.68e-07p 1.14e-11p 0.0
sig0.562 cc 0.000366p 0.092123p 0.0 1.952022p 4.155719p 0.0 4.447246p 4.180719p 4.449056p 4.449056p 1.17e-11p 0.0
rc 0.000369p 0.092906p 0.001843o 1.969887m 4.132342l 0.005277m 4.454220j 4.187265i 4.455979h 4.455980f 1.14e-11p 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.344812h 0.0 3.538709l 3.386179k 0.0 0.0
zp 38.37 ri 0.003074p 0.246231p 0.0 1.745232n 1.319806n 0.0 0.101953p 7.52e-05p 0.000608p 3.17e-07p 1.02e-11p 0.0
sig0.600 cc 0.003075p 0.249335p 0.0 1.930513p 3.247930p 0.0 3.348141p 3.147326p 3.348806p 3.348806p 1.01e-11p 0.0
rc 0.003074p 0.249305p 0.006590o 1.934813m 3.254522j 0.003760n 3.358477h 3.157043h 3.359160h 3.359161h 1.02e-11p 0.0

```
  np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  6.211237g      0.0  6.393973i 6.038619f      0.0       0.0
 zp 39.01 ri 2.97e-05p 0.023731p       0.0  1.103110n 3.816726n       0.0  1.171420n 0.004642p 0.022663p 3.57e-05p 2.46e-09p
0.0
 sig0.568 cc 2.97e-05p 0.023759p       0.0  1.120577p 4.936984p       0.0  6.106312p 5.744518p 6.133279p 6.133316p 2.50e-09p
0.0
          rc 2.97e-05p 0.023761p 0.000327o 1.120878m 4.937547m 0.004331m 6.110633g 5.748636g 6.137937f 6.137973e 2.46e-09p
0.0
  cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  1.666153g      0.0  1.454143k 1.688557h      0.0       0.0
 zp 38.71 ri 0.000199p 0.034390p       0.0  0.601515p 0.869775o       0.0  0.165732p 0.000412p 0.001757p 3.01e-06p 2.20e-10p
0.0
 sig0.600 cc 0.000198p 0.034526p       0.0  0.626137p 1.497054p       0.0  1.661442p 1.562195p 1.663755p 1.663758p 2.19e-10p
0.0
          rc 0.000199p 0.034589p 0.001093o 0.627997o 1.497740l 0.002328o 1.664991g 1.565504g 1.667160g 1.667163f 2.20e-10p
0.0

   kr, rb, sr, y, zr, nb half lives from 89wal1; ru half life 90bur1.
1

     mass number     98                    LA-UR-94-3106 (ENDF-349)                    percent yields
 nuclide       36 kr g   37 rb g   38 sr g   39 y  m   39 y  g   40 zr d   40 zr g   41 nb m   41 nb g   42 mo g   43 tc g   44  ru g
 half life     0.160s    0.107s    0.65 s     2.1 s    0.59 s     1.4 s    30.7 s     51. m     2.9 s    stable    1.5e6y    stable
 lambda       4.332e+00 6.478e+00 1.066e+00 3.301e-01 1.175e+00 4.951e-01 2.258e-02 2.265e-04 2.390e-01       0.0 1.465e-14
0.0
  z - 1 g    100.0000  100.0000   86.7000       0.0  100.0000       0.0   99.7720       0.0  100.0000  100.0000       0.0  100.0000
  z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0  100.0000       0.0       0.0
  z - 0 m        0.0       0.0       0.0    0.1290       0.0    2.0200  100.0000       0.0       0.0       0.0       0.0       0.0
  u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.138014d      0.0       0.0
 zp 39.67 ri 3.10e-08p 0.000145p 0.109337p 0.612074p 0.612082p       0.0  3.566064l 0.049622p 0.175895p 0.003029p 5.28e-07p
1.40e-11p
 sig0.553 cc 3.09e-08p 0.000145p 0.109346p 0.611428p 0.720774p       0.0  4.898247p 0.049569p 5.073991p 5.126586p 5.27e-07p
5.27e-07p
          rc 3.10e-08p 0.000145p 0.109463p 0.612090o 0.721545o 0.011415o 4.909469j 0.049622p 5.085364g 5.138015d 5.28e-07p
5.28e-07p
```

u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.945308m 0.0 0.0
zp 39.69 ri 1.30e-06p 0.001255p 0.123442p 0.690820p 0.690836p 0.0 2.020157n 0.059985p 0.339883p 0.009513p 2.39e-05p 5.85e-09p
sig0.642 cc 1.30e-06p 0.001256p 0.124471p 0.690506p 0.814977p 0.0 3.524647p 0.059957p 3.864402p 3.933868p 2.39e-05p 2.39e-05p
rc 1.30e-06p 0.001256p 0.124531p 0.690853o 0.815368o 0.013974o 3.538493m 0.059985p 3.878376m 3.947874l 2.39e-05p 2.39e-05p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.009153n 0.0 0.0
zp 39.06 ri 1.07e-05p 0.009906p 1.235122n 1.513081n 1.513267n 0.0 1.694884n 0.004290p 0.015211p 3.11e-05p 6.47e-10p 0.0
sig0.545 cc 1.07e-05p 0.009913p 1.243179p 1.512609p 2.755788p 0.0 5.958678p 0.004288p 5.973882p 5.978202p 6.47e-10p 6.47e-10p
rc 1.07e-05p 0.009917p 1.243720m 1.513456m 2.756987l 0.055611o 6.014652l 0.004290p 6.029863k 6.034184k 6.47e-10p 6.47e-10p
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.862702l 0.0 0.0
zp 39.70 ri 3.43e-06p 0.002206p 0.168179p 0.837998p 0.838022p 0.0 2.447066n 0.080952p 0.458343p 0.016323p 6.05e-05p 2.56e-08p
sig0.664 cc 3.43e-06p 0.002208p 0.170000p 0.837557p 1.007557p 0.0 4.290807p 0.080907p 4.749280p 4.846501p 6.05e-05p 6.05e-05p
rc 3.43e-06p 0.002209p 0.170094p 0.838046o 1.008116o 0.017545o 4.308475m 0.080952p 4.766818l 4.864093k 6.05e-05p 6.06e-05p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.501392f 0.0 0.0
zp 39.36 ri 9.56e-07p 0.001873p 0.406516p 1.202889n 1.202943n 0.0 2.562681m 0.020508p 0.072709p 0.000432p 4.23e-08p 0.0
sig0.558 cc 9.54e-07p 0.001869p 0.407027p 1.199661p 1.606688p 0.0 5.373246p 0.020452p 5.445757p 5.466639p 4.21e-08p 4.21e-08p
rc 9.56e-07p 0.001874p 0.408140p 1.202997m 1.611083m 0.034663o 5.407752j 0.020508p 5.480461h 5.501400f 4.23e-08p 4.23e-08p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.799087f 0.0 0.0
zp 39.12 ri 5.90e-06p 0.006550p 0.774532p 1.257272n 1.257410n 0.0 1.433337n 0.005432p 0.019260p 4.72e-05p 1.71e-09p 0.0

sig0.551 cc 5.89e-06p 0.006538p 0.778096p 1.253992p 2.032088p 0.0 4.723672p 0.005418p 4.742879p 4.748344p 1.71e-09p 1.71e-09p
rc 5.90e-06p 0.006556p 0.780216o 1.257550m 2.037626m 0.050495o 4.774363j 0.005432p 4.793623h 4.799103f 1.71e-09p 1.71e-09p
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.833399f 0.0 0.0
zp 39.03 ri 1.90e-05p 0.013840p 0.962679p 1.339584n 1.339769n 0.0 1.108117n 0.004173p 0.014795p 3.12e-05p 1.40e-09p 0.0
sig0.562 cc 1.90e-05p 0.013832p 0.972804p 1.337170p 2.309974p 0.0 4.756940p 0.004165p 4.771706p 4.775902p 1.40e-09p 1.40e-09p
rc 1.90e-05p 0.013859p 0.974695o 1.339958m 2.314464m 0.057157o 4.814420j 0.004173p 4.829215h 4.833419f 1.40e-09p 1.40e-09p
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.709114j 0.0 0.0
zp 38.75 ri 0.000233p 0.049319p 0.857311p 0.748565p 0.748754p 0.0 0.280009p 0.000719p 0.004076p 6.22e-06p 5.58e-10p 0.0
sig0.600 cc 0.000233p 0.049531p 0.899874p 0.748423p 1.648297p 0.0 2.673848p 0.000719p 2.677922p 2.678647p 5.58e-10p 5.58e-10p
rc 0.000233p 0.049553p 0.900273o 0.748948o 1.649027n 0.030536o 2.704760m 0.000719p 2.708836l 2.709561j 5.58e-10p 5.58e-10p
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.106570f 0.0 0.0
zp 39.40 ri 9.73e-07p 0.002457p 0.338529p 1.559030n 1.559077n 0.0 2.451752m 0.035482p 0.125685p 0.000671p 1.49e-07p 1.62e-12p
sig0.568 cc 9.71e-07p 0.002452p 0.339868p 1.555453p 1.895321p 0.0 5.906460p 0.035400p 6.031968p 6.068037p 1.48e-07p 1.48e-07p
rc 9.73e-07p 0.002457p 0.340660p 1.559125m 1.899737m 0.038460o 5.944742j 0.035482p 6.070427h 6.106580f 1.49e-07p 1.49e-07p
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.296398k 0.0 0.0
zp 39.10 ri 1.72e-05p 0.008204p 0.370852p 0.643054p 0.643140p 0.0 0.587392p 0.005413p 0.016238p 7.79e-05p 1.63e-08p 0.0
sig0.600 cc 1.72e-05p 0.008212p 0.377550p 0.642410p 1.019960p 0.0 2.249266p 0.005407p 2.265486p 2.270970p 1.62e-08p 1.62e-08p
rc 1.72e-05p 0.008221p 0.377980p 0.643228o 1.021120o 0.025942o 2.275354m 0.005413p 2.291592l 2.297083k 1.63e-08p 1.63e-08p

kr half life from 80eng2; rb, sr, y, zr, nb half lives from 89wal1.

1

mass number 99 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 38 sr g 39 y g 40 zr d 40 zr g 41 nb m 41 nb g 42 mo g 43 tc m 43 tc g 44 ru g 45 rh g 46 pd g
half life 0.269s 1.47 s 0.80 s 2.2 s 2.6 m 15.0 s 2.748d 6.01 h 2.1e5y stable 15.0 d 21.4m
lambda 2.577e+00 4.715e-01 8.664e-01 3.151e-01 4.443e-03 4.621e-02 2.919e-06 3.204e-05 1.047e-13 0.0 5.348e-07
5.398e-04
z - 1 g 100.0000 99.8710 0.0 97.9800 30.0000 70.0000 100.0000 88.0000 12.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.8420 100.0000 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.685910h 0.0 0.0 4.722607h 0.0 0.0
zp 40.06 ri 0.012582p 0.552512p 0.0 3.360496n 0.697594p 0.060661p 0.024647p 3.18e-06p 1.55e-05p 1.33e-09p 0.0
0.0
sig0.553 cc 0.012581p 0.565039p 0.0 3.914203p 1.871817p 2.800599p 4.697062p 4.133418p 4.697081p 4.697081p 0.0
0.0
rc 0.012582p 0.565078o 0.001069o 3.915228m 1.872162n 2.801321m 4.698130h 4.134358h 4.698149g 4.698149g 0.0
0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.781397i 0.0 0.0 0.0 0.0 0.0
zp 40.08 ri 0.025925p 0.665908p 0.0 2.125728n 0.850967p 0.074000p 0.051165p 3.44e-05p 0.000278p 1.91e-07p 1.11e-11p
0.0
sig0.642 cc 0.025921p 0.691716p 0.0 2.803640p 1.691989p 2.036539p 3.779687p 3.326159p 3.779999p 3.780000p 1.11e-11p
0.0
rc 0.025925p 0.691799o 0.001742o 2.805295m 1.692556n 2.037707m 3.781428h 3.327691h 3.781740h 3.781740h 1.11e-11p
0.0
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.793802h 5.463378l 0.0 0.0 0.0 0.0
zp 39.44 ri 0.290642p 2.462721n 0.0 2.981489n 0.116656p 0.010145p 0.000542p 8.17e-09p 3.99e-08p 0.0 0.0 0.0
sig0.545 cc 0.290656p 2.753116p 0.0 5.678848p 1.820326p 3.985339p 5.806207p 5.109462p 5.806207p 5.806207p 0.0
0.0
rc 0.290642p 2.752988m 0.009235n 5.688102l 1.823086l 3.991816l 5.815445h 5.117591g 5.815445g 5.815445g 0.0
0.0

pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.748949h 0.0 0.0 0.0 0.0 0.0
zp 40.10 ri 0.037494p 0.831137p 0.0 2.588707n 1.125452n 0.097870p 0.083117p 7.94e-05p 0.000642p 7.32e-07p 8.25e-11p
0.0
sig0.664 cc 0.037488p 0.868448p 0.0 3.439895p 2.157301p 2.505781p 4.746187p 4.176724p 4.746908p 4.746909p 8.25e-11p
0.0
rc 0.037494p 0.868583o 0.002832o 3.442576m 2.158225l 2.507673m 4.749016h 4.179213h 4.749737h 4.749738h 8.26e-11p
0.0
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.873397h 0.0 0.0 6.148585j 0.0 0.0
zp 39.74 ri 0.083940p 1.632181n 0.0 3.793452n 0.409368p 0.035600p 0.005353p 3.46e-07p 1.69e-06p 5.52e-11p 0.0
0.0
sig0.558 cc 0.083918p 1.715567p 0.0 5.474901p 2.051759p 3.868021p 5.925132p 5.214116p 5.925134p 5.925134p 0.0
0.0
rc 0.083940p 1.716013m 0.005798o 5.480600m 2.053548n 3.872019l 5.930920h 5.219210h 5.930922h 5.930922g 0.0
0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.678076i 0.0 0.0 5.357531i 0.0 0.0
zp 39.50 ri 0.215636p 2.284420n 0.0 2.899062n 0.156889p 0.013639p 0.000888p 2.10e-08p 1.03e-07p 1.17e-12p 0.0
0.0
sig0.551 cc 0.215093p 2.493488p 0.0 5.348942p 1.761138p 3.757864p 5.519887p 4.857501p 5.519887p 5.519887p 0.0
0.0
rc 0.215636p 2.499777m 0.009232n 5.357576l 1.764162m 3.763942l 5.528991i 4.865512i 5.528992i 5.528992h 0.0
0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.436815i 0.0 0.0
zp 39.43 ri 0.289830p 2.540079n 0.0 2.509023n 0.131940p 0.011474p 0.000681p 2.00e-08p 9.75e-08p 1.29e-12p 0.0
0.0
sig0.562 cc 0.289679p 2.828063p 0.0 5.281496p 1.716331p 3.708515p 5.425527p 4.774463p 5.425527p 5.425527p 0.0
0.0
rc 0.289830p 2.829535m 0.012310n 5.293712l 1.720054l 3.717072l 5.437807k 4.785270k 5.437807j 5.437807i 0.0 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.048428f 0.0 0.0 0.0 0.0 0.0
zp 39.13 ri 0.296860p 1.215193n 0.0 0.536644p 0.021535p 0.001873p 8.21e-05p 2.25e-09p 1.82e-08p 0.0 0.0 0.0
sig0.600 cc 0.296686p 1.510784p 0.0 2.017811p 0.626866p 1.414339p 2.041287p 1.796332p 2.041287p 2.041287p 0.0
0.0

rc 0.296860p 1.511671m 0.007183o 2.024962m 0.629024m 1.419346l 2.048452f 1.802638f 2.048452f 2.048452f 0.0
0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 6.142137h 0.0 0.0 6.038463i 0.0 0.0
zp 39.78 ri 0.073416p 1.830616n 0.0 3.611788n 0.576580p 0.050142p 0.007641p 8.81e-07p 4.30e-06p 1.79e-10p 0.0
0.0
sig0.568 cc 0.073397p 1.903445p 0.0 5.477391p 2.219698p 3.884302p 6.111639p 5.378243p 6.111645p 6.111645p 0.0
0.0
rc 0.073416p 1.903938m 0.006412o 5.483679m 2.221684m 3.888717l 6.118042h 5.383878h 6.118047g 6.118047g 0.0
0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.770221k 0.0 2.632412f 0.0 0.0 2.635506i 0.0 0.0
zp 39.49 ri 0.135035p 1.149395n 0.0 1.249168n 0.107266p 0.009327p 0.001144p 1.29e-07p 5.48e-07p 3.33e-11p 0.0
0.0
sig0.600 cc 0.134916p 1.283125p 0.0 2.507608p 0.859454p 1.764645p 2.625241p 2.310212p 2.625242p 2.625242p 0.0
0.0
rc 0.135035p 1.284255m 0.006848o 2.514329k 0.861565k 1.769358j 2.632067f 2.316219f 2.632067f 2.632067f 0.0
0.0

nb decay from 71har1; sr, y, zr, nb, mo, tc half lives 89wal1.
1

mass number 100 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 36 kr g 37 rb g 38 sr g 39 y g 40 zr g 41 nb m 41 nb g 42 mo g 43 tc g 44 ru g
half life 0.053s 0.201s 0.73 s 7.1 s 3.0 s 1.5 s stable 16. s stable
lambda 0.0 1.308e+01 3.448e+00 9.495e-01 9.763e-02 2.310e-01 4.621e-01 0.0 4.332e-02 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 99.1580 50.0000 50.0000 100.0000 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.357285d 0.0 0.0
zp 40.45 ri 2.48e-12p 1.39e-07p 0.001169p 0.125798p 2.774188n 0.647329p 0.647329p 0.162542p 0.000313p 9.86e-08p
sig0.553 cc 2.48e-12p 1.39e-07p 0.001169p 0.126967p 2.900086p 2.097372p 2.097372p 4.357285p 0.000313p 0.000313p
rc 2.48e-12p 1.39e-07p 0.001169p 0.126967p 2.900086m 2.097372m 2.097372m 4.357285d 0.000313p 0.000313p
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.084341m 0.0 0.0

zp 40.46 ri 1.04e-09p 6.08e-06p 0.003452p 0.203472p 1.410572n 0.653790p 0.653790p 0.161002p 0.002306p 3.41e-06p
sig0.642 cc 1.04e-09p 6.08e-06p 0.003458p 0.206930p 1.615760p 1.461670p 1.461670p 3.084341p 0.002306p 0.002309p
rc 1.04e-09p 6.08e-06p 0.003458p 0.206930p 1.615760m 1.461670n 1.461670n 3.084341l 0.002306p 0.002309p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.776083n 0.0 0.0
zp 39.83 ri 3.36e-09p 3.74e-05p 0.050157p 1.046651n 4.252337n 0.214322p 0.214322p 0.007493p 1.89e-06p 5.62e-11p
sig0.545 cc 3.36e-09p 3.74e-05p 0.050194p 1.096845p 5.339946p 2.884295p 2.884295p 5.776082p 1.89e-06p 1.89e-06p
rc 3.36e-09p 3.74e-05p 0.050194p 1.096845m 5.339946m 2.884295m 2.884295m 5.776082k 1.89e-06p 1.89e-06p
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.114614l 0.0 0.0
zp 40.50 ri 4.25e-09p 1.57e-05p 0.006558p 0.329753p 2.220169n 1.113866n 1.113866n 0.333219p 0.006676p 1.61e-05p
sig0.664 cc 4.25e-09p 1.57e-05p 0.006573p 0.336327p 2.553664p 2.390698p 2.390698p 5.114614p 0.006676p 0.006693p
rc 4.25e-09p 1.57e-05p 0.006573p 0.336327p 2.553664m 2.390698l 2.390698l 5.114614k 0.006676p 0.006693p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.811398f 0.0 0.0
zp 40.12 ri 3.21e-10p 6.64e-06p 0.014022p 0.674524p 4.813639n 0.631045p 0.631045p 0.052914p 5.30e-05p 5.54e-09p
sig0.558 cc 3.21e-10p 6.64e-06p 0.014029p 0.688553p 5.496395p 3.379242p 3.379242p 6.811398p 5.30e-05p 5.30e-05p
rc 3.21e-10p 6.64e-06p 0.014029p 0.688553o 5.496395m 3.379242m 3.379242m 6.811398f 5.30e-05p 5.30e-05p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.960369f 0.0 0.0
zp 39.89 ri 2.54e-09p 3.22e-05p 0.039285p 1.057124n 4.260263n 0.300532p 0.300532p 0.011833p 4.91e-06p 1.92e-10p
sig0.551 cc 2.54e-09p 3.22e-05p 0.039317p 1.096442p 5.347472p 2.974268p 2.974268p 5.960369p 4.91e-06p 4.91e-06p
rc 2.54e-09p 3.22e-05p 0.039317p 1.096442m 5.347472m 2.974268m 2.974268m 5.960369f 4.91e-06p 4.91e-06p
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.084156f 0.0 0.0
zp 39.82 ri 1.16e-08p 9.26e-05p 0.063267p 1.398658n 4.057974n 0.283554p 0.283554p 0.009367p 4.66e-06p 1.93e-10p
sig0.562 cc 1.16e-08p 9.26e-05p 0.063359p 1.462017p 5.507681p 3.037395p 3.037395p 6.084156p 4.66e-06p 4.66e-06p
rc 1.16e-08p 9.26e-05p 0.063359p 1.462017m 5.507681m 3.037395m 3.037395m 6.084156f 4.66e-06p 4.66e-06p
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.638174i 0.0 0.0
zp 39.47 ri 5.95e-07p 0.000830p 0.085612p 0.766691p 0.720972p 0.035328p 0.035328p 0.000594p 3.68e-07p 1.55e-11p
sig0.600 cc 5.95e-07p 0.000830p 0.086442p 0.853134p 1.566923p 0.818790p 0.818790p 1.638174p 3.68e-07p 3.68e-07p
rc 5.95e-07p 0.000830p 0.086442p 0.853134o 1.566923n 0.818790n 0.818790n 1.638174i 3.68e-07p 3.68e-07p
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.436294g 0.0 0.0
zp 40.17 ri 3.21e-10p 8.13e-06p 0.010390p 0.751153p 3.864832n 0.877021p 0.877021p 0.062281p 0.000133p 1.49e-08p

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sig0.568 cc 3.21e-10p 8.13e-06p 0.010398p 0.761552p 4.619971p 3.187006p 3.187006p 6.436294p 0.000133p 0.000133p
         rc 3.21e-10p 8.13e-06p 0.010398p 0.761552o 4.619971m 3.187006m 3.187006m 6.436294g 0.000133p 0.000133p
 cf252s  xi      0.0       0.0       0.0       0.0  1.865299l      0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.505381k      0.0       0.0
zp 39.89 ri 2.69e-08p 0.000105p 0.035189p 0.778052p 2.056129n 0.285334p 0.285334p 0.014843p 2.53e-05p 3.66e-09p
sig0.600 cc 2.77e-08p 0.000107p 0.036251p 0.835408p 2.940278p 1.717354p 1.717354p 3.447953p 2.25e-05p 2.25e-05p
         rc 2.69e-08p 0.000105p 0.035293p 0.813346p 2.862626n 1.716647n 1.716647n 3.448136j 2.53e-05p 2.53e-05p

  rb, sr, y, zr, nb half lives from 89wal1.
1

    mass number    101                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       38 sr g   39 y  g   40 zr g   41 nb g   42 mo g   43 tc g   44 ru g   45 rh m   45 rh g   46 pd g
half life     0.115s    0.43 s     2.1 s     7.1 s    14.6 m    14.2 m    stable    4.47 d     3.  y     8.3 h
lambda      6.027e+00 1.612e+00 3.301e-01 9.763e-02 7.913e-04 8.136e-04       0.0 1.795e-06 7.327e-09 2.320e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  -90.0000 -100.0000       0.0
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0 -100.0000
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   10.0000       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  3.893542f      0.0       0.0       0.0
zp 40.84 ri 5.54e-05p 0.025163p 1.267494n 2.034889n 0.561471p 0.004466p 3.69e-06p 5.01e-11p 1.03e-11p       0.0
sig0.553 cc 5.54e-05p 0.025218p 1.292712p 3.327601p 3.889072p 3.893539p 3.893542p 5.01e-11p 1.53e-11p       0.0
         rc 5.54e-05p 0.025218p 1.292712m 3.327601l 3.889072j 3.893539h 3.893542f 5.01e-11p 1.53e-11p       0.0
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.743739m      0.0       0.0       0.0
zp 40.84 ri 0.000362p 0.049806p 0.765227p 1.509756n 0.405174p 0.013369p 4.73e-05p 1.47e-08p 1.81e-09p       0.0
sig0.642 cc 0.000362p 0.050168p 0.815395p 2.325150p 2.730324p 2.743692p 2.743740p 1.47e-08p 3.28e-09p       0.0
         rc 0.000362p 0.050168p 0.815395o 2.325150m 2.730324m 2.743692m 2.743740l 1.47e-08p 3.28e-09p       0.0
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  5.189118i 5.399704l 5.456173n      0.0       0.0       0.0
zp 40.21 ri 0.004973p 0.397354p 3.564813n 1.209212n 0.052633p 5.62e-05p 4.72e-09p       0.0       0.0       0.0
sig0.545 cc 0.004979p 0.402768p 3.971488p 5.176296p 5.228986p 5.229041p 5.229041p       0.0       0.0       0.0
         rc 0.004973p 0.402327p 3.967140m 5.176352k 5.228985i 5.229041i 5.229041i       0.0       0.0       0.0
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  4.997584l      0.0       0.0       0.0
zp 40.90 ri 0.000741p 0.086006p 1.275079n 2.717366n 0.878254p 0.039911p 0.000227p 1.32e-07p 1.64e-08p 1.08e-11p
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sig0.664 cc 0.000741p 0.086747p 1.361826p 4.079192p 4.957446p 4.997357p 4.997584p 1.32e-07p 2.96e-08p 1.08e-11p
        rc 0.000741p 0.086747p 1.361826m 4.079192m 4.957446m 4.997357l 4.997584k 1.32e-07p 2.96e-08p 1.08e-11p
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  6.479862h      0.0       0.0       0.0
zp 40.51 ri 0.001112p 0.196633p 3.311292n 2.691177n 0.278592p 0.001055p 3.13e-07p 2.11e-12p       0.0       0.0
sig0.558 cc 0.001112p 0.197746p 3.509037p 6.200215p 6.478807p 6.479862p 6.479862p 2.11e-12p       0.0       0.0
        rc 0.001112p 0.197746p 3.509037m 6.200215l 6.478807k 6.479862j 6.479862h 2.12e-12p       0.0       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  6.490907e      0.0       0.0       0.0
zp 40.28 ri 0.004356p 0.433571p 4.102039n 1.855415n 0.095370p 0.000157p 1.81e-08p       0.0       0.0       0.0
sig0.551 cc 0.004356p 0.437927p 4.539966p 6.395381p 6.490751p 6.490907p 6.490907p       0.0       0.0       0.0
        rc 0.004356p 0.437927p 4.539966m 6.395381k 6.490751i 6.490907g 6.490907e       0.0       0.0       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.990136i      0.0       0.0       0.0
zp 40.20 ri 0.007888p 0.570012p 3.796313n 1.550296n 0.065512p 0.000115p 1.35e-08p       0.0       0.0       0.0
sig0.562 cc 0.007888p 0.577901p 4.374213p 5.924509p 5.990021p 5.990136p 5.990136p       0.0       0.0       0.0
        rc 0.007888p 0.577901o 4.374213m 5.924509l 5.990021l 5.990136k 5.990136i       0.0       0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  1.677860l      0.0  1.331016i      0.0       0.0       0.0
zp 39.70 ri 0.030425p 0.469201p 0.733584p 0.122728p 0.001848p 1.87e-06p 1.46e-10p       0.0       0.0       0.0
sig0.600 cc 0.030425p 0.499626p 1.233209p 1.355938p 1.357785p 1.357787p 1.357787p       0.0       0.0       0.0
        rc 0.030425p 0.499626o 1.233210o 1.355938n 1.357785l 1.357787k 1.357787i       0.0       0.0       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  6.124369f      0.0       0.0       0.0
zp 40.56 ri 0.000861p 0.187045p 2.606701n 3.027654n 0.300137p 0.001970p 7.03e-07p 1.03e-11p 2.12e-12p       0.0
sig0.568 cc 0.000861p 0.187906p 2.794606p 5.822260p 6.122398p 6.124368p 6.124369p 1.03e-11p 3.15e-12p       0.0
        rc 0.000861p 0.187906p 2.794606m 5.822260l 6.122398j 6.124368h 6.124369f 1.03e-11p 3.15e-12p       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  3.778211i 4.051304i 3.979056i      0.0       0.0       0.0
zp 40.29 ri 0.005663p 0.336414p 2.199014n 1.303129n 0.089282p 0.000446p 1.90e-07p 3.61e-12p       0.0       0.0
sig0.600 cc 0.005726p 0.345907p 2.569544p 3.843231p 3.933513p 3.933948p 3.933948p 3.50e-12p 1.17e-12p       0.0
        rc 0.005663p 0.342076p 2.541090m 3.844219k 3.933501i 3.933948h 3.933948g 3.62e-12p 1.21e-12p       0.0

  sr, y, zr, nb, mo, tc half lives from 89wal1.
1
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mass number 102 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 38 sr g 39 y g 40 zr g 41 nb g 42 mo d 42 mo g 43 tc m 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g

half life 0.068s 0.36 s 2.9 s 1.3 s 1.5 s 11.3 m 4.4 m 5.3 s stable 3. y 207. d stable

lambda 1.019e+01 1.925e+00 2.390e-01 5.332e-01 4.621e-01 1.022e-03 2.626e-03 1.308e-01 0.0 7.327e-09 3.876e-08 0.0

z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 100.0000 100.0000 0.0 100.0000 -100.0000 -84.0000 16.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 95.0000 0.0 0.0 0.0

z - 0 m 0.0 0.0 0.0 0.0 0.0140 100.0000 0.0 5.0000 0.0 0.0 0.0 0.0

u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.935481f 0.0 0.0 0.0

zp 41.23 ri 1.60e-06p 0.001878p 0.378380p 1.285987n 0.0 1.245536m 0.011768p 0.011768p 8.37e-05p 1.83e-09p 1.83e-09p 0.0

sig0.553 cc 1.60e-06p 0.001879p 0.380256p 1.666229p 0.0 2.911783p 2.923551p 0.157946p 2.935403p 1.83e-09p 1.83e-09p 2.92e-10p

rc 1.60e-06p 0.001879p 0.380260p 1.666247m 7.80e-05o 2.911861j 2.923629h 0.157950k 2.935481f 1.83e-09p 1.83e-09p 2.92e-10p

u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.507210m 0.0 0.0 0.0

zp 41.22 ri 2.79e-05p 0.009130p 0.317734p 1.347001n 0.0 0.775001p 0.028858p 0.028858p 0.000483p 2.05e-07p 2.05e-07p 3.31e-11p

sig0.642 cc 2.79e-05p 0.009158p 0.326890p 1.673884p 0.0 2.448894p 2.477752p 0.152745p 2.507093p 2.05e-07p 2.05e-07p 3.28e-08p

rc 2.79e-05p 0.009158p 0.326892p 1.673892m 0.000168n 2.449062m 2.477920m 0.152754n 2.507262l 2.05e-07p 2.05e-07p 3.28e-08p

u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.196271n 0.0 0.0 0.0

zp 40.60 ri 0.000391p 0.084170p 2.741403n 2.036966n 0.0 0.332244p 0.000475p 0.000475p 3.47e-07p 0.0 0.0 0.0

sig0.545 cc 0.000391p 0.084561p 2.825964p 4.862930p 0.0 5.195175p 5.195650p 0.260258p 5.196126p 0.0 0.0 0.0

rc 0.000391p 0.084561p 2.825965m 4.862931l 0.000461n 5.195635l 5.196111l 0.260281l 5.196586l 0.0 0.0 0.0

pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.476614l 0.0 0.0 0.0

zp 41.30 ri 6.67e-05p 0.018124p 0.603693p 2.759041n 0.0 1.900843n 0.096053p 0.096053p 0.002539p 1.99e-06p 1.99e-06p 6.98e-10p

sig0.664 cc 6.67e-05p 0.018191p 0.621881p 3.380910p 0.0 5.281770p 5.377822p 0.364943p 5.476416p 1.99e-06p 1.99e-06p 3.19e-07p

rc 6.67e-05p 0.018191p 0.621884o 3.380925m 0.000269n 5.282038l 5.378091l 0.364957n 5.476686k 1.99e-06p 1.99e-06p 3.19e-07p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.667159h 0.0 0.0 0.0
zp 40.90 ri 6.92e-05p 0.033313p 1.930589n 3.505323n 0.0 1.185448n 0.005924p 0.005924p 1.37e-05p 1.60e-10p 1.60e-10p 0.0
sig0.558 cc 6.92e-05p 0.033382p 1.963960p 5.469264p 0.0 6.654742p 6.660666p 0.338957p 6.666604p 1.60e-10p 1.60e-10p 2.57e-11p
rc 6.92e-05p 0.033382p 1.963971m 5.469294m 0.000560n 6.655302k 6.661226j 0.338985j 6.667164h 1.60e-10p 1.60e-10p 2.57e-11p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.865604e 0.0 0.0 0.0
zp 40.68 ri 0.000319p 0.090597p 3.019979n 3.173557n 0.0 0.577770p 0.001355p 0.001355p 1.31e-06p 5.80e-12p 5.80e-12p 0.0
sig0.551 cc 0.000319p 0.090915p 3.110815p 6.284423p 0.0 6.862223p 6.863579p 0.344534p 6.864936p 5.80e-12p 5.80e-12p 0.0
rc 0.000319p 0.090917p 3.110896m 6.284453l 0.000668n 6.862892i 6.864247g 0.344568g 6.865604e 5.80e-12p 5.80e-12p 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.420279i 0.0 0.0 0.0
zp 40.58 ri 0.000790p 0.151591p 3.074875n 2.818284n 0.0 0.372259p 0.000879p 0.000879p 7.44e-07p 4.18e-12p 4.18e-12p 0.0
sig0.562 cc 0.000790p 0.152381p 3.227246p 6.045522p 0.0 6.417799p 6.418678p 0.321813p 6.419557p 4.18e-12p 4.18e-12p 0.0
rc 0.000790p 0.152381p 3.227256m 6.045540l 0.000747n 6.418546l 6.419424k 0.321850k 6.420304i 4.18e-12p 4.18e-12p 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.023858i 0.0 0.0 0.0
zp 40.05 ri 0.004935p 0.177946p 0.607813p 0.224963p 0.0 0.008059p 1.15e-05p 1.15e-05p 4.62e-09p 0.0 0.0 0.0
sig0.600 cc 0.004935p 0.182879p 0.790685p 1.015657p 0.0 1.023716p 1.023728p 0.051198p 1.023739p 0.0 0.0 0.0
rc 0.004935p 0.182882p 0.790695o 1.015657n 0.000119o 1.023836m 1.023847k 0.051204k 1.023859i 0.0 0.0 0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.769296g 0.0 0.0 0.0
zp 40.95 ri 4.52e-05p 0.030347p 1.197514n 3.575397n 0.0 0.947005p 0.009244p 0.009244p 2.09e-05p 6.00e-10p 6.00e-10p 0.0

sig0.568 cc 4.52e-05p 0.030391p 1.227882p 4.803210p 0.0 5.750309p 5.759553p 0.297222p 5.768817p 6.00e-10p 6.00e-10p 9.60e-11p
rc 4.52e-05p 0.030392p 1.227906m 4.803303m 0.000479n 5.750787k 5.760031i 0.297246i 5.769296g 6.00e-10p 6.00e-10p 9.60e-11p
cf252s xi 0.0 0.0 1.455938l 0.0 0.0 0.468344l 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.957810i 0.0 0.0 4.599272k 0.0 0.0 0.0
zp 40.71 ri 0.000478p 0.082624p 1.446061n 2.038202m 0.0 0.464251l 0.002941p 0.002941p 7.61e-06p 2.78e-10p 2.78e-10p 0.0
sig0.600 cc 0.000479p 0.083285p 1.532524p 3.633430p 0.0 4.031918p 4.034708p 0.204525p 4.037505p 2.64e-10p 2.64e-10p 4.22e-11p
rc 0.000478p 0.083102p 1.529163n 3.567365j 0.000549o 4.032165h 4.035106h 0.204696i 4.038054h 2.78e-10p 2.78e-10p 4.45e-11p

rb, sr, y, zr, nb, mo, tc half lives from 89wal1.
1

mass number 103 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 39 y g 40 zr g 41 nb d 41 nb g 42 mo d 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g 47 ag g
half life 0.260s 1.3 s 2.573s 1.5 s 4.8 s 1.13 m 54. s 39.27d 56.12m stable 16.99d 1.10 h
lambda 2.666e+00 5.332e-01 2.694e-01 4.621e-01 1.444e-01 1.022e-02 1.284e-02 2.043e-07 2.059e-04 0.0 4.722e-07 1.750e-04
z - 1 g 100.0000 100.0000 0.0 100.0000 0.0 99.9860 100.0000 100.0000 99.0000 1.0000 -0.1000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -99.9000 0.0
z - 0 m 0.0 0.0 0.1820 100.0000 0.0410 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.646390i 0.0 1.726838k 0.0 0.0
zp 41.62 ri 8.18e-05p 0.041000p 0.0 0.516345p 0.0 1.032861n 0.073418p 0.000657p 1.14e-07p 1.56e-08p 2.27e-12p 0.0
sig0.553 cc 8.20e-05p 0.041193p 0.0 0.558933p 0.0 1.590010p 1.663626p 1.664285p 1.647642p 1.664285p 2.22e-12p 0.0
rc 8.18e-05p 0.041082p 2.28e-07o 0.557428o 5.72e-05o 1.590267l 1.663685k 1.664343i 1.647700i 1.664343i 2.27e-12p 0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.570961i 0.0 2.285612l 0.0 0.0
zp 41.54 ri 0.001858p 0.130801p 0.0 1.070210n 0.0 1.160477n 0.165729p 0.002889p 4.46e-06p 3.88e-07p 8.34e-10p 0.0

sig0.642 cc 0.001854p 0.132369p 0.0 1.200262p 0.0 2.360312p 2.528913p 2.531796p 2.506483p 2.531801p 8.81e-10p 0.0
rc 0.001858p 0.132660p 9.18e-05o 1.202962m 0.000281o 2.363551l 2.529280k 2.532169i 2.506852i 2.532174i 8.34e-10p 0.0
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.156222i 0.0 0.0
zp 40.98 ri 0.011937p 0.950103p 0.0 2.326875n 0.0 0.857082p 0.009585p 9.60e-06p 1.67e-10p 2.28e-11p 0.0 0.0
sig0.545 cc 0.011937p 0.962011p 0.0 3.288912p 0.0 4.145537p 4.155122p 4.155131p 4.113580p 4.155131p 0.0 0.0
rc 0.011937p 0.962040o 0.000463o 3.289378m 0.000692n 4.146692m 4.156276m 4.156286m 4.114723k 4.156286i 0.0 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.216204i 0.0 5.138026l 0.0 0.0
zp 41.72 ri 0.002125p 0.168974p 0.0 1.751776n 0.0 2.658198n 0.607408p 0.019180p 6.78e-05p 5.89e-06p 3.26e-08p 1.58e-12p
sig0.664 cc 0.002125p 0.171054p 0.0 1.922385p 0.0 4.579681p 5.188217p 5.207391p 5.155386p 5.207466p 3.28e-08p 1.59e-12p
rc 0.002125p 0.171099p 6.36e-05o 1.922939m 0.000364o 4.581232l 5.188639k 5.207819i 5.155809i 5.207893h 3.26e-08p 1.58e-12p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.669660j 0.0 6.533529j 0.0 0.0
zp 41.28 ri 0.004118p 0.600481p 0.0 3.395416n 0.0 2.525766n 0.086692p 0.000268p 2.10e-08p 2.87e-09p 0.0 0.0
sig0.558 cc 0.004114p 0.604023p 0.0 3.996278p 0.0 6.525304p 6.611913p 6.612181p 6.546060p 6.612181p 0.0 0.0
rc 0.004118p 0.604600o 0.000268o 4.000284m 0.000859n 6.526348l 6.613040k 6.613308j 6.547175j 6.613308i 0.0 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.088870i 0.0 6.919988i 0.0 0.0
zp 41.09 ri 0.011419p 1.049009p 0.0 3.711385n 0.0 1.704088n 0.030959p 4.58e-05p 1.68e-09p 2.29e-10p 0.0 0.0
sig0.551 cc 0.011466p 1.064816p 0.0 4.791701p 0.0 6.475103p 6.506190p 6.506236p 6.441174p 6.506236p 0.0 0.0
rc 0.011419p 1.060428o 0.000551o 4.772364m 0.001237n 6.477021l 6.507980k 6.508026i 6.442946i 6.508026h 0.0 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.544046k 0.0 0.0
zp 40.96 ri 0.028777p 1.457786n 0.0 3.845791n 0.0 1.191778n 0.018786p 2.22e-05p 7.98e-10p 1.09e-10p 0.0 0.0
sig0.562 cc 0.028776p 1.486511p 0.0 5.332355p 0.0 6.523385p 6.542171p 6.542193p 6.476771p 6.542193p 0.0 0.0
rc 0.028777p 1.486563m 0.000838o 5.333192m 0.001372n 6.525595l 6.544381l 6.544403l 6.478959k 6.544403j 0.0 0.0

th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.990619j 0.0 0.833834i 0.0 0.0
zp 40.43 ri 0.053552p 0.436845p 0.0 0.361714p 0.0 0.033542p 0.000255p 1.42e-07p 4.52e-12p 0.0 0.0 0.0
sig0.600 cc 0.052699p 0.482584p 0.0 0.852649p 0.0 0.885538p 0.885788p 0.885788p 0.876931p 0.885788p 0.0 0.0
rc 0.053552p 0.490397p 0.000521o 0.852632o 0.000339o 0.886393n 0.886648l 0.886648j 0.877782j 0.886648h 0.0
0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.747463g 0.0 4.936160h 0.0 0.0
zp 41.34 ri 0.003301p 0.383979p 0.0 3.033936n 0.0 2.020477n 0.115993p 0.000406p 6.15e-08p 8.39e-09p 0.0 0.0
sig0.568 cc 0.003268p 0.383404p 0.0 3.387010p 0.0 5.442384p 5.557217p 5.557619p 5.502043p 5.557619p 0.0 0.0
rc 0.003301p 0.387280p 0.000113o 3.421329m 0.000577n 5.441905k 5.557898i 5.558304g 5.502721g 5.558304f 0.0
0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.247347m 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.407573g 0.0 5.584526i 0.0 0.0
zp 41.12 ri 0.017756p 0.843362n 0.0 3.060788n 0.0 1.467782n 0.056554p 0.000131p 9.48e-09p 1.42e-09p 0.0 0.0
sig0.600 cc 0.017755p 0.861105p 0.0 3.921846p 0.0 5.389056p 5.445609p 5.445824p 5.391365p 5.445824p 0.0 0.0
rc 0.017756p 0.861118p 0.000411p 3.922317p 0.000973o 5.390522p 5.447076p 5.447208g 5.392736g 5.447208f 0.0
0.0

y half life from 80eng2; zr, nb, mo, tc, ru, rh half lives 89wal1; pd half life 90bur1.

1

mass number 104 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 38 sr g 39 y g 40 zr g 41 nb d 41 nb g 42 mo d 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g
half life 0.163s 0.128s 1.2 s 0.493s 4.8 s 2.8 s 60. s 18.2 m stable 4.35 m 42. s stable
lambda 4.252e+00 5.415e+00 5.776e-01 1.406e+00 1.444e-01 2.476e-01 1.155e-02 6.348e-04 0.0 2.656e-03 1.650e-02
0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 99.8180 0.0 99.9590 100.0000 100.0000 0.0 -0.5000 99.5000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1800
z - 0 m 0.0 0.0 0.0 1.0880 100.0000 2.2320 100.0000 0.0 0.0 0.0 99.8200 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.279155e 0.0 0.0 0.0
zp 41.81 ri 0.0 1.44e-11p 0.000125p 0.0 0.139443p 0.0 1.120326k 0.018336p 9.79e-07p 0.0 0.0 0.0
sig0.350 cc 0.0 1.44e-11p 0.000125p 0.0 0.139502p 0.0 1.259846p 1.278173p 1.278174p 0.0 0.0 0.0
rc 0.0 1.44e-11p 0.000125p 7.55e-08o 0.139568p 0.000981o 1.260819i 1.279154g 1.279155e 0.0 0.0 0.0

u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.977385m 0.0 0.0 0.0
zp 41.75 ri 4.00e-07p 0.000444p 0.049998p 0.0 0.634907p 0.0 1.045874n 0.233969p 0.006348p 1.55e-05p 2.74e-06p 5.15e-09p
sig0.642 cc 4.00e-07p 0.000444p 0.050411p 0.0 0.684867p 0.0 1.730929p 1.964824p 1.971168p 1.55e-05p 1.82e-05p 1.82e-05p
rc 4.00e-07p 0.000445p 0.050442p 0.000132o 0.685390o 0.007249o 1.738232m 1.972201m 1.978549l 1.55e-05p 1.83e-05p 1.82e-05p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.535502n 0.0 0.0 0.0
zp 41.37 ri 3.18e-07p 0.000794p 0.253539p 0.0 1.434278n 0.0 1.789622n 0.050627p 0.000215p 9.58e-09p 2.70e-09p 0.0
sig0.545 cc 3.18e-07p 0.000794p 0.254200p 0.0 1.687269p 0.0 3.477105p 3.527705p 3.527920p 9.57e-09p 1.23e-08p 1.22e-08p
rc 3.18e-07p 0.000794p 0.254333p 8.82e-06o 1.688157m 0.012173o 3.489260l 3.539887l 3.540101l 9.58e-09p 1.23e-08p 1.22e-08p
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.441902l 0.0 0.0 0.0
zp 42.15 ri 1.03e-07p 0.000176p 0.034742p 0.0 0.852245p 0.0 2.919886n 1.516716n 0.113867p 0.000934p 0.000165p 1.24e-06p
sig0.664 cc 1.03e-07p 0.000176p 0.034909p 0.0 0.886891p 0.0 3.806885p 5.323366p 5.437211p 0.000933p 0.001096p 0.001094p
rc 1.03e-07p 0.000176p 0.034918p 4.19e-05o 0.887141o 0.005083o 3.811746m 5.328463l 5.442335k 0.000934p 0.001097p 0.001094p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.839577h 0.0 0.0 0.0
zp 41.66 ri 5.65e-08p 0.000279p 0.147099p 0.0 1.948112n 0.0 4.370930m 0.353024p 0.003969p 7.64e-07p 2.16e-07p 2.43e-11p
sig0.558 cc 5.64e-08p 0.000279p 0.147211p 0.0 2.092898p 0.0 6.465344p 6.818322p 6.822286p 7.63e-07p 9.77e-07p 9.74e-07p
rc 5.65e-08p 0.000279p 0.147378p 0.000176o 2.095398m 0.017157o 6.482626l 6.835650j 6.839619h 7.64e-07p 9.78e-07p 9.75e-07p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.306441e 0.0 0.0 0.0
zp 41.50 ri 2.23e-07p 0.000819p 0.301879p 0.0 2.713395n 0.0 4.059251l 0.202419p 0.001243p 1.18e-07p 3.32e-08p 1.69e-12p

sig0.551 cc 2.23e-07p 0.000817p 0.301901p 0.0 3.007718p 0.0 7.074004p 7.275983p 7.277223p 1.18e-07p 1.51e-07p 1.50e-07p
rc 2.23e-07p 0.000820p 0.302698p 0.000406o 3.015948m 0.028818n 7.102781j 7.305200g 7.306442e 1.18e-07p 1.51e-07p 1.50e-07p
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.486172k 6.773256i 0.0 0.0 0.0
zp 41.35 ri 1.39e-06p 0.002651p 0.458044p 0.0 2.884621n 0.0 2.984917n 0.108115p 0.000528p 4.93e-08p 1.39e-08p 0.0
sig0.562 cc 1.47e-06p 0.002798p 0.486007p 0.0 3.528579p 0.0 6.322009p 6.436064p 6.436548p 4.52e-08p 5.78e-08p 5.76e-08p
rc 1.39e-06p 0.002652p 0.460697p 0.001106o 3.345585m 0.047744n 6.376875k 6.484990j 6.485518i 4.93e-08p 6.31e-08p 6.29e-08o
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.962427i 0.0 0.0 0.0
zp 40.81 ri 5.50e-05p 0.013566p 0.272451p 0.0 0.540550p 0.0 0.116189p 0.002319p 3.53e-06p 3.16e-10p 5.58e-11p 0.0
sig0.600 cc 5.47e-05p 0.013563p 0.284850p 0.0 0.825768p 0.0 0.941964p 0.944273p 0.944277p 3.15e-10p 3.70e-10p 3.69e-10p
rc 5.50e-05p 0.013621p 0.286072p 0.001435o 0.827537n 0.016726o 0.960112m 0.962432k 0.962435i 3.16e-10p 3.71e-10p 3.70e-10p
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.131474h 0.0 0.0 0.0
zp 41.73 ri 2.58e-08p 0.000174p 0.061692p 0.0 1.346065n 0.0 2.352177n 0.359481p 0.003817p 1.76e-06p 4.96e-07p 6.68e-11p
sig0.568 cc 2.58e-08p 0.000174p 0.061825p 0.0 1.406888p 0.0 3.759087p 4.118902p 4.122716p 1.76e-06p 2.25e-06p 2.24e-06p
rc 2.58e-08p 0.000174p 0.061866p 6.29e-05o 1.407881m 0.008711o 3.768192l 4.127673j 4.131490h 1.76e-06p 2.25e-06p 2.24e-06p
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 3.431127l 0.449251n 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.646883i 5.662718i 0.0 0.0 0.0
zp 41.54 ri 1.08e-06p 0.001642p 0.224335p 0.0 2.147237n 0.0 2.827707m 0.430704n 0.003141p 1.59e-06p 5.31e-07p 1.20e-10p
sig0.600 cc 1.15e-06p 0.001760p 0.242035p 0.0 2.541539p 0.0 5.337142p 5.630022p 5.633284p 1.65e-06p 2.20e-06p 2.19e-06p
rc 1.08e-06p 0.001643p 0.225978p 0.000425o 2.373229m 0.023170n 5.223133j 5.653837i 5.656978h 1.59e-06p 2.12e-06p 2.11e-06p

sr, y half lives from 80eng2; zr, nb, mo, tc half lives 89wal1.
1

mass number 105 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 40 zr g 41 nb g 42 mo d 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g
half life 0.493s 3.0 s 1.0 s 36. s 7.6 m 4.44 h 40. s 35.4 h stable 7.2 m 41.0d 55.5m
lambda 1.406e+00 2.310e-01 6.931e-01 1.925e-02 1.520e-03 4.337e-05 1.733e-02 5.439e-06 0.0 1.605e-03 1.957e-07
2.082e-04
z - 1 g 100.0000 98.9120 0.0 97.7680 100.0000 100.0000 27.0000 73.0000 100.0000 -50.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.9400 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0 50.0000 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.855466i 0.0 0.0 0.0
zp 42.01 ri 6.94e-06p 0.043961p 0.0 0.762632p 0.049802p 9.36e-06p 0.0 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 6.94e-06p 0.043967p 0.0 0.805619p 0.855420p 0.855430p 0.230966p 0.855430p 0.855430p 0.0 0.0 0.0
rc 6.94e-06p 0.043968p 3.67e-05o 0.805655o 0.855457o 0.855466n 0.230976n 0.855466k 0.855466i 0.0 0.0 0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.728641k 0.0 1.953593k 1.804947k 0.0 0.0 0.0
zp 42.08 ri 0.012175p 0.312739p 0.0 0.998324p 0.463870p 0.024029p 1.10e-05p 0.000146p 9.36e-08p 4.99e-12p 0.0
0.0
sig0.642 cc 0.012375p 0.330113p 0.0 1.337668p 1.779218p 1.803642p 0.486994p 1.803791p 1.803791p 4.86e-12p 2.85e-12p
0.0
rc 0.012175p 0.324781p 0.000853o 1.316709o 1.780579m 1.804608k 0.487255k 1.804765j 1.804765i 4.99e-12p 2.93e-12p
0.0
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.474503i 0.0 0.0 2.445621i 0.0 0.0 0.0
zp 41.70 ri 0.000811p 0.544585p 0.0 1.910271m 0.021387p 3.61e-07p 0.0 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.000809p 0.544538p 0.0 2.443537p 2.464892p 2.464892p 0.665521p 2.464892p 2.464892p 0.0 0.0 0.0
rc 0.000811p 0.545387o 0.000674o 2.444160l 2.465547k 2.465547i 0.665698i 2.465547h 2.465547h 0.0 0.0 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.291493i 4.150903l 0.0 0.0 0.0
zp 42.57 ri 0.003851p 0.223931p 0.0 1.728419n 1.978212n 0.337295p 0.000550p 0.007301p 2.17e-05p 6.34e-09p 5.51e-10p
0.0
sig0.664 cc 0.003850p 0.227640p 0.0 1.950338p 3.927701p 4.266588p 1.152528p 4.274435p 4.274457p 6.44e-09p 3.78e-09p
0.0

rc 0.003851p 0.227740p 0.000414o 1.951490m 3.929701l 4.266997l 1.152639l 4.274847i 4.274868h 6.34e-09p 3.72e-09p
0.0
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.399696j 5.853308j 0.0 0.0 0.0
zp 42.05 ri 0.016219p 0.752657p 0.0 3.810776n 0.991536p 0.028865p 3.31e-06p 2.43e-05p 2.05e-09p 0.0 0.0 0.0
sig0.558 cc 0.016228p 0.769140p 0.0 4.565430p 5.553828p 5.582709p 1.507335p 5.582737p 5.582737p 0.0 0.0 0.0
rc 0.016219p 0.768699o 0.001790o 4.564108m 5.555644m 5.584509l 1.507821m 5.584536i 5.584536i 0.0 0.0 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.583377i 0.0 0.0 0.0
zp 41.91 ri 0.037335p 1.254210n 0.0 4.513250n 0.790819p 0.014009p 8.76e-07p 6.42e-06p 2.58e-10p 0.0 0.0 0.0
sig0.551 cc 0.037330p 1.290988p 0.0 5.775652p 6.566394p 6.580401p 1.776709p 6.580408p 6.580408p 0.0 0.0 0.0
rc 0.037335p 1.291138m 0.003013o 5.778583m 6.569402m 6.583411l 1.777522l 6.583418k 6.583418i 0.0 0.0 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 6.890014j 0.0 7.447587j 6.249275k 0.0 0.0 0.0
zp 41.74 ri 0.101610p 2.038577n 0.0 4.303233n 0.558932p 0.006441p 3.56e-07p 2.61e-06p 7.88e-11p 0.0 0.0 0.0
sig0.562 cc 0.101716p 2.141308p 0.0 6.399729p 6.953445p 6.959893p 1.879171p 6.959896p 6.959896p 0.0 0.0 0.0
rc 0.101610p 2.139081m 0.006109o 6.400679l 6.959611k 6.966052i 1.880834j 6.966055h 6.966055h 0.0 0.0 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.046073i 0.0 0.0 1.149064i 0.0 0.0 0.0
zp 41.19 ri 0.131903p 0.618909p 0.0 0.327983p 0.015754p 6.46e-05p 1.39e-09p 1.85e-08p 0.0 0.0 0.0 0.0
sig0.600 cc 0.133721p 0.759707p 0.0 1.060165p 1.076136p 1.076201p 0.290574p 1.076201p 1.076201p 0.0 0.0 0.0
rc 0.131903p 0.749376o 0.005082o 1.065715m 1.081469k 1.081533i 0.292014i 1.081533h 1.081533h 0.0 0.0 0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.942689j 0.0 2.864875i 3.398759i 0.0 0.0 0.0
zp 42.14 ri 0.005781p 0.384567p 0.0 1.835699n 0.860098o 0.025370p 5.95e-06p 4.37e-05p 5.46e-09p 0.0 0.0 0.0
sig0.568 cc 0.005944p 0.401282p 0.0 2.279947p 3.076408p 3.102493p 0.837679p 3.102544p 3.102544p 0.0 0.0 0.0
rc 0.005781p 0.390285p 0.000734o 2.218007m 3.078105k 3.103475i 0.837944j 3.103525g 3.103525g 0.0 0.0 0.0
cf252s xi 0.0 0.0 0.0 0.0 2.124835m 0.068947p 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 6.199003i 6.189757i 0.0 6.264813g 6.037430i 0.0 0.0 0.0
zp 41.95 ri 0.039055p 0.999477n 0.0 3.019384n 2.104745m 0.068296p 8.27e-06p 5.53e-05p 1.07e-08p 0.0 0.0 0.0
sig0.600 cc 0.049721p 1.321617p 0.0 5.137798p 6.168887p 6.200916p 1.674256p 6.200980p 6.200980p 0.0 0.0 0.0
rc 0.039055p 1.038106m 0.004201o 4.038521l 6.143266i 6.211562h 1.677130h 6.211626f 6.211626f 0.0 0.0 0.0

zr half life from 80eng2; nb, mo, tc, ru, rh half lives 89wal1.
1

mass number 106 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 40 zr g 41 nb g 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g

half life 0.907s 1.0 s 8.4 s 36. s 1.020y 2.18 h 29.9 s stable 8.4 d 24.1 m stable

lambda 7.642e-01 6.931e-01 8.252e-02 1.925e-02 2.155e-08 8.832e-05 2.318e-02 0.0 9.551e-07 4.794e-04 0.0

z - 1 g 100.0000 100.0000 99.0600 100.0000 100.0000 0.0 100.0000 100.0000 -100.0000 -100.0000 0.0

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0

z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.342805h 0.0 0.0 0.273645j 0.0 0.0 0.0

zp 42.22 ri 1.62e-07p 0.003907p 0.278721n 0.042579p 4.87e-05p 3.26e-12p 3.26e-12p 0.0 0.0 0.0 0.0

sig0.350 cc 1.56e-07p 0.003760p 0.284199p 0.325173p 0.325220p 3.49e-12p 0.325220p 0.325220p 0.0 0.0 0.0

rc 1.62e-07p 0.003907p 0.282591m 0.325170j 0.325219h 3.26e-12p 0.325219h 0.325219h 0.0 0.0 0.0

u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 1.305418l 0.0 0.0 1.471705l 0.0 0.0 0.0

zp 42.46 ri 0.001513p 0.089217p 0.618496p 0.607005o 0.070595p 0.000540p 0.000540p 1.60e-06p 1.86e-10p 4.09e-11p 0.0

sig0.642 cc 0.001551p 0.092991p 0.726022p 1.313643p 1.385996p 0.000518p 1.386514p 1.387034p 1.79e-10p 3.92e-11p 0.0

rc 0.001513p 0.090730p 0.708373o 1.315378m 1.385973k 0.000540p 1.386513k 1.387055k 1.86e-10p 4.09e-11p 0.0

u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.012314j 0.0 0.0 0.0

zp 41.92 ri 2.65e-05p 0.071717p 0.910756o 0.030486p 3.42e-06p 0.0 0.0 0.0 0.0 0.0 0.0

sig0.350 cc 2.65e-05p 0.071744p 0.981825p 1.012311p 1.012315p 0.0 1.012315p 1.012315p 0.0 0.0 0.0

rc 2.65e-05p 0.071743p 0.981825n 1.012311n 1.012315m 0.0 1.012315l 1.012315j 0.0 0.0 0.0

pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 3.559592j 0.0 0.0 3.511473l 0.0 0.0 0.0

zp 42.99 ri 0.000312p 0.043746p 0.776775p 1.963166n 0.752993p 0.020261p 0.020261p 0.000279p 1.82e-07p 4.00e-08p 1.97e-11p

sig0.664 cc 0.000312p 0.044052p 0.820300p 2.783185p 3.536069p 0.020513p 3.556583p 3.577379p 1.85e-07p 4.05e-08p 1.99e-11p

rc 0.000312p 0.044058p 0.820418o 2.783585m 3.536578j 0.020261p 3.556839j 3.577379j 1.82e-07p 4.00e-08p 1.97e-11p

pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 5.104013i 0.0 0.0 4.986590l 0.0 0.0 0.0

zp 42.43 ri 0.001594p 0.188792p 3.025873n 1.709373n 0.168996p 0.000211p 0.000211p 1.15e-07p 0.0 0.0 0.0

sig0.558 cc 0.001593p 0.190276p 3.212610p 4.924411p 5.092836p 0.000214p 5.093050p 5.093263p 0.0 0.0 0.0

rc 0.001594p 0.190386p 3.214470m 4.923843j 5.092840h 0.000211p 5.093051h 5.093262h 0.0 0.0 0.0

pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 6.254431e 0.0 0.0 5.241727l 0.0 0.0 0.0

```
zp 42.33 ri 0.003236p 0.317327p 4.045180n 1.758352n 0.123032p 9.16e-05p 9.16e-05p 2.92e-08p      0.0       0.0       0.0
sig0.551 cc 0.003234p 0.320416p 4.360731p 6.121343p 6.244099p 9.97e-05p 6.244199p 6.244298p      0.0       0.0       0.0
        rc 0.003236p 0.320563p 4.362730m 6.121082i 6.244114e 9.16e-05p 6.244205e 6.244297e      0.0       0.0       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  5.770420i      0.0       0.0  5.426540n      0.0       0.0       0.0
zp 42.12 ri 0.012497p 0.637369p 3.911058n 1.159519n 0.044451p 2.64e-05p 2.64e-05p 5.49e-09p      0.0       0.0       0.0
sig0.562 cc 0.012495p 0.649726p 4.553834p 5.714344p 5.758785p 2.72e-05p 5.758812p 5.758840p      0.0       0.0       0.0
        rc 0.012497p 0.649866o 4.554816m 5.714335k 5.758786i 2.64e-05p 5.758812i 5.758838i      0.0       0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  1.182684j      0.0       0.0  1.199907i      0.0       0.0       0.0
zp 41.57 ri 0.043857p 0.496747p 0.586040p 0.072140p 0.000782p 3.18e-07p 3.18e-07p 3.51e-11p      0.0       0.0       0.0
sig0.600 cc 0.043984p 0.542170p 1.121337p 1.193685p 1.194470p 3.16e-07p 1.194470p 1.194470p      0.0       0.0       0.0
        rc 0.043857p 0.540604p 1.121562n 1.193702l 1.194484j 3.18e-07p 1.194485i 1.194485h      0.0       0.0       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  2.412092j      0.0       0.0  2.177348k      0.0       0.0       0.0
zp 42.54 ri 0.000379p 0.077679p 1.027514n 1.117151n 0.111489p 0.000316p 0.000316p 2.12e-07p 2.58e-12p      0.0       0.0
sig0.568 cc 0.000376p 0.077528p 1.097350p 2.227089p 2.333454p 0.000330p 2.333784p 2.334114p 2.70e-12p      0.0       0.0
        rc 0.000379p 0.078057p 1.104838m 2.221989l 2.333478j 0.000316p 2.333793j 2.334109i 2.58e-12p      0.0       0.0
 cf252s  xi      0.0       0.0  3.400564l      0.0  0.161451m      0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0  5.559972i 6.530950g      0.0  5.983781j 6.135478i      0.0       0.0       0.0
zp 42.37 ri 0.006068p 0.440894p 3.466477n 2.193099n 0.208158m 0.000592p 0.000592p 6.22e-07p 1.27e-11p 5.44e-12p      0.0
sig0.600 cc 0.005907p 0.435100p 3.805497p 6.112764p 6.310621p 0.000585p 6.311206p 6.311791p 1.25e-11p 5.37e-12p      0.0
        rc 0.006068p 0.446962p 3.909237n 6.102336h 6.310494g 0.000592p 6.311087g 6.311680f 1.27e-11p 5.44e-12p      0.0

  zr half life from 80eng2; nb, mo, tc, ru, rh half lives 89wal1.
1

    mass number    107                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide      41 nb g   42 mo g   43 tc g   44 ru g   45 rh g   46 pd m   46 pd g   47 ag m   47 ag g   48 cd g   49 in g
half life     0.766s     3.5 s    21.2 s     3.8 m    21.7 m    21.3 s    6.5e6y     44. s    stable     6.5 h     33. m
lambda      9.049e-01 1.980e-01 3.270e-02 3.040e-03 5.324e-04 3.254e-02 3.381e-15 1.575e-02       0.0 2.962e-05 3.501e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000       0.0  100.0000   -0.3400 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  -99.6600       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0  100.0000       0.0       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.145756j      0.0       0.0       0.0       0.0
```

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zp 42.42 ri 0.000480p 0.098188p 0.046916p 0.000172p 1.60e-10p      0.0       0.0       0.0       0.0       0.0       0.0
sig0.350 cc 0.000480p 0.098669p 0.145584p 0.145756p 0.145756p      0.0  0.145756p      0.0  0.145756p      0.0       0.0
        rc 0.000480p 0.098669p 0.145584o 0.145756n 0.145756l      0.0  0.145756j      0.0  0.145756j      0.0       0.0
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.422649m      0.0       0.0       0.0       0.0
zp 42.84 ri 0.025828p 0.396828p 0.782922p 0.210113p 0.006933p 1.94e-05p 5.15e-06p 7.86e-09p 6.84e-10p      0.0       0.0
sig0.642 cc 0.025828p 0.422656p 1.205579p 1.415692p 1.422624p 1.94e-05p 1.422649p 7.86e-09p 1.422649p      0.0       0.0
        rc 0.025828p 0.422656p 1.205579o 1.415692n 1.422624n 1.94e-05p 1.422649m 7.86e-09p 1.422649m      0.0       0.0
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.616017n      0.0       0.0       0.0       0.0
zp 42.15 ri 0.014546p 0.528029o 0.073401p 3.71e-05p 4.24e-12p      0.0       0.0       0.0       0.0       0.0       0.0
sig0.350 cc 0.014546p 0.542576p 0.615976p 0.616013p 0.616013p      0.0  0.616013p      0.0  0.616013p      0.0       0.0
        rc 0.014546p 0.542575o 0.615976n 0.616013n 0.616013n      0.0  0.616013m      0.0  0.616013m      0.0       0.0
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.862280l      0.0       0.0       0.0       0.0
zp 43.40 ri 0.005953p 0.243500p 1.349965n 1.122515n 0.138098p 0.001776p 0.000472p 4.02e-06p 3.50e-07p 9.56e-10p      0.0
sig0.664 cc 0.005953p 0.249453p 1.599418p 2.721934p 2.860031p 0.001776p 2.862280p 4.02e-06p 2.862284p 9.56e-10p      0.0
        rc 0.005953p 0.249453p 1.599418m 2.721934l 2.860031l 0.001776p 2.862280k 4.02e-06p 2.862284k 9.56e-10p      0.0
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  4.015557l      0.0  3.179060n      0.0       0.0
zp 42.82 ri 0.031313p 1.231111n 2.156483n 0.503922p 0.004717p 2.50e-06p 1.13e-06p 6.14e-11p 8.37e-12p      0.0       0.0
sig0.558 cc 0.031313p 1.262424p 3.418907p 3.922830p 3.927547p 2.50e-06p 3.927550p 6.86e-11p 3.927550p      0.0       0.0
        rc 0.031313p 1.262424m 3.418907m 3.922830m 3.927547l 2.50e-06p 3.927550k 6.14e-11p 3.927550k      0.0       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  4.906669k      0.0       0.0       0.0       0.0
zp 42.75 ri 0.051145p 1.762112n 2.604989n 0.485115p 0.003306p 1.17e-06p 5.24e-07p 1.94e-11p 2.65e-12p      0.0       0.0
sig0.551 cc 0.051145p 1.813258p 4.418247p 4.903362p 4.906667p 1.17e-06p 4.906669p 1.94e-11p 4.906669p      0.0       0.0
        rc 0.051145p 1.813258m 4.418247l 4.903362m 4.906667l 1.17e-06p 4.906669k 1.94e-11p 4.906669k      0.0       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.031254n      0.0  5.011600n      0.0       0.0
zp 42.51 ri 0.166506p 2.482982n 2.166076n 0.210767p 0.000917p 1.92e-07p 8.62e-08p 2.49e-12p      0.0       0.0       0.0
sig0.562 cc 0.166506p 2.649487p 4.815564p 5.026330p 5.027247p 1.92e-07p 5.027247p 2.50e-12p 5.027247p      0.0       0.0
        rc 0.166506p 2.649487m 4.815564l 5.026330l 5.027247l 1.92e-07p 5.027247l 2.50e-12p 5.027247l      0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.045042j      0.0  1.228630i      0.0       0.0
zp 41.95 ri 0.254947p 0.695487p 0.221633p 0.005763p 1.26e-05p 1.54e-09p 4.09e-10p      0.0       0.0       0.0       0.0
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sig0.600 cc 0.258464p 0.963544p 1.171988p 1.177831p 1.177844p 1.56e-09p 1.177844p 0.0 1.177844p 0.0 0.0
rc 0.254947p 0.950434n 1.172067n 1.177831m 1.177844l 1.54e-09p 1.177844j 0.0 1.177844i 0.0 0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.669292l 0.0 1.735703k 0.0 0.0
zp 42.76 ri 0.000262p 0.387200p 1.295315n 0.029840p 5.75e-07p 0.0 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.000263p 0.388077p 1.682729p 1.712617p 1.712617p 0.0 1.712617p 0.0 1.712617p 0.0 0.0
rc 0.000262p 0.387462p 1.682777m 1.712617m 1.712617l 0.0 1.712617k 0.0 1.712617j 0.0 0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 6.425527i 6.641026i 0.0 6.372701l 0.0 6.753524i 0.0 0.0
zp 42.81 ri 0.090202p 2.007319n 3.633230n 0.871586p 0.015842p 1.71e-05p 9.21e-06p 2.26e-09p 3.37e-10p 0.0 0.0
sig0.600 cc 0.090277p 2.099254p 5.735485p 6.602589p 6.618179p 1.71e-05p 6.618205p 2.19e-09p 6.618205p 0.0 0.0
rc 0.090202p 2.097522m 5.730751l 6.602337i 6.618179h 1.71e-05p 6.618205h 2.26e-09p 6.618205g 0.0 0.0

nb half life from 80eng2; mo, tc, ru, rh, pd half lives 89wal1.
1

mass number 108 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 40 zr g 41 nb g 42 mo g 43 tc d 43 tc g 44 ru d 44 ru g 45 rh m 45 rh g 46 pd g 47 ag g 48 cd g
half life 0.378s 0.242s 1.5 s 1.41 s 5.1 s 1.4 s 4.5 m 5.9 m 17. s stable 2.41 m stable
lambda 1.834e+00 2.864e+00 4.621e-01 4.916e-01 1.359e-01 4.951e-01 2.567e-03 1.958e-03 4.077e-02 0.0 4.794e-03
0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 100.0000 0.0 100.0000 0.0 100.0000 100.0000 -2.3000 97.7000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.1360 100.0000 0.0880 100.0000 0.0 0.0 0.0 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.097551n 0.0 0.0
zp 42.68 ri 5.32e-06p 0.001147p 0.047585p 0.0 0.039494p 0.0 0.009233p 1.77e-05p 1.77e-05p 2.30e-08p 0.0 0.0
sig0.553 cc 5.32e-06p 0.001152p 0.048737p 0.0 0.088231p 0.0 0.097464p 1.77e-05p 0.097482p 0.097500p 0.0 0.0
rc 5.32e-06p 0.001152p 0.048737p 1.33e-05o 0.088244p 4.62e-05o 0.097524o 1.77e-05p 0.097541o 0.097559n 0.0 0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.431887m 0.0 0.0
zp 43.22 ri 1.59e-05p 0.005212p 0.181400p 0.0 0.769001p 0.0 0.442423p 0.016475p 0.016475p 0.000276p 2.34e-07p
1.89e-11p
sig0.642 cc 1.59e-05p 0.005228p 0.186619p 0.0 0.955607p 0.0 1.398054p 0.016475p 1.414529p 1.431280p 2.34e-07p
2.28e-07p

rc 1.59e-05p 0.005228p 0.186628p 9.09e-05o 0.955720o 0.000586o 1.398729o 0.016475p 1.415205n 1.431956m 2.34e-07p 2.28e-07p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.383969n 0.0 0.0
zp 42.39 ri 1.48e-08p 0.001434p 0.282913p 0.0 0.099079p 0.0 0.000346p 1.06e-10p 1.06e-10p 0.0 0.0 0.0
sig0.350 cc 1.48e-08p 0.001434p 0.284347p 0.0 0.383425p 0.0 0.383771p 1.06e-10p 0.383771p 0.383771p 0.0 0.0
rc 1.48e-08p 0.001434p 0.284347p 9.59e-05o 0.383521o 0.000134o 0.384001o 1.06e-10p 0.384001o 0.384001n 0.0 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.398126l 0.0 0.0
zp 43.70 ri 1.69e-06p 0.001090p 0.083112p 0.0 0.828262p 0.0 1.210323n 0.133351p 0.133346p 0.008067p 2.99e-05p 1.27e-08p
sig0.664 cc 1.69e-06p 0.001092p 0.084199p 0.0 0.912431p 0.0 2.122799p 0.133344p 2.256143p 2.397554p 2.99e-05p 2.92e-05p
rc 1.69e-06p 0.001092p 0.084204p 5.43e-05o 0.912520o 0.000573o 2.123416m 0.133351p 2.256762l 2.398181k 2.99e-05p 2.92e-05p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.795096l 0.0 0.0
zp 43.21 ri 2.01e-06p 0.002481p 0.347981p 0.0 1.391727n 0.0 1.027846n 0.012306p 0.012306p 7.28e-05p 4.47e-09p 0.0
sig0.558 cc 2.01e-06p 0.002483p 0.350460p 0.0 1.742171p 0.0 2.770037p 0.012306p 2.782343p 2.794721p 4.47e-09p 4.37e-09p
rc 2.01e-06p 0.002483p 0.350464p 1.37e-06o 1.742192m 0.000443o 2.770481l 0.012306p 2.782787l 2.795166k 4.47e-09p 4.37e-09p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.541822k 0.0 0.0
zp 43.18 ri 2.53e-06p 0.003387p 0.478074p 0.0 1.817237n 0.0 1.217697n 0.012345p 0.012345p 5.69e-05p 2.50e-09p 0.0
sig0.551 cc 2.53e-06p 0.003389p 0.481453p 0.0 2.298669p 0.0 3.516397p 0.012344p 3.528742p 3.541143p 2.50e-09p 2.44e-09p
rc 2.53e-06p 0.003389p 0.481463p 7.08e-05o 2.298771m 0.000740o 3.517208l 0.012345p 3.529552l 3.541954k 2.50e-09p 2.44e-09p
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.396492m 0.0 0.0
zp 42.91 ri 4.66e-05p 0.023685p 1.179193n 0.0 2.432690n 0.0 0.750537p 0.004551p 0.004551p 1.04e-05p 3.24e-10p 0.0

sig0.562 cc 4.66e-05p 0.023731p 1.202893p 0.0 3.635592p 0.0 4.386153p 0.004551p 4.390704p 4.395266p 3.24e-10p 3.17e-10p
rc 4.66e-05p 0.023731p 1.202925m 0.000354o 3.635970m 0.001689n 4.388196m 0.004551p 4.392747m 4.397309l 3.24e-10p 3.17e-10p
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.279823i 0.0 0.0
zp 42.33 ri 0.001440p 0.104249p 0.674411p 0.0 0.464964p 0.0 0.032753p 9.63e-05p 9.63e-05p 8.20e-08p 2.36e-12p 0.0
sig0.600 cc 0.001439p 0.105651p 0.779827p 0.0 1.245075p 0.0 1.277816p 9.63e-05p 1.277912p 1.278008p 2.36e-12p 2.31e-12p
rc 0.001440p 0.105688p 0.780099o 0.000693o 1.245756n 0.001122o 1.279631m 9.63e-05p 1.279727k 1.279823i 2.36e-12p 2.31e-12p
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.296732l 0.0 0.0
zp 42.97 ri 1.01e-12p 1.65e-05p 0.114600p 0.0 1.096656n 0.0 0.085105p 4.05e-06p 4.05e-06p 0.0 0.0 0.0
sig0.350 cc 1.01e-12p 1.65e-05p 0.114614p 0.0 1.211273p 0.0 1.296377p 4.05e-06p 1.296381p 1.296385p 0.0 0.0
rc 1.01e-12p 1.65e-05p 0.114616p 1.93e-05o 1.211291m 0.000461o 1.296858m 4.05e-06p 1.296862m 1.296866l 0.0 0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 1.964882l 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.969524h 0.0 0.0 6.340628k 0.0 0.0
zp 43.25 ri 1.44e-05p 0.010158p 0.666893p 0.0 3.331973l 0.0 1.983150l 0.057305p 0.057305p 0.000608p 1.90e-07p 4.87e-12p
sig0.600 cc 1.43e-05p 0.010139p 0.674857p 0.0 3.919538p 0.0 5.997275p 0.054774p 6.052050p 6.107405p 1.81e-07p 1.77e-07p
rc 1.44e-05p 0.010172p 0.677065o 0.000203o 4.009241k 0.001791n 5.994182g 0.057305p 6.051487h 6.109399g 1.90e-07p 1.85e-07p

zr, nb half lives from 80eng2; mo, tc, ru, rh half lives 89wal1.
1

mass number 109 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 41 nb g 42 mo g 43 tc g 44 ru d 44 ru g 45 rh m 45 rh g 46 pd m 46 pd g 47 ag g 48 cd g 49 in g
half life 0.315s 1.41 s 1.4 s 0.83 s 34.5 s 50. s 1.34 m 4.69 m 13.5 h stable 462.9d 4.2 h
lambda 2.200e+00 4.916e-01 4.951e-01 8.351e-01 2.009e-02 1.386e-02 8.621e-03 2.463e-03 1.426e-05 0.0 1.733e-08 4.584e-05
z - 1 g 100.0000 100.0000 99.8640 0.0 99.9120 50.0000 50.0000 0.0 100.0000 100.0000 0.0 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -100.0000 0.0

z - 0 m 0.0 0.0 0.0 0.6210 100.0000 0.0 100.0000 0.0 100.0000 0.0 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.085282m 0.0 0.0 0.0
zp 43.23 ri 6.23e-05p 0.009719p 0.042686p 0.0 0.031993p 0.000391p 0.000391p 1.48e-06p 6.67e-07p 1.21e-10p 0.0 0.0
sig0.553 cc 6.23e-05p 0.009781p 0.052454p 0.0 0.084401p 0.042591p 0.085182p 1.48e-06p 0.085184p 0.085184p 0.0
0.0
rc 6.23e-05p 0.009781p 0.052454p 0.000108o 0.084509p 0.042645o 0.085290n 1.48e-06p 0.085292m 0.085292m 0.0
0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.533502l 1.442848m 0.0 0.0
zp 43.59 ri 0.000839p 0.065978p 0.599048p 0.0 0.718494p 0.057894p 0.057894p 0.001747p 0.000464p 4.28e-06p 8.28e-10p
0.0
sig0.642 cc 0.000839p 0.066806p 0.665666p 0.0 1.383701p 0.749735p 1.499470p 0.001746p 1.501680p 1.501684p 8.53e-10p
0.0
rc 0.000839p 0.066817p 0.665774o 0.001860o 1.385542n 0.750665n 1.501329m 0.001747p 1.503540l 1.503545k 8.28e-10p
0.0
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.154004n 0.0 0.0
zp 42.61 ri 9.96e-05p 0.070405p 0.082291p 0.0 0.001028p 2.18e-09p 2.18e-09p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 9.96e-05p 0.070505p 0.152700p 0.0 0.153594p 0.076797p 0.153594p 0.0 0.153594p 0.153594p 0.0 0.0
rc 9.96e-05p 0.070505p 0.152700p 0.000503o 0.154096p 0.077048o 0.154096n 0.0 0.154096n 0.154096m 0.0 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.487734i 2.409059l 0.0 0.0
zp 43.92 ri 0.000327p 0.039590p 0.610895p 0.0 1.351873n 0.226983p 0.224567p 0.016971p 0.004511p 0.000125p 8.59e-08p
6.50e-12p
sig0.664 cc 0.000327p 0.039874p 0.650057p 0.0 2.000141p 1.226815p 2.453631p 0.016952p 2.475089p 2.475217p 8.72e-08p
6.60e-12p
rc 0.000327p 0.039917p 0.650758o 0.001263o 2.003321m 1.228643n 2.454871k 0.016971p 2.476353i 2.476479i 8.59e-08p
6.50e-12p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.693285j 1.920806l 0.0 0.0
zp 43.64 ri 6.49e-10p 0.001009p 0.502390p 0.0 1.232023n 0.005296p 0.005296p 7.18e-08p 3.23e-08p 0.0 0.0 0.0
sig0.350 cc 6.51e-10p 0.001013p 0.504981p 0.0 1.734944p 0.872785p 1.745570p 7.20e-08p 1.745570p 1.745570p 0.0
0.0
rc 6.49e-10p 0.001009p 0.503398p 0.000619o 1.735598m 0.873095m 1.746191k 7.18e-08p 1.746191i 1.746191i 0.0
0.0

pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.352800l 0.0 0.0
zp 43.63 ri 0.000112p 0.051957p 0.788751p 0.0 1.394844n 0.058146p 0.058146p 0.000619p 0.000278p 1.94e-07p 2.79e-12p
0.0
sig0.551 cc 0.000112p 0.052066p 0.840695p 0.0 2.234861p 1.175573p 2.351146p 0.000619p 2.352043p 2.352043p 2.79e-12p
0.0
rc 0.000112p 0.052069p 0.840750o 0.000934o 2.235787m 1.176040m 2.352080l 0.000619p 2.352977l 2.352977k 2.79e-12p
0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.192719m 0.0 0.0
zp 43.31 ri 0.001897p 0.258703p 1.658720n 0.0 1.222807n 0.025298p 0.025298p 0.000117p 5.24e-05p 2.02e-08p 0.0
0.0
sig0.562 cc 0.001897p 0.260576p 1.918789p 0.0 3.140088p 1.595339p 3.190679p 0.000117p 3.190847p 3.190848p 0.0
0.0
rc 0.001897p 0.260600p 1.918966m 0.003207o 3.143291l 1.596943l 3.193886k 0.000117p 3.194055k 3.194055k 0.0
0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.498100i 1.321932i 0.0 0.0
zp 42.71 ri 0.030342p 0.479247p 0.766076p 0.0 0.131146p 0.001012p 0.001012p 1.87e-06p 4.96e-07p 1.79e-10p 0.0
0.0
sig0.600 cc 0.030342p 0.509589p 1.274972p 0.0 1.404997p 0.703511p 1.407021p 1.87e-06p 1.407024p 1.407024p 0.0
0.0
rc 0.030342p 0.509589o 1.274972o 0.006528o 1.411525n 0.706775n 1.413549k 1.87e-06p 1.413551i 1.413551h 0.0
0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.435035l 0.705472k 0.0 0.0
zp 43.19 ri 3.88e-07p 0.014209p 0.510145p 0.0 0.112742p 2.75e-05p 2.75e-05p 8.50e-12p 3.82e-12p 0.0 0.0 0.0
sig0.350 cc 4.15e-07p 0.015207p 0.516412p 0.0 0.636618p 0.318338p 0.636677p 9.10e-12p 0.636677p 0.636677p 0.0
0.0
rc 3.88e-07p 0.014210p 0.524335o 0.001081o 0.637697n 0.318876n 0.637752l 8.50e-12p 0.637752k 0.637752j 0.0 0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.263335n 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 4.132330i 0.0 5.246439i 0.0 6.360478h 5.962875i 0.0 0.0
zp 43.66 ri 0.000799p 0.148380p 1.886785n 0.0 2.987536l 0.253718p 0.651636m 0.005262p 0.002833p 7.70e-06p 6.01e-10p
0.0
sig0.600 cc 0.000871p 0.162590p 2.218776p 0.0 5.476873p 2.963986p 5.927972p 0.004424p 5.934778p 5.934784p 4.93e-10p
0.0

rc 0.000799p 0.149179p 2.035761l 0.005454o 5.026960h 2.767198k 5.932315h 0.005262p 5.940410g 5.940418g 6.01e-10p
0.0

nb, mo half lives from 80eng2; tc, ru, rh, pd half lives 89wal1.
1

mass number 110 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 40 zr g 41 nb g 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g
half life 0.130s 2.77 s 0.83 s 15. s 29. s 3.1 s stable 252. d 24.6 s stable
lambda 0.0 5.332e+00 2.502e-01 8.351e-01 4.621e-02 2.390e-02 2.236e-01 0.0 3.184e-08 2.818e-02 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 99.3790 0.0 100.0000 100.0000 0.0 -0.3000 99.7000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 98.6000
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.4000 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.079815n 0.0 0.0 0.0
zp 43.75 ri 2.00e-10p 1.20e-06p 0.001159p 0.016237p 0.057924p 0.002262p 0.002262p 7.70e-05p 1.26e-08p 4.65e-09p 0.0
sig0.553 cc 2.00e-10p 1.20e-06p 0.001161p 0.017398p 0.075214p 0.002262p 0.077476p 0.079815p 1.26e-08p 4.83e-09p 1.72e-08p
rc 2.00e-10p 1.20e-06p 0.001161p 0.017398p 0.075214p 0.002262p 0.077476o 0.079815n 1.26e-08p 4.83e-09p 1.72e-08p
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.321031m 0.0 0.0 0.0
zp 43.98 ri 3.84e-08p 7.29e-05p 0.013793p 0.285695p 0.745936p 0.132769p 0.132769p 0.011855p 4.73e-05p 1.04e-05p 2.79e-08p
sig0.642 cc 3.84e-08p 7.30e-05p 0.013866p 0.299561p 1.043637p 0.132769p 1.176406p 1.321031p 4.73e-05p 1.11e-05p 5.77e-05p
rc 3.84e-08p 7.30e-05p 0.013866p 0.299561p 1.043637o 0.132769p 1.176406n 1.321031m 4.73e-05p 1.11e-05p 5.77e-05p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.114153n 0.0 0.0 0.0
zp 43.07 ri 1.88e-07p 0.000179p 0.022979p 0.057819p 0.033284p 0.000197p 0.000197p 6.48e-07p 1.02e-11p 3.77e-12p 0.0
sig0.545 cc 1.88e-07p 0.000179p 0.023158p 0.080977p 0.113758p 0.000197p 0.113955p 0.114152p 1.02e-11p 3.91e-12p 1.39e-
11p
rc 1.88e-07p 0.000179p 0.023158p 0.080977p 0.113758o 0.000197p 0.113955o 0.114152n 1.02e-11p 3.91e-12p 1.39e-11p
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.743551l 0.0 0.0 0.0
zp 44.29 ri 9.75e-09p 2.27e-05p 0.006045p 0.197258p 0.884332p 0.298955p 0.298955p 0.059245p 0.000629p 0.000138p 1.18e-
06p
sig0.664 cc 9.75e-09p 2.27e-05p 0.006067p 0.203326p 1.086396p 0.298955p 1.385350p 1.743553p 0.000629p 0.000147p
0.000767p
rc 9.75e-09p 2.27e-05p 0.006067p 0.203326p 1.086396o 0.298955p 1.385351n 1.743551k 0.000629p 0.000147p 0.000767p

pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.941013m 0.0 0.0 0.0
zp 43.86 ri 0.0 4.64e-12p 4.83e-05p 0.099708p 0.818865o 0.011505p 0.011505p 1.44e-06p 0.0 0.0 0.0
sig0.350 cc 0.0 4.64e-12p 4.83e-05p 0.099756p 0.918001p 0.011505p 0.929506p 0.941013p 0.0 0.0 0.0
rc 0.0 4.64e-12p 4.83e-05p 0.099756p 0.918001n 0.011505p 0.929506m 0.941013l 0.0 0.0 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.399562j 0.0 0.0 0.0
zp 43.86 ri 0.0 7.32e-12p 7.44e-05p 0.150301p 1.216506m 0.016806p 0.016806p 2.06e-06p 0.0 0.0 0.0
sig0.350 cc 0.0 7.32e-12p 7.44e-05p 0.150376p 1.365949p 0.016806p 1.382754p 1.399562p 0.0 0.0 0.0
rc 0.0 7.32e-12p 7.44e-05p 0.150376p 1.365949l 0.016806p 1.382754l 1.399562j 0.0 0.0 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.077608m 0.0 0.0 0.0
zp 43.68 ri 0.0 3.89e-10p 0.000836p 0.515635p 1.548193n 0.008076p 0.008076p 2.18e-07p 0.0 0.0 0.0
sig0.350 cc 0.0 3.89e-10p 0.000836p 0.516471p 2.061457p 0.008076p 2.069532p 2.077608p 0.0 0.0 0.0
rc 0.0 3.89e-10p 0.000836p 0.516471o 2.061457m 0.008076p 2.069532m 2.077608l 0.0 0.0 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000142n 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.382209i 0.0 0.0 0.0
zp 43.08 ri 1.16e-05p 0.005784p 0.224566p 0.820825p 0.324891p 0.006261p 0.006261p 3.86e-05p 0.000142p 1.51e-09p 0.0
sig0.600 cc 1.16e-05p 0.005796p 0.230381p 1.051271p 1.369691p 0.006262p 1.375953p 1.382253p 6.90e-09p 1.61e-09p 8.41e-09p
rc 1.16e-05p 0.005796p 0.230362p 1.051187o 1.369551m 0.006261p 1.375812k 1.382112i 0.000142o 1.98e-06m 0.000141m
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.300653k 0.0 0.0 0.0
zp 43.43 ri 0.0 4.95e-09p 0.001158p 0.172865p 0.127370p 0.000171p 0.000171p 5.08e-10p 0.0 0.0 0.0
sig0.350 cc 0.0 4.95e-09p 0.001158p 0.174023p 0.300312p 0.000171p 0.300483p 0.300653p 0.0 0.0 0.0
rc 0.0 4.95e-09p 0.001158p 0.174023p 0.300312n 0.000171p 0.300483m 0.300653k 0.0 0.0 0.0
cf252s xi 0.0 0.0 0.0 0.0 3.669051m 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.896414k 0.0 0.0 0.0
zp 44.10 ri 5.81e-09p 3.97e-05p 0.023110p 0.855151p 3.623340o 0.674690o 0.671597p 0.060502p 0.000125p 5.34e-05p 4.54e-08p
sig0.600 cc 5.80e-09p 3.96e-05p 0.023093p 0.876159p 4.485226p 0.678460p 5.163687p 5.902988p 0.000125p 5.55e-05p 0.000179p
rc 5.81e-09p 3.97e-05p 0.023149p 0.878300p 4.496186n 0.674690o 5.167783m 5.902975k 0.000125p 5.52e-05p 0.000178p

nb, mo half lives from 80eng2; tc, ru, rh half lives from 89wal1.

mass number 111 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 42 mo g 43 tc g 44 ru g 45 rh g 46 pd m 46 pd g 47 ag m 47 ag g 48 cd m 48 cd g 49 in g 50 sn g

half life 0.466s 1.98 s 1.5 s 11. s 5.5 h 23.4 m 1.08 m 7.47 d 48.7 m stable 2.83 d 35.3 m

lambda 1.487e+00 3.501e-01 4.621e-01 6.301e-02 3.501e-05 4.937e-04 1.070e-02 1.074e-06 2.372e-04 0.0 2.835e-06 3.273e-04

z - 1 g 100.0000 100.0000 100.0000 100.0000 0.4300 99.5700 99.3000 0.7000 0.0 100.0000 -100.0000 -100.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 21.7000 7.0000 0.0 0.3000 0.0 0.0

z - 0 m 0.0 0.0 0.0 0.0 0.0 71.3000 0.0 99.7000 0.0 100.0000 0.0 0.0

u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.081332k 0.0 0.067627k 0.0 0.0

zp 44.24 ri 6.88e-05p 0.005117p 0.049803p 0.017736p 0.000663p 0.000298p 1.11e-06p 1.52e-07p 1.26e-10p 3.34e-11p 0.0 0.0

sig0.553 cc 6.88e-05p 0.005186p 0.054989p 0.072724p 0.000976p 0.073406p 0.073105p 0.073468p 1.26e-10p 0.073687p 0.0 0.0

rc 6.88e-05p 0.005186p 0.054989p 0.072724o 0.000976p 0.073406o 0.073105n 0.073468k 1.26e-10p 0.073687j 0.0 0.0

u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.467218j 0.0 1.334091k 0.0 0.0

zp 44.36 ri 0.002623p 0.124042p 0.699921p 0.532000p 0.042012p 0.011168p 0.000561p 4.88e-05p 6.14e-07p 1.00e-07p 8.03e-11p 0.0

sig0.642 cc 0.002623p 0.126665p 0.826586p 1.358586p 0.047854p 1.398031p 1.399190p 1.408177p 6.14e-07p 1.412376p 8.03e-11p 0.0

rc 0.002623p 0.126665p 0.826586o 1.358586n 0.047854p 1.398031n 1.399190m 1.408177j 6.14e-07p 1.412376i 8.03e-11p 0.0

u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.065210j 0.0 0.081137m 0.0 0.0

zp 43.57 ri 0.001920p 0.023422p 0.039528p 0.002419p 1.07e-05p 4.80e-06p 1.84e-09p 2.51e-10p 0.0 0.0 0.0 0.0

sig0.545 cc 0.001920p 0.025342p 0.064871p 0.067290p 0.000300p 0.067219p 0.066814p 0.067105p 0.0 0.067305p 0.0 0.0

rc 0.001920p 0.025342p 0.064871p 0.067290p 0.000300p 0.067219p 0.066814n 0.067105j 0.0 0.067305j 0.0 0.0

pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.591045k 0.0 1.517649j 0.0 0.0

zp 44.65 ri 0.000918p 0.063084p 0.569704p 0.757812p 0.119785p 0.031842p 0.003808p 0.000331p 1.19e-05p 1.93e-06p 5.23e-09p 0.0

sig0.664 cc 0.000918p 0.064002p 0.633706p 1.391518p 0.125768p 1.507049p 1.527600p 1.542701p 1.19e-05p 1.547298p 5.23e-09p 0.0

rc 0.000918p 0.064002p 0.633706o 1.391518n 0.125768p 1.507049n 1.527600m 1.542701j 1.19e-05p 1.547298i 5.23e-09p 0.0
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.471298j 0.0 0.527744l 0.0 0.0
zp 44.09 ri 1.31e-06p 0.017779p 0.420730p 0.048686p 1.01e-05p 4.53e-06p 1.04e-12p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 1.31e-06p 0.017780p 0.438509p 0.487196p 0.002105p 0.486606p 0.483657p 0.485760p 0.0 0.487211p 0.0 0.0
rc 1.31e-06p 0.017780p 0.438509p 0.487196p 0.002105o 0.486606o 0.483657m 0.485760j 0.0 0.487211i 0.0 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.644584l 0.0 0.0
zp 44.08 ri 2.06e-06p 0.025391p 0.558669o 0.060506p 1.14e-05p 5.12e-06p 1.06e-12p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 2.06e-06p 0.025393p 0.584061p 0.644567p 0.002783p 0.643785p 0.639883p 0.642664p 0.0 0.644584p 0.0 0.0
rc 2.06e-06p 0.025393p 0.584061o 0.644567n 0.002783n 0.643785n 0.639883n 0.642664m 0.0 0.644584l 0.0 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.222247m 0.0 0.0
zp 43.90 ri 3.93e-05p 0.135062p 1.041179n 0.045963p 2.05e-06p 9.21e-07p 0.0 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 3.93e-05p 0.135102p 1.176281p 1.222244p 0.005258p 1.220738p 1.213333p 1.218607p 0.0 1.222247p 0.0 0.0
rc 3.93e-05p 0.135102p 1.176281m 1.222244m 0.005258m 1.220738m 1.213333m 1.218607m 0.0 1.222247l 0.0 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.261193h 0.0 1.347018i 0.0 0.0
zp 43.45 ri 0.072561p 0.620161p 0.557980p 0.052170p 0.000329p 8.76e-05p 2.25e-07p 1.96e-08p 8.39e-12p 1.37e-12p 0.0 0.0
sig0.600 cc 0.072561p 0.692723p 1.250702p 1.302872p 0.005932p 1.301587p 1.293763p 1.299408p 8.39e-12p 1.303290p 0.0 0.0
rc 0.072561p 0.692723o 1.250702n 1.302872n 0.005932n 1.301587m 1.293763k 1.299408h 8.39e-12p 1.303290g 0.0 0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.094922i 0.0 0.095478j 0.0 0.0
zp 43.78 ri 0.001137p 0.028353p 0.055963p 0.009707p 8.17e-05p 3.67e-05p 7.13e-08p 9.72e-09p 2.20e-12p 0.0 0.0 0.0
sig0.568 cc 0.001137p 0.029490p 0.085453p 0.095160p 0.000491p 0.095138p 0.094578p 0.094995p 2.20e-12p 0.095279p 0.0 0.0
rc 0.001137p 0.029490p 0.085453p 0.095160o 0.000491o 0.095138n 0.094578l 0.094995i 2.20e-12p 0.095279h 0.0 0.0

cf252s xi 0.0 0.0 0.0 0.0 0.172745i 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.193683i 0.0 0.0 5.143130g 0.0 5.301566i 0.0 0.0
zp 44.58 ri 0.001419p 0.175809p 2.259118n 2.456426n 0.170636i 0.120736p 0.003029p 0.000453p 2.46e-06p 7.35e-07p 1.64e-10p
0.0
sig0.600 cc 0.001405p 0.175416p 2.411436p 4.842747p 0.242754p 5.114508p 5.134382p 5.172221p 2.43e-06p 5.187627p 1.63e-
10p 0.0
rc 0.001419p 0.177228p 2.436346m 4.892772l 0.191675h 5.129132l 5.137851j 5.172211g 2.46e-06p 5.187627f 1.64e-10p
0.0

mo, tc half lives from 80eng2; ru, rh, pd, ag half lives 89wal1.
1

mass number 112 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 42 mo g 43 tc g 44 ru g 45 rh g 46 pd g 47 ag g 48 cd g 49 in m 49 in g 50 sn g
half life 0.975s 0.431s 4.5 s 4. s 20.04h 3.13 h stable 20.8 m 14.4 m stable
lambda 7.109e-01 1.608e+00 1.540e-01 1.733e-01 9.608e-06 6.151e-05 0.0 5.554e-04 8.023e-04 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 0.0 -56.0000 44.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.064850m 0.0 0.064813n 0.0 0.0 0.0
zp 44.70 ri 3.05e-06p 0.000700p 0.030713p 0.026805p 0.006609p 2.69e-05p 1.86e-08p 0.0 0.0 0.0
sig0.553 cc 3.05e-06p 0.000703p 0.031416p 0.058221p 0.064830p 0.064857p 0.064857p 0.0 0.0 0.0
rc 3.05e-06p 0.000703p 0.031416p 0.058221o 0.064830m 0.064857m 0.064857l 0.0 0.0 0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.670109j 1.686740l 1.746090k 0.0 0.0 0.0
zp 44.73 ri 0.000427p 0.045892p 0.558744p 0.892002o 0.188509p 0.004952p 1.39e-05p 3.32e-09p 4.10e-10p 0.0
sig0.642 cc 0.000428p 0.046459p 0.606902p 1.494988p 1.685578p 1.690526p 1.690540p 3.26e-09p 3.66e-09p 1.61e-09p
rc 0.000427p 0.046318p 0.605063o 1.497065m 1.685574j 1.690526i 1.690540i 3.32e-09p 3.73e-09p 1.64e-09p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.052925n 0.0 0.0 0.0
zp 44.04 ri 0.000146p 0.005668p 0.039870p 0.007011p 0.000230p 1.14e-07p 6.70e-12p 0.0 0.0 0.0
sig0.545 cc 0.000146p 0.005814p 0.045684p 0.052695p 0.052925p 0.052925p 0.052925p 0.0 0.0 0.0
rc 0.000146p 0.005814p 0.045684p 0.052695p 0.052925o 0.052925o 0.052925n 0.0 0.0 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.374329i 0.0 1.399226l 0.0 0.0 0.0

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zp 45.00 ri 0.000114p 0.016368p 0.296547p 0.764041p 0.298466p 0.016651p 0.000117p 8.49e-08p 1.05e-08p 8.63e-12p
sig0.664 cc 0.000114p 0.016484p 0.313059p 1.076965p 1.375585p 1.392188p 1.392305p 8.47e-08p 9.52e-08p 4.19e-08p
        rc 0.000114p 0.016483p 0.313030p 1.077071n 1.375537i 1.392188i 1.392305i 8.49e-08p 9.54e-08p 4.20e-08p
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.220127j      0.0  0.250989l      0.0       0.0       0.0
zp 44.30 ri 3.12e-08p 0.001794p 0.178328p 0.047772p 7.79e-05p 3.01e-11p      0.0       0.0       0.0       0.0
sig0.350 cc 3.16e-08p 0.001818p 0.179473p 0.227893p 0.227972p 0.227972p 0.227972p      0.0       0.0       0.0
        rc 3.12e-08p 0.001794p 0.180122o 0.227894l 0.227972j 0.227972j 0.227972i      0.0       0.0       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.317786l      0.0       0.0       0.0
zp 44.29 ri 5.34e-08p 0.002780p 0.250604p 0.064306p 9.56e-05p 3.12e-11p      0.0       0.0       0.0       0.0
sig0.350 cc 5.34e-08p 0.002780p 0.253384p 0.317690p 0.317786p 0.317786p 0.317786p      0.0       0.0       0.0
        rc 5.34e-08p 0.002780p 0.253384p 0.317690o 0.317786o 0.317786n 0.317786l      0.0       0.0       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.653576m      0.0       0.0       0.0
zp 44.13 ri 1.08e-06p 0.018504p 0.560327o 0.074714p 3.05e-05p 3.15e-12p      0.0       0.0       0.0       0.0
sig0.350 cc 1.08e-06p 0.018505p 0.578832p 0.653546p 0.653576p 0.653576p 0.653576p      0.0       0.0       0.0
        rc 1.08e-06p 0.018505p 0.578832o 0.653546n 0.653576n 0.653576n 0.653576m      0.0       0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0  0.011042n      0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  1.633062i 1.372702i 1.433787i      0.0       0.0       0.0
zp 43.82 ri 0.020895p 0.429871p 0.821101o 0.185877p 0.003925p 0.010312n 5.95e-10p      0.0       0.0       0.0
sig0.600 cc 0.020167p 0.435066p 1.281752p 1.468186p 1.471974p 1.471980p 1.471980p      0.0       0.0       0.0
        rc 0.020895p 0.450766p 1.271866n 1.457743k 1.461668i 1.471980h 1.471980h      0.0       0.0       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.073342j      0.0  0.073818l      0.0       0.0       0.0
zp 44.36 ri 3.81e-05p 0.004695p 0.039035p 0.028036p 0.001651p 6.14e-06p 1.21e-09p      0.0       0.0       0.0
sig0.568 cc 3.81e-05p 0.004733p 0.043768p 0.071803p 0.073454p 0.073460p 0.073460p      0.0       0.0       0.0
        rc 3.81e-05p 0.004733p 0.043767p 0.071803l 0.073454j 0.073460j 0.073460j      0.0       0.0       0.0
 cf252s  xi      0.0       0.0  0.982441l      0.0  0.779876l 0.037697o      0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  4.036965g 4.816070j 3.954073i      0.0       0.0       0.0
zp 45.06 ri 5.34e-05p 0.022918p 0.938560p 2.392800m 0.745042l 0.036013o 0.000100p 1.52e-08p 3.57e-09p      0.0
sig0.600 cc 4.23e-05p 0.018185p 0.761158p 3.115282p 4.102510p 4.135381p 4.135488p 1.62e-08p 2.00e-08p 8.79e-09p
        rc 5.34e-05p 0.022972p 0.961532p 3.354332j 4.099374g 4.135387g 4.135488g 1.52e-08p 1.88e-08p 8.28e-09p

  mo, tc half lives from 80eng2; ru, rh, pd, ag half lives 89wal1.
1
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mass number 113 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 43 tc g 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd m 48 cd g 49 in m 49 in g 50 sn g 51 sb g

half life 0.652s 2.7 s 0.9 s 1.64 m 1.14 m 5.3 h 14.6 y 9.e15y 1.658h stable 115.1d 6.7 m

lambda 1.063e+00 2.567e-01 7.702e-01 7.044e-03 1.013e-02 3.633e-05 1.505e-09 2.442e-24 1.161e-04 0.0 6.970e-08 1.724e-03

z - 1 g 100.0000 100.0000 100.0000 100.0000 10.0000 90.0000 1.3000 98.7000 0.0 100.0000 0.0 -100.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 99.9000 -100.0000 0.0

z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1000 0.0 100.0000 0.0 0.0

u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.055954m 0.0 0.0 0.0 0.062831n 0.0 0.0

zp 45.14 ri 7.94e-05p 0.009508p 0.032982p 0.019688p 0.000328p 4.47e-05p 6.15e-07p 1.64e-07p 5.61e-12p 2.74e-11p 0.0 0.0

sig0.553 cc 7.94e-05p 0.009587p 0.042569p 0.062257p 0.006554p 0.056076p 0.000730p 0.061902p 5.61e-12p 0.062631p 0.0 0.0

rc 7.94e-05p 0.009587p 0.042569p 0.062257n 0.006554o 0.056076m 0.000730m 0.061902m 5.62e-12p 0.062631l 0.0 0.0

u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 1.569254j 0.0 0.0 0.0 1.245806m 0.0 0.0

zp 45.11 ri 0.008173p 0.223999p 0.764375p 0.685063p 0.019043p 0.001656p 0.000116p 1.89e-05p 9.75e-09p 7.89e-08p 5.52e-12p 0.0

sig0.642 cc 0.010202p 0.289805p 1.238275p 1.676438p 0.191414p 1.510861p 0.019786p 1.682678p 1.22e-08p 1.702444p 6.89e-12p 0.0

rc 0.008173p 0.232172p 0.996547n 1.681610l 0.187204n 1.515105j 0.019813j 1.682651j 9.75e-09p 1.702444i 5.52e-12p 0.0

u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.041068n 0.0 0.0

zp 44.51 ri 0.001083p 0.022168p 0.016150p 0.001662p 3.91e-06p 5.33e-07p 7.76e-10p 2.06e-10p 0.0 0.0 0.0 0.0

sig0.545 cc 0.001083p 0.023251p 0.039401p 0.041063p 0.004110p 0.036957p 0.000480p 0.040587p 0.0 0.041067p 0.0 0.0

rc 0.001083p 0.023251p 0.039401p 0.041063o 0.004110o 0.036957o 0.000480o 0.040587n 0.0 0.041067m 0.0 0.0

pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.295266l 0.0 0.0

zp 45.34 ri 0.003569p 0.129034p 0.637005p 0.473172p 0.047602p 0.004139p 0.000639p 0.000104p 1.40e-07p 1.13e-06p 2.43e-10p 0.0

sig0.664 cc 0.003569p 0.132603p 0.769608p 1.242780p 0.171880p 1.122641p 0.015234p 1.280046p 1.40e-07p 1.295266p 2.43e-10p 0.0
rc 0.003569p 0.132603p 0.769608o 1.242780o 0.171880o 1.122641n 0.015234o 1.280046m 1.40e-07p 1.295266k 2.43e-10p 0.0
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.146555k 0.0 0.0 0.0 0.117174m 0.0 0.0
zp 44.49 ri 0.000295p 0.084452p 0.064498p 0.000335p 5.57e-10p 7.59e-11p 0.0 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.000295p 0.084747p 0.149245p 0.149580p 0.014958p 0.134622p 0.001750p 0.147832p 0.0 0.149580p 0.0 0.0
rc 0.000295p 0.084747p 0.149245n 0.149580m 0.014958o 0.134622k 0.001750k 0.147832k 0.0 0.149580k 0.0 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.213241l 0.0 0.0
zp 44.48 ri 0.000470p 0.123420p 0.088927p 0.000423p 6.36e-10p 8.67e-11p 0.0 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.000470p 0.123890p 0.212818p 0.213241p 0.021324p 0.191917p 0.002495p 0.210748p 0.0 0.213241p 0.0 0.0
rc 0.000470p 0.123890p 0.212818p 0.213241o 0.021324o 0.191917o 0.002495o 0.210748n 0.0 0.213241l 0.0 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.318057m 0.0 0.0
zp 44.34 ri 0.002327p 0.223570p 0.092008p 0.000152p 8.17e-11p 1.11e-11p 0.0 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.002327p 0.225897p 0.317905p 0.318057p 0.031806p 0.286251p 0.003721p 0.314340p 0.0 0.318057p 0.0 0.0
rc 0.002327p 0.225897p 0.317905o 0.318057o 0.031806o 0.286251o 0.003721o 0.314340n 0.0 0.318057m 0.0 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.273253h 0.0 0.0 0.0 1.423619i 0.0 0.0
zp 44.20 ri 0.168919p 0.810885p 0.417422p 0.021619p 8.36e-05p 7.27e-06p 2.35e-08p 3.83e-09p 0.0 0.0 0.0 0.0
sig0.600 cc 0.168679p 0.978413p 1.397257p 1.418846p 0.141968p 1.276968p 0.016601p 1.402352p 0.0 1.418936p 0.0 0.0
rc 0.168919p 0.979804o 1.397226m 1.418846k 0.141968n 1.276968h 0.016601h 1.402352i 0.0 1.418936h 0.0 0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.046430j 0.0 0.0 0.0 0.051302k 0.0 0.0
zp 44.88 ri 0.000384p 0.012525p 0.031517p 0.007019p 9.94e-05p 1.36e-05p 8.20e-08p 2.18e-08p 0.0 4.01e-12p 0.0 0.0
sig0.568 cc 0.000384p 0.012908p 0.044425p 0.051445p 0.005244p 0.046314p 0.000602p 0.050956p 0.0 0.051558p 0.0 0.0
rc 0.000384p 0.012908p 0.044425o 0.051445l 0.005244o 0.046314j 0.000602j 0.050956j 0.0 0.051558j 0.0 0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.451456h 0.0 0.0 0.0 4.491943i 0.0 0.0

zp 45.52 ri 0.001642p 0.213219p 1.947205n 2.393357m 0.195574p 0.029434p 0.001846p 0.000551p 2.92e-07p 1.24e-06p 8.21e-11p 0.0
sig0.600 cc 0.001687p 0.220700p 2.220820p 4.547798p 0.657113p 4.123252p 0.055498p 4.727385p 3.00e-07p 4.782829p 8.43e-11p 0.0
rc 0.001642p 0.214861p 2.162066m 4.555423k 0.651116n 4.129314h 0.055527i 4.727356i 2.92e-07p 4.782829h 8.21e-11p 0.0

tc half life from 80eng2; ru, rh, pd, ag half lives 89wal1; sn, in half lives 90bur1.

1

mass number 114 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	42 mo g	43 tc g	44 ru g	45 rh g	46 pd g	47 ag g	48 cd g	49 in m	49 in g	50 sn g
half life	0.377s	0.202s	8.14 s	1.8 s	2.48 m	4.6 s	stable	49.51d	71.9 s	stable
lambda	1.839e+00	3.431e+00	8.515e-02	3.851e-01	4.658e-03	1.507e-01	0.0	1.620e-07	9.640e-03	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	-3.5000	-2.0000	98.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	96.5000	0.0
u233f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.055870n	0.0	0.0	0.0

zp 45.56 ri 1.10e-09p 3.64e-06p 0.001966p 0.016235p 0.035959p 0.001690p 1.63e-05p 1.57e-09p 4.44e-10p 0.0
sig0.553 cc 1.10e-09p 3.64e-06p 0.001969p 0.018205p 0.054164p 0.055854p 0.055870p 1.57e-09p 1.96e-09p 1.92e-09p
rc 1.10e-09p 3.64e-06p 0.001969p 0.018205p 0.054164p 0.055854o 0.055870n 1.57e-09p 1.96e-09p 1.92e-09p

u233he xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	1.228651m	0.0	0.0	0.0

zp 45.49 ri 1.93e-06p 0.001174p 0.073950p 0.545471p 0.536657p 0.070322p 0.001076p 1.45e-06p 2.56e-07p 2.61e-10p
sig0.642 cc 1.93e-06p 0.001176p 0.075126p 0.620596p 1.157253p 1.227575p 1.228651p 1.45e-06p 1.65e-06p 1.62e-06p
rc 1.93e-06p 0.001176p 0.075126p 0.620596o 1.157253n 1.227575n 1.228651m 1.45e-06p 1.65e-06p 1.62e-06p

u236f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.036321n	0.0	0.0	0.0

zp 44.96 ri 1.58e-07p 0.000106p 0.009782p 0.018421p 0.007944p 6.78e-05p 7.86e-08p 0.0 0.0 0.0
sig0.545 cc 1.58e-07p 0.000106p 0.009888p 0.028310p 0.036253p 0.036321p 0.036321p 0.0 1.15e-12p 1.12e-12p
rc 1.58e-07p 0.000106p 0.009888p 0.028310p 0.036253o 0.036321o 0.036321n 0.0 1.15e-12p 1.13e-12p

pu239h xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	1.256586l	0.0	0.0	0.0

zp 45.68 ri 1.03e-06p 0.000636p 0.046507p 0.445557p 0.627080p 0.132946p 0.003860p 1.17e-05p 2.06e-06p 5.55e-09p

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sig0.664 cc 1.03e-06p 0.000637p 0.047144p 0.492701p 1.119781p 1.252726p 1.256586p 1.17e-05p 1.33e-05p 1.30e-05p
         rc 1.03e-06p 0.000637p 0.047144p 0.492701p 1.119781n 1.252726m 1.256586k 1.17e-05p 1.33e-05p 1.30e-05p
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.091121m      0.0       0.0       0.0
zp 44.74 ri 3.27e-06p 0.000974p 0.036169p 0.044051p 0.009861p 6.21e-05p 4.41e-08p      0.0       0.0       0.0
sig0.558 cc 3.27e-06p 0.000978p 0.037147p 0.081197p 0.091058p 0.091121p 0.091121p      0.0       0.0       0.0
         rc 3.27e-06p 0.000978p 0.037147p 0.081197p 0.091058o 0.091121n 0.091121m      0.0       0.0       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.117393k      0.0       0.0       0.0
zp 44.67 ri 5.88e-06p 0.001618p 0.052451p 0.053748p 0.009526p 4.34e-05p 2.03e-08p      0.0       0.0       0.0
sig0.551 cc 5.88e-06p 0.001624p 0.054076p 0.107823p 0.117350p 0.117393p 0.117393p      0.0       0.0       0.0
         rc 5.88e-06p 0.001624p 0.054076p 0.107823o 0.117350n 0.117393m 0.117393k      0.0       0.0       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.133050m      0.0       0.0       0.0
zp 44.55 ri 3.54e-10p 0.000156p 0.068097p 0.064290p 0.000507p 1.42e-09p      0.0       0.0       0.0       0.0
sig0.350 cc 3.54e-10p 0.000156p 0.068253p 0.132543p 0.133050p 0.133050p 0.133050p      0.0       0.0       0.0
         rc 3.54e-10p 0.000156p 0.068253p 0.132543p 0.133050o 0.133050n 0.133050m      0.0       0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.331016i      0.0       0.0       0.0
zp 44.57 ri 0.000367p 0.048791p 0.552624p 0.648109p 0.080254p 0.000870p 7.02e-07p 3.29e-11p 5.81e-12p      0.0
sig0.600 cc 0.000367p 0.049157p 0.601782p 1.249891p 1.330145p 1.331015p 1.331016p 3.29e-11p 3.76e-11p 3.68e-11p
         rc 0.000367p 0.049157p 0.601782o 1.249891n 1.330145m 1.331015k 1.331016i 3.29e-11p 3.76e-11p 3.68e-11p
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.052834l      0.0       0.0       0.0
zp 45.32 ri 1.76e-08p 3.51e-05p 0.003863p 0.029009p 0.018921p 0.001002p 3.31e-06p 4.51e-10p 1.27e-10p      0.0
sig0.568 cc 1.76e-08p 3.51e-05p 0.003898p 0.032907p 0.051828p 0.052831p 0.052834p 4.51e-10p 5.63e-10p 5.51e-10p
         rc 1.76e-08p 3.51e-05p 0.003898p 0.032907p 0.051828o 0.052831n 0.052834l 4.51e-10p 5.63e-10p 5.51e-10p
 cf252s  xi      0.0       0.0       0.0       0.0  1.555930l      0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  3.345950k      0.0       0.0       0.0
zp 45.97 ri 6.24e-09p 3.87e-05p 0.019038p 0.560286p 1.816604n 0.912665p 0.019758p 2.61e-05p 8.70e-06p 4.83e-09p
sig0.591 cc 7.15e-09p 4.44e-05p 0.021851p 0.663600p 2.744331p 3.311561p 3.328396p 2.22e-05p 2.89e-05p 2.83e-05p
         rc 6.24e-09p 3.87e-05p 0.019077p 0.579363p 2.395967n 3.308632l 3.328392k 2.61e-05p 3.39e-05o 3.32e-05o

  mo, tc, ru half lives from 80eng2; rh, pd, ag half lives 89wal1.
1
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mass number 115 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd m 48 cd g 49 in m 49 in g 50 sn g 51 sb g 52 te g

half life 0.878s 0.99 s 47. s 18.7 s 20. m 44.6 d 2.228d 4.486h 5.e14y stable 32. m 6. m

lambda 7.895e-01 7.001e-01 1.475e-02 3.707e-02 5.776e-04 1.799e-07 3.601e-06 4.292e-05 4.396e-23 0.0 3.610e-04 1.925e-03

z - 1 g 100.0000 100.0000 100.0000 27.0000 73.0000 9.5000 90.5000 100.0000 0.0 100.0000 -100.0000 -100.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 5.0000 95.0000 0.0100 99.9900 3.7000 0.0 0.0

z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 96.3000 0.0 0.0 0.0

u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.003840n 0.049919l 0.0 0.055131m 0.0 0.0 0.0

zp 46.00 ri 0.000204p 0.007530p 0.039244p 0.003797p 0.003797p 0.000164p 4.36e-05p 2.22e-08p 1.08e-07p 7.67e-12p 0.0 0.0

sig0.553 cc 0.000204p 0.007735p 0.046978p 0.016481p 0.038091p 0.004607p 0.050172p 0.050173p 0.052923p 0.054779p 0.0 0.0

rc 0.000204p 0.007735p 0.046978p 0.016481p 0.038091o 0.004607m 0.050172k 0.050173k 0.052923k 0.054779k 0.0 0.0

u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 1.287668l 0.0 1.455708k 1.283219o 0.0 0.0

zp 45.86 ri 0.023976p 0.384363p 0.810756p 0.110278p 0.110278p 0.006536p 0.001064p 3.10e-06p 2.51e-05p 1.03e-08p 0.0 0.0

sig0.642 cc 0.024338p 0.414506p 1.215649p 0.440169p 0.999367p 0.123583p 1.323668p 1.323683p 1.398303p 1.447280p 0.0 0.0

rc 0.023976p 0.408339p 1.219095n 0.439434n 1.000218n 0.123528m 1.323723l 1.323739l 1.398301j 1.447280j 0.0 0.0

u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.037988n 0.037988n 0.0 0.0

zp 45.40 ri 0.002237p 0.016964p 0.018538p 0.000352p 0.000352p 2.10e-06p 5.58e-07p 3.51e-11p 1.72e-10p 0.0 0.0 0.0

sig0.545 cc 0.002237p 0.019200p 0.037738p 0.010541p 0.027901p 0.003180p 0.035265p 0.035266p 0.037140p 0.038445p 0.0 0.0

rc 0.002237p 0.019200p 0.037738o 0.010541o 0.027901o 0.003180o 0.035265o 0.035266n 0.037140m 0.038445m 0.0 0.0

pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.102132m 1.217245j 0.0 1.021784l 1.279318j 0.0 0.0

zp 46.02 ri 0.013861p 0.261438p 0.698163p 0.142062p 0.139643p 0.014137p 0.002301p 1.31e-05p 0.000106p 1.01e-07p 9.57e-12p 0.0

sig0.664 cc 0.013822p 0.274520p 0.972010p 0.404044p 0.851169p 0.115160p 1.156445p 1.156470p 1.228936p 1.271726p 9.67e-12p 0.0
rc 0.013861p 0.275299p 0.973462o 0.404897o 0.850271n 0.115158l 1.156449j 1.156474j 1.228936i 1.271726i 9.57e-12p 0.0
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.003800j 0.057384j 0.0 0.061146n 0.0 0.0 0.0
zp 45.23 ri 0.006563p 0.032584p 0.021461p 0.000320p 0.000320p 1.35e-06p 3.58e-07p 2.23e-11p 1.09e-10p 0.0 0.0 0.0
sig0.558 cc 0.006563p 0.039147p 0.060608p 0.016684p 0.044564p 0.005069p 0.056181p 0.056181p 0.059171p 0.061250p 0.0 0.0
rc 0.006563p 0.039147p 0.060608o 0.016684o 0.044564n 0.005069i 0.056181j 0.056181j 0.059171j 0.061250i 0.0 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.008565n 0.095088n 0.0 0.107610l 0.0 0.0 0.0
zp 45.17 ri 0.013908p 0.060689p 0.033639p 0.000391p 0.000391p 1.17e-06p 3.11e-07p 1.26e-11p 6.17e-11p 0.0 0.0 0.0
sig0.551 cc 0.013908p 0.074598p 0.108237p 0.029615p 0.079404p 0.009025p 0.099994p 0.099995p 0.105320p 0.109020p 0.0 0.0
rc 0.013908p 0.074598p 0.108237o 0.029615o 0.079404o 0.009025m 0.099994m 0.099995m 0.105320k 0.109020k 0.0 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.008927n 0.098955n 0.0 0.108093n 0.0 0.0 0.0
zp 44.75 ri 0.038204p 0.059954p 0.010900p 4.74e-05p 4.74e-05p 4.70e-08p 1.25e-08p 0.0 1.06e-12p 0.0 0.0 0.0
sig0.562 cc 0.038204p 0.098157p 0.109058p 0.029493p 0.079660p 0.009042p 0.100110p 0.100111p 0.105448p 0.109153p 0.0 0.0
rc 0.038204p 0.098157p 0.109058o 0.029493o 0.079660o 0.009042m 0.100110m 0.100111m 0.105448m 0.109153l 0.0 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.951213j 0.107313l 1.218747i 0.0 1.244673i 1.325627k 0.0 0.0
zp 44.94 ri 0.295038p 0.785698p 0.225224p 0.003111p 0.003111p 1.14e-05p 1.86e-06p 2.19e-10p 1.77e-09p 0.0 0.0 0.0
sig0.600 cc 0.294235p 1.079118p 1.305977p 0.355716p 0.956465p 0.108661p 1.203533p 1.203544p 1.267664p 1.312195p 0.0 0.0
rc 0.295038p 1.080736n 1.305960m 0.355720n 0.956462j 0.108661j 1.203534i 1.203544i 1.267664h 1.312195g 0.0 0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.042701i 0.0 0.051151k 0.056456l 0.0 0.0
zp 45.71 ri 0.000799p 0.016538p 0.027562p 0.002004p 0.002004p 3.17e-05p 8.43e-06p 3.80e-09p 1.85e-08p 0.0 0.0 0.0
sig0.568 cc 0.000799p 0.017337p 0.044900p 0.014127p 0.034780p 0.004042p 0.044905p 0.044905p 0.047286p 0.048947p 0.0 0.0

rc 0.000799p 0.017337p 0.044900p 0.014127p 0.034780o 0.004042o 0.044905i 0.044905i 0.047286i 0.048947i 0.0 0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.659638k 0.226622j 2.546597h 3.007027j 2.790505g 2.929053i 0.0 0.0
zp 46.34 ri 0.001179p 0.171209p 1.695005n 0.537504p 0.438902p 0.041037p 0.012258p 2.23e-05p 9.51e-05p 1.34e-08p 0.0
0.0
sig0.548 cc 0.001157p 0.169242p 1.833314p 1.000726p 1.844051p 0.265509p 2.631589p 2.631637p 2.799841p 2.897211p 0.0
0.0
rc 0.001179p 0.172388p 1.867394m 1.041700o 1.802099j 0.264321j 2.632773h 2.632821h 2.799797f 2.897211f 0.0
0.0

ru half life 80eng2; ag-115g branching 80tob1; ag-115m branching to fit data; rh, pd, ag, cd, in half lives 89wal1.

1

mass number 116 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 42 mo g 43 tc g 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g 49 in m 49 in g 50 sn g
half life 0.115s 1.70 s 0.7 s 12.7 s 10.5 s 2.68 m stable 54.2 m 14.2 s stable
lambda 0.0 6.027e+00 4.077e-01 9.902e-01 5.458e-02 6.601e-02 4.311e-03 0.0 2.131e-04 4.881e-02 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 50.0000 50.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 100.0000
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.065480n 0.0 0.0 0.0
zp 46.43 ri 0.0 2.53e-09p 2.00e-05p 0.002029p 0.042382p 0.009407p 0.009407p 0.002236p 2.03e-06p 2.03e-06p 1.20e-09p
sig0.553 cc 0.0 2.53e-09p 2.00e-05p 0.002049p 0.044431p 0.031622p 0.031622p 0.065480p 2.03e-06p 2.03e-06p 4.06e-06p
rc 0.0 2.53e-09p 2.00e-05p 0.002049p 0.044431p 0.031622p 0.031622p 0.065480m 2.03e-06p 2.03e-06p 4.06e-06o
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.381495m 0.0 0.0 0.0
zp 46.22 ri 4.62e-09p 1.54e-05p 0.005032p 0.175115p 0.742383p 0.213570p 0.213570p 0.031809p 0.000133p 0.000133p 2.25e-
07p
sig0.642 cc 4.62e-09p 1.54e-05p 0.005047p 0.180163p 0.922546p 0.674843p 0.674843p 1.381495p 0.000133p 0.000133p
0.000267p
rc 4.62e-09p 1.54e-05p 0.005047p 0.180163p 0.922546o 0.674843o 0.674843o 1.381495l 0.000133p 0.000133p 0.000267o
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.037359n 0.0 0.0 0.0
zp 45.81 ri 2.74e-11p 2.85e-07p 0.000359p 0.007071p 0.027280p 0.001303p 0.001303p 4.29e-05p 5.08e-09p 5.08e-09p 0.0

sig0.545 cc 2.74e-11p 2.85e-07p 0.000359p 0.007431p 0.034710p 0.018658p 0.018658p 0.037359p 5.08e-09p 5.08e-09p 1.02e-08p
rc 2.74e-11p 2.85e-07p 0.000359p 0.007431p 0.034710p 0.018658p 0.018658p 0.037359n 5.08e-09p 5.08e-09p 1.02e-08o
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.156417l 0.0 0.0 0.0
zp 46.37 ri 3.16e-09p 8.78e-06p 0.002773p 0.106625p 0.557787p 0.219187p 0.219187p 0.050848p 0.000389p 0.000389p 1.42e-06p
sig0.664 cc 3.16e-09p 8.78e-06p 0.002782p 0.109407p 0.667194p 0.552784p 0.552784p 1.156417p 0.000389p 0.000389p 0.000779p
rc 3.16e-09p 8.78e-06p 0.002782p 0.109407p 0.667194o 0.552784o 0.552784o 1.156417k 0.000389p 0.000389p 0.000779o
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.064827m 0.0 0.0 0.0
zp 45.71 ri 3.14e-10p 1.81e-06p 0.001109p 0.016852p 0.042867p 0.001972p 0.001972p 5.13e-05p 7.38e-09p 7.38e-09p 0.0
sig0.558 cc 3.14e-10p 1.81e-06p 0.001111p 0.017964p 0.060831p 0.032388p 0.032388p 0.064827p 7.38e-09p 7.38e-09p 1.48e-08p
rc 3.14e-10p 1.81e-06p 0.001111p 0.017964p 0.060831p 0.032388p 0.032388p 0.064827m 7.38e-09p 7.38e-09p 1.48e-08o
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.096928l 0.0 0.0 0.0
zp 45.64 ri 6.72e-10p 3.85e-06p 0.002171p 0.028761p 0.061481p 0.002234p 0.002234p 4.18e-05p 3.96e-09p 3.96e-09p 0.0
sig0.551 cc 6.72e-10p 3.85e-06p 0.002175p 0.030937p 0.092418p 0.048443p 0.048443p 0.096928p 3.96e-09p 3.96e-09p 7.92e-09p
rc 6.72e-10p 3.85e-06p 0.002175p 0.030937p 0.092418p 0.048443p 0.048443p 0.096928l 3.96e-09p 3.96e-09p 7.92e-09o
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.097549n 0.0 0.0 0.0
zp 45.26 ri 5.14e-08p 7.46e-05p 0.009961p 0.049718p 0.036619p 0.000586p 0.000586p 3.81e-06p 1.73e-10p 1.73e-10p 0.0
sig0.562 cc 5.14e-08p 7.47e-05p 0.010036p 0.059754p 0.096374p 0.048772p 0.048772p 0.097549p 1.73e-10p 1.73e-10p 3.46e-10p
rc 5.14e-08p 7.47e-05p 0.010036p 0.059754p 0.096374o 0.048772o 0.048772o 0.097549m 1.73e-10p 1.73e-10p 3.46e-10o
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.272370i 0.0 0.0 0.0
zp 45.30 ri 1.90e-06p 0.001691p 0.113532p 0.685396p 0.442595p 0.014498p 0.014498p 0.000158p 3.10e-08p 3.10e-08p 1.65e-12p
sig0.600 cc 1.90e-06p 0.001693p 0.115225p 0.800620p 1.243215p 0.636106p 0.636106p 1.272370p 3.10e-08p 3.10e-08p 6.20e-08p
rc 1.90e-06p 0.001693p 0.115225p 0.800620o 1.243215o 0.636106o 0.636106o 1.272370i 3.10e-08p 3.10e-08p 6.20e-08o
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.047786k 0.0 0.0 0.0
zp 46.13 ri 3.79e-12p 8.49e-08p 9.65e-05p 0.006246p 0.029085p 0.005988p 0.005988p 0.000382p 3.64e-07p 3.64e-07p 7.20e-11p
sig0.568 cc 3.79e-12p 8.49e-08p 9.66e-05p 0.006343p 0.035427p 0.023702p 0.023702p 0.047786p 3.64e-07p 3.64e-07p 7.28e-07p
rc 3.79e-12p 8.49e-08p 9.66e-05p 0.006343p 0.035427p 0.023702p 0.023702p 0.047786k 3.64e-07p 3.64e-07p 7.28e-07o
cf252s xi 0.0 0.0 0.0 0.0 0.914634l 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 1.682086p 2.083334k 0.0 0.0 0.0
zp 46.65 ri 0.0 4.55e-10p 2.29e-05p 0.022624p 0.818536p 0.537178p 0.650416p 0.098263p 0.000124p 0.000124p 1.91e-08p
sig0.506 cc 0.0 4.63e-10p 2.33e-05p 0.023037p 0.855692p 1.010669p 1.010669p 2.127021p 0.000133p 0.000133p 0.000266p
rc 0.0 4.55e-10p 2.29e-05p 0.022647p 0.841183p 0.957769o 1.071007o 2.127040k 0.000124p 0.000124p 0.000247p

tc, ru half lives from 80eng2; rh, pd, ag half lives from 89wal1.
1

mass number 117 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd m 48 cd g 49 in m 49 in g 50 sn g 51 sb g 52 te g
half life 0.343s 1.22 s 5. s 5.3 s 1.22 m 3.4 h 2.49 h 1.94 h 44. m stable 2.80 h 64. m
lambda 2.021e+00 5.682e-01 1.386e-01 1.308e-01 9.469e-03 5.663e-05 7.733e-05 9.925e-05 2.626e-04 0.0 6.876e-05
1.805e-04
z - 1 g 100.0000 100.0000 100.0000 50.0000 50.0000 50.0000 50.0000 92.0000 8.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 1.0000 99.0000 53.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 47.0000 0.0 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.065723j 0.0 0.0
zp 46.87 ri 7.35e-07p 0.000366p 0.020086p 0.017399p 0.017399p 0.008202p 0.002180p 1.53e-05p 7.48e-05p 8.18e-08p 1.47e-12p
0.0
sig0.553 cc 7.35e-07p 0.000367p 0.020453p 0.027625p 0.027625p 0.022015p 0.043618p 0.040364p 0.044330p 0.065723p 1.47e-
12p 0.0
rc 7.35e-07p 0.000367p 0.020453p 0.027625p 0.027625p 0.022015p 0.043618o 0.040364o 0.044330n 0.065723j 1.47e-12p
0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.320991m 0.0 0.0
zp 46.58 ri 0.000779p 0.059920p 0.532822p 0.313357p 0.313357p 0.085059p 0.013847p 0.000203p 0.001644p 3.60e-06p 6.80e-
10p 0.0
sig0.642 cc 0.000779p 0.060699p 0.593520p 0.610118p 0.610118p 0.390117p 0.929023p 0.858806p 0.865821p 1.320991p 6.80e-
10p 0.0
rc 0.000779p 0.060699p 0.593520o 0.610118o 0.610118o 0.390117o 0.929023n 0.858806n 0.865821m 1.320991l 6.80e-10p
0.0
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.037698n 0.0 0.0
zp 46.22 ri 3.37e-05p 0.002779p 0.025613p 0.004437p 0.004437p 0.000316p 8.39e-05p 7.33e-08p 3.58e-07p 3.71e-11p 0.0
0.0

sig0.545 cc 3.37e-05p 0.002813p 0.028426p 0.018649p 0.018649p 0.009640p 0.028058p 0.025910p 0.023966p 0.037698p 0.0
0.0
rc 3.37e-05p 0.002813p 0.028426p 0.018649p 0.018649p 0.009640o 0.028058o 0.025910o 0.023966n 0.037698l 0.0
0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.151458l 0.0 0.0
zp 46.72 ri 0.000470p 0.037351p 0.387229p 0.293801p 0.293801p 0.115713p 0.018837p 0.000466p 0.003773p 1.64e-05p 7.25e-
09p 0.0
sig0.664 cc 0.000470p 0.037821p 0.425049p 0.506326p 0.506326p 0.368876p 0.778325p 0.720215p 0.769728p 1.151458p 7.25e-
09p 0.0
rc 0.000470p 0.037821p 0.425049p 0.506326p 0.506326p 0.368876o 0.778325o 0.720215n 0.769728n 1.151458k 7.25e-09p
0.0
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.063752m 0.0 0.0
zp 46.18 ri 8.82e-05p 0.005945p 0.042004p 0.007540p 0.007540p 0.000501p 0.000133p 1.53e-07p 7.45e-07p 9.59e-11p 0.0
0.0
sig0.558 cc 8.82e-05p 0.006033p 0.048037p 0.031558p 0.031558p 0.016280p 0.047471p 0.043836p 0.040519p 0.063752p 0.0
0.0
rc 8.82e-05p 0.006033p 0.048037p 0.031558p 0.031558p 0.016280o 0.047471o 0.043836o 0.040519n 0.063752l 0.0
0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.088045l 0.0 0.0
zp 46.10 ri 0.000175p 0.010196p 0.059980p 0.008583p 0.008583p 0.000417p 0.000111p 8.46e-08p 4.13e-07p 3.23e-11p 0.0
0.0
sig0.551 cc 0.000175p 0.010370p 0.070350p 0.043758p 0.043758p 0.022296p 0.065748p 0.060711p 0.055868p 0.088045p 0.0
0.0
rc 0.000175p 0.010370p 0.070350p 0.043758p 0.043758p 0.022296o 0.065748o 0.060711o 0.055868n 0.088045k 0.0
0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.098267n 0.0 0.0
zp 45.73 ri 0.001493p 0.029149p 0.060018p 0.003761p 0.003761p 6.72e-05p 1.79e-05p 6.20e-09p 3.03e-08p 1.01e-12p 0.0
0.0
sig0.562 cc 0.001493p 0.030642p 0.090660p 0.049091p 0.049091p 0.024613p 0.073654p 0.068008p 0.062223p 0.098267p 0.0
0.0
rc 0.001493p 0.030642p 0.090660p 0.049091p 0.049091p 0.024613o 0.073654o 0.068008n 0.062223n 0.098267l 0.0
0.0

th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.266976l 1.362151j 0.0 0.0 1.167762i 0.0 0.0
zp 45.67 ri 0.036627p 0.525844p 0.745423p 0.060054p 0.060054p 0.001442p 0.000235p 1.66e-07p 1.35e-06p 1.09e-10p 0.0
0.0
sig0.600 cc 0.036025p 0.553229p 1.309895p 0.714015p 0.714015p 0.358426p 1.071253p 0.989137p 0.905438p 1.429681p 0.0
0.0
rc 0.036627p 0.562471o 1.307894n 0.714001n 0.714001n 0.358443k 1.071236k 0.989122k 0.905446j 1.429681h 0.0
0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.043023k 0.0 0.0
zp 46.55 ri 6.47e-06p 0.001367p 0.018559p 0.010522p 0.010522p 0.001606p 0.000427p 2.21e-06p 1.08e-05p 4.49e-09p 0.0
0.0
sig0.568 cc 6.47e-06p 0.001373p 0.019932p 0.020488p 0.020488p 0.011850p 0.031159p 0.028787p 0.027765p 0.043023p 0.0
0.0
rc 6.47e-06p 0.001373p 0.019932p 0.020488p 0.020488p 0.011850o 0.031159o 0.028787o 0.027765n 0.043023k 0.0
0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.394887j 0.0 0.0 1.409013j 0.0 0.0
zp 46.93 ri 3.71e-07p 0.002153p 0.291714p 0.515100p 0.500454p 0.146599p 0.043789p 0.000160p 0.000684p 8.41e-08p 0.0
0.0
sig0.483 cc 3.74e-07p 0.002175p 0.296764p 0.653768p 0.653768p 0.474928p 1.024873p 0.947795p 0.998323p 1.500654p 0.0
0.0
rc 3.71e-07p 0.002154p 0.293868p 0.662034o 0.647388p 0.470293o 1.029517k 0.952019k 0.996084l 1.500654i 0.0
0.0

ag-to-cd branching from 80eng2; ru half life from 80eng2; rh, pd, ag, cd, in half lives 89wal1.

1

mass number 118 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g 49 in m 49 in g 50 sn g 51 sb m 51 sb g 52 te g
half life 0.662s 0.316s 2.4 s 2.4 s 4.0 s 50.3 m 4.4 m 5.0 s stable 5.00 h 3.6 m 6.00 d
lambda 1.047e+00 2.194e+00 2.888e-01 2.888e-01 1.733e-01 2.297e-04 2.626e-03 1.386e-01 0.0 3.851e-05 3.209e-03
1.337e-06
z - 1 g 100.0000 100.0000 100.0000 50.0000 50.0000 100.0000 0.0 100.0000 100.0000 -100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 54.0000 0.0 0.0 100.0000 0.0 0.0 0.0

z - 0 m 0.0 0.0 0.0 0.0 46.0000 0.0 0.0 0.0 0.0 0.0 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.070680j 0.0 0.0 0.0
zp 47.30 ri 1.96e-08p 2.87e-05p 0.007119p 0.014560p 0.014560p 0.033637p 0.000170p 0.000603p 3.41e-06p 1.17e-10p 6.87e-11p 0.0
sig0.553 cc 1.96e-08p 2.87e-05p 0.007147p 0.018133p 0.026474p 0.069903p 0.000170p 0.070506p 0.070680p 1.17e-10p 6.87e-11p 0.0
rc 1.96e-08p 2.87e-05p 0.007147p 0.018133p 0.026474p 0.069903n 0.000170p 0.070506l 0.070680j 1.17e-10p 6.87e-11p 0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.285070m 0.0 0.0 0.0
zp 46.94 ri 9.13e-05p 0.015768p 0.299787p 0.361197p 0.361197p 0.237267p 0.001458p 0.008261p 4.32e-05p 1.41e-08p 4.94e-09p 0.0
sig0.642 cc 9.13e-05p 0.015859p 0.315646p 0.519020p 0.757769p 1.275307p 0.001458p 1.283568p 1.285070p 1.41e-08p 4.95e-09p 0.0
rc 9.13e-05p 0.015859p 0.315646p 0.519020p 0.757769o 1.275307n 0.001458p 1.283568n 1.285070m 1.41e-08p 4.95e-09p 0.0
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.036295n 0.0 0.0 0.0
zp 46.63 ri 2.19e-06p 0.000519p 0.018393p 0.007379p 0.007379p 0.002615p 1.81e-06p 6.40e-06p 3.30e-09p 0.0 0.0 0.0
sig0.545 cc 2.19e-06p 0.000521p 0.018914p 0.016836p 0.024581p 0.036287p 1.81e-06p 0.036293p 0.036295p 0.0 0.0 0.0
rc 2.19e-06p 0.000521p 0.018914p 0.016836p 0.024581o 0.036287n 1.81e-06p 0.036293n 0.036295m 0.0 0.0 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.248700k 0.0 0.0 1.259636l 0.0 0.0 0.0
zp 47.08 ri 6.36e-05p 0.010807p 0.230058p 0.344969p 0.344969p 0.313862p 0.003061p 0.017348p 0.000170p 1.22e-07p 4.29e-08p 1.78e-11p
sig0.664 cc 6.36e-05p 0.010870p 0.240913p 0.465403p 0.679489p 1.244649p 0.003073p 1.262063p 1.265306p 1.23e-07p 4.31e-08p 1.79e-11p
rc 6.36e-05p 0.010870p 0.240928p 0.465433p 0.679532o 1.244727k 0.003061p 1.262075k 1.265306j 1.22e-07p 4.29e-08p 1.78e-11p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.058995m 0.0 0.0 0.0
zp 46.65 ri 4.10e-06p 0.000932p 0.027034p 0.013171p 0.013171p 0.004660p 4.97e-06p 1.76e-05p 1.22e-08p 0.0 0.0 0.0
sig0.558 cc 4.10e-06p 0.000936p 0.027970p 0.027156p 0.039648p 0.058972p 4.97e-06p 0.058990p 0.058995p 0.0 0.0 0.0

rc 4.10e-06p 0.000936p 0.027970p 0.027156p 0.039648o 0.058972n 4.97e-06p 0.058990n 0.058995m 0.0 0.0 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.083358l 0.0 0.0 0.0
zp 46.54 ri 1.06e-05p 0.001969p 0.044445p 0.016415p 0.016415p 0.004092p 2.77e-06p 9.83e-06p 3.91e-09p 0.0 0.0 0.0
sig0.551 cc 1.06e-05p 0.001979p 0.046424p 0.039626p 0.057855p 0.083345p 2.77e-06p 0.083355p 0.083358p 0.0 0.0
0.0
rc 1.06e-05p 0.001979p 0.046424p 0.039626p 0.057855o 0.083345n 2.77e-06p 0.083355m 0.083358l 0.0 0.0 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.087794n 0.0 0.0 0.0
zp 46.19 ri 0.000128p 0.007942p 0.058225p 0.010272p 0.010272p 0.000954p 3.16e-07p 1.12e-06p 1.85e-10p 0.0 0.0
0.0
sig0.562 cc 0.000128p 0.008070p 0.066295p 0.043419p 0.063392p 0.087792p 3.16e-07p 0.087794p 0.087794p 0.0 0.0
0.0
rc 0.000128p 0.008070p 0.066295p 0.043419p 0.063392o 0.087792n 3.16e-07p 0.087794n 0.087794m 0.0 0.0 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.113324i 0.0 0.0 0.0
zp 46.02 ri 0.006198p 0.207558p 0.662613p 0.114651p 0.114651p 0.007633p 3.02e-06p 1.71e-05p 3.73e-09p 0.0 0.0
0.0
sig0.600 cc 0.006198p 0.213756p 0.876369p 0.552835p 0.807140p 1.113304p 3.02e-06p 1.113321p 1.113324p 0.0 0.0
0.0
rc 0.006198p 0.213756p 0.876369o 0.552835o 0.807140n 1.113304l 3.02e-06p 1.113321k 1.113324i 0.0 0.0 0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.052941k 0.0 0.0 0.0
zp 46.98 ri 3.26e-07p 0.000239p 0.010234p 0.016444p 0.016444p 0.009381p 4.37e-05p 0.000155p 2.45e-07p 9.71e-12p 5.70e-12p
0.0
sig0.568 cc 3.26e-07p 0.000239p 0.010473p 0.021681p 0.031654p 0.052742p 4.37e-05p 0.052897p 0.052941p 9.71e-12p 5.70e-
12p 0.0
rc 3.26e-07p 0.000239p 0.010473p 0.021681p 0.031654p 0.052742n 4.37e-05p 0.052897m 0.052941k 9.71e-12p 5.71e-12p
0.0
cf252s xi 0.0 0.0 0.336417l 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.820122k 0.0 0.0 0.0
zp 47.20 ri 2.26e-08p 0.000354p 0.126729p 0.294030p 0.297104p 0.272126p 0.000881p 0.002642p 1.16e-06p 3.14e-12p 2.19e-12p
0.0
sig0.486 cc 1.39e-08p 0.000218p 0.078310p 0.353630p 0.516300p 0.990222p 0.000911p 0.992954p 0.993867p 3.25e-12p 2.26e-
12p 0.0

rc 2.26e-08p 0.000354p 0.127083p 0.357572p 0.525128p 0.990342p 0.000881p 0.992985n 0.993867k 3.14e-12p 2.19e-12p 0.0

ru, rh, ag half lives 80eng2; pd, ag, cd, in half lives 89wal1; sb half life 90bur1.

1

mass number 119 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag g 48 cd m 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te g
half life 0.195s 0.465s 1.76 s 2.1s 2.20 m 2.69 m 17.9 m 2.3 m 293. d stable 38.1 h 16. h
lambda 3.555e+00 1.491e+00 3.938e-01 3.301e-01 5.251e-03 4.295e-03 6.454e-04 5.023e-03 2.738e-08 0.0 5.054e-06 1.203e-05
z - 1 g 100.0000 100.0000 100.0000 100.0000 50.0000 50.0000 100.0000 0.0 5.0000 95.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 95.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.0000 0.0 100.0000 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.074920j 0.0 0.0
zp 47.73 ri 2.17e-10p 1.59e-06p 0.001112p 0.019026p 0.024971p 0.024971p 0.000813p 0.003968p 4.69e-05p 1.25e-05p 1.61e-08p 0.0
sig0.553 cc 2.17e-10p 1.59e-06p 0.001114p 0.020139p 0.035040p 0.035040p 0.035853p 0.040801p 0.002087p 0.074920p 1.61e-08p 0.0
rc 2.17e-10p 1.59e-06p 0.001114p 0.020139p 0.035040p 0.035040p 0.035853p 0.040801o 0.002087o 0.074920j 1.61e-08p 0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.220152m 0.0 0.0
zp 47.30 ri 7.74e-06p 0.003041p 0.126037p 0.628958p 0.212165p 0.212165p 0.004114p 0.033289p 0.000322p 5.25e-05p 3.82e-07p 3.73e-11p
sig0.642 cc 7.74e-06p 0.003048p 0.129085p 0.758043p 0.591187p 0.591187p 0.595301p 0.654241p 0.033034p 1.220152p 3.82e-07p 3.73e-11p
rc 7.74e-06p 0.003048p 0.129085p 0.758043o 0.591187o 0.591187o 0.595301o 0.654241o 0.033034n 1.220152l 3.82e-07p 3.73e-11p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.035340n 0.0 0.0
zp 47.04 ri 6.78e-08p 7.24e-05p 0.006886p 0.019751p 0.004259p 0.004259p 1.94e-05p 9.45e-05p 1.09e-07p 2.90e-08p 3.32e-12p 0.0

sig0.545 cc 6.78e-08p 7.24e-05p 0.006958p 0.026709p 0.017613p 0.017613p 0.017632p 0.018589p 0.000930p 0.035340p 3.32e-12p 0.0
rc 6.78e-08p 7.24e-05p 0.006958p 0.026709p 0.017613o 0.017613o 0.017632o 0.018589o 0.000930o 0.035340m 3.32e-12p 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.251859l 0.0 0.0
zp 47.46 ri 5.09e-06p 0.001951p 0.090293p 0.562396p 0.261728p 0.261728p 0.007966p 0.064454p 0.001149p 0.000187p 2.96e-06p 7.38e-10p
sig0.664 cc 5.09e-06p 0.001956p 0.092249p 0.654645p 0.589050p 0.589050p 0.597016p 0.683355p 0.035316p 1.251859p 2.96e-06p 7.38e-10p
rc 5.09e-06p 0.001956p 0.092249p 0.654645o 0.589050o 0.589050o 0.597016o 0.683355o 0.035316n 1.251859k 2.96e-06p 7.38e-10p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.058555m 0.0 0.0
zp 47.12 ri 8.65e-08p 9.57e-05p 0.008790p 0.032859p 0.008224p 0.008224p 6.14e-05p 0.000300p 5.46e-07p 1.45e-07p 3.78e-11p 0.0
sig0.558 cc 8.65e-08p 9.58e-05p 0.008886p 0.041745p 0.029096p 0.029096p 0.029158p 0.030854p 0.001543p 0.058555p 3.78e-11p 0.0
rc 8.65e-08p 9.58e-05p 0.008886p 0.041745p 0.029096p 0.029096o 0.029158o 0.030854o 0.001543o 0.058555m 3.78e-11p 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.082389l 0.0 0.0
zp 46.99 ri 2.93e-07p 0.000255p 0.017490p 0.047737p 0.008338p 0.008338p 3.92e-05p 0.000191p 1.97e-07p 5.24e-08p 7.05e-12p 0.0
sig0.551 cc 2.93e-07p 0.000255p 0.017745p 0.065482p 0.041079p 0.041079p 0.041118p 0.043326p 0.002167p 0.082389p 7.05e-12p 0.0
rc 2.93e-07p 0.000255p 0.017745p 0.065482p 0.041079o 0.041079o 0.041118o 0.043326o 0.002167o 0.082389l 7.05e-12p 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.087794n 0.0 0.0
zp 46.66 ri 5.79e-06p 0.001586p 0.035312p 0.044442p 0.003202p 0.003202p 7.31e-06p 3.57e-05p 1.62e-08p 4.32e-09p 0.0 0.0
sig0.562 cc 5.79e-06p 0.001592p 0.036904p 0.081346p 0.043875p 0.043875p 0.043883p 0.046105p 0.002305p 0.087794p 0.0 0.0
rc 5.79e-06p 0.001592p 0.036904p 0.081346o 0.043875o 0.043875o 0.043883o 0.046105o 0.002305o 0.087794m 0.0 0.0

th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.060308i 0.0 0.0
zp 46.37 ri 0.000954p 0.076416p 0.542259p 0.408832p 0.015820p 0.015820p 2.27e-05p 0.000183p 8.40e-08p 1.37e-08p 3.14e-12p 0.0
sig0.600 cc 0.000954p 0.077370p 0.619630p 1.028462p 0.530051p 0.530051p 0.530074p 0.556738p 0.027837p 1.060308p 3.14e-12p 0.0
rc 0.000954p 0.077370p 0.619630o 1.028462o 0.530051o 0.530051o 0.530074o 0.556738o 0.027837n 1.060308i 3.14e-12p 0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.053266k 0.0 0.0
zp 47.41 ri 7.76e-09p 2.02e-05p 0.002859p 0.027022p 0.010944p 0.010944p 0.000250p 0.001220p 4.97e-06p 1.32e-06p 1.44e-09p 0.0
sig0.568 cc 7.76e-09p 2.02e-05p 0.002880p 0.029901p 0.025895p 0.025895p 0.026145p 0.028422p 0.001426p 0.053266p 1.44e-09p 0.0
rc 7.76e-09p 2.02e-05p 0.002880p 0.029901p 0.025895p 0.025895p 0.026145o 0.028422o 0.001426o 0.053266k 1.44e-09p 0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.384146k 0.0 0.0
zp 47.44 ri 4.47e-11p 5.11e-06p 0.008493p 0.193347p 0.089073p 0.089073p 0.000789p 0.003365p 1.44e-06p 4.29e-07p 8.00e-12p 0.0
sig0.464 cc 4.47e-11p 5.11e-06p 0.008498p 0.201844p 0.189995p 0.189995p 0.190784p 0.202899p 0.010146p 0.384147p 8.00e-12p 0.0
rc 4.47e-11p 5.11e-06p 0.008498p 0.201844p 0.189995p 0.189995p 0.190784o 0.202899o 0.010146o 0.384147k 8.00e-12p 0.0

ru, rh, pd half lives 80eng2; ag, cd, in, sn half lives 89wal1.
1

mass number 120 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	44 ru g	45 rh g	46 pd g	47 ag g	48 cd g	49 in m	49 in g	50 sn g	51 sb m	51 sb g	52 te g
half life	0.350s	0.172s	3.91 s	1.23 s	50.8 s	46. s	3.1 s	stable	5.76 d	16.0 m	stable
lambda	1.980e+00	4.030e+00	1.773e-01	5.635e-01	1.364e-02	1.507e-02	2.236e-01	0.0	1.393e-06	7.220e-04	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	50.0000	50.0000	100.0000	-100.0000	-100.0000	0.0
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
u233f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.070917j 0.0 0.0 0.0
zp 48.15 ri 1.71e-12p 3.66e-08p 0.000121p 0.005351p 0.053145p 0.005833p 0.005833p 0.000634p 3.08e-07p 1.81e-07p 5.98e-11p
sig0.553 cc 1.71e-12p 3.66e-08p 0.000121p 0.005472p 0.058617p 0.035142p 0.035142p 0.070917p 3.08e-07p 1.81e-07p 5.98e-11p
rc 1.71e-12p 3.66e-08p 0.000121p 0.005472p 0.058617p 0.035142p 0.035142p 0.070917j 3.08e-07p 1.81e-07p 5.98e-11p
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.159649m 0.0 0.0 0.0
zp 47.66 ri 4.86e-07p 0.000438p 0.040311p 0.423680p 0.584142p 0.054325p 0.054325p 0.002420p 4.19e-06p 1.47e-06p 1.29e-09p
sig0.642 cc 4.86e-07p 0.000439p 0.040750p 0.464430p 1.048573p 0.578612p 0.578612p 1.159649p 4.19e-06p 1.47e-06p 1.29e-09p
rc 4.86e-07p 0.000439p 0.040750p 0.464430p 1.048573n 0.578612n 0.578612n 1.159649l 4.19e-06p 1.47e-06p 1.29e-09p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.038206n 0.0 0.0 0.0
zp 47.45 ri 1.50e-09p 4.85e-06p 0.001983p 0.013998p 0.021455p 0.000380p 0.000380p 4.14e-06p 1.93e-10p 1.14e-10p 0.0
sig0.545 cc 1.50e-09p 4.85e-06p 0.001988p 0.015986p 0.037441p 0.019101p 0.019101p 0.038205p 1.93e-10p 1.14e-10p 0.0
rc 1.50e-09p 4.85e-06p 0.001988p 0.015986p 0.037441p 0.019101p 0.019101p 0.038205m 1.93e-10p 1.14e-10p 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.248022l 0.0 0.0 0.0
zp 47.83 ri 3.24e-07p 0.000277p 0.027700p 0.357159p 0.666852p 0.094281p 0.094281p 0.007435p 2.69e-05p 9.46e-06p 2.05e-08p
sig0.664 cc 3.24e-07p 0.000277p 0.027977p 0.385136p 1.051988p 0.620275p 0.620275p 1.248022p 2.69e-05p 9.46e-06p 2.05e-08p
rc 3.24e-07p 0.000277p 0.027977p 0.385136p 1.051988n 0.620275n 0.620275n 1.248022k 2.69e-05p 9.46e-06p 2.05e-08p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.067071m 0.0 0.0 0.0
zp 47.60 ri 1.04e-09p 4.28e-06p 0.001886p 0.021216p 0.041106p 0.001416p 0.001416p 2.67e-05p 3.45e-09p 2.03e-09p 0.0
sig0.558 cc 1.04e-09p 4.28e-06p 0.001891p 0.023106p 0.064212p 0.033522p 0.033522p 0.067071p 3.45e-09p 2.03e-09p 0.0
rc 1.04e-09p 4.28e-06p 0.001891p 0.023106p 0.064212p 0.033522p 0.033522p 0.067071m 3.45e-09p 2.03e-09p 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.086505l 0.0 0.0 0.0
zp 47.44 ri 4.90e-09p 1.49e-05p 0.004575p 0.034900p 0.045107p 0.000949p 0.000949p 9.71e-06p 6.15e-10p 3.61e-10p 0.0
sig0.551 cc 4.90e-09p 1.49e-05p 0.004590p 0.039490p 0.084597p 0.043248p 0.043248p 0.086505p 6.15e-10p 3.61e-10p 0.0
rc 4.90e-09p 1.49e-05p 0.004590p 0.039490p 0.084597p 0.043248p 0.043248p 0.086505l 6.15e-10p 3.61e-10p 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.082916n 0.0 0.0 0.0
zp 47.12 ri 1.53e-07p 0.000145p 0.013028p 0.045497p 0.023727p 0.000259p 0.000259p 1.11e-06p 4.14e-11p 2.43e-11p 0.0
sig0.562 cc 1.53e-07p 0.000146p 0.013174p 0.058671p 0.082398p 0.041458p 0.041458p 0.082916p 4.14e-11p 2.43e-11p 0.0
rc 1.53e-07p 0.000146p 0.013174p 0.058671p 0.082398o 0.041458o 0.041458o 0.082916m 4.14e-11p 2.43e-11p 0.0

```
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.975484i      0.0       0.0       0.0
zp 46.70 ri 0.000118p 0.021855p 0.337051p 0.526970p 0.088162p 0.000664p 0.000664p 1.51e-06p 8.76e-11p 3.08e-11p       0.0
sig0.600 cc 0.000118p 0.021973p 0.359024p 0.885993p 0.974155p 0.487741p 0.487741p 0.975484p 8.76e-11p 3.08e-11p       0.0
         rc 0.000118p 0.021973p 0.359024p 0.885993o 0.974155n 0.487741n 0.487741n 0.975484i 8.76e-11p 3.08e-11p       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.053022k      0.0       0.0       0.0
zp 47.85 ri 9.41e-11p 9.10e-07p 0.000456p 0.013725p 0.032106p 0.003318p 0.003318p 9.83e-05p 5.21e-08p 3.06e-08p 3.52e-12p
sig0.568 cc 9.41e-11p 9.10e-07p 0.000457p 0.014182p 0.046288p 0.026462p 0.026462p 0.053022p 5.21e-08p 3.06e-08p 3.52e-12p
         rc 9.41e-11p 9.10e-07p 0.000457p 0.014182p 0.046288p 0.026462p 0.026462p 0.053022k 5.21e-08p 3.06e-08p 3.52e-12p
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.238961k      0.0       0.0       0.0
zp 47.64 ri       0.0  3.94e-09p 0.000405p 0.079462p 0.156011p 0.001542p 0.001542p 2.21e-07p       0.0       0.0       0.0
sig0.389 cc       0.0  3.94e-09p 0.000405p 0.079868p 0.235878p 0.119481p 0.119481p 0.238962p       0.0       0.0       0.0
         rc       0.0  3.94e-09p 0.000405p 0.079867p 0.235878o 0.119481o 0.119481o 0.238962k       0.0       0.0       0.0

  ru, rh, pd half lives from 80eng2; ag, cd, in half lives 89wal1.
1

    mass number    121                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       45 rh g   46 pd g   47 ag g   48 cd d   48 cd g   49 in m   49 in g   50 sn m   50 sn g   51 sb g   52 te g   53 i  g
half life     0.250s    0.644s    0.78 s     1.5 s    13.5 s     3.8 m     23. s     55. y    1.128d    stable     17. d    2.12 h
lambda       2.773e+00 1.076e+00 8.887e-01 4.621e-01 5.134e-02 3.040e-03 3.014e-02 3.996e-10 7.112e-06       0.0 4.719e-07
9.082e-05
  z - 1 g    100.0000  100.0000  100.0000       0.0  100.0000   18.0000   82.0000       0.0  100.0000  100.0000 -100.0000 -100.0000
  z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000  100.0000       0.0       0.0
  z - 0 m       0.0       0.0       0.0    0.1840  100.0000       0.0       0.0       0.0       0.0       0.0       0.0       0.0
  u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.082188l 0.065244n      0.0       0.0
zp 48.56 ri 1.00e-09p 9.27e-06p 0.001796p       0.0  0.041364p 0.005584p 0.027262p 0.003186p 0.001119p 1.49e-05p 5.14e-09p
0.0
sig0.553 cc 1.00e-09p 9.27e-06p 0.001805p       0.0  0.043169p 0.013354p 0.062661p 0.003186p 0.077134p 0.080335p 5.14e-09p
0.0
         rc 1.00e-09p 9.27e-06p 0.001805p 4.14e-07o 0.043169p 0.013354o 0.062661n 0.003186p 0.077135l 0.080336l 5.14e-09p
0.0
  u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.746672j 1.154824n 0.0 0.0
zp 48.03 ri 5.22e-05p 0.011050p 0.254829p 0.0 0.796935p 0.031850p 0.600633p 0.011801p 0.002591p 7.85e-05p 4.26e-08p 2.20e-12p
sig0.642 cc 6.83e-05p 0.014539p 0.348259p 0.0 1.311683p 0.277813p 1.413056p 0.015455p 1.694261p 1.709819p 5.59e-08p 2.88e-12p
rc 5.22e-05p 0.011102p 0.265931p 0.000182o 1.063047n 0.223199n 1.472332l 0.011801p 1.698121j 1.710001j 4.26e-08p 2.20e-12p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.037462n 0.0 0.0
zp 47.85 ri 2.38e-07p 0.000276p 0.007543p 0.0 0.026153p 0.000584p 0.002849p 3.82e-05p 1.34e-05p 1.72e-08p 0.0 0.0
sig0.545 cc 2.38e-07p 0.000277p 0.007820p 0.0 0.033973p 0.006699p 0.030707p 3.82e-05p 0.037419p 0.037457p 0.0 0.0
rc 2.38e-07p 0.000277p 0.007820p 5.10e-06o 0.033978p 0.006700p 0.030711p 3.82e-05p 0.037424o 0.037463n 0.0 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.398537k 1.455389k 0.0 0.0
zp 48.20 ri 3.40e-05p 0.007471p 0.202884p 0.0 0.765155p 0.048033p 0.384364p 0.029689p 0.006517p 0.000388p 4.89e-07p 6.88e-11p
sig0.664 cc 3.39e-05p 0.007483p 0.209764p 0.0 0.972682p 0.222973p 1.185078p 0.029601p 1.414549p 1.444537p 4.88e-07p 6.86e-11p
rc 3.40e-05p 0.007505p 0.210389p 0.000143o 0.975688o 0.223657o 1.184428m 0.029689p 1.414603k 1.444680j 4.89e-07p 6.88e-11p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.068034m 0.0 0.0
zp 48.08 ri 1.05e-07p 0.000167p 0.008438p 0.0 0.046124p 0.002192p 0.010700p 0.000303p 0.000107p 4.29e-07p 3.36e-11p 0.0
sig0.558 cc 1.05e-07p 0.000167p 0.008605p 0.0 0.054729p 0.012043p 0.055578p 0.000303p 0.067727p 0.068031p 3.36e-11p 0.0
rc 1.05e-07p 0.000167p 0.008605p 3.33e-06o 0.054732p 0.012043p 0.055580o 0.000303p 0.067730n 0.068034m 3.36e-11p 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.091594l 0.0 0.0
zp 47.89 ri 5.55e-07p 0.000574p 0.018211p 0.0 0.062272p 0.001760p 0.008594p 0.000128p 4.50e-05p 8.47e-08p 2.81e-12p 0.0
sig0.551 cc 5.55e-07p 0.000575p 0.018786p 0.0 0.081058p 0.016351p 0.075062p 0.000128p 0.091458p 0.091586p 2.81e-12p 0.0

rc 5.55e-07p 0.000575p 0.018786p 8.34e-06o 0.081066p 0.016352p 0.075069o 0.000128p 0.091466n 0.091594l 2.81e-12p
0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.082041n 0.0 0.0
zp 47.58 ri 8.03e-06p 0.002397p 0.031244p 0.0 0.044562p 0.000643p 0.003140p 2.06e-05p 7.23e-06p 7.56e-09p 0.0 0.0
sig0.562 cc 8.03e-06p 0.002405p 0.033649p 0.0 0.078211p 0.014721p 0.067273p 2.06e-05p 0.082001p 0.082022p 0.0
0.0
rc 8.03e-06p 0.002405p 0.033649p 2.22e-05o 0.078234p 0.014725p 0.067291p 2.06e-05p 0.082024o 0.082044n 0.0
0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.185017k 0.922468i 0.0 0.0
zp 47.02 ri 0.005256p 0.176018p 0.561925p 0.0 0.198382p 0.000712p 0.005761p 1.40e-05p 3.07e-06p 3.17e-09p 0.0
0.0
sig0.600 cc 0.005278p 0.182028p 0.746288p 0.0 0.941554p 0.170195p 0.777860p 1.40e-05p 0.948057p 0.948071p 0.0
0.0
rc 0.005256p 0.181274p 0.743199o 0.000952o 0.942533n 0.170368n 0.778638m 1.40e-05p 0.949009k 0.949023i 0.0
0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.049037i 0.064497k 0.0 0.0
zp 48.28 ri 2.52e-08p 4.46e-05p 0.004382p 0.0 0.029730p 0.002993p 0.014615p 0.000621p 0.000218p 2.47e-06p 3.83e-10p
0.0
sig0.568 cc 2.52e-08p 4.46e-05p 0.004426p 0.0 0.034157p 0.009142p 0.042624p 0.000621p 0.051984p 0.052607p 3.83e-10p
0.0
rc 2.52e-08p 4.46e-05p 0.004426p 1.91e-06o 0.034159p 0.009142p 0.042625n 0.000621p 0.051986i 0.052609i 3.83e-10p
0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.117998f 0.104345k 0.0 0.0
zp 47.77 ri 0.0 8.11e-07p 0.018962p 0.0 0.097857p 0.000134p 0.000570p 1.54e-10p 6.28e-11p 0.0 0.0 0.0
sig0.293 cc 0.0 8.11e-07p 0.018963p 0.0 0.116819p 0.021161p 0.096362p 1.54e-10p 0.117523p 0.117523p 0.0 0.0
rc 0.0 8.11e-07p 0.018963p 8.60e-06o 0.116828o 0.021163p 0.096369m 1.54e-10p 0.117532f 0.117532f 0.0 0.0

in branching from 71erd1; rh, pd half lives 80eng2; ag, cd, in, sn half lives 89wal1.

1

nuclide 44 ru g 45 rh g 46 pd g 47 ag g 48 cd d 48 cd g 49 in m 49 in g 50 sn g 51 sb m 51 sb g 52 te g
half life 0.107s 1.41 s 0.56 s 0.39s 5.3 s 10. s 1.5 s stable 4.2 m 2.72 d stable
lambda 0.0 6.478e+00 4.916e-01 1.238e+00 1.777e+00 1.308e-01 6.931e-02 4.621e-01 0.0 2.751e-03 2.949e-06 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 99.8160 0.0 100.0000 100.0000 0.0 -3.0000 97.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.5450 100.0000 0.0 0.0 0.0 0.0 100.0000 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.072503j 0.0 0.0 0.0
zp 48.96 ri 0.0 1.04e-11p 4.41e-07p 0.000225p 0.0 0.020607p 0.017374p 0.017374p 0.016918p 8.42e-05p 6.35e-05p 2.29e-07p
sig0.553 cc 0.0 1.04e-11p 4.41e-07p 0.000225p 0.0 0.020832p 0.017374p 0.038206p 0.072502p 8.42e-05p 0.000148p 0.000144p
rc 0.0 1.04e-11p 4.41e-07p 0.000225p 1.21e-07o 0.020832p 0.017374p 0.038206p 0.072503j 8.42e-05p 0.000148p 0.000144o
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.234476m 0.0 0.0 0.0
zp 48.40 ri 7.46e-10p 3.80e-06p 0.001878p 0.096945p 0.0 0.593828p 0.244357p 0.244354p 0.053110p 0.000466p 0.000200p 8.56e-07p
sig0.642 cc 7.46e-10p 3.80e-06p 0.001881p 0.098822p 0.0 0.692494p 0.244346p 0.936840p 1.234315p 0.000466p 0.000666p 0.000646p
rc 7.46e-10p 3.80e-06p 0.001881p 0.098827p 0.000175o 0.692648o 0.244357p 0.937002o 1.234490m 0.000466p 0.000666p 0.000646o
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.050574n 0.0 0.0 0.0
zp 48.27 ri 0.0 6.44e-09p 3.53e-05p 0.002739p 0.0 0.035677p 0.005696p 0.005696p 0.000731p 4.27e-07p 3.22e-07p 9.36e-11p
sig0.545 cc 0.0 6.44e-09p 3.53e-05p 0.002774p 0.0 0.038446p 0.005696p 0.044142p 0.050569p 4.27e-07p 7.49e-07p 7.26e-07p
rc 0.0 6.44e-09p 3.53e-05p 0.002774p 5.01e-06o 0.038451p 0.005696p 0.044147o 0.050574n 4.27e-07p 7.49e-07p 7.26e-07p
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.458104l 0.0 0.0 0.0
zp 48.57 ri 6.27e-10p 2.71e-06p 0.001314p 0.076401p 0.0 0.589703p 0.337469p 0.337471p 0.115673p 0.001875p 0.000804p 7.51e-06p
sig0.664 cc 6.27e-10p 2.71e-06p 0.001317p 0.077716p 0.0 0.667302p 0.337459p 1.004761p 1.457970p 0.001875p 0.002678p 0.002605p

rc 6.27e-10p 2.71e-06p 0.001317p 0.077718p 0.000141o 0.667418o 0.337469p 1.004889o 1.458111k 0.001875p 0.002678p 0.002606o
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.075981m 0.0 0.0 0.0
zp 48.55 ri 0.0 1.35e-09p 1.07e-05p 0.001800p 0.0 0.039782p 0.015140p 0.015140p 0.004111p 8.47e-06p 6.39e-06p 5.88e-09p
sig0.558 cc 0.0 1.35e-09p 1.07e-05p 0.001811p 0.0 0.041590p 0.015140p 0.056729p 0.075980p 8.47e-06p 1.49e-05p 1.44e-05p
rc 0.0 1.35e-09p 1.07e-05p 0.001811p 1.44e-06o 0.041591p 0.015140p 0.056731o 0.075981m 8.47e-06p 1.49e-05p 1.44e-05p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.094647l 0.0 0.0 0.0
zp 48.35 ri 0.0 8.39e-09p 4.31e-05p 0.004491p 0.0 0.060411p 0.013833p 0.013833p 0.002040p 2.01e-06p 1.51e-06p 5.99e-10p
sig0.551 cc 0.0 8.39e-09p 4.31e-05p 0.004534p 0.0 0.064937p 0.013833p 0.078770p 0.094643p 2.01e-06p 3.52e-06p 3.42e-06p
rc 0.0 8.39e-09p 4.31e-05p 0.004534p 4.35e-06o 0.064941p 0.013833p 0.078774o 0.094647l 2.01e-06p 3.52e-06p 3.42e-06p
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.083864n 0.0 0.0 0.0
zp 48.03 ri 1.53e-11p 2.33e-07p 0.000298p 0.011794p 0.0 0.057682p 0.006844p 0.006844p 0.000408p 2.18e-07p 1.64e-07p 3.01e-11p
sig0.562 cc 1.53e-11p 2.33e-07p 0.000298p 0.012092p 0.0 0.069752p 0.006844p 0.076596p 0.083848p 2.18e-07p 3.82e-07p 3.70e-07p
rc 1.53e-11p 2.33e-07p 0.000298p 0.012092p 1.80e-05o 0.069770p 0.006844p 0.076614o 0.083866n 2.18e-07p 3.82e-07p 3.70e-07p
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.848247i 0.0 0.0 0.0
zp 47.33 ri 9.92e-07p 0.000955p 0.069147p 0.447332p 0.0 0.308122p 0.010862p 0.010862p 0.000128p 3.81e-08p 1.63e-08p 1.57e-12p
sig0.600 cc 9.91e-07p 0.000955p 0.070055p 0.517081p 0.0 0.824622p 0.010855p 0.835477p 0.846459p 3.81e-08p 5.44e-08p 5.27e-08p
rc 9.92e-07p 0.000956p 0.070103p 0.517436p 0.001788o 0.826395m 0.010862p 0.837257k 0.848247i 3.81e-08p 5.44e-08p 5.28e-08o
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.060682k 0.0 0.0 0.0

zp 48.70 ri 0.0 5.17e-10p 3.19e-06p 0.001036p 0.0 0.020872p 0.016978p 0.016978p 0.004813p 2.67e-05p 2.02e-05p 2.53e-08p
sig0.568 cc 0.0 5.17e-10p 3.19e-06p 0.001039p 0.0 0.021910p 0.016978p 0.038888p 0.060681p 2.67e-05p 4.69e-05p 4.55e-05p
rc 0.0 5.17e-10p 3.19e-06p 0.001039p 9.32e-07o 0.021911p 0.016978p 0.038889o 0.060682k 2.67e-05p 4.69e-05p 4.55e-05o
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.088464l 0.0 0.0 0.0
zp 47.87 ri 0.0 0.0 3.32e-10p 0.004676p 0.0 0.083443p 0.000168p 0.000168p 0.0 0.0 0.0 0.0
sig0.238 cc 0.0 0.0 3.32e-10p 0.004676p 0.0 0.088111p 0.000168p 0.088279p 0.088446p 0.0 0.0 0.0
rc 0.0 0.0 3.32e-10p 0.004676p 1.82e-05o 0.088129p 0.000168p 0.088297n 0.088464l 0.0 0.0 0.0

ru, rh pd half lives from 80eng2; ag, cd, in half lives 89wal1.
1

mass number 123 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 45 rh g 46 pd g 47 ag g 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te m 52 te g 53 i g
half life 0.134s 0.300s 0.31 s 2.09 s 47. s 6.0 s 40.1 m 129.2d stable 119.7d 1e+13y 13.2 h
lambda 5.173e+00 2.310e+00 2.236e+00 3.316e-01 1.475e-02 1.155e-01 2.881e-04 6.209e-08 0.0 6.702e-08 2.198e-21 1.459e-05
z - 1 g 100.0000 100.0000 100.0000 99.4550 23.0000 77.0000 100.0000 0.0 100.0000 0.0 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 100.0000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.075808n 0.0 0.0 0.0
zp 49.37 ri 0.0 9.45e-09p 2.23e-05p 0.005260p 0.005698p 0.027820p 0.009285p 0.026427p 0.001289p 4.30e-06p 1.14e-06p 4.77e-10p
sig0.553 cc 0.0 9.45e-09p 2.23e-05p 0.005282p 0.006913p 0.031887p 0.048086p 0.026427p 0.075807p 4.30e-06p 5.44e-06p 4.77e-10p
rc 0.0 9.45e-09p 2.23e-05p 0.005282p 0.006913p 0.031887p 0.048086o 0.026427p 0.075808n 4.30e-06p 5.44e-06p 4.77e-10p
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.351243m 0.0 0.0 0.0
zp 48.77 ri 2.32e-07p 0.000271p 0.031851p 0.421930p 0.079641p 0.644370p 0.030342p 0.138224p 0.004776p 1.24e-05p 2.02e-06p 4.26e-09p

sig0.642 cc 2.32e-07p 0.000271p 0.032121p 0.453877p 0.184033p 0.993855p 1.208230p 0.138224p 1.351245p 1.24e-05p 1.44e-05p 4.26e-09p
rc 2.32e-07p 0.000271p 0.032121p 0.453877p 0.184033p 0.993855o 1.208230n 0.138224p 1.351245l 1.24e-05p 1.44e-05p 4.26e-09p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.071179n 0.0 0.0 0.0
zp 48.68 ri 1.61e-10p 2.69e-06p 0.000917p 0.030393p 0.005816p 0.028395p 0.001465p 0.004169p 2.54e-05p 7.69e-09p 2.04e-09p 0.0
sig0.545 cc 1.61e-10p 2.69e-06p 0.000919p 0.031308p 0.013017p 0.052502p 0.066984p 0.004169p 0.071178p 7.69e-09p 9.73e-09p 0.0
rc 1.61e-10p 2.69e-06p 0.000919p 0.031308p 0.013017p 0.052502p 0.066984o 0.004169p 0.071178n 7.69e-09p 9.73e-09p 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.729580l 0.0 0.0 0.0
zp 48.94 ri 1.87e-07p 0.000203p 0.025624p 0.411543p 0.104064p 0.841973p 0.059393p 0.270570p 0.016257p 8.65e-05p 1.41e-05p 7.20e-08p
sig0.664 cc 1.87e-07p 0.000203p 0.025827p 0.437229p 0.204627p 1.178639p 1.442659p 0.270570p 1.729587p 8.65e-05p 0.000101p 7.20e-08p
rc 1.87e-07p 0.000203p 0.025827p 0.437229p 0.204627p 1.178639o 1.442659n 0.270570p 1.729587k 8.65e-05p 0.000101p 7.20e-08p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.086940m 0.0 0.0 0.0
zp 49.01 ri 1.18e-11p 3.32e-07p 0.000263p 0.017642p 0.008470p 0.041352p 0.004916p 0.013993p 0.000305p 3.30e-07p 8.78e-08p 1.62e-11p
sig0.558 cc 1.18e-11p 3.32e-07p 0.000263p 0.017904p 0.012588p 0.055138p 0.072642p 0.013993p 0.086940p 3.30e-07p 4.18e-07p 1.62e-11p
rc 1.18e-11p 3.32e-07p 0.000263p 0.017904p 0.012588p 0.055138p 0.072642o 0.013993p 0.086940m 3.30e-07p 4.18e-07p 1.62e-11p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.101771l 0.0 0.0 0.0
zp 48.81 ri 8.51e-11p 1.60e-06p 0.000797p 0.032570p 0.009531p 0.046536p 0.003182p 0.009057p 9.97e-05p 4.86e-08p 1.29e-08p 0.0
sig0.551 cc 8.51e-11p 1.60e-06p 0.000799p 0.033365p 0.017205p 0.072227p 0.092614p 0.009057p 0.101771p 4.86e-08p 6.15e-08p 0.0
rc 8.51e-11p 1.60e-06p 0.000799p 0.033365p 0.017205p 0.072227p 0.092614n 0.009057p 0.101771l 4.86e-08p 6.15e-08p 0.0

pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.088422n 0.0 0.0 0.0
zp 48.48 ri 4.61e-09p 2.03e-05p 0.003281p 0.045192p 0.006229p 0.030412p 0.000856p 0.002437p 1.31e-05p 2.87e-09p 7.63e-10p 0.0
sig0.562 cc 4.61e-09p 2.03e-05p 0.003301p 0.048475p 0.017378p 0.067738p 0.085972p 0.002437p 0.088422p 2.87e-09p 3.63e-09p 0.0
rc 4.61e-09p 2.03e-05p 0.003301p 0.048475p 0.017378p 0.067738p 0.085972o 0.002437p 0.088422n 2.87e-09p 3.63e-09p 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.805834i 0.0 0.0 0.0
zp 47.64 ri 0.000143p 0.022830p 0.305186p 0.417812p 0.006695p 0.054168p 0.000142p 0.000646p 7.65e-07p 4.39e-11p 7.14e-12p 0.0
sig0.600 cc 0.000143p 0.022973p 0.328159p 0.744183p 0.177857p 0.627189p 0.805188p 0.000646p 0.805834p 4.39e-11p 5.10e-11p 0.0
rc 0.000143p 0.022973p 0.328159p 0.744183o 0.177857o 0.627189n 0.805188k 0.000646p 0.805834i 4.39e-11p 5.10e-11p 0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.075697k 0.0 0.0 0.0
zp 49.11 ri 7.55e-12p 1.59e-07p 0.000171p 0.010460p 0.007878p 0.038463p 0.004726p 0.013450p 0.000549p 7.80e-07p 2.07e-07p 9.19e-11p
sig0.568 cc 7.55e-12p 1.59e-07p 0.000171p 0.010630p 0.010323p 0.046648p 0.061697p 0.013450p 0.075697p 7.80e-07p 9.88e-07p 9.19e-11p
rc 7.55e-12p 1.59e-07p 0.000171p 0.010630p 0.010323p 0.046648p 0.061697n 0.013450p 0.075697k 7.80e-07p 9.88e-07p 9.19e-11p
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.004871k 0.040659j 0.0 0.0 0.0
zp 48.02 ri 1.44e-12p 1.78e-06p 0.003339p 0.033421p 0.000783p 0.003339p 8.44e-07p 2.07e-06p 3.17e-12p 0.0 0.0 0.0
sig0.388 cc 1.44e-12p 1.78e-06p 0.003341p 0.036744p 0.009234p 0.031632p 0.040867p 2.07e-06p 0.040869p 0.0 0.0 0.0
rc 1.44e-12p 1.78e-06p 0.003341p 0.036744p 0.009234p 0.031632o 0.040867l 2.07e-06p 0.040869j 0.0 0.0 0.0

rh, pd half lives from 80eng2; ag, cd, in, sn half lives 89wal1; i, te half lives 90bur1.

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nuclide       44 ru g   45 rh g   46 pd g   47 ag g   48 cd g   49 in g   50 sn g   51 sb m   51 sb g   52 te g
half life                       0.514s    0.22 s    1.24 s    3.18 s    stable    20.2 m    60.20d    stable
lambda            0.0       0.0 1.349e+00 3.151e+00 5.590e-01 2.180e-01       0.0 5.719e-04 1.333e-07       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0       0.0  100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.103187k      0.0       0.0       0.0
zp 49.53 ri      0.0       0.0       0.0  2.19e-10p 0.000211p 0.032289p 0.070688p 9.81e-05p 9.81e-05p 1.20e-09p
sig0.350 cc      0.0       0.0       0.0  2.19e-10p 0.000211p 0.032499p 0.103187p 9.81e-05p 0.000196p 0.000196p
         rc      0.0       0.0       0.0  2.19e-10p 0.000211p 0.032499p 0.103187k 9.81e-05p 0.000196p 0.000196p
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.487443m      0.0       0.0       0.0
zp 49.15 ri      0.0  9.64e-09p 2.73e-05p 0.007595p 0.227016p 0.834979p 0.417824p 0.013413p 0.013413p 0.000192p
sig0.642 cc      0.0  9.64e-09p 2.73e-05p 0.007623p 0.234639p 1.069618p 1.487443p 0.013413p 0.026827p 0.027018p
         rc      0.0  9.64e-09p 2.73e-05p 0.007623p 0.234639p 1.069618o 1.487443m 0.013413p 0.026827p 0.027018p
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.093656n      0.0       0.0       0.0
zp 49.09 ri      0.0  1.63e-12p 1.28e-07p 0.000130p 0.017772p 0.047155p 0.028599p 0.000179p 0.000179p 6.30e-07p
sig0.545 cc      0.0  1.63e-12p 1.28e-07p 0.000130p 0.017902p 0.065057p 0.093656p 0.000179p 0.000359p 0.000360p
         rc      0.0  1.63e-12p 1.28e-07p 0.000130p 0.017902p 0.065057p 0.093656n 0.000179p 0.000359p 0.000360p
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.813038l      0.0       0.0       0.0
zp 49.31 ri      0.0  8.80e-09p 2.14e-05p 0.005952p 0.202356p 0.942811p 0.661898p 0.034113p 0.034113p 0.000921p
sig0.664 cc      0.0  8.80e-09p 2.14e-05p 0.005973p 0.208329p 1.151140p 1.813038p 0.034113p 0.068225p 0.069146p
         rc      0.0  8.80e-09p 2.14e-05p 0.005973p 0.208329p 1.151140o 1.813038k 0.034113p 0.068225p 0.069146p
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.109807m      0.0       0.0       0.0
zp 49.39 ri      0.0       0.0       0.0  2.82e-09p 0.000733p 0.056584p 0.052490p 3.59e-05p 3.59e-05p 1.18e-10p
sig0.350 cc      0.0       0.0       0.0  2.82e-09p 0.000733p 0.057317p 0.109807p 3.59e-05p 7.18e-05p 7.18e-05p
         rc      0.0       0.0       0.0  2.82e-09p 0.000733p 0.057317p 0.109807m 3.59e-05p 7.18e-05p 7.18e-05p
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.111948l      0.0       0.0       0.0
zp 49.26 ri      0.0       0.0  3.80e-08p 6.54e-05p 0.011709p 0.055013p 0.045161p 0.000575p 0.000575p 3.39e-06p
sig0.551 cc      0.0       0.0  3.80e-08p 6.54e-05p 0.011774p 0.066787p 0.111948p 0.000575p 0.001149p 0.001153p
         rc      0.0       0.0  3.80e-08p 6.54e-05p 0.011774p 0.066787p 0.111948l 0.000575p 0.001149p 0.001153p
```

```
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.100273n      0.0       0.0       0.0
zp 48.94 ri      0.0  4.13e-11p 8.38e-07p 0.000466p 0.025188p 0.055988p 0.018631p 0.000123p 0.000123p 3.09e-07p
sig0.562 cc      0.0  4.13e-11p 8.38e-07p 0.000466p 0.025654p 0.081642p 0.100273p 0.000123p 0.000246p 0.000246p
         rc      0.0  4.13e-11p 8.38e-07p 0.000466p 0.025654p 0.081642p 0.100273n 0.000123p 0.000246p 0.000246p
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.036900n 0.036900n      0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.759702i      0.0       0.0       0.0
zp 47.95 ri 3.21e-09p 1.62e-05p 0.005733p 0.161752p 0.425718p 0.127570p 0.003657p 0.036082p 0.036082p 1.23e-09p
sig0.600 cc 3.45e-09p 1.73e-05p 0.006165p 0.179619p 0.652794p 0.792679p 0.796601p 4.30e-06p 8.60e-06p 8.61e-06p
         rc 3.21e-09p 1.62e-05p 0.005750p 0.167501p 0.593219o 0.720789k 0.724446i 0.036082p 0.072164p 0.072164o
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.072713k      0.0       0.0       0.0
zp 49.34 ri      0.0       0.0       0.0  5.01e-09p 0.000582p 0.048448p 0.023683p 1.69e-05p 1.69e-05p 2.48e-11p
sig0.350 cc      0.0       0.0       0.0  5.01e-09p 0.000582p 0.049030p 0.072713p 1.69e-05p 3.39e-05p 3.39e-05p
         rc      0.0       0.0       0.0  5.01e-09p 0.000582p 0.049030p 0.072713k 1.69e-05p 3.39e-05p 3.39e-05p
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.025334l      0.0       0.0       0.0
zp 48.46 ri 3.51e-09p 1.43e-06p 0.000142p 0.002416p 0.011041p 0.009465p 0.002268p 4.87e-05p 4.87e-05p 1.06e-06p
sig0.770 cc 3.51e-09p 1.43e-06p 0.000144p 0.002560p 0.013601p 0.023066p 0.025334p 4.87e-05p 9.75e-05p 9.86e-05p
         rc 3.51e-09p 1.43e-06p 0.000144p 0.002560p 0.013601p 0.023066n 0.025334l 4.87e-05p 9.75e-05p 9.86e-05p

  pd, sb half lives from 80eng2; ag, cd, in half lives from 89wal1.
1

    mass number    125                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide      46 pd g   47 ag g   48 cd g   49 in m   49 in g   50 sn m   50 sn g   51 sb g   52 te m   52 te g   53 i  g   54 xe g
half life    0.166s    0.334s    0.68 s    12.2 s    2.36 s    9.5 m     9.63 d    2.758y    58. d     stable    60.14d    17. h
lambda      4.176e+00 2.075e+00 1.019e+00 5.682e-02 2.937e-01 1.216e-03 8.331e-07 7.969e-09 1.383e-07       0.0 1.334e-07
1.133e-05
 z - 1 g    100.0000  100.0000  100.0000   30.0000   70.0000   50.0000   50.0000  100.0000   22.5000   77.5000 -100.0000 -
100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0   50.0000   50.0000  100.0000       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.146173h      0.0  0.142906n      0.0       0.0
zp 49.69 ri      0.0  2.03e-11p 5.30e-05p 0.016048p 0.016048p 0.029340p 0.083506p 0.001145p 1.47e-08p 3.91e-09p       0.0       0.0
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sig0.350 cc 0.0 2.03e-11p 5.30e-05p 0.016064p 0.016085p 0.045414p 0.099580p 0.146139p 0.032881p 0.146139p 0.0 0.0
rc 0.0 2.03e-11p 5.30e-05p 0.016064p 0.016085p 0.045414p 0.099580o 0.146139h 0.032881h 0.146139g 0.0 0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.516257i 0.0 0.0
zp 49.53 ri 1.76e-06p 0.001172p 0.080653p 0.323177p 0.323177p 0.123919p 0.564519p 0.097997p 0.001410p 0.000229p 2.85e-06p 4.78e-10p
sig0.642 cc 1.76e-06p 0.001173p 0.081827p 0.347725p 0.380456p 0.488009p 0.928609p 1.514616p 0.342198p 1.516257p 2.85e-06p 4.78e-10p
rc 1.76e-06p 0.001173p 0.081827p 0.347725p 0.380456p 0.488009o 0.928609n 1.514616l 0.342198m 1.516257i 2.85e-06p 4.78e-10p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.164288n 0.0 0.0
zp 49.37 ri 0.0 6.34e-09p 0.001292p 0.045659p 0.045659p 0.018613p 0.052975p 8.85e-05p 9.02e-11p 2.40e-11p 0.0 0.0
sig0.350 cc 0.0 6.34e-09p 0.001292p 0.046046p 0.046563p 0.064917p 0.099279p 0.164285p 0.036964p 0.164285p 0.0 0.0
rc 0.0 6.34e-09p 0.001292p 0.046046p 0.046563p 0.064917o 0.099279p 0.164285n 0.036964n 0.164285m 0.0 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.892881k 0.0 2.092949l 0.0 0.0
zp 49.68 ri 1.60e-06p 0.000988p 0.072219p 0.345943p 0.345943p 0.175278p 0.802324p 0.205879p 0.005422p 0.000883p 2.24e-05p 9.07e-09p
sig0.664 cc 1.61e-06p 0.000991p 0.073342p 0.368581p 0.397918p 0.558849p 1.183203p 1.948876p 0.443661p 1.954902p 2.13e-05p 8.64e-09p
rc 1.60e-06p 0.000989p 0.073208p 0.367906p 0.397189p 0.557825o 1.184871n 1.948576k 0.443851k 1.954901j 2.24e-05p 9.07e-09p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.085918j 0.0 0.156604m 0.0 0.0
zp 49.54 ri 0.0 1.98e-10p 0.000140p 0.017433p 0.017433p 0.014050p 0.039989p 0.000243p 1.22e-09p 3.25e-10p 0.0 0.0
sig0.350 cc 0.0 1.98e-10p 0.000140p 0.017476p 0.017532p 0.031554p 0.057493p 0.089289p 0.020090p 0.089289p 0.0 0.0
rc 0.0 1.98e-10p 0.000140p 0.017476p 0.017532p 0.031554o 0.057493o 0.089289i 0.020090i 0.089289i 0.0 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.151116l 0.0 0.0
zp 49.46 ri 0.0 1.38e-09p 0.000514p 0.036391p 0.036391p 0.020181p 0.057439p 0.000199p 3.72e-10p 9.88e-11p 0.0 0.0

sig0.350 cc 0.0 1.38e-09p 0.000514p 0.036545p 0.036751p 0.056829p 0.094088p 0.151116p 0.034001p 0.151116p 0.0 0.0
rc 0.0 1.38e-09p 0.000514p 0.036545p 0.036751p 0.056829o 0.094088p 0.151116n 0.034001o 0.151116k 0.0 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.124866n 0.0 0.132642m 0.0 0.0
zp 49.30 ri 0.0 1.63e-08p 0.001598p 0.043252p 0.043252p 0.010597p 0.030161p 3.67e-05p 1.85e-11p 4.91e-12p 0.0 0.0
sig0.350 cc 0.0 1.63e-08p 0.001598p 0.043732p 0.044371p 0.054648p 0.074213p 0.128898p 0.029002p 0.128898p 0.0 0.0
rc 0.0 1.63e-08p 0.001598p 0.043732p 0.044371p 0.054648o 0.074213o 0.128898l 0.029002m 0.128898k 0.0 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.295773l 0.738477k 0.0 0.721010i 0.0 0.0
zp 48.27 ri 0.001129p 0.070336p 0.396323p 0.119733p 0.118784p 0.002629p 0.011974p 7.36e-05p 2.24e-08p 3.65e-09p 0.0 0.0
sig0.600 cc 0.001128p 0.071372p 0.467174p 0.259728p 0.446597p 0.355788p 0.365121p 0.720982p 0.162221p 0.720982p 0.0 0.0
rc 0.001129p 0.071466p 0.467789p 0.260070p 0.446236o 0.355781n 0.365127l 0.720982j 0.162221k 0.720982i 0.0 0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.056529n 0.135623i 0.0 0.127114i 0.0 0.0
zp 49.49 ri 0.0 7.98e-10p 0.000298p 0.033187p 0.033187p 0.016670p 0.047444p 0.000259p 4.69e-10p 1.25e-10p 0.0 0.0
sig0.350 cc 0.0 7.98e-10p 0.000298p 0.033276p 0.033396p 0.050006p 0.080780p 0.131045p 0.029485p 0.131045p 0.0 0.0
rc 0.0 7.98e-10p 0.000298p 0.033276p 0.033396p 0.050006o 0.080780m 0.131045i 0.029485i 0.131045h 0.0 0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.008522j 0.017824k 0.0 0.017938l 0.0 0.0
zp 49.31 ri 4.53e-06p 0.000203p 0.002686p 0.003658p 0.003658p 0.001822p 0.004460p 0.001132p 4.73e-05p 1.41e-05p 6.53e-07p 1.95e-09p
sig0.807 cc 4.53e-06p 0.000208p 0.002894p 0.004526p 0.005683p 0.006926p 0.009564p 0.017623p 0.004013p 0.017685p 6.59e-07p 1.97e-09p
rc 4.53e-06p 0.000208p 0.002894p 0.004526p 0.005683p 0.006926o 0.009564i 0.017623k 0.004012k 0.017685j 6.55e-07p 1.95e-09p

pd, ag half lives from 80eng2; cd, in, sn, sb, te half lives from 89wal1; i half life 90bur1.

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nuclide      46 pd g   47 ag g   48 cd g   49 in g   50 sn d   50 sn g   51 sb m   51 sb g   52 te g   53 i  g   54 xe g
half life    0.252s    0.140s    0.52 s    1.63 s    3.76 s    1.e5y     19.0 m    12.4 d    stable    13.02d    stable
lambda       2.751e+00 4.951e+00 1.333e+00 4.252e-01 1.843e-01 2.198e-13 6.080e-04 6.470e-07       0.0 6.162e-07       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000       0.0  100.0000  -56.0000   44.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   86.0000       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0    0.6600  100.0000       0.0   14.0000       0.0       0.0       0.0
 u233f   xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  0.272452j 0.267251n      0.0  0.353692m      0.0       0.0
zp 49.85 ri    0.0  1.44e-12p 1.73e-05p 0.025761p       0.0  0.252043k 0.003857p 0.002793p 4.82e-07p       0.0       0.0
sig0.350 cc    0.0  1.45e-12p 1.74e-05p 0.025901p       0.0  0.279227p 0.282268p 0.041720p 0.284471p       0.0       0.0
         rc    0.0  1.44e-12p 1.73e-05p 0.025778p 0.000119o 0.277940j 0.281796j 0.042244k 0.284589i       0.0       0.0
 u233he  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  1.966361m 1.865260n      0.0       0.0       0.0       0.0
zp 49.88 ri 1.58e-07p 0.000238p 0.035946p 0.601309p       0.0  1.284617n 0.160792p 0.214296p 0.013455p 5.22e-05p 2.00e-08p
sig0.642 cc 1.59e-07p 0.000239p 0.036196p 0.637699p       0.0  1.923139p 2.083983p 0.504969p 2.310683p 5.22e-05p 2.30e-05p
         rc 1.58e-07p 0.000239p 0.036185p 0.637494o 0.001311o 1.923422l 2.084214l 0.506086o 2.311995l 5.22e-05p 2.30e-05p
 u236f   xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  0.248337n 0.235528n      0.0       0.0       0.0       0.0
zp 49.53 ri    0.0  5.59e-10p 0.000489p 0.081123p       0.0  0.161073p 0.000282p 0.000204p 2.71e-09p       0.0       0.0
sig0.350 cc    0.0  5.57e-10p 0.000487p 0.081345p       0.0  0.242686p 0.242967p 0.034219p 0.243171p       0.0       0.0
         rc    0.0  5.59e-10p 0.000489p 0.081612p 0.000257o 0.242941n 0.243223m 0.034256m 0.243428m       0.0       0.0
 pu239h  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  2.031841l 1.788284n      0.0       0.0       0.0       0.0
zp 50.00 ri 1.69e-07p 0.000209p 0.029922p 0.542104p       0.0  1.395860m 0.234712p 0.313532p 0.030349p 0.000213p 1.74e-07p
sig0.664 cc 1.69e-07p 0.000209p 0.030154p 0.572670p       0.0  1.970060p 2.204951p 0.620059p 2.546809p 0.000213p 9.41e-05p
         rc 1.69e-07p 0.000209p 0.030131p 0.572236o 0.001030o 1.969126k 2.203838l 0.622070o 2.547843l 0.000213p 9.40e-05p
 pu240f  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  0.284643l 0.286074n      0.0  0.190709m      0.0       0.0
zp 49.70 ri    0.0  2.96e-11p 8.71e-05p 0.056317p       0.0  0.213194n 0.001105p 0.000800p 3.51e-08p       0.0       0.0
sig0.350 cc    0.0  2.95e-11p 8.68e-05p 0.056181p       0.0  0.269219p 0.270543p 0.038835p 0.271503p       0.0       0.0
         rc    0.0  2.96e-11p 8.71e-05p 0.056404p 0.000171o 0.269768k 0.270873k 0.038722k 0.271673k       0.0       0.0
 pu241f  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  0.199211l 0.196976n      0.0  0.325020n      0.0       0.0
zp 49.62 ri    0.0  1.10e-10p 0.000169p 0.060610p       0.0  0.161675n 0.000762p 0.000552p 1.27e-08p       0.0       0.0
```

sig0.350 cc 0.0 1.13e-10p 0.000172p 0.062156p 0.0 0.222753p 0.223341p 0.031694p 0.223768p 0.0 0.0
rc 0.0 1.10e-10p 0.000169p 0.060779p 0.000184o 0.222637l 0.223399k 0.031828k 0.223951k 0.0 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.167262m 0.170187n 0.0 0.0 0.0 0.0
zp 49.47 ri 0.0 1.29e-09p 0.000537p 0.077577p 0.0 0.089728p 0.000136p 9.86e-05p 6.20e-10p 0.0 0.0
sig0.350 cc 0.0 1.29e-09p 0.000537p 0.078114p 0.0 0.167842p 0.167978p 0.023616p 0.168077p 0.0 0.0
rc 0.0 1.29e-09p 0.000537p 0.078114p 0.000275o 0.168117m 0.168253m 0.023654m 0.168351l 0.0 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.878031i 0.0 0.0
zp 48.59 ri 0.000213p 0.029860p 0.354568p 0.433459p 0.0 0.056381p 0.000277p 0.000367p 5.47e-07p 3.19e-11p 0.0
sig0.600 cc 0.000213p 0.030033p 0.384132p 0.818175p 0.0 0.874482p 0.874758p 0.122832p 0.875125p 3.18e-11p 1.40e-11p
rc 0.000213p 0.030073p 0.384641p 0.818100o 0.002906o 0.877387m 0.877664k 0.123240k 0.878031i 3.19e-11p 1.40e-11p
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.164911l 0.160032n 0.0 0.0 0.0 0.0
zp 49.64 ri 0.0 7.44e-11p 8.99e-05p 0.056373p 0.0 0.107322o 0.000679p 0.000492p 8.94e-09p 0.0 0.0
sig0.350 cc 0.0 7.43e-11p 8.98e-05p 0.056418p 0.0 0.163785p 0.164463p 0.023516p 0.164955p 0.0 0.0
rc 0.0 7.44e-11p 8.99e-05p 0.056462p 0.000218o 0.164002l 0.164681l 0.023547l 0.165173k 0.0 0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.029476n 0.025192n 0.0 0.027088l 0.0 0.0
zp 49.75 ri 6.06e-12p 1.98e-07p 0.000233p 0.007984p 0.0 0.017652p 0.001144p 0.000672p 1.06e-05p 1.61e-09p 0.0
sig0.521 cc 6.03e-12p 1.97e-07p 0.000232p 0.008171p 0.0 0.025724p 0.026959p 0.004500p 0.027696p 1.73e-09p 7.63e-10p
rc 6.06e-12p 1.98e-07p 0.000233p 0.008217p 1.57e-05o 0.025885n 0.027029m 0.004456m 0.027712k 1.61e-09p 7.06e-10p

pd, ag half lives from 80eng2; cd, in, sn, sb half lives 89wal1; i half life 90bur1.

1

mass number 127 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 47 ag g 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te m 52 te g 53 i g 54 xe g 55 cs g
half life 0.175s 0.4 s 3.73 s 1.14 s 4.15 m 2.12 h 3.84 d 109. d 9.4 h stable 36.41d 6.2 h
lambda 3.961e+00 1.733e+00 1.858e-01 6.080e-01 2.784e-03 9.082e-05 2.089e-06 7.360e-08 2.048e-05 0.0 2.203e-07
3.105e-05
z - 1 g 100.0000 100.0000 50.0000 50.0000 49.6700 49.6700 100.0000 16.0000 84.0000 100.0000 -100.0000 -
100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 100.0000 100.0000 0.0 0.0 2.4000 0.0 0.0
z - 0 m 0.0 0.0 0.1220 0.0 0.0610 0.0 0.0 0.0 97.6000 0.0 0.0 0.0

u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.739535k 0.0 0.0
zp 50.02 ri 0.0 5.27e-06p 0.017973p 0.017973p 0.171169p 0.487172p 0.045342p 6.80e-06p 2.39e-06p 0.0 0.0 0.0
sig0.350 cc 0.0 5.27e-06p 0.017975p 0.017975p 0.180097p 0.514076p 0.739515p 0.118329p 0.736684p 0.739524p 0.0
0.0
rc 0.0 5.27e-06p 0.017975p 0.017975p 0.180097p 0.514076p 0.739515n 0.118329o 0.736684m 0.739524k 0.0 0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.205700i 0.0 0.0 2.174552k 0.0 0.0
zp 50.09 ri 6.00e-05p 0.014577p 0.191302p 0.191302p 0.224370p 1.022128n 0.553261o 0.025276p 0.005548p 0.000193p 1.20e-
07p 7.15e-12p
sig0.642 cc 6.00e-05p 0.014634p 0.198581p 0.198581p 0.322960p 1.319142p 2.195254p 0.376871p 2.217466p 2.226706p 1.22e-
07p 7.25e-12p
rc 6.00e-05p 0.014637p 0.198620p 0.198620p 0.323024p 1.319403m 2.195688i 0.376586j 2.217475i 2.226706h 1.20e-07p
7.15e-12p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.353402n 0.0 0.0
zp 49.70 ri 4.29e-11p 0.000116p 0.038811p 0.038811p 0.070936p 0.201895p 0.003048p 3.81e-08p 1.34e-08p 0.0 0.0
0.0
sig0.350 cc 4.29e-11p 0.000116p 0.038869p 0.038869p 0.090243p 0.260071p 0.353362p 0.056538p 0.352005p 0.353362p 0.0
0.0
rc 4.29e-11p 0.000116p 0.038869p 0.038869p 0.090243p 0.260071p 0.353362o 0.056538o 0.352005n 0.353362m 0.0
0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.125818i 0.0 0.0 2.318807l 0.0 0.0
zp 50.21 ri 4.85e-05p 0.010870p 0.150637p 0.150637p 0.208487p 0.949776p 0.673561p 0.049589p 0.010885p 0.000662p 8.53e-
07p 1.23e-10p
sig0.664 cc 4.86e-05p 0.010937p 0.156348p 0.156348p 0.286481p 1.185311p 2.146438p 0.390219p 2.194132p 2.204123p 8.05e-
07p 1.16e-10p
rc 4.85e-05p 0.010919p 0.156097p 0.156097p 0.286021p 1.183406o 2.142987i 0.392467l 2.194042i 2.204125i 8.53e-07p
1.23e-10p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.429785j 0.0 0.0 0.376823k 0.0 0.0
zp 49.86 ri 2.41e-12p 2.13e-05p 0.025881p 0.025881p 0.093782p 0.260131p 0.011946p 4.42e-07p 1.55e-07p 0.0 0.0 0.0
sig0.350 cc 2.37e-12p 2.09e-05p 0.025478p 0.025478p 0.104937p 0.300782p 0.417474p 0.066796p 0.415871p 0.417474p 0.0
0.0
rc 2.41e-12p 2.13e-05p 0.025892p 0.025892p 0.106642p 0.298883o 0.417471j 0.066796j 0.415869i 0.417472i 0.0 0.0

pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.332131l 0.0 0.0
zp 49.79 ri 7.86e-12p 3.90e-05p 0.027799p 0.027799p 0.070411p 0.200402p 0.005835p 1.32e-07p 4.63e-08p 0.0 0.0 0.0
sig0.350 cc 7.86e-12p 3.90e-05p 0.027819p 0.027819p 0.084229p 0.242038p 0.332102p 0.053136p 0.330826p 0.332102p 0.0
0.0
rc 7.86e-12p 3.90e-05p 0.027819p 0.027819p 0.084229p 0.242038p 0.332102o 0.053136o 0.330826n 0.332102l 0.0
0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.277274l 0.0 0.0
zp 49.65 ri 9.81e-11p 0.000148p 0.041546p 0.041546p 0.050020p 0.142365p 0.001873p 1.32e-08p 4.62e-09p 0.0 0.0
0.0
sig0.350 cc 9.81e-11p 0.000148p 0.041620p 0.041620p 0.070693p 0.204657p 0.277223p 0.044356p 0.276158p 0.277223p 0.0
0.0
rc 9.81e-11p 0.000148p 0.041620p 0.041620p 0.070693p 0.204657p 0.277223n 0.044356o 0.276158m 0.277223l 0.0
0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.208905i 0.0 0.0 0.938380i 0.0 0.0
zp 48.96 ri 0.007964p 0.230250p 0.321177p 0.321177p 0.034961p 0.159269p 0.005580p 9.14e-06p 2.01e-06p 1.76e-09p 0.0
0.0
sig0.600 cc 0.007964p 0.238214p 0.440284p 0.440284p 0.253650p 0.818241p 1.077472p 0.172406p 1.073347p 1.077484p 0.0
0.0
rc 0.007964p 0.238214p 0.440284p 0.440284p 0.253651p 0.818242n 1.077473j 0.172405j 1.073347i 1.077484h 0.0
0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.355281j 0.0 0.0 0.361325m 0.0 0.0
zp 49.81 ri 6.74e-12p 3.11e-05p 0.033049p 0.033049p 0.073014p 0.208100p 0.008757p 1.85e-07p 6.49e-08p 0.0 0.0 0.0
sig0.350 cc 6.74e-12p 3.11e-05p 0.033092p 0.033092p 0.089511p 0.257508p 0.355783p 0.056925p 0.354417p 0.355783p 0.0
0.0
rc 6.74e-12p 3.11e-05p 0.033065p 0.033065p 0.089437p 0.257589n 0.355783j 0.056926j 0.354417j 0.355784j 0.0 0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.106282j 0.021808k 0.0 0.088381l 0.0 0.0
zp 49.96 ri 0.0 9.83e-09p 0.002378p 0.002378p 0.028468p 0.069697p 0.002684p 1.50e-09p 6.14e-10p 0.0 0.0 0.0
sig0.281 cc 0.0 9.83e-09p 0.002378p 0.002378p 0.029649p 0.073255p 0.105589p 0.016894p 0.105183p 0.105589p 0.0
0.0
rc 0.0 9.83e-09p 0.002378p 0.002378p 0.029649p 0.073255p 0.105589j 0.016894j 0.105183i 0.105589i 0.0 0.0

ag half life from 80eng2; cd, in, sn, sb, te half lives 89wal1.
1

mass number 128 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	46 pd g	47 ag g	48 cd g	49 in g	50 sn d	50 sn g	51 sb m	51 sb g	52 te g	53 i g	54 xe g
half life		0.094s	0.28 s	0.80 s	2.5 s	59.1 m	10.1 m	9.1 h	stable	25.00m	stable
lambda	0.0	7.374e+00	2.476e+00	8.664e-01	2.773e-01	1.955e-04	1.144e-03	2.116e-05	0.0	4.621e-04	0.0
z - 1 g	100.0000	100.0000	100.0000	99.8780	0.0	99.9390	99.8000	0.2000	100.0000	-6.3000	93.7000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	2.9200	100.0000	0.0	0.0	0.0	0.0	0.0
u233f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.183956j	0.0	0.0
zp 50.19 ri	0.0	0.0	8.66e-07p	0.016621p	0.0	1.035270m	0.075913p	0.054972p	0.000120p	1.42e-11p	0.0
sig0.350 cc	0.0	0.0	8.66e-07p	0.016615p	0.0	1.051936p	1.125714p	0.057053p	1.182887p	1.41e-11p	1.33e-11p
rc	0.0	0.0	8.66e-07p	0.016622p	0.001080o	1.052962l	1.126769k	0.057077p	1.183967i	1.42e-11p	1.33e-11p
u233he xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.541144m	0.0	0.0
zp 50.39 ri	1.69e-09p	8.41e-06p	0.004064p	0.205258p	0.0	1.231527n	0.427297p	0.566434p	0.105763p	0.001296p	1.63e-06p
sig0.642 cc	1.69e-09p	8.42e-06p	0.004072p	0.209302p	0.0	1.440835p	1.865215p	0.569252p	2.540300p	0.001296p	0.001216p
rc	1.69e-09p	8.42e-06p	0.004072p	0.209325p	0.000956o	1.441680m	1.866094n	0.569317o	2.541256l	0.001296p	0.001216p
u236f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.544431m	0.0	0.0
zp 49.88 ri	0.0	1.69e-12p	2.32e-05p	0.046779p	0.0	0.484382p	0.007498p	0.005430p	1.07e-06p	0.0	0.0
sig0.350 cc	0.0	1.69e-12p	2.32e-05p	0.046785p	0.0	0.531161p	0.537593p	0.006490p	0.544084p	0.0	0.0
rc	0.0	1.69e-12p	2.32e-05p	0.046803p	0.000341o	0.531496o	0.537931n	0.006493p	0.544425m	0.0	0.0
pu239h xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.715720l	0.0	0.0
zp 50.51 ri	2.05e-09p	7.76e-06p	0.003311p	0.169956p	0.0	1.166532n	0.512966p	0.680001p	0.181953p	0.003722p	9.18e-06p
sig0.664 cc	2.05e-09p	7.76e-06p	0.003318p	0.173252p	0.0	1.339827p	1.850076p	0.682608p	2.714853p	0.003722p	0.003496p
rc	2.05e-09p	7.76e-06p	0.003318p	0.173270p	0.000933o	1.340630m	1.850915m	0.682683o	2.715785k	0.003722p	0.003497p
pu240f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.693438k	0.0	0.0
zp 50.03 ri	0.0	0.0	4.23e-06p	0.030936p	0.0	0.617790o	0.025773p	0.018663p	1.01e-05p	0.0	0.0
sig0.350 cc	0.0	0.0	4.22e-06p	0.030934p	0.0	0.648720p	0.673191p	0.019957p	0.693158p	0.0	0.0
rc	0.0	0.0	4.23e-06p	0.030940p	0.000283o	0.648994n	0.673469m	0.019961p	0.693441k	0.0	0.0
pu241f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.658782k      0.0       0.0
 zp 49.96 ri      0.0       0.0  1.02e-05p 0.043432p      0.0  0.586440o 0.016527p 0.011968p 3.73e-06p      0.0       0.0
 sig0.350 cc      0.0       0.0  1.02e-05p 0.043428p      0.0  0.629865p 0.645127p 0.013224p 0.658354p      0.0       0.0
          rc      0.0       0.0  1.02e-05p 0.043442p 0.000431o 0.630287n 0.645553m 0.013228p 0.658785k      0.0       0.0
  pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0  0.602144p      0.0       0.0  0.511456l      0.0       0.0
 zp 49.83 ri      0.0  5.77e-12p 4.06e-05p 0.073842p      0.0  0.432558o 0.006102p 0.004418p 4.51e-07p      0.0       0.0
 sig0.350 cc      0.0  5.54e-12p 3.89e-05p 0.070911p      0.0  0.505579p 0.511144p 0.005773p 0.516917p      0.0       0.0
          rc      0.0  5.77e-12p 4.06e-05p 0.073882p 0.001021o 0.507416o 0.512503n 0.005433p 0.517936l      0.0       0.0
  th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.166339i      0.0       0.0
 zp 49.34 ri 1.25e-06p 0.001239p 0.092003p 0.609097p      0.0  0.427136p 0.013317p 0.017653p 0.000187p 8.17e-08p 2.42e-12p
 sig0.600 cc 1.25e-06p 0.001237p 0.093035p 0.700654p      0.0  1.129005p 1.140035p 0.019872p 1.160093p 8.15e-08p 7.64e-08p
          rc 1.25e-06p 0.001240p 0.093243p 0.702226o 0.006251o 1.135185m 1.146232k 0.019924p 1.166342i 8.17e-08p 7.66e-08p
  np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.499557j      0.0       0.0
 zp 49.99 ri      0.0       0.0  1.48e-05p 0.119320p      0.0  1.269830m 0.063717p 0.046140p 1.22e-05p      0.0       0.0
 sig0.350 cc      0.0       0.0  1.48e-05p 0.119316p      0.0  1.389110p 1.450038p 0.048911p 1.498961p      0.0       0.0
          rc      0.0       0.0  1.48e-05p 0.119335p 0.000610o 1.389702l 1.450640l 0.048919p 1.499571j      0.0       0.0
  cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  0.185159o 0.004962o 0.193853k      0.0       0.0
 zp 50.10 ri      0.0       0.0  3.35e-09p 0.003316p      0.0  0.174984o 0.009480p 0.005568p 1.51e-07p      0.0       0.0
 sig0.291 cc      0.0       0.0  3.38e-09p 0.003352p      0.0  0.178132p 0.187361p 0.005985p 0.193346p      0.0       0.0
          rc      0.0       0.0  3.35e-09p 0.003316p 0.000143o 0.178440n 0.187564m 0.005925n 0.193489k      0.0       0.0

   ag half life from 80eng2; cd, in, sn, sb half lives from 89wal1.
1

     mass number    129                    LA-UR-94-3106 (ENDF-349)                    percent yields
 nuclide      48 cd g   49 in m   49 in g   50 sn m   50 sn g   51 sb g   52 te m   52 te g   53 i  g   54 xe g   55 cs g   56 ba g
 half life     0.27 s    1.23 s     0.63s     6.9 m     2.4 m    4.40 h    33.6 d    1.16 h    1.6e7y    stable    32.06h     2.1 h
 lambda      2.567e+00 5.635e-01 1.100e+00 1.674e-03 4.814e-03 4.376e-05 2.388e-07 1.660e-04 1.374e-15       0.0 6.006e-06
9.169e-05
  z - 1 g    100.0000       0.0  100.0000       0.0   97.0800  100.0000   16.6000   83.4000  100.0000  100.0000 -100.0000 -100.0000
  z - 1 m       0.0       0.0       0.0       0.0  100.0000  100.0000       0.0       0.0   36.4000       0.0       0.0       0.0
  z - 0 m       0.0       0.0       0.0    1.0400       0.0       0.0       0.0   63.6000       0.0       0.0       0.0       0.0
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u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.678907i 2.032051k 0.0 0.0
zp 50.39 ri 0.000626p 0.036364p 0.036364p 0.274333p 0.781100p 0.564086p 0.033388p 0.011731p 9.37e-05p 2.09e-08p 0.0
0.0
sig0.553 cc 0.000632p 0.036705p 0.037337p 0.277015p 0.861379p 1.691359p 0.314467p 1.622435p 1.736996p 1.736996p 0.0
0.0
rc 0.000626p 0.036364p 0.036990p 0.274543p 0.853374o 1.692003m 0.314261n 1.622731k 1.737216i 1.737216i 0.0
0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.833577m 0.0 0.0 0.0
zp 50.78 ri 0.000535p 0.032201p 0.032201p 0.156771p 0.714512p 1.525272n 0.297181p 0.065235p 0.010495p 3.24e-05p 9.79e-
09p 0.0
sig0.642 cc 0.000535p 0.032200p 0.032735p 0.156839p 0.778468p 2.460546p 0.705623p 2.566105p 2.833446p 2.833479p 9.79e-
09p 0.0
rc 0.000535p 0.032201p 0.032736p 0.156917p 0.778492o 2.460681m 0.705654o 2.566239l 2.833592l 2.833625l 9.80e-09p
0.0
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.478429m 0.0 0.0 1.009252j 0.0 0.0 0.0
zp 50.06 ri 2.45e-06p 0.011659p 0.011659p 0.131765p 0.731393o 0.044640p 1.47e-05p 5.17e-06p 1.11e-12p 0.0 0.0 0.0
sig0.350 cc 3.96e-06p 0.018875p 0.018879p 0.213485p 0.644815p 0.930568p 0.154488p 0.874353p 0.930587p 0.930587p 0.0
0.0
rc 2.45e-06p 0.011659p 0.011662p 0.131939p 0.754373m 0.930952k 0.154553k 0.874714k 0.930972j 0.930972j 0.0
0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.387215l 0.0 0.0 0.0
zp 50.88 ri 0.000564p 0.031385p 0.031385p 0.160852p 0.733209p 1.834830n 0.468080p 0.102749p 0.024911p 0.000136p 8.51e-
08p 5.90e-12p
sig0.664 cc 0.000564p 0.031384p 0.031948p 0.160943p 0.795583p 2.791311p 0.931423p 3.023084p 3.387032p 3.387168p 8.52e-
08p 5.90e-12p
rc 0.000564p 0.031385p 0.031949p 0.161045p 0.795610o 2.791485m 0.931466o 3.023261l 3.387226k 3.387362k 8.52e-08p
5.90e-12p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.030412m 1.256600m 0.0 0.0
zp 50.21 ri 5.71e-07p 0.009687p 0.009687p 0.239777p 0.683593p 0.206146p 0.000104p 3.65e-05p 2.93e-11p 0.0 0.0
0.0

sig0.350 cc 5.77e-07p 0.009789p 0.009790p 0.242705p 0.710068p 1.148604p 0.190773p 1.079304p 1.148746p 1.148746p 0.0
0.0
rc 5.71e-07p 0.009687p 0.009688p 0.240511p 0.702685o 1.149342n 0.190895n 1.079997m 1.149483l 1.149483l 0.0
0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.052748k 1.426522l 0.0 0.0
zp 50.15 ri 1.41e-06p 0.014766p 0.014766p 0.252119p 0.717753p 0.167989p 5.06e-05p 1.78e-05p 8.69e-12p 0.0 0.0 0.0
sig0.350 cc 1.43e-06p 0.015001p 0.015003p 0.256205p 0.758766p 1.166956p 0.193766p 1.096495p 1.167026p 1.167026p 0.0
0.0
rc 1.41e-06p 0.014766p 0.014767p 0.252237p 0.746855o 1.167082m 0.193786n 1.096612l 1.167150j 1.167150j 0.0
0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.836098m 1.275971k 0.0 0.0
zp 50.02 ri 8.30e-06p 0.034962p 0.034962p 0.263164p 0.811308o 0.086455p 1.02e-05p 3.59e-06p 0.0 0.0 0.0 0.0
sig0.350 cc 8.74e-06p 0.036799p 0.036808p 0.277225p 0.861558p 1.229783p 0.204155p 1.155485p 1.229797p 1.229797p 0.0
0.0
rc 8.30e-06p 0.034962p 0.034970p 0.263473o 0.880218n 1.230146m 0.204214m 1.155825l 1.230159k 1.230159j 0.0
0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.230929j 0.0 0.0 1.265243i 0.0 0.0 0.0
zp 49.77 ri 0.021155p 0.192915p 0.192915p 0.124611p 0.583541o 0.136922p 0.002063p 0.000453p 3.44e-06p 3.26e-10p 0.0
0.0
sig0.600 cc 0.021191p 0.193248p 0.214439p 0.127037p 0.980148p 1.245826p 0.208846p 1.172293p 1.248317p 1.248317p 0.0
0.0
rc 0.021155p 0.192915p 0.214069p 0.129104p 0.984274n 1.250301j 0.209613j 1.176518i 1.252821h 1.252821h 0.0
0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.471903i 2.409383j 0.0 0.0
zp 50.18 ri 1.23e-06p 0.020892p 0.020892p 0.336782p 0.960353p 0.419890p 9.97e-05p 3.50e-05p 2.79e-11p 0.0 0.0 0.0
sig0.350 cc 1.32e-06p 0.022445p 0.022446p 0.362504p 1.075978p 1.758144p 0.291959p 1.652016p 1.758289p 1.758289p 0.0
0.0
rc 1.23e-06p 0.020892p 0.020893p 0.337935p 1.001528o 1.759353m 0.292152n 1.653144k 1.759487i 1.759487i 0.0
0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.599084i 0.0 0.0 0.0 0.538976k 0.0 0.0

zp 50.31 ri 8.37e-07p 0.004883p 0.004883p 0.117774p 0.288470p 0.172211p 0.000441p 0.000180p 4.08e-09p 0.0 0.0
0.0
sig0.387 cc 8.36e-07p 0.004880p 0.004880p 0.117733p 0.297861p 0.588046p 0.098080p 0.552999p 0.588700p 0.588700p 0.0
0.0
rc 8.37e-07p 0.004883p 0.004884p 0.117880p 0.298095p 0.588185i 0.098079i 0.553105h 0.588805h 0.588805h 0.0
0.0

cd, in, sn, sb, te, i half lives 89wal1. sb-te branching to fit data; cs half life 90bur1.

1

mass number 130 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 46 pd g 47 ag g 48 cd g 49 in g 50 sn d 50 sn g 51 sb m 51 sb g 52 te g 53 i m 53 i g 54 xe g
half life 0.20 s 0.29 s 0.28 s 3.7 m 6.5 m 38.4 m stable 8.9 m 12.36h stable
lambda 0.0 0.0 3.466e+00 2.390e+00 2.476e+00 3.122e-03 1.777e-03 3.008e-04 0.0 1.298e-03 1.558e-05 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 98.9600 90.0000 10.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 15.0000
z - 0 m 0.0 0.0 0.0 0.0 1.8400 100.0000 0.0 0.0 0.0 0.0 85.0000 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.790902l 0.0 0.0 0.0
zp 50.79 ri 0.0 2.70e-09p 6.67e-05p 0.020122p 0.0 1.136913n 0.721896p 0.522753p 0.389300p 0.000559p 0.001510p
1.89e-06p
sig0.553 cc 0.0 2.70e-09p 6.67e-05p 0.020189p 0.0 1.156902p 1.763104p 0.638440p 2.790840p 0.000559p 0.001985p
0.002071p
rc 0.0 2.70e-09p 6.67e-05p 0.020189p 6.47e-05o 1.156957m 1.763157n 0.638448o 2.790905l 0.000559p 0.001985p
0.002071p
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.136094m 0.0 0.0 0.0
zp 51.18 ri 0.0 1.55e-08p 4.70e-05p 0.014011p 0.0 0.446959p 0.751224p 0.995811p 0.928150p 0.011432p 0.052077p
0.000486p
sig0.642 cc 0.0 1.55e-08p 4.70e-05p 0.014058p 0.0 0.460880p 1.166015p 1.041895p 3.136057p 0.011432p 0.061794p
0.063995p
rc 0.0 1.55e-08p 4.70e-05p 0.014058p 3.96e-05o 0.460911p 1.166044o 1.041902o 3.136096l 0.011432p 0.061794p
0.063995p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.742904l 0.0 0.0 0.0

zp 50.26 ri 0.0 0.0 4.71e-07p 0.016714p 0.0 1.447308m 0.161046p 0.116618p 0.000385p 2.30e-11p 6.22e-11p 0.0
sig0.350 cc 0.0 0.0 4.71e-07p 0.016711p 0.0 1.463894p 1.478524p 0.262989p 1.741898p 2.30e-11p 8.17e-11p 8.51e-11p
rc 0.0 0.0 4.71e-07p 0.016714p 0.001088o 1.464936m 1.479489m 0.263112o 1.742986l 2.30e-11p 8.17e-11p 8.52e-11p
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.337861l 0.0 0.0 0.0
zp 51.25 ri 1.83e-12p 3.55e-08p 7.59e-05p 0.018524p 0.0 0.557022p 0.994323p 1.318059n 1.450002n 0.023896p 0.108859p 0.001580p
sig0.664 cc 1.83e-12p 3.55e-08p 7.59e-05p 0.018600p 0.0 0.575441p 1.512218p 1.375599p 4.337813p 0.023896p 0.129170p 0.134334p
rc 1.83e-12p 3.55e-08p 7.59e-05p 0.018600p 5.05e-05o 0.575479o 1.512254o 1.375607m 4.337863k 0.023896p 0.129170p 0.134335p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.030863k 0.0 0.0 0.0
zp 50.45 ri 1.65e-12p 9.59e-08p 0.000557p 0.070025p 0.0 1.183583n 0.408276p 0.295649p 0.073102p 5.31e-05p 0.000144p 5.72e-08p
sig0.558 cc 1.65e-12p 9.59e-08p 0.000557p 0.070578p 0.0 1.253468p 1.536379p 0.420982p 2.030458p 5.31e-05p 0.000189p 0.000197p
rc 1.65e-12p 9.59e-08p 0.000557p 0.070582p 0.000414o 1.253845m 1.536737n 0.421034p 2.030872k 5.31e-05p 0.000189p 0.000197p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.863015j 0.0 0.0 0.0
zp 50.34 ri 0.0 0.0 1.48e-07p 0.011314p 0.0 1.397782n 0.262377p 0.190003p 0.000960p 1.25e-10p 3.38e-10p 0.0
sig0.350 cc 0.0 0.0 1.48e-07p 0.011312p 0.0 1.409014p 1.530472p 0.330886p 1.862318p 1.25e-10p 4.45e-10p 4.64e-10p
rc 0.0 0.0 1.48e-07p 0.011314p 0.000709o 1.409687m 1.531095m 0.330972o 1.863027j 1.25e-10p 4.45e-10p 4.64e-10p
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.005938k 0.0 0.0 0.0
zp 50.23 ri 0.0 0.0 8.05e-07p 0.029649p 0.0 1.621820n 0.204699p 0.148232p 0.000299p 1.84e-11p 4.97e-11p 0.0
sig0.350 cc 0.0 0.0 8.05e-07p 0.029643p 0.0 1.651228p 1.690766p 0.313326p 2.004391p 1.84e-11p 6.53e-11p 6.81e-11p
rc 0.0 0.0 8.05e-07p 0.029650p 0.001604o 1.652765m 1.692187m 0.313508o 2.005994k 1.84e-11p 6.53e-11p 6.81e-11p
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.005410m 0.024646m 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.430257j 0.0 0.0 0.0
zp 50.05 ri 3.85e-09p 2.53e-05p 0.011658p 0.420355p 0.0 1.435308n 0.228515p 0.302909p 0.019037p 0.005374p 0.024480p 1.09e-08p
sig0.600 cc 3.89e-09p 2.56e-05p 0.011825p 0.437268p 0.0 1.885909p 1.928608p 0.495184p 2.443059p 9.88e-06p 5.34e-05p 5.49e-05p
rc 3.85e-09p 2.53e-05p 0.011684p 0.432039p 0.002630o 1.865484m 1.907451m 0.489457p 2.415945j 0.005374p 0.029047p 0.029853o
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.624995m 2.729357j 0.0 0.0 0.0
zp 50.49 ri 2.82e-12p 1.88e-07p 0.000620p 0.110234p 0.0 1.280370n 0.735411p 0.496238n 0.103985p 0.000151p 0.000408p 1.62e-07p
sig0.568 cc 2.80e-12p 1.86e-07p 0.000614p 0.109827p 0.0 1.377301p 1.961901p 0.660797p 2.725720p 0.000150p 0.000532p 0.000554p
rc 2.82e-12p 1.88e-07p 0.000620p 0.110853p 0.000417o 1.390488m 1.986850m 0.635286l 2.726121j 0.000151p 0.000537p 0.000560p
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.847073l 0.0 0.0 0.0
zp 50.60 ri 0.0 1.23e-10p 8.83e-06p 0.010185p 0.0 0.361984p 0.279867p 0.164359p 0.030730p 1.44e-05p 3.36e-05p 1.85e-09p
sig0.493 cc 0.0 1.23e-10p 8.83e-06p 0.010193p 0.0 0.372084p 0.614730p 0.201567p 0.847028p 1.44e-05p 4.58e-05p 4.80e-05p
rc 0.0 1.23e-10p 8.83e-06p 0.010193p 4.82e-05o 0.372120p 0.614775o 0.201571p 0.847076l 1.44e-05p 4.58e-05p 4.80e-05p

cd, in, sn, sb half lives from 89wal1; i half life 90bur1.
1

mass number 131 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 48 cd g 49 in g 50 sn d 50 sn g 51 sb g 52 te m 52 te g 53 i g 54 xe m 54 xe g 55 cs g 56 ba g
half life 0.106s 0.28 s 0.12s 39. s 23.0 m 1.35 d 25.0 m 8.040d 11.9 d stable 9.69 d 11.7 d
lambda 6.539e+00 2.476e+00 5.776e+00 1.777e-02 5.023e-04 5.943e-06 4.621e-04 9.978e-07 6.742e-07 0.0 8.279e-07 6.857e-07
z - 1 g 100.0000 100.0000 0.0 98.1600 100.0000 7.0000 93.0000 100.0000 1.4000 98.6000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 82.0000 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 5.3600 100.0000 0.0 0.0 18.0000 0.0 0.0 100.0000 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.836121h 0.0 3.741199d 0.0 0.0
zp 51.19 ri 2.62e-06p 0.003514p 0.0 0.487074p 1.925687n 0.965458p 0.332143p 0.028458p 5.01e-05p 1.76e-05p 3.37e-09p
0.0
sig0.553 cc 2.61e-06p 0.003510p 0.0 0.489604p 2.411657p 1.132451p 2.785257p 3.742271p 0.052443p 3.742340p 3.44e-09p
0.0
rc 2.62e-06p 0.003517p 1.15e-05o 0.490538p 2.416225m 1.134594o 2.783459m 3.742284f 0.052442h 3.742352d 3.37e-09p
0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.218278i 0.0 3.467258j 0.0 0.0
zp 51.60 ri 2.74e-06p 0.002149p 0.0 0.172878p 1.602759n 1.608468n 0.353078p 0.321905p 0.004699p 0.001031p 1.17e-05p
2.32e-09p
sig0.642 cc 2.74e-06p 0.002151p 0.0 0.174940p 1.777212p 1.732383p 2.317607p 4.060634p 0.062011p 4.066942p 1.28e-05p
2.54e-09p
rc 2.74e-06p 0.002152p 8.81e-06o 0.174999p 1.777758m 1.732911m 2.318317m 4.061209i 0.061556k 4.066951h 1.17e-05p
2.32e-09p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.152117h 0.0 2.917306f 0.0 0.0
zp 50.58 ri 0.000236p 0.058886p 0.0 1.468203n 1.262179n 0.118695p 0.041594p 0.000531p 1.03e-07p 3.63e-08p 0.0
0.0
sig0.545 cc 0.000235p 0.058782p 0.0 1.517628p 2.789656p 0.312980p 2.692072p 2.949244p 0.041290p 2.949244p 0.0
0.0
rc 0.000236p 0.059122p 0.000518o 1.526756m 2.788935l 0.313921o 2.691809k 2.949756h 0.041297h 2.949756f 0.0
0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.533855i 0.0 4.307656h 0.0 0.0
zp 51.64 ri 4.85e-06p 0.002742p 0.0 0.184435p 1.633232n 1.748264n 0.383765p 0.402474p 0.008882p 0.001950p 3.53e-05p
1.31e-08p
sig0.664 cc 4.83e-06p 0.002737p 0.0 0.186440p 1.813592p 1.868706p 2.405344p 4.354549p 0.070105p 4.365734p 3.64e-05p
1.35e-08p
rc 4.85e-06p 0.002747p 1.51e-05o 0.187146p 1.820379m 1.875691m 2.414342m 4.354882h 0.069850l 4.365750g 3.53e-05p
1.31e-08p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.738695j 0.0 3.765519j 0.0 3.499336g 0.0 0.0
zp 50.86 ri 4.47e-05p 0.022462p 0.0 0.987350n 1.911370n 0.465171l 0.128716p 0.005199p 3.17e-06p 1.11e-06p 1.04e-10p
0.0

sig0.558 cc 4.59e-05p 0.023157p 0.0 1.038627p 3.005184p 0.587284p 3.032964p 3.519887p 0.049282p 3.519891p 1.13e-10p
0.0
rc 4.47e-05p 0.022507p 0.000137o 1.009579m 2.920949m 0.669637j 2.965734k 3.520035i 0.049284j 3.520040g 1.04e-10p
0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.362428f 0.0 0.0
zp 50.73 ri 9.87e-05p 0.038456p 0.0 1.252000n 1.759615n 0.229918p 0.080782p 0.001995p 7.08e-07p 2.49e-07p 1.17e-11p
0.0
sig0.551 cc 9.87e-05p 0.038554p 0.0 1.289896p 3.049470p 0.443374p 2.996594p 3.362155p 0.047071p 3.362156p 1.17e-11p
0.0
rc 9.87e-05p 0.038555p 0.000272o 1.290118m 3.049733l 0.443399o 2.996845k 3.362427h 0.047075l 3.362428f 1.17e-11p
0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.407734l 0.0 3.172369j 0.0 3.105040f 0.0 0.0
zp 50.55 ri 0.000437p 0.086716p 0.0 1.437693n 1.360785n 0.181903n 0.038882p 0.000731p 1.82e-07p 6.39e-08p 2.84e-12p
0.0
sig0.562 cc 0.000444p 0.088538p 0.0 1.547742p 2.952852p 0.319123p 2.843095p 3.105518p 0.043477p 3.105518p 2.94e-12p
0.0
rc 0.000437p 0.087153p 0.000922o 1.524165m 2.884949l 0.383850l 2.790978j 3.106466h 0.043491j 3.106466f 2.84e-12p
0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.798990i 0.0 2.836519i 0.0 0.0
zp 50.48 ri 0.001338p 0.141603p 0.0 1.297715n 1.249648n 0.102645p 0.022538p 0.001081p 5.67e-07p 1.24e-07p 2.99e-11p
0.0
sig0.600 cc 0.001339p 0.143004p 0.0 1.439067p 2.687590p 0.290849p 2.574359p 2.813937p 0.039396p 2.813937p 2.97e-11p
0.0
rc 0.001338p 0.142941p 0.001316o 1.439342m 2.688990l 0.290874o 2.575656k 2.815253i 0.039414i 2.815254h 2.99e-11p
0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.707919k 0.0 3.640700i 0.0 3.599759d 0.0 0.0
zp 50.91 ri 3.79e-05p 0.022651p 0.0 0.801682p 2.157432n 0.473989m 0.135411p 0.009106p 6.69e-06p 2.35e-06p 4.61e-10p
0.0
sig0.568 cc 3.88e-05p 0.023173p 0.0 0.841612p 3.058640p 0.607742p 3.092233p 3.599882p 0.050405p 3.599892p 4.76e-10p
0.0
rc 3.79e-05p 0.022689p 0.000155o 0.824108o 2.981540m 0.682697k 3.031129i 3.600046f 0.050407h 3.600055d 4.61e-10p
0.0

cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.192587m 0.302086j 0.0 1.592734i 0.0 1.623699i 0.0 0.0
zp 50.94 ri 6.68e-07p 0.002620p 0.0 0.295641p 0.994527n 0.236110k 0.069522p 0.001412p 1.66e-07p 6.78e-08p 0.0
0.0
sig0.496 cc 7.11e-07p 0.002790p 0.0 0.317467p 1.376173p 0.254165p 1.390057p 1.599781p 0.022397p 1.599781p 0.0
0.0
rc 6.68e-07p 0.002621p 2.76e-05o 0.298241p 1.292768l 0.326604i 1.330585j 1.599812h 0.022398h 1.599812h 0.0 0.0

cd half life from 80eng2; in, sn, sb, te, i, xe half lives from 89wal1.

1

mass number 132 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 48 cd g 49 in g 50 sn g 51 sb m 51 sb g 52 te g 53 i g 54 xe g 55 cs g 56 ba g
half life 0.136s 0.20 s 40. s 2.8 m 4.2 m 3.26 d 2.28 h stable 6.475d stable
lambda 5.097e+00 3.466e+00 1.733e-02 4.126e-03 2.751e-03 2.461e-06 8.445e-05 0.0 1.239e-06 0.0
z - 1 g 100.0000 100.0000 94.6400 50.0000 50.0000 100.0000 100.0000 100.0000 -97.8000 2.2000
z - 1 m 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.2550 0.0 0.0 0.0 0.0 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.574595h 0.0 5.038319e 0.0 0.0
zp 51.61 ri 5.56e-08p 0.000215p 0.135329p 0.602935p 0.679906p 3.220086l 0.396848o 0.002064p 2.98e-07p 6.53e-12p
sig0.553 cc 5.82e-08p 0.000225p 0.141833p 0.701883p 0.782432p 4.854106p 5.035336p 5.037371p 2.94e-07p 6.47e-09p
rc 5.56e-08p 0.000215p 0.135532p 0.670701o 0.747672o 4.638460h 5.035308g 5.037372e 2.98e-07p 6.57e-09p
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.302823h 4.091200j 3.807971i 0.0 0.0
zp 52.03 ri 7.69e-08p 0.000164p 0.034790p 0.489418p 0.312907p 2.316252l 0.787842o 0.041901p 0.000229p 1.24e-07p
sig0.642 cc 7.45e-08p 0.000159p 0.033864p 0.491203p 0.320155p 3.055924p 3.939345p 3.983489p 0.000239p 5.40e-06p
rc 7.69e-08p 0.000164p 0.034946p 0.506891o 0.330379p 3.153522h 3.941365i 3.983499h 0.000229p 5.15e-06p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.578901i 0.0 4.332119f 0.0 0.0
zp 51.01 ri 1.23e-05p 0.009658p 1.037217n 1.046809n 1.180444n 1.095659n 0.007103p 9.66e-06p 1.71e-10p 0.0
sig0.545 cc 1.23e-05p 0.009662p 1.045472p 1.568647p 1.702168p 4.365534p 4.376380p 4.376395p 2.61e-10p 5.74e-12p
rc 1.23e-05p 0.009670p 1.046369n 1.569994n 1.703629n 4.369282i 4.376385h 4.376394f 1.71e-10p 3.76e-12p
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.117932i 0.0 5.260829h 0.0 0.0

```
zp 52.04 ri 2.08e-07p 0.000281p 0.043810p 0.524769p 0.335508p 2.390833l 1.858032m 0.077385p 0.000592p 5.27e-07p
sig0.664 cc 2.49e-07p 0.000337p 0.052826p 0.655364p 0.428529p 3.949380p 5.157825p 5.231179p 0.000557p 1.27e-05p
        rc 2.08e-07p 0.000281p 0.044075p 0.546806p 0.357546p 3.295185i 5.153217i 5.231150g 0.000592p 1.35e-05p
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.041959k      0.0       0.0
zp 51.30 ri 1.56e-06p 0.002546p 0.463707p 1.101777n 1.242429n 2.164932n 0.066445p 0.000257p 2.09e-08p       0.0
sig0.558 cc 1.56e-06p 0.002547p 0.466117p 1.334836p 1.475488p 4.975255p 5.041701p 5.041958p 2.09e-08p 4.60e-10p
        rc 1.56e-06p 0.002547p 0.466117p 1.334836m 1.475488m 4.975255l 5.041701k 5.041958j 2.09e-08p 4.60e-10p
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  4.406735i      0.0  4.721427f      0.0       0.0
zp 51.16 ri 4.03e-06p 0.005072p 0.674809p 1.143743n 1.289753n 1.565970m 0.030721p 6.65e-05p 2.74e-09p       0.0
sig0.551 cc 4.05e-06p 0.005094p 0.682113p 1.489007p 1.635554p 4.680017p 4.709802p 4.709866p 2.66e-09p 5.85e-11p
        rc 4.03e-06p 0.005076p 0.679613o 1.483550m 1.629560m 4.679079i 4.709801h 4.709867f 2.74e-09p 6.04e-11p
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  4.621866k 4.483273e      0.0       0.0
zp 50.98 ri 2.74e-05p 0.017175p 1.038772n 1.199048n 1.352117n 0.863663o 0.013858p 1.90e-05p 7.34e-10p       0.0
sig0.562 cc 2.70e-05p 0.016919p 1.037699p 1.698175p 1.848728p 4.470124p 4.483754p 4.483773p 7.43e-10p 1.63e-11p
        rc 2.74e-05p 0.017202p 1.055052m 1.726574m 1.879644m 4.469881i 4.483739g 4.483758e 7.34e-10p 1.61e-11p
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0  0.122050k      0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  3.240835h 3.404263j 3.613427i      0.0       0.0
zp 50.96 ri 6.72e-05p 0.024477p 0.707623p 1.204222n 0.769913p 0.598980p 0.124556k 4.14e-05p 6.55e-09p       0.0
sig0.600 cc 6.94e-05p 0.025353p 0.754946p 1.621396p 1.172768p 3.410766p 3.428481p 3.428521p 6.31e-09p 1.39e-10p
        rc 6.72e-05p 0.024544p 0.730851o 1.569648m 1.135338o 3.303967h 3.428523g 3.428564g 6.55e-09p 1.44e-10p
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  5.053565i 5.197790j 4.850857d      0.0       0.0
zp 51.34 ri 1.36e-06p 0.002883p 0.335361p 1.245413n 1.404402n 1.763506m 0.102045p 0.000335p 6.21e-08p       0.0
sig0.568 cc 1.35e-06p 0.002855p 0.334680p 1.400189p 1.557574p 4.753157p 4.853442p 4.853793p 6.51e-08p 1.43e-09p
        rc 1.36e-06p 0.002884p 0.338090p 1.414458m 1.573447m 4.751411h 4.853456f 4.853791d 6.21e-08p 1.37e-09p
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  2.190462h 2.125942i 2.092258i      0.0       0.0
zp 51.30 ri 7.06e-08p 0.000514p 0.137701p 0.510963p 0.705615p 0.776736o 0.021069p 2.44e-05p 6.65e-10p       0.0
sig0.518 cc 7.05e-08p 0.000513p 0.137848p 0.578633p 0.772807p 2.131096p 2.152570p 2.152595p 6.89e-10p 1.51e-11p
        rc 7.06e-08p 0.000514p 0.138188p 0.580057o 0.774709o 2.131502h 2.152571g 2.152595g 6.65e-10p 1.46e-11p

  cd half life from 80eng2; in, sn, sb, te, i half lives 89wal1; cs half life 90bur1.
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     mass number    133                    LA-UR-94-3106 (ENDF-349)                    percent yields
 nuclide       49 in g   50 sn g   51 sb d   51 sb g   52 te m   52 te g   53 i  g   54 xe m   54 xe g   55 cs g   56 ba g   57 la g
 half life     0.18 s    1.44 s     1.04s     2.5 m    55.4 m    12.4 m    20.8 h    2.19 d    5.243d    stable    10.74y      4. h
 lambda       3.851e+00 4.814e-01 6.665e-01 4.621e-03 2.085e-04 9.316e-04 9.257e-06 3.663e-06 1.530e-06       0.0 2.047e-09
4.814e-05
  z - 1 g    100.0000  100.0000       0.0   99.7450   42.0000   58.0000  100.0000    2.8000   97.2000  100.0000 -100.0000 -100.0000
  z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0   87.0000       0.0       0.0       0.0       0.0       0.0
  z - 0 m        0.0       0.0   18.3000  100.0000       0.0   13.0000       0.0       0.0  100.0000       0.0       0.0       0.0
  u233f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc     0.0       0.0       0.0       0.0       0.0       0.0  5.472337i      0.0       0.0  6.040219d      0.0       0.0
 zp 52.04 ri 9.65e-06p 0.017540p       0.0  0.726744p 3.106875n 1.091601n 1.065346o 0.021961p 0.007716p 2.11e-05p 1.41e-09p
0.0
 sig0.553 cc 9.92e-06p 0.018050p       0.0  0.765524p 3.516927p 2.023915p 6.009339p 0.189284p 6.037748p 6.037768p 1.35e-09p
0.0
          rc 9.65e-06p 0.017550p 0.000258o 0.744508o 3.419568m 1.967960l 6.008330h 0.190194l 6.038007f 6.038028d 1.41e-09p
0.0
  u233he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc     0.0       0.0       0.0       0.0       0.0       0.0  4.388433j      0.0       0.0  4.483260j      0.0       0.0
 zp 52.46 ri 8.99e-06p 0.005102p       0.0  0.300721p 1.709607n 0.375279p 1.932659m 0.191436p 0.042140p 0.003353p 4.95e-06p
7.05e-10p
 sig0.642 cc 8.98e-06p 0.005106p       0.0  0.305539p 1.836260p 0.790839p 4.319153p 0.315879p 4.556888p 4.560298p 5.03e-06p
7.16e-10p
          rc 8.99e-06p 0.005111p 8.23e-05o 0.305901p 1.838086m 0.791653o 4.323446j 0.312493p 4.557022j 4.560380i 4.95e-06p
7.05e-10p
  u236f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc     0.0       0.0       0.0       0.0       0.0       0.0  6.904566j      0.0       0.0  6.883383i      0.0       0.0
 zp 51.45 ri 0.000990p 0.327788p       0.0  2.853914n 2.624243n 0.922032p 0.155146p 0.000506p 0.000178p 6.25e-08p       0.0
0.0
 sig0.545 cc 0.000989p 0.328673p       0.0  3.182724p 3.960357p 3.282636p 6.883274p 0.193238p 6.883958p 6.883958p       0.0
0.0
          rc 0.000990p 0.328778p 0.008578o 3.190432m 3.964224m 3.287832m 6.891853i 0.193477i 6.892536i 6.892536h       0.0
0.0
  pu239h  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.271723m 0.080336k      0.0       0.0       0.0
          xc     0.0       0.0       0.0       0.0       0.0       0.0  4.127626k      0.0       0.0  5.431956l      0.0       0.0
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zp 52.46 ri 1.93e-05p 0.007414p 0.0 0.343155p 1.752873n 0.384775p 1.989637m 0.294783p 0.087153p 0.005739p 1.27e-05p 3.17e-09p
sig0.664 cc 1.98e-05p 0.007601p 0.0 0.358522p 1.942972p 0.853981p 4.578864p 0.359017p 4.860338p 4.865541p 1.15e-05p 2.87e-09p
rc 1.93e-05p 0.007433p 0.000183o 0.350752p 1.900188m 0.835236o 4.478036j 0.420168p 4.859973k 4.865723j 1.27e-05p 3.17e-09p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 7.258686j 0.0 0.0 6.917902e 0.0 0.0
zp 51.75 ri 0.000159p 0.093176p 0.0 1.862099n 3.285075n 1.154208n 0.517115p 0.004721p 0.001659p 2.45e-06p 6.83e-11p 0.0
sig0.558 cc 0.000159p 0.093095p 0.0 1.950545p 4.095900p 2.815046p 6.911375p 0.198402p 6.917974p 6.917977p 7.07e-11p 0.0
rc 0.000159p 0.093335p 0.001672o 1.956868m 4.106960m 2.823096l 6.913266i 0.198293j 6.919646g 6.919648e 6.83e-11p 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.405672f 6.538851f 0.0 0.0
zp 51.60 ri 0.000384p 0.162723p 0.0 2.271381n 2.757399n 0.968809p 0.293201p 0.001493p 0.000525p 4.01e-07p 5.24e-12p 0.0
sig0.551 cc 0.000384p 0.163252p 0.0 2.437125p 3.783541p 2.875104p 6.453479p 0.182192p 6.455498p 6.455499p 5.19e-12p 0.0
rc 0.000384p 0.163107p 0.003810o 2.437882m 3.781310m 2.874351m 6.457291h 0.182297l 6.459309f 6.459309e 5.25e-12p 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 7.020545j 0.0 6.571568e 6.833971f 0.0 0.0
zp 51.43 ri 0.001819p 0.350813p 0.0 3.072453n 2.249685n 0.790440p 0.173602p 0.000577p 0.000203p 1.36e-07p 1.49e-12p 0.0
sig0.562 cc 0.001819p 0.352506p 0.0 3.425036p 3.687592p 3.256124p 6.637869p 0.186470p 6.638693p 6.638693p 1.56e-12p 0.0
rc 0.001819p 0.352632p 0.009985o 3.434170m 3.692037m 3.262224m 6.647898g 0.186718i 6.648678e 6.648678d 1.50e-12p 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.395507n 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.704106j 0.0 0.0 4.615522j 0.0 0.0
zp 51.43 ri 0.002952p 0.275146p 0.0 2.243173n 1.584234n 0.347768p 0.197736n 0.000541p 0.000119p 3.66e-07p 1.38e-11p 0.0
sig0.600 cc 0.002967p 0.279499p 0.0 2.534558p 2.656855p 2.164973p 4.649640p 0.131269p 4.650955p 4.650956p 2.76e-11p 0.0

rc 0.002952p 0.278098p 0.011676o 2.532238o 2.647774n 2.160677n 4.661976j 0.131076j 4.662635j 4.662636i 1.38e-11p 0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 3.658430k 0.0 6.681021j 0.0 0.0 6.452630g 0.0 0.0
zp 51.79 ri 0.000177p 0.074424p 0.0 1.905802n 2.755042l 1.003868n 0.719777p 0.006228p 0.002188p 5.93e-06p 2.11e-10p 0.0
sig0.568 cc 0.000175p 0.073892p 0.0 1.961716p 3.649225p 2.604869p 6.458806p 0.187146p 6.467318p 6.467324p 2.13e-10p 0.0
rc 0.000177p 0.074601p 0.001351o 1.981564m 3.587299j 2.619524l 6.460251i 0.187115j 6.468668h 6.468674f 2.11e-10p 0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.307192i 0.0 3.076503i 3.112074i 0.0 0.0
zp 51.68 ri 0.000195p 0.062608p 0.0 1.056286n 1.284030n 0.524456p 0.219459p 0.001636p 0.000668p 1.14e-06p 3.57e-11p 0.0
sig0.571 cc 0.000194p 0.062681p 0.0 1.117375p 1.750903p 1.399167p 3.146784p 0.089810p 3.149178p 3.149179p 3.75e-11p 0.0
rc 0.000195p 0.062803p 0.002766o 1.121695m 1.755142m 1.403208n 3.149640i 0.089826i 3.151944h 3.151945g 3.57e-11p 0.0

sb-te branching 66str1; in, sn, sb, te, i, xe half lives 89wal1; ba half life 90bur1.

1

mass number 134 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 48 cd g 49 in g 50 sn g 51 sb g 52 te d 52 te g 53 i m 53 i g 54 xe m 54 xe g 55 cs g 56 ba g
half life 0.081s 1.04 s 0.8 s 1.82 s 42. m 3.7 m 52.6 m 0.29 s stable 2.062y stable
lambda 0.0 8.557e+00 6.665e-01 8.664e-01 3.809e-01 2.751e-04 3.122e-03 2.196e-04 2.390e+00 0.0 1.066e-08 0.0
z - 1 g 100.0000 100.0000 100.0000 81.7000 0.0 100.0000 0.0 100.0000 0.0 100.0000 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.0000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 17.8700 100.0000 0.0 98.0000 0.0 100.0000 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.292958k 0.0 0.0 0.0 6.313051d 0.0 0.0
zp 52.48 ri 2.47e-12p 1.52e-07p 0.001412p 0.166284p 0.0 3.975148k 0.916900p 0.983576n 0.194098p 0.071790p 0.000561p 1.94e-07p
sig0.553 cc 2.43e-12p 1.50e-07p 0.001388p 0.164555p 0.0 4.074187p 0.924355p 6.022413p 0.214163p 6.308949p 0.000565p 0.000566p

rc 2.47e-12p 1.52e-07p 0.001412p 0.167438p 0.004964o 4.147550j 0.916900o 6.029688i 0.212436p 6.313914d 0.000561p 0.000561p
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.663794j 0.0 4.734002j 0.0 0.0
zp 52.89 ri 1.80e-11p 2.92e-07p 0.000449p 0.069300p 0.0 1.183508n 1.574904m 1.360076m 0.628633p 0.137993p 0.028189p 0.000112p
sig0.642 cc 1.94e-11p 3.14e-07p 0.000484p 0.074970p 0.0 1.349313p 1.694780p 4.093746p 0.710378p 4.952620p 0.030335p 0.030455p
rc 1.80e-11p 2.92e-07p 0.000450p 0.069667p 0.002184o 1.255359m 1.574904m 4.158841j 0.660131p 4.956964i 0.028189p 0.028301p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 6.645010i 0.0 7.699624h 0.0 7.757570g 0.0 0.0
zp 51.89 ri 2.13e-09p 2.89e-05p 0.046847p 1.165457n 0.0 5.494864j 0.326439p 0.644758p 0.010633p 0.003933p 4.46e-06p 1.61e-10p
sig0.545 cc 2.21e-09p 2.99e-05p 0.048641p 1.249083p 0.0 6.990427p 0.319318p 7.663440p 0.016775p 7.684058p 4.36e-06p 4.36e-06p
rc 2.13e-09p 2.89e-05p 0.046876p 1.203755m 0.056490o 6.755108i 0.326439p 7.719776g 0.017162p 7.740870f 4.46e-06p 4.46e-06p
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.964810h 0.0 0.0
zp 52.88 ri 1.23e-10p 1.05e-06p 0.001000p 0.111285p 0.0 1.584016n 1.984329m 1.268592n 0.829860p 0.182164p 0.044165p 0.000241p
sig0.664 cc 1.23e-10p 1.05e-06p 0.001001p 0.112079p 0.0 1.696982p 1.983896p 4.909593p 0.869357p 5.961074p 0.044155p 0.044396p
rc 1.23e-10p 1.05e-06p 0.001001p 0.112103p 0.003805o 1.699924m 1.984329m 4.913158k 0.869547o 5.964869h 0.044165p 0.044406p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.486043g 0.0 0.0
zp 52.21 ri 1.20e-10p 3.28e-06p 0.009133p 0.569375p 0.0 5.115710m 0.790466o 0.890327p 0.066144p 0.024464p 0.000119p 1.65e-08p
sig0.558 cc 1.20e-10p 3.28e-06p 0.009126p 0.576146p 0.0 5.693637p 0.789514p 7.357664p 0.081855p 7.463954p 0.000119p 0.000119p
rc 1.20e-10p 3.28e-06p 0.009137p 0.576840o 0.022107o 5.714658m 0.790466o 7.379641i 0.081954p 7.486060g 0.000119p 0.000119p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.544579e 0.0 0.0

zp 52.05 ri 4.90e-10p 1.04e-05p 0.020811p 0.890656p 0.0 5.401975m 0.544234p 0.612880p 0.026540p 0.009816p 2.49e-05p 1.62e-09p
sig0.551 cc 4.88e-10p 1.03e-05p 0.020766p 0.905262p 0.0 6.311985p 0.542793p 7.456007p 0.037325p 7.503122p 2.48e-05p 2.48e-05p
rc 4.90e-10p 1.04e-05p 0.020821p 0.907667o 0.041469o 6.351111l 0.544234o 7.497341g 0.037424p 7.544581e 2.49e-05p 2.49e-05p
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.811126i 0.0 7.431829d 0.0 0.0
zp 51.89 ri 6.55e-09p 6.48e-05p 0.054497p 1.460953n 0.0 5.000796m 0.395411p 0.434071p 0.012370p 0.004575p 1.04e-05p 5.35e-10p
sig0.562 cc 6.50e-09p 6.43e-05p 0.054188p 1.495210p 0.0 6.500460p 0.392700p 7.328139p 0.020139p 7.352821p 1.03e-05p 1.03e-05p
rc 6.55e-09p 6.48e-05p 0.054562p 1.505530m 0.077399o 6.583725k 0.395411p 7.405299f 0.020278p 7.430152d 1.04e-05p 1.04e-05p
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.108117n 0.0 0.0 0.000464p 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.290077k 0.0 6.548442i 0.0 0.0
zp 51.88 ri 5.16e-08p 0.000215p 0.063589p 1.512822n 0.0 3.445058n 0.543228o 0.996421n 0.017220p 0.003780p 0.000426p 4.89e-09p
sig0.600 cc 5.64e-08p 0.000235p 0.069803p 1.712068p 0.0 5.572714p 0.594296p 6.535084p 0.030725p 6.569944p 4.20e-05p 4.20e-05p
rc 5.16e-08p 0.000215p 0.063804p 1.564950m 0.071808o 5.081816m 0.543228o 6.610601j 0.028085p 6.642466h 0.000426p 0.000426o
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.089455i 0.0 5.782455i 0.0 7.129714e 0.0 0.0
zp 52.23 ri 1.59e-10p 4.84e-06p 0.007379p 0.630487p 0.0 3.752850j 1.098583n 1.461332m 0.071570p 0.026471p 0.000250p 3.33e-08p
sig0.568 cc 1.74e-10p 5.27e-06p 0.008043p 0.693400p 0.0 4.801215p 1.013364p 6.937042p 0.085907p 7.047226p 0.000229p 0.000229p
rc 1.59e-10p 4.84e-06p 0.007383p 0.636519o 0.025250o 4.414619h 1.098583m 6.952563g 0.093542p 7.072576e 0.000250p 0.000250p
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.669872h 0.380727i 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.375739j 0.0 3.696603i 0.0 3.817403i 0.0 0.0
zp 52.10 ri 3.80e-09p 2.59e-05p 0.015088p 0.558320p 0.0 2.351657l 0.582674p 0.331167i 0.026008p 0.011146p 0.000109p 2.79e-08p
sig0.600 cc 3.80e-09p 2.60e-05p 0.015150p 0.572010p 0.0 2.943220p 0.373873p 3.825917p 0.035416p 3.873307p 0.000117p 0.000118p

rc 3.80e-09p 2.59e-05p 0.015114p 0.570669o 0.026269o 2.948594j 0.582674p 3.850783l 0.037662p 3.899591h 0.000109p 0.000109p

in half life from 80eng2; sn, sb, te, i half lives 89wal1; cs half life 90bur1.

1

mass number 135 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 50 sn g 51 sb g 52 te d 52 te g 53 i d 53 i g 54 xe m 54 xe g 55 cs g 56 ba g 57 la g 58 ce g
half life 0.418s 1.71 s 0.82s 19.0 s 19.0 s 6.57 h 15.3 m 9.10 h 2.3e6y stable 19.5 h 17.7 h
lambda 1.658e+00 4.053e-01 8.453e-01 3.648e-02 3.648e-02 2.931e-05 7.551e-04 2.116e-05 9.556e-15 0.0 9.874e-06 1.088e-05
z - 1 g 100.0000 100.0000 0.0 82.1300 0.0 100.0000 14.7000 85.3000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 28.9790 100.0000 1.1400 100.0000 0.0 100.0000 0.0 0.0 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.365318f 6.431450e 0.0 0.0 0.0
zp 52.92 ri 4.77e-05p 0.027731p 0.0 1.754712n 0.0 3.451189n 0.867986p 0.307387p 0.011858p 1.26e-05p 2.65e-10p 0.0
sig0.553 cc 4.77e-05p 0.027782p 0.0 1.777916p 0.0 5.230965p 1.637113p 6.404156p 6.415945p 6.415957p 2.63e-10p 0.0
rc 4.77e-05p 0.027779p 0.000584o 1.778111m 0.006622o 5.235922m 1.637666n 6.411294f 6.423152d 6.423164d 2.65e-10p 0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.974714j 5.125158j 0.0 0.0 0.0
zp 53.31 ri 3.03e-05p 0.012193p 0.0 0.516452p 0.0 2.630715n 1.484834n 0.325859p 0.161782p 0.001669p 1.74e-06p 1.74e-10p
sig0.642 cc 3.03e-05p 0.012219p 0.0 0.526434p 0.0 3.156631p 1.948315p 4.966741p 5.129680p 5.131352p 1.74e-06p 1.74e-10p
rc 3.03e-05p 0.012223p 0.000422o 0.526913o 0.001757o 3.159385m 1.949263m 4.970077j 5.131860i 5.133530i 1.74e-06p 1.74e-10p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 6.451003h 0.0 5.889945g 6.494148n 0.0 0.0 0.0
zp 52.33 ri 0.002720p 0.313391p 0.0 3.891045n 0.0 1.778844n 0.077629p 0.027275p 0.000162p 1.99e-08p 0.0 0.0
sig0.545 cc 0.002710p 0.314967p 0.0 4.140060p 0.0 5.924305p 0.952500p 6.034612p 6.034780p 6.034780p 0.0 0.0

rc 0.002720p 0.316111p 0.014745o 4.165412m 0.030225o 5.974481h 0.955877k 6.079384f 6.079546f 6.079546f 0.0
0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 1.734862j 1.105594k 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.816110l 0.0 0.0 0.0
zp 53.30 ri 7.81e-05p 0.021214p 0.0 0.706595p 0.0 3.229334n 1.358887o 0.865993o 0.192458p 0.002543p 3.98e-06p
6.99e-10p
sig0.664 cc 7.77e-05p 0.021183p 0.0 0.720375p 0.0 3.933173p 2.393236p 6.146660p 6.370360p 6.373321p 4.63e-06p
8.12e-10p
rc 7.81e-05p 0.021292p 0.000768p 0.724850p 0.002371p 3.956555o 1.940501n 6.181435n 6.373893k 6.376441k 3.98e-06p
6.99e-10p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 6.874629j 0.0 6.970643j 7.447730e 0.0 0.0 0.0
zp 52.66 ri 0.000447p 0.123266p 0.0 3.115559n 0.0 3.660572m 0.402959p 0.142367p 0.003314p 1.56e-06p 2.03e-11p
0.0
sig0.558 cc 0.000445p 0.123225p 0.0 3.205579p 0.0 6.860046p 1.425124p 7.423149p 7.426463p 7.426464p 2.03e-11p
0.0
rc 0.000447p 0.123713p 0.003205o 3.220369m 0.012961o 6.893902j 1.416363n 7.439228g 7.442542e 7.442543e 2.03e-11p
0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.923496f 6.704479l 7.203259f 0.0 0.0
zp 52.48 ri 0.001271p 0.230790p 0.0 3.746097n 0.0 2.849595n 0.186060p 0.065482p 0.000750p 1.70e-07p 0.0 0.0
sig0.551 cc 0.001278p 0.233360p 0.0 3.961803p 0.0 6.784313p 1.184710p 7.037578p 7.038344p 7.038344p 0.0 0.0
rc 0.001271p 0.232061p 0.009123o 3.945812m 0.021948o 6.817355k 1.188211m 7.068897f 7.069647f 7.069647e 0.0
0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 6.792251i 0.0 7.112862h 6.970060f 0.0 0.0 0.0
zp 52.34 ri 0.003978p 0.429146p 0.0 4.092085n 0.0 2.352607n 0.110979p 0.038889p 0.000390p 7.05e-08p 0.0 0.0
sig0.562 cc 0.003972p 0.432527p 0.0 4.447877p 0.0 6.804708p 1.108101p 6.950396p 6.950781p 6.950781p 0.0 0.0
rc 0.003978p 0.433124p 0.019432o 4.467242m 0.027089o 6.846938i 1.117479k 6.996805g 6.997196f 6.997196f 0.0
0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 2.540426m 0.0 0.0 0.005405n 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.679336j 0.0 5.583201h 4.810820j 5.418611j 0.0 0.0
zp 52.32 ri 0.005611p 0.396224p 0.0 2.441726n 0.0 2.271105l 0.114294p 0.024328p 0.005228n 3.06e-07p 8.58e-12p
0.0
sig0.600 cc 0.006259p 0.448230p 0.0 3.162145p 0.0 5.048079p 0.848336p 5.177675p 5.178417p 5.178418p 8.63e-12p
0.0

rc 0.005611p 0.401835p 0.035582o 2.807335m 0.024654o 5.103094i 0.864449l 5.241716h 5.246943g 5.246944g 8.58e-12p 0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 6.485308g 0.0 6.929146i 7.534713f 5.646707i 0.0 0.0
zp 52.67 ri 0.000473p 0.140825p 0.0 2.618930n 0.0 3.957830l 0.383529p 0.162933p 0.004882p 2.16e-06p 5.33e-11p 0.0
sig0.568 cc 0.000474p 0.141614p 0.0 2.742660p 0.0 6.717315p 1.373801p 7.239418p 7.244094p 7.244097p 5.71e-11p 0.0
rc 0.000473p 0.141298p 0.004525o 2.739502m 0.010717o 6.708049g 1.369612n 7.254511g 7.259393f 7.259395f 5.34e-11p 0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.257698l 0.208879k 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.225900i 0.0 4.058420h 3.588258l 4.182469i 0.0 0.0
zp 52.56 ri 0.001238p 0.145758p 0.0 1.784077n 0.0 1.852434m 0.225265p 0.186150k 0.002070p 1.93e-06p 9.42e-11p 0.0
sig0.600 cc 0.001285p 0.152564p 0.0 1.979585p 0.0 3.908670p 0.758166p 4.167249p 4.169730p 4.169732p 1.05e-10p 0.0
rc 0.001238p 0.146997p 0.008772o 1.913577m 0.010646o 3.776658i 0.780434n 4.188073h 4.190143h 4.190145g 9.42e-11p 0.0

xe branching from 74dan1; sn half life from 80eng2; sb, te, i, xe, cs half lives 89wal1.

1

mass number 136 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 48 cd g 49 in g 50 sn g 51 sb g 52 te d 52 te g 53 i m 53 i g 54 xe d 54 xe g 55 cs g 56 ba g
half life 0.717s 0.82 s 0.478s 17.5 s 47. s 1.39 m 24.5 s stable 13.00d stable
lambda 0.0 0.0 9.667e-01 8.453e-01 1.450e+00 3.961e-02 1.475e-02 8.311e-03 2.829e-02 0.0 6.171e-07 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 71.0210 0.0 98.8600 0.0 100.0000 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 18.0320 100.0000 2.6900 0.0 6.9700 100.0000 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.107051f 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.930245e 0.116940j 0.0
zp 53.35 ri 0.0 8.04e-12p 1.18e-06p 0.002015p 0.0 0.579458p 1.353291n 1.354231n 0.0 3.546899n 0.106165f 0.000536p
sig0.553 cc 0.0 8.06e-12p 1.18e-06p 0.002019p 0.0 0.581861p 1.356483p 1.931711p 0.0 6.840990p 0.093906p 0.094387p

rc 0.0 8.05e-12p 1.18e-06p 0.002016p 1.57e-05o 0.580905o 1.355202m 1.928514m 0.102239m 6.932853e 0.106165f 0.106701f
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.840274m 0.829129j 0.0
zp 53.72 ri 0.0 1.30e-10p 1.40e-06p 0.001455p 0.0 0.153033p 0.911874p 0.912237p 0.0 2.834142n 0.823088j 0.018071p
sig0.642 cc 0.0 1.35e-10p 1.46e-06p 0.001518p 0.0 0.160598p 0.950870p 1.109637p 0.0 5.014667p 0.621184p 0.636965p
rc 0.0 1.30e-10p 1.40e-06p 0.001456p 1.85e-05o 0.154086p 0.912609o 1.064567o 0.056153o 4.867470l 0.823088i 0.841159i
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.004222i 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.580385g 0.0 0.0
zp 52.76 ri 0.0 5.33e-09p 0.000143p 0.050739p 0.0 2.614158n 1.454325n 1.464502n 0.0 0.740025p 0.004036p 2.11e-06p
sig0.545 cc 0.0 5.32e-09p 0.000142p 0.050802p 0.0 2.646444p 1.462224p 4.078498p 0.0 6.279585p 0.003451p 0.003453p
rc 0.0 5.33e-09p 0.000143p 0.050882p 0.000993o 2.651287m 1.475902m 4.085565l 0.286598m 6.588089g 0.004036p 0.004038p
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.767813i 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.463567h 0.751273i 0.0
zp 53.71 ri 0.0 6.85e-10p 4.02e-06p 0.002647p 0.0 0.206061p 1.046922n 1.047298n 0.0 3.119185n 0.753223h 0.022319p
sig0.664 cc 0.0 6.91e-10p 4.06e-06p 0.002674p 0.0 0.209743p 1.056316p 1.263668p 0.0 5.466020p 0.706659p 0.728474p
rc 0.0 6.85e-10p 4.03e-06p 0.002651p 2.70e-05o 0.207971p 1.047685m 1.252898m 0.048302o 5.468070h 0.753223g 0.775543h
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.055272i 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.633386f 0.0 0.0
zp 53.10 ri 0.0 2.86e-10p 1.25e-05p 0.011047p 0.0 1.128963n 1.698010n 1.701043n 0.0 1.908858o 0.053618p 7.14e-05p
sig0.558 cc 0.0 2.86e-10p 1.25e-05p 0.011088p 0.0 1.139825p 1.705483p 2.832314p 0.0 6.451627p 0.033717p 0.033789p
rc 0.0 2.86e-10p 1.25e-05p 0.011059p 0.000143o 1.136960m 1.704297m 2.825042m 0.189428l 6.627625f 0.053618p 0.053690p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.015835f 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.669471f 0.0 0.0

zp 52.89 ri 0.0 2.03e-09p 5.80e-05p 0.031423p 0.0 1.902341n 1.696810n 1.703814n 0.0 1.081744n 0.015177p 8.84e-06p
sig0.551 cc 0.0 2.03e-09p 5.80e-05p 0.031474p 0.0 1.924427p 1.703434p 3.605923p 0.0 6.390846p 0.009462p 0.009471p
rc 0.0 2.03e-09p 5.80e-05p 0.031481p 0.000575o 1.925275m 1.711563m 3.607141l 0.271866l 6.672315f 0.015177p 0.015186p
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.008055i 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.865480f 0.0 0.0
zp 52.78 ri 0.0 1.56e-08p 0.000194p 0.066861p 0.0 2.327525n 1.733447n 1.741409n 0.0 0.772219p 0.007748p 5.02e-06p
sig0.562 cc 0.0 1.56e-08p 0.000193p 0.066983p 0.0 2.372956p 1.739585p 4.085489p 0.0 6.596469p 0.006471p 0.006476p
rc 0.0 1.56e-08p 0.000194p 0.067054p 0.001088o 2.376236m 1.750191m 4.090556l 0.256283m 6.869249f 0.007748p 0.007753p
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.015839l 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.398722m 0.0 0.0
zp 52.74 ri 4.88e-12p 2.07e-07p 0.000593p 0.122191p 0.0 2.072904n 1.763008n 1.771284n 0.0 0.649740p 0.015666p 1.37e-05p
sig0.600 cc 4.87e-12p 2.07e-07p 0.000593p 0.122700p 0.0 2.159411p 1.770159p 3.904953p 0.0 6.324407p 0.010805p 0.010819p
rc 4.88e-12p 2.07e-07p 0.000594p 0.122784p 0.002495o 2.162601m 1.780048m 3.909231l 0.225060l 6.564080k 0.015666p 0.015680p
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.060141f 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.658018d 0.0 0.0
zp 53.10 ri 0.0 7.32e-10p 1.50e-05p 0.015599p 0.0 0.928840p 2.004798n 2.007219n 0.0 1.536611n 0.058536p 7.90e-05p
sig0.568 cc 0.0 7.33e-10p 1.50e-05p 0.015640p 0.0 0.941548p 2.010566p 2.941380p 0.0 6.491110p 0.045243p 0.045322p
rc 0.0 7.32e-10p 1.50e-05p 0.015614p 0.000177o 0.940107o 2.009805m 2.936609m 0.170761m 6.653785d 0.058536p 0.058615p
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.746913m 0.592587m 0.0 0.0 0.740734o 0.026485l 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.224160k 0.037531i 0.0
zp 52.98 ri 0.0 1.43e-08p 8.67e-05p 0.030181p 0.0 0.911850p 0.932343p 1.358717n 0.0 0.816044o 0.029178l 8.77e-05p
sig0.600 cc 0.0 1.25e-08p 7.52e-05p 0.026265p 0.0 0.899754p 1.165810p 2.055307p 0.0 4.038193p 0.022367p 0.022426p

rc 0.0 1.44e-08p 8.67e-05p 0.030268p 0.000451o 0.933798o 0.938674o 2.281870m 0.125765m 4.162353j 0.029178j 0.029265j

sn half life from 80eng2; sb, te, i half lives from 89wal1.
1

mass number 137 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 50 sn g 51 sb g 52 te g 53 i d 53 i g 54 xe d 54 xe g 55 cs g 56 ba m 56 ba g 57 la g 58 ce g
half life 0.478s 2.5 s 1.6 s 24.5 s 6.50 s 3.82 m 30.17y 2.552m stable 6.e4y 9.0 h
lambda 0.0 1.450e+00 2.773e-01 4.332e-01 2.829e-02 1.066e-01 3.024e-03 7.285e-10 4.527e-03 0.0 3.663e-13 2.139e-05
z - 1 g 100.0000 100.0000 81.9680 0.0 97.3100 0.0 93.0300 100.0000 94.6000 5.4000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 6.7800 100.0000 5.3800 100.0000 0.0 0.0 100.0000 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.397707p 0.0 0.0 6.236982j 0.0 6.753234d 0.0 0.0
zp 53.78 ri 1.01e-08p 8.69e-05p 0.070950p 0.0 1.397123n 0.0 4.823132m 0.529460p 0.005650p 0.001985p 2.42e-06p 7.07e-11p
sig0.553 cc 1.14e-08p 9.75e-05p 0.079641p 0.0 1.644318p 0.0 6.194738p 6.704285p 6.347680p 6.711621p 2.33e-06p 6.79e-11p
rc 1.01e-08p 8.69e-05p 0.071021p 0.000604o 1.466838m 0.024277o 6.212008k 6.741468i 6.383079f 6.749106d 2.42e-06p 7.07e-11p
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 3.156607k 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.989276j 0.0 5.060593j 0.0 0.0
zp 54.13 ri 3.79e-08p 0.000102p 0.027213p 0.0 0.778715p 0.0 2.932380n 1.292063n 0.066759p 0.014654p 0.000557p 3.82e-07p
sig0.642 cc 3.91e-08p 0.000105p 0.028126p 0.0 0.829858p 0.0 3.606535p 4.969392p 4.769811p 5.053826p 0.000574p 3.94e-07p
rc 3.79e-08p 0.000102p 0.027296p 0.000365o 0.805642o 0.020171o 3.702039m 4.994102j 4.791180i 5.076092h 0.000557p 3.82e-07p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.019881i 0.0 5.978827i 0.0 0.0
zp 53.18 ri 3.29e-06p 0.005502p 0.797604p 0.0 3.318563n 0.0 2.021481n 0.041590p 5.80e-05p 2.04e-05p 2.98e-09p 0.0
sig0.545 cc 3.27e-06p 0.005466p 0.796471p 0.0 4.073420p 0.0 5.837118p 5.878415p 5.561039p 5.878493p 2.97e-09p 0.0

rc 3.29e-06p 0.005505p 0.802117o 0.012836o 4.111938m 0.115927m 5.962744k 6.004334i 5.680158i 6.004413h 2.98e-09p 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.776225g 4.627804l 0.0 4.585659k 0.0 0.0
zp 54.13 ri 9.10e-08p 0.000149p 0.028244p 0.0 0.665263p 0.0 2.189780k 1.612319m 0.075797p 0.016638p 0.000855p 9.26e-07p
sig0.664 cc 1.03e-07p 0.000169p 0.032016p 0.0 0.782059p 0.0 3.204783p 4.443465p 4.276786p 4.533643p 0.000827p 8.95e-07p
rc 9.10e-08p 0.000150p 0.028366p 0.000131o 0.692997o 0.005704m 2.840178g 4.452497j 4.287859j 4.545769i 0.000856p 9.26e-07p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.702520l 0.0 0.0 6.544446g 0.0 6.943066l 0.0 0.0
zp 53.52 ri 2.09e-07p 0.000790p 0.233078p 0.0 2.487772l 0.0 3.732237l 0.238411p 0.001144p 0.000402p 2.92e-07p 3.97e-12p
sig0.558 cc 2.22e-07p 0.000840p 0.248199p 0.0 2.884735p 0.0 6.250345p 6.484462p 6.135396p 6.485942p 2.80e-07p 3.80e-12p
rc 2.09e-07p 0.000791p 0.233726p 0.002547o 2.717758k 0.058480m 6.319047j 6.557459g 6.204500g 6.559005g 2.92e-07p 3.97e-12p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 3.908634l 0.0 0.0 6.323970i 0.0 6.397633f 0.0 0.0
zp 53.30 ri 1.39e-06p 0.003189p 0.545834p 0.0 3.358985l 0.0 2.573043n 0.087020p 0.000183p 6.44e-05p 1.88e-08p 0.0
sig0.551 cc 1.38e-06p 0.003180p 0.546547p 0.0 3.883278p 0.0 6.195429p 6.282136p 5.943082p 6.282381p 1.86e-08p 0.0
rc 1.39e-06p 0.003191p 0.548450o 0.007839o 3.900520k 0.097857m 6.299554k 6.386575i 6.041883h 6.386823f 1.88e-08p 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 3.480656p 0.0 0.0 6.315980f 0.0 0.0 0.0 0.0
zp 53.21 ri 4.27e-06p 0.006027p 0.617525p 0.0 3.059653n 0.0 2.700974m 0.070771p 0.000130p 4.57e-05p 1.55e-08p 0.0
sig0.562 cc 5.01e-06p 0.007070p 0.729642p 0.0 4.298819p 0.0 6.069201p 6.134438p 5.803298p 6.134600p 1.43e-08p 0.0
rc 4.27e-06p 0.006031p 0.622468o 0.011571o 3.676948m 0.123161m 6.244799h 6.315570f 5.974659f 6.315746f 1.55e-08p 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 1.916087l 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.979835l 0.0 5.764743k 5.788062i 0.0 5.543648i 0.0 0.0

zp 53.14 ri 2.37e-05p 0.013812p 0.622102p 0.0 2.595805l 0.0 2.368132k 0.077793p 0.000222p 4.87e-05p 6.93e-08p 1.19e-12p
sig0.600 cc 3.00e-05p 0.017563p 0.804122p 0.0 4.089457p 0.0 5.301130p 5.367865p 5.078197p 5.368105p 6.16e-08p 1.06e-12p
rc 2.37e-05p 0.013836p 0.633442o 0.016779o 3.228988k 0.148685m 5.520744i 5.598537h 5.296438h 5.598808g 6.93e-08p 1.19e-12p
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.390053m 0.0 0.0 6.251307f 0.0 6.259701h 0.0 0.0
zp 53.51 ri 2.81e-07p 0.000984p 0.185324p 0.0 2.266203m 0.0 3.606346l 0.288653p 0.001141p 0.000401p 4.74e-07p 7.22e-12p
sig0.568 cc 3.58e-07p 0.001251p 0.236648p 0.0 3.113027p 0.0 5.865314p 6.124010p 5.794403p 6.125483p 4.53e-07p 6.90e-12p
rc 2.81e-07p 0.000984p 0.186131p 0.002608o 2.449935l 0.077094m 5.962615j 6.251269f 5.914841f 6.252811e 4.74e-07p 7.22e-12p
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.729493n 0.0 4.254668h 5.001578h 0.0 5.095550h 0.0 0.0
zp 53.39 ri 2.44e-06p 0.002500p 0.233434p 0.0 1.572573n 0.0 2.592436l 0.692532n 0.000908p 0.000371p 5.80e-07p 2.18e-11p
sig0.600 cc 3.79e-06p 0.003881p 0.365169p 0.0 2.795729p 0.0 4.731365p 4.888179p 4.625064p 4.889371p 5.40e-07p 2.03e-11p
rc 2.44e-06p 0.002503p 0.235486p 0.003682o 1.805405m 0.056765m 4.328770h 5.021302h 4.751059h 5.022581g 5.80e-07p 2.18e-11p

sb half life from 80eng2; te, i, xe, cs, ba half lives 89wal1.
1

mass number 138 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 50 sn g 51 sb g 52 te g 53 i d 53 i g 54 xe d 54 xe g 55 cs m 55 cs g 56 ba g 57 la g 58 ce g
half life 0.173s 1.4 s 0.580s 6.5 s 2.38 s 14.1 m 2.9 m 32.2 m stable 11.02l stable
lambda 0.0 4.007e+00 4.951e-01 1.195e+00 1.066e-01 2.912e-01 8.193e-04 3.984e-03 3.588e-04 0.0 2.099e-19 0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 93.2200 0.0 94.6200 0.0 100.0000 100.0000 -70.0000 30.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 25.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 7.9620 100.0000 9.8100 100.0000 0.0 75.0000 0.0 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.575735e 0.0 0.0

zp 54.19 ri 9.77e-11p 2.38e-06p 0.008913p 0.0 0.442880p 0.0 4.878366m 0.593163o 0.592863p 0.072176p 6.30e-05p 8.74e-09p
sig0.553 cc 9.76e-11p 2.38e-06p 0.008908p 0.0 0.450802p 0.0 5.306133p 0.592631p 6.343237p 6.563553p 6.30e-05p 1.89e-05p
rc 9.77e-11p 2.38e-06p 0.008916p 4.64e-05o 0.451237p 0.012164o 5.317490l 0.593163o 6.355226h 6.575736e 6.30e-05p 1.89e-05p
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 1.931391k 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.598920m 0.0 0.0
zp 54.53 ri 1.16e-09p 8.05e-06p 0.005373p 0.0 0.369865p 0.0 2.389396n 1.578596n 1.608927n 0.449417p 0.007516p 1.31e-05p
sig0.642 cc 1.07e-09p 7.42e-06p 0.004960p 0.0 0.345539p 0.0 3.059040p 1.454989p 5.605271p 6.388094p 0.006928p 0.002090p
rc 1.16e-09p 8.06e-06p 0.005381p 3.65e-05o 0.374918p 0.007620o 2.751764m 1.578596m 5.544637l 6.393712k 0.007516p 0.002268p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 6.440533l 0.0 0.0 6.295555n 0.0 0.0
zp 53.59 ri 5.88e-08p 0.000299p 0.189022p 0.0 1.976680n 0.0 4.288515m 0.110523p 0.110523p 0.001856p 2.17e-07p 2.92e-12p
sig0.545 cc 5.84e-08p 0.000297p 0.187847p 0.0 2.136901p 0.0 6.322392p 0.112716p 6.519646p 6.549718p 2.21e-07p 6.63e-08p
rc 5.88e-08p 0.000299p 0.189322p 0.001695o 2.154861m 0.088063o 6.415507k 0.110523p 6.608922k 6.638410k 2.17e-07p 6.50e-08p
pu239h xi 0.0 0.0 0.0 0.0 0.106957o 0.0 1.643973o 1.004210o 1.004210o 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.104553m 0.0 1.807342g 0.0 3.763893m 4.143842l 0.0 0.0
zp 54.53 ri 1.09e-09p 4.32e-06p 0.001927p 0.0 0.104179m 0.0 1.708773g 1.007617n 1.007617o 0.294545p 0.006279p 1.62e-05p
sig0.664 cc 2.59e-09p 1.02e-05p 0.004561p 0.0 0.247782p 0.0 1.972900p 0.922758p 3.587727p 4.115431p 0.006239p 0.001888p
rc 1.09e-09p 4.33e-06p 0.001931p 4.10e-05o 0.106020l 0.006289o 1.815379f 1.007617n 3.578709k 4.129539k 0.006279p 0.001900p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.449155f 0.0 0.0
zp 53.93 ri 2.76e-09p 3.16e-05p 0.037531p 0.0 1.051689n 0.0 4.615489m 0.375922p 0.375101p 0.018420p 1.04e-05p 6.00e-10p
sig0.558 cc 2.76e-09p 3.15e-05p 0.037454p 0.0 1.083662p 0.0 5.645302p 0.374837p 6.301267p 6.413351p 1.04e-05p 3.11e-06p

rc 2.76e-09p 3.16e-05p 0.037563p 0.000284o 1.086989m 0.035714o 5.679712k 0.375922p 6.336754h 6.449162f 1.04e-05p 3.12e-06p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.146171i 0.0 0.0
zp 53.68 ri 2.78e-08p 0.000181p 0.115439p 0.0 1.709857n 0.0 4.013514n 0.163612p 0.163198p 0.003454p 7.42e-07p 1.48e-11p
sig0.551 cc 2.77e-08p 0.000180p 0.115038p 0.0 1.808879p 0.0 5.735125p 0.162788p 6.020004p 6.064139p 7.38e-07p 2.21e-07p
rc 2.78e-08p 0.000181p 0.115620p 0.001266o 1.818905m 0.082435o 5.816996l 0.163612p 6.102903k 6.147261i 7.42e-07p 2.23e-07p
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.195582f 0.0 0.0
zp 53.61 ri 1.10e-07p 0.000463p 0.170194p 0.0 2.128221n 0.0 3.627326l 0.149988p 0.149657p 0.002714p 7.17e-07p 1.55e-11p
sig0.562 cc 1.09e-07p 0.000458p 0.168951p 0.0 2.265032p 0.0 5.795583p 0.148489p 6.055439p 6.095249p 7.09e-07p 2.13e-07p
rc 1.10e-07p 0.000463p 0.170657p 0.001930o 2.289237m 0.099842o 5.893244j 0.149988p 6.155391h 6.195603f 7.17e-07p 2.15e-07p
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 2.832924m 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.394438j 0.0 0.0 5.764204h 0.0 0.0
zp 53.53 ri 1.25e-06p 0.002042p 0.245440p 0.0 2.528747n 0.0 2.689519l 0.154248p 0.158307p 0.003023p 2.19e-06p 1.09e-10p
sig0.600 cc 1.24e-06p 0.002036p 0.246555p 0.0 2.750348p 0.0 5.308417p 0.152617p 5.575497p 5.616644p 2.17e-06p 6.51e-07p
rc 1.25e-06p 0.002043p 0.247483p 0.004219o 2.763670m 0.140681m 5.445185i 0.154248p 5.719177i 5.760764g 2.19e-06p 6.58e-07p
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.397851j 0.0 6.442018k 6.125002f 0.0 0.0
zp 53.92 ri 5.24e-09p 6.25e-05p 0.038409p 0.0 1.396819n 0.0 3.850726k 0.466452p 0.404682p 0.016767p 1.73e-05p 9.10e-10p
sig0.568 cc 5.15e-09p 6.14e-05p 0.037814p 0.0 1.408278p 0.0 5.141829p 0.468460p 5.961633p 6.095600p 1.74e-05p 5.22e-06p
rc 5.24e-09p 6.25e-05p 0.038471p 0.000298o 1.432980m 0.040703o 5.247315j 0.466452p 6.001835h 6.135228f 1.73e-05p 5.20e-06p
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 2.289954l 0.0 0.609083m 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.050507m 0.0 5.076847h 0.0 5.449326h 5.148994i 0.0 0.0

zp 53.80 ri 6.66e-08p 0.000203p 0.054129p 0.0 1.004439m 0.0 3.634733i 0.300774p 0.573245m 0.012887p 1.73e-05p 1.97e-09p
sig0.600 cc 1.06e-07p 0.000324p 0.086528p 0.0 1.613591p 0.0 4.841687p 0.316247p 5.395120p 5.487744p 1.82e-05p 5.46e-06p
rc 6.66e-08p 0.000203p 0.054332p 0.000655o 1.055742l 0.040910m 4.674586h 0.300774p 5.473412g 5.561505g 1.73e-05p 5.19e-06p

sb half life from 80eng2; te, i, xe, cs half lives from 89wal1.
1

mass number 139 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 51 sb g 52 te g 53 i g 54 xe d 54 xe g 55 cs g 56 ba g 57 la g 58 ce m 58 ce g 59 pr g
half life 0.218s 0.580s 2.30 s 0.86 s 39.7 s 9.3 m 1.396h stable 56. s 137.7d 4.41 h
lambda 3.180e+00 1.195e+00 3.014e-01 8.060e-01 1.746e-02 1.242e-03 1.379e-04 0.0 1.238e-02 5.826e-08 4.366e-05
z - 1 g 100.0000 100.0000 92.0380 0.0 90.1900 100.0000 100.0000 100.0000 0.0 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 9.2700 100.0000 0.0 0.0 0.0 0.0 100.0000 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 7.973797k 5.874527f 0.0 0.0 0.0
zp 54.59 ri 5.74e-08p 0.000582p 0.123457p 0.0 3.088516n 2.308830n 0.375840p 0.001073p 3.00e-07p 1.06e-07p 2.99e-12p
sig0.553 cc 5.43e-08p 0.000551p 0.117311p 0.0 3.028253p 5.529810p 5.885397p 5.886746p 3.78e-07p 5.10e-07p 3.76e-12p
rc 5.74e-08p 0.000582p 0.123993p 0.001468o 3.201813n 5.510643l 5.886483h 5.887556f 3.00e-07p 4.06e-07p 2.99e-12p
u233he xi 0.0 0.0 0.0 0.0 0.982056k 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.802145i 5.892334i 0.0 0.0 0.0
zp 54.93 ri 2.71e-07p 0.000458p 0.077258p 0.0 1.197510p 3.449266n 1.104183n 0.043991p 0.000157p 3.44e-05p 8.22e-08p
sig0.642 cc 2.63e-07p 0.000445p 0.075421p 0.0 1.464047p 4.761319p 5.822689p 5.865423p 0.000152p 0.000185p 7.95e-08p
rc 2.71e-07p 0.000458p 0.077679p 0.000870o 1.268439o 4.717705m 5.821888i 5.866064h 0.000157p 0.000191p 8.22e-08p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 6.062935i 6.031591n 0.0 0.0 0.0
zp 53.99 ri 1.18e-05p 0.021281p 0.878096p 0.0 4.381287n 0.833945p 0.019114p 9.92e-06p 2.98e-10p 1.05e-10p 0.0
sig0.545 cc 1.18e-05p 0.021269p 0.896689p 0.0 5.190977p 6.024983p 6.044076p 6.044086p 2.98e-10p 4.03e-10p 0.0
rc 1.18e-05p 0.021293p 0.897693o 0.018418o 5.209335m 6.043280k 6.062394i 6.062404i 2.98e-10p 4.03e-10p 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.160647k 3.996513l 0.0 0.0 0.0
zp 54.93 ri 4.85e-07p 0.000515p 0.063636p 0.0 1.001437n 2.259582n 0.772154p 0.036426p 0.000181p 3.97e-05p 1.54e-07p
sig0.664 cc 4.85e-07p 0.000515p 0.064071p 0.0 1.058975p 3.317289p 4.090104p 4.127645p 0.000185p 0.000226p 1.58e-07p

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        rc 4.85e-07p 0.000515p 0.064110p 0.001081o 1.060339m 3.319921m 4.092075k 4.128726j 0.000181p 0.000221p 1.54e-07p
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.982305i      0.0       0.0       0.0
zp 54.32 ri 1.08e-06p 0.003567p 0.360771p       0.0  3.667216n 1.864890n 0.115431p 0.000249p 3.04e-08p 1.07e-08p       0.0
sig0.558 cc 1.08e-06p 0.003567p 0.363921p       0.0  3.996065p 5.860493p 5.975892p 5.976140p 3.04e-08p 4.10e-08p       0.0
        rc 1.08e-06p 0.003568p 0.364055p 0.006218o 4.001775m 5.866665l 5.982096k 5.982345i 3.04e-08p 4.10e-08p       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.307388g      0.0       0.0       0.0
zp 54.06 ri 9.05e-06p 0.015897p 0.825673p       0.0  4.371406n 1.129947n 0.030997p 2.58e-05p 1.09e-09p 3.84e-10p       0.0
sig0.551 cc 9.05e-06p 0.015893p 0.839596p       0.0  5.129885p 6.259329p 6.290300p 6.290326p 1.09e-09p 1.47e-09p       0.0
        rc 9.05e-06p 0.015906p 0.840313o 0.017138o 5.146422m 6.276369k 6.307366i 6.307392g 1.09e-09p 1.48e-09p       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.837557j 6.020100f      0.0       0.0       0.0
zp 54.00 ri 2.34e-05p 0.024220p 0.995443p       0.0  3.996606n 1.051473p 0.024156p 2.39e-05p 1.13e-09p 3.97e-10p       0.0
sig0.562 cc 2.36e-05p 0.024462p 1.026946p       0.0  4.961682p 5.964858p 5.989232p 5.989255p 1.11e-09p 1.50e-09p       0.0
        rc 2.34e-05p 0.024244p 1.017757o 0.025549o 4.940070m 5.991543j 6.015699h 6.015723f 1.13e-09p 1.53e-09p       0.0
 th232h  xi      0.0       0.0       0.0       0.0  3.481921l      0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  4.866887j      0.0  5.840446i 5.769256h      0.0       0.0       0.0
zp 53.92 ri 0.000161p 0.052830p 1.385281n       0.0  3.477767k 0.950737p 0.025321p 5.09e-05p 5.92e-09p 1.30e-09p       0.0
sig0.600 cc 0.000159p 0.052270p 1.414535p       0.0  4.761183p 5.724102p 5.749169p 5.749220p 5.92e-09p 7.22e-09p       0.0
        rc 0.000161p 0.052991p 1.434053m 0.049594o 4.820733i 5.771470j 5.796791h 5.796842g 5.92e-09p 7.22e-09p       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.524687i 5.644078g      0.0       0.0       0.0
zp 54.32 ri 1.88e-06p 0.003742p 0.411470p       0.0  3.087518n 2.058193n 0.106778p 0.000359p 4.64e-08p 1.63e-08p       0.0
sig0.568 cc 1.89e-06p 0.003771p 0.417895p       0.0  3.488972p 5.518865p 5.626410p 5.626765p 4.59e-08p 6.20e-08p       0.0
        rc 1.88e-06p 0.003744p 0.414915p 0.007644o 3.469374m 5.527568j 5.634345h 5.634704f 4.64e-08p 6.27e-08p       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0  0.414575n      0.0  3.861243i 5.701239i 5.914414g 5.645850i      0.0       0.0       0.0
zp 54.22 ri 1.03e-05p 0.008217p 0.409692n       0.0  3.495169i 1.826145l 0.144577p 0.000407p 1.02e-07p 4.15e-08p 2.78e-12p
sig0.600 cc 1.56e-05p 0.012462p 0.632044p       0.0  4.024927p 5.719269p 5.820814p 5.821222p 1.02e-07p 1.44e-07p 2.78e-12p
        rc 1.03e-05p 0.008227p 0.417264m 0.010862n 3.882362h 5.708507h 5.853084f 5.853491f 1.02e-07p 1.43e-07p 2.78e-12p

  sb half life from 80eng2; i, xe, cs, ba half lives from 89wal1; cehalf life 90bur1.
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mass number 140 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 52 te g 53 i g 54 xe d 54 xe g 55 cs d 55 cs g 56 ba d 56 ba g 57 la g 58 ce g 59 pr g 60 nd g

half life 0.894s 0.86 s 0.46s 13.6 s 1.72 s 1.06 m 24.9 s 12.75d 1.678d stable 3.39 m 3.37 d

lambda 7.753e-01 8.060e-01 1.507e+00 5.097e-02 4.030e-01 1.090e-02 2.784e-02 6.292e-07 4.781e-06 0.0 3.408e-03 2.381e-06

z - 1 g 100.0000 100.0000 0.0 90.7300 0.0 100.0000 0.0 100.0000 100.0000 100.0000 -100.0000 -100.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

z - 0 m 0.0 0.0 21.3000 100.0000 0.0350 100.0000 0.0470 100.0000 0.0 0.0 0.0 0.0

u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.185238h 0.0 5.982896e 0.0 0.0

zp 54.99 ri 2.83e-05p 0.015813p 0.0 1.581378n 0.0 2.879879n 0.0 1.514078n 0.014175p 2.41e-05p 4.91e-10p 0.0

sig0.553 cc 2.83e-05p 0.015838p 0.0 1.595573p 0.0 4.474962p 0.0 5.989455p 6.003882p 6.003907p 5.00e-10p 0.0

rc 2.83e-05p 0.015841p 0.000368o 1.596118m 0.000148o 4.476145m 0.001492o 5.991715h 6.005890g 6.005914e 4.91e-10p 0.0

u233he xi 0.0 0.0 0.0 0.391636k 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.478163h 5.673703l 4.589172k 0.0 0.0

zp 55.34 ri 2.18e-05p 0.009363p 0.0 0.403458p 0.0 2.300073n 0.0 1.678793m 0.636346p 0.001866p 2.09e-06p 2.24e-10p

sig0.642 cc 2.40e-05p 0.010338p 0.0 0.476076p 0.0 3.003670p 0.0 4.850027p 5.027023p 5.028965p 2.17e-06p 2.33e-10p

rc 2.18e-05p 0.009385p 0.000227o 0.412201p 3.37e-05o 2.712308m 0.000734o 4.391835h 5.028181j 5.030049j 2.09e-06p 2.24e-10p

u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.637670f 0.0 5.617099i 0.0 0.0

zp 54.40 ri 0.001702p 0.196988p 0.0 3.661046n 0.0 1.630465n 0.0 0.152187p 0.000234p 4.46e-08p 0.0 0.0

sig0.545 cc 0.001700p 0.198518p 0.0 3.840782p 0.0 5.472034p 0.0 5.623985p 5.624218p 5.624218p 0.0 0.0

rc 0.001702p 0.198690p 0.008418o 3.849735m 0.000660n 5.480860i 0.002222o 5.635269f 5.635502f 5.635502f 0.0 0.0

pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.724917h 0.0 3.691282l 0.0 0.0

zp 55.32 ri 4.10e-05p 0.011623p 0.0 0.403241p 0.0 1.915795n 0.0 1.370385n 0.140720p 0.001939p 3.17e-06p 5.82e-10p

sig0.664 cc 4.09e-05p 0.011653p 0.0 0.413529p 0.0 2.327511p 0.0 3.696738p 3.840681p 3.842667p 3.24e-06p 5.95e-10p

rc 4.10e-05p 0.011664p 0.000310o 0.414134p 4.09e-05o 2.329970m 0.000619o 3.700974h 3.841694i 3.843636i 3.17e-06p 5.82e-10p

pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.243397j 0.0 5.510766f 0.0 0.0
zp 54.71 ri 0.000246p 0.066829p 0.0 2.283347n 0.0 2.615479n 0.0 0.538619p 0.003188p 2.06e-06p 2.66e-11p 0.0
sig0.558 cc 0.000247p 0.067526p 0.0 2.360658p 0.0 4.960194p 0.0 5.498340p 5.501448p 5.501450p 2.60e-11p 0.0
rc 0.000246p 0.067075p 0.001951o 2.346155m 0.000281o 4.961915l 0.001703o 5.502236i 5.505424h 5.505426f 2.67e-11p
0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.306047f 0.0 0.0
zp 54.44 ri 0.001344p 0.183527p 0.0 3.147666n 0.0 1.808604n 0.0 0.171333p 0.000389p 8.81e-08p 0.0 0.0
sig0.551 cc 0.001343p 0.184749p 0.0 3.315725p 0.0 5.124085p 0.0 5.295349p 5.295738p 5.295738p 0.0 0.0
rc 0.001344p 0.184871p 0.007688o 3.323088m 0.000556n 5.132249k 0.002077o 5.305658j 5.306048h 5.306048f 0.0
0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.647631k 6.439273l 5.408045g 0.0 0.0
zp 54.38 ri 0.002547p 0.273063p 0.0 3.264231n 0.0 1.777026n 0.0 0.142840p 0.000359p 7.29e-08p 0.0 0.0
sig0.562 cc 0.002517p 0.272418p 0.0 3.476860p 0.0 5.293254p 0.0 5.434440p 5.434812p 5.434812p 0.0 0.0
rc 0.002547p 0.275609p 0.012450o 3.526741m 0.000614n 5.304381l 0.002115o 5.449336k 5.449694i 5.449694g 0.0
0.0
th232h xi 0.0 0.0 0.0 3.214081l 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 3.764020l 0.0 0.0 0.0 6.039165h 6.077910l 5.936456h 0.0 0.0
zp 54.31 ri 0.007658p 0.527333p 0.0 3.215014k 0.0 2.114014m 0.0 0.146000p 0.000804p 3.21e-07p 8.75e-12p 0.0
sig0.600 cc 0.007560p 0.528160p 0.0 3.695295p 0.0 5.818597p 0.0 5.961067p 5.961862p 5.961863p 8.76e-12p 0.0
rc 0.007658p 0.534991o 0.025479o 3.725890j 0.000629m 5.840533j 0.002566o 5.989099h 5.989903h 5.989903g 8.76e-12p
0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.495206f 5.573806h 5.464633f 0.0 0.0
zp 54.73 ri 0.000232p 0.082232p 0.0 1.793484n 0.0 3.134976m 0.0 0.480765p 0.005121p 3.00e-06p 8.88e-11p 0.0
sig0.568 cc 0.000232p 0.082417p 0.0 1.867997p 0.0 5.004425p 0.0 5.484086p 5.489170p 5.489173p 8.89e-11p 0.0
rc 0.000232p 0.082464p 0.002311o 1.870615m 0.000249o 5.005840l 0.001871o 5.488475f 5.493597e 5.493600e 8.88e-11p
0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.518864l 0.0 0.0 0.0 0.0
xc 0.0 0.117548o 0.0 2.676090k 0.0 0.0 0.0 5.930963e 0.0 6.093805h 0.0 0.0
zp 54.62 ri 0.000848p 0.116394o 0.0 2.553471k 0.0 2.770421k 0.0 0.516041l 0.005031p 5.13e-06p 2.94e-10p 0.0
sig0.600 cc 0.001258p 0.173942p 0.0 2.597104p 0.0 5.494600p 0.0 5.941096p 5.946082p 5.946087p 2.92e-10p 0.0
rc 0.000848p 0.117242n 0.005895o 2.665739j 0.000358m 5.436519h 0.002265o 5.954825e 5.959855e 5.959861e 2.94e-10p
0.0

te half life from 80eng2; i, xe, cs, ba, la half lives from 89wal1.

1

mass number 141 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 53 i g 54 xe d 54 xe g 55 cs d 55 cs g 56 ba d 56 ba g 57 la g 58 ce g 59 pr g 60 nd g 61 pm g
half life 0.45s 0.20 s 1.72 s 1.22s 24.9 s 1.69 s 18.3 m 3.90 h 32.50d stable 2.46 h 20.9 m
lambda 1.540e+00 3.466e+00 4.030e-01 5.682e-01 2.784e-02 4.101e-01 6.313e-04 4.937e-05 2.468e-07 0.0 7.827e-05 5.527e-04
z - 1 g 100.0000 0.0 78.7000 0.0 99.9650 0.0 99.9530 100.0000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 13.8610 100.0000 0.4040 100.0000 0.0950 100.0000 0.0 0.0 0.0 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.384596i 6.189068h 0.0 0.0
zp 55.38 ri 0.001727p 0.0 0.420424p 0.0 2.752043n 0.0 2.961914n 0.111603p 0.000485p 4.31e-08p 0.0 0.0
sig0.553 cc 0.001715p 0.0 0.418781p 0.0 3.151158p 0.0 6.134913p 6.245721p 6.246202p 6.246202p 0.0 0.0
rc 0.001727p 1.09e-05o 0.421794p 0.000325o 3.174014m 0.001209o 6.135645k 6.247248j 6.247733h 6.247733g 0.0 0.0
u233he xi 0.0 0.0 0.094197m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.416337h 4.699838k 0.0 0.0
zp 55.74 ri 0.001068p 0.0 0.095328p 0.0 1.465479n 0.0 2.361621n 0.527218p 0.013722p 3.99e-05p 1.10e-08p 0.0
sig0.642 cc 0.001066p 0.0 0.118130p 0.0 1.576551p 0.0 3.933355p 4.449723p 4.463427p 4.463465p 1.06e-08p 0.0
rc 0.001068p 1.26e-05o 0.096181p 9.77e-05o 1.561723m 0.000679o 3.923289l 4.450507j 4.464229h 4.464269h 1.10e-08p 0.0
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.343015i 0.0 0.0 5.423334i 0.0 0.0
zp 54.80 ri 0.039521p 0.0 1.853013n 0.0 2.841002n 0.0 0.646961p 0.004247p 2.39e-06p 2.62e-11p 0.0 0.0
sig0.545 cc 0.039514p 0.0 1.883949p 0.0 4.723683p 0.0 5.369231p 5.373448p 5.373450p 5.373450p 0.0 0.0
rc 0.039521p 0.000521o 1.884637m 0.002896o 4.727874l 0.003095o 5.375708i 5.379955i 5.379958i 5.379958h 0.0 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.587155i 3.362123l 0.0 0.0
zp 55.72 ri 0.001456p 0.0 0.115749p 0.0 1.200027n 0.0 1.820970n 0.409170p 0.013139p 4.93e-05p 2.18e-08p 1.06e-12p

sig0.664 cc 0.001453p 0.0 0.116641p 0.0 1.313996p 0.0 3.130373p 3.546432p 3.559542p 3.559593p 2.24e-08p 1.09e-12p
rc 0.001456p 1.69e-05o 0.116912p 9.14e-05o 1.316989m 0.000515o 3.137856l 3.547026k 3.560165i 3.560214i 2.18e-08p 1.06e-12p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.708716j 5.159514i 0.0 0.0
zp 55.10 ri 0.009161p 0.0 0.794382p 0.0 2.821081n 0.0 1.363960n 0.027889p 5.02e-05p 2.74e-09p 0.0 0.0
sig0.558 cc 0.009199p 0.0 0.804919p 0.0 3.637559p 0.0 4.984517p 5.012521p 5.012571p 5.012571p 0.0 0.0
rc 0.009161p 8.88e-05o 0.801680o 0.000850o 3.623330m 0.001912o 4.987499l 5.015388k 5.015438i 5.015438h 0.0 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.075312h 0.0 0.0
zp 54.83 ri 0.036092p 0.0 1.560978n 0.0 2.827126n 0.0 0.650527p 0.005622p 3.69e-06p 6.24e-11p 0.0 0.0
sig0.551 cc 0.036086p 0.0 1.589266p 0.0 4.415896p 0.0 5.064406p 5.070027p 5.070030p 5.070030p 0.0 0.0
rc 0.036092p 0.000449o 1.589831m 0.002152o 4.418553m 0.002690o 5.069694l 5.075316k 5.075319j 5.075319h 0.0 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.016492i 0.0 0.0
zp 54.76 ri 0.058450p 0.0 1.706152n 0.0 2.743981n 0.0 0.511954p 0.004581p 2.96e-06p 6.54e-11p 0.0 0.0
sig0.562 cc 0.058439p 0.0 1.752118p 0.0 4.495594p 0.0 5.005364p 5.009943p 5.009946p 5.009946p 0.0 0.0
rc 0.058450p 0.000939o 1.753090m 0.002690o 4.499148l 0.002996o 5.011983l 5.016564l 5.016567k 5.016567i 0.0 0.0
th232h xi 0.0 0.0 1.483422l 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 1.763817m 0.0 0.0 0.0 0.0 0.0 6.023787j 6.124263g 0.0 0.0
zp 54.70 ri 0.119617p 0.0 1.699559k 0.0 3.659714n 0.0 0.644544p 0.009058p 1.03e-05p 8.18e-10p 0.0 0.0
sig0.600 cc 0.137414p 0.0 2.227311p 0.0 5.539792p 0.0 6.091496p 6.099841p 6.099850p 6.099850p 0.0 0.0
rc 0.119617p 0.004475o 1.798173k 0.002874l 5.460131l 0.003777o 6.105886l 6.114944k 6.114955i 6.114955g 0.0 0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.668987i 5.177585h 0.0 0.0
zp 55.13 ri 0.010851p 0.0 0.702050p 0.0 3.269043n 0.0 1.317986n 0.042917p 8.19e-05p 7.66e-09p 0.0 0.0
sig0.568 cc 0.010794p 0.0 0.706856p 0.0 3.958496p 0.0 5.295750p 5.338440p 5.338521p 5.338521p 0.0 0.0
rc 0.010851p 0.000107o 0.710697o 0.000624o 3.980115m 0.002030o 5.298259k 5.341176j 5.341258h 5.341258g 0.0 0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 1.023056k 0.0 4.825051i 0.0 5.811993h 5.858269i 6.051436g 5.797372i 0.0 0.0
zp 55.01 ri 0.027674p 0.0 1.001794k 0.0 3.793488j 0.0 1.109838m 0.037188p 0.000108p 1.74e-08p 0.0 0.0

sig0.600 cc 0.033299p 0.0 1.232028p 0.0 4.645091p 0.0 5.922569p 5.960275p 5.960382p 5.960382p 0.0 0.0
rc 0.027674p 0.000520o 1.024093j 0.001500o 4.818722h 0.002760o 5.929055g 5.966244g 5.966351f 5.966351f 0.0
0.0

i, xe, cs, ba, la, ce half lives from 89wal1.
1

mass number 142 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	52 te g	53 i g	54 xe g	55 cs d	55 cs g	56 ba d	56 ba g	57 la g	58 ce g	59 pr g	60 nd g
half life	0.590s	0.2 s	1.22 s	0.96 s	1.8 s	1.78 s	10.7 m	1.54 h	5.e16y	19.16h	stable
lambda	1.175e+00	3.466e+00	5.682e-01	7.220e-01	3.851e-01	3.894e-01	1.080e-03	1.250e-04	4.396e-25	1.005e-05	0.0
z - 1 g	100.0000	100.0000	86.1390	0.0	99.5960	0.0	99.9050	100.0000	100.0000	0.0	100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	3.0560	100.0000	1.6000	100.0000	0.0	0.0	0.0	0.0
u233f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.122288e	0.0	0.0

zp 55.77 ri 1.22e-08p 7.87e-05p 0.080470p 0.0 1.192126n 0.0 4.468728l 0.368095p 0.006650p 1.58e-06p 5.78e-11p
sig0.553 cc 1.22e-08p 7.86e-05p 0.080480p 0.0 1.271501p 0.0 5.739990p 6.107959p 6.114604p 1.58e-06p 1.58e-06p
rc 1.22e-08p 7.87e-05p 0.080538p 0.000225o 1.272563m 0.007460o 5.747543k 6.115638g 6.122288e 1.58e-06p 1.58e-06p

u233he xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.396582m	0.0	0.0

zp 56.13 ri 3.36e-08p 9.06e-05p 0.024111p 0.0 0.690046p 0.0 2.436728n 1.171886n 0.072113p 0.000493p 3.38e-07p
sig0.642 cc 3.36e-08p 9.06e-05p 0.024185p 0.0 0.714034p 0.0 3.150358p 4.322086p 4.394186p 0.000493p 0.000493p
rc 3.36e-08p 9.07e-05p 0.024189p 7.59e-05o 0.714213o 0.002773o 3.153035m 4.324922l 4.397034l 0.000493p 0.000493p

u236f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.281067h	5.694469i	0.0	0.0

zp 55.20 ri 2.60e-06p 0.003754p 0.713577p 0.0 2.539999n 0.0 2.100465n 0.035513p 9.18e-05p 3.02e-09p 0.0
sig0.545 cc 2.62e-06p 0.003791p 0.723424p 0.0 3.284962p 0.0 5.350905p 5.386745p 5.386834p 2.93e-09p 2.93e-09p
rc 2.60e-06p 0.003756p 0.716813o 0.004185o 3.258101m 0.032068m 5.387539j 5.423052h 5.423144h 3.02e-09p 3.02e-09p

pu239h xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.111744k	2.995200l	0.0	0.0

zp 56.12 ri 7.58e-08p 0.000122p 0.022526p 0.0 0.519943p 0.0 1.682284n 0.824142o 0.056751p 0.000514p 5.44e-07p
sig0.664 cc 7.57e-08p 0.000122p 0.022602p 0.0 0.541817p 0.0 2.222104p 3.046816p 3.105131p 0.000528p 0.000529p
rc 7.58e-08p 0.000122p 0.022631p 9.96e-05o 0.542582o 0.002785o 2.227136m 3.051278k 3.108028j 0.000514p 0.000514p

pu240f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.889917f	0.0	0.0

```
zp 55.50 ri 2.13e-07p 0.000641p 0.209888p      0.0  1.802122n      0.0  2.719799m 0.143969p 0.001011p 1.53e-07p 2.29e-12p
sig0.558 cc 2.12e-07p 0.000640p 0.210056p      0.0  2.008308p      0.0  4.729800p 4.873575p 4.874584p 1.52e-07p 1.52e-07p
         rc 2.13e-07p 0.000641p 0.210440p 0.000904o 2.012616m 0.014437o 4.744940j 4.888908h 4.889919f 1.53e-07p 1.53e-07p
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.634237f      0.0       0.0
zp 55.23 ri 2.07e-06p 0.003237p 0.529957p      0.0  2.298448n      0.0  1.737589n 0.040888p 0.000110p 5.67e-09p      0.0
sig0.551 cc 2.06e-06p 0.003230p 0.531305p      0.0  2.822159p      0.0  4.564069p 4.604846p 4.604956p 5.65e-09p 5.65e-09p
         rc 2.07e-06p 0.003239p 0.532747o 0.003026o 2.832069m 0.026276m 4.593244j 4.634132h 4.634242f 5.67e-09p 5.67e-09p
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.604410j 4.600820f      0.0       0.0
zp 55.15 ri 6.49e-06p 0.006766p 0.660042p      0.0  2.486029n      0.0  1.386557n 0.033071p 7.76e-05p 5.04e-09p      0.0
sig0.562 cc 6.47e-06p 0.006755p 0.664191p      0.0  3.142368p      0.0  4.532880p 4.565867p 4.565945p 5.03e-09p 5.03e-09p
         rc 6.49e-06p 0.006772p 0.665875o 0.004572o 3.153786m 0.030381m 4.567729j 4.600801h 4.600878f 5.04e-09p 5.04e-09p
 th232h  xi      0.0       0.0  0.774025m      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0  0.031809n 0.573468m      0.0       0.0       0.0       0.0  5.557283j 5.338653i      0.0       0.0
zp 55.08 ri 6.46e-05p 0.032219p 0.683598l      0.0  3.259258n      0.0  1.341852n 0.050963p 0.000153p 3.34e-08p      0.0
sig0.600 cc 4.48e-05p 0.022404p 0.887393p      0.0  4.056828p      0.0  5.309007p 5.357415p 5.357564p 3.25e-08p 3.25e-08p
         rc 6.46e-05p 0.032284n 0.711407k 0.008458o 3.976249m 0.043062m 5.357386k 5.408349j 5.408502i 3.34e-08p 3.34e-08p
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.250703i 4.847373f      0.0       0.0
zp 55.53 ri 2.08e-07p 0.000771p 0.153810p      0.0  1.981979n      0.0  2.446432m 0.196551p 0.001309p 4.27e-07p 6.92e-12p
sig0.568 cc 2.22e-07p 0.000824p 0.164966p      0.0  2.281176p      0.0  4.566739p 4.776639p 4.777904p 4.13e-07p 4.13e-07p
         rc 2.08e-07p 0.000772p 0.154474p 0.000833o 2.136663m 0.016727m 4.597792j 4.794343g 4.795652f 4.27e-07p 4.27e-07p
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0  2.887333l      0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  5.448542h 6.055130j 6.093497h      0.0       0.0
zp 55.41 ri 3.47e-06p 0.003748p 0.368032p      0.0  2.534005m      0.0  2.695537l 0.413832p 0.001565p 7.49e-07p 2.97e-11p
sig0.600 cc 3.78e-06p 0.004084p 0.404159p      0.0  3.231939p      0.0  5.810625p 6.009860p 6.011453p 7.62e-07p 7.62e-07p
         rc 3.47e-06p 0.003751p 0.371264p 0.001276o 2.905044m 0.012531n 5.610352h 6.024185h 6.025750g 7.49e-07p 7.49e-07p

  te half life from 80eng2; i, xe, cs, ba, la half lives 89wal1.
1

    mass number    143                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide      54 xe g   55 cs d   55 cs g   56 ba d   56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm m   62 sm g
half life     0.30 s    1.1  s    1.78 s    1.001s    14.3 s    14.1 m    1.38 d    13.57d    stable    265. d     64. s    8.83 m
```

lambda 2.310e+00 6.301e-01 3.894e-01 6.925e-01 4.847e-02 8.193e-04 5.813e-06 5.912e-07 0.0 3.027e-08 1.083e-02 1.308e-03
z - 1 g 100.0000 0.0 96.9440 0.0 98.4000 100.0000 100.0000 100.0000 100.0000 -100.0000 0.0 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 4.6120 100.0000 3.1300 100.0000 0.0 0.0 0.0 0.0 0.0 0.0 100.0000
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.371189i 4.947176l 5.524783d 0.0 0.0 0.0
zp 56.18 ri 0.007363p 0.0 0.459105p 0.0 3.815541n 1.193804n 0.053455p 5.67e-05p 6.25e-09p 0.0 0.0 0.0
sig0.553 cc 0.007396p 0.0 0.468368p 0.0 4.294515p 5.467849p 5.521547p 5.521606p 5.521606p 0.0 0.0 0.0
rc 0.007363p 2.26e-05o 0.466266p 0.002458o 4.276805m 5.470609j 5.524064h 5.524121f 5.524121d 0.0 0.0 0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.181960h 0.0 3.347006j 0.0 0.0 0.0
zp 56.53 ri 0.002482p 0.0 0.170878p 0.0 1.369115n 1.469383n 0.204532p 0.003561p 6.18e-06p 1.04e-09p 0.0 0.0
sig0.642 cc 0.002488p 0.0 0.173689p 0.0 1.543523p 3.005507p 3.213616p 3.217096p 3.217102p 1.02e-09p 0.0 0.0
rc 0.002482p 9.21e-06o 0.173294p 0.001037o 1.540674m 3.010056k 3.214588h 3.218149h 3.218155h 1.04e-09p 0.0 0.0
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.662519h 0.0 5.958482i 0.0 0.0 0.0
zp 55.61 ri 0.136937p 0.0 1.870810n 0.0 3.527195m 0.243219p 0.001731p 2.73e-07p 3.18e-12p 0.0 0.0 0.0
sig0.545 cc 0.137729p 0.0 2.015377p 0.0 5.501159p 5.741696p 5.743437p 5.743437p 5.743437p 0.0 0.0 0.0
rc 0.136937p 0.000725o 2.004287m 0.018459o 5.517873k 5.761092j 5.762822h 5.762823h 5.762823h 0.0 0.0 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.834507i 0.0 2.573513l 0.0 0.0 0.0
zp 56.52 ri 0.003260p 0.0 0.170877p 0.0 1.195884n 1.238898n 0.196605p 0.003858p 9.72e-06p 2.77e-09p 0.0 0.0
sig0.664 cc 0.003254p 0.0 0.173721p 0.0 1.364997p 2.608999p 2.802463p 2.806503p 2.806513p 2.90e-09p 0.0 0.0
rc 0.003260p 1.55e-05o 0.174054p 0.001313o 1.368465m 2.607364l 2.803968i 2.807826i 2.807836i 2.77e-09p 0.0 0.0
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.263862j 0.0 4.439825f 0.0 0.0 0.0
zp 55.89 ri 0.029594p 0.0 0.873461p 0.0 2.969722n 0.562120p 0.009454p 5.72e-06p 2.47e-10p 0.0 0.0 0.0
sig0.558 cc 0.030062p 0.0 0.916448p 0.0 3.901230p 4.419166p 4.428769p 4.428774p 4.428774p 0.0 0.0 0.0
rc 0.029594p 0.000145o 0.902295o 0.007593o 3.865174l 4.427293k 4.436747i 4.436753h 4.436753f 0.0 0.0 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.671235d 0.0 0.0 0.0
zp 55.64 ri 0.099031p 0.0 1.545773n 0.0 2.798310m 0.239825p 0.001908p 4.26e-07p 6.33e-12p 0.0 0.0 0.0
sig0.551 cc 0.098903p 0.0 1.639806p 0.0 4.413857p 4.653683p 4.655588p 4.655588p 4.655588p 0.0 0.0 0.0
rc 0.099031p 0.000497o 1.642275m 0.015193o 4.429502l 4.669327j 4.671235h 4.671235f 4.671235d 0.0 0.0 0.0

```
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  3.934563j      0.0  4.546050e      0.0       0.0       0.0
zp 55.54 ri 0.149610p       0.0  1.752688n       0.0  2.352181n 0.299554p 0.001134p 3.09e-07p 4.76e-12p       0.0       0.0       0.0
sig0.562 cc 0.156856p       0.0  1.990026p       0.0  4.335654p 4.517345p 4.518533p 4.518534p 4.518534p       0.0       0.0       0.0
         rc 0.149610p 0.001113o 1.898839m 0.023972o 4.244610l 4.544165k 4.545298i 4.545299g 4.545299e       0.0       0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  5.104678i 5.273960j 5.049286i      0.0       0.0       0.0
zp 55.46 ri 0.276780p       0.0  2.420770n       0.0  2.220551n 0.212864p 0.001749p 1.07e-06p 4.31e-11p       0.0       0.0       0.0
sig0.600 cc 0.276363p       0.0  2.685697p       0.0  4.866666p 5.079551p 5.081297p 5.081298p 5.081298p       0.0       0.0       0.0
         rc 0.276780p 0.002254o 2.691346m 0.036133m 4.904969l 5.117833k 5.119582i 5.119583h 5.119583g       0.0       0.0       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  4.760352h      0.0  4.636217f      0.0       0.0       0.0
zp 55.93 ri 0.027266p       0.0  1.018920n       0.0  2.894770n 0.703943p 0.013494p 1.41e-05p 7.65e-10p       0.0       0.0       0.0
sig0.568 cc 0.027099p       0.0  1.039000p       0.0  3.901616p 4.627529p 4.640941p 4.640955p 4.640955p       0.0       0.0       0.0
         rc 0.027266p 0.000113o 1.045466m 0.008994o 3.932502m 4.636445j 4.649939h 4.649954g 4.649954f       0.0       0.0       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0  0.717484p      0.0       0.0       0.0  6.171916f 6.494648h 6.219647i      0.0       0.0       0.0
zp 55.80 ri 0.041773p       0.0  0.742597o       0.0  4.395108m 1.053633o 0.016446p 2.27e-05p 2.54e-09p       0.0       0.0       0.0
sig0.600 cc 0.096547p       0.0  1.810440p       0.0  5.494090p 6.202468p 6.217643p 6.217664p 6.217664p       0.0       0.0       0.0
         rc 0.041773p 0.000533o 0.783628n 0.017515o 5.183713l 6.237346h 6.253792f 6.253815f 6.253815f       0.0       0.0       0.0

  xe, cs, ba, la, ce, pr half lives from 89wal1.
1

    mass number    144                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       54 xe g   55 cs g   56 ba d   56 ba g   57 la g   58 ce g   59 pr m   59 pr g   60 nd g   61 pm g   62 sm g
half life      1.2 s    1.01 s    0.59 s    11.4 s    40.7 s    284.6d     7.2 m    17.28m    15.32l    363. d    stable
lambda       5.776e-01 6.863e-01 1.175e+00 6.080e-02 1.703e-02 2.819e-08 1.605e-03 6.685e-04 1.052e-23 2.210e-08       0.0
 z - 1 g    100.0000   95.3880       0.0   96.8700  100.0000  100.0000    0.5000   99.5000  100.0000 -100.0000       0.0
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0    0.0500       0.0       0.0
 z - 0 m       0.0       0.0   13.5900  100.0000       0.0       0.0       0.0   99.9500       0.0       0.0       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  4.477340i      0.0       0.0  4.379067d      0.0       0.0
zp 56.58 ri 0.000490p 0.078063p       0.0  2.454974n 1.564465n 0.281657p 0.000722p 7.14e-05p 3.76e-07p 2.08e-12p       0.0
sig0.553 cc 0.000488p 0.078100p       0.0  2.517602p 4.095103p 4.377172p 0.022617p 4.377964p 4.377976p 2.10e-12p       0.0
         rc 0.000490p 0.078531p 0.001370o 2.532418m 4.096882k 4.378539h 0.022615i 4.379321f 4.379333d 2.08e-12p       0.0
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```
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  2.437654i      0.0       0.0  2.597683l      0.0       0.0
zp 56.92 ri 0.000200p 0.032947p       0.0  0.599992p 1.389857n 0.437947p 0.016637p 0.001062p 7.52e-05p 3.16e-08p 1.25e-12p
sig0.642 cc 0.000200p 0.033140p       0.0  0.632362p 2.022009p 2.460398p 0.028469p 2.477583p 2.477670p 3.07e-08p 1.22e-12p
         rc 0.000200p 0.033138p 0.000653o 0.632745o 2.022602m 2.460549i 0.028940p 2.478233i 2.478323i 3.16e-08p 1.25e-12p
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  4.986144i      0.0       0.0  5.239639i      0.0       0.0
zp 56.02 ri 0.015723p 0.574760p       0.0  3.840459n 0.659702p 0.019767p 8.56e-06p 8.47e-07p 5.20e-10p      0.0       0.0
sig0.545 cc 0.015800p 0.592657p       0.0  4.428182p 5.071267p 5.091132p 0.025464p 5.091128p 5.091141p      0.0       0.0
         rc 0.015723p 0.589758o 0.020444o 4.432201m 5.091903k 5.111670i 0.025567i 5.111666i 5.111679h      0.0       0.0
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  2.686711h      0.0       0.0  2.629589l      0.0       0.0
zp 56.93 ri 0.000337p 0.041625p       0.0  0.655019p 1.478013n 0.505788p 0.022612p 0.001443p 0.000146p 1.02e-07p 7.90e-12p
sig0.664 cc 0.000337p 0.041935p       0.0  0.695731p 2.173414p 2.679091p 0.036347p 2.703489p 2.703655p 1.04e-07p 8.01e-12p
         rc 0.000337p 0.041946p 0.000816o 0.696468o 2.174482m 2.680270h 0.036013p 2.704307h 2.704471h 1.02e-07p 7.90e-12p
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  3.813548j      0.0       0.0  3.972344g      0.0       0.0
zp 56.28 ri 0.003137p 0.239596p       0.0  2.584410n 1.070147p 0.066036p 9.97e-05p 9.86e-06p 1.88e-08p      0.0       0.0
sig0.558 cc 0.003184p 0.246178p       0.0  2.863227p 3.888462p 3.955475p 0.019876p 3.955574p 3.955584p      0.0       0.0
         rc 0.003137p 0.242588p 0.006352o 2.825758m 3.895905l 3.961941j 0.019909j 3.962041i 3.962051g      0.0       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  4.008856i      0.0       0.0  4.180038f      0.0       0.0
zp 56.06 ri 0.010781p 0.475126p       0.0  2.972904n 0.691385p 0.021022p 1.38e-05p 1.37e-06p 1.03e-09p      0.0       0.0
sig0.551 cc 0.010901p 0.490793p       0.0  3.476403p 4.134100p 4.155355p 0.020790p 4.155360p 4.155370p      0.0       0.0
         rc 0.010781p 0.485410p 0.015552o 3.458673m 4.150059k 4.171081i 0.020869i 4.171086h 4.171096f      0.0       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  4.117119i      0.0       0.0  4.269031f      0.0       0.0
zp 55.94 ri 0.024125p 0.742866p       0.0  2.903876n 0.575369p 0.012742p 8.46e-06p 8.37e-07p 5.57e-10p      0.0       0.0
sig0.562 cc 0.024286p 0.770989p       0.0  3.667753p 4.220899p 4.233725p 0.021177p 4.233724p 4.233734p      0.0       0.0
         rc 0.024125p 0.765879o 0.028398o 3.674180m 4.249548k 4.262290i 0.021320i 4.262289h 4.262299f      0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  4.506311k      0.0       0.0  4.079262j      0.0       0.0
zp 55.86 ri 0.048879p 1.107791n       0.0  2.463642n 0.585047p 0.013375p 2.07e-05p 1.32e-06p 2.66e-09p      0.0       0.0
sig0.600 cc 0.048664p 1.149336p       0.0  3.573829p 4.167198p 4.180514p 0.020924p 4.180527p 4.180537p      0.0       0.0
         rc 0.048879p 1.154416m 0.037524o 3.619449m 4.204495l 4.217870k 0.021110k 4.217881j 4.217892i      0.0       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0  4.188883f      0.0       0.0  3.221009j      0.0       0.0
zp 56.34 ri 0.002450p 0.285017p       0.0  2.250077n 1.518377n 0.086098p 0.000243p 2.40e-05p 4.94e-08p       0.0       0.0
sig0.568 cc 0.002435p 0.285628p       0.0  2.515189p 4.047353p 4.132934p 0.020937p 4.133223p 4.133234p       0.0       0.0
        rc 0.002450p 0.287354p 0.006440o 2.534877m 4.053254i 4.139352f 0.020939f 4.139609f 4.139619f       0.0       0.0
 cf252s  xi      0.0  0.523403l      0.0  3.556070k 1.776040l 0.096504l      0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  5.380000i 5.948526g      0.0       0.0  6.066289i      0.0       0.0
zp 56.20 ri 0.011564p 0.548547p       0.0  3.373678m 1.861363l 0.101140l 0.000342p 3.80e-05p 1.27e-07p 2.33e-12p       0.0
sig0.600 cc 0.013847p 0.670022p       0.0  4.142378p 5.781110p 5.874706p 0.029695p 5.875048p 5.875063p 2.19e-12p       0.0
        rc 0.011564p 0.559578p 0.020449o 3.936191k 5.797553i 5.898693g 0.029835g 5.899058g 5.899073f 2.33e-12p       0.0

  xe, cs, ba, la, ce, pr, half lives from 89wal1.
1

    mass number    145                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       54 xe g   55 cs g   56 ba d   56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g
half life      0.9 s     0.59 s    0.340s     4.0 s     24. s    3.00 m    5.98 h    stable    17.7 y    340. d
lambda       7.702e-01 1.175e+00 2.039e+00 1.733e-01 2.888e-02 3.851e-03 3.220e-05       0.0 1.242e-09 2.360e-08
 z - 1 g    100.0000  100.0000       0.0   86.4100  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0   13.3000  100.0000       0.0       0.0       0.0       0.0       0.0       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.199751d      0.0       0.0
zp 56.98 ri 1.44e-05p 0.010070p       0.0  0.757140p 1.736681n 0.688898p 0.008239p 1.05e-05p 2.68e-10p       0.0
sig0.553 cc 1.44e-05p 0.010084p       0.0  0.765870p 2.502538p 3.191432p 3.199671p 3.199681p 2.68e-10p       0.0
        rc 1.44e-05p 0.010084p 7.00e-05o 0.765923o 2.502604m 3.191502h 3.199741f 3.199751d 2.68e-10p       0.0
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.008390k 2.128894m      0.0       0.0
zp 57.31 ri 1.19e-05p 0.004790p       0.0  0.202937p 1.033734n 0.719603o 0.064040p 0.000676p 7.06e-07p 7.05e-11p
sig0.642 cc 1.20e-05p 0.004822p       0.0  0.207947p 1.245874p 1.960179p 2.024478p 2.025138p 6.88e-07p 6.87e-11p
        rc 1.19e-05p 0.004802p 6.16e-05o 0.207149p 1.240883m 1.960486l 2.024525j 2.025202j 7.06e-07p 7.05e-11p
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.152898i      0.0       0.0
zp 56.43 ri 0.000954p 0.149483p       0.0  2.447119n 1.453587n 0.119442p 0.000249p 4.25e-08p       0.0       0.0
sig0.545 cc 0.000954p 0.150405p       0.0  2.577387p 4.030726p 4.150146p 4.150395p 4.150395p       0.0       0.0
        rc 0.000954p 0.150437p 0.002514o 2.579626m 4.033213l 4.152656l 4.152905k 4.152905i      0.0       0.0
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.194926k 2.101690l      0.0       0.0
zp 57.34 ri 2.02e-05p 0.005981p       0.0  0.216204p 1.067454n 0.781222p 0.086705p 0.001217p 2.08e-06p 3.98e-10p
sig0.664 cc 2.01e-05p 0.005968p       0.0  0.220215p 1.281893p 2.070517p 2.156752p 2.157993p 2.12e-06p 4.05e-10p
        rc 2.02e-05p 0.006001p 7.61e-05o 0.221465p 1.288919m 2.070141m 2.156846k 2.158065j 2.08e-06p 3.98e-10p
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.075099f      0.0       0.0
zp 56.68 ri 0.000159p 0.046582p       0.0  1.243817n 1.538773n 0.249874p 0.001559p 7.81e-07p 1.08e-11p       0.0
sig0.558 cc 0.000159p 0.046737p       0.0  1.284312p 2.822988p 3.072853p 3.074412p 3.074413p 1.08e-11p       0.0
        rc 0.000159p 0.046741p 0.000687o 1.284893m 2.823666l 3.073539j 3.075098h 3.075099f 1.08e-11p       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.326693d      0.0       0.0
zp 56.47 ri 0.000646p 0.113790p       0.0  1.797957n 1.312873n 0.114620p 0.000336p 7.10e-08p       0.0       0.0
sig0.551 cc 0.000646p 0.114405p       0.0  1.896997p 3.209744p 3.324339p 3.324675p 3.324675p       0.0       0.0
        rc 0.000646p 0.114436p 0.002023o 1.898864m 3.211737k 3.326357h 3.326693f 3.326693d       0.0       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.369645e      0.0       0.0
zp 56.34 ri 0.001919p 0.207040p       0.0  1.975796n 1.138244n 0.070384p 0.000186p 3.36e-08p       0.0       0.0
sig0.562 cc 0.001918p 0.208850p       0.0  2.156637p 3.294654p 3.365001p 3.365187p 3.365187p       0.0       0.0
        rc 0.001919p 0.208959p 0.004472o 2.160830m 3.299074k 3.369458i 3.369644g 3.369644e       0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.799488i 2.509727i      0.0       0.0
zp 56.26 ri 0.004472p 0.271642p       0.0  1.493698n 0.837792p 0.052633p 0.000258p 8.62e-08p 2.05e-12p       0.0
sig0.600 cc 0.004392p 0.271178p       0.0  1.703474p 2.571696p 2.623388p 2.623642p 2.623642p 2.13e-12p       0.0
        rc 0.004472p 0.276114p 0.007977o 1.740266m 2.578057m 2.630690k 2.630949i 2.630949h 2.05e-12p       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.450362f      0.0       0.0
zp 56.75 ri 0.000126p 0.047262p       0.0  1.087478n 1.996562n 0.321134p 0.003600p 2.25e-06p 7.10e-11p       0.0
sig0.568 cc 0.000126p 0.047384p       0.0  1.128546p 3.124998p 3.446124p 3.449724p 3.449726p 7.10e-11p       0.0
        rc 0.000126p 0.047388p 0.000636o 1.129062m 3.125625l 3.446759j 3.450359h 3.450362f 7.10e-11p       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  4.635095i 5.317832i 5.316620k      0.0       0.0
zp 56.61 ri 0.001116p 0.149346p       0.0  2.059015n 2.508225n 0.346574p 0.004246p 4.34e-06p 2.42e-10p       0.0
sig0.600 cc 0.001139p 0.153485p       0.0  2.234223p 4.676013p 5.043662p 5.047665p 5.047669p 2.22e-10p       0.0
        rc 0.001116p 0.150462p 0.003438o 2.192468m 4.700693k 5.047267i 5.051513h 5.051518h 2.42e-10p       0.0

  xe, cs, ba, la, ce, pr half lives from 89wal1; pm, sm half lives 90bur1.
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    mass number    146                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       54 xe g   55 cs g   56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g
half life     0.563s    0.322s    2.20 s     6.3 s    13.5 m    24.2 m    stable    5.53 y    1.0e8y
lambda       1.231e+00 2.153e+00 3.151e-01 1.100e-01 8.557e-04 4.774e-04       0.0 3.975e-09 2.198e-16
 z - 1 g    100.0000  100.0000   86.7000  100.0000  100.0000  100.0000  100.0000  -65.0000   35.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u233f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  2.381593d      0.0       0.0
zp 57.39 ri 2.71e-07p 0.000526p 0.170573p 0.887562p 1.284844m 0.037939p 0.000220p 1.59e-08p       0.0
sig0.553 cc 2.71e-07p 0.000527p 0.171029p 1.058591p 2.343434p 2.381374p 2.381593p 1.59e-08p 5.56e-09p
         rc 2.71e-07p 0.000527p 0.171029p 1.058591o 2.343434i 2.381374f 2.381593d 1.59e-08p 5.56e-09p
 u233he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  1.629104m      0.0       0.0
zp 57.71 ri 4.57e-07p 0.000463p 0.047618p 0.555866p 0.846476p 0.174396p 0.004334p 1.14e-05p 2.92e-09p
sig0.642 cc 4.57e-07p 0.000463p 0.048020p 0.603886p 1.450362p 1.624758p 1.629100p 1.14e-05p 3.99e-06p
         rc 4.57e-07p 0.000463p 0.048020p 0.603886o 1.450362n 1.624758n 1.629100m 1.14e-05p 3.99e-06p
 u236f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0  3.499408k 3.011469n      0.0       0.0
zp 56.84 ri 4.12e-05p 0.018862p 1.226615n 1.689749n 0.526811p 0.003152p 2.32e-06p 2.34e-11p       0.0
sig0.545 cc 4.12e-05p 0.018888p 1.242027p 2.930449p 3.459569p 3.462718p 3.462721p 2.52e-11p 8.82e-12p
         rc 4.12e-05p 0.018903p 1.243004m 2.932753l 3.459564l 3.462717k 3.462719j 2.34e-11p 8.21e-12p
 pu239h  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  1.743970l      0.0       0.0
zp 57.76 ri 7.80e-07p 0.000572p 0.049423p 0.554575p 0.907394p 0.224378p 0.007672p 3.23e-05p 1.56e-08p
sig0.664 cc 7.80e-07p 0.000572p 0.049919p 0.604495p 1.511890p 1.736266p 1.743959p 3.23e-05p 1.13e-05p
         rc 7.80e-07p 0.000572p 0.049919p 0.604494o 1.511889n 1.736266m 1.743959k 3.23e-05p 1.13e-05p
 pu240f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  2.553082e      0.0       0.0
zp 57.07 ri 6.40e-06p 0.005159p 0.483880p 1.350552n 0.702769o 0.011380p 2.21e-05p 8.77e-10p       0.0
sig0.558 cc 6.40e-06p 0.005165p 0.488359p 1.838910p 2.541680p 2.553060p 2.553082p 8.77e-10p 3.07e-10p
         rc 6.40e-06p 0.005165p 0.488359p 1.838910m 2.541680i 2.553060g 2.553082e 8.77e-10p 3.07e-10p
 pu241f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.805788d      0.0       0.0
zp 56.87 ri 2.98e-05p 0.015177p 0.867590p 1.476531n 0.444810p 0.003669p 3.22e-06p 5.25e-11p       0.0
sig0.551 cc 2.98e-05p 0.015207p 0.880775p 2.357305p 2.802116p 2.805785p 2.805788p 5.25e-11p 1.84e-11p
        rc 2.98e-05p 0.015207p 0.880775o 2.357305m 2.802116h 2.805785f 2.805788d 5.25e-11p 1.84e-11p
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.908089e      0.0       0.0
zp 56.75 ri 0.000106p 0.033519p 1.075317n 1.494443n 0.306813p 0.002362p 1.67e-06p 3.18e-11p       0.0
sig0.562 cc 0.000106p 0.033625p 1.104469p 2.598912p 2.905725p 2.908087p 2.908089p 3.18e-11p 1.11e-11p
        rc 0.000106p 0.033625p 1.104470m 2.598912l 2.905725i 2.908087g 2.908089e 3.18e-11p 1.11e-11p
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.453127j      0.0       0.0
zp 56.68 ri 0.000338p 0.059642p 0.876920p 1.311642n 0.209559p 0.003000p 3.24e-06p 2.40e-10p       0.0
sig0.600 cc 0.000338p 0.059980p 0.928923p 2.240565p 2.450124p 2.453124p 2.453127p 2.40e-10p 8.42e-11p
        rc 0.000338p 0.059980p 0.928923o 2.240565m 2.450124m 2.453124l 2.453127j 2.40e-10p 8.42e-11p
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.799534f      0.0       0.0
zp 57.16 ri 3.85e-06p 0.004780p 0.336063p 1.686431n 0.747019o 0.025820p 5.37e-05p 5.81e-09p       0.0
sig0.568 cc 3.85e-06p 0.004783p 0.340210p 2.026641p 2.773660p 2.799480p 2.799534p 5.81e-09p 2.03e-09p
        rc 3.85e-06p 0.004783p 0.340210p 2.026641m 2.773660j 2.799480h 2.799534f 5.81e-09p 2.03e-09p
 cf252s  xi      0.0       0.0  1.003761l      0.0  1.033576l      0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  4.344577h      0.0  4.700119k      0.0       0.0
zp 57.03 ri 6.50e-05p 0.025788p 0.980856n 2.389791m 1.009990l 0.030747p 9.21e-05p 1.59e-08p       0.0
sig0.600 cc 5.67e-05p 0.022558p 0.875408p 3.409776p 4.403488p 4.434237p 4.434329p 1.59e-08p 5.58e-09p
        rc 6.50e-05p 0.025853p 1.003270o 3.393061k 4.403052h 4.433799h 4.433891h 1.59e-08p 5.58e-09p

  xe half life from 80eng2; cs, ba, la, ce, pr half lives 89wal1.
1

    mass number    147                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g
half life     0.892s    4.02 s     56. s    13.4 m    10.98d    2.623y    11.03l    24.3 d    38.0 h
lambda       7.771e-01 1.724e-01 1.238e-02 8.621e-04 7.306e-07 8.380e-09 2.051e-19 3.301e-07 5.067e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0  1.751602i      0.0  1.685804d      0.0       0.0
zp 57.79 ri 0.018956p 0.383987p 1.153068n 0.127993p 0.001949p 6.19e-07p 1.86e-11p       0.0       0.0
sig0.553 cc 0.018702p 0.397538p 1.554313p 1.684031p 1.685954p 1.685954p 1.685954p       0.0       0.0
        rc 0.018956p 0.402943p 1.556011l 1.684005j 1.685954h 1.685954f 1.685954d       0.0       0.0
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  1.251982i      0.0  1.203560k      0.0       0.0
zp 58.10 ri 0.007803p 0.209290p 0.695207p 0.310584p 0.018186p 0.000114p 7.29e-08p 4.43e-12p       0.0
sig0.642 cc 0.007772p 0.216218p 0.909172p 1.222956p 1.241069p 1.241185p 1.241185p 4.50e-12p       0.0
        rc 0.007803p 0.217093p 0.912300o 1.222884k 1.241071i 1.241185i 1.241185i 4.43e-12p       0.0
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  2.294533f      0.0  2.301640i      0.0       0.0
zp 57.25 ri 0.232627p 1.170212n 0.870773n 0.021509p 5.07e-05p 2.43e-09p       0.0       0.0       0.0
sig0.545 cc 0.232674p 1.403121p 2.273608p 2.295122p 2.295173p 2.295173p 2.295173p       0.0       0.0
        rc 0.232627p 1.402839m 2.273613j 2.295122h 2.295173f 2.295173f 2.295173f       0.0       0.0
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  1.707185i      0.0  1.720247l      0.0       0.0
zp 58.18 ri 0.009603p 0.250389p 0.908877p 0.500555p 0.039800p 0.000410p 4.95e-07p 6.67e-11p       0.0
sig0.664 cc 0.009609p 0.260159p 1.169620p 1.669400p 1.709225p 1.709634p 1.709635p 6.65e-11p       0.0
        rc 0.009603p 0.259992p 1.168869o 1.669424k 1.709224i 1.709634i 1.709635i 6.67e-11p       0.0
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  2.179947j      0.0  2.203278f      0.0       0.0
zp 57.47 ri 0.099384p 0.928238p 1.111367n 0.063558p 0.000346p 5.65e-08p       0.0       0.0       0.0
sig0.558 cc 0.099574p 1.029586p 2.138867p 2.202546p 2.202893p 2.202893p 2.202893p       0.0       0.0
        rc 0.099384p 1.027623o 2.138989l 2.202547k 2.202893i 2.202893h 2.202893f       0.0       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.224196f      0.0       0.0
zp 57.28 ri 0.197596p 1.154109n 0.845588p 0.026832p 7.14e-05p 5.09e-09p       0.0       0.0       0.0
sig0.551 cc 0.197596p 1.351705p 2.197292p 2.224125p 2.224196p 2.224196p 2.224196p       0.0       0.0
        rc 0.197596p 1.351705m 2.197292m 2.224125l 2.224196j 2.224196h 2.224196f       0.0       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.370548f      0.0       0.0
zp 57.15 ri 0.319124p 1.357879n 0.675451p 0.018056p 3.75e-05p 2.75e-09p       0.0       0.0       0.0
sig0.562 cc 0.319124p 1.677003p 2.352454p 2.370510p 2.370548p 2.370548p 2.370548p       0.0       0.0
        rc 0.319124p 1.677003m 2.352454m 2.370510l 2.370548j 2.370548h 2.370548f       0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  1.874646i      0.0  1.854576i      0.0       0.0
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zp 57.11 ri 0.281583p 1.101544n 0.462287p 0.019331p 6.44e-05p 1.51e-08p 0.0 0.0 0.0
sig0.600 cc 0.280982p 1.380174p 1.845455p 1.864744p 1.864808p 1.864808p 1.864808p 0.0 0.0
rc 0.281583p 1.383127m 1.845413m 1.864744k 1.864808i 1.864808i 1.864808h 0.0 0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.322105h 0.0 2.204999f 0.0 0.0
zp 57.57 ri 0.066003p 0.944193p 1.102601n 0.114262p 0.000772p 2.76e-07p 5.04e-12p 0.0 0.0
sig0.568 cc 0.065394p 1.000876p 2.113858p 2.227066p 2.227831p 2.227831p 2.227831p 0.0 0.0
rc 0.066003p 1.010196o 2.112797l 2.227059j 2.227831h 2.227831g 2.227831f 0.0 0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 4.211807k 4.906307k 4.306987f 0.0 4.100130i 0.0 0.0
zp 57.45 ri 0.250133p 1.939002n 1.909172m 0.180906p 0.001435p 7.42e-07p 3.28e-11p 0.0 0.0
sig0.600 cc 0.249748p 2.185769p 4.115543p 4.279198p 4.280648p 4.280649p 4.280649p 0.0 0.0
rc 0.250133p 2.189135m 4.098307j 4.279213h 4.280648f 4.280649f 4.280649f 0.0 0.0

cs, ba, la, ce, pr, nd, pm half lives from 89wal1.
1

mass number 148 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 54 xe g 55 cs g 56 ba g 57 la d 57 la g 58 ce d 58 ce g 59 pr g 60 nd g 61 pm m 61 pm g 62 sm g
half life 0.15 s 0.64 s 0.695s 1.1 s 2.41 s 56. s 2.27 m stable 41.3 d 5.37 d 8.e15y
lambda 0.0 4.621e+00 1.083e+00 9.973e-01 6.301e-01 2.876e-01 1.238e-02 5.089e-03 0.0 1.943e-07 1.494e-06 2.747e-24
z - 1 g 100.0000 100.0000 100.0000 0.0 100.0000 0.0 100.0000 100.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 95.4000
z - 0 m 0.0 0.0 0.0 0.5750 100.0000 1.0600 100.0000 0.0 0.0 0.0 4.6000 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.197536d 0.0 0.0 0.0
zp 58.19 ri 1.77e-11p 4.32e-07p 0.001619p 0.0 0.080426p 0.0 0.886797o 0.215416p 0.013106p 8.36e-06p 3.09e-06p 1.59e-09p
sig0.553 cc 1.77e-11p 4.32e-07p 0.001619p 0.0 0.082038p 0.0 0.968850p 1.184259p 1.197364p 8.36e-06p 3.47e-06p 1.14e-05p
rc 1.77e-11p 4.32e-07p 0.001619p 4.07e-07o 0.082045p 0.000160o 0.969001n 1.184418g 1.197524d 8.36e-06p 3.47e-06p 1.14e-05p
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.884371m 0.0 0.0 0.0

zp 58.48 ri 2.44e-10p 1.50e-06p 0.000891p 0.0 0.054876p 0.0 0.396451p 0.382138p 0.049082p 0.000603p 0.000132p 1.14e-06p
sig0.642 cc 2.44e-10p 1.50e-06p 0.000892p 0.0 0.055748p 0.0 0.452094p 0.834374p 0.883439p 0.000602p 0.000160p 0.000736p
rc 2.44e-10p 1.50e-06p 0.000892p 3.89e-07o 0.055768p 0.000106o 0.452326p 0.834464n 0.883546m 0.000603p 0.000160p 0.000736p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.728806n 0.0 0.0 0.0
zp 57.66 ri 6.97e-09p 4.45e-05p 0.034975p 0.0 0.446532p 0.0 1.170650n 0.074441p 0.000775p 8.28e-08p 3.06e-08p 1.92e-12p
sig0.545 cc 6.97e-09p 4.45e-05p 0.035012p 0.0 0.481454p 0.0 1.652218p 1.726643p 1.727418p 8.28e-08p 3.44e-08p 1.13e-07p
rc 6.97e-09p 4.45e-05p 0.035020p 1.80e-05o 0.481570p 0.001715o 1.653935m 1.728377m 1.729152m 8.28e-08p 3.44e-08p 1.13e-07p
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.295986l 0.0 0.0 0.0
zp 58.60 ri 4.19e-10p 1.93e-06p 0.001000p 0.0 0.061869p 0.0 0.506437p 0.612101o 0.111395p 0.002250p 0.000494p 8.21e-06p
sig0.664 cc 4.18e-10p 1.93e-06p 0.001001p 0.0 0.062812p 0.0 0.568821p 1.181514p 1.292806p 0.002248p 0.000597p 0.002749p
rc 4.19e-10p 1.93e-06p 0.001002p 4.41e-07o 0.062871p 0.000122o 0.569430o 1.181531m 1.292926k 0.002250p 0.000597p 0.002752p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.774038f 0.0 0.0 0.0
zp 57.87 ri 1.48e-09p 1.41e-05p 0.013947p 0.0 0.330254p 0.0 1.251013m 0.174155p 0.003594p 1.23e-06p 4.56e-07p 8.09e-11p
sig0.558 cc 1.48e-09p 1.41e-05p 0.013958p 0.0 0.344129p 0.0 1.595235p 1.769385p 1.772978p 1.23e-06p 5.12e-07p 1.69e-06p
rc 1.48e-09p 1.41e-05p 0.013961p 6.64e-06o 0.344222p 0.001052o 1.596287l 1.770442h 1.774037f 1.23e-06p 5.12e-07p 1.69e-06p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.956179d 0.0 0.0 0.0
zp 57.68 ri 8.77e-09p 5.71e-05p 0.036401p 0.0 0.539281p 0.0 1.274234m 0.103168p 0.001089p 1.71e-07p 6.32e-08p 4.66e-12p
sig0.551 cc 8.77e-09p 5.70e-05p 0.036441p 0.0 0.575468p 0.0 1.850009p 1.953141p 1.954230p 1.71e-07p 7.10e-08p 2.34e-07p

rc 8.77e-09p 5.71e-05p 0.036458p 1.87e-05o 0.575758o 0.001931o 1.851922k 1.955090f 1.956179d 1.71e-07p 7.10e-08p 2.34e-07p
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.001288e 0.0 0.0 0.0
zp 57.56 ri 5.82e-08p 0.000210p 0.066780p 0.0 0.730831p 0.0 1.119786m 0.079959p 0.000626p 1.04e-07p 3.83e-08p 2.63e-12p
sig0.562 cc 5.82e-08p 0.000210p 0.066951p 0.0 0.797370p 0.0 1.917655p 1.997567p 1.998193p 1.04e-07p 4.31e-08p 1.42e-07p
rc 5.82e-08p 0.000210p 0.066991p 4.38e-05o 0.797866o 0.003051o 1.920703j 2.000662g 2.001288e 1.04e-07p 4.31e-08p 1.42e-07p
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.068814j 0.0 0.0 0.0
zp 57.54 ri 2.10e-07p 0.000353p 0.043574p 0.0 0.459837p 0.0 0.504207p 0.058277p 0.000586p 3.58e-07p 7.85e-08p 2.22e-11p
sig0.600 cc 2.10e-07p 0.000353p 0.043906p 0.0 0.503527p 0.0 1.008001p 1.066249p 1.066834p 3.58e-07p 9.49e-08p 4.36e-07p
rc 2.10e-07p 0.000354p 0.043927p 3.53e-05o 0.503800p 0.001947o 1.009954n 1.068231l 1.068817j 3.58e-07p 9.50e-08p 4.36e-07p
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.719460f 0.0 0.0 0.0
zp 57.99 ri 6.64e-10p 9.77e-06p 0.007369p 0.0 0.324319p 0.0 1.067948n 0.312149p 0.006803p 6.30e-06p 2.33e-06p 5.60e-10p
sig0.568 cc 6.64e-10p 9.77e-06p 0.007377p 0.0 0.331630p 0.0 1.399578p 1.711796p 1.718597p 6.30e-06p 2.62e-06p 8.62e-06p
rc 6.64e-10p 9.77e-06p 0.007379p 3.42e-06o 0.331701p 0.000851o 1.400499m 1.712648h 1.719451f 6.30e-06p 2.62e-06p 8.63e-06p
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 2.281461l 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.950582k 0.0 0.0 0.0
zp 57.86 ri 4.30e-08p 0.000154p 0.047967p 0.0 0.986105p 0.0 2.354948n 0.540768p 0.013257p 1.46e-05p 6.25e-06p 2.79e-09p
sig0.600 cc 4.22e-08p 0.000151p 0.047228p 0.0 1.015038p 0.0 3.407017p 3.930188p 3.943199p 1.43e-05p 6.80e-06p 2.05e-05p
rc 4.30e-08p 0.000154p 0.048121p 2.32e-05o 1.034249o 0.002526o 3.391723m 3.932491l 3.945748j 1.46e-05p 6.92e-06p 2.08e-05p

cs, ba, la, ce, pr half lives 89wal1.

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    mass number    149                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       56 ba g   57 la d   57 la g   58 ce d   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g
half life     0.36 s    0.962s    1.10 s    0.608s    5.2 s     2.3 m     1.72 h    2.212d    1.e16y    93. d     9.3 d
lambda       1.925e+00 7.205e-01 6.301e-01 1.140e+00 1.333e-01 5.023e-03 1.119e-04 3.627e-06 2.198e-24 8.626e-08 8.626e-07
 z - 1 g    100.0000       0.0   99.4250       0.0   98.9400  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0   10.9280  100.0000    0.3990  100.0000       0.0       0.0       0.0       0.0       0.0       0.0
 u233f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.811692l 0.710610d      0.0       0.0
zp 58.59 ri 7.07e-05p      0.0  0.014993p      0.0  0.375124p 0.274766p 0.045643p 0.000173p 5.74e-08p      0.0       0.0
sig0.553 cc 6.64e-05p      0.0  0.014141p      0.0  0.366159p 0.667608p 0.710457p 0.710620p 0.710620p      0.0       0.0
         rc 7.07e-05p 2.42e-07o 0.015064p 4.94e-06o 0.390033p 0.664799l 0.710442h 0.710615f 0.710615d      0.0       0.0
 u233he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.615631k 0.621667m      0.0       0.0
zp 58.87 ri 6.77e-05p      0.0  0.009976p      0.0  0.163355p 0.342527p 0.097583p 0.003436p 1.31e-05p 4.89e-09p      0.0
sig0.642 cc 6.77e-05p      0.0  0.010048p      0.0  0.173386p 0.515764p 0.613400p 0.616838p 0.616851p 4.87e-09p      0.0
         rc 6.77e-05p 4.11e-07o 0.010043p 5.38e-06o 0.173297p 0.515824o 0.613407m 0.616843k 0.616857k 4.89e-09p      0.0
 u236f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.338313j      0.0       0.0
zp 58.06 ri 0.003122p      0.0  0.158723p      0.0  0.953825p 0.218120p 0.006146p 4.00e-06p 2.04e-10p      0.0       0.0
sig0.545 cc 0.003122p      0.0  0.161829p      0.0  1.113937p 1.332056p 1.338202p 1.338206p 1.338206p      0.0       0.0
         rc 0.003122p 1.74e-05o 0.161845p 8.65e-05o 1.114040o 1.332160n 1.338306m 1.338310l 1.338310j      0.0       0.0
 pu239h  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.055207l      0.0       0.0
zp 59.02 ri 7.67e-05p      0.0  0.011469p      0.0  0.216319p 0.578761p 0.234996p 0.013602p 9.97e-05p 8.50e-08p 8.03e-12p
sig0.664 cc 7.67e-05p      0.0  0.011545p      0.0  0.227743p 0.806503p 1.041498p 1.055100p 1.055200p 8.50e-08p 8.03e-12p
         rc 7.67e-05p 5.08e-07o 0.011546p 6.82e-06o 0.227749p 0.806510o 1.041506n 1.055107m 1.055207k 8.50e-08p 8.03e-12p
 pu240f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.353803j 1.335084e      0.0       0.0
zp 58.26 ri 0.001155p      0.0  0.098106p      0.0  0.852081p 0.365198p 0.019612p 3.53e-05p 4.77e-09p      0.0       0.0
sig0.558 cc 0.001147p      0.0  0.098568p      0.0  0.944565p 1.315624p 1.335101p 1.335136p 1.335136p      0.0       0.0
         rc 0.001155p 7.67e-06o 0.099262p 6.59e-05o 0.950357o 1.315555k 1.335167i 1.335202g 1.335202e      0.0       0.0
 pu241f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.458571e      0.0       0.0
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zp 58.08 ri 0.003248p      0.0  0.178872p      0.0  0.998751o 0.271571p 0.007890p 6.98e-06p 4.26e-10p      0.0       0.0
sig0.551 cc 0.003248p      0.0  0.182101p      0.0  1.178930p 1.450495p 1.458384p 1.458391p 1.458391p      0.0       0.0
        rc 0.003248p 2.78e-05o 0.182130p 0.000153o 1.179103n 1.450674k 1.458564i 1.458571g 1.458571e      0.0       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.504099k      0.0  1.573390e      0.0       0.0
zp 57.96 ri 0.007624p      0.0  0.280219p      0.0  1.043928o 0.239360p 0.004977p 4.43e-06p 2.50e-10p      0.0       0.0
sig0.562 cc 0.007798p      0.0  0.294412p      0.0  1.333491p 1.567850p 1.572941p 1.572945p 1.572945p      0.0       0.0
        rc 0.007624p 7.54e-05o 0.287874p 0.000281o 1.329031n 1.568391k 1.573368i 1.573372g 1.573372e      0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.076321k 0.647798j 0.875862j      0.0       0.0
zp 57.96 ri 0.006142p      0.0  0.177559p      0.0  0.477063p 0.149790p 0.004303p 7.17e-06p 1.16e-09p      0.0       0.0
sig0.600 cc 0.006007p      0.0  0.179634p      0.0  0.662214p 0.808708p 0.812917p 0.812927p 0.812927p      0.0       0.0
        rc 0.006142p 4.04e-05o 0.183706p 0.000119o 0.658942o 0.808732m 0.813035k 0.813042i 0.813042i      0.0       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.632980j 1.616917j 1.289786f      0.0       0.0
zp 58.39 ri 0.000595p      0.0  0.079648p      0.0  0.715056p 0.472791p 0.035172p 0.000135p 2.51e-08p      0.0       0.0
sig0.568 cc 0.000560p      0.0  0.075641p      0.0  0.748923p 1.269301p 1.302458p 1.302592p 1.302592p      0.0       0.0
        rc 0.000595p 2.73e-06o 0.080242p 4.33e-05o 0.794491o 1.267281l 1.302453j 1.302589h 1.302589f      0.0       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.592671g 2.856371h 2.866141i      0.0       0.0
zp 58.28 ri 0.004043p      0.0  0.234248p      0.0  1.496403n 0.928699o 0.058023p 0.000286p 1.20e-07p 2.75e-12p      0.0
sig0.600 cc 0.004182p      0.0  0.246452p      0.0  1.791633p 2.658771p 2.718784p 2.719066p 2.719066p 2.65e-12p      0.0
        rc 0.004043p 3.57e-05o 0.238304p 0.000221o 1.732402m 2.661101j 2.719123g 2.719409g 2.719409g 2.75e-12p      0.0

  ba, la, ce, pr, nd, pm half lives from 89wal1.
1

    mass number    150                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide      54 xe g   55 cs g   56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g
half life              0.124s    0.962s    0.608s     4.4 s     6.2 s    stable    2.68 h    stable
lambda           0.0 5.590e+00 7.205e-01 1.140e+00 1.575e-01 1.118e-01       0.0 7.184e-05       0.0
 z - 1 g    100.0000  100.0000  100.0000   89.0720   99.6010  100.0000  100.0000       0.0  100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.468729d      0.0       0.0
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zp 58.99 ri 0.0 4.76e-11p 2.22e-06p 0.001237p 0.123714p 0.225285p 0.118495p 0.001129p 1.92e-06p
sig0.553 cc 0.0 4.76e-11p 2.22e-06p 0.001239p 0.124948p 0.350234p 0.468729p 0.001129p 0.001131p
rc 0.0 4.76e-11p 2.22e-06p 0.001239p 0.124948p 0.350234o 0.468729d 0.001129p 0.001131p
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.434090m 0.0 0.0
zp 59.26 ri 0.0 1.03e-09p 3.76e-06p 0.001346p 0.051124p 0.235125p 0.146497p 0.011871p 0.000109p
sig0.642 cc 0.0 1.03e-09p 3.76e-06p 0.001350p 0.052469p 0.287594p 0.434090p 0.011871p 0.011979p
rc 0.0 1.03e-09p 3.76e-06p 0.001350p 0.052469p 0.287594p 0.434090m 0.011871p 0.011979p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.739883n 0.0 0.0
zp 58.45 ri 0.0 1.63e-08p 0.000159p 0.021540p 0.460224p 0.233042p 0.025007p 4.50e-05p 1.01e-08p
sig0.545 cc 0.0 1.63e-08p 0.000159p 0.021682p 0.481811p 0.714862p 0.739869p 4.50e-05p 4.50e-05p
rc 0.0 1.63e-08p 0.000159p 0.021682p 0.481820p 0.714862o 0.739869n 4.50e-05p 4.50e-05p
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.938642l 0.0 0.0
zp 59.44 ri 0.0 1.43e-09p 4.65e-06p 0.001706p 0.075793p 0.454088p 0.407058p 0.054158p 0.000958p
sig0.664 cc 0.0 1.43e-09p 4.65e-06p 0.001710p 0.077496p 0.531584p 0.938642p 0.054158p 0.055116p
rc 0.0 1.43e-09p 4.65e-06p 0.001710p 0.077496p 0.531584p 0.938642l 0.054158p 0.055116p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.084938f 0.0 0.0
zp 58.66 ri 0.0 6.31e-09p 7.02e-05p 0.016446p 0.490085p 0.489514p 0.088897p 0.000444p 2.46e-07p
sig0.558 cc 0.0 6.31e-09p 7.02e-05p 0.016509p 0.506528p 0.996042p 1.084938p 0.000444p 0.000444p
rc 0.0 6.31e-09p 7.02e-05p 0.016509p 0.506528p 0.996042l 1.084938f 0.000444p 0.000444p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.230267d 0.0 0.0
zp 58.47 ri 0.0 3.38e-08p 0.000254p 0.038021p 0.708289p 0.438745p 0.045139p 0.000112p 2.80e-08p
sig0.551 cc 0.0 3.38e-08p 0.000254p 0.038247p 0.746383p 1.185128p 1.230267p 0.000112p 0.000112p
rc 0.0 3.38e-08p 0.000254p 0.038247p 0.746383o 1.185128j 1.230267d 0.000112p 0.000112p
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.319827e 0.0 0.0
zp 58.36 ri 4.75e-12p 2.00e-07p 0.000690p 0.069850p 0.793419p 0.424923p 0.031301p 7.78e-05p 1.69e-08p
sig0.562 cc 4.75e-12p 2.00e-07p 0.000690p 0.070465p 0.863603p 1.288526p 1.319827p 7.78e-05p 7.78e-05p
rc 4.75e-12p 2.00e-07p 0.000690p 0.070465p 0.863603o 1.288526i 1.319827e 7.78e-05p 7.78e-05p
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.410437j 0.0 0.0
zp 58.37 ri 2.22e-11p 3.45e-07p 0.000370p 0.029597p 0.210027p 0.158348p 0.012255p 7.98e-05p 3.78e-08p

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sig0.600 cc 2.22e-11p 3.45e-07p 0.000370p 0.029927p 0.239834p 0.398182p 0.410437p 7.98e-05p 7.99e-05p
         rc 2.22e-11p 3.45e-07p 0.000370p 0.029927p 0.239834p 0.398182l 0.410437j 7.98e-05p 7.99e-05p
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.992582f      0.0       0.0
zp 58.80 ri       0.0  3.00e-09p 2.49e-05p 0.010818p 0.284600p 0.589641o 0.107545p 0.001386p 1.01e-06p
sig0.568 cc       0.0  3.00e-09p 2.50e-05p 0.010840p 0.295397p 0.885038p 0.992582p 0.001386p 0.001387p
         rc       0.0  3.00e-09p 2.50e-05p 0.010840p 0.295397p 0.885038m 0.992582f 0.001386p 0.001387p
 cf252s  xi      0.0       0.0       0.0       0.0  0.956488k      0.0  0.147379m 0.001955p      0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.442237k      0.0       0.0
zp 58.70 ri 3.31e-12p 1.15e-07p 0.000327p 0.055061p 0.940903p 1.301968n 0.144978m 0.001923p 4.19e-06p
sig0.600 cc 3.14e-12p 1.09e-07p 0.000310p 0.052438p 0.943589p 2.207447p 2.441718p 0.003199p 0.003203p
         rc 3.31e-12p 1.15e-07p 0.000327p 0.055352p 0.996034p 2.298002l 2.442980k 0.001923p 0.001928p

  cs, ba, la half lives from 80eng2; ce, pr half lives from 89wal1.
1

    mass number    151                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide      57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g
half life     0.719s     1.0 s    22.4 s    12.4 m    1.183d     90. y    stable    120. d    17.6 h
lambda      9.640e-01 6.931e-01 3.094e-02 9.316e-04 6.782e-06 2.442e-10       0.0 6.685e-08 1.094e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u233f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  0.343636l 0.308993d 0.258005k      0.0       0.0
zp 59.39 ri 8.49e-05p 0.021289p 0.143151p 0.137617p 0.006119p 2.46e-05p 2.11e-09p      0.0       0.0
sig0.553 cc 7.91e-05p 0.019905p 0.153222p 0.302561p 0.308260p 0.308286p 0.308286p      0.0       0.0
         rc 8.49e-05p 0.021373p 0.164525p 0.302142i 0.308261f 0.308286d 0.308286d      0.0       0.0
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  0.527911m 0.300254k 0.311301m      0.0       0.0
zp 59.65 ri 0.000151p 0.013549p 0.139446p 0.153981p 0.034346p 0.000542p 1.07e-06p 2.38e-10p      0.0
sig0.642 cc 0.000137p 0.012437p 0.139037p 0.310151p 0.341333p 0.342013p 0.342014p 3.47e-10p      0.0
         rc 0.000151p 0.013699p 0.153145p 0.307126o 0.341471m 0.342013k 0.342014j 2.38e-10p      0.0
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.414869l      0.0       0.0
zp 58.83 ri 0.002625p 0.134319p 0.222522p 0.055009p 0.000392p 2.43e-07p 2.94e-12p      0.0       0.0
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sig0.545 cc 0.002625p 0.136943p 0.359466p 0.414474p 0.414866p 0.414867p 0.414867p 0.0 0.0
rc 0.002625p 0.136943p 0.359466p 0.414474o 0.414866n 0.414867m 0.414867k 0.0 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.757831l 0.726174l 0.0 0.0
zp 59.86 ri 0.000138p 0.014759p 0.202025p 0.397359p 0.118295p 0.005009p 2.55e-05p 1.53e-08p 1.02e-12p
sig0.664 cc 0.000138p 0.014836p 0.216023p 0.613555p 0.732596p 0.737585p 0.737611p 1.56e-08p 1.04e-12p
rc 0.000138p 0.014898p 0.216922p 0.614281p 0.732576n 0.737585l 0.737611k 1.53e-08p 1.02e-12p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.808441j 0.849923e 0.916279l 0.0 0.0
zp 59.05 ri 0.002012p 0.151246p 0.485337p 0.208298p 0.003581p 5.81e-06p 2.67e-10p 0.0 0.0
sig0.558 cc 0.002066p 0.157389p 0.642943p 0.846797p 0.850475p 0.850480p 0.850480p 0.0 0.0
rc 0.002012p 0.153258p 0.638595o 0.846894i 0.850474g 0.850480e 0.850480e 0.0 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.911266f 0.0 0.0
zp 58.87 ri 0.005301p 0.257123p 0.515733p 0.131826p 0.001282p 9.55e-07p 1.83e-11p 0.0 0.0
sig0.551 cc 0.005301p 0.262424p 0.778158p 0.909984p 0.911265p 0.911266p 0.911266p 0.0 0.0
rc 0.005301p 0.262424p 0.778158n 0.909984l 0.911265j 0.911266h 0.911266f 0.0 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.992032f 0.981111g 0.0 0.0
zp 58.76 ri 0.011510p 0.336043p 0.538683o 0.100822p 0.000902p 5.83e-07p 1.28e-11p 0.0 0.0
sig0.562 cc 0.011489p 0.346921p 0.886420p 0.987059p 0.987959p 0.987960p 0.987960p 0.0 0.0
rc 0.011510p 0.347553p 0.886236m 0.987057j 0.987959h 0.987960f 0.987960f 0.0 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.235037j 0.245270i 0.204278j 0.0 0.0
zp 58.76 ri 0.004115p 0.073261p 0.129584p 0.025121p 0.000439p 5.98e-07p 5.11e-11p 0.0 0.0
sig0.600 cc 0.004092p 0.076960p 0.207097p 0.232083p 0.232520p 0.232520p 0.232520p 0.0 0.0
rc 0.004115p 0.077375p 0.206959n 0.232080l 0.232520j 0.232520i 0.232520h 0.0 0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.895722i 0.707827f 1.083611l 0.0 0.0
zp 59.20 ri 0.001040p 0.081750p 0.447605p 0.188283p 0.008518p 1.66e-05p 2.44e-09p 0.0 0.0
sig0.568 cc 0.000987p 0.078589p 0.509017p 0.719109p 0.727195p 0.727214p 0.727214p 0.0 0.0
rc 0.001040p 0.082791p 0.530396o 0.718679j 0.727197h 0.727214f 0.727214f 0.0 0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 1.712487j 1.899828h 0.0 2.118431i 0.0 0.0
zp 59.12 ri 0.006137p 0.291509p 1.069348p 0.560365p 0.021461p 8.56e-05p 1.89e-08p 0.0 0.0
sig0.600 cc 0.006353p 0.308134p 1.403376p 1.928593p 1.948830p 1.948906p 1.948906p 0.0 0.0

rc 0.006137p 0.297646p 1.366994n 1.927359h 1.948821g 1.948906g 1.948906g 0.0 0.0

la half life from 80eng2; ce, pr, nd, pm, sm half lives 89wal1.
1

mass number 152 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 56 ba g 57 la g 58 ce g 59 pr g 60 nd g 61 pm m 61 pm g 62 sm g 63 eu m 63 eu g 64 gd g
half life 0.420s 0.285s 3.1 s 3.2 s 11.4 m 7.5 m 4.1 m stable 9.3 h 13. y 14.04l
lambda 1.650e+00 2.432e+00 2.236e-01 2.166e-01 1.013e-03 1.540e-03 2.818e-03 0.0 2.070e-05 1.691e-09 2.005e-22
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 0.0 100.0000 100.0000 -23.0000 -72.0000 28.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 77.0000
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.192187e 0.0 0.0 0.0
zp 59.79 ri 3.07e-10p 2.10e-06p 0.002288p 0.035864p 0.141518n 0.006140p 0.006140p 0.000235p 2.98e-08p 2.98e-08p 2.32e-12p
sig0.553 cc 3.07e-10p 2.10e-06p 0.002290p 0.038154p 0.179671p 0.006140p 0.185811p 0.192187p 2.98e-08p 2.98e-08p 3.13e-08p
rc 3.07e-10p 2.10e-06p 0.002290p 0.038154p 0.179671k 0.006140p 0.185811i 0.192187e 2.98e-08p 2.98e-08p 3.13e-08p
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.216819m 0.0 0.0 0.0
zp 60.04 ri 3.71e-09p 8.12e-06p 0.001759p 0.041445p 0.122081p 0.024511p 0.024511p 0.002489p 6.94e-06p 6.94e-06p 7.72e-09p
sig0.642 cc 3.71e-09p 8.12e-06p 0.001767p 0.043212p 0.165293p 0.024511p 0.189805p 0.216815p 6.94e-06p 6.94e-06p 7.30e-06p
rc 3.71e-09p 8.12e-06p 0.001767p 0.043212p 0.165293o 0.024511p 0.189804n 0.216812l 6.94e-06p 6.94e-06p 7.30e-06p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.315197m 0.0 0.0 0.0
zp 59.21 ri 1.39e-07p 0.000208p 0.040690p 0.148855p 0.123235p 0.001099p 0.001099p 5.64e-06p 9.57e-11p 9.57e-11p 0.0
sig0.545 cc 1.39e-07p 0.000208p 0.040897p 0.189749p 0.312988p 0.001099p 0.314087p 0.315192p 9.57e-11p 9.57e-11p 1.01e-10p
rc 1.39e-07p 0.000208p 0.040898p 0.189753p 0.312988o 0.001099p 0.314087n 0.315192m 9.57e-11p 9.57e-11p 1.01e-10p
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.540002l 0.0 0.0 0.0
zp 60.27 ri 3.60e-09p 8.03e-06p 0.002046p 0.064089p 0.276475p 0.090010p 0.090010p 0.017147p 0.000106p 0.000106p 3.12e-07p
sig0.664 cc 3.60e-09p 8.03e-06p 0.002054p 0.066143p 0.342618p 0.090010p 0.432628p 0.539939p 0.000106p 0.000106p 0.000112p
rc 3.60e-09p 8.03e-06p 0.002054p 0.066143p 0.342618p 0.090010p 0.432628o 0.539887l 0.000106p 0.000106p 0.000112p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.651102f 0.0 0.0 0.0
zp 59.44 ri 5.17e-08p 0.000130p 0.035579p 0.260271p 0.339768o 0.007632p 0.007632p 8.97e-05p 5.62e-09p 5.62e-09p 0.0
sig0.558 cc 5.17e-08p 0.000130p 0.035708p 0.295980p 0.635748p 0.007632p 0.643380p 0.651102p 5.62e-09p 5.62e-09p 5.90e-09p
rc 5.17e-08p 0.000130p 0.035708p 0.295980p 0.635748j 0.007632p 0.643380h 0.651102f 5.62e-09p 5.62e-09p 5.90e-09p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.731908e 0.0 0.0 0.0
zp 59.26 ri 2.46e-07p 0.000423p 0.075770p 0.356007p 0.292249p 0.003718p 0.003718p 2.19e-05p 6.22e-10p 6.22e-10p 0.0
sig0.551 cc 2.46e-07p 0.000424p 0.076194p 0.432201p 0.724450p 0.003718p 0.728168p 0.731908p 6.22e-10p 6.22e-10p 6.53e-10p
rc 2.46e-07p 0.000424p 0.076194p 0.432201p 0.724450i 0.003718p 0.728168g 0.731908e 6.22e-10p 6.22e-10p 6.53e-10p
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.790400f 0.0 0.0 0.0
zp 59.15 ri 1.12e-06p 0.001167p 0.113805p 0.428835p 0.240876p 0.002851p 0.002851p 1.34e-05p 4.35e-10p 4.35e-10p 0.0
sig0.562 cc 1.12e-06p 0.001168p 0.114972p 0.543808p 0.784684p 0.002851p 0.787535p 0.790400p 4.35e-10p 4.35e-10p 4.56e-10p
rc 1.12e-06p 0.001168p 0.114972p 0.543808p 0.784684j 0.002851p 0.787535h 0.790400f 4.35e-10p 4.35e-10p 4.56e-10p
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.129381j 0.0 0.0 0.0
zp 59.15 ri 6.34e-07p 0.000380p 0.017534p 0.075112p 0.034761p 0.000794p 0.000794p 5.87e-06p 7.72e-10p 7.72e-10p 0.0
sig0.600 cc 6.34e-07p 0.000380p 0.017915p 0.093026p 0.127788p 0.000794p 0.128582p 0.129381p 7.72e-10p 7.72e-10p 8.11e-10p
rc 6.34e-07p 0.000380p 0.017915p 0.093026p 0.127788n 0.000794p 0.128582l 0.129381j 7.72e-10p 7.72e-10p 8.11e-10p
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.459940f 0.0 0.0 0.0
zp 59.59 ri 1.18e-08p 5.26e-05p 0.012456p 0.187763p 0.234391p 0.012549p 0.012549p 0.000179p 3.50e-08p 3.50e-08p 1.36e-12p
sig0.568 cc 1.18e-08p 5.26e-05p 0.012509p 0.200271p 0.434662p 0.012549p 0.447212p 0.459940p 3.50e-08p 3.50e-08p 3.67e-08p
rc 1.18e-08p 5.26e-05p 0.012509p 0.200271p 0.434662k 0.012549p 0.447212i 0.459940f 3.50e-08p 3.50e-08p 3.67e-08p
cf252s xi 0.0 0.0 0.0 0.0 0.589517l 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.722044k 0.0 0.0 0.0
zp 59.53 ri 3.77e-07p 0.000559p 0.074460p 0.696174p 0.828029p 0.060577p 0.060577p 0.001321p 4.35e-07p 4.35e-07p 4.77e-11p
sig0.600 cc 3.85e-07p 0.000572p 0.076660p 0.788057p 1.634192p 0.043283p 1.677476p 1.721699p 3.09e-07p 3.09e-07p 3.25e-07p
rc 3.77e-07p 0.000559p 0.075020p 0.771194p 1.599223o 0.060577p 1.659800m 1.721699k 4.35e-07p 4.35e-07p 4.56e-07o

ba, la half lives from 80eng2; ce, pr, nd, pm half lives 89wal1.

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    mass number    153                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g
half life     0.326s    1.47 s     4.3 s    28.9 s     5.4 m    1.929d    stable    241.6d    2.34 d
lambda       2.126e+00 4.715e-01 1.612e-01 2.398e-02 2.139e-03 4.159e-06       0.0 3.321e-08 3.428e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u233f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0  0.123470l 0.102459j      0.0       0.0
zp 60.19 ri 4.50e-08p 0.000130p 0.008374p 0.071460p 0.022431p 0.001056p 1.02e-06p 1.10e-10p       0.0
sig0.553 cc 4.50e-08p 0.000130p 0.008505p 0.079964p 0.102396p 0.103452p 0.103453p 1.28e-10p       0.0
         rc 4.50e-08p 0.000130p 0.008505p 0.079965p 0.102396m 0.103452k 0.103453i 1.10e-10p       0.0
 u233he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0  0.141169k 0.144604k      0.0       0.0
zp 60.43 ri 3.52e-07p 0.000186p 0.010283p 0.067009p 0.058527p 0.006771p 9.18e-05p 1.27e-07p 1.68e-11p
sig0.642 cc 3.52e-07p 0.000187p 0.010470p 0.077480p 0.136007p 0.142778p 0.142869p 1.25e-07p 1.66e-11p
         rc 3.52e-07p 0.000187p 0.010470p 0.077479p 0.136006m 0.142777k 0.142869j 1.27e-07p 1.68e-11p
 u236f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.252871n      0.0       0.0
zp 59.59 ri 1.29e-05p 0.006596p 0.085156p 0.151249p 0.009785p 6.66e-05p 9.59e-09p       0.0       0.0
sig0.545 cc 1.29e-05p 0.006609p 0.091764p 0.243015p 0.252801p 0.252867p 0.252867p       0.0       0.0
         rc 1.29e-05p 0.006609p 0.091766p 0.243015p 0.252801o 0.252867o 0.252867n       0.0       0.0
 pu239h  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0  0.469759l 0.449902l      0.0       0.0
zp 60.68 ri 3.81e-07p 0.000235p 0.017164p 0.164439p 0.225422p 0.049065p 0.001388p 4.93e-06p 2.00e-09p
sig0.664 cc 3.76e-07p 0.000232p 0.017172p 0.179467p 0.407881p 0.456306p 0.457717p 5.00e-06p 2.02e-09p
         rc 3.81e-07p 0.000235p 0.017399p 0.181838p 0.407259n 0.456325l 0.457717k 4.93e-06p 2.00e-09p
 pu240f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0  0.526895j 0.498934j      0.0       0.0
zp 59.84 ri 5.91e-06p 0.004537p 0.116437p 0.340020p 0.052750p 0.000847p 4.16e-07p 1.54e-11p       0.0
sig0.558 cc 5.83e-06p 0.004480p 0.119294p 0.461748p 0.513762p 0.514597p 0.514598p 1.56e-11p       0.0
         rc 5.91e-06p 0.004543p 0.120980p 0.461000n 0.513750l 0.514597j 0.514598i 1.54e-11p       0.0
 pu241f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.550597h      0.0       0.0
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zp 59.66 ri 2.08e-05p 0.010615p 0.175233p 0.334263p 0.030211p 0.000255p 6.06e-08p       0.0       0.0
sig0.551 cc 2.08e-05p 0.010635p 0.185868p 0.520131p 0.550342p 0.550597p 0.550597p       0.0       0.0
         rc 2.08e-05p 0.010635p 0.185868p 0.520131n 0.550342l 0.550597j 0.550597h       0.0       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.623322g      0.0       0.0
zp 59.54 ri 8.08e-05p 0.021461p 0.251471p 0.325287p 0.024859p 0.000163p 3.92e-08p       0.0       0.0
sig0.562 cc 8.08e-05p 0.021542p 0.273013p 0.598300p 0.623159p 0.623322p 0.623322p       0.0       0.0
         rc 8.08e-05p 0.021542p 0.273013p 0.598300m 0.623159k 0.623322i 0.623322g       0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.091675j 0.088474j      0.0       0.0
zp 59.54 ri 2.97e-05p 0.003657p 0.038595p 0.042362p 0.004891p 4.92e-05p 3.59e-08p 1.82e-12p       0.0
sig0.600 cc 2.97e-05p 0.003687p 0.042282p 0.084644p 0.089535p 0.089584p 0.089584p 1.86e-12p       0.0
         rc 2.97e-05p 0.003687p 0.042282p 0.084644n 0.089535l 0.089584j 0.089584i 1.83e-12p       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  0.427710i 0.376196l 0.318225i      0.0       0.0
zp 59.99 ri 2.24e-06p 0.001691p 0.074438p 0.215885p 0.071675p 0.001463p 1.69e-06p 1.09e-10p       0.0
sig0.568 cc 2.08e-06p 0.001567p 0.070462p 0.297372p 0.363710p 0.365155p 0.365157p 1.19e-10p       0.0
         rc 2.24e-06p 0.001694p 0.076132p 0.292017o 0.363692j 0.365156i 0.365157h 1.09e-10p       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  1.261058g 1.400522i      0.0       0.0
zp 59.95 ri 2.59e-05p 0.010181p 0.260544p 0.798868o 0.216738p 0.006558p 1.38e-05p 2.35e-09p       0.0
sig0.600 cc 2.62e-05p 0.010343p 0.274367p 1.072324p 1.286269p 1.292915p 1.292928p 2.26e-09p       0.0
         rc 2.59e-05p 0.010207p 0.270750p 1.069619n 1.286356i 1.292914g 1.292928g 2.35e-09p       0.0

  la, ce half lives from 80eng2; pr, nd, pm, sm half lives 89wal1; gd half life 90bur1.

1

    mass number    154                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm m   61 pm g   62 sm g   63 eu g   64 gd g
half life              0.149s    2.02 s     2.3 s    25.9 s     2.7 m     1.7 m    stable     8.8 y    stable
lambda            0.0 4.652e+00 3.431e-01 3.014e-01 2.676e-02 4.279e-03 6.796e-03       0.0 2.498e-09       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000       0.0  100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.043618g 0.0 0.0
zp 60.58 ri 0.0 3.82e-10p 4.86e-06p 0.000773p 0.024320p 0.007855p 0.007855p 0.002809p 8.00e-06p 3.79e-09p
sig0.553 cc 0.0 3.82e-10p 4.86e-06p 0.000778p 0.025098p 0.007855p 0.032953p 0.043618p 8.00e-06p 8.01e-06p
rc 0.0 3.82e-10p 4.86e-06p 0.000778p 0.025098p 0.007855p 0.032953n 0.043618g 8.00e-06p 8.01e-06p
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.097215m 0.0 0.0
zp 60.82 ri 0.0 1.11e-08p 1.45e-05p 0.001912p 0.028156p 0.026689p 0.026689p 0.013756p 0.000435p 1.47e-06p
sig0.642 cc 0.0 1.11e-08p 1.45e-05p 0.001927p 0.030082p 0.026689p 0.056771p 0.097215p 0.000435p 0.000436p
rc 0.0 1.11e-08p 1.45e-05p 0.001927p 0.030082p 0.026689p 0.056771p 0.097215l 0.000435p 0.000436p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.131118n 0.0 0.0
zp 59.97 ri 1.46e-11p 2.56e-07p 0.000536p 0.016894p 0.098842p 0.007230p 0.007230p 0.000385p 1.52e-07p 7.14e-12p
sig0.545 cc 1.46e-11p 2.56e-07p 0.000536p 0.017430p 0.116272p 0.007230p 0.123501p 0.131116p 1.52e-07p 1.52e-07p
rc 1.46e-11p 2.56e-07p 0.000536p 0.017430p 0.116272p 0.007230p 0.123501o 0.131116n 1.52e-07p 1.52e-07p
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.321363l 0.0 0.0
zp 61.09 ri 0.0 1.03e-08p 1.54e-05p 0.002680p 0.058217p 0.088975p 0.088975p 0.082499p 0.005494p 4.67e-05p
sig0.664 cc 0.0 1.03e-08p 1.54e-05p 0.002695p 0.060913p 0.088975p 0.149888p 0.321363p 0.005494p 0.005541p
rc 0.0 1.03e-08p 1.54e-05p 0.002695p 0.060913p 0.088975p 0.149888p 0.321363l 0.005494p 0.005541p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.309572h 0.0 0.0
zp 60.22 ri 4.39e-12p 1.24e-07p 0.000357p 0.022880p 0.211292p 0.035552p 0.035552p 0.003938p 5.33e-06p 7.61e-10p
sig0.558 cc 4.39e-12p 1.24e-07p 0.000357p 0.023236p 0.234529p 0.035552p 0.270081p 0.309572p 5.33e-06p 5.34e-06p
rc 4.39e-12p 1.24e-07p 0.000357p 0.023236p 0.234529o 0.035552p 0.270081m 0.309572h 5.33e-06p 5.34e-06p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.381331f 0.0 0.0
zp 60.05 ri 2.48e-11p 5.26e-07p 0.001054p 0.045123p 0.274647n 0.029332p 0.029332p 0.001842p 1.26e-06p 8.23e-11p
sig0.551 cc 2.48e-11p 5.26e-07p 0.001055p 0.046178p 0.320825p 0.029332p 0.350157p 0.381331p 1.26e-06p 1.26e-06p
rc 2.48e-11p 5.26e-07p 0.001055p 0.046178p 0.320825m 0.029332p 0.350157k 0.381331f 1.26e-06p 1.26e-06p
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.435688f 0.0 0.0
zp 59.94 ri 2.21e-10p 2.54e-06p 0.002484p 0.076501p 0.298802o 0.028293p 0.028293p 0.001312p 9.37e-07p 5.61e-11p
sig0.562 cc 2.21e-10p 2.54e-06p 0.002487p 0.078988p 0.377790p 0.028293p 0.406083p 0.435688p 9.37e-07p 9.37e-07p
rc 2.21e-10p 2.54e-06p 0.002487p 0.078988p 0.377790m 0.028293p 0.406083k 0.435688f 9.37e-07p 9.37e-07p
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.055171j 0.0 0.0

zp 59.92 ri 3.20e-10p 1.49e-06p 0.000488p 0.012795p 0.032636p 0.004508p 0.004508p 0.000235p 4.76e-07p 6.76e-11p
sig0.600 cc 3.20e-10p 1.49e-06p 0.000489p 0.013284p 0.045920p 0.004508p 0.050428p 0.055171p 4.76e-07p 4.76e-07p
rc 3.20e-10p 1.49e-06p 0.000489p 0.013284p 0.045920o 0.004508p 0.050428m 0.055171j 4.76e-07p 4.76e-07p
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.187225f 0.0 0.0
zp 60.37 ri 0.0 3.96e-08p 9.13e-05p 0.011562p 0.098625p 0.036280p 0.036280p 0.004386p 1.67e-05p 3.39e-09p
sig0.568 cc 0.0 3.96e-08p 9.14e-05p 0.011654p 0.110279p 0.036280p 0.146559p 0.187225p 1.67e-05p 1.67e-05p
rc 0.0 3.96e-08p 9.14e-05p 0.011654p 0.110279p 0.036280p 0.146559n 0.187225f 1.67e-05p 1.67e-05p
cf252s xi 0.0 0.0 0.0 0.0 0.393011l 0.0 0.0 0.039301p 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.067025k 0.0 0.0
zp 60.37 ri 4.37e-11p 6.18e-07p 0.000733p 0.053263p 0.418773p 0.254539p 0.297824p 0.041877p 0.000258p 1.36e-07p
sig0.600 cc 5.95e-11p 8.42e-07p 0.000999p 0.073525p 0.643750p 0.194943p 0.838693p 1.067070p 0.000198p 0.000198p
rc 4.37e-11p 6.18e-07p 0.000734p 0.053996p 0.472769p 0.254539p 0.770593o 1.067010k 0.000258p 0.000258p

la, ce half lives 80eng2; pr, nd, pm half lives 89wal1; eu half life 90bur1.

1

mass number 155 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 58 ce g 59 pr g 60 nd g 61 pm g 62 sm g 63 eu g 64 gd g 65 tb g 66 dy g
half life 0.528s 1.12 s 8.9 s 48. s 22.2 m 4.71 y stable 5.3 d 9.6 h
lambda 1.313e+00 6.189e-01 7.788e-02 1.444e-02 5.204e-04 4.667e-09 0.0 1.514e-06 2.006e-05
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
u233f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.022742p 0.0 0.0
zp 60.98 ri 1.02e-07p 7.15e-05p 0.005379p 0.012338p 0.004894p 5.85e-05p 7.47e-08p 1.91e-12p 0.0
sig0.553 cc 1.02e-07p 7.16e-05p 0.005451p 0.017789p 0.022684p 0.022742p 0.022742p 1.91e-12p 0.0
rc 1.02e-07p 7.16e-05p 0.005451p 0.017789p 0.022684o 0.022742o 0.022742o 1.91e-12p 0.0
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.065374m 0.0 0.0
zp 61.22 ri 7.28e-07p 0.000238p 0.008285p 0.035124p 0.020209p 0.001505p 1.26e-05p 1.07e-08p 0.0
sig0.642 cc 7.28e-07p 0.000239p 0.008524p 0.043648p 0.063856p 0.065361p 0.065374p 1.07e-08p 0.0
rc 7.28e-07p 0.000239p 0.008524p 0.043648p 0.063856o 0.065361n 0.065374l 1.07e-08p 0.0
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

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        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.093656n      0.0       0.0
zp 60.35 ri 3.66e-05p 0.004479p 0.058814p 0.028459p 0.001863p 3.03e-06p 3.98e-10p      0.0       0.0
sig0.545 cc 3.66e-05p 0.004516p 0.063330p 0.091789p 0.093652p 0.093655p 0.093655p      0.0       0.0
        rc 3.66e-05p 0.004516p 0.063330p 0.091789p 0.093652o 0.093655o 0.093655n      0.0       0.0
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.239820l 0.229268l      0.0       0.0
zp 61.50 ri 7.14e-07p 0.000298p 0.015004p 0.101022p 0.101366p 0.015162p 0.000296p 7.14e-07p 1.95e-10p
sig0.664 cc 7.14e-07p 0.000299p 0.015303p 0.116321p 0.217684p 0.232846p 0.233150p 7.33e-07p 2.00e-10p
        rc 7.14e-07p 0.000299p 0.015304p 0.116325p 0.217691n 0.232853l 0.233150k 7.14e-07p 1.95e-10p
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.224748i 0.289330l      0.0       0.0
zp 60.61 ri 1.96e-05p 0.004663p 0.102884p 0.113417p 0.014456p 7.35e-05p 3.40e-08p      0.0       0.0
sig0.558 cc 2.02e-05p 0.004813p 0.110565p 0.220579p 0.235438p 0.235513p 0.235513p      0.0       0.0
        rc 1.96e-05p 0.004683p 0.107567p 0.220984m 0.235440k 0.235513i 0.235513i      0.0       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.335845l      0.0       0.0
zp 60.44 ri 7.96e-05p 0.012807p 0.186514p 0.126271p 0.010147p 2.72e-05p 5.22e-09p      0.0       0.0
sig0.551 cc 7.96e-05p 0.012886p 0.199400p 0.325671p 0.335818p 0.335845p 0.335845p      0.0       0.0
        rc 7.96e-05p 0.012886p 0.199400p 0.325671o 0.335818o 0.335845n 0.335845l      0.0       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.328165n      0.0       0.0
zp 60.33 ri 0.000197p 0.020692p 0.192547p 0.108201p 0.006510p 1.67e-05p 2.93e-09p      0.0       0.0
sig0.562 cc 0.000197p 0.020890p 0.213437p 0.321638p 0.328148p 0.328165p 0.328165p      0.0       0.0
        rc 0.000197p 0.020890p 0.213437p 0.321638o 0.328148o 0.328165o 0.328165n      0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.032450k 0.031280j      0.0       0.0
zp 60.30 ri 4.21e-05p 0.002825p 0.017052p 0.011012p 0.000721p 3.93e-06p 1.51e-09p      0.0       0.0
sig0.600 cc 4.21e-05p 0.002867p 0.019919p 0.030931p 0.031652p 0.031656p 0.031656p      0.0       0.0
        rc 4.21e-05p 0.002867p 0.019919p 0.030931o 0.031652m 0.031656k 0.031656j      0.0       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.141933k      0.0       0.0
zp 60.76 ri 4.80e-06p 0.001855p 0.043850p 0.082463p 0.013602p 0.000157p 1.01e-07p 3.28e-12p      0.0
sig0.568 cc 4.80e-06p 0.001860p 0.045710p 0.128173p 0.141776p 0.141932p 0.141933p 3.28e-12p      0.0
        rc 4.80e-06p 0.001860p 0.045710p 0.128173p 0.141776n 0.141932m 0.141933k 3.28e-12p      0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.760561i 0.832823i 0.753855j      0.0       0.0
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zp 60.79 ri 5.40e-05p 0.011470p 0.243238p 0.440461p 0.095940p 0.001725p 2.68e-06p 2.43e-10p       0.0
sig0.600 cc 5.53e-05p 0.011814p 0.261164p 0.692854p 0.791205p 0.792887p 0.792890p 2.44e-10p       0.0
        rc 5.40e-05p 0.011524p 0.254762p 0.695223m 0.791162i 0.792887h 0.792890h 2.43e-10p       0.0

  ce, pr half lives from 80eng2; nd, pm, sm, eu half lives 89wal1.
1

    mass number    156                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb m   65 tb g   66 dy g
half life     0.596s    0.379s     5.5 s    26.7 s     9.4 h    15.2 d    stable     5.0 h     5.1 d    2.e14y
lambda       1.163e+00 1.829e+00 1.260e-01 2.596e-02 2.048e-05 5.278e-07       0.0 3.851e-05 1.573e-06 1.099e-22
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  -50.0000 -100.0000       0.0
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   50.0000       0.0
 u233f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.017565k      0.0       0.0       0.0       0.0
zp 61.37 ri 2.45e-09p 4.46e-06p 0.001360p 0.006707p 0.009235p 0.000258p 1.41e-06p 8.60e-12p 8.69e-11p       0.0
sig0.553 cc 2.45e-09p 4.46e-06p 0.001365p 0.008072p 0.017307p 0.017565p 0.017567p 8.60e-12p 9.12e-11p       0.0
        rc 2.45e-09p 4.46e-06p 0.001365p 0.008072p 0.017307m 0.017565k 0.017567k 8.60e-12p 9.12e-11p       0.0
 u233he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.043082j 0.043989j      0.0       0.0       0.0
zp 61.62 ri 2.51e-08p 2.06e-05p 0.001735p 0.016773p 0.021359p 0.003660p 7.54e-05p 9.67e-09p 1.51e-07p 3.35e-11p
sig0.642 cc 2.51e-08p 2.07e-05p 0.001756p 0.018529p 0.039888p 0.043548p 0.043623p 9.57e-09p 1.55e-07p 3.31e-11p
        rc 2.51e-08p 2.07e-05p 0.001756p 0.018529p 0.039888m 0.043548j 0.043623i 9.67e-09p 1.56e-07p 3.35e-11p
 u236f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.033540i 0.040540n      0.0       0.0       0.0
zp 60.73 ri 9.59e-07p 0.000310p 0.014659p 0.015202p 0.003541p 1.51e-05p 9.25e-09p       0.0       0.0       0.0
sig0.545 cc 9.59e-07p 0.000311p 0.014970p 0.030173p 0.033714p 0.033729p 0.033729p       0.0       0.0       0.0
        rc 9.59e-07p 0.000311p 0.014970p 0.030173n 0.033714k 0.033729i 0.033729i       0.0       0.0       0.0
 pu239h  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.213938i 0.204745l      0.0       0.0       0.0
zp 61.91 ri 2.96e-08p 3.00e-05p 0.003562p 0.053874p 0.116210p 0.038544p 0.001742p 6.07e-07p 9.50e-06p 6.78e-09p
sig0.664 cc 2.95e-08p 3.00e-05p 0.003578p 0.057241p 0.173788p 0.212181p 0.213972p 6.20e-07p 1.00e-05p 6.93e-09p
        rc 2.96e-08p 3.01e-05p 0.003592p 0.057466p 0.173676n 0.212220i 0.213972i 6.07e-07p 9.81e-06p 6.78e-09p
 pu240f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.165376j 0.202944l      0.0       0.0       0.0
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zp 61.00 ri 7.92e-07p 0.000517p 0.039696p 0.092741p 0.040447p 0.000537p 9.41e-07p 2.71e-12p 2.74e-11p       0.0
sig0.558 cc 7.92e-07p 0.000517p 0.040213p 0.132954p 0.173401p 0.173938p 0.173939p 2.43e-12p 2.57e-11p       0.0
         rc 7.92e-07p 0.000517p 0.040213p 0.132954p 0.173401l 0.173938j 0.173939i 2.71e-12p 2.87e-11p       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.244251l      0.0       0.0       0.0
zp 60.83 ri 3.58e-06p 0.001610p 0.082063p 0.126119p 0.034205p 0.000251p 1.94e-07p       0.0  2.53e-12p       0.0
sig0.551 cc 3.58e-06p 0.001613p 0.083676p 0.209795p 0.244000p 0.244251p 0.244251p       0.0  2.66e-12p       0.0
         rc 3.58e-06p 0.001613p 0.083676p 0.209795p 0.244000o 0.244251n 0.244251l       0.0  2.66e-12p       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.237008n      0.0       0.0       0.0
zp 60.71 ri 1.16e-05p 0.003256p 0.093694p 0.118035p 0.021862p 0.000150p 9.43e-08p       0.0  1.44e-12p       0.0
sig0.562 cc 1.16e-05p 0.003267p 0.096961p 0.214996p 0.236858p 0.237008p 0.237008p       0.0  1.51e-12p       0.0
         rc 1.16e-05p 0.003267p 0.096961p 0.214996p 0.236858o 0.237008o 0.237008n       0.0  1.51e-12p       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.018558k 0.018196j      0.0       0.0       0.0
zp 60.68 ri 2.51e-06p 0.000444p 0.006525p 0.009760p 0.001559p 2.23e-05p 2.38e-08p       0.0  1.66e-12p       0.0
sig0.600 cc 2.51e-06p 0.000446p 0.006971p 0.016731p 0.018290p 0.018313p 0.018313p       0.0  1.74e-12p       0.0
         rc 2.51e-06p 0.000446p 0.006971p 0.016731o 0.018290m 0.018313k 0.018313j       0.0  1.72e-12p       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.101795j 0.096375l      0.0       0.0       0.0
zp 61.14 ri 1.64e-07p 0.000192p 0.012771p 0.060966p 0.025724p 0.000842p 1.61e-06p 1.47e-11p 1.49e-10p       0.0
sig0.568 cc 1.64e-07p 0.000192p 0.012963p 0.073928p 0.099652p 0.100495p 0.100496p 1.52e-11p 1.61e-10p       0.0
         rc 1.64e-07p 0.000192p 0.012963p 0.073928p 0.099652l 0.100495j 0.100496i 1.47e-11p 1.56e-10p       0.0
 cf252s  xi      0.0       0.0       0.0       0.0  0.099563l      0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  0.654928i 0.669339h 0.706650i      0.0       0.0       0.0
zp 61.20 ri 2.93e-06p 0.001817p 0.105263p 0.458291m 0.101358l 0.009922p 4.76e-05p 1.30e-09p 1.17e-08p       0.0
sig0.600 cc 2.36e-06p 0.001465p 0.086230p 0.455279p 0.666766p 0.676654p 0.676700p 1.26e-09p 1.20e-08p       0.0
         rc 2.93e-06p 0.001819p 0.107082p 0.565373k 0.666731i 0.676653g 0.676700g 1.30e-09p 1.24e-08p       0.0

  ce, pr half lives from 80eng2; nd, pm, sm, eu half lives 89wal1.
1

    mass number    157                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g
half life     0.214s    0.380s    2.48 s    10.9 s     8.0 m    15.13h    stable    160. y     8.1 h
lambda      3.239e+00 1.824e+00 2.795e-01 6.359e-02 1.444e-03 1.273e-05       0.0 1.374e-10 2.377e-05
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 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.010113l      0.0       0.0       0.0
zp 61.75 ri 2.35e-11p 1.83e-07p 0.000136p 0.002470p 0.006818p 0.000688p 9.06e-06p 2.62e-09p       0.0
sig0.553 cc 2.35e-11p 1.83e-07p 0.000137p 0.002607p 0.009425p 0.010113p 0.010122p 2.62e-09p       0.0
         rc 2.35e-11p 1.83e-07p 0.000137p 0.002607p 0.009425n 0.010113l 0.010122l 2.62e-09p       0.0
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.027361k 0.028166m      0.0       0.0
zp 62.02 ri 5.67e-10p 1.18e-06p 0.000245p 0.005530p 0.015647p 0.006036p 0.000299p 1.59e-06p 8.46e-10p
sig0.642 cc 5.67e-10p 1.18e-06p 0.000246p 0.005778p 0.021428p 0.027466p 0.027761p 1.57e-06p 8.31e-10p
         rc 5.67e-10p 1.18e-06p 0.000246p 0.005776p 0.021424o 0.027460k 0.027761k 1.60e-06p 8.46e-10p
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.023414n      0.0       0.0
zp 61.10 ri 2.61e-08p 3.37e-05p 0.003841p 0.012918p 0.006516p 0.000104p 1.53e-07p 4.47e-12p       0.0
sig0.545 cc 2.61e-08p 3.38e-05p 0.003875p 0.016794p 0.023310p 0.023413p 0.023414p 4.47e-12p       0.0
         rc 2.61e-08p 3.38e-05p 0.003875p 0.016794p 0.023310o 0.023413o 0.023414n 4.47e-12p       0.0
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.113962l 0.110317l      0.0       0.0
zp 62.31 ri 5.31e-10p 1.29e-06p 0.000359p 0.012197p 0.056829p 0.039896p 0.003963p 5.35e-05p 8.56e-08p
sig0.664 cc 5.30e-10p 1.29e-06p 0.000360p 0.012540p 0.069293p 0.109137p 0.113299p 5.55e-05p 8.87e-08p
         rc 5.31e-10p 1.29e-06p 0.000360p 0.012557p 0.069386p 0.109282l 0.113301k 5.36e-05p 8.56e-08p
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.127976k 0.134658l      0.0       0.0
zp 61.39 ri 1.57e-08p 3.98e-05p 0.007997p 0.060381p 0.059113p 0.002734p 1.21e-05p 1.53e-09p       0.0
sig0.558 cc 1.57e-08p 3.98e-05p 0.008037p 0.068418p 0.127530p 0.130264p 0.130276p 1.49e-09p       0.0
         rc 1.57e-08p 3.98e-05p 0.008037p 0.068417p 0.127530m 0.130264k 0.130276j 1.53e-09p       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.162834l      0.0       0.0
zp 61.21 ri 8.05e-08p 0.000140p 0.018275p 0.088621p 0.054380p 0.001415p 3.03e-06p 1.73e-10p       0.0
sig0.551 cc 8.05e-08p 0.000140p 0.018414p 0.107036p 0.161416p 0.162831p 0.162834p 1.73e-10p       0.0
         rc 8.05e-08p 0.000140p 0.018414p 0.107036p 0.161416o 0.162831n 0.162834l 1.73e-10p       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.164082n      0.0       0.0
zp 61.09 ri 3.65e-07p 0.000359p 0.026162p 0.095631p 0.040999p 0.000929p 1.62e-06p 9.85e-11p       0.0
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sig0.562 cc 3.65e-07p 0.000359p 0.026521p 0.122153p 0.163152p 0.164081p 0.164082p 9.85e-11p       0.0
         rc 3.65e-07p 0.000359p 0.026521p 0.122153p 0.163152o 0.164081o 0.164082n 9.85e-11p       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.010637k 0.010599j       0.0       0.0
zp 61.05 ri 1.11e-07p 5.12e-05p 0.001845p 0.006300p 0.002332p 8.35e-05p 2.38e-07p 4.78e-11p       0.0
sig0.600 cc 1.11e-07p 5.13e-05p 0.001896p 0.008196p 0.010528p 0.010612p 0.010612p 4.79e-11p       0.0
         rc 1.11e-07p 5.13e-05p 0.001896p 0.008196p 0.010528m 0.010612k 0.010612j 4.78e-11p       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.032215l      0.0       0.0
zp 61.52 ri 1.65e-09p 5.94e-06p 0.001150p 0.014446p 0.015242p 0.001363p 7.98e-06p 2.53e-09p       0.0
sig0.568 cc 1.65e-09p 5.94e-06p 0.001156p 0.015603p 0.030844p 0.032207p 0.032215p 2.53e-09p       0.0
         rc 1.65e-09p 5.94e-06p 0.001156p 0.015603p 0.030844o 0.032207n 0.032215l 2.53e-09p       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.535928h 0.546750k      0.0       0.0
zp 61.61 ri 5.90e-08p 0.000108p 0.017698p 0.199856p 0.284724o 0.034962p 0.000469p 3.82e-07p 2.60e-11p
sig0.600 cc 5.91e-08p 0.000109p 0.017842p 0.218093p 0.502321p 0.537353p 0.537819p 3.79e-07p 2.58e-11p
         rc 5.90e-08p 0.000108p 0.017807p 0.217663p 0.502387l 0.537349h 0.537819h 3.82e-07p 2.60e-11p

  ce, pr, nd half lives from 80eng2; pm, sm, eu half lives 89wal1.
1

    mass number    158                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb m   65 tb g   66 dy g
half life              0.169s    2.69 s     4.8 s     5.5 m    45.9 m    stable    10.9 s    150. y    stable
lambda            0.0 4.101e+00 2.577e-01 1.444e-01 2.100e-03 2.517e-04       0.0 6.359e-02 1.465e-10       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  -84.0000   16.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.003317n      0.0       0.0       0.0
zp 62.14 ri       0.0  1.87e-09p 6.00e-06p 0.000258p 0.002492p 0.000533p 2.82e-05p 1.90e-09p 1.92e-08p 2.49e-12p
sig0.553 cc       0.0  1.87e-09p 6.00e-06p 0.000264p 0.002755p 0.003288p 0.003317p 1.90e-09p 2.11e-08p 3.38e-09p
         rc       0.0  1.87e-09p 6.00e-06p 0.000264p 0.002755p 0.003288o 0.003317n 1.90e-09p 2.11e-08p 3.38e-09p
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.017078m      0.0       0.0       0.0
zp 62.42 ri 8.50e-12p 4.53e-08p 2.35e-05p 0.001266p 0.008079p 0.006918p 0.000784p 6.16e-07p 9.65e-06p 1.38e-08p
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sig0.642 cc 8.50e-12p 4.53e-08p 2.35e-05p 0.001289p 0.009368p 0.016286p 0.017078p 6.16e-07p 1.03e-05p 1.66e-06p
rc 8.50e-12p 4.53e-08p 2.35e-05p 0.001289p 0.009368p 0.016286n 0.017078l 6.16e-07p 1.03e-05p 1.66e-06p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.011239n 0.0 0.0 0.0
zp 61.48 ri 3.22e-10p 1.15e-06p 0.000514p 0.003944p 0.006526p 0.000252p 1.50e-06p 1.11e-11p 1.12e-10p 0.0
sig0.545 cc 3.22e-10p 1.15e-06p 0.000515p 0.004459p 0.010985p 0.011237p 0.011239p 1.11e-11p 1.23e-10p 1.97e-11p
rc 3.22e-10p 1.15e-06p 0.000515p 0.004459p 0.010985p 0.011237o 0.011239n 1.11e-11p 1.23e-10p 1.97e-11p
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.073037l 0.0 0.0 0.0
zp 62.71 ri 8.15e-12p 4.79e-08p 3.15e-05p 0.002451p 0.024913p 0.037100p 0.008333p 1.54e-05p 0.000242p 9.75e-07p
sig0.664 cc 8.15e-12p 4.79e-08p 3.15e-05p 0.002483p 0.027396p 0.064495p 0.073045p 1.54e-05p 0.000257p 4.21e-05p
rc 8.15e-12p 4.79e-08p 3.15e-05p 0.002483p 0.027396p 0.064495o 0.073045l 1.54e-05p 0.000257p 4.21e-05p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.077783m 0.0 0.0 0.0
zp 61.78 ri 1.76e-10p 1.26e-06p 0.000955p 0.017596p 0.053259p 0.005879p 9.36e-05p 3.00e-09p 3.04e-08p 1.21e-12p
sig0.558 cc 1.76e-10p 1.27e-06p 0.000956p 0.018552p 0.071811p 0.077690p 0.077783p 3.00e-09p 3.34e-08p 5.34e-09p
rc 1.76e-10p 1.27e-06p 0.000956p 0.018552p 0.071811p 0.077690o 0.077783m 3.00e-09p 3.34e-08p 5.34e-09p
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.111948l 0.0 0.0 0.0
zp 61.58 ri 1.48e-09p 6.99e-06p 0.003284p 0.036804p 0.067642p 0.004179p 3.27e-05p 4.60e-10p 4.66e-09p 0.0
sig0.551 cc 1.48e-09p 6.99e-06p 0.003291p 0.040095p 0.107737p 0.111916p 0.111948p 4.60e-10p 5.12e-09p 8.19e-10p
rc 1.48e-09p 6.99e-06p 0.003291p 0.040095p 0.107737o 0.111916n 0.111948l 4.60e-10p 5.12e-09p 8.19e-10p
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.109388n 0.0 0.0 0.0
zp 61.47 ri 7.82e-09p 2.15e-05p 0.005248p 0.045251p 0.055715p 0.003134p 1.89e-05p 2.93e-10p 2.97e-09p 0.0
sig0.562 cc 7.82e-09p 2.15e-05p 0.005270p 0.050521p 0.106236p 0.109369p 0.109388p 2.93e-10p 3.26e-09p 5.21e-10p
rc 7.82e-09p 2.15e-05p 0.005270p 0.050521p 0.106236p 0.109369o 0.109388n 2.93e-10p 3.26e-09p 5.21e-10p
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.006249j 0.0 0.0 0.0
zp 61.43 ri 3.18e-09p 3.99e-06p 0.000371p 0.003030p 0.002609p 0.000233p 1.77e-06p 5.90e-11p 9.24e-10p 0.0
sig0.600 cc 3.18e-09p 3.99e-06p 0.000375p 0.003406p 0.006014p 0.006247p 0.006249p 5.90e-11p 9.83e-10p 1.57e-10p
rc 3.18e-09p 3.99e-06p 0.000375p 0.003406p 0.006014n 0.006247l 0.006249j 5.90e-11p 9.83e-10p 1.57e-10p
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.012772l 0.0 0.0 0.0
zp 61.90 ri 1.32e-11p 1.49e-07p 8.62e-05p 0.002970p 0.007847p 0.001837p 3.12e-05p 2.74e-09p 2.77e-08p 1.51e-12p
sig0.568 cc 1.32e-11p 1.49e-07p 8.64e-05p 0.003056p 0.010904p 0.012740p 0.012772p 2.74e-09p 3.04e-08p 4.87e-09p

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        rc 1.32e-11p 1.49e-07p 8.64e-05p 0.003056p 0.010904p 0.012740n 0.012772l 2.74e-09p 3.04e-08p 4.87e-09p
 cf252s  xi      0.0       0.0       0.0       0.0  0.147379l      0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.469943k      0.0       0.0       0.0
zp 62.02 ri 8.75e-10p 4.82e-06p 0.002276p 0.069143p 0.244551p 0.148049p 0.005581p 1.33e-06p 1.20e-05p 2.75e-09p
sig0.600 cc 1.04e-09p 5.72e-06p 0.002708p 0.084795p 0.375129p 0.466249p 0.469617p 8.03e-07p 8.03e-06p 1.29e-06p
        rc 8.75e-10p 4.82e-06p 0.002281p 0.071424p 0.315975p 0.464024m 0.469612k 1.33e-06o 1.33e-05o 2.14e-06o

  pr, nd half lives from 80eng2; pm, sm, eu half lives from 89wal1.
1

    mass number    159                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g
half life     0.181s    0.642s     3.0 s    11.3 s    18.1 m    18.6 h    stable    144.4d     8.3 s     33. m
lambda      3.830e+00 1.080e+00 2.310e-01 6.134e-02 6.383e-04 1.035e-05       0.0 5.556e-08 8.351e-02 3.501e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000       0.0 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.001734l      0.0       0.0       0.0       0.0
zp 62.52 ri 3.25e-11p 2.64e-07p 4.53e-05p 0.000936p 0.000673p 7.91e-05p 2.43e-07p 7.39e-11p       0.0       0.0
sig0.553 cc 3.25e-11p 2.64e-07p 4.56e-05p 0.000982p 0.001655p 0.001734p 0.001734p 7.39e-11p       0.0       0.0
        rc 3.25e-11p 2.64e-07p 4.56e-05p 0.000982p 0.001655n 0.001734l 0.001734l 7.39e-11p       0.0       0.0
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.010508k 0.010763l      0.0       0.0       0.0
zp 62.82 ri 1.21e-09p 1.58e-06p 0.000209p 0.003070p 0.005821p 0.001500p 4.79e-05p 1.62e-07p 3.76e-12p 5.00e-11p
sig0.642 cc 1.21e-09p 1.58e-06p 0.000210p 0.003281p 0.009102p 0.010602p 0.010649p 1.60e-07p 3.73e-12p 5.32e-11p
        rc 1.21e-09p 1.58e-06p 0.000210p 0.003280p 0.009101o 0.010601k 0.010649k 1.62e-07p 3.76e-12p 5.38e-11p
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.004402n      0.0       0.0       0.0
zp 61.86 ri 2.58e-08p 3.08e-05p 0.000866p 0.003083p 0.000416p 6.44e-06p 2.21e-09p       0.0       0.0       0.0
sig0.545 cc 2.58e-08p 3.08e-05p 0.000897p 0.003980p 0.004395p 0.004402p 0.004402p       0.0       0.0       0.0
        rc 2.58e-08p 3.08e-05p 0.000897p 0.003980p 0.004395p 0.004402o 0.004402n       0.0       0.0       0.0
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.053605l 0.051321l      0.0       0.0       0.0
zp 63.10 ri 1.52e-09p 2.33e-06p 0.000413p 0.009164p 0.028549p 0.013488p 0.000886p 7.69e-06p 5.46e-10p 7.26e-09p
sig0.664 cc 1.52e-09p 2.33e-06p 0.000415p 0.009574p 0.038106p 0.051587p 0.052510p 7.96e-06p 5.65e-10p 8.07e-09p
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        rc 1.52e-09p 2.33e-06p 0.000416p 0.009579p 0.038128p 0.051617l 0.052511k 7.70e-06p 5.46e-10p 7.80e-09p
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.031152j 0.052031l      0.0       0.0       0.0
zp 62.17 ri 2.52e-08p 5.27e-05p 0.003449p 0.023747p 0.008315p 0.000340p 6.27e-07p 6.50e-11p      0.0       0.0
sig0.558 cc 2.52e-08p 5.27e-05p 0.003502p 0.027249p 0.035564p 0.035904p 0.035905p 4.84e-11p      0.0       0.0
        rc 2.52e-08p 5.27e-05p 0.003502p 0.027249o 0.035564k 0.035904i 0.035905i 6.50e-11p      0.0       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.065134l      0.0       0.0       0.0
zp 61.96 ri 2.19e-07p 0.000282p 0.010944p 0.044787p 0.008936p 0.000183p 1.12e-07p 4.64e-12p      0.0       0.0
sig0.551 cc 2.19e-07p 0.000282p 0.011227p 0.056014p 0.064950p 0.065133p 0.065134p 4.64e-12p      0.0       0.0
        rc 2.19e-07p 0.000282p 0.011227p 0.056014p 0.064950o 0.065133n 0.065134l 4.64e-12p      0.0       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.065633n      0.0       0.0       0.0
zp 61.85 ri 8.54e-07p 0.000565p 0.015325p 0.042404p 0.007222p 0.000115p 7.08e-08p 2.84e-12p      0.0       0.0
sig0.562 cc 8.54e-07p 0.000566p 0.015891p 0.058295p 0.065518p 0.065633p 0.065633p 2.84e-12p      0.0       0.0
        rc 8.54e-07p 0.000566p 0.015891p 0.058295p 0.065518p 0.065633o 0.065633n 2.85e-12p      0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.004775k 0.004385k      0.0       0.0       0.0
zp 61.81 ri 2.64e-07p 6.50e-05p 0.001306p 0.002607p 0.000561p 1.11e-05p 1.62e-08p 1.71e-12p      0.0       0.0
sig0.600 cc 2.64e-07p 6.53e-05p 0.001371p 0.003978p 0.004539p 0.004550p 0.004550p 1.78e-12p      0.0       0.0
        rc 2.64e-07p 6.53e-05p 0.001371p 0.003978o 0.004539m 0.004550k 0.004550j 1.71e-12p      0.0       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.006491l      0.0       0.0       0.0
zp 62.28 ri 3.11e-09p 5.50e-06p 0.000541p 0.003668p 0.002173p 0.000104p 3.05e-07p 4.72e-11p      0.0       0.0
sig0.568 cc 3.11e-09p 5.50e-06p 0.000546p 0.004214p 0.006387p 0.006490p 0.006491p 4.72e-11p      0.0       0.0
        rc 3.11e-09p 5.50e-06p 0.000546p 0.004214p 0.006387o 0.006490n 0.006491l 4.72e-11p      0.0       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.340976i 0.337955k      0.0       0.0       0.0
zp 62.41 ri 1.93e-07p 0.000254p 0.020405p 0.176037p 0.131064p 0.012396p 8.08e-05p 4.72e-08p      0.0  1.33e-12p
sig0.600 cc 1.92e-07p 0.000254p 0.020633p 0.196450p 0.327776p 0.340156p 0.340237p 4.74e-08p      0.0  1.54e-12p
        rc 1.93e-07p 0.000254p 0.020659p 0.196696p 0.327761l 0.340156i 0.340237i 4.72e-08p      0.0  1.53e-12p

  pr, nd, pm half lives from 80eng2; sm, eu, gd half lives 89wal1; dy half life 90bur1.
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mass number 160 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	58 ce g	59 pr g	60 nd g	61 pm g	62 sm g	63 eu g	64 gd g	65 tb g	66 dy g
half life		0.789s	0.729s	9.6 s	38. s	stable	72.3 d	stable	
lambda	0.0	0.0	8.785e-01	9.508e-01	7.220e-02	1.824e-02	0.0	1.110e-07	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	0.0	100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
u233f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.000417n	2.30e-06p	0.0
zp 62.91 ri	0.0	0.0	3.84e-09p	1.68e-06p	0.000133p	0.000198p	8.46e-05p	1.47e-06p	1.95e-09p
sig0.553 cc	0.0	0.0	3.85e-09p	1.68e-06p	0.000135p	0.000333p	0.000418p	6.40e-07p	6.41e-07p
rc	0.0	0.0	3.84e-09p	1.68e-06p	0.000135p	0.000333p	0.000417n	1.47e-06p	1.47e-06p
u233he xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.02e-05m	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.007056m	0.0	0.0
zp 63.25 ri	0.0	1.85e-11p	6.62e-08p	2.32e-05p	0.000861p	0.003878p	0.002368p	3.05e-05p	1.68e-06p
sig0.642 cc	0.0	1.81e-11p	6.47e-08p	2.27e-05p	0.000865p	0.004659p	0.006977p	0.000184p	0.000186p
rc	0.0	1.85e-11p	6.62e-08p	2.32e-05p	0.000884p	0.004761p	0.007130l	3.05e-05p	3.22e-05p
u236f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.001967n	0.0	0.0
zp 62.24 ri	0.0	3.33e-10p	1.65e-06p	0.000117p	0.001407p	0.000416p	2.45e-05p	2.28e-08p	2.59e-12p
sig0.545 cc	0.0	3.33e-10p	1.65e-06p	0.000119p	0.001526p	0.001942p	0.001967p	2.28e-08p	2.28e-08p
rc	0.0	3.33e-10p	1.65e-06p	0.000119p	0.001526p	0.001942o	0.001967n	2.28e-08p	2.28e-08p
pu239h xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.033173l	0.0	0.0
zp 63.48 ri	0.0	3.53e-11p	1.25e-07p	5.00e-05p	0.002412p	0.015618p	0.015093p	0.002171p	4.17e-05p
sig0.664 cc	0.0	3.53e-11p	1.25e-07p	5.01e-05p	0.002462p	0.018080p	0.033173p	0.002171p	0.002213p
rc	0.0	3.53e-11p	1.25e-07p	5.01e-05p	0.002462p	0.018080p	0.033173l	0.002171p	0.002213p
pu240f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.019397n	0.0	0.0
zp 62.56 ri	0.0	3.11e-10p	2.54e-06p	0.000442p	0.010033p	0.007828p	0.001091p	4.06e-06p	1.66e-09p
sig0.558 cc	0.0	3.11e-10p	2.54e-06p	0.000444p	0.010478p	0.018305p	0.019397p	4.06e-06p	4.07e-06p
rc	0.0	3.11e-10p	2.54e-06p	0.000444p	0.010478p	0.018305o	0.019397n	4.06e-06p	4.07e-06p
pu241f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.039691l	0.0	0.0
zp 62.34 ri	0.0	3.87e-09p	1.93e-05p	0.001948p	0.025513p	0.011393p	0.000817p	1.37e-06p	2.25e-10p
sig0.551 cc	0.0	3.87e-09p	1.93e-05p	0.001968p	0.027481p	0.038874p	0.039691p	1.37e-06p	1.37e-06p

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         rc      0.0  3.87e-09p 1.93e-05p 0.001968p 0.027481p 0.038874n 0.039691l 1.37e-06p 1.37e-06p
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.041021n      0.0       0.0
zp 62.22 ri      0.0  2.21e-08p 5.01e-05p 0.003393p 0.026859p 0.010204p 0.000514p 8.46e-07p 1.20e-10p
sig0.562 cc      0.0  2.21e-08p 5.01e-05p 0.003444p 0.030303p 0.040506p 0.041021p 8.46e-07p 8.46e-07p
         rc      0.0  2.21e-08p 5.01e-05p 0.003444p 0.030303p 0.040506o 0.041021n 8.46e-07p 8.46e-07p
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001724j      0.0       0.0
zp 62.18 ri      0.0  6.69e-09p 4.34e-06p 0.000216p 0.000990p 0.000490p 2.41e-05p 9.60e-08p 2.74e-11p
sig0.600 cc      0.0  6.69e-09p 4.34e-06p 0.000220p 0.001210p 0.001700p 0.001724p 9.60e-08p 9.61e-08p
         rc      0.0  6.69e-09p 4.34e-06p 0.000220p 0.001210p 0.001700l 0.001724j 9.60e-08p 9.61e-08p
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.002507l      0.0       0.0
zp 62.66 ri      0.0  3.21e-11p 1.76e-07p 5.08e-05p 0.000921p 0.001361p 0.000174p 1.52e-06p 7.28e-10p
sig0.568 cc      0.0  3.21e-11p 1.76e-07p 5.10e-05p 0.000972p 0.002332p 0.002507p 1.52e-06p 1.52e-06p
         rc      0.0  3.21e-11p 1.76e-07p 5.10e-05p 0.000972p 0.002332n 0.002507l 1.52e-06p 1.52e-06p
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.285130k      0.0       0.0
zp 62.81 ri      0.0  4.55e-09p 1.74e-05p 0.003898p 0.086749p 0.157024p 0.037442p 0.000673p 1.13e-06p
sig0.600 cc      0.0  4.55e-09p 1.74e-05p 0.003916p 0.090667p 0.247687p 0.285131p 0.000673p 0.000674p
         rc      0.0  4.55e-09p 1.74e-05p 0.003916p 0.090664p 0.247689n 0.285131k 0.000673p 0.000674p

  nd, pm half lives from 80eng2; sm, eu half lives from 89wal1.
1

    mass number    161                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g
half life     0.311s    0.790s    4.78 s    27. s     3.66 m    6.91 d    stable    6.8 s     2.5 h     3.1 h
lambda      2.229e+00 8.774e-01 1.450e-01 2.567e-02 3.156e-03 1.161e-06       0.0 1.019e-01 7.702e-05 6.211e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000  -73.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  -27.0000
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  9.48e-05n      0.0       0.0       0.0
zp 63.29 ri 2.58e-11p 4.73e-08p 8.80e-06p 4.53e-05p 3.95e-05p 1.14e-06p 3.77e-09p      0.0       0.0       0.0
sig0.553 cc 2.58e-11p 4.73e-08p 8.85e-06p 5.41e-05p 9.36e-05p 9.48e-05p 9.48e-05p      0.0       0.0       0.0
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        rc 2.58e-11p 4.73e-08p 8.85e-06p 5.41e-05p 9.36e-05p 9.48e-05o 9.48e-05n      0.0       0.0       0.0
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.004602j 0.004714j      0.0       0.0       0.0
zp 63.68 ri 1.67e-09p 1.58e-06p 0.000152p 0.001662p 0.002384p 0.000462p 1.09e-05p 1.87e-09p 2.48e-08p 6.38e-12p
sig0.642 cc 1.67e-09p 1.58e-06p 0.000153p 0.001815p 0.004199p 0.004661p 0.004672p 1.85e-09p 2.64e-08p 6.31e-12p
        rc 1.67e-09p 1.58e-06p 0.000153p 0.001815p 0.004199n 0.004661j 0.004672i 1.87e-09p 2.67e-08p 6.38e-12p
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.000482i 0.000890n      0.0       0.0       0.0
zp 62.61 ri 3.15e-08p 8.62e-06p 0.000234p 0.000220p 2.99e-05p 1.09e-07p 4.74e-11p      0.0       0.0       0.0
sig0.545 cc 3.15e-08p 8.65e-06p 0.000243p 0.000463p 0.000493p 0.000493p 0.000493p      0.0       0.0       0.0
        rc 3.15e-08p 8.65e-06p 0.000243p 0.000463m 0.000493k 0.000493i 0.000493i      0.0       0.0       0.0
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.018506i 0.017731l      0.0       0.0       0.0
zp 63.87 ri 3.51e-09p 3.26e-06p 0.000356p 0.004966p 0.010000p 0.003052p 0.000127p 4.75e-08p 6.31e-07p 4.17e-10p
sig0.664 cc 3.51e-09p 3.27e-06p 0.000359p 0.005324p 0.015323p 0.018375p 0.018506p 4.88e-08p 6.96e-07p 4.27e-10p
        rc 3.51e-09p 3.27e-06p 0.000359p 0.005325p 0.015326o 0.018378i 0.018506i 4.76e-08p 6.79e-07p 4.17e-10p
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.010777j 0.017459l      0.0       0.0       0.0
zp 62.94 ri 8.12e-08p 5.20e-05p 0.002862p 0.006773p 0.002152p 2.84e-05p 4.13e-08p      0.0  1.14e-12p      0.0
sig0.558 cc 8.12e-08p 5.21e-05p 0.002915p 0.009688p 0.011841p 0.011869p 0.011869p      0.0       0.0       0.0
        rc 8.12e-08p 5.21e-05p 0.002915p 0.009688o 0.011840l 0.011869j 0.011869j      0.0  1.29e-12p      0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.023407l      0.0       0.0       0.0
zp 62.72 ri 7.42e-07p 0.000280p 0.008870p 0.012154p 0.002090p 1.30e-05p 6.06e-09p      0.0       0.0       0.0
sig0.551 cc 7.42e-07p 0.000281p 0.009151p 0.021305p 0.023394p 0.023407p 0.023407p      0.0       0.0       0.0
        rc 7.42e-07p 0.000281p 0.009151p 0.021305p 0.023394o 0.023407n 0.023407l      0.0       0.0       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.023701n      0.0       0.0       0.0
zp 62.60 ri 2.39e-06p 0.000550p 0.010420p 0.011325p 0.001396p 7.89e-06p 3.14e-09p      0.0       0.0       0.0
sig0.562 cc 2.39e-06p 0.000552p 0.010972p 0.022297p 0.023693p 0.023701p 0.023701p      0.0       0.0       0.0
        rc 2.39e-06p 0.000552p 0.010972p 0.022297p 0.023693o 0.023701o 0.023701n      0.0       0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.001073i 0.001018k      0.0       0.0       0.0
zp 62.56 ri 3.10e-07p 4.02e-05p 0.000445p 0.000510p 6.17e-05p 6.53e-07p 4.99e-10p      0.0       0.0       0.0
sig0.600 cc 3.10e-07p 4.05e-05p 0.000485p 0.000996p 0.001058p 0.001058p 0.001058p      0.0       0.0       0.0
        rc 3.10e-07p 4.05e-05p 0.000485p 0.000996m 0.001058k 0.001058i 0.001058i      0.0       0.0       0.0
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 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000779l      0.0       0.0       0.0
zp 63.04 ri 2.94e-09p 2.57e-06p 0.000130p 0.000483p 0.000160p 3.99e-06p 5.85e-09p      0.0       0.0       0.0
sig0.568 cc 2.94e-09p 2.57e-06p 0.000132p 0.000615p 0.000775p 0.000779p 0.000779p      0.0       0.0       0.0
         rc 2.94e-09p 2.57e-06p 0.000132p 0.000615p 0.000775o 0.000779n 0.000779l      0.0       0.0       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.193753h 0.193232k      0.0       0.0       0.0
zp 63.19 ri 7.31e-07p 0.000441p 0.024937p 0.106114p 0.059477p 0.002715p 1.23e-05p 4.25e-10p 2.85e-09p      0.0
sig0.600 cc 7.31e-07p 0.000442p 0.025378p 0.131495p 0.190970p 0.193684p 0.193696p 4.26e-10p 3.28e-09p      0.0
         rc 7.31e-07p 0.000442p 0.025379p 0.131493p 0.190970j 0.193684h 0.193696h 4.25e-10p 3.27e-09p      0.0

  nd, pm, sm half lives from 80eng2; eu, gd, tb half lives 89wal1.
1

     mass number    162                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb m   65 tb g   66 dy g   67 ho m   67 ho g   68 er g
half life              0.324s    5.26 s     11. s     8.4 m    2.23 h     7.6 m    stable     66. m     13. m    stable
lambda            0.0 2.139e+00 1.318e-01 6.301e-02 1.375e-03 8.634e-05 1.520e-03       0.0 1.750e-04 8.887e-04       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000    2.0000   98.0000  100.0000  -37.0000 -100.0000       0.0
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   63.0000       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.27e-05n      0.0       0.0       0.0
zp 63.67 ri      0.0  6.42e-10p 4.84e-07p 5.42e-06p 1.58e-05p 5.00e-07p 5.00e-07p 1.34e-08p 1.71e-12p      0.0       0.0
sig0.553 cc      0.0  6.42e-10p 4.85e-07p 5.91e-06p 2.17e-05p 9.34e-07p 2.18e-05p 2.27e-05p 1.71e-12p 1.71e-12p      0.0
         rc      0.0  6.42e-10p 4.85e-07p 5.91e-06p 2.17e-05p 9.34e-07p 2.18e-05o 2.27e-05n 1.71e-12p 1.71e-12p      0.0
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.002749n      0.0       0.0       0.0
zp 64.11 ri 2.52e-11p 6.48e-08p 1.65e-05p 0.000451p 0.001531p 0.000354p 0.000354p 4.17e-05p 2.24e-07p 4.91e-08p 1.79e-10p
sig0.642 cc 2.52e-11p 6.48e-08p 1.65e-05p 0.000468p 0.001999p 0.000394p 0.002313p 0.002749p 2.24e-07p 1.90e-07p 1.79e-10p
         rc 2.52e-11p 6.48e-08p 1.65e-05p 0.000468p 0.001999p 0.000394p 0.002313o 0.002749n 2.24e-07p 1.90e-07p 1.79e-10p
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000206n      0.0       0.0       0.0
zp 62.99 ri 6.89e-10p 5.08e-07p 5.14e-05p 0.000105p 4.89e-05p 2.28e-07p 2.28e-07p 5.82e-10p      0.0       0.0       0.0
sig0.545 cc 6.89e-10p 5.09e-07p 5.19e-05p 0.000157p 0.000206p 4.34e-06p 0.000202p 0.000206p      0.0       0.0       0.0
         rc 6.89e-10p 5.09e-07p 5.19e-05p 0.000157p 0.000206o 4.34e-06o 0.000202o 0.000206n      0.0       0.0       0.0
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 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.009047l      0.0       0.0       0.0
zp 64.25 ri 7.19e-11p 1.53e-07p 3.75e-05p 0.001127p 0.004678p 0.001467p 0.001467p 0.000269p 2.62e-06p 5.75e-07p 4.49e-09p
sig0.664 cc 7.19e-11p 1.54e-07p 3.76e-05p 0.001164p 0.005842p 0.001583p 0.007192p 0.009047p 2.62e-06p 2.23e-06p 4.49e-09p
         rc 7.19e-11p 1.54e-07p 3.76e-05p 0.001164p 0.005842p 0.001583p 0.007192o 0.009047l 2.62e-06p 2.23e-06p 4.49e-09p
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.006864m      0.0       0.0       0.0
zp 63.32 ri 1.76e-09p 3.05e-06p 0.000588p 0.003133p 0.003041p 4.93e-05p 4.93e-05p 4.05e-07p 2.56e-11p 9.46e-12p       0.0
sig0.558 cc 1.76e-09p 3.05e-06p 0.000591p 0.003724p 0.006765p 0.000185p 0.006679p 0.006864p 2.56e-11p 2.56e-11p       0.0
         rc 1.76e-09p 3.05e-06p 0.000591p 0.003724p 0.006765p 0.000185o 0.006679o 0.006864m 2.56e-11p 2.56e-11p       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.011788m      0.0       0.0       0.0
zp 63.09 ri 1.91e-08p 1.93e-05p 0.002092p 0.006280p 0.003344p 2.62e-05p 2.62e-05p 9.13e-08p 2.20e-12p       0.0       0.0
sig0.551 cc 1.91e-08p 1.93e-05p 0.002111p 0.008391p 0.011736p 0.000261p 0.011527p 0.011788p 2.20e-12p 2.20e-12p       0.0
         rc 1.91e-08p 1.93e-05p 0.002111p 0.008391p 0.011736o 0.000261o 0.011527n 0.011788m 2.20e-12p 2.20e-12p       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.012762n      0.0       0.0       0.0
zp 62.97 ri 8.33e-08p 5.06e-05p 0.002979p 0.007135p 0.002560p 1.84e-05p 1.84e-05p 5.05e-08p 1.38e-12p       0.0       0.0
sig0.562 cc 8.33e-08p 5.07e-05p 0.003030p 0.010165p 0.012725p 0.000273p 0.012489p 0.012762p 1.38e-12p 1.38e-12p       0.0
         rc 8.33e-08p 5.07e-05p 0.003030p 0.010165p 0.012725o 0.000273o 0.012489o 0.012762n 1.38e-12p 1.38e-12p       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000510j      0.0       0.0       0.0
zp 62.93 ri 1.28e-08p 4.31e-06p 0.000116p 0.000302p 8.54e-05p 1.14e-06p 1.14e-06p 4.75e-09p       0.0       0.0       0.0
sig0.600 cc 1.28e-08p 4.33e-06p 0.000120p 0.000423p 0.000508p 1.13e-05p 0.000499p 0.000510p       0.0       0.0       0.0
         rc 1.28e-08p 4.33e-06p 0.000120p 0.000423p 0.000508n 1.13e-05o 0.000499l 0.000510j       0.0       0.0       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000303l      0.0       0.0       0.0
zp 63.42 ri 4.02e-11p 1.08e-07p 1.57e-05p 0.000152p 0.000126p 4.35e-06p 4.35e-06p 3.83e-08p 6.59e-12p 2.44e-12p       0.0
sig0.568 cc 4.02e-11p 1.08e-07p 1.58e-05p 0.000168p 0.000294p 1.02e-05p 0.000293p 0.000303p 6.59e-12p 6.58e-12p       0.0
         rc 4.02e-11p 1.08e-07p 1.58e-05p 0.000168p 0.000294o 1.02e-05p 0.000293n 0.000303l 6.59e-12p 6.58e-12p       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.119571l      0.0       0.0       0.0
zp 63.57 ri 1.88e-08p 3.10e-05p 0.004573p 0.046984p 0.061045p 0.003428p 0.003428p 8.24e-05p 4.22e-08p 1.81e-08p 3.69e-12p
sig0.600 cc 1.88e-08p 3.10e-05p 0.004604p 0.051588p 0.112633p 0.005681p 0.113808p 0.119572p 4.22e-08p 4.47e-08p 3.69e-12p
         rc 1.88e-08p 3.10e-05p 0.004604p 0.051588p 0.112633o 0.005681p 0.113808n 0.119572l 4.22e-08p 4.47e-08p 3.69e-12p
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pm, sm half lives from 80eng2; eu, gd, tb half lives from 89wal1.
1

mass number 163 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	60 nd g	61 pm g	62 sm g	63 eu g	64 gd g	65 tb g	66 dy g	67 ho m	67 ho g	68 er g
half life		1.27 s	7.60 s	1.13 m	19.5 m	stable	1.07 s	33. y	75. m	
lambda	0.0	0.0	5.458e-01	9.120e-02	1.022e-02	5.924e-04	0.0	6.478e-01	6.660e-10	1.540e-04
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	0.0	-100.0000	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0
u233f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	1.04e-05n	0.0	0.0	0.0
zp 64.06 ri	0.0	1.44e-11p	2.79e-08p	1.22e-06p	7.44e-06p	1.68e-06p	5.46e-08p	4.95e-12p	3.63e-11p	0.0
sig0.553 cc	0.0	1.44e-11p	2.79e-08p	1.25e-06p	8.69e-06p	1.04e-05p	1.04e-05p	4.95e-12p	4.13e-11p	0.0
rc	0.0	1.44e-11p	2.79e-08p	1.25e-06p	8.69e-06p	1.04e-05o	1.04e-05n	4.95e-12p	4.13e-11p	0.0
u233he xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.001706n	0.0	0.0	0.0
zp 64.53 ri	0.0	1.98e-09p	1.32e-06p	9.08e-05p	0.000727p	0.000775p	0.000110p	1.29e-07p	1.72e-06p	3.20e-09p
sig0.642 cc	0.0	1.98e-09p	1.32e-06p	9.21e-05p	0.000819p	0.001594p	0.001706p	1.29e-07p	1.85e-06p	3.20e-09p
rc	0.0	1.98e-09p	1.32e-06p	9.21e-05p	0.000819p	0.001594o	0.001706n	1.29e-07p	1.85e-06p	3.20e-09p
u236f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.000112n	0.0	0.0	0.0
zp 63.37 ri	9.22e-12p	2.84e-08p	7.35e-06p	5.13e-05p	5.19e-05p	1.81e-06p	6.22e-09p	0.0	0.0	0.0
sig0.545 cc	9.22e-12p	2.84e-08p	7.37e-06p	5.87e-05p	0.000111p	0.000112p	0.000112p	0.0	0.0	0.0
rc	9.22e-12p	2.84e-08p	7.37e-06p	5.87e-05p	0.000111p	0.000112o	0.000112n	0.0	0.0	0.0
pu239h xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.003195l	0.0	0.0	0.0
zp 64.63 ri	0.0	3.81e-09p	2.11e-06p	0.000139p	0.001205p	0.001544p	0.000297p	5.45e-07p	7.24e-06p	2.49e-08p
sig0.664 cc	0.0	3.81e-09p	2.11e-06p	0.000141p	0.001346p	0.002890p	0.003195p	5.45e-07p	7.81e-06p	2.49e-08p
rc	0.0	3.81e-09p	2.11e-06p	0.000141p	0.001346p	0.002890n	0.003195l	5.45e-07p	7.81e-06p	2.49e-08p
pu240f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.002167m	0.0	0.0	0.0
zp 63.71 ri	9.93e-12p	6.76e-08p	3.51e-05p	0.000628p	0.001355p	0.000147p	1.62e-06p	6.60e-11p	4.84e-10p	0.0
sig0.558 cc	9.93e-12p	6.76e-08p	3.51e-05p	0.000663p	0.002018p	0.002165p	0.002167p	6.60e-11p	5.50e-10p	0.0
rc	9.93e-12p	6.76e-08p	3.51e-05p	0.000663p	0.002018p	0.002165o	0.002167m	6.60e-11p	5.50e-10p	0.0
pu241f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.005228m      0.0       0.0       0.0
zp 63.47 ri 2.03e-10p 7.99e-07p 0.000228p 0.002225p 0.002631p 0.000142p 6.74e-07p 1.05e-11p 7.73e-11p       0.0
sig0.551 cc 2.03e-10p 7.99e-07p 0.000229p 0.002454p 0.005085p 0.005227p 0.005228p 1.05e-11p 8.79e-11p       0.0
        rc 2.03e-10p 7.99e-07p 0.000229p 0.002454p 0.005085o 0.005227n 0.005228m 1.05e-11p 8.79e-11p       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.005469n      0.0       0.0       0.0
zp 63.35 ri 1.17e-09p 2.52e-06p 0.000386p 0.002745p 0.002232p 0.000103p 3.86e-07p 6.27e-12p 4.60e-11p       0.0
sig0.562 cc 1.17e-09p 2.52e-06p 0.000389p 0.003134p 0.005366p 0.005469p 0.005469p 6.27e-12p 5.22e-11p       0.0
        rc 1.17e-09p 2.52e-06p 0.000389p 0.003134p 0.005366p 0.005469o 0.005469n 6.27e-12p 5.22e-11p       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000255j      0.0       0.0       0.0
zp 63.31 ri 3.51e-10p 3.21e-07p 2.21e-05p 0.000137p 9.01e-05p 6.05e-06p 3.38e-08p      0.0  1.27e-11p       0.0
sig0.600 cc 3.51e-10p 3.21e-07p 2.24e-05p 0.000159p 0.000249p 0.000255p 0.000255p      0.0  1.36e-11p       0.0
        rc 3.51e-10p 3.21e-07p 2.24e-05p 0.000159p 0.000249n 0.000255l 0.000255j      0.0  1.36e-11p       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000130l      0.0       0.0       0.0
zp 63.80 ri      0.0  3.25e-09p 1.41e-06p 3.71e-05p 7.69e-05p 1.40e-05p 1.81e-07p 1.57e-11p 1.15e-10p       0.0
sig0.568 cc      0.0  3.25e-09p 1.41e-06p 3.85e-05p 0.000115p 0.000129p 0.000130p 1.57e-11p 1.31e-10p       0.0
        rc      0.0  3.25e-09p 1.41e-06p 3.85e-05p 0.000115p 0.000129n 0.000130l 1.57e-11p 1.31e-10p       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.075839l      0.0       0.0       0.0
zp 63.96 ri 3.05e-10p 1.43e-06p 0.000578p 0.015157p 0.046847p 0.012847p 0.000409p 1.09e-07p 7.27e-07p 1.46e-10p
sig0.600 cc 3.05e-10p 1.43e-06p 0.000579p 0.015736p 0.062583p 0.075429p 0.075839p 1.09e-07p 8.36e-07p 1.46e-10p
        rc 3.05e-10p 1.43e-06p 0.000579p 0.015736p 0.062583p 0.075429n 0.075839l 1.09e-07p 8.36e-07p 1.46e-10p

  sm, eu half lives from 80eng2; gd, tb half lives from 89wal1.
1

    mass number    164                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g
half life                    1.39 s    1.58 s     45. s     3.0 m    stable     37. m     24. m    stable
lambda           0.0       0.0 4.987e-01 4.387e-01 1.540e-02 3.851e-03       0.0 3.122e-04 4.814e-04       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  -47.0000   53.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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xc 0.0 0.0 0.0 0.0 0.0 0.0 3.51e-06n 0.0 0.0 0.0
zp 64.44 ri 0.0 0.0 1.00e-09p 1.05e-07p 2.25e-06p 1.02e-06p 1.25e-07p 1.71e-10p 6.32e-11p 0.0
sig0.553 cc 0.0 0.0 1.00e-09p 1.06e-07p 2.36e-06p 3.38e-06p 3.51e-06p 1.71e-10p 2.34e-10p 1.24e-10p
rc 0.0 0.0 1.00e-09p 1.06e-07p 2.36e-06p 3.38e-06o 3.51e-06n 1.71e-10p 2.34e-10p 1.24e-10o
u233he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.001043n 0.0 0.0 0.0
zp 64.93 ri 0.0 4.69e-11p 7.92e-08p 1.34e-05p 0.000249p 0.000588p 0.000189p 6.22e-06p 1.37e-06p 3.30e-08p
sig0.642 cc 0.0 4.69e-11p 7.92e-08p 1.35e-05p 0.000262p 0.000850p 0.001043p 6.22e-06p 7.58e-06p 4.05e-06p
rc 0.0 4.69e-11p 7.92e-08p 1.35e-05p 0.000262p 0.000850p 0.001043n 6.22e-06p 7.58e-06p 4.05e-06p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.50e-05n 0.0 0.0 0.0
zp 63.74 ri 0.0 6.10e-10p 6.16e-07p 9.90e-06p 3.19e-05p 2.52e-06p 3.35e-08p 4.63e-12p 1.71e-12p 0.0
sig0.545 cc 0.0 6.10e-10p 6.17e-07p 1.05e-05p 4.24e-05p 4.49e-05p 4.50e-05p 4.63e-12p 6.35e-12p 3.36e-12p
rc 0.0 6.10e-10p 6.17e-07p 1.05e-05p 4.24e-05p 4.49e-05o 4.50e-05n 4.63e-12p 6.35e-12p 3.37e-12o
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.001828l 0.0 0.0 0.0
zp 65.01 ri 0.0 1.12e-10p 1.42e-07p 2.08e-05p 0.000385p 0.001010p 0.000402p 1.87e-05p 4.11e-06p 1.64e-07p
sig0.664 cc 0.0 1.13e-10p 1.42e-07p 2.10e-05p 0.000406p 0.001415p 0.001828p 1.87e-05p 2.28e-05p 1.23e-05p
rc 0.0 1.13e-10p 1.42e-07p 2.10e-05p 0.000406p 0.001415p 0.001828l 1.87e-05p 2.28e-05p 1.23e-05p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.001164n 0.0 0.0 0.0
zp 64.08 ri 0.0 1.60e-09p 3.00e-06p 0.000129p 0.000828p 0.000196p 7.36e-06p 4.77e-09p 1.77e-09p 0.0
sig0.558 cc 0.0 1.60e-09p 3.00e-06p 0.000132p 0.000960p 0.001156p 0.001164p 4.77e-09p 6.54e-09p 3.47e-09p
rc 0.0 1.60e-09p 3.00e-06p 0.000132p 0.000960p 0.001156o 0.001164n 4.77e-09p 6.54e-09p 3.47e-09o
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.003313n 0.0 0.0 0.0
zp 63.85 ri 2.23e-12p 2.49e-08p 2.68e-05p 0.000643p 0.002341p 0.000297p 5.20e-06p 1.39e-09p 5.15e-10p 0.0
sig0.551 cc 2.23e-12p 2.49e-08p 2.68e-05p 0.000670p 0.003011p 0.003308p 0.003313p 1.39e-09p 1.91e-09p 1.01e-09p
rc 2.23e-12p 2.49e-08p 2.68e-05p 0.000670p 0.003011p 0.003308o 0.003313n 1.39e-09p 1.91e-09p 1.01e-09o
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.001367n 0.0 0.0 0.0
zp 63.73 ri 6.84e-12p 4.14e-08p 2.17e-05p 0.000375p 0.000872p 9.68e-05p 1.24e-06p 3.43e-10p 1.27e-10p 0.0
sig0.562 cc 6.84e-12p 4.14e-08p 2.17e-05p 0.000397p 0.001269p 0.001366p 0.001367p 3.43e-10p 4.70e-10p 2.49e-10p
rc 6.84e-12p 4.14e-08p 2.17e-05p 0.000397p 0.001269p 0.001366o 0.001367n 3.43e-10p 4.70e-10p 2.49e-10o
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000132j 0.0 0.0 0.0

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zp 63.68 ri 7.43e-12p 1.81e-08p 3.20e-06p 4.70e-05p 7.03e-05p 1.12e-05p 1.61e-07p 1.42e-10p 3.12e-11p       0.0
sig0.600 cc 7.43e-12p 1.81e-08p 3.22e-06p 5.02e-05p 0.000121p 0.000132p 0.000132p 1.42e-10p 1.74e-10p 9.20e-11p
        rc 7.43e-12p 1.81e-08p 3.22e-06p 5.02e-05p 0.000121n 0.000132l 0.000132j 1.42e-10p 1.74e-10p 9.20e-11p
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.62e-05l      0.0       0.0       0.0
zp 64.18 ri       0.0  6.51e-11p 8.57e-08p 6.37e-06p 3.36e-05p 1.56e-05p 5.70e-07p 9.17e-10p 3.39e-10p       0.0
sig0.568 cc       0.0  6.51e-11p 8.57e-08p 6.45e-06p 4.00e-05p 5.57e-05p 5.62e-05p 9.17e-10p 1.26e-09p 6.66e-10p
        rc      0.0  6.51e-11p 8.57e-08p 6.45e-06p 4.00e-05p 5.57e-05n 5.62e-05l 9.17e-10p 1.26e-09p 6.66e-10o
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.047204l      0.0       0.0       0.0
zp 64.34 ri 3.65e-12p 4.77e-08p 5.22e-05p 0.003518p 0.025803p 0.016510p 0.001318p 5.05e-06p 2.16e-06p 3.50e-09p
sig0.600 cc 3.65e-12p 4.77e-08p 5.23e-05p 0.003570p 0.029373p 0.045883p 0.047205p 5.05e-06p 7.22e-06p 3.83e-06p
        rc 3.65e-12p 4.77e-08p 5.23e-05p 0.003570p 0.029373p 0.045883n 0.047205l 5.05e-06p 7.22e-06p 3.83e-06o

  sm, eu half lives from 80eng2; gd, tb half lives from 89wal1.
1

    mass number    165                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy m   66 dy g   67 ho g   68 er g   69 tm g
half life              0.454s    1.35 s    0.705m     2.1 m    1.26 m    2.33 h    stable    10.36h    30.06h
lambda            0.0 1.527e+00 5.134e-01 1.639e-02 5.501e-03 9.169e-03 8.264e-05       0.0 1.859e-05 6.405e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000   50.0000   50.0000  100.0000 -100.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0    2.5000       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0   97.5000       0.0       0.0       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.16e-06n      0.0       0.0
zp 64.82 ri       0.0  1.93e-11p 8.23e-09p 3.92e-07p 5.98e-07p 1.88e-08p 1.38e-07p 1.17e-09p       0.0       0.0
sig0.553 cc       0.0  1.93e-11p 8.25e-09p 4.00e-07p 9.98e-07p 5.18e-07p 1.14e-06p 1.16e-06p       0.0       0.0
        rc      0.0  1.93e-11p 8.25e-09p 4.00e-07p 9.98e-07p 5.18e-07p 1.14e-06n 1.16e-06m       0.0       0.0
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000626n      0.0       0.0
zp 65.31 ri       0.0  3.70e-09p 1.49e-06p 6.29e-05p 0.000321p 1.54e-05p 0.000205p 1.99e-05p 2.04e-07p 2.12e-10p
sig0.642 cc       0.0  3.70e-09p 1.49e-06p 6.44e-05p 0.000385p 0.000208p 0.000600p 0.000626p 2.04e-07p 2.12e-10p
        rc      0.0  3.70e-09p 1.49e-06p 6.44e-05p 0.000385p 0.000208p 0.000600o 0.000626n 2.04e-07p 2.12e-10p
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.72e-05n      0.0       0.0
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zp 64.12 ri 1.03e-11p 2.82e-08p 1.72e-06p 1.21e-05p 3.24e-06p 1.31e-08p 9.57e-08p 8.56e-11p 0.0 0.0
sig0.545 cc 1.03e-11p 2.82e-08p 1.75e-06p 1.38e-05p 1.71e-05p 8.55e-06p 1.70e-05p 1.72e-05p 0.0 0.0
rc 1.03e-11p 2.82e-08p 1.75e-06p 1.38e-05p 1.71e-05p 8.55e-06o 1.70e-05n 1.72e-05m 0.0 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000737l 0.0 0.0
zp 65.39 ri 1.68e-12p 4.88e-09p 1.61e-06p 6.44e-05p 0.000350p 2.00e-05p 0.000266p 3.45e-05p 5.50e-07p 1.05e-09p
sig0.664 cc 1.68e-12p 4.88e-09p 1.61e-06p 6.60e-05p 0.000416p 0.000228p 0.000696p 0.000737p 5.51e-07p 1.05e-09p
rc 1.68e-12p 4.88e-09p 1.61e-06p 6.60e-05p 0.000416p 0.000228p 0.000696n 0.000737l 5.51e-07p 1.05e-09p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000570n 0.0 0.0
zp 64.46 ri 2.70e-11p 1.37e-07p 2.09e-05p 0.000308p 0.000221p 2.40e-06p 1.76e-05p 6.54e-08p 1.67e-11p 0.0
sig0.558 cc 2.70e-11p 1.37e-07p 2.10e-05p 0.000329p 0.000550p 0.000278p 0.000563p 0.000570p 1.67e-11p 0.0
rc 2.70e-11p 1.37e-07p 2.10e-05p 0.000329p 0.000550p 0.000278o 0.000563n 0.000570m 1.67e-11p 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.001538n 0.0 0.0
zp 64.23 ri 4.70e-10p 1.41e-06p 0.000121p 0.000999p 0.000398p 2.13e-06p 1.56e-05p 2.50e-08p 2.46e-12p 0.0
sig0.551 cc 4.70e-10p 1.41e-06p 0.000122p 0.001121p 0.001520p 0.000762p 0.001518p 0.001538p 2.46e-12p 0.0
rc 4.70e-10p 1.41e-06p 0.000122p 0.001121p 0.001520p 0.000762o 0.001518n 0.001538m 2.46e-12p 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000937n 0.0 0.0
zp 64.10 ri 1.56e-09p 2.18e-06p 0.000119p 0.000614p 0.000196p 7.54e-07p 5.53e-06p 8.17e-09p 0.0 0.0
sig0.562 cc 1.56e-09p 2.19e-06p 0.000121p 0.000735p 0.000931p 0.000466p 0.000926p 0.000937p 0.0 0.0
rc 1.56e-09p 2.19e-06p 0.000121p 0.000735p 0.000931p 0.000466o 0.000926n 0.000937m 0.0 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.28e-05j 0.0 0.0
zp 64.06 ri 7.06e-10p 3.34e-07p 1.23e-05p 4.31e-05p 1.63e-05p 4.20e-08p 5.57e-07p 1.75e-09p 0.0 0.0
sig0.600 cc 7.06e-10p 3.35e-07p 1.27e-05p 5.58e-05p 7.22e-05p 3.61e-05p 7.18e-05p 7.28e-05p 0.0 0.0
rc 7.06e-10p 3.35e-07p 1.27e-05p 5.58e-05p 7.22e-05o 3.61e-05o 7.18e-05l 7.28e-05j 0.0 0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.92e-05l 0.0 0.0
zp 64.56 ri 0.0 2.70e-09p 5.88e-07p 8.19e-06p 9.51e-06p 1.13e-07p 8.30e-07p 6.19e-09p 2.21e-12p 0.0
sig0.568 cc 0.0 2.71e-09p 5.90e-07p 8.78e-06p 1.83e-05p 9.26e-06p 1.90e-05p 1.92e-05p 2.21e-12p 0.0
rc 0.0 2.71e-09p 5.90e-07p 8.78e-06p 1.83e-05p 9.26e-06p 1.90e-05m 1.92e-05k 2.21e-12p 0.0
cf252s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.028644l 0.0 0.0
zp 64.73 ri 9.64e-10p 2.98e-06p 0.000543p 0.009962p 0.015095p 0.000390p 0.002608p 4.41e-05p 6.02e-08p 4.65e-12p

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sig0.600 cc 9.64e-10p 2.98e-06p 0.000546p 0.010507p 0.025603p 0.013191p 0.028271p 0.028645p 6.02e-08p 4.65e-12p
        rc 9.64e-10p 2.98e-06p 0.000546p 0.010507p 0.025603p 0.013191p 0.028271n 0.028645l 6.02e-08p 4.65e-12p

  sm, eu, gd half lives from 80eng2; tb, dy half lives from 89wal1.
1

    mass number    166                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide      62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g   69 tm g   70 yb g
half life                                  3.400d    1.2e3y    1.117d    stable    7.70 h    56.7 h
lambda          0.0       0.0       0.0       0.0 2.360e-06 1.832e-11 7.182e-06       0.0 2.501e-05 3.396e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u233f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.73e-07n      0.0       0.0
zp 65.20 ri      0.0  5.20e-10p 9.59e-08p 3.01e-07p 2.70e-07p 3.43e-09p 1.27e-09p 1.52e-11p       0.0       0.0
sig0.553 cc      0.0  5.20e-10p 9.64e-08p 3.98e-07p 6.68e-07p 3.43e-09p 6.69e-07p 6.73e-07p       0.0       0.0
        rc      0.0  5.20e-10p 9.64e-08p 3.98e-07p 6.68e-07p 3.43e-09p 6.69e-07o 6.73e-07n       0.0       0.0
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.000236k      0.0       0.0       0.0       0.0       0.0
zp 65.70 ri 8.03e-11p 7.94e-08p 7.99e-06p 9.13e-05p 0.000136p 2.26e-05p 4.95e-06p 6.69e-07p 1.72e-09p       0.0
sig0.642 cc 8.03e-11p 7.95e-08p 8.07e-06p 9.94e-05p 0.000236p 2.26e-05p 0.000241p 0.000264p 1.72e-09p       0.0
        rc 8.03e-11p 7.95e-08p 8.07e-06p 9.94e-05p 0.000236k 2.26e-05p 0.000241k 0.000264k 1.72e-09p       0.0
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.03e-05n      0.0       0.0
zp 64.50 ri 1.58e-09p 2.48e-07p 6.10e-06p 3.51e-06p 4.34e-07p 6.65e-10p 2.46e-10p       0.0       0.0       0.0
sig0.545 cc 1.58e-09p 2.50e-07p 6.35e-06p 9.87e-06p 1.03e-05p 6.65e-10p 1.03e-05p 1.03e-05p       0.0       0.0
        rc 1.58e-09p 2.50e-07p 6.35e-06p 9.87e-06p 1.03e-05o 6.65e-10p 1.03e-05o 1.03e-05n       0.0       0.0
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000505l      0.0       0.0
zp 65.77 ri 2.09e-10p 1.57e-07p 1.38e-05p 0.000158p 0.000264p 5.46e-05p 1.20e-05p 2.32e-06p 1.00e-08p 4.93e-12p
sig0.664 cc 2.09e-10p 1.57e-07p 1.40e-05p 0.000172p 0.000436p 5.46e-05p 0.000448p 0.000505p 1.00e-08p 4.93e-12p
        rc 2.09e-10p 1.57e-07p 1.40e-05p 0.000172p 0.000436o 5.46e-05p 0.000448n 0.000505l 1.00e-08p 4.93e-12p
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000303n      0.0       0.0
zp 64.84 ri 5.07e-09p 2.04e-06p 9.97e-05p 0.000156p 4.52e-05p 2.78e-07p 1.03e-07p 3.66e-10p       0.0       0.0
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sig0.558 cc 5.07e-09p 2.04e-06p 0.000102p 0.000258p 0.000303p 2.78e-07p 0.000303p 0.000303p      0.0       0.0
         rc 5.07e-09p 2.04e-06p 0.000102p 0.000258p 0.000303o 2.78e-07p 0.000303o 0.000303n      0.0       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000621n      0.0       0.0
zp 64.60 ri 5.19e-08p 1.15e-05p 0.000307p 0.000264p 3.87e-05p 1.04e-07p 3.86e-08p 5.36e-11p      0.0       0.0
sig0.551 cc 5.19e-08p 1.16e-05p 0.000319p 0.000582p 0.000621p 1.04e-07p 0.000621p 0.000621p      0.0       0.0
         rc 5.19e-08p 1.16e-05p 0.000319p 0.000582p 0.000621o 1.04e-07p 0.000621o 0.000621n      0.0       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000456n      0.0       0.0
zp 64.48 ri 1.10e-07p 1.58e-05p 0.000246p 0.000176p 1.79e-05p 4.61e-08p 1.71e-08p 1.98e-11p      0.0       0.0
sig0.562 cc 1.10e-07p 1.59e-05p 0.000261p 0.000438p 0.000456p 4.61e-08p 0.000456p 0.000456p      0.0       0.0
         rc 1.10e-07p 1.59e-05p 0.000261p 0.000438p 0.000456o 4.61e-08p 0.000456o 0.000456n      0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  3.07e-05j      0.0       0.0  2.85e-05k      0.0       0.0
zp 64.43 ri 1.90e-08p 1.77e-06p 1.44e-05p 1.24e-05p 1.11e-06p 6.65e-09p 1.46e-09p 4.51e-12p      0.0       0.0
sig0.600 cc 1.90e-08p 1.79e-06p 1.62e-05p 2.86e-05p 2.97e-05p 6.90e-09p 2.97e-05p 2.97e-05p      0.0       0.0
         rc 1.90e-08p 1.79e-06p 1.62e-05p 2.86e-05l 2.97e-05j 6.65e-09p 2.97e-05j 2.97e-05i      0.0       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.12e-05l      0.0       0.0
zp 64.94 ri 9.55e-11p 6.22e-08p 2.39e-06p 6.96e-06p 1.80e-06p 2.49e-08p 9.23e-09p 3.74e-11p      0.0       0.0
sig0.568 cc 9.55e-11p 6.23e-08p 2.45e-06p 9.41e-06p 1.12e-05p 2.49e-08p 1.12e-05p 1.12e-05p      0.0       0.0
         rc 9.55e-11p 6.23e-08p 2.45e-06p 9.41e-06p 1.12e-05o 2.49e-08p 1.12e-05n 1.12e-05l      0.0       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  0.017686k      0.0       0.0  0.019582l      0.0       0.0
zp 65.11 ri 1.29e-07p 6.30e-05p 0.002919p 0.010356p 0.004857p 0.000140p 6.00e-05p 7.39e-07p 1.59e-10p      0.0
sig0.600 cc 1.29e-07p 6.32e-05p 0.002985p 0.013351p 0.018212p 0.000128p 0.018267p 0.018396p 1.45e-10p      0.0
         rc 1.29e-07p 6.31e-05p 0.002982p 0.013338p 0.018195k 0.000140p 0.018255k 0.018396k 1.59e-10p      0.0

  dy, ho half lives from 89wal1.
1

    mass number    167                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide      62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho g   68 er m   68 er g   69 tm g   70 yb g
half life                                   6.2 m     3.1 h     2.28 s    stable    9.24 d    17.5 m
lambda          0.0       0.0       0.0       0.0 1.863e-03 6.211e-05 3.040e-01       0.0 8.682e-07 6.601e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000   10.0000   90.0000   -2.0000 -100.0000
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 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  -98.0000       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.38e-08n      0.0       0.0
zp 65.59 ri      0.0  5.78e-12p 2.65e-09p 3.07e-08p 5.67e-08p 3.73e-09p 3.67e-12p 2.69e-11p      0.0       0.0
sig0.553 cc      0.0  5.79e-12p 2.65e-09p 3.33e-08p 9.00e-08p 9.38e-08p 9.38e-09p 9.38e-08p      0.0       0.0
         rc      0.0  5.79e-12p 2.65e-09p 3.33e-08p 9.00e-08p 9.38e-08o 9.38e-09o 9.38e-08n      0.0       0.0
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000218n      0.0       0.0
zp 66.08 ri 2.61e-12p 6.27e-09p 1.49e-06p 3.83e-05p 0.000122p 5.31e-05p 2.06e-07p 2.73e-06p 1.80e-08p 1.10e-11p
sig0.642 cc 2.61e-12p 6.28e-09p 1.50e-06p 3.98e-05p 0.000162p 0.000215p 2.17e-05p 0.000218p 1.80e-08p 1.10e-11p
         rc 2.61e-12p 6.28e-09p 1.50e-06p 3.98e-05p 0.000162p 0.000215o 2.17e-05o 0.000218n 1.80e-08p 1.10e-11p
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.87e-06n      0.0       0.0
zp 64.88 ri 3.72e-11p 2.39e-08p 1.42e-06p 2.67e-06p 7.54e-07p 6.25e-09p      0.0  4.00e-12p      0.0       0.0
sig0.545 cc 3.72e-11p 2.39e-08p 1.44e-06p 4.11e-06p 4.86e-06p 4.87e-06p 4.87e-07p 4.87e-06p      0.0       0.0
         rc 3.72e-11p 2.39e-08p 1.44e-06p 4.11e-06p 4.86e-06o 4.87e-06o 4.87e-07o 4.87e-06n      0.0       0.0
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000274l      0.0       0.0
zp 66.15 ri 5.18e-12p 8.88e-09p 1.75e-06p 4.30e-05p 0.000147p 7.65e-05p 4.02e-07p 5.34e-06p 5.54e-08p 6.26e-11p
sig0.664 cc 5.18e-12p 8.88e-09p 1.76e-06p 4.47e-05p 0.000192p 0.000268p 2.73e-05p 0.000274p 5.54e-08p 6.26e-11p
         rc 5.18e-12p 8.88e-09p 1.76e-06p 4.47e-05p 0.000192p 0.000268n 2.73e-05o 0.000274l 5.54e-08p 6.26e-11p
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000182n      0.0       0.0
zp 65.22 ri 1.09e-10p 1.64e-07p 2.01e-05p 9.73e-05p 6.25e-05p 1.81e-06p 5.63e-10p 4.13e-09p      0.0       0.0
sig0.558 cc 1.09e-10p 1.64e-07p 2.03e-05p 0.000118p 0.000180p 0.000182p 1.82e-05p 0.000182p      0.0       0.0
         rc 1.09e-10p 1.64e-07p 2.03e-05p 0.000118p 0.000180p 0.000182o 1.82e-05o 0.000182n      0.0       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000311n      0.0       0.0
zp 64.98 ri 1.20e-09p 1.02e-06p 6.76e-05p 0.000180p 6.12e-05p 8.22e-07p 1.04e-10p 7.60e-10p      0.0       0.0
sig0.551 cc 1.20e-09p 1.02e-06p 6.87e-05p 0.000249p 0.000310p 0.000311p 3.11e-05p 0.000311p      0.0       0.0
         rc 1.20e-09p 1.02e-06p 6.87e-05p 0.000249p 0.000310o 0.000311o 3.11e-05o 0.000311n      0.0       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000182n      0.0       0.0
zp 64.85 ri 2.89e-09p 1.39e-06p 5.19e-05p 0.000104p 2.45e-05p 2.83e-07p 2.88e-11p 2.11e-10p      0.0       0.0
sig0.562 cc 2.89e-09p 1.39e-06p 5.33e-05p 0.000158p 0.000182p 0.000182p 1.82e-05p 0.000182p      0.0       0.0
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```
        rc 2.89e-09p 1.39e-06p 5.33e-05p 0.000158p 0.000182o 0.000182o 1.82e-05o 0.000182n      0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.59e-05j      0.0       0.0
zp 64.81 ri 9.24e-10p 2.28e-07p 4.58e-06p 9.14e-06p 1.97e-06p 3.90e-08p 4.15e-12p 5.51e-11p      0.0       0.0
sig0.600 cc 9.24e-10p 2.29e-07p 4.81e-06p 1.39e-05p 1.59e-05p 1.59e-05p 1.59e-06p 1.59e-05p      0.0       0.0
        rc 9.24e-10p 2.29e-07p 4.81e-06p 1.39e-05p 1.59e-05n 1.59e-05m 1.59e-06o 1.59e-05j      0.0       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.55e-06l      0.0       0.0
zp 65.32 ri      0.0  1.03e-09p 1.14e-07p 8.53e-07p 5.56e-07p 2.95e-08p 1.17e-11p 8.57e-11p      0.0       0.0
sig0.568 cc      0.0  1.03e-09p 1.15e-07p 9.68e-07p 1.52e-06p 1.55e-06p 1.55e-07p 1.55e-06p      0.0       0.0
        rc      0.0  1.03e-09p 1.15e-07p 9.68e-07p 1.52e-06o 1.55e-06n 1.55e-07o 1.55e-06l      0.0       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.009568l      0.0       0.0
zp 65.49 ri 3.03e-09p 4.05e-06p 0.000487p 0.004142p 0.004510p 0.000420p 5.36e-07p 3.59e-06p 2.44e-09p      0.0
sig0.600 cc 3.03e-09p 4.05e-06p 0.000491p 0.004633p 0.009143p 0.009564p 0.000957p 0.009568p 2.44e-09p      0.0
        rc 3.03e-09p 4.05e-06p 0.000491p 0.004633p 0.009143o 0.009564n 0.000957o 0.009568l 2.44e-09p      0.0

  dy, ho half lives from 89wal1; er, tm half life 90bur1.
1

    mass number    168                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide      62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb g
half life                                  8.5 m     3.0 m    stable    93.1 d    stable
lambda          0.0       0.0       0.0       0.0 1.359e-03 3.851e-03       0.0 8.617e-08       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000       0.0
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.46e-08n      0.0       0.0
zp 65.97 ri      0.0       0.0  1.15e-10p 3.02e-09p 1.88e-08p 2.61e-09p 8.45e-11p      0.0       0.0
sig0.553 cc      0.0       0.0  1.15e-10p 3.13e-09p 2.19e-08p 2.46e-08p 2.46e-08p      0.0       0.0
        rc      0.0       0.0  1.15e-10p 3.13e-09p 2.19e-08p 2.46e-08o 2.46e-08n      0.0       0.0
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000133n      0.0       0.0
zp 66.46 ri      0.0  2.61e-10p 1.48e-07p 8.74e-06p 6.06e-05p 5.62e-05p 6.92e-06p 9.91e-08p 1.46e-10p
sig0.642 cc      0.0  2.61e-10p 1.49e-07p 8.89e-06p 6.95e-05p 0.000126p 0.000133p 9.91e-08p 1.46e-10p
```

rc 0.0 2.61e-10p 1.49e-07p 8.89e-06p 6.95e-05p 0.000126o 0.000133n 9.91e-08p 1.46e-10p
u236f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.22e-06n 0.0 0.0
zp 65.25 ri 0.0 6.18e-10p 1.37e-07p 5.58e-07p 5.12e-07p 1.03e-08p 2.98e-11p 0.0 0.0
sig0.545 cc 0.0 6.19e-10p 1.37e-07p 6.95e-07p 1.21e-06p 1.22e-06p 1.22e-06p 0.0 0.0
rc 0.0 6.19e-10p 1.37e-07p 6.95e-07p 1.21e-06p 1.22e-06o 1.22e-06n 0.0 0.0
pu239h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000138l 0.0 0.0
zp 66.53 ri 0.0 3.40e-10p 1.52e-07p 8.11e-06p 5.79e-05p 6.15e-05p 9.75e-06p 2.08e-07p 5.35e-10p
sig0.664 cc 0.0 3.40e-10p 1.52e-07p 8.26e-06p 6.62e-05p 0.000128p 0.000138p 2.08e-07p 5.35e-10p
rc 0.0 3.40e-10p 1.52e-07p 8.26e-06p 6.62e-05p 0.000128n 0.000138l 2.08e-07p 5.35e-10p
pu240f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 9.10e-05n 0.0 0.0
zp 65.60 ri 1.41e-12p 5.80e-09p 2.56e-06p 2.88e-05p 5.57e-05p 3.84e-06p 3.62e-08p 7.43e-12p 0.0
sig0.558 cc 1.41e-12p 5.81e-09p 2.56e-06p 3.13e-05p 8.71e-05p 9.09e-05p 9.10e-05p 7.43e-12p 0.0
rc 1.41e-12p 5.81e-09p 2.56e-06p 3.13e-05p 8.71e-05p 9.09e-05o 9.10e-05n 7.43e-12p 0.0
pu241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000124n 0.0 0.0
zp 65.36 ri 1.57e-11p 3.71e-08p 8.97e-06p 5.51e-05p 5.82e-05p 1.96e-06p 7.86e-09p 0.0 0.0
sig0.551 cc 1.57e-11p 3.72e-08p 9.00e-06p 6.41e-05p 0.000122p 0.000124p 0.000124p 0.0 0.0
rc 1.57e-11p 3.72e-08p 9.00e-06p 6.41e-05p 0.000122p 0.000124o 0.000124n 0.0 0.0
pu242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 7.29e-05n 0.0 0.0
zp 65.23 ri 5.05e-11p 6.70e-08p 8.21e-06p 3.79e-05p 2.60e-05p 7.65e-07p 2.28e-09p 0.0 0.0
sig0.562 cc 5.05e-11p 6.71e-08p 8.27e-06p 4.62e-05p 7.22e-05p 7.29e-05p 7.29e-05p 0.0 0.0
rc 5.05e-11p 6.71e-08p 8.27e-06p 4.62e-05p 7.22e-05p 7.29e-05o 7.29e-05n 0.0 0.0
th232h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 8.01e-06j 0.0 0.0
zp 65.19 ri 2.88e-11p 1.92e-08p 9.77e-07p 4.58e-06p 2.32e-06p 1.17e-07p 4.78e-10p 0.0 0.0
sig0.600 cc 2.88e-11p 1.92e-08p 9.96e-07p 5.58e-06p 7.90e-06p 8.01e-06p 8.01e-06p 0.0 0.0
rc 2.88e-11p 1.92e-08p 9.96e-07p 5.58e-06p 7.90e-06n 8.01e-06l 8.01e-06j 0.0 0.0
np237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.98e-07l 0.0 0.0
zp 65.70 ri 0.0 2.09e-11p 6.80e-09p 1.37e-07p 2.23e-07p 3.16e-08p 3.08e-10p 0.0 0.0
sig0.568 cc 0.0 2.09e-11p 6.82e-09p 1.44e-07p 3.67e-07p 3.98e-07p 3.98e-07p 0.0 0.0
rc 0.0 2.09e-11p 6.82e-09p 1.44e-07p 3.67e-07p 3.98e-07n 3.98e-07l 0.0 0.0

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 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.005251l      0.0       0.0
zp 65.88 ri 4.63e-11p 1.75e-07p 5.74e-05p 0.001239p 0.003202p 0.000733p 1.92e-05p 3.17e-08p 4.48e-12p
sig0.600 cc 4.63e-11p 1.75e-07p 5.76e-05p 0.001297p 0.004499p 0.005232p 0.005251p 3.17e-08p 4.48e-12p
         rc 4.63e-11p 1.75e-07p 5.76e-05p 0.001297p 0.004499p 0.005232n 0.005251l 3.17e-08p 4.48e-12p

  dy, ho half lives from 89wal1.
1

    mass number    169                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       63 eu g   64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb m   70 yb g   71 lu m   71 lu g
half life                                   4.7 m    9.40 d    stable     46. s    32.02d      2.7 m    1.42 d
lambda           0.0       0.0       0.0       0.0 2.458e-03 8.535e-07       0.0 1.507e-02 2.505e-07 4.279e-03 5.650e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000       0.0 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0  100.0000
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  8.24e-09n      0.0       0.0       0.0       0.0
zp 66.35 ri      0.0  3.88e-12p 4.00e-10p 5.21e-09p 2.45e-09p 1.80e-10p      0.0       0.0       0.0       0.0       0.0
sig0.553 cc      0.0  3.88e-12p 4.04e-10p 5.62e-09p 8.06e-09p 8.24e-09p 8.24e-09p      0.0       0.0       0.0       0.0
         rc      0.0  3.88e-12p 4.04e-10p 5.62e-09p 8.06e-09p 8.24e-09o 8.24e-09n      0.0       0.0       0.0       0.0
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  8.25e-05k      0.0       0.0       0.0       0.0       0.0
zp 66.84 ri 7.97e-12p 1.09e-08p 1.50e-06p 2.31e-05p 4.56e-05p 1.22e-05p 4.04e-07p 1.00e-10p 1.33e-09p      0.0       0.0
sig0.642 cc 7.97e-12p 1.09e-08p 1.52e-06p 2.46e-05p 7.02e-05p 8.25e-05p 8.29e-05p 1.00e-10p 1.43e-09p      0.0       0.0
         rc 7.97e-12p 1.09e-08p 1.52e-06p 2.46e-05p 7.02e-05o 8.25e-05k 8.29e-05k 1.00e-10p 1.43e-09p      0.0       0.0
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  3.00e-07n      0.0       0.0       0.0       0.0
zp 65.63 ri 1.12e-11p 6.52e-09p 9.42e-08p 1.85e-07p 1.34e-08p 1.03e-10p      0.0       0.0       0.0       0.0       0.0
sig0.545 cc 1.12e-11p 6.53e-09p 1.01e-07p 2.86e-07p 3.00e-07p 3.00e-07p 3.00e-07p      0.0       0.0       0.0       0.0
         rc 1.12e-11p 6.53e-09p 1.01e-07p 2.86e-07p 3.00e-07p 3.00e-07o 3.00e-07n      0.0       0.0       0.0       0.0
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  6.42e-05l      0.0       0.0       0.0       0.0
zp 66.91 ri 8.84e-12p 8.98e-09p 1.06e-06p 1.61e-05p 3.50e-05p 1.15e-05p 5.34e-07p 2.17e-10p 2.88e-09p      0.0  1.93e-12p
sig0.664 cc 8.84e-12p 8.99e-09p 1.07e-06p 1.72e-05p 5.21e-05p 6.36e-05p 6.42e-05p 2.17e-10p 3.10e-09p      0.0  2.08e-12p
         rc 8.84e-12p 8.99e-09p 1.07e-06p 1.72e-05p 5.21e-05p 6.36e-05n 6.42e-05l 2.17e-10p 3.10e-09p      0.0  2.08e-12p
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 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.000106l 4.02e-05n      0.0       0.0       0.0       0.0
zp 65.98 ri 3.35e-10p 3.92e-07p 1.49e-05p 6.33e-05p 1.37e-05p 3.29e-07p 1.75e-10p      0.0       0.0       0.0       0.0
sig0.558 cc 3.35e-10p 3.93e-07p 1.53e-05p 7.86e-05p 9.23e-05p 9.27e-05p 9.27e-05p      0.0       0.0       0.0       0.0
         rc 3.35e-10p 3.93e-07p 1.53e-05p 7.86e-05p 9.23e-05o 9.27e-05m 9.27e-05l      0.0       0.0       0.0       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  5.90e-05n      0.0       0.0       0.0       0.0
zp 65.74 ri 1.20e-09p 7.83e-07p 1.62e-05p 3.78e-05p 4.23e-06p 4.53e-08p 1.39e-11p      0.0       0.0       0.0       0.0
sig0.551 cc 1.20e-09p 7.84e-07p 1.70e-05p 5.47e-05p 5.90e-05p 5.90e-05p 5.90e-05p      0.0       0.0       0.0       0.0
         rc 1.20e-09p 7.84e-07p 1.70e-05p 5.47e-05p 5.90e-05p 5.90e-05o 5.90e-05n      0.0       0.0       0.0       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  4.38e-05n      0.0       0.0       0.0       0.0
zp 65.60 ri 3.72e-09p 1.18e-06p 1.62e-05p 2.42e-05p 2.17e-06p 1.69e-08p 4.88e-12p      0.0       0.0       0.0       0.0
sig0.562 cc 3.72e-09p 1.18e-06p 1.74e-05p 4.16e-05p 4.37e-05p 4.38e-05p 4.38e-05p      0.0       0.0       0.0       0.0
         rc 3.72e-09p 1.18e-06p 1.74e-05p 4.16e-05p 4.37e-05p 4.38e-05o 4.38e-05n      0.0       0.0       0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  3.78e-06n 3.89e-06k      0.0       0.0       0.0       0.0
zp 65.56 ri 1.14e-09p 1.48e-07p 1.63e-06p 1.87e-06p 2.26e-07p 2.40e-09p 1.93e-12p      0.0       0.0       0.0       0.0
sig0.600 cc 1.14e-09p 1.49e-07p 1.78e-06p 3.65e-06p 3.88e-06p 3.88e-06p 3.88e-06p      0.0       0.0       0.0       0.0
         rc 1.14e-09p 1.49e-07p 1.78e-06p 3.65e-06o 3.88e-06n 3.88e-06l 3.88e-06j      0.0       0.0       0.0       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.30e-07l      0.0       0.0       0.0       0.0
zp 66.08 ri      0.0  3.45e-10p 1.94e-08p 7.99e-08p 2.91e-08p 8.11e-10p 1.34e-12p      0.0       0.0       0.0       0.0
sig0.568 cc      0.0  3.45e-10p 1.98e-08p 9.97e-08p 1.29e-07p 1.30e-07p 1.30e-07p      0.0       0.0       0.0       0.0
         rc      0.0  3.45e-10p 1.98e-08p 9.97e-08p 1.29e-07o 1.30e-07n 1.30e-07l      0.0       0.0       0.0       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.001660n 0.001836p      0.0       0.0       0.0       0.0
zp 66.26 ri 3.22e-09p 2.86e-06p 0.000157p 0.000960p 0.000514p 3.39e-05p 1.59e-07p 8.11e-12p 5.42e-11p      0.0       0.0
sig0.600 cc 3.22e-09p 2.86e-06p 0.000160p 0.001120p 0.001635p 0.001669p 0.001669p 7.70e-12p 5.92e-11p      0.0       0.0
         rc 3.22e-09p 2.86e-06p 0.000160p 0.001120p 0.001635o 0.001669m 0.001669m 8.11e-12p 6.23e-11p      0.0       0.0

  ho, er half lives from 89wal1; yb half life 90bur1.
1

    mass number    170                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g   69 tm g   70 yb g
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```
half life                                          43. s     2.8 m    stable    128.6d    stable
lambda          0.0       0.0       0.0       0.0       0.0 1.612e-02 4.126e-03       0.0 6.238e-08       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000   -0.2000   99.8000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.46e-09n      0.0       0.0
zp 66.73 ri      0.0       0.0       0.0  2.33e-11p 1.11e-09p 5.24e-10p 5.24e-10p 2.80e-10p 1.25e-12p      0.0
sig0.553 cc      0.0       0.0       0.0  2.34e-11p 1.14e-09p 5.24e-10p 1.66e-09p 2.46e-09p 1.25e-12p 1.24e-12p
         rc      0.0       0.0       0.0  2.34e-11p 1.14e-09p 5.24e-10p 1.66e-09p 2.46e-09n 1.25e-12p 1.24e-12p
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.27e-05n      0.0       0.0
zp 67.22 ri      0.0       0.0  4.87e-10p 1.59e-07p 5.53e-06p 1.17e-05p 1.17e-05p 1.35e-05p 1.01e-06p 8.42e-09p
sig0.642 cc      0.0       0.0  4.87e-10p 1.60e-07p 5.69e-06p 1.17e-05p 1.74e-05p 4.27e-05p 1.01e-06p 1.01e-06p
         rc      0.0       0.0  4.87e-10p 1.60e-07p 5.69e-06p 1.17e-05p 1.74e-05p 4.27e-05n 1.01e-06p 1.01e-06p
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.08e-08n      0.0       0.0
zp 66.01 ri      0.0       0.0  2.97e-10p 1.05e-08p 6.85e-08p 5.57e-09p 5.57e-09p 3.34e-10p      0.0       0.0
sig0.545 cc      0.0       0.0  2.97e-10p 1.08e-08p 7.94e-08p 5.57e-09p 8.49e-08p 9.08e-08p      0.0       0.0
         rc      0.0       0.0  2.97e-10p 1.08e-08p 7.94e-08p 5.57e-09p 8.49e-08o 9.08e-08n      0.0       0.0
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.64e-05l      0.0       0.0
zp 67.29 ri      0.0       0.0  6.25e-10p 1.66e-07p 5.43e-06p 1.22e-05p 1.22e-05p 1.64e-05p 1.63e-06p 2.11e-08p
sig0.664 cc      0.0       0.0  6.25e-10p 1.67e-07p 5.59e-06p 1.22e-05p 1.78e-05p 4.64e-05p 1.63e-06p 1.65e-06p
         rc      0.0       0.0  6.25e-10p 1.67e-07p 5.59e-06p 1.22e-05p 1.78e-05p 4.64e-05l 1.63e-06p 1.65e-06p
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.02e-05n      0.0       0.0
zp 66.36 ri      0.0  2.24e-12p 9.89e-09p 9.54e-07p 1.27e-05p 3.02e-06p 3.02e-06p 4.92e-07p 1.01e-09p      0.0
sig0.558 cc      0.0  2.24e-12p 9.89e-09p 9.64e-07p 1.37e-05p 3.02e-06p 1.67e-05p 2.02e-05p 1.01e-09p 1.01e-09p
         rc      0.0  2.25e-12p 9.89e-09p 9.64e-07p 1.37e-05p 3.02e-06p 1.67e-05p 2.02e-05n 1.01e-09p 1.01e-09p
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.66e-05n      0.0       0.0
zp 66.11 ri      0.0  1.35e-11p 3.25e-08p 1.66e-06p 1.18e-05p 1.47e-06p 1.47e-06p 1.10e-07p 9.06e-11p      0.0
sig0.551 cc      0.0  1.35e-11p 3.26e-08p 1.69e-06p 1.35e-05p 1.47e-06p 1.50e-05p 1.66e-05p 9.06e-11p 9.04e-11p
         rc      0.0  1.35e-11p 3.26e-08p 1.69e-06p 1.35e-05p 1.47e-06p 1.50e-05o 1.66e-05n 9.06e-11p 9.04e-11p
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.10e-05n      0.0       0.0
zp 65.98 ri      0.0  8.83e-11p 9.71e-08p 3.34e-06p 1.44e-05p 1.51e-06p 1.51e-06p 7.84e-08p 6.31e-11p       0.0
sig0.562 cc      0.0  8.83e-11p 9.72e-08p 3.44e-06p 1.79e-05p 1.51e-06p 1.94e-05p 2.10e-05p 6.31e-11p 6.30e-11p
        rc      0.0  8.83e-11p 9.72e-08p 3.44e-06p 1.79e-05p 1.51e-06p 1.94e-05o 2.10e-05n 6.31e-11p 6.30e-11p
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.74e-06j      0.0       0.0
zp 65.94 ri      0.0  4.07e-11p 1.41e-08p 3.88e-07p 1.03e-06p 1.50e-07p 1.50e-07p 8.18e-09p 1.75e-11p       0.0
sig0.600 cc      0.0  4.07e-11p 1.41e-08p 4.02e-07p 1.44e-06p 1.50e-07p 1.59e-06p 1.74e-06p 1.75e-11p 1.74e-11p
        rc      0.0  4.07e-11p 1.41e-08p 4.02e-07p 1.44e-06o 1.50e-07p 1.59e-06m 1.74e-06j 1.75e-11p 1.74e-11p
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.08e-07l      0.0       0.0
zp 66.46 ri      0.0       0.0  1.12e-10p 1.83e-08p 1.96e-07p 8.97e-08p 8.97e-08p 1.37e-08p 6.78e-11p       0.0
sig0.568 cc      0.0       0.0  1.12e-10p 1.84e-08p 2.15e-07p 8.97e-08p 3.04e-07p 4.08e-07p 6.78e-11p 6.77e-11p
        rc      0.0       0.0  1.12e-10p 1.84e-08p 2.15e-07p 8.97e-08p 3.04e-07o 4.08e-07l 6.78e-11p 6.77e-11p
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001397p      0.0       0.0
zp 66.65 ri      0.0  9.78e-11p 2.44e-07p 3.62e-05p 0.000549p 0.000348p 0.000348p 0.000115p 1.39e-06p 1.53e-09p
sig0.600 cc      0.0  9.78e-11p 2.44e-07p 3.64e-05p 0.000585p 0.000348p 0.000934p 0.001397p 1.39e-06p 1.38e-06p
        rc      0.0  9.78e-11p 2.44e-07p 3.64e-05p 0.000585p 0.000348p 0.000934p 0.001397o 1.39e-06p 1.38e-06p

  ho half life from 89wal1; tm half life 90bur1.
1

    mass number    171                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide      64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb g   71 lu m   71 lu g   72 hf g
half life                                   7.52 h    1.92 y    stable     78. s    8.24 d    12.2 h
lambda          0.0       0.0       0.0       0.0 2.560e-05 1.145e-08       0.0 8.887e-03 9.736e-07 1.578e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  7.58e-10n      0.0       0.0       0.0
zp 67.11 ri      0.0  1.15e-12p 1.26e-10p 4.04e-10p 2.23e-10p 3.88e-12p       0.0       0.0       0.0       0.0
sig0.553 cc      0.0  1.15e-12p 1.27e-10p 5.31e-10p 7.54e-10p 7.58e-10p 7.58e-10p       0.0       0.0       0.0
        rc      0.0  1.15e-12p 1.27e-10p 5.31e-10p 7.54e-10o 7.58e-10o 7.58e-10n       0.0       0.0       0.0
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.37e-05n      0.0       0.0       0.0
zp 67.61 ri 1.48e-11p 1.18e-08p 9.74e-07p 9.22e-06p 1.15e-05p 1.93e-06p 3.86e-08p 4.03e-11p 4.03e-11p       0.0
sig0.642 cc 1.48e-11p 1.19e-08p 9.86e-07p 1.02e-05p 2.17e-05p 2.37e-05p 2.37e-05p 4.03e-11p 8.06e-11p       0.0
        rc 1.48e-11p 1.19e-08p 9.86e-07p 1.02e-05p 2.17e-05p 2.37e-05o 2.37e-05n 4.03e-11p 8.06e-11p       0.0
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.00e-08n      0.0       0.0       0.0
zp 66.39 ri 8.98e-12p 1.24e-09p 1.82e-08p 9.77e-09p 7.17e-10p 1.32e-12p      0.0       0.0       0.0       0.0
sig0.545 cc 8.98e-12p 1.25e-09p 1.95e-08p 2.93e-08p 3.00e-08p 3.00e-08p 3.00e-08p      0.0       0.0       0.0
        rc 8.98e-12p 1.25e-09p 1.95e-08p 2.93e-08p 3.00e-08o 3.00e-08o 3.00e-08n      0.0       0.0       0.0
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.67e-05l      0.0       0.0       0.0
zp 67.67 ri 3.25e-11p 1.96e-08p 1.40e-06p 1.32e-05p 1.82e-05p 3.78e-06p 1.08e-07p 1.87e-10p 1.87e-10p       0.0
sig0.664 cc 3.25e-11p 1.96e-08p 1.42e-06p 1.46e-05p 3.28e-05p 3.66e-05p 3.67e-05p 1.87e-10p 3.74e-10p       0.0
        rc 3.25e-11p 1.96e-08p 1.42e-06p 1.46e-05p 3.28e-05p 3.66e-05n 3.67e-05l 1.87e-10p 3.74e-10p       0.0
 pu240f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.11e-05n      0.0       0.0       0.0
zp 66.74 ri 3.67e-10p 1.29e-07p 4.05e-06p 5.82e-06p 1.11e-06p 8.21e-09p 4.94e-12p      0.0       0.0       0.0
sig0.558 cc 3.67e-10p 1.29e-07p 4.18e-06p 1.00e-05p 1.11e-05p 1.11e-05p 1.11e-05p      0.0       0.0       0.0
        rc 3.67e-10p 1.29e-07p 4.18e-06p 1.00e-05p 1.11e-05o 1.11e-05o 1.11e-05n      0.0       0.0       0.0
 pu241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.80e-06n      0.0       0.0       0.0
zp 66.49 ri 9.77e-10p 1.83e-07p 3.05e-06p 2.34e-06p 2.16e-07p 6.74e-10p      0.0       0.0       0.0       0.0
sig0.551 cc 9.77e-10p 1.84e-07p 3.24e-06p 5.58e-06p 5.80e-06p 5.80e-06p 5.80e-06p      0.0       0.0       0.0
        rc 9.77e-10p 1.84e-07p 3.24e-06p 5.58e-06p 5.80e-06o 5.80e-06o 5.80e-06n      0.0       0.0       0.0
 pu242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.19e-05n      0.0       0.0       0.0
zp 66.36 ri 5.91e-09p 6.75e-07p 6.79e-06p 4.11e-06p 2.68e-07p 7.52e-10p      0.0       0.0       0.0       0.0
sig0.562 cc 5.91e-09p 6.81e-07p 7.47e-06p 1.16e-05p 1.18e-05p 1.19e-05p 1.19e-05p      0.0       0.0       0.0
        rc 5.91e-09p 6.81e-07p 7.47e-06p 1.16e-05p 1.18e-05o 1.19e-05o 1.19e-05n      0.0       0.0       0.0
 th232h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  8.19e-07j      0.0       0.0       0.0
zp 66.31 ri 1.03e-09p 7.09e-08p 4.38e-07p 2.89e-07p 1.94e-08p 1.08e-10p      0.0       0.0       0.0       0.0
sig0.600 cc 1.03e-09p 7.19e-08p 5.10e-07p 7.99e-07p 8.19e-07p 8.19e-07p 8.19e-07p      0.0       0.0       0.0
        rc 1.03e-09p 7.19e-08p 5.10e-07p 7.99e-07o 8.19e-07n 8.19e-07l 8.19e-07j      0.0       0.0       0.0
 np237f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.21e-07l      0.0       0.0       0.0
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zp 66.84 ri 2.24e-12p 1.09e-09p 3.20e-08p 7.30e-08p 1.47e-08p 2.12e-10p      0.0       0.0       0.0       0.0
sig0.568 cc 2.24e-12p 1.09e-09p 3.31e-08p 1.06e-07p 1.21e-07p 1.21e-07p 1.21e-07p      0.0       0.0       0.0
         rc 2.24e-12p 1.09e-09p 3.31e-08p 1.06e-07p 1.21e-07o 1.21e-07n 1.21e-07l      0.0       0.0       0.0
 cf252s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000708p      0.0       0.0       0.0
zp 67.03 ri 9.05e-09p 3.59e-06p 0.000137p 0.000404p 0.000159p 4.91e-06p 1.47e-08p 1.27e-12p 1.27e-12p      0.0
sig0.600 cc 9.05e-09p 3.60e-06p 0.000140p 0.000545p 0.000703p 0.000708p 0.000708p 1.27e-12p 2.54e-12p      0.0
         rc 9.05e-09p 3.60e-06p 0.000140p 0.000545p 0.000703o 0.000708o 0.000708o 1.27e-12p 2.55e-12p      0.0

  er, tm half lives from 89wal1.
1

    mass number    172                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb g   71 lu m   71 lu g   72 hf g
half life                                   2.05 d    2.65 d    stable      4. m    6.70 d    1.87 y
lambda            0.0       0.0       0.0       0.0 3.913e-06 3.027e-06       0.0 2.888e-03 1.197e-06 1.175e-08
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 u233f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.84e-10n      0.0       0.0       0.0
zp 67.49 ri      0.0       0.0  1.35e-11p 9.23e-11p 1.72e-10p 6.67e-12p      0.0       0.0       0.0       0.0
sig0.553 cc      0.0       0.0  1.36e-11p 1.06e-10p 2.78e-10p 2.84e-10p 2.84e-10p      0.0       0.0       0.0
         rc      0.0       0.0  1.36e-11p 1.06e-10p 2.78e-10p 2.84e-10o 2.84e-10n      0.0       0.0       0.0
 u233he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  1.79e-05k      0.0       0.0       0.0       0.0       0.0
zp 67.99 ri      0.0  1.18e-09p 2.28e-07p 4.82e-06p 1.28e-05p 4.66e-06p 2.13e-07p 5.29e-10p 5.29e-10p      0.0
sig0.642 cc      0.0  1.18e-09p 2.29e-07p 5.05e-06p 1.79e-05p 2.25e-05p 2.28e-05p 5.29e-10p 1.06e-09p      0.0
         rc      0.0  1.18e-09p 2.29e-07p 5.05e-06p 1.79e-05k 2.25e-05m 2.28e-05m 5.29e-10p 1.06e-09p      0.0
 u236f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  8.05e-09n      0.0       0.0       0.0
zp 66.76 ri      0.0  6.45e-11p 3.32e-09p 3.72e-09p 9.40e-10p 4.39e-12p      0.0       0.0       0.0       0.0
sig0.545 cc      0.0  6.47e-11p 3.39e-09p 7.11e-09p 8.05e-09p 8.05e-09p 8.05e-09p      0.0       0.0       0.0
         rc      0.0  6.47e-11p 3.39e-09p 7.11e-09p 8.05e-09o 8.05e-09o 8.05e-09n      0.0       0.0       0.0
 pu239h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.84e-05l      0.0       0.0       0.0
```

```
zp 68.05 ri       0.0  1.11e-09p 1.77e-07p 3.55e-06p 1.01e-05p 4.32e-06p 2.66e-07p 1.04e-09p 1.04e-09p 1.89e-12p
sig0.664 cc       0.0  1.11e-09p 1.78e-07p 3.73e-06p 1.38e-05p 1.81e-05p 1.84e-05p 1.04e-09p 2.08e-09p 1.89e-12p
         rc       0.0  1.11e-09p 1.78e-07p 3.73e-06p 1.38e-05p 1.81e-05n 1.84e-05l 1.04e-09p 2.08e-09p 1.89e-12p
 pu240f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  6.06e-06n      0.0       0.0       0.0
zp 67.12 ri 9.80e-12p 9.20e-09p 9.96e-07p 3.16e-06p 1.86e-06p 3.47e-08p 7.83e-11p       0.0       0.0       0.0
sig0.558 cc 9.80e-12p 9.21e-09p 1.01e-06p 4.16e-06p 6.03e-06p 6.06e-06p 6.06e-06p       0.0       0.0       0.0
         rc 9.80e-12p 9.21e-09p 1.01e-06p 4.16e-06p 6.03e-06o 6.06e-06o 6.06e-06n       0.0       0.0       0.0
 pu241f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  1.66e-06n      0.0       0.0       0.0
zp 66.87 ri 1.76e-11p 8.95e-09p 5.12e-07p 8.71e-07p 2.62e-07p 2.16e-09p 1.90e-12p       0.0       0.0       0.0
sig0.551 cc 1.76e-11p 8.97e-09p 5.21e-07p 1.39e-06p 1.65e-06p 1.66e-06p 1.66e-06p       0.0       0.0       0.0
         rc 1.76e-11p 8.97e-09p 5.21e-07p 1.39e-06p 1.65e-06o 1.66e-06o 1.66e-06n       0.0       0.0       0.0
 pu242f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  6.38e-06n      0.0       0.0       0.0
zp 66.73 ri 2.69e-10p 8.03e-08p 2.44e-06p 3.23e-06p 6.29e-07p 4.58e-09p 3.05e-12p       0.0       0.0       0.0
sig0.562 cc 2.69e-10p 8.05e-08p 2.52e-06p 5.75e-06p 6.38e-06p 6.38e-06p 6.38e-06p       0.0       0.0       0.0
         rc 2.69e-10p 8.05e-08p 2.52e-06p 5.75e-06p 6.38e-06o 6.38e-06o 6.38e-06n       0.0       0.0       0.0
 th232h  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  3.81e-07j      0.0       0.0       0.0
zp 66.69 ri 4.91e-11p 8.89e-09p 1.34e-07p 2.05e-07p 3.35e-08p 4.91e-10p       0.0       0.0       0.0       0.0
sig0.600 cc 4.91e-11p 8.94e-09p 1.43e-07p 3.47e-07p 3.81e-07p 3.81e-07p 3.81e-07p       0.0       0.0       0.0
         rc 4.91e-11p 8.94e-09p 1.43e-07p 3.47e-07p 3.81e-07n 3.81e-07l 3.81e-07j       0.0       0.0       0.0
 np237f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  4.68e-07l      0.0       0.0       0.0
zp 67.22 ri       0.0  5.66e-10p 4.70e-08p 2.74e-07p 1.40e-07p 5.70e-09p 1.41e-11p       0.0       0.0       0.0
sig0.568 cc       0.0  5.66e-10p 4.76e-08p 3.22e-07p 4.62e-07p 4.68e-07p 4.68e-07p       0.0       0.0       0.0
         rc       0.0  5.66e-10p 4.76e-08p 3.22e-07p 4.62e-07o 4.68e-07n 4.68e-07l       0.0       0.0       0.0
 cf252s  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.000346p      0.0       0.0       0.0
zp 67.41 ri 2.17e-10p 2.35e-07p 2.30e-05p 0.000163p 0.000148p 1.15e-05p 9.16e-08p 2.19e-11p 2.19e-11p       0.0
sig0.600 cc 2.17e-10p 2.35e-07p 2.33e-05p 0.000186p 0.000334p 0.000346p 0.000346p 2.19e-11p 4.38e-11p       0.0
         rc 2.17e-10p 2.35e-07p 2.33e-05p 0.000186p 0.000334p 0.000346o 0.000346o 2.19e-11p 4.38e-11p       0.0

  er, tm half lives from 89wal1.
1
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0measured nuclide	fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
66	u233f	es	cu		0.0000004	30.0	0.0000045	30.0000000%	0		10.0000000	75mee1	0
66 ni g	u233he	rc	cu		0.0006667	10.6	0.0000071	0.0000007	97 zr g	u233he	0.0480000	72net2	0
66 ni g	u233he	cm	cu		0.0000000	0.0	0.0007120	11.9000000%	0		0.0000000	73net2	0
66	u236f	es	cu		0.0000008	30.0	0.0000008	30.0000000%	0		0.0000000	75mee1	0
66	pu239h	es	cu		0.0000623	12.0	0.0000630	12.0000000%	0		0.0000000	75mee5	0
66	pu240f	es	cu		0.0000009	30.0	0.0000010	0.0000000	0		0.0000000	75mee1	0
66	pu241f	es	cu		0.0000002	30.0	0.0000002	30.0000000%	0		0.0000000	75mee1	0
66	pu242f	es	cu		0.0000029	30.0	0.0000030	0.0000000	0		0.0000000	89rid1	0
66	th232h	es	cu		0.0001382	8.1	0.0001350	8.1000000%	0		0.0000000	75mee3	0
66 ni g	th232h	rc	re		0.0001341	9.9	0.0000013	0.0000001	0		0.0100000	69net1	0
66 ni g	th232h	rc	cu		0.0001049	10.2	0.0001000	0.0000100	99 mo g	th232h	2.0000000	73bat1	0
66 ni g	th232h	cm	cu		0.0000000	0.0	0.0001270	10.1000000%	0		0.0000000	73net2	0
66 ni g	th232h	cm	cu		0.0000000	0.0	0.0001010	20.7000000%	0		0.0000000	77cro1	0
66	np237f	es	cu		0.0000002	12.0	0.0000002	12.0000000%	0		0.0000000	75mee4	0
66	cf252s	es	cu		0.0000001	30.0	0.0045960	30.0000000%	0		100000.0000000	87wah1	36
66 ni g	cf252s	rc	cu	ul	0.0000000	0.0	0.0000680	0.0000000	0		0.0000000	60ner1	0
66 ni g	cf252s	cm	cu		0.0000000	0.0	0.0000680	0.0000000	0		0.0000000	69gun2	0
67	u233f	es	cu		0.0000016	30.0	0.0000018	30.0000000%	0		0.0000000	75mee1	0
67 cu g	u233he	rc	cu		0.0015148	12.3	0.0000164	0.0000019	97 zr g	u233he	0.0480000	72net2	0
67 cu g	u233he	cm	cu		0.0000000	0.0	0.0016400	11.9000000%	0		0.0000000	73net2	0
67	u236f	es	cu		0.0000021	30.0	0.0000020	30.0000000%	0		0.0000000	75mee1	0
67	pu239h	es	cu		0.0000982	12.0	0.0000994	12.0000000%	0		0.0000000	75mee5	0
67	pu240f	es	cu		0.0000013	30.0	0.0000015	0.0000000	0		0.0000000	75mee1	0
67	pu241f	es	cu		0.0000013	30.0	0.0000014	30.0000000%	0		0.0000000	75mee1	0
67	pu242f	es	cu		0.0000058	30.0	0.0000060	0.0000000	0		0.0000000	89rid1	0
67	th232h	es	cu		0.0002378	8.1	0.0002300	8.1000000%	0		0.0000000	75mee3	0
67 cu g	th232h	rc	re		0.0002688	23.1	0.0000026	0.0000006	0		0.0100000	69net1	0
67 cu g	th232h	rc	cu		0.0001694	12.7	0.0001600	0.0000200	99 mo g	th232h	2.0000000	73bat1	0
67 cu g	th232h	cm	cu	x3	0.0000000	0.0	0.0002520	25.1000000%	0		0.0000000	73net2	0
67 cu g	th232h	cm	cu		0.0000000	0.0	0.0001640	26.2000000%	0		0.0000000	77cro1	0
67	np237f	es	cu		0.0000004	12.0	0.0000004	12.0000000%	0		0.0000000	75mee4	0
67	cf252s	es	cu		0.0000001	30.0	0.0012580	30.0000000%	0		10000.0000000	87wah1	36
68	u233f	es	cu		0.0000049	30.0	0.0000055	30.0000000%	0		0.0000000	75mee1	0

68	u233he	es	cu	0.0018025	31.0	0.0000230	0.0000000	72	zn g	u233he	0.0001460	70net1	0
68	u236f	es	cu	0.0000042	30.0	0.0000040	30.0000000%	0			0.0000000	75mee1	0
68	pu239h	es	cu	0.0002174	12.0	0.0002200	12.0000000%	0			0.0000000	75mee5	0
68	pu240f	es	cu	0.0000031	30.0	0.0000035	0.0000000	0			0.0000000	75mee1	0
68	pu241f	es	cu	0.0000028	30.0	0.0000030	30.0000000%	0			0.0000000	75mee1	0
68	pu242f	es	cu	0.0000087	30.0	0.0000090	0.0000000	0			0.0000000	89rid1	0
68	th232h	es	cu	0.0005169	30.0	0.0000050	0.0000000	0			0.0100000	69net1	0
68	th232h	es	cu	0.0007774	8.1	0.0007520	8.1000000%	0			0.0000000	75mee3	0
68	np237f	es	cu	0.0000019	12.0	0.0000019	12.0000000%	0			0.0000000	75mee4	0
68	cf252s	es	cu	0.0000004	30.0	0.0033510	30.0000000%	0			10000.0000000	87wah1	36
69	u233f	es	cu	0.0000133	30.0	0.0000150	30.0000000%	0			0.0000000	75mee1	0
69	u233he	es	cu	0.0028997	31.0	0.0000370	0.0000000	72	zn g	u233he	0.0001460	70net1	0
69	u236f	es	cu	0.0000093	30.0	0.0000090	30.0000000%	0			0.0000000	75mee1	0
69	pu239h	es	cu	0.0003706	12.0	0.0003750	12.0000000%	0			0.0000000	75mee5	0
69	pu240f	es	cu	0.0000049	30.0	0.0000055	0.0000000	0			0.0000000	75mee1	0
69	pu241f	es	cu	0.0000103	30.0	0.0000110	30.0000000%	0			0.0000000	75mee1	0
69	pu242f	es	cu	0.0000116	30.0	0.0000120	0.0000000	0			0.0000000	89rid1	0
69	th232h	es	cu	0.0010337	30.0	0.0000100	0.0000000	0			0.0100000	69net1	0
69	th232h	es	cu	0.0015506	8.1	0.0015000	8.1000000%	0			0.0000000	75mee3	0
69	np237f	es	cu	0.0000001	12.0	0.0000001	12.0000000%	0			0.0000000	75mee4	0
69	cf252s	es	cu	0.0000010	30.0	0.0086500	30.0000000%	0			10000.0000000	87wah1	36
70	u233f	es	cu	0.0000532	30.0	0.0000600	30.0000000%	0			0.0000000	75mee1	0
70	u233he	es	cu	0.0047023	31.0	0.0000600	0.0000000	72	zn g	u233he	0.0001460	70net1	0
70	u236f	es	cu	0.0000208	30.0	0.0000200	30.0000000%	0			0.0000000	75mee1	0
70	pu239h	es	cu	0.0006691	12.0	0.0006770	12.0000000%	0			0.0000000	75mee5	0
70	pu240f	es	cu	0.0000119	30.1	0.0000001	0.0000000	99		pu240f	0.0618000	77mye1	0
70	pu241f	es	cu	0.0000328	30.0	0.0000350	30.0000000%	0			0.0000000	75mee1	0
70	pu242f	es	cu	0.0000290	30.0	0.0000300	0.0000000	0			0.0000000	89rid1	0
70	th232h	es	cu	0.0019641	30.0	0.0000190	0.0000000	0			0.0100000	69net1	0
70	th232h	es	cu	0.0028428	8.1	0.0027500	8.1000000%	0			0.0000000	75mee3	0
70	np237f	es	cu	0.0000244	12.0	0.0000248	12.0000000%	0			0.0000000	75mee4	0
70	cf252s	es	cu	0.0000024	30.0	0.0021670	30.0000000%	0			1000.0000000	87wah1	36
71	u233f	es	cu	0.0002306	30.0	0.0002600	30.0000000%	0			0.0000000	75mee1	0
71	u233he	es	cu	0.0074453	31.0	0.0000950	0.0000000	72	zn g	u233he	0.0001460	70net1	0
71	u236f	es	cu	0.0000519	30.0	0.0000500	30.0000000%	0			0.0000000	75mee1	0
71	pu239h	es	cu	0.0011959	12.0	0.0012100	12.0000000%	0			0.0000000	75mee5	0

71 pu240f es cu 0.0000341 30.1 0.0000004 0.0000000 99 pu240f 0.0618000 77mye1 0
71 pu241f es cu 0.0000845 30.0 0.0000900 30.0000000% 0 0.0000000 75mee1 0
71 pu242f es cu 0.0000579 30.0 0.0000600 0.0000000 0 0.0000000 89rid1 0
71 th232h es cu 0.0036181 30.0 0.0000350 0.0000000 0 0.0100000 69net1 0
71 th232h es cu 0.0054271 8.1 0.0052500 8.1000000% 0 0.0000000 75mee3 0
71 np237f es cu 0.0000619 12.0 0.0000629 12.0000000% 0 0.0000000 75mee4 0
71 cf252s es cu 0.0000060 30.0 0.0052600 30.0000000% 0 1000.0000000 87wah1 36
72 u233f es cu 0.0006829 30.0 0.0007700 30.0000000% 0 0.0000000 75mee1 0
72 u233he cm cu 0.0000000 0.0 0.0135000 5.0000000% 0 0.0000000 77cro1 0
72 zn g u233he rc cu 0.0128242 6.4 0.0001350 0.0000060 97 zr g u233he 0.0480000 72net2 0
72 zn g u233he cm cu 0.0000000 0.0 0.0135000 7.9000000% 0 0.0000000 73net2 0
72 u236f es cu 0.0001868 30.0 0.0001800 30.0000000% 0 0.0000000 75mee1 0
72 pu239h es cu 0.0021843 12.0 0.0022100 12.0000000% 0 0.0000000 75mee5 0
72 pu240f es cu 0.0001082 30.1 0.0000012 0.0000000 99 pu240f 0.0618000 77mye1 0
72 zn g pu240f rc cu 0.0001082 6.4 0.0000012 3.1000000% 99 mo g pu240f 0.0618000 77mye1 0
72 pu241f es cu 0.0001502 30.0 0.0001600 30.0000000% 0 0.0000000 75mee1 0
72 pu242f es cu 0.0001255 30.0 0.0001300 0.0000000 0 0.0000000 89rid1 0
72 th232h cm cu 0.0000000 0.0 0.0013300 39.8000000% 0 0.0000000 77cro1 0
72 th232h es cu 0.0084043 8.1 0.0081300 8.1000000% 0 0.0000000 75mee3 0
72 ga g th232h rc cu x4 0.0000000 0.0 0.0056000 0.0008000 99 mo g th232h 2.0000000 73bat1 0
72 zn g th232h rc re 0.0072362 8.6 0.0000700 0.0000060 0 0.0100000 69net1 0
72 zn g th232h rc cu x1 0.0000000 0.0 0.0011000 0.0002000 99 mo g th232h 2.0000000 73bat1 0
72 zn g th232h cm cu x3 0.0000000 0.0 0.0067800 10.1000000% 0 0.0000000 73net2 0
72 zn g th232h cm cu 0.0000000 0.0 0.0013300 39.8000000% 0 0.0000000 77cro1 0
72 np237f es cu 0.0001505 12.0 0.0001530 12.0000000% 0 0.0000000 75mee4 0
72 cf252s es cu 0.0000141 30.0 0.0012290 30.0000000% 0 100.0000000 87wah1 36
72 zn g cf252s rc cu ul 0.0000000 0.0 0.0000620 0.0000000 0 0.0000000 60ner1 0
72 zn g cf252s cm cu 0.0000000 0.0 0.0000620 0.0000000 0 0.0000000 69gun2 0
73 u233f es cu 0.0015640 30.0 0.0017000 30.0000000% 0 0.0000000 75mee1 0
73 u233he es cu 0.0194419 30.5 0.0002300 0.0000000 93 y g u233he 0.0600000 70net1 0
73 u233he es cu 0.0184493 20.0 0.0195000 20.0000000% 0 0.0000000 77cro1 0
73 u236f es cu 0.0007187 30.0 0.0007000 30.0000000% 0 0.0000000 75mee1 0
73 pu239h es cu 0.0037588 12.0 0.0037900 12.0000000% 0 0.0000000 75mee5 0
73 pu240f es cu 0.0003093 30.1 0.0000035 0.0000000 99 pu240f 0.0618000 77mye1 0
73 pu241f es cu 0.0004783 30.0 0.0005000 30.0000000% 0 0.0000000 75mee1 0
73 pu242f es cu 0.0002413 30.0 0.0002500 0.0000000 0 0.0000000 89rid1 0

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 73       th232h   es    cu        0.0113712 30.0   0.0001100  0.0000000     0                    0.0100000   69net1      0
 73       th232h   cm    cu         0.0000000  0.0   0.0110000 33.3000000%    0                    0.0000000   77cro1      0
 73       th232h   es    cu        0.0171601  8.1   0.0166000  8.1000000%    0                    0.0000000   75mee3      0
 73 ga g   th232h   rc    cu        0.0169406 12.7   0.0160000  0.0020000    99 mo g      th232h      2.0000000   73bat1      0
 73 ga g   th232h   cm    cu         0.0000000  0.0   0.0110000 33.3000000%    0                    0.0000000   77cro1      0
 73 ga g   th232h   rc    cu    x1   0.0000000  0.0   0.0600000  0.0000000     0                    0.0000000   60vla1      0
 73 ga g   th232h   rc    cu        0.0084703 25.1   0.0080000  0.0020000    99 mo g      th232h      2.0000000   71swi2      0
 73       np237f   es    cu        0.0003687 12.0   0.0003730 12.0000000%    0                    0.0000000   75mee4      0
 73       cf252s   es    cu        0.0000321 30.0   0.0028070 30.0000000%    0                  100.0000000   87wah1     36
 74       u233f    es    cu        0.0037247 30.0   0.0042000 30.0000000%    0                    0.0000000   75mee1      0
 74       u233f    cm    cu         0.0000000  0.0   0.0010000 20.0000000%    0                    0.0000000   77cro1      0
 74       u233he   es    cu        0.0295855 30.5   0.0003500  0.0000000    93 y  g      u233he      0.0600000   70net1      0
 74       u233he   es    cu        0.0274374 20.0   0.0290000 20.0000000%    0                    0.0000000   77cro1      0
 74       u236f    es    cu        0.0031133 30.0   0.0030000 30.0000000%    0                    0.0000000   75mee1      0
 74       pu239h   es    cu        0.0058808 12.0   0.0059500 12.0000000%    0                    0.0000000   75mee5      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material      value      no.   treatment

 74       pu240f   es    cu        0.0007841 30.1   0.0000092  0.0000000    99          pu240f      0.0618000   77mye1      0
 74       pu241f   es    cu        0.0011263 30.0   0.0012000 30.0000000%    0                    0.0000000   75mee1      0
 74       pu242f   es    cu        0.0007723 30.0   0.0008000  0.0000000     0                    0.0000000   89rid1      0
 74       th232h   es    cu        0.0206748 30.0   0.0002000  0.0000000     0                    0.0100000   69net1      0
 74       th232h   cm    cu         0.0000000  0.0   0.0180000 20.0000000%    0                    0.0000000   77cro1      0
 74       th232h   es    cu        0.0309089  8.1   0.0299000  8.1000000%    0                    0.0000000   75mee3      0
 74       np237f   es    cu        0.0006630 12.0   0.0006740 12.0000000%    0                    0.0000000   75mee4      0
 74       cf252s   es    cu        0.0000706 30.0   0.0061660 30.0000000%    0                  100.0000000   87wah1     36
 75       u233f    es    cu        0.0110854 30.0   0.0125000 30.0000000%    0                    0.0000000   75mee1      0
 75       u233f    cm    cu         0.0000000  0.0   0.0022000 20.0000000%    0                    0.0000000   77cro1      0
 75       u233he   es    cu        0.0456462 30.5   0.0005400  0.0000000    93 y  g      u233he      0.0600000   70net1      0
 75       u233he   es    cu        0.0425753 20.0   0.0450000 20.0000000%    0                    0.0000000   77cro1      0
 75       u236f    cm    cu    x3   0.0000000  0.0   0.0130000 30.0000000%    0                    0.0000000   72sid1      0
 75       u236f    es    cu        0.0083020 30.0   0.0080000 30.0000000%    0                    0.0000000   89rid1      0
 75       pu239h   es    cu        0.0102297 12.0   0.0103500 12.0000000%    0                    0.0000000   75mee5      0
 75       pu240f   es    cu    x3   0.0000000  0.0   0.0002000 15.0000000%    0                    0.0000000   77cro1      0
 75       pu240f   es    cu        0.0017046 30.1   0.0000200  0.0000000    99          pu240f      0.0618000   77mye1      0
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75	pu241f	es	cu		0.0028157	30.0	0.0030000	30.0000000%	0			0.0000000	75mee1	0
75	pu241f	cm	cu	x3	0.0000000	0.0	0.0001000	15.0000000%	0			0.0000000	77cro1	0
75	pu242f	es	cu	x3	0.0000000	0.0	0.0000500	0.0000000	0			0.0000000	72sid1	0
75	pu242f	es	cu		0.0011584	30.0	0.0012000	0.0000000	0			0.0000000	89rid1	0
75	th232h	es	cu		0.0361809	30.0	0.0003500	0.0000000	0			0.0100000	69net1	0
75	th232h	es	cu		0.0542714	8.1	0.0525000	8.1000000%	0			0.0000000	75mee3	0
75	th232h	cm	cu	x3	0.0000000	0.0	0.0351000	20.0000000%	0			0.0000000	77cro1	0
75	np237f	es	cu		0.0013181	12.0	0.0013400	12.0000000%	0			0.0000000	75mee4	0
75	cf252s	es	cu		0.0001518	30.0	0.0013260	30.0000000%	0			10.0000000	87wah1	36
76	u233f	es	cu		0.0196876	30.0	0.0222000	30.0000000%	0			0.0000000	75mee1	0
76	u233f	cm	cu		0.0000000	0.0	0.0048000	20.0000000%	0			0.0000000	77cro1	0
76	u233he	es	cu		0.0684693	30.5	0.0008100	0.0000000	93	y	g	u233he	0.0600000	70net1	0
76	u233he	es	cu		0.0661336	20.0	0.0699000	20.0000000%	0			0.0000000	77cro1	0
76	u236f	es	cu		0.0228306	30.0	0.0220000	30.0000000%	0			0.0000000	72sid1	0
76	pu239h	es	cu		0.0163576	12.0	0.0165500	12.0000000%	0			0.0000000	75mee5	0
76	pu240f	es	cu	x3	0.0000000	0.0	0.0007000	15.0000000%	0			0.0000000	77cro1	0
76	pu240f	es	cu		0.0040911	30.1	0.0000480	0.0000000	99			pu240f	0.0618000	77mye1	0
76	pu241f	es	cu		0.0056313	30.0	0.0060000	30.0000000%	0			0.0000000	75mee1	0
76	pu241f	cm	cu	x3	0.0000000	0.0	0.0003000	15.0000000%	0			0.0000000	77cro1	0
76	pu242f	es	cu	x3	0.0000000	0.0	0.0002000	0.0000000	0			0.0000000	72sid1	0
76	pu242f	es	cu		0.0024133	30.0	0.0025000	0.0000000	0			0.0000000	89rid1	0
76	th232h	es	cu		0.0620245	30.0	0.0006000	0.0000000	0			0.0100000	69net1	0
76	th232h	cm	cu		0.0000000	0.0	0.0662000	20.0000000%	0			0.0000000	77cro1	0
76	th232h	es	cu		0.0927266	8.1	0.0897000	8.1000000%	0			0.0000000	75mee3	0
76	np237f	es	cu		0.0060102	12.0	0.0061100	12.0000000%	0			0.0000000	75mee4	0
76	cf252s	es	cu		0.0003172	30.0	0.0027700	30.0000000%	0			10.0000000	87wah1	36
77	u233f	es	cu		0.0372590	30.0	0.0405000	30.0000000%	0			0.0000000	75mee1	0
77	u233f	cm	cu		0.0000000	0.0	0.0110000	20.0000000%	0			0.0000000	77cro1	0
77	u233he	es	cu		0.1014360	30.5	0.0012000	0.0000000	93	y	g	u233he	0.0600000	70net1	0
77	u233he	es	cu		0.1021806	20.0	0.1080000	20.0000000%	0			0.0000000	77cro1	0
77	u236f	es	cu		0.0451746	30.0	0.0440000	30.0000000%	0			0.0000000	72sid1	0
77	pu239h	es	cu		0.0237036	12.0	0.0239000	12.0000000%	0			0.0000000	75mee5	0
77	pu240f	es	cu		0.0128924	30.0	0.0140000	30.0000000%	0			0.0000000	72sid1	0
77	pu240f	es	cu		0.0086609	30.1	0.0000980	0.0000000	99			pu240f	0.0618000	77mye1	0
77	pu240f	es	cu	x3	0.0000000	0.0	0.0140000	15.0000000%	0			0.0000000	77cro1	0
77	pu241f	es	cu		0.0096928	15.0	0.0100000	15.0000000%	0			0.0000000	77cro1	0

77		pu242f	es	cu	x3	0.0000000	0.0	0.0050000	0.0000000	0			0.0000000	72sid1	0
77		pu242f	es	cu		0.0068284	30.0	0.0070000	0.0000000	0			0.0000000	89rid1	0
77		th232h	es	cu		0.1033741	30.0	0.0010000	0.0000000	0			0.0100000	69net1	0
77		th232h	rc	cu		0.1033741	20.0	0.1000000	0.0200000	0			0.0000000	72swi1	0
77		th232h	cm	cu		0.0000000	0.0	0.1240000	12.0000000%	0			0.0000000	77cro1	0
77		th232h	es	cu		0.1343863	8.1	0.1300000	8.1000000%	0			0.0000000	75mee3	0
77	as g	th232h	rc	cu		0.1376420	15.5	0.1300000	0.0200000	99	mo g	th232h	2.0000000	73bat1	0
77	as g	th232h	rc	cu	x4	0.0000000	0.0	0.0075000	10.0000000%	89	sr g	th232h	1.0000000	76lis1	0
77	as g	th232h	rc	re	x1	0.0000000	0.0	0.0070000	0.0000000	89	sr g	th232h	1.0000000	73dub1	0
77	as g	th232h	rc	cu		0.1376420	15.5	0.1300000	0.0200000	99	mo g	th232h	2.0000000	71swi2	0
77	as g	th232h	cm	cu	x3	0.0000000	0.0	0.1240000	12.0000000%	0			0.0000000	77cro1	0
77	ge g	th232h	rc	cu	x1	0.0000000	0.0	0.1000000	0.0200000	99	mo g	th232h	2.0000000	73bat1	0
77	ge g	th232h	rc	cu	x2	0.0000000	0.0	0.0700000	0.0200000	99	mo g	th232h	2.0000000	71swi2	0
77		np237f	es	cu		0.0071168	30.0	0.0072000	0.0000000	0			0.0000000	72sid1	0
77		np237f	es	cu		0.0109717	12.0	0.0111000	12.0000000%	0			0.0000000	75mee4	0
77		np237f	sp	cu	ul	0.0000000	0.0	0.0300000	0.0200000	0			0.0000000	80naq1	0
77		cf252s	es	cu		0.0006254	30.0	0.0056720	30.0000000%	0			10.0000000	87wah1	36
77	as g	cf252s	rc	cu	ul	0.0000000	0.0	0.0000880	0.0000000	0			0.0000000	60ner1	0
77	as g	cf252s	cm	cu		0.0000000	0.0	0.0000880	0.0000000	0			0.0000000	69gun2	0
78		u233f	es	cu		0.0620780	30.0	0.0700000	30.0000000%	0			0.0000000	75mee1	0
78		u233f	cm	cu		0.0000000	0.0	0.0231000	20.0000000%	0			0.0000000	77cro1	0
78		u233he	es	cu		0.1521540	30.5	0.0018000	0.0000000	93	y g	u233he	0.0600000	70net1	0
78		u233he	es	cu		0.1561093	20.0	0.1650000	20.0000000%	0			0.0000000	77cro1	0
78		u236f	es	cu		0.0581142	30.0	0.0560000	30.0000000%	0			0.0000000	72sid1	0
78		pu239h	es	cu		0.0415118	12.0	0.0420000	12.0000000%	0			0.0000000	75mee5	0
78		pu240f	es	cu		0.0267056	30.0	0.0290000	30.0000000%	0			0.0000000	72sid1	0
78		pu240f	es	cu		0.0176753	30.1	0.0002000	0.0000000	99		pu240f	0.0618000	77mye1	0
78		pu240f	es	cu	x3	0.0000000	0.0	0.0290000	15.0000000%	0			0.0000000	77cro1	0
78		pu241f	es	cu		0.0184163	15.0	0.0190000	15.0000000%	0			0.0000000	77cro1	0
78		pu242f	es	cu		0.0135147	30.0	0.0140000	30.0000000%	0			0.0000000	72sid1	0
78		th232h	es	cu		0.1757360	30.0	0.0017000	0.0000000	0			0.0100000	69net1	0
78		th232h	rc	cu		0.2170856	19.0	0.2100000	0.0400000	0			0.0000000	72swi1	0
78		th232h	cm	cu		0.0000000	0.0	0.2980000	17.0000000%	0			0.0000000	77cro1	0
78		th232h	es	cu		0.2605027	8.1	0.2520000	8.1000000%	0			0.0000000	75mee3	0
78	as g	th232h	cm	cu		0.0000000	0.0	0.2950000	17.0000000%	0			0.0000000	77cro1	0
78	as g	th232h	rc	cu	x1	0.0000000	0.0	0.3100000	0.0500000	99	mo g	th232h	2.0000000	71swi2	0

78 ge g th232h rc cu x1 0.0000000 0.0 0.1100000 0.0300000 99 mo g th232h 2.0000000 71swi2 0
78 np237f es cu 0.0197689 30.0 0.0200000 30.0000000% 0 0.0000000 72sid1 0
78 np237f es cu 0.0251065 12.0 0.0254000 12.0000000% 0 0.0000000 75mee4 0
78 np237f sp cu ul 0.0000000 0.0 0.0600000 0.0300000 0 0.0000000 80naq1 0
78 cf252s es cu 0.0019733 30.0 0.0018770 30.0000000% 0 0.0000000 87wah1 36
78 as g cf252s rc cu 0.0020711 10.0 0.0019700 0.0001800 0 0.0000000 60ner1 0
78 as g cf252s cm cu x3 0.0000000 0.0 0.0019700 0.0000000 0 0.0000000 69gun2 0
79 u233f es cu 0.0975512 30.0 0.1100000 30.0000000% 0 0.0000000 75mee1 0
79 u233f cm cu 0.0000000 0.0 0.0503000 20.0000000% 0 0.0000000 77cro1 0
79 u233he es cu 0.2197780 30.5 0.0026000 0.0000000 93 y g u233he 0.0600000 70net1 0
79 u233he es cu 0.2355831 20.0 0.2490000 20.0000000% 0 0.0000000 77cro1 0
79 u236f es cu 0.1141529 30.0 0.1100000 30.0000000% 0 0.0000000 72sid1 0
79 pu239h es cu 0.0862849 12.0 0.0870000 12.0000000% 0 0.0000000 75mee5 0
79 pu240f es cu 0.0497276 30.0 0.0540000 30.0000000% 0 0.0000000 72sid1 0
79 pu240f es cu 0.0335832 30.1 0.0003800 0.0000000 99 pu240f 0.0618000 77mye1 0
79 pu240f es cu x3 0.0000000 0.0 0.0540000 15.0000000% 0 0.0000000 77cro1 0
79 pu241f es cu 0.0358632 30.0 0.0370000 30.0000000% 0 0.0000000 72sid1 0
79 pu241f es cu 0.0358632 15.0 0.0370000 15.0000000% 0 0.0000000 77cro1 0
79 pu242f es cu x3 0.0000000 0.0 0.0280000 0.0000000 0 0.0000000 72sid1 0
79 pu242f es cu 0.0337867 30.0 0.0350000 0.0000000 0 0.0000000 89rid1 0
79 th232h cm cu 0.0000000 0.0 0.9320000 16.0000000% 0 0.0000000 77cro1 0
79 th232h es cu 0.4134964 8.1 0.4000000 8.1000000% 0 0.0000000 75mee3 0
79 as g th232h cm cu 0.0000000 0.0 0.9030000 16.0000000% 0 0.0000000 77cro1 0
79 as g th232h rc cu x1 0.0000000 0.0 0.9500000 0.1500000 99 mo g th232h 2.0000000 71swi2 0
79 np237f es cu 0.0484338 30.0 0.0490000 30.0000000% 0 0.0000000 72sid1 0
79 np237f es cu 0.0577252 12.0 0.0584000 12.0000000% 0 0.0000000 75mee4 0
79 np237f sp cu ul 0.0000000 0.0 0.1900000 0.0500000 0 0.0000000 80naq1 0
79 cf252s cm cu x3 0.0000000 0.0 0.0022170 30.0000000% 0 0.0000000 87wah1 36
79 cf252s es cu 0.0034353 30.0 0.0030000 30.0000000% 0 0.0000000 89rid1 0
80 u233f cm cu 0.0000000 0.0 0.1918000 0.0000000 0 0.0000000 63wea1 0
80 u233f es cu 0.1886829 30.0 0.2000000 30.0000000% 0 0.0000000 75mee1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

80 u233f cm cu 0.0000000 0.0 0.1060000 20.0000000% 0 0.0000000 77cro1 0

80	u233f	es	cu		0.2301931	25.0	0.2440000	0.0610000	0				0.0000000	81mae1	0
80	u233f	es	cu		0.2094380	25.2	0.2220000	0.0560000	0				0.0000000	81mae1	0
80	u233f	cm	cu		0.0000000	0.0	0.2330000	0.0590000	0				0.0000000	81mae1	0
80	u233he	cm	cu		0.0000000	0.0	0.8344000	0.0000000	0				0.0000000	63wea1	0
80	u233he	es	cu		0.3127610	30.5	0.0037000	0.0000000	93	y	g	u233he	0.0600000	70net1	0
80	u233he	es	cu		0.3481711	20.0	0.3680000	20.0000000%	0				0.0000000	77cro1	0
80	u236f	es	cu		0.1867956	30.0	0.1800000	30.0000000%	0				0.0000000	72sid1	0
80	pu239h	cm	cu		0.0000000	0.0	0.1116000	0.0000000	0				0.0000000	63wea1	0
80	pu239h	es	cu		0.1573495	12.0	0.1592000	12.0000000%	0				0.0000000	75mee5	0
80	pu240f	es	cu		0.0828794	30.0	0.0900000	30.0000000%	0				0.0000000	72sid1	0
80	pu240f	es	cu		0.0592124	30.1	0.0006700	0.0000000	99			pu240f	0.0618000	77mye1	0
80	pu240f	es	cu	x3	0.0000000	0.0	0.0900000	15.0000000%	0				0.0000000	77cro1	0
80	pu241f	es	cu		0.0649415	30.0	0.0670000	30.0000000%	0				0.0000000	72sid1	0
80	pu241f	es	cu		0.0649415	15.0	0.0670000	15.0000000%	0				0.0000000	77cro1	0
80	pu242f	es	cu		0.0517008	30.0	0.0530000	0.0000000	0				0.0000000	72sid1	0
80	pu242f	es	cu		0.0585292	30.0	0.0600000	0.0000000	0				0.0000000	89rid1	0
80	th232h	es	cu		1.1267777	20.0	1.0900000	20.0000000%	0				0.0000000	77cro1	0
80	th232h	es	cu		0.6202446	8.1	0.6000000	8.1000000%	0				0.0000000	75mee3	0
80	np237f	es	cu		0.0909370	30.0	0.0920000	30.0000000%	0				0.0000000	72sid1	0
80	np237f	es	cu		0.1146597	12.0	0.1160000	12.0000000%	0				0.0000000	75mee4	0
80	np237f	sp	cu	ul	0.0000000	0.0	0.1800000	0.0500000	0				0.0000000	80naq1	0
80	cf252s	es	cu		0.0047774	30.0	0.0041720	30.0000000%	0				0.0000000	87wah1	36
80	cf252s	sp	cu	ul	0.0000000	0.0	0.0145000	0.0000000	0				0.0000000	63fra1	0
81	u233f	cm	cu		0.0000000	0.0	0.5595000	0.0000000	0				0.0000000	63wea1	0
81	u233f	es	cu		0.3625978	5.4	0.3700000	0.0200000	0				0.0000000	74mae1	0
81	u233f	cm	cu		0.0000000	0.0	0.2260000	20.0000000%	0				0.0000000	77cro1	0
81	u233f	es	cu		0.4066975	14.9	0.4150000	0.0620000	0				0.0000000	81mae1	0
81	u233f	es	cu		0.3900376	15.1	0.3980000	0.0600000	0				0.0000000	81mae1	0
81	u233f	cm	cu		0.0000000	0.0	0.4060000	0.0620000	0				0.0000000	81mae1	0
81	u233he	cm	cu		0.0000000	0.0	1.1060000	0.0000000	0				0.0000000	63wea1	0
81	u233he	es	cu		0.5413456	20.0	0.5860000	20.0000000%	0				0.0000000	77cro1	0
81	u236f	es	cu		0.2698159	30.0	0.2600000	30.0000000%	0				0.0000000	72sid1	0
81	pu239h	cm	cu		0.0000000	0.0	0.1617000	0.0000000	0				0.0000000	63wea1	0
81	pu239h	es	cu		0.2720012	12.0	0.2752000	12.0000000%	0				0.0000000	75mee5	0
81	pu240f	es	cu		0.1381324	30.0	0.1500000	30.0000000%	0				0.0000000	72sid1	0
81	pu240f	es	cu		0.0972144	30.1	0.0011000	0.0000000	99			pu240f	0.0618000	77mye1	0

81		pu240f	es	cu	x3	0.0000000	0.0	0.1500000	15.0000000%	0				0.0000000	77cro1	0
81		pu241f	es	cu		0.1076103	30.0	0.1100000	30.0000000%	0				0.0000000	72sid1	0
81		pu241f	es	cu		0.0902680	11.2	0.0900000	0.0100000	148	nd	g	pu241f	1.9080000	77mae1	0
81		pu241f	es	cu	x3	0.0000000	0.0	0.1100000	15.0000000%	0				0.0000000	77cro1	0
81		pu242f	es	cu		0.0975487	30.0	0.1000000	0.0000000	0				0.0000000	89rid1	0
81		pu242f	es	cu		0.0858429	30.0	0.0880000	0.0000000	0				0.0000000	72sid1	0
81		th232h	es	cu		1.2404892	17.0	1.2000000	17.0000000%	0				0.0000000	77cro1	0
81		th232h	es	cu		0.9820540	8.1	0.9500000	8.1000000%	0				0.0000000	75mee3	0
81	se	g	th232h	cm	cu		0.0000000	0.0	1.1500000	17.0000000%	0			0.0000000	77cro1	0
81	se	g	th232h	rc	cu	nr	1.2811292	16.6	1.2100000	0.2000000	99	mo	g	th232h	2.0000000	71swi2	0
81		np237f	es	cu		0.1686111	30.0	0.1700000	30.0000000%	0				0.0000000	72sid1	0
81		np237f	es	cu		0.2380392	8.3	0.2400000	0.0200000	0				0.0000000	77mae2	0
81		np237f	sp	cu		0.2578758	23.1	0.2600000	0.0600000	0				0.0000000	80naq1	0
81		cf252s	es	cu		0.0083359	15.0	0.0077720	15.0000000%	0				0.0000000	87wah1	36
81		cf252s	sp	cu	ul	0.0000000	0.0	0.0282000	0.0000000	0				0.0000000	63fra1	0
82		u233f	cm	cu		0.0000000	0.0	0.9548000	0.0000000	0				0.0000000	63wea1	0
82		u233f	es	cu		0.5635902	6.9	0.5800000	0.0400000	0				0.0000000	74mae1	0
82		u233f	cm	cu		0.0000000	0.0	0.5090000	20.0000000%	0				0.0000000	77cro1	0
82		u233f	es	cu		0.6549307	15.0	0.6740000	0.1010000	0				0.0000000	81mae1	0
82		u233f	es	cu		0.6374400	15.1	0.6560000	0.0990000	0				0.0000000	81mae1	0
82		u233f	cm	cu		0.0000000	0.0	0.6650000	0.1000000	0				0.0000000	81mae1	0
82		u233he	cm	cu		0.0000000	0.0	1.4440000	0.0000000	0				0.0000000	63wea1	0
82		u233he	es	cu		0.8240277	20.0	0.8920000	20.0000000%	0				0.0000000	77cro1	0
82		u236f	es	cu		0.3839688	30.0	0.3700000	30.0000000%	0				0.0000000	72sid1	0
82		pu239h	cm	cu		0.0000000	0.0	0.2269000	0.0000000	0				0.0000000	63wea1	0
82		pu239h	es	cu		0.3454376	12.0	0.3495000	12.0000000%	0				0.0000000	75mee5	0
82		pu240f	es	cu		0.1933853	30.0	0.2100000	30.0000000%	0				0.0000000	72sid1	0
82		pu240f	es	cu		0.1520080	30.1	0.0017200	0.0000000	99			pu240f	0.0618000	77mye1	0
82		pu240f	es	cu	x3	0.0000000	0.0	0.2100000	15.0000000%	0				0.0000000	77cro1	0
82		pu241f	es	cu		0.1673885	30.0	0.1700000	30.0000000%	0				0.0000000	72sid1	0
82		pu241f	es	cu		0.1413302	7.2	0.1400000	0.0100000	148	nd	g	pu241f	1.9080000	77mae1	0
82		pu241f	es	cu	x3	0.0000000	0.0	0.1700000	15.0000000%	0				0.0000000	77cro1	0
82		pu242f	es	cu		0.1254934	30.0	0.1300000	30.0000000%	0				0.0000000	72sid1	0
82	br	g	th232h	rc	fi		0.0001064	21.5	0.0000750	0.0000150	82		th232h	1.0000000	82wen1	0
82		th232h	es	cu		1.5402741	20.0	1.4900000	20.0000000%	0				0.0000000	77cro1	0
82		th232h	es	cu		1.3438633	8.1	1.3000000	8.1000000%	0				0.0000000	75mee3	0

82		np237f	es	cu		0.2569959	30.0	0.2600000	30.0000000%	0						0.0000000	72sid1	0
82		np237f	es	cu		0.3360716	8.8	0.3400000	0.0300000	0						0.0000000	77mae2	0
82		np237f	sp	cu		0.4645696	17.0	0.4700000	0.0800000	0						0.0000000	80naq1	0
82	br g	cf252s	rc	in	ul	0.0000000	0.0	0.0000037	0.0000000	0						0.0000000	69gun1	0
82		cf252s	sp	cu	ul	0.0000000	0.0	0.0460000	0.0000000	0						0.0000000	63fra1	0
82		cf252s	es	cu		0.0152517	15.0	0.0142200	15.0000000%	0						0.0000000	87wah1	36
82		cf252s	sp	cu	ul	0.0000000	0.0	0.0640000	0.0000000	0						0.0000000	65sch1	0
83	kr g	u233f	ms	cu		0.9914811	2.0	0.9950000	0.0080000	0						0.0000000	74mae1	0
83		u233f	cm	cu	x3	0.0000000	0.0	1.4870000	0.0000000	0						0.0000000	63wea1	0
83		u233f	cm	cu		0.0000000	0.0	1.0000000	5.0000000%	0						0.0000000	77cro1	0
83	kr g	u233f	ms	cu		0.9914811	2.0	0.9950000	0.0090000	0						0.0000000	81mae1	0
83	kr g	u233f	ms	cu		0.9954670	2.0	0.9990000	0.0080000	0						0.0000000	81mae1	0
83	kr g	u233f	cm	cu		0.0000000	0.0	0.9970000	0.0080000	0						0.0000000	81mae1	0
83	kr g	u233f	ms	cu	su	0.0000000	0.0	1.0330000	0.0080000	0						0.0000000	80mae1	0
83	se g	u233f	rc	cu		0.5480549	12.7	0.5500000	0.0700000	0						0.0000000	77gud1	0
83		u233he	cm	cu	x3	0.0000000	0.0	1.7910000	0.0000000	0						0.0000000	63wea1	0
83		u233he	es	cu		1.3046628	7.0	1.3300000	7.0000000%	0						0.0000000	77cro1	0
83	br g	u233he	rc	cu		1.3046628	6.0	1.3300000	0.0800000	0						0.0000000	69bor1	0
83		u236f	es	cu		0.5646826	30.0	0.5500000	30.0000000%	0						0.0000000	72sid1	0
83		pu239h	cm	cu		0.0000000	0.0	0.3225000	0.0000000	0						0.0000000	63wea1	0
83		pu239h	es	cu		0.4735754	12.0	0.4775000	12.0000000%	0						0.0000000	75mee5	0
83		pu240f	es	cu		0.3177622	30.0	0.3200000	30.0000000%	0						0.0000000	72sid1	0
83		pu240f	es	cu		0.2306224	30.1	0.0024200	0.0000000	99		pu240f				0.0618000	77mye1	0
83		pu240f	es	cu	x3	0.0000000	0.0	0.3200000	15.0000000%	0						0.0000000	77cro1	0
83	kr g	pu240f	ms	cu		0.2254126	2.0	0.2270000	0.0020000	0						0.0000000	79mae1	0
83		pu241f	es	cu		0.2493211	30.0	0.2500000	30.0000000%	0						0.0000000	72sid1	0
83	kr g	pu241f	ms	cu		0.2034709	1.4	0.1990000	0.0020000	148	nd g	pu241f				1.9080000	77mae1	0
83		pu241f	es	cu	x3	0.0000000	0.0	0.2500000	15.0000000%	0						0.0000000	77cro1	0
83		pu242f	es	cu		0.2095450	30.0	0.2100000	30.0000000%	0						0.0000000	72sid1	0
83	kr g	pu242f	ms	cu		0.1786122	2.0	0.1790000	0.0010000	0						0.0000000	79mae1	0
83		th232h	es	cu		1.6574989	5.5	1.6300000	5.5000000%	0						0.0000000	77cro1	0
83		th232h	es	cu		1.8100295	8.0	1.7800000	8.0000000%	0						0.0000000	75mee3	0
83	br g	th232h	rc	cu		1.3031440	22.4	1.4500000	0.3200000	97	zr g	th232h				3.8000000	64lyl1	0
83	br g	th232h	cm	cu		0.0000000	0.0	1.6200000	5.5000000%	0						0.0000000	77cro1	0
83	br g	th232h	rc	cu		1.6269928	18.7	1.6000000	0.3000000	0						0.0000000	60vla1	0
83	br g	th232h	cm	cu		0.0000000	0.0	1.5200000	0.0000000	0						0.0000000	69gun2	0

83 br g th232h rc cu 1.7960652 5.4 1.6900000 0.0700000 99 mo g th232h 1.9600000 68lyl1 0
83 np237f es cu 0.3991830 30.0 0.4000000 30.0000000% 0 0.0000000 72sid1 0
83 kr g np237f ms cu 0.4850073 2.0 0.4860000 0.0070000 0 0.0000000 77mae2 0
83 np237f ms re 0.4764743 3.3 0.3640000 0.0060000 86 np237f 1.0000000 73tra1 0
83 np237f sp cu 0.6187337 16.1 0.6200000 0.1000000 0 0.0000000 80naq1 0
83 br g np237f es fc 0.4815338 5.4 0.9999900 5.0000000% 83 np237f 1.0000000 74mee5 0
83 br g np237f rc re 0.3657180 20.1 0.4300000 20.0000000% 140 ba g np237f 6.4400000 65iye1 0
83 br g np237f cm cu 0.0000000 0.0 0.4200000 10.0000000% 0 0.0000000 77cro1 0
83 br g np237f cm cu 0.0000000 0.0 0.4300000 0.0000000 0 0.0000000 69gun2 0
83 br g np237f rc cu x4 0.0000000 0.0 0.2650000 0.0090000 140 ba g np237f 5.3000000 68nam1 0
83 cf252s ms re 0.0439600 21.5 0.0510000 20.0000000% 136 cf252s 4.9530000 69sri1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

83 cf252s sp cu ul 0.0000000 0.0 0.0726000 0.0000000 0 0.0000000 63fra1 0
83 cf252s es cu 0.0374876 15.0 0.0365500 15.0000000% 0 0.0000000 87wah1 36
83 cf252s sp cu ul 0.0000000 0.0 0.0820000 0.0000000 0 0.0000000 65sch1 0
83 br g cf252s rc cu 0.0430774 9.5 0.0420000 0.0040000 0 0.0000000 75fly2 0
83 br g cf252s es fc 0.0423936 7.5 0.9999800 5.0000000% 83 cf252s 1.0000000 74mee5 0
83 br g cf252s cm cu x3 0.0000000 0.0 0.0214000 0.0000000 0 0.0000000 69gun2 0
83 br g cf252s rc cu 0.0379491 16.2 0.0370000 0.0060000 0 0.0000000 84che1 0
83 br g cf252s rc cu 0.0379491 16.2 0.0370000 0.0060000 0 0.0000000 86che1 0
83 br g cf252s rc cu x4 0.0000000 0.0 0.0214000 0.0093000 0 0.0000000 60ner1 0
84 kr g u233f ms cu 1.6342000 2.0 1.6400000 0.0100000 0 0.0000000 74mae1 0
84 u233f cm cu 0.0000000 0.0 1.6600000 5.0000000% 0 0.0000000 77cro1 0
84 kr g u233f ms cu 1.6840232 2.0 1.6900000 0.0120000 0 0.0000000 80mae1 0
84 kr g u233f ms cu 1.6371894 2.0 1.6430000 0.0140000 0 0.0000000 81mae1 0
84 kr g u233f ms cu 1.6322071 2.0 1.6380000 0.0120000 0 0.0000000 81mae1 0
84 kr g u233f cm cu 0.0000000 0.0 1.6410000 0.0130000 0 0.0000000 81mae1 0
84 u233f cm cu x3 0.0000000 0.0 1.9265000 0.0000000 0 0.0000000 63wea1 0
84 u233he cm cu 0.0000000 0.0 2.2290000 0.0000000 0 0.0000000 63wea1 0
84 u233he es cu 1.9815180 5.0 2.0200000 5.0000000% 0 0.0000000 77cro1 0
84 br g u233he rc cu 1.9815180 5.0 2.0200000 0.1000000 0 0.0000000 69bor1 0
84 u236f es cu 1.0266957 30.0 1.0000000 30.0000000% 0 0.0000000 72sid1 0
84 pu239h cm cu 0.0000000 0.0 0.4490000 0.0000000 0 0.0000000 63wea1 0

84		pu239h	es	cu		0.7966314	12.0	0.8060000	12.0000000%	0			0.0000000	75mee5	0
84		pu240f	es	cu		0.4468531	30.0	0.4500000	30.0000000%	0			0.0000000	72sid1	0
84		pu240f	es	cu		0.3240149	30.1	0.0034000	0.0000000	99		pu240f	0.0618000	77mye1	0
84		pu240f	es	cu	x3	0.0000000	0.0	0.4510000	15.0000000%	0			0.0000000	77cro1	0
84	kr g	pu240f	ms	cu		0.3872727	2.0	0.3900000	0.0040000	0			0.0000000	79mae1	0
84		pu241f	es	cu		0.3689952	30.0	0.3700000	30.0000000%	0			0.0000000	72sid1	0
84	kr g	pu241f	ms	cu		0.3568410	1.3	0.3490000	0.0030000	148	nd g	pu241f	1.9080000	77mae1	0
84		pu241f	es	cu	x3	0.0000000	0.0	0.3700000	15.0000000%	0			0.0000000	77cro1	0
84		pu242f	es	cu		0.3093283	30.0	0.3100000	30.0000000%	0			0.0000000	72sid1	0
84	kr g	pu242f	ms	cu		0.3442525	2.0	0.3450000	0.0020000	0			0.0000000	79mae1	0
84		th232h	es	cu		2.1862716	11.4	2.1500000	11.4000000%	0			0.0000000	77cro1	0
84		th232h	es	cu		2.3998144	8.0	2.3600000	8.0000000%	0			0.0000000	75mee3	0
84	br g	th232h	rc	cu		1.6716192	10.8	1.8600000	0.1200000	97	zr g	th232h	3.8000000	64lyl1	0
84	br g	th232h	cm	cu		0.0000000	0.0	2.0800000	11.4000000%	0			0.0000000	77cro1	0
84	br g	th232h	cm	cu		0.0000000	0.0	1.8600000	0.0000000	0			0.0000000	69gun2	0
84	br g	th232h	rc	cu		2.5612528	5.4	2.4100000	0.0400000	99	mo g	th232h	1.9600000	68lyl1	0
84		np237f	es	cu		0.7684273	30.0	0.7700000	30.0000000%	0			0.0000000	72sid1	0
84	kr g	np237f	ms	cu		0.7674293	2.0	0.7690000	0.0080000	0			0.0000000	77mae2	0
84		np237f	ms	re		0.7068575	6.2	0.5400000	0.0300000	86		np237f	1.0000000	73tra1	0
84		np237f	sp	cu		0.8682230	12.6	0.8700000	0.1100000	0			0.0000000	80naq1	0
84		cf252s	sp	cu	ul	0.0000000	0.0	0.1130000	0.0000000	0			0.0000000	63fra1	0
84		cf252s	sp	cu	ul	0.0000000	0.0	0.1150000	0.0000000	0			0.0000000	65sch1	0
84		cf252s	es	cu		0.0603741	15.0	0.0562900	15.0000000%	0			0.0000000	87wah1	36
84		cf252s	ms	re		0.0766171	21.5	0.0850000	20.0000000%	136		cf252s	4.9530000	69sri1	0
85	rb g	u233f	ms	cu		2.1125024	2.0	2.1200000	0.0200000	0			0.0000000	74mae1	0
85		u233f	cm	cu		0.0000000	0.0	2.1500000	5.0000000%	0			0.0000000	77cro1	0
85	rb g	u233f	ms	cu		2.1374140	2.0	2.1450000	0.0180000	0			0.0000000	80mae1	0
85		u233f	rc	cu	x4	0.0000000	0.0	2.6100000	0.0900000	140	ba g	u233f	6.2600000	77bla1	0
85		u233f	es	cu	x4	0.0000000	0.0	3.2600000	30.0000000%	0			0.0000000	72sid1	0
85		u233f	cm	cu	x3	0.0000000	0.0	2.5840000	0.0000000	0			0.0000000	63wea1	0
85	rb g	u233f	ms	cu		2.1164883	2.0	2.1240000	0.0180000	0			0.0000000	81mae1	0
85	rb g	u233f	ms	cu		2.1154918	2.0	2.1230000	0.0240000	0			0.0000000	81mae1	0
85	rb g	u233f	cm	cu		0.0000000	0.0	2.1240000	0.0190000	0			0.0000000	81mae1	0
85	kr g	u233f	cm	cu		0.0000000	0.0	0.5188000	33.0000000%	0			0.0000000	73net2	0
85	kr m	u233f	cm	cu		0.0000000	0.0	2.3820000	10.1000000%	0			0.0000000	73net2	0
85	kr m	u233f	rc	cu	x1	0.0000000	0.0	3.0500000	0.2800000	0			0.0000000	77gud1	0

85 br g u233f cm cu 0.0000000 0.0 2.3700000 10.1000000% 0 0.0000000 73net2 0
85 se g u233f cm cu x3 0.0000000 0.0 1.7170000 14.0000000% 0 0.0000000 73net2 0
85 as g u233f cm cu 0.0000000 0.0 0.1316000 46.0000000% 0 0.0000000 73net2 0
85 u233he cm cu 0.0000000 0.0 2.6610000 0.0000000 0 0.0000000 63wea1 0
85 u233he es cu 2.2964181 20.0 2.3600000 20.0000000% 0 0.0000000 77cro1 0
85 kr g u233he cm cu 0.0000000 0.0 0.4812000 33.0000000% 0 0.0000000 73net2 0
85 kr m u233he es cu 1.9247097 10.1 1.9780000 10.1000000% 0 0.0000000 73net2 0
85 kr m u233he rc cu x4 0.0000000 0.0 1.6000000 0.1500000 87 kr g u233he 2.8600000 75cav1 0
85 br g u233he cm cu 0.0000000 0.0 1.9510000 11.0000000% 0 0.0000000 73net2 0
85 se g u233he cm cu 0.0000000 0.0 1.1650000 18.0000000% 0 0.0000000 73net2 0
85 as g u233he cm cu 0.0000000 0.0 0.0513800 46.0000000% 0 0.0000000 73net2 0
85 u236f es cu 1.2157102 30.0 1.2100000 30.0000000% 0 0.0000000 72sid1 0
85 u236f rc cu 1.5137645 6.2 1.5400000 0.0900000 140 ba g u236f 5.7600000 77bla1 0
85 kr m u236f rc cu 1.5611780 7.0 1.5000000 0.1000000 140 ba g u236f 5.4400000 77fer1 0
85 kr m u236f rc cu 1.2489424 5.4 1.2000000 0.0600000 140 ba g u236f 5.4400000 80gud1 0
85 pu239h cm cu x3 0.0000000 0.0 0.6664000 0.0000000 0 0.0000000 63wea1 0
85 pu239h es cu 1.0369779 12.0 1.0400000 12.0000000% 0 0.0000000 75mee5 0
85 kr g pu239h cm cu 0.0000000 0.0 0.1790000 14.9000000% 0 0.0000000 73net2 0
85 kr m pu239h cm cu 0.0000000 0.0 0.8360000 14.9000000% 0 0.0000000 73net2 0
85 kr m pu239h rc cu 0.9582768 5.4 0.8200000 0.0200000 88 kr g pu239h 1.4600000 74bal1 0
85 kr m pu239h rc cu 0.9582768 5.4 0.8200000 0.0100000 88 kr g pu239h 1.4600000 74bal1 0
85 kr m pu239h rc cu 0.8990579 5.4 0.7500000 0.0200000 138 xe g pu239h 1.5100000 74bal1 0
85 kr m pu239h rc cu 0.9230328 5.4 0.7700000 0.0200000 138 xe g pu239h 1.5100000 74bal1 0
85 kr m pu239h rc cu 0.8966123 5.7 0.7900000 5.0000000% 89 kr g pu239h 1.3900000 74bal1 0
85 br g pu239h cm cu 0.0000000 0.0 0.8259000 14.9000000% 0 0.0000000 73net2 0
85 se g pu239h cm cu x3 0.0000000 0.0 0.5083000 21.0000000% 0 0.0000000 73net2 0
85 as g pu239h cm cu x3 0.0000000 0.0 0.0242200 47.0000000% 0 0.0000000 73net2 0
85 pu240f es cu 0.5940662 30.0 0.6000000 30.0000000% 0 0.0000000 72sid1 0
85 pu240f es cu 0.4465964 30.1 0.0047000 0.0000000 99 pu240f 0.0618000 77mye1 0
85 pu240f es cu x3 0.0000000 0.0 0.6010000 15.0000000% 0 0.0000000 77cro1 0
85 rb g pu240f ms cu 0.4326782 2.1 0.4370000 0.0090000 0 0.0000000 79mae1 0
85 pu241f es cu 0.5080414 30.0 0.5100000 30.0000000% 0 0.0000000 72sid1 0
85 pu241f es cu x3 0.0000000 0.0 0.5100000 15.0000000% 0 0.0000000 77cro1 0
85 rb g pu241f ms cu su 0.0000000 0.0 0.3980000 0.0030000 148 nd g pu241f 1.9080000 77mae1 0
85 pu241f ms cu 0.4462795 2.0 0.4480000 0.0040000 0 0.0000000 80mae4 0
85 pu242f es cu 0.4290683 30.0 0.4300000 30.0000000% 0 0.0000000 72sid1 0

85 rb g pu242f ms cu 0.3223002 2.0 0.3230000 0.0050000 0 0.0000000 79mae1 0
85 kr m pu242f rc cu 0.3691983 10.8 0.3700000 0.0400000 0 0.0000000 83gud1 0
85 th232h es cu 4.3928806 4.5 4.3200000 4.5000000% 0 0.0000000 77cro1 0
85 th232h es cu 4.5149050 8.0 4.4400000 8.0000000% 0 0.0000000 75mee3 0
85 kr g th232h cm cu 0.0000000 0.0 0.8630000 33.0000000% 0 0.0000000 73net2 0
85 kr m th232h cm cu 0.0000000 0.0 4.2440000 10.1000000% 0 0.0000000 73net2 0
85 kr m th232h cm cu 0.0000000 0.0 4.2700000 4.5000000% 0 0.0000000 77cro1 0
85 kr m th232h rc cu 4.7792914 15.0 4.7000000 0.0000000 0 0.0000000 71bla1 0
85 kr m th232h rc cu 4.6071852 5.7 4.3300000 0.0600000 87 kr g th232h 4.7500000 73cha1 0
85 br g th232h cm cu 0.0000000 0.0 4.2430000 10.1000000% 0 0.0000000 73net2 0
85 br g th232h es in 0.2115091 30.0 0.2080000 0.0000000 0 0.0000000 89rid1 0
85 se g th232h cm cu x3 0.0000000 0.0 3.8710000 11.0000000% 0 0.0000000 73net2 0
85 as g th232h cm cu x3 0.0000000 0.0 0.8720000 33.0000000% 0 0.0000000 73net2 0
85 as g th232h es cu 1.5110696 17.0 1.4860000 17.0000000% 0 0.0000000 80rid1 0
85 as g th232h es in 1.4632766 24.0 1.4390000 24.0000000% 0 0.0000000 80rid1 0
85 np237f es cu 0.7185294 30.0 0.7200000 30.0000000% 0 0.0000000 72sid1 0
85 rb g np237f ms cu 0.9490576 2.0 0.9510000 0.0060000 0 0.0000000 77mae2 0
85 np237f ms re 0.9987634 3.3 0.7630000 0.0130000 86 np237f 1.0000000 73tra1 0
85 np237f sp cu 1.1276920 11.5 1.1300000 0.1300000 0 0.0000000 80naq1 0
85 kr m np237f rc cu 0.7754551 6.6 0.7900000 0.0500000 140 ba g np237f 5.5800000 77bla2 0
85 kr m np237f rc cu 0.6187337 12.9 0.6200000 12.9000000% 0 0.0000000 83gud2 0
85 cf252s es cu 0.0895599 15.0 0.0873200 15.0000000% 0 0.0000000 87wah1 36
85 cf252s sp cu ul 0.0000000 0.0 0.1560000 0.0000000 0 0.0000000 65sch1 0
85 cf252s ms re 0.0939537 21.5 0.1090000 20.0000000% 136 cf252s 4.9530000 69sri1 0
85 cf252s sp cu ul 0.0000000 0.0 0.1560000 0.0000000 0 0.0000000 63fra1 0
85 cf252s rc cu 0.1138474 6.3 0.1110000 0.0070000 0 0.0000000 83li 1 0
85 kr m cf252s rc cu 0.1128217 18.2 0.1100000 0.0200000 0 0.0000000 76thi1 0
1
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nuclide material tech. type value err. value nuclide material value no. treatment

85 kr m cf252s rc cu 0.0892604 35.1 0.0820000 35.0000000% 99 mo g cf252s 2.4800000 75fly2 36
86 kr g u233f ms cu 2.7701683 2.0 2.7800000 0.0200000 0 0.0000000 74mae1 0
86 u233f cm cu 0.0000000 0.0 2.8400000 5.0000000% 0 0.0000000 77cro1 0
86 kr g u233f ms cu 2.8289596 2.0 2.8390000 0.0200000 0 0.0000000 80mae1 0
86 kr g u233f ms cu 2.7761471 2.0 2.7860000 0.0240000 0 0.0000000 81mae1 0

86	kr g	u233f	ms	cu		2.7781400	2.0	2.7880000	0.0210000	0			0.0000000	81mae1	0
86	kr g	u233f	cm	cu		0.0000000	0.0	2.7870000	0.0220000	0			0.0000000	81mae1	0
86		u233f	cm	cu	x3	0.0000000	0.0	3.2450000	0.0000000	0			0.0000000	63wea1	0
86		u233he	cm	cu		0.0000000	0.0	3.4400000	0.0000000	0			0.0000000	63wea1	0
86		u233he	es	cu		2.6491276	20.0	2.8000000	20.0000000%	0			0.0000000	77cro1	0
86		u236f	es	cu		1.7351157	30.0	1.6900000	30.0000000%	0			0.0000000	72sid1	0
86		pu239h	cm	cu		0.0000000	0.0	0.9239000	0.0000000	0			0.0000000	63wea1	0
86		pu239h	es	cu		1.1296384	12.0	1.1390000	12.0000000%	0			0.0000000	75mee5	0
86		pu240f	es	cu		0.7844755	30.0	0.7900000	30.0000000%	0			0.0000000	72sid1	0
86		pu240f	es	cu		0.6003805	30.1	0.0063000	0.0000000	99	pu240f		0.0618000	77mye1	0
86		pu240f	es	cu	x3	0.0000000	0.0	0.7920000	15.0000000%	0			0.0000000	77cro1	0
86	kr g	pu240f	ms	cu		0.6255944	2.0	0.6300000	0.0060000	0			0.0000000	79mae1	0
86		pu241f	es	cu		0.6681806	30.0	0.6700000	30.0000000%	0			0.0000000	72sid1	0
86	kr g	pu241f	ms	cu		0.5991657	1.3	0.5860000	0.0050000	148	nd g	pu241f	1.9080000	77mae1	0
86		pu241f	es	cu	x3	0.0000000	0.0	0.6710000	15.0000000%	0			0.0000000	77cro1	0
86		pu242f	es	cu		0.5887217	30.0	0.5900000	30.0000000%	0			0.0000000	72sid1	0
86	kr g	pu242f	ms	cu		0.5408257	2.0	0.5420000	0.0040000	0			0.0000000	79mae1	0
86	rb g	th232h	rc	fi		0.0000150	21.7	0.0000027	0.0000005	86	th232h		1.0000000	73net1	0
86	rb m	th232h	rc	fi		0.0000735	21.7	0.0000132	0.0000027	86	th232h		1.0000000	73net1	0
86		th232h	es	cu		5.6028763	20.5	5.4200000	20.5000000%	0			0.0000000	77cro1	0
86		th232h	es	cu		5.3341037	8.0	5.1600000	8.0000000%	0			0.0000000	75mee3	0
86		np237f	es	cu		1.2563605	30.0	1.2600000	30.0000000%	0			0.0000000	72sid1	0
86	kr g	np237f	ms	cu		1.3032247	2.0	1.3070000	0.0140000	0			0.0000000	77mae2	0
86		np237f	ms	re	rp	1.2853086	3.9	1.0000000	0.0000000	no. relative values =		3		73tra1	
86		np237f	sp	cu		1.6651762	9.6	1.6700000	0.1600000	0			0.0000000	80naq1	0
86	rb g	cf252s	rc	in		0.0000058	18.5	0.0000054	0.0000010	0			0.0000000	69gun1	0
86		cf252s	ms	re		0.1406150	21.5	0.1560000	20.0000000%	136	cf252s		4.9530000	69sri1	0
86		cf252s	sp	cu	ul	0.0000000	0.0	0.1480000	0.0000000	0			0.0000000	65sch1	0
86		cf252s	sp	cu	ul	0.0000000	0.0	0.2020000	0.0000000	0			0.0000000	63fra1	0
86		cf252s	es	cu		0.1207697	15.0	0.1126000	15.0000000%	0			0.0000000	87wah1	36
87		u233f	cm	cu		0.0000000	0.0	3.9130000	0.0000000	0			0.0000000	63wea1	0
87		u233f	cm	cu		0.0000000	0.0	3.9500000	5.0000000%	0			0.0000000	77cro1	0
87	sr m	u233f	es	cu		0.0000092	30.0	0.0000093	0.0000000	0			0.0000000	75mee1	0
87	rb g	u233f	ms	cu		3.8264195	2.0	3.8400000	0.0300000	0			0.0000000	74mae1	0
87	rb g	u233f	ms	cu		3.8742498	2.0	3.8880000	0.0330000	0			0.0000000	80mae1	0
87	rb g	u233f	ms	cu		3.8413665	2.0	3.8550000	0.0330000	0			0.0000000	81mae1	0

87	rb g	u233f	ms	cu		3.8154584	2.0	3.8290000	0.0500000	0			0.0000000	81mae1	0
87	rb g	u233f	cm	cu		0.0000000	0.0	3.8420000	0.0370000	0			0.0000000	81mae1	0
87	rb g	u233f	rc	cu	x4	0.0000000	0.0	3.5200000	0.1100000	140	ba g	u233f	6.2600000	77bla1	0
87	kr g	u233f	es	cu		4.0277051	10.1	4.0420000	10.1000000%	0			0.0000000	73net2	0
87	kr g	u233f	rc	cu	x4	0.0000000	0.0	4.8500000	0.5100000	0			0.0000000	77gud1	0
87	br g	u233f	cm	cu		0.0000000	0.0	2.6620000	16.1000000%	0			0.0000000	73net2	0
87	br g	u233f	rc	cu		2.3018305	8.2	2.3100000	0.1900000	0			0.0000000	81wal1	0
87	se g	u233f	cm	cu		0.0000000	0.0	0.6217000	33.0000000%	0			0.0000000	73net2	0
87	as g	u233f	cm	cu		0.0000000	0.0	0.0050860	90.0000000%	0			0.0000000	73net2	0
87		u233he	cm	cu		0.0000000	0.0	4.0140000	0.0000000	0			0.0000000	63wea1	0
87		u233he	ms	cu		3.3339216	8.1	4.0000000	0.0000000	90		u233he	5.6000000	72boc1	0
87	sr m	u233he	es	cu		0.0000056	30.0	0.0000057	0.0000000	0			0.0000000	75mee1	0
87	kr g	u233he	ms	in		1.8736135	15.7	1.9100000	0.3000000	0			0.0000000	72boc1	0
87	kr g	u233he	es	cu		2.9379438	10.1	2.9950000	10.1000000%	0			0.0000000	73net2	0
87	kr g	u233he	es	fc		3.2929359	7.5	0.9917000	5.0000000%	87		u233he	1.0000000	74mee5	0
87	kr g	u233he	rc	cu	rp	3.0290479	19.5	2.8600000	0.0000000	no. relative values =			2	75cav1	
87	kr g	u233he	ms	cu		3.3339216	8.1	4.0000000	0.0000000	90		u233he	5.6000000	72boc1	0
87	kr g	u233he	es	cu		3.2665618	20.0	3.3300000	20.0000000%	0			0.0000000	77cro1	0
87	br g	u233he	cm	cu		0.0000000	0.0	1.5020000	24.0000000%	0			0.0000000	73net2	0
87	se g	u233he	cm	cu		0.0000000	0.0	0.2202000	46.0000000%	0			0.0000000	73net2	0
87	as g	u233he	cm	cu		0.0000000	0.0	0.0009585	90.0000000%	0			0.0000000	73net2	0
87	sr m	u236f	es	cu		0.0000001	30.0	0.0000001	0.0000000	0			0.0000000	75mee1	0
87	kr g	u236f	es	cu		2.3108541	30.0	2.3000000	30.0000000%	0			0.0000000	75mee1	0
87	kr g	u236f	es	cu		2.3108541	30.0	2.3000000	30.0000000%	0			0.0000000	72sid1	0
87	kr g	u236f	rc	cu		2.2793199	6.7	2.1900000	0.1400000	140	ba g	u236f	5.4400000	77fer1	0
87	kr g	u236f	rc	cu		2.3417671	7.0	2.2500000	0.1500000	140	ba g	u236f	5.4400000	80gud1	0
87	kr g	u236f	rc	cu		2.2804764	5.4	2.3200000	0.1100000	140	ba g	u236f	5.7600000	77bla1	0
87		pu239h	cm	cu		0.0000000	0.0	1.3120000	0.0000000	0			0.0000000	63wea1	0
87	sr m	pu239h	es	cu		0.0000046	30.0	0.0000047	0.0000000	0			0.0000000	75mee1	0
87	kr g	pu239h	cm	cu	x3	0.0000000	0.0	0.9170000	49.9000000%	0			0.0000000	73net2	0
87	kr g	pu239h	rc	cu		1.3322385	10.7	1.1400000	0.1200000	88	kr g	pu239h	1.4600000	74bal1	0
87	kr g	pu239h	rc	cu		1.2466936	5.4	1.0400000	0.0300000	138	xe g	pu239h	1.5100000	74bal1	0
87	kr g	pu239h	rc	cu		1.2706685	5.4	1.0600000	0.0300000	138	xe g	pu239h	1.5100000	74bal1	0
87	kr g	pu239h	rc	cu		1.3322385	5.4	1.1400000	0.0200000	88	kr g	pu239h	1.4600000	74bal1	0
87	kr g	pu239h	rc	cu		1.2484475	5.7	1.1000000	5.0000000%	89	kr g	pu239h	1.3900000	74bal1	0
87	kr g	pu239h	es	cu		1.3729986	12.0	1.3770000	12.0000000%	0			0.0000000	75mee5	0

87 br g pu239h cm cu 0.0000000 0.0 0.4797000 52.0000000% 0 0.0000000 73net2 0
87 se g pu239h cm cu 0.0000000 0.0 0.0751700 67.0000000% 0 0.0000000 73net2 0
87 as g pu239h cm cu 0.0000000 0.0 0.0003569 90.0000000% 0 0.0000000 73net2 0
87 pu240f es cu x3 0.0000000 0.0 1.0200000 30.0000000% 0 0.0000000 72sid1 0
87 sr m pu240f es cu 0.0000005 30.0 0.0000005 0.0000000 0 0.0000000 75mee1 0
87 rb g pu240f ms cu 0.8544652 2.2 0.8630000 0.0190000 0 0.0000000 79mae1 0
87 kr g pu240f es cu 1.0079323 15.0 1.0180000 15.0000000% 0 0.0000000 75mee1 0
87 kr g pu240f es cu 0.7981723 30.1 0.0084000 0.0000000 99 pu240f 0.0618000 77mye1 0
87 kr g pu240f es cu x3 0.0000000 0.0 1.0200000 15.0000000% 0 0.0000000 77cro1 0
87 br g pu240f rc cu 0.9109015 14.1 0.9200000 0.1300000 0 0.0000000 81wal1 0
87 pu241f es cu x3 0.0000000 0.0 0.8810000 15.0000000% 0 0.0000000 77cro1 0
87 pu241f ms cu 0.8019085 2.0 0.8050000 0.0080000 0 0.0000000 80mae4 0
87 sr m pu241f es cu 0.0000001 30.0 0.0000001 0.0000000 0 0.0000000 75mee1 0
87 rb g pu241f es cu 0.8766204 30.0 0.8800000 30.0000000% 0 0.0000000 72sid1 0
87 rb g pu241f ms cu su 0.0000000 0.0 0.7540000 0.0050000 148 nd g pu241f 1.9080000 77mae1 0
87 br g pu241f rc cu 0.7570813 6.6 0.7600000 0.0500000 0 0.0000000 81wal1 0
87 sr m pu242f es cu 0.0000000 30.0 0.0000000 0.0000000 0 0.0000000 75mee1 0
87 kr g pu242f es cu 0.8758880 15.0 0.8797000 15.0000000% 0 0.0000000 75mee1 0
87 kr g pu242f es cu 0.7766200 30.0 0.7800000 30.0000000% 0 0.0000000 72sid1 0
87 kr g pu242f rc cu x1 0.0000000 0.0 1.4700000 0.2300000 0 0.0000000 83gud1 0
87 kr g pu242f ms cu 0.6203003 2.0 0.6230000 0.0110000 0 0.0000000 79mae1 0
87 br g pu242f rc cu 0.7965334 16.3 0.8000000 0.1300000 0 0.0000000 81wal1 0
87 sr m th232h es cu 0.0000001 30.0 0.0000001 0.0000000 0 0.0000000 75mee1 0
87 kr g th232h ms in 0.4654875 19.6 0.4600000 0.0900000 0 0.0000000 72boc1 0
87 kr g th232h es cu 5.3308432 10.1 5.2680000 10.1000000% 0 0.0000000 73net2 0
87 kr g th232h rc cu rp 5.2274220 11.9 4.7500000 0.0000000 no. relative values = 2 73cha1
87 kr g th232h ms cu 4.8979456 3.2 4.7500000 0.0000000 91 th232h 5.8800000 72boc1 0
87 kr g th232h es cu 5.1001234 8.0 5.0400000 8.0000000% 0 0.0000000 75mee3 0
87 kr g th232h es cu 5.6263266 20.0 5.5600000 20.0000000% 0 0.0000000 77cro1 0
87 kr g th232h rc cu 4.9845513 5.7 4.7600000 0.0300000 91 th232h 5.7900000 77feu1 0
87 br g th232h rc fc 4.1259305 12.5 0.8200000 0.1000000 87 th232h 1.0000000 71gri1 0
87 br g th232h cm cu 0.0000000 0.0 4.7960000 11.0000000% 0 0.0000000 73net2 0
87 se g th232h cm cu 0.0000000 0.0 2.4410000 24.0000000% 0 0.0000000 73net2 0
87 as g th232h cm cu x3 0.0000000 0.0 0.0746900 51.0000000% 0 0.0000000 73net2 0
87 np237f sp cu 1.7449451 9.1 1.7500000 0.1600000 0 0.0000000 80naq1 0
87 sr m np237f es cu 0.0000007 30.0 0.0000007 0.0000000 0 0.0000000 75mee1 0

87 kr g np237f es fc 1.7412614 5.7 0.9990000 5.0000000% 87 np237f 1.0000000 74mee5 0
87 kr g np237f rc cu 1.5594029 14.0 1.5900000 0.2200000 140 ba g np237f 5.5800000 77bla2 0
87 kr g np237f ms cu 1.7230086 2.0 1.7280000 0.0110000 0 0.0000000 77mae2 0
87 kr g np237f es cu 1.5654650 30.0 1.5700000 30.0000000% 0 0.0000000 72sid1 0
87 kr g np237f rc cu 2.0041941 7.0 2.0100000 7.0000000% 0 0.0000000 83gud2 0
87 br g np237f rc cu 1.5056383 9.3 1.5100000 0.1400000 0 0.0000000 81wal1 0
87 cf252s sp cu ul 0.0000000 0.0 0.2580000 0.0000000 0 0.0000000 63fra1 0
1
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nuclide material tech. type value err. value nuclide material value no. treatment

87 cf252s sp cu ul 0.0000000 0.0 0.1630000 0.0000000 0 0.0000000 65sch1 0
87 cf252s es cu 0.2146182 15.0 0.2001000 15.0000000% 0 0.0000000 87wah1 36
87 sr m cf252s es cu 0.0000003 30.0 0.0000002 0.0000000 0 0.0000000 75mee1 0
88 u233f cm cu 0.0000000 0.0 4.7310000 0.0000000 0 0.0000000 63wea1 0
88 sr g u233f ms cu 5.1018927 2.0 5.1200000 0.0300000 0 0.0000000 74mae1 0
88 u233f cm cu 0.0000000 0.0 5.3200000 5.0000000% 0 0.0000000 77cro1 0
88 sr g u233f ms cu 4.9912852 2.0 5.0090000 0.0370000 0 0.0000000 80mae1 0
88 u233f rc cu 4.9118535 6.4 5.1500000 0.0800000 140 ba g u233f 6.2600000 77bla1 0
88 sr g u233f ms cu 5.1258078 2.0 5.1440000 0.0450000 0 0.0000000 81mae1 0
88 sr g u233f ms cu 5.0949174 2.0 5.1130000 0.0460000 0 0.0000000 81mae1 0
88 sr g u233f cm cu 0.0000000 0.0 5.1290000 0.0440000 0 0.0000000 81mae1 0
88 kr g u233f cm cu 0.0000000 0.0 4.8950000 10.1000000% 0 0.0000000 73net2 0
88 br g u233f cm cu 0.0000000 0.0 1.7640000 24.0000000% 0 0.0000000 73net2 0
88 se g u233f cm cu 0.0000000 0.0 0.1576000 46.0000000% 0 0.0000000 73net2 0
88 u233he cm cu 0.0000000 0.0 4.4000000 0.0000000 0 0.0000000 63wea1 0
88 u233he ms cu 3.7204906 8.1 4.5000000 0.0000000 90 u233he 5.6000000 72boc1 0
88 u233he es cu 3.8143894 20.0 3.9200000 20.0000000% 0 0.0000000 77cro1 0
88 kr g u233he ms in 2.5007604 15.6 2.5700000 0.4000000 0 0.0000000 72boc1 0
88 kr g u233he cm cu 0.0000000 0.0 3.2240000 11.0000000% 0 0.0000000 73net2 0
88 kr g u233he rc cu 4.0818452 9.3 3.6500000 0.2700000 87 kr g u233he 2.8600000 75cav1 0
88 br g u233he cm cu 0.0000000 0.0 0.7712000 33.0000000% 0 0.0000000 73net2 0
88 se g u233he cm cu 0.0000000 0.0 0.0393900 51.0000000% 0 0.0000000 73net2 0
88 u236f es cu 3.1347238 30.0 3.1200000 30.0000000% 0 0.0000000 72sid1 0
88 u236f rc cu 2.9194029 5.4 2.9700000 0.0900000 140 ba g u236f 5.7600000 77bla1 0
88 kr g u236f rc cu 2.9141990 5.7 2.8000000 0.1500000 140 ba g u236f 5.4400000 77fer1 0

88 kr g u236f rc cu 2.7476734 7.8 2.6400000 0.2000000 140 ba g u236f 5.4400000 80gud1 0
88 pu239h cm cu 0.0000000 0.0 1.7080000 0.0000000 0 0.0000000 63wea1 0
88 pu239h es cu 2.0490219 12.0 2.0610000 12.0000000% 0 0.0000000 75mee5 0
88 kr g pu239h es cu 1.5012242 11.0 1.5100000 11.0000000% 0 0.0000000 73net2 0
88 kr g pu239h rc cu rp 1.6304800 6.1 1.4600000 0.0000000 no. relative values = 7 74bal1
88 kr g pu239h rc cu rp 1.6565693 16.1 1.4600000 0.0000000 no. relative values = 1 74bal3
88 kr g pu239h rc cu 1.5896829 5.4 1.3300000 0.0400000 138 xe g pu239h 1.5100000 74bal1 0
88 kr g pu239h rc cu 1.6135879 5.4 1.3500000 0.0400000 138 xe g pu239h 1.5100000 74bal1 0
88 kr g pu239h rc cu 1.6494454 5.4 1.3800000 0.0400000 138 xe g pu239h 1.5100000 74bal1 0
88 kr g pu239h rc cu 1.6374929 5.4 1.3700000 0.0200000 138 xe g pu239h 1.5100000 74bal1 0
88 kr g pu239h rc cu rp 1.6205482 7.2 1.4600000 0.0000000 no. relative values = 5 74bal1
88 kr g pu239h rc cu rp 1.6348221 16.1 1.4600000 0.0000000 no. relative values = 1 74bal3
88 kr g pu239h rc cu 1.5956189 5.7 1.4100000 5.0000000% 89 kr g pu239h 1.3900000 74bal1 0
88 br g pu239h cm cu x3 0.0000000 0.0 0.3834000 33.0000000% 0 0.0000000 73net2 0
88 se g pu239h cm cu x3 0.0000000 0.0 0.0211800 51.0000000% 0 0.0000000 73net2 0
88 pu240f es cu 1.2522376 30.0 1.2700000 30.0000000% 0 0.0000000 72sid1 0
88 pu240f es cu 1.2620978 15.0 1.2800000 15.0000000% 0 0.0000000 77cro1 0
88 pu240f es cu 1.0503638 30.1 0.0111000 0.0000000 99 pu240f 0.0618000 77mye1 0
88 sr g pu240f ms cu 0.9653076 2.3 0.9790000 0.0230000 0 0.0000000 79mae1 0
88 pu241f es cu 1.1269314 30.0 1.1300000 30.0000000% 0 0.0000000 72sid1 0
88 sr g pu241f ms cu 0.9887256 1.2 0.9670000 0.0060000 148 nd g pu241f 1.9080000 77mae1 0
88 pu241f cm cu x3 0.0000000 0.0 1.1300000 15.0000000% 0 0.0000000 77cro1 0
88 pu242f es cu 0.9978333 30.0 1.0000000 30.0000000% 0 0.0000000 72sid1 0
88 sr g pu242f ms cu 0.8341887 2.0 0.8360000 0.0070000 0 0.0000000 79mae1 0
88 kr g pu242f rc cu x1 0.0000000 0.0 0.7700000 0.1000000 0 0.0000000 83gud1 0
88 th232h ms cu 5.5124858 3.2 5.3200000 0.0000000 91 th232h 5.8800000 72boc1 0
88 th232h es cu 4.6979417 4.6 4.6200000 4.6000000% 0 0.0000000 77cro1 0
88 th232h rc cu 5.6507865 6.4 5.3700000 0.3100000 91 th232h 5.7900000 77feu1 0
88 th232h es cu 5.5724503 8.0 5.4800000 8.0000000% 0 0.0000000 75mee3 0
88 kr g th232h rc cu 4.9826655 15.0 4.9000000 0.0000000 0 0.0000000 71bla1 0
88 kr g th232h ms in 2.0134036 15.2 1.9800000 0.3000000 0 0.0000000 72boc1 0
88 kr g th232h es cu 5.6436313 10.1 5.5500000 10.1000000% 0 0.0000000 73net2 0
88 kr g th232h cm cu 0.0000000 0.0 4.5600000 4.5000000% 0 0.0000000 77cro1 0
88 kr g th232h rc cu 4.9902306 5.7 4.6900000 0.0500000 87 kr g th232h 4.7500000 73cha1 0
88 kr g th232h rc cu 5.0538464 15.0 4.9700000 0.0000000 0 0.0000000 71bla2 0
88 br g th232h cm cu 0.0000000 0.0 3.8450000 16.1000000% 0 0.0000000 73net2 0

88 br g th232h rc fc ul 0.0000000 0.0 1.0500000 0.1800000 88 th232h 1.0000000 71gri1 0
88 se g th232h cm cu 0.0000000 0.0 0.9896000 33.0000000% 0 0.0000000 73net2 0
88 np237f es cu 1.4258694 30.0 1.4300000 30.0000000% 0 0.0000000 72sid1 0
88 sr g np237f ms cu 2.1936452 2.0 2.2000000 0.0220000 0 0.0000000 77mae2 0
88 np237f sp cu 1.9343963 8.8 1.9400000 0.1700000 0 0.0000000 80naq1 0
88 kr g np237f rc cu nr 1.7261315 6.6 1.7600000 0.1100000 140 ba g np237f 5.5800000 77bla2 0
88 kr g np237f rc cu 1.7848295 20.7 1.7900000 20.7000000% 0 0.0000000 83gud2 0
88 cf252s sp cu 0.3512980 15.0 0.3390000 0.0000000 0 0.0000000 63fra1 0
88 cf252s sp cu 0.2911939 15.0 0.2810000 0.0000000 0 0.0000000 65sch1 0
88 cf252s es cu 0.3177227 15.0 0.3066000 15.0000000% 0 0.0000000 87wah1 36
88 cf252s rc cu 0.3067381 14.2 0.2960000 0.0420000 0 0.0000000 83li 1 0
88 kr g cf252s rc cu 0.3108832 10.0 0.3000000 0.0300000 0 0.0000000 76thi1 0
89 u233f cm cu 0.0000000 0.0 5.4080000 0.0000000 0 0.0000000 63wea1 0
89 u233f es cu 5.7320827 5.0 5.7900000 0.2900000 0 0.0000000 74mae1 0
89 u233f cm cu 0.0000000 0.0 6.6700000 6.3000000% 0 0.0000000 77cro1 0
89 u233f es cu 5.7479227 5.1 5.8060000 0.2940000 0 0.0000000 81mae1 0
89 u233f es cu 5.7310927 5.1 5.7890000 0.2930000 0 0.0000000 81mae1 0
89 u233f cm cu 0.0000000 0.0 5.7980000 0.2930000 0 0.0000000 81mae1 0
89 sr g u233f rc cu 6.2369812 10.0 6.3000000 0.6000000 0 0.0000000 61bon1 0
89 sr g u233f rc cu 5.8555339 15.5 5.9800000 15.0000000% 99 mo g u233f 4.7500000 65bun2 0
89 sr g u233f cm cu 0.0000000 0.0 6.4900000 10.1000000% 0 0.0000000 73net2 0
89 rb g u233f cm cu 0.0000000 0.0 6.4620000 10.1000000% 0 0.0000000 73net2 0
89 kr g u233f cm cu 0.0000000 0.0 5.5910000 12.0000000% 0 0.0000000 73net2 0
89 br g u233f cm cu 0.0000000 0.0 0.8990000 33.0000000% 0 0.0000000 73net2 0
89 u233he cm cu 0.0000000 0.0 4.7770000 0.0000000 0 0.0000000 63wea1 0
89 u233he ms cu 4.5007942 8.1 5.4000000 0.0000000 90 u233he 5.6000000 72boc1 0
89 u233he es cu 4.6987481 11.0 4.7900000 11.0000000% 0 0.0000000 77cro1 0
89 sr g u233he rc cu 4.7281766 10.4 4.8200000 0.5000000 0 0.0000000 69bor1 0
89 sr g u233he cm cu 0.0000000 0.0 3.9800000 10.1000000% 0 0.0000000 73net2 0
89 rb g u233he cm cu 0.0000000 0.0 3.9280000 10.1000000% 0 0.0000000 73net2 0
89 kr g u233he ms in 3.1096099 15.8 3.1700000 0.5000000 0 0.0000000 72boc1 0
89 kr g u233he cm cu 0.0000000 0.0 3.0450000 14.0000000% 0 0.0000000 73net2 0
89 br g u233he cm cu x3 0.0000000 0.0 0.2966000 46.0000000% 0 0.0000000 73net2 0
89 u236f es cu 3.9058948 30.0 3.8800000 30.0000000% 0 0.0000000 72sid1 0
89 sr g u236f rc cu 3.8636145 5.0 3.8380000 1.8000000% 0 0.0000000 76for1 0
89 pu239h cm cu 0.0000000 0.0 2.1140000 0.0000000 0 0.0000000 63wea1 0

89 pu239h es cu 2.1337814 12.0 2.1400000 12.0000000% 0 0.0000000 75mee5 0
89 sr g pu239h rc re 2.0834949 10.8 0.4400000 0.0200000 99 mo g pu239h 1.0000000 58pro1 0
89 sr g pu239h cm cu 0.0000000 0.0 1.8900000 9.9000000% 0 0.0000000 73net2 0
89 sr g pu239h rc re x5 0.0000000 0.0 0.4970000 0.8500000% 99 mo g u235t 0.0000000 64oth1 7
89 sr g pu239h rc cu 1.8047403 10.0 1.8100000 0.8500000% 0 0.0000000 64oth1 0
89 sr g pu239h cm cu 0.0000000 0.0 1.7000000 7.1000000% 0 0.0000000 77cro1 0
89 sr g pu239h rc cu 2.1148366 5.0 2.1210000 2.4000000% 0 0.0000000 76for1 0
89 rb g pu239h cm cu 0.0000000 0.0 1.8690000 9.9000000% 0 0.0000000 73net2 0
89 kr g pu239h cm cu 0.0000000 0.0 1.4750000 14.0000000% 0 0.0000000 73net2 0
89 kr g pu239h rc cu 1.6127098 5.4 1.3800000 0.0400000 88 kr g pu239h 1.4600000 74bal1 0
89 kr g pu239h rc cu 1.7412591 5.4 1.4900000 0.0600000 88 kr g pu239h 1.4600000 74bal1 0
89 kr g pu239h rc cu 1.6243961 5.4 1.3900000 0.0400000 88 kr g pu239h 1.4600000 74bal1 0
89 kr g pu239h rc cu 1.7529454 5.4 1.5000000 0.0500000 88 kr g pu239h 1.4600000 74bal1 0
89 kr g pu239h rc cu 1.5343921 5.4 1.2800000 0.0400000 138 xe g pu239h 1.5100000 74bal1 0
89 kr g pu239h rc cu 1.5583670 5.4 1.3000000 0.0400000 138 xe g pu239h 1.5100000 74bal1 0
89 kr g pu239h rc cu 1.6902289 5.4 1.4100000 0.0600000 138 xe g pu239h 1.5100000 74bal1 0
89 kr g pu239h rc cu rp 1.6438812 8.0 1.3900000 0.0000000 no. relative values = 4 74bal1
89 br g pu239h cm cu x3 0.0000000 0.0 0.1542000 46.0000000% 0 0.0000000 73net2 0
89 pu240f es cu 1.5683530 30.0 1.6000000 30.0000000% 0 0.0000000 72sid1 0
89 pu240f es cu 1.5781552 15.0 1.6100000 15.0000000% 0 0.0000000 77cro1 0
89 pu240f es cu 1.3640353 30.1 0.0145000 0.0000000 99 pu240f 0.0618000 77mye1 0
89 pu240f es cu 1.3654473 7.6 1.3930000 0.1060000 0 0.0000000 79mae1 0
89 sr g pu240f rc cu 1.4016633 7.9 0.0149000 6.8000000% 99 mo g pu240f 0.0618000 77mye1 0
1
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89 pu241f es cu 1.3650099 30.0 1.3800000 30.0000000% 0 0.0000000 72sid1 0
89 pu241f es cu 1.3650099 15.0 1.3800000 15.0000000% 0 0.0000000 77cro1 0
89 pu241f es cu 1.2696714 5.2 1.2520000 0.0640000 148 nd g pu241f 1.9080000 77mae1 0
89 pu242f es cu 1.2490801 30.0 1.2600000 30.0000000% 0 0.0000000 72sid1 0
89 pu242f es cu 1.0894754 7.4 1.0990000 0.0810000 0 0.0000000 79mae1 0
89 th232h ms cu 5.8156660 3.2 5.6400000 0.0000000 91 th232h 5.8800000 72boc1 0
89 th232h es cu 6.1727684 8.3 6.1000000 8.3000000% 0 0.0000000 77cro1 0
89 th232h rc cu 5.9060649 5.7 5.6400000 0.2800000 91 th232h 5.7900000 77feu1 0
89 th232h es cu 6.1120526 8.0 6.0400000 8.0000000% 0 0.0000000 75mee3 0

89 sr g th232h cm cu 0.0000000 0.0 5.7300000 10.1000000% 0 0.0000000 73net2 0
89 sr g th232h cm cu 0.0000000 0.0 5.8000000 10.1000000% 0 0.0000000 73net2 0
89 sr g th232h cm cu 0.0000000 0.0 5.8000000 8.3000000% 0 0.0000000 77cro1 0
89 sr g th232h rc cu 5.7679967 14.0 5.7000000 0.8000000 0 0.0000000 60vla1 0
89 sr g th232h rc cu rp 6.7555458 22.5 1.0000000 0.0000000 no. relative values = 2 76lis1
89 sr g th232h rc re rp 6.6991094 36.6 1.0000000 0.0000000 no. relative values = 3 73dub1
89 sr g th232h cm cu 0.0000000 0.0 5.7000000 0.0000000 0 0.0000000 69gun2 0
89 sr g th232h rc cu 6.3773053 10.2 6.0300000 0.4800000 99 mo g th232h 1.9600000 64bro1 0
89 rb g th232h cm cu 0.0000000 0.0 5.7290000 10.1000000% 0 0.0000000 73net2 0
89 kr g th232h ms in 2.7322090 11.1 2.7000000 0.3000000 0 0.0000000 72boc1 0
89 kr g th232h cm cu 0.0000000 0.0 5.5510000 10.1000000% 0 0.0000000 73net2 0
89 kr g th232h rc fc 5.7356378 5.7 0.9550000 0.0200000 89 th232h 1.0000000 77feu1 0
89 br g th232h cm cu x3 0.0000000 0.0 2.2500000 24.0000000% 0 0.0000000 73net2 0
89 np237f es cu 2.7547009 5.1 2.7660000 0.1420000 0 0.0000000 77mae2 0
89 np237f sp cu 2.8184395 7.4 2.8300000 0.2100000 0 0.0000000 80naq1 0
89 sr g np237f es cu 2.5196650 30.0 2.5300000 30.0000000% 0 0.0000000 72sid1 0
89 sr g np237f rc re 2.5123481 20.1 2.9600000 20.0000000% 140 ba g np237f 6.4400000 65iye1 0
89 sr g np237f cm cu 0.0000000 0.0 2.4400000 15.0000000% 0 0.0000000 77cro1 0
89 sr g np237f cm cu 0.0000000 0.0 2.0000000 0.0000000 0 0.0000000 69gun2 0
89 sr g np237f rc cu nr 2.1039154 5.4 2.0400000 0.0800000 140 ba g np237f 5.3000000 68nam1 0
89 cf252s sp cu 0.4476691 15.0 0.4420000 0.0000000 0 0.0000000 63fra1 0
89 cf252s sp cu 0.3767713 15.0 0.3720000 0.0000000 0 0.0000000 65sch1 0
89 cf252s es cu 0.3578314 15.0 0.3533000 15.0000000% 0 0.0000000 87wah1 36
89 sr g cf252s rc cu 0.3241043 10.0 0.3200000 0.0100000 0 0.0000000 60ner1 0
89 sr g cf252s rc cu 0.3848739 5.3 0.3800000 0.0200000 0 0.0000000 75fly2 0
89 sr g cf252s es fc 0.3678925 5.7 0.9999970 5.0000000% 89 cf252s 1.0000000 74mee5 0
89 sr g cf252s cm cu 0.0000000 0.0 0.3200000 0.0000000 0 0.0000000 69gun2 0
89 sr g cf252s rc cu 0.3514506 5.0 0.3470000 0.0160000 0 0.0000000 84che1 0
89 sr g cf252s rc cu 0.3514506 5.0 0.3470000 0.0160000 0 0.0000000 86che1 0
90 u233f cm cu 0.0000000 0.0 6.3890000 0.0000000 0 0.0000000 63wea1 0
90 zr g u233f ms cu 6.4271890 2.0 6.4500000 0.0400000 0 0.0000000 74mae1 0
90 u233f cm cu 0.0000000 0.0 6.7600000 5.0000000% 0 0.0000000 77cro1 0
90 zr g u233f ms cu 6.2607796 2.0 6.2830000 0.0500000 0 0.0000000 80mae1 0
90 sr g u233f cm cu 0.0000000 0.0 6.8000000 10.1000000% 0 0.0000000 73net2 0
90 sr g u233f ms cu 6.4451254 2.0 6.4680000 0.0550000 0 0.0000000 81mae1 0
90 sr g u233f ms cu 6.4411395 2.0 6.4640000 0.0550000 0 0.0000000 81mae1 0

90 sr g u233f cm cu 0.0000000 0.0 6.4660000 0.0530000 0 0.0000000 81mae1 0
90 rb g u233f cm cu 0.0000000 0.0 4.6540000 16.1000000% 0 0.0000000 73net2 0
90 rb m u233f cm cu 0.0000000 0.0 1.9450000 33.0000000% 0 0.0000000 73net2 0
90 kr g u233f cm cu 0.0000000 0.0 4.4910000 16.1000000% 0 0.0000000 73net2 0
90 br g u233f cm cu x3 0.0000000 0.0 0.2825000 46.0000000% 0 0.0000000 73net2 0
90 u233he cm cu 0.0000000 0.0 5.0170000 0.0000000 0 0.0000000 63wea1 0
90 u233he es cu 5.4491277 30.0 5.6000000 0.0000000 0 0.0000000 72boc1 0
90 u233he ms cu rp 4.7796303 9.9 5.6000000 0.0000000 no. relative values = 3 72boc1
90 u233he es cu 4.6901420 20.0 4.8200000 20.0000000% 0 0.0000000 77cro1 0
90 u233he ms cu rp 4.4777283 16.8 5.6000000 0.0000000 no. relative values = 1 72boc1
90 sr g u233he cm cu 0.0000000 0.0 4.4590000 10.1000000% 0 0.0000000 73net2 0
90 rb g u233he cm cu 0.0000000 0.0 2.6160000 18.0000000% 0 0.0000000 73net2 0
90 rb m u233he cm cu 0.0000000 0.0 1.5220000 24.0000000% 0 0.0000000 73net2 0
90 kr g u233he es in 2.2380346 13.0 2.3000000 0.3000000 0 0.0000000 72boc1 0
90 kr g u233he cm cu 0.0000000 0.0 2.2630000 18.0000000% 0 0.0000000 73net2 0
90 br g u233he cm cu x3 0.0000000 0.0 0.0811200 51.0000000% 0 0.0000000 73net2 0
90 u236f es cu 4.7173991 30.0 4.6300000 30.0000000% 0 0.0000000 72sid1 0
90 pu239h cm cu 0.0000000 0.0 2.6120000 0.0000000 0 0.0000000 63wea1 0
90 pu239h es cu 2.1025755 12.0 2.1200000 12.0000000% 0 0.0000000 75mee5 0
90 sr g pu239h cm cu 0.0000000 0.0 2.1700000 10.0000000% 0 0.0000000 73net2 0
90 rb g pu239h cm cu 0.0000000 0.0 1.3050000 16.1000000% 0 0.0000000 73net2 0
90 rb m pu239h cm cu 0.0000000 0.0 0.7261000 23.0000000% 0 0.0000000 73net2 0
90 kr g pu239h cm cu 0.0000000 0.0 1.1490000 18.0000000% 0 0.0000000 73net2 0
90 br g pu239h cm cu 0.0000000 0.0 0.0445500 46.0000000% 0 0.0000000 73net2 0
90 pu240f es cu 1.9562237 30.0 1.9700000 30.0000000% 0 0.0000000 72sid1 0
90 pu240f es cu 1.9661537 15.0 1.9800000 15.0000000% 0 0.0000000 77cro1 0
90 pu240f es cu 1.7820819 30.1 0.0187000 0.0000000 99 pu240f 0.0618000 77mye1 0
90 zr g pu240f ms cu 1.7943635 2.0 1.8070000 0.0300000 0 0.0000000 79mae1 0
90 sr g pu240f rc cu 1.8392603 6.4 0.0193000 3.0000000% 99 mo g pu240f 0.0618000 77mye1 0
90 pu241f es cu 1.7532408 30.0 1.7600000 30.0000000% 0 0.0000000 72sid1 0
90 pu241f es cu x3 0.0000000 0.0 1.7600000 15.0000000% 0 0.0000000 77cro1 0
90 pu241f ms cu 1.5500243 2.0 1.5560000 0.0220000 0 0.0000000 80mae4 0
90 sr g pu241f ms cu su 0.0000000 0.0 1.5360000 0.0090000 148 nd g pu241f 1.9080000 77mae1 0
90 pu242f es cu 1.5765767 30.0 1.5800000 30.0000000% 0 0.0000000 72sid1 0
90 zr g pu242f ms cu 1.3590490 2.0 1.3620000 0.0120000 0 0.0000000 79mae1 0
90 th232h ms cu 6.0012724 3.2 5.8200000 0.0000000 91 th232h 5.8800000 72boc1 0

90		th232h	es	cu		6.6382558	16.0	6.5600000	16.0000000%	0				0.0000000	77cro1	0
90		th232h	rc	cu		6.1888021	5.7	5.9100000	0.2300000	91		th232h		5.7900000	77feu1	0
90		th232h	es	cu		6.2638420	8.0	6.1900000	8.0000000%	0				0.0000000	75mee3	0
90	sr g	th232h	cm	cu		0.0000000	0.0	5.5400000	15.0000000%	0				0.0000000	77cro1	0
90	sr g	th232h	rc	cu		6.0494504	14.3	5.7200000	0.8100000	99	mo g	th232h		1.9600000	64bro1	0
90	rb g	th232h	cm	cu		0.0000000	0.0	4.7440000	12.0000000%	0				0.0000000	73net2	0
90	rb m	th232h	cm	cu	x3	0.0000000	0.0	1.0400000	33.0000000%	0				0.0000000	73net2	0
90	kr g	th232h	ms	in		3.6631839	11.0	3.6200000	0.4000000	0				0.0000000	72boc1	0
90	kr g	th232h	cm	cu		0.0000000	0.0	5.1510000	12.0000000%	0				0.0000000	73net2	0
90	br g	th232h	cm	cu	x3	0.0000000	0.0	0.9835000	33.0000000%	0				0.0000000	73net2	0
90		np237f	es	cu		2.8441789	30.0	2.8500000	30.0000000%	0				0.0000000	72sid1	0
90	zr g	np237f	ms	cu		3.3251944	2.0	3.3320000	0.0390000	0				0.0000000	77mae2	0
90		np237f	sp	cu		3.5327696	6.5	3.5400000	0.2300000	0				0.0000000	80naq1	0
90		cf252s	sp	cu	x1	0.0000000	0.0	0.6210000	0.0000000	0				0.0000000	63fra1	0
90		cf252s	sp	cu		0.5223342	15.0	0.4870000	0.0000000	0				0.0000000	65sch1	0
90		cf252s	es	cu	x1	0.0000000	0.0	0.5761000	15.0000000%	0				0.0000000	87wah1	36
90	rb g	cf252s	rc	in	ul	0.0000000	0.0	1.0000000	0.0000000	90	rb m	cf252s		3.5000000	78aum1	0
91		u233f	cm	cu		0.0000000	0.0	6.6130000	0.0000000	0				0.0000000	63wea1	0
91	zr g	u233f	ms	cu		6.4172244	2.0	6.4400000	0.0700000	0				0.0000000	74mae1	0
91		u233f	cm	cu		0.0000000	0.0	6.7200000	4.7000000%	0				0.0000000	77cro1	0
91	zr g	u233f	ms	cu		6.5278318	2.0	6.5510000	0.0980000	0				0.0000000	80mae1	0
91		u233f	rc	cu		6.4760166	6.4	6.7900000	0.0700000	140	ba g	u233f		6.2600000	77bla1	0
91	zr g	u233f	ms	cu		6.3893234	2.0	6.4120000	0.0590000	0				0.0000000	81mae1	0
91	zr g	u233f	ms	cu		6.4600723	2.0	6.4830000	0.0600000	0				0.0000000	81mae1	0
91	zr g	u233f	cm	cu		0.0000000	0.0	6.4480000	0.0610000	0				0.0000000	81mae1	0
91	y g	u233f	rc	cu		6.5146974	15.5	6.6100000	15.0000000%	99	mo g	u233f		4.7500000	65bun2	0
91	y g	u233f	cm	cu		0.0000000	0.0	6.8100000	10.1000000%	0				0.0000000	73net2	0
91	y m	u233f	rc	cu	x6	0.0000000	0.0	4.2000000	0.3800000	0				0.0000000	77gud1	0
91	sr g	u233f	cm	cu		0.0000000	0.0	6.8030000	10.1000000%	0				0.0000000	73net2	0
91	rb g	u233f	cm	cu		0.0000000	0.0	5.8920000	12.0000000%	0				0.0000000	73net2	0
91	kr g	u233f	cm	cu	x3	0.0000000	0.0	2.5510000	24.0000000%	0				0.0000000	73net2	0
91	br g	u233f	cm	cu	x3	0.0000000	0.0	0.0566400	90.0000000%	0				0.0000000	73net2	0
91		u233he	cm	cu		0.0000000	0.0	5.2220000	0.0000000	0				0.0000000	63wea1	0
91		u233he	ms	cu		4.8341823	8.1	5.8000000	0.0000000	90		u233he		5.6000000	72boc1	0
91		u233he	es	cu		5.0224614	14.7	5.1200000	14.7000000%	0				0.0000000	77cro1	0
91	y g	u233he	cm	cu		0.0000000	0.0	4.7900000	10.1000000%	0				0.0000000	73net2	0

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 91 sr g   u233he   rc    cu        5.5423647  6.2   5.6500000  0.3500000     0                    0.0000000   69bor1      0
 91 sr g   u233he   rc    cu        5.9837919 15.0   6.1000000  0.0000000     0                    0.0000000   71bla1      0
 91 sr g   u233he   cm    cu        0.0000000  0.0   4.7740000 10.1000000%    0                    0.0000000   73net2      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value      no.   treatment

 91 sr g   u233he   rc    cu        4.8238620  7.0   4.4900000  0.2600000   140 ba g      u233he      4.0100000   75cav1      0
 91 rb g   u233he   cm    cu        0.0000000  0.0   3.5840000 14.0000000%    0                    0.0000000   73net2      0
 91 kr g   u233he   ms    in        1.1771394 12.5   1.2000000  0.1500000     0                    0.0000000   72boc1      0
 91 kr g   u233he   cm    cu        0.0000000  0.0   1.0890000 33.0000000%    0                    0.0000000   73net2      0
 91 br g   u233he   cm    cu        0.0000000  0.0   0.0132100 90.0000000%    0                    0.0000000   73net2      0
 91        u236f    es    cu        4.9665179 30.0   4.9500000 30.0000000%    0                    0.0000000   72sid1      0
 91        u236f    rc    cu        5.5951865  5.4   5.7000000  0.0500000   140 ba g      u236f       5.7600000   77bla1      0
 91 sr g   u236f    rc    cu        5.5917220  5.4   5.3800000  0.2300000   140 ba g      u236f       5.4400000   77fer1      0
 91 sr g   u236f    rc    cu        5.2383418  5.4   5.0400000  0.2000000   140 ba g      u236f       5.4400000   80gud1      0
 91 sr g   u236f    rc    cu        5.5995910  6.8   5.4700000  0.3000000    97 zr g      u236f       5.3400000   84gud1      0
 91 sr g   u236f    rc    cu        5.5688803  8.2   5.4400000  0.3900000    97 zr g      u236f       5.3400000   84gud1      0
 91        pu239h   cm    cu        0.0000000  0.0   3.1120000  0.0000000     0                    0.0000000   63wea1      0
 91        pu239h   es    cu        2.1037023 12.0   2.1160000 12.0000000%    0                    0.0000000   75mee5      0
 91 y  g   pu239h   cm    cu        0.0000000  0.0   2.5600000  9.9000000%    0                    0.0000000   73net2      0
 91 sr g   pu239h   rc    re        2.3134936 10.8   0.4900000  0.0300000    99 mo g      pu239h      1.0000000   58pro1      0
 91 sr g   pu239h   cm    cu        0.0000000  0.0   2.5530000  9.9000000%    0                    0.0000000   73net2      0
 91 sr g   pu239h   cm    cu        0.0000000  0.0   2.0400000 10.0000000%    0                    0.0000000   77cro1      0
 91 rb g   pu239h   cm    cu        0.0000000  0.0   1.9630000 14.0000000%    0                    0.0000000   73net2      0
 91 kr g   pu239h   cm    cu        0.0000000  0.0   0.6286000 33.0000000%    0                    0.0000000   73net2      0
 91 br g   pu239h   cm    cu    x3  0.0000000  0.0   0.0082870 90.0000000%    0                    0.0000000   73net2      0
 91        pu240f   es    cu        2.3534265 30.0   2.3700000 30.0000000%    0                    0.0000000   72sid1      0
 91        pu240f   es    cu        2.3732866 15.0   2.3900000 15.0000000%    0                    0.0000000   77cro1      0
 91        pu240f   es    cu        2.1918654 30.1   0.0230000  0.0000000    99           pu240f      0.0618000   77mye1      0
 91 zr g   pu240f   ms    cu        2.1836223  2.0   2.1990000  0.0290000     0                    0.0000000   79mae1      0
 91 y  g   pu240f   rc    cu        2.2395139  6.4   0.0235000  3.0000000%   99 mo g      pu240f      0.0618000   77mye1      0
 91 sr g   pu240f   rc    cu        2.2109243  6.4   0.0232000  3.0000000%   99 mo g      pu240f      0.0618000   77mye1      0
 91        pu241f   es    cu        2.1118583 30.0   2.1200000 30.0000000%    0                    0.0000000   72sid1      0
 91        pu241f   es    cu        2.1218199 15.0   2.1300000 15.0000000%    0                    0.0000000   77cro1      0
 91 zr g   pu241f   ms    cu    su  0.0000000  0.0   1.9030000  0.0210000   148 nd g      pu241f      1.9080000   77mae1      0
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91 pu241f ms cu 1.9245803 2.0 1.9320000 0.0320000 0 0.0000000 80mae4 0
91 pu242f es cu 1.9440250 30.0 1.9500000 30.0000000% 0 0.0000000 72sid1 0
91 zr g pu242f ms cu 1.8014632 2.7 1.8070000 0.0480000 0 0.0000000 79mae1 0
91 sr g pu242f rc cu 1.7645765 7.9 1.7700000 0.1400000 0 0.0000000 83gud1 0
91 th232h es cu 5.9501439 30.0 5.8800000 0.0000000 0 0.0000000 72boc1 0
91 th232h ms cu rp 6.1737206 8.1 5.8800000 0.0000000 no. relative values = 4 72boc1
91 th232h es cu 6.0513369 5.0 5.9800000 5.0000000% 0 0.0000000 77cro1 0
91 th232h rc cu rp 6.0269038 9.7 5.7900000 0.0000000 no. relative values = 3 77feu1
91 th232h es cu 6.1525298 8.0 6.0800000 8.0000000% 0 0.0000000 75mee3 0
91 th232h ms cu rp 6.2260069 16.1 5.8800000 0.0000000 no. relative values = 1 72boc1
91 th232h rc cu rp 6.1178313 16.1 5.7900000 0.0000000 no. relative values = 1 77feu1
91 y g th232h rc cu 6.1564792 10.3 5.9400000 0.6000000 99 mo g th232h 2.0000000 68the1 0
91 y g th232h cm cu 0.0000000 0.0 5.7900000 10.1000000% 0 0.0000000 73net2 0
91 y g th232h cm cu 0.0000000 0.0 5.8800000 0.0000000 0 0.0000000 69gun2 0
91 y g th232h rc cu x4 0.0000000 0.0 5.2000000 0.8000000 0 0.0000000 60vla1 0
91 sr g th232h rc cu 5.8132935 10.8 6.5000000 0.3300000 97 zr g th232h 3.8000000 64lyl1 0
91 sr g th232h rc cu 5.8691896 15.0 5.8000000 0.0000000 0 0.0000000 71bla1 0
91 sr g th232h rc cu 5.8756467 6.6 5.7200000 0.3000000 140 ba g th232h 5.9000000 73cha1 0
91 sr g th232h cm cu 0.0000000 0.0 5.8700000 5.0000000% 0 0.0000000 77cro1 0
91 sr g th232h rc cu 5.8379312 10.2 5.5200000 0.5200000 99 mo g th232h 1.9600000 64bro1 0
91 sr g th232h rc cu 5.9703825 15.0 5.9000000 0.0000000 0 0.0000000 71bla2 0
91 rb g th232h cm cu 0.0000000 0.0 5.6700000 10.1000000% 0 0.0000000 73net2 0
91 kr g th232h es in 3.1673385 6.4 3.1300000 0.2000000 0 0.0000000 72boc1 0
91 kr g th232h cm cu x3 0.0000000 0.0 4.1090000 14.0000000% 0 0.0000000 73net2 0
91 kr g th232h rc fc 3.7591475 5.7 0.6200000 0.0200000 91 th232h 1.0000000 77feu1 0
91 br g th232h cm cu x3 0.0000000 0.0 0.3148000 46.0000000% 0 0.0000000 73net2 0
91 np237f es cu 3.5327696 30.0 3.5400000 30.0000000% 0 0.0000000 72sid1 0
91 zr g np237f ms cu 3.9020138 2.0 3.9100000 0.0530000 0 0.0000000 77mae2 0
91 np237f sp cu 4.2014011 5.9 4.2100000 0.2500000 0 0.0000000 80naq1 0
91 y g np237f rc cu 3.9459866 7.2 4.0200000 0.2800000 140 ba g np237f 5.5800000 77bla2 0
91 sr g np237f rc cu 4.1751227 5.4 4.0400000 0.1030000 140 ba g np237f 5.3000000 68nam1 0
91 sr g np237f rc cu 3.3930555 8.8 3.4000000 0.3000000 0 0.0000000 73kir1 0
91 sr g np237f rc re 3.9123321 20.1 4.6000000 20.0000000% 140 ba g np237f 6.4400000 65iye1 0
91 sr g np237f cm cu 0.0000000 0.0 4.1500000 8.3000000% 0 0.0000000 77cro1 0
91 sr g np237f cm cu 0.0000000 0.0 4.6000000 0.0000000 0 0.0000000 69gun2 0
91 sr g np237f rc cu 3.7124019 5.7 3.7200000 5.7000000% 0 0.0000000 83gud2 0

91		cf252s	sp	cu		0.7099910	15.0	0.7010000	0.0000000	0			0.0000000	63fra1	0
91		cf252s	sp	cu		0.4831180	15.0	0.4770000	0.0000000	0			0.0000000	65sch1	0
91		cf252s	es	cu		0.6328137	15.0	0.6248000	15.0000000%	0			0.0000000	87wah1	36
91		cf252s	rc	cu		0.5418619	11.2	0.5350000	0.0600000	0			0.0000000	83li 1	0
91	y g	cf252s	rc	cu		0.5975673	10.2	0.5900000	0.0600000	0			0.0000000	60ner1	0
91	y g	cf252s	rc	cu		0.6677618	5.4	0.6900000	0.0300000	147	nd g	cf252s	4.4800000	73sko1	0
91	y g	cf252s	rc	cu		0.4161544	23.2	0.0690000	0.0160000	140	ba g	cf252s	1.0000000	75bla1	0
91	y g	cf252s	es	fc		0.6047455	5.7	1.0000000	5.0000000%	91		cf252s	1.0000000	74mee5	0
91	y g	cf252s	cm	cu	x3	0.0000000	0.0	0.5900000	0.0000000	0			0.0000000	69gun2	0
91	sr g	cf252s	rc	cu		0.6178239	9.8	0.6100000	0.0600000	0			0.0000000	75fly2	0
91	sr g	cf252s	rc	cu		0.3980608	27.3	0.0660000	0.0180000	140	ba g	cf252s	1.0000000	75bla1	0
91	sr g	cf252s	es	fc		0.6045883	5.7	0.9997400	5.0000000%	91		cf252s	1.0000000	74mee5	0
91	sr g	cf252s	rc	cu		0.4861565	6.2	0.4800000	0.0300000	0			0.0000000	76thi1	0
91	sr g	cf252s	rc	cu	x4	0.0000000	0.0	3.4000000	0.3000000	0			0.0000000	74kir1	0
91	sr g	cf252s	rc	cu		0.5894647	5.0	0.5820000	0.0260000	0			0.0000000	84che1	0
91	sr g	cf252s	rc	cu		0.5894647	5.0	0.5820000	0.0260000	0			0.0000000	86che1	0
92		u233f	cm	cu		0.0000000	0.0	6.0940000	0.0000000	0			0.0000000	63wea1	0
92	zr g	u233f	ms	cu		6.5168707	2.0	6.5400000	0.0600000	0			0.0000000	74mae1	0
92		u233f	cm	cu		0.0000000	0.0	6.8500000	5.0000000%	0			0.0000000	77cro1	0
92	zr g	u233f	ms	cu		6.6563756	2.0	6.6800000	0.0950000	0			0.0000000	80mae1	0
92		u233f	rc	cu		5.8942242	6.4	6.1800000	0.0900000	140	ba g	u233f	6.2600000	77bla1	0
92	zr g	u233f	ms	cu		6.4969415	2.0	6.5200000	0.0610000	0			0.0000000	81mae1	0
92	zr g	u233f	ms	cu		6.5607151	2.0	6.5840000	0.0610000	0			0.0000000	81mae1	0
92	zr g	u233f	cm	cu		0.0000000	0.0	6.5520000	0.0590000	0			0.0000000	81mae1	0
92	sr g	u233f	cm	cu		0.0000000	0.0	6.8430000	10.1000000%	0			0.0000000	73net2	0
92	sr g	u233f	rc	cu		5.8791342	8.6	5.9000000	0.5100000	0			0.0000000	77gud1	0
92		u233he	cm	cu		0.0000000	0.0	5.4060000	0.0000000	0			0.0000000	63wea1	0
92		u233he	es	cu		5.6012216	7.0	5.7100000	7.0000000%	0			0.0000000	77cro1	0
92	sr g	u233he	rc	cu		5.6110311	6.5	5.7200000	0.3700000	0			0.0000000	69bor1	0
92	sr g	u233he	cm	cu		0.0000000	0.0	4.9520000	8.1000000%	0			0.0000000	73net2	0
92	sr g	u233he	rc	cu		4.5015550	8.2	4.1900000	0.3000000	140	ba g	u233he	4.0100000	75cav1	0
92	kr g	u233he	ms	in		0.4610463	21.3	0.4700000	0.1000000	0			0.0000000	72boc1	0
92		u236f	es	cu		5.2747756	30.0	5.2500000	30.0000000%	0			0.0000000	72sid1	0
92		u236f	rc	cu		6.1828433	5.4	6.2900000	0.0900000	140	ba g	u236f	5.7600000	77bla1	0
92	y g	u236f	rc	cu		5.0582169	14.3	4.8600000	0.6900000	140	ba g	u236f	5.4400000	80gud1	0
92	y g	u236f	rc	cu		5.1357584	9.5	5.0100000	0.4300000	97	zr g	u236f	5.3400000	84gud1	0

92 y g u236f rc cu 4.4694425 10.4 4.3600000 0.4200000 97 zr g u236f 5.3400000 84gud1 0
92 sr g u236f rc cu 6.1718572 5.4 5.9300000 0.2600000 140 ba g u236f 5.4400000 77fer1 0
92 sr g u236f rc cu 5.1414797 5.6 4.9400000 0.2600000 140 ba g u236f 5.4400000 80gud1 0
92 sr g u236f rc cu 4.5309486 13.7 4.4200000 0.5800000 97 zr g u236f 5.3400000 84gud1 0
92 sr g u236f rc cu 4.6949648 12.9 4.5800000 0.5600000 97 zr g u236f 5.3400000 84gud1 0
92 pu239h cm cu 0.0000000 0.0 3.6630000 0.0000000 0 0.0000000 63wea1 0
92 pu239h es cu 2.9128605 12.0 2.9370000 12.0000000% 0 0.0000000 75mee5 0
92 sr g pu239h cm cu 0.0000000 0.0 2.7370000 10.0000000% 0 0.0000000 73net2 0
92 pu240f es cu 2.8797201 30.0 2.9000000 30.0000000% 0 0.0000000 72sid1 0
92 pu240f es cu 2.9095103 15.0 2.9300000 15.0000000% 0 0.0000000 77cro1 0
92 pu240f es cu 2.7255369 30.1 0.0286000 0.0000000 99 pu240f 0.0618000 77mye1 0
92 zr g pu240f ms cu 2.6751607 2.0 2.6940000 0.0340000 0 0.0000000 79mae1 0
92 pu241f es cu 2.5501685 30.0 2.5600000 30.0000000% 0 0.0000000 72sid1 0
92 pu241f es cu 2.5601301 15.0 2.5700000 15.0000000% 0 0.0000000 77cro1 0
92 zr g pu241f ms cu su 0.0000000 0.0 2.3480000 0.0320000 148 nd g pu241f 1.9080000 77mae1 0
92 pu241f ms cu 2.3907830 2.0 2.4000000 0.0400000 0 0.0000000 80mae4 0
92 pu242f es cu 2.3328300 30.0 2.3400000 30.0000000% 0 0.0000000 72sid1 0
92 zr g pu242f ms cu 2.1713264 2.6 2.1780000 0.0560000 0 0.0000000 79mae1 0
92 y g pu242f rc cu 2.1434122 11.6 2.1500000 0.2500000 0 0.0000000 83gud1 0
1
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nuclide material tech. type value err. value nuclide material value no. treatment

92 sr g pu242f rc cu 1.9240863 5.7 1.9300000 0.1100000 0 0.0000000 83gud1 0
92 th232h es cu 5.4138214 3.3 5.3500000 3.3000000% 0 0.0000000 77cro1 0
92 th232h es cu 5.7781160 8.0 5.7100000 8.0000000% 0 0.0000000 75mee3 0
92 th232h ms cu ul 0.0000000 0.0 6.2000000 0.0000000 91 th232h 5.8800000 72boc1 0
92 y g th232h rc cu 5.8551025 6.4 5.7000000 0.1600000 140 ba g th232h 5.9000000 73cha1 0
92 y g th232h rc cu 5.8995475 15.0 5.8300000 0.0000000 0 0.0000000 71bla2 0
92 sr g th232h cm cu 0.0000000 0.0 5.6770000 10.1000000% 0 0.0000000 73net2 0
92 sr g th232h rc cu 5.2798643 6.4 5.1400000 0.2600000 140 ba g th232h 5.9000000 73cha1 0
92 sr g th232h cm cu 0.0000000 0.0 5.3100000 3.3000000% 0 0.0000000 77cro1 0
92 sr g th232h rc cu 5.9013870 10.2 5.5800000 0.5300000 99 mo g th232h 1.9600000 64bro1 0
92 kr g th232h ms in 2.0542164 9.9 2.0300000 0.2000000 0 0.0000000 72boc1 0
92 kr g th232h rc fc 2.1209953 6.0 0.3800000 0.0200000 92 th232h 1.0000000 77feu1 0
92 np237f es cu 3.9818504 30.0 3.9900000 30.0000000% 0 0.0000000 72sid1 0

92	zr	g	np237f	ms	cu		4.4668578	2.0	4.4760000	0.0590000	0		0.0000000	77mae2	0
92			np237f	sp	cu		4.5806249	5.9	4.5900000	0.2700000	0		0.0000000	80naq1	0
92	y	g	np237f	rc	cu		3.3631168	6.8	3.3700000	6.8000000%	0		0.0000000	87nai1	0
92	sr	g	np237f	rc	cu		3.6924428	10.8	3.7000000	0.4000000	0		0.0000000	73kir1	0
92	sr	g	np237f	rc	cu		4.2797267	7.2	4.3600000	0.3000000	140	ba g	np237f	5.5800000	77bla2	0
92	sr	g	np237f	rc	cu		3.7722794	5.0	3.7800000	4.2000000%	0		0.0000000	83gud2	0
92			cf252s	sp	cu		0.7515169	15.0	0.7420000	0.0000000	0		0.0000000	63fra1	0
92			cf252s	sp	cu		0.7363245	15.0	0.7270000	0.0000000	0		0.0000000	65sch1	0
92			cf252s	es	cu		0.6658318	15.0	0.6574000	15.0000000%	0		0.0000000	87wah1	36
92			cf252s	rc	cu		0.6117469	5.0	0.6040000	0.0260000	0		0.0000000	83li 1	0
92	y	g	cf252s	rc	cu		0.6774395	5.4	0.7000000	0.0300000	147	nd g	cf252s	4.4800000	73sko1	0
92	y	g	cf252s	rc	cu		0.5729663	22.2	0.0950000	0.0210000	140	ba g	cf252s	1.0000000	75bla1	0
92	sr	g	cf252s	rc	cu		0.7191064	9.9	0.7100000	0.0700000	0		0.0000000	76thi1	0
92	sr	g	cf252s	rc	cu	x4	0.0000000	0.0	3.7000000	0.4000000	0		0.0000000	74kir1	0
92	sr	g	cf252s	rc	cu		0.7342988	6.3	0.7250000	0.0460000	0		0.0000000	84che1	0
92	sr	g	cf252s	rc	cu		0.7342988	6.3	0.7250000	0.0460000	0		0.0000000	86che1	0
93			u233f	cm	cu		0.0000000	0.0	7.0030000	0.0000000	0		0.0000000	63wea1	0
93			u233f	cm	cu		0.0000000	0.0	7.2700000	5.0000000%	0		0.0000000	77cro1	0
93	nb	m	u233f	es	cu		6.5955913	30.0	6.6190000	0.0000000	0		0.0000000	75mee1	0
93	zr	g	u233f	ms	cu		6.8955268	2.0	6.9200000	0.0700000	0		0.0000000	74mae1	0
93	zr	g	u233f	ms	cu		7.0539645	2.0	7.0790000	0.1000000	0		0.0000000	80mae1	0
93	zr	g	u233f	ms	cu		6.8576612	2.0	6.8820000	0.0640000	0		0.0000000	81mae1	0
93	zr	g	u233f	ms	cu		6.9483394	2.0	6.9730000	0.0650000	0		0.0000000	81mae1	0
93	zr	g	u233f	cm	cu		0.0000000	0.0	6.9280000	0.0700000	0		0.0000000	81mae1	0
93	y	g	u233f	cm	cu		0.0000000	0.0	6.8970000	10.1000000%	0		0.0000000	73net2	0
93	y	g	u233f	rc	cu	x4	0.0000000	0.0	6.6100000	0.1100000	140	ba g	u233f	6.2600000	77bla1	0
93			u233he	cm	cu		0.0000000	0.0	5.4820000	0.0000000	0		0.0000000	63wea1	0
93	nb	m	u233he	es	cu		5.0204995	30.0	5.1180000	0.0000000	0		0.0000000	75mee1	0
93	y	g	u233he	cm	cu		0.0000000	0.0	5.2310000	8.1000000%	0		0.0000000	73net2	0
93	y	g	u233he	rc	cu		5.4050317	6.9	5.5100000	0.3800000	0		0.0000000	75cav1	0
93	y	g	u233he	rc	cu		5.2670446	11.6	0.0550000	0.0060000	97	zr g	u233he	0.0480000	72net2	0
93	y	g	u233he	es	cu		5.3854128	12.0	5.4900000	12.0000000%	0		0.0000000	77cro1	0
93	kr	g	u233he	ms	in		0.0980949	30.0	0.1000000	0.0300000	0		0.0000000	72boc1	0
93	nb	m	u236f	es	cu		5.4415590	30.0	5.4160000	0.0000000	0		0.0000000	75mee1	0
93	y	g	u236f	es	cu		5.5661442	30.0	5.5400000	30.0000000%	0		0.0000000	72sid1	0
93	y	g	u236f	rc	cu		5.6028945	5.4	5.7000000	0.1200000	140	ba g	u236f	5.7600000	77bla1	0

93	y	g	u236f	rc	cu		4.7052158	13.9	4.5900000	0.6100000	97 zr g	u236f	5.3400000	84gud1	0
93	y	g	u236f	rc	cu		4.5617016	13.4	4.4500000	0.5700000	97 zr g	u236f	5.3400000	84gud1	0
93	sr	g	u236f	rc	cu		5.5994252	5.4	5.3800000	0.2600000	140 ba g	u236f	5.4400000	77fer1	0
93	sr	g	u236f	rc	cu		6.0573708	13.7	5.8200000	0.7900000	140 ba g	u236f	5.4400000	80gud1	0
93	sr	g	u236f	rc	cu		5.5355480	26.2	5.4000000	1.4000000	97 zr g	u236f	5.3400000	84gud1	0
93			pu239h	cm	cu		0.0000000	0.0	4.2450000	0.0000000	0		0.0000000	63wea1	0
93	nb	m	pu239h	es	cu		3.0655948	30.0	3.0910000	0.0000000	0		0.0000000	75mee1	0
93	y	g	pu239h	cm	cu		0.0000000	0.0	3.0960000	10.0000000%	0		0.0000000	73net2	0
93	y	g	pu239h	es	cu		3.2103948	12.0	3.2370000	12.0000000%	0		0.0000000	75mee5	0
93	nb	m	pu240f	es	cu		3.5589369	30.0	3.5840000	0.0000000	0		0.0000000	75mee1	0
93	zr	g	pu240f	ms	cu		3.5003495	2.0	3.5250000	0.0460000	0		0.0000000	79mae1	0
93	y	g	pu240f	rc	cu		3.7928788	6.4	0.0398000	3.0000000%	99 mo g	pu240f	0.0618000	77mye1	0
93	y	g	pu240f	es	cu		3.4755243	30.0	3.5000000	30.0000000%	0		0.0000000	72sid1	0
93	y	g	pu240f	es	cu		3.5152446	15.0	3.5400000	15.0000000%	0		0.0000000	77cro1	0
93	y	g	pu240f	cm	cu		0.0000000	0.0	0.0341000	0.0000000	99	pu240f	0.0618000	77mye1	0
93			pu241f	ms	cu		2.9785171	2.0	2.9900000	0.0480000	0		0.0000000	80mae4	0
93	nb	m	pu241f	es	cu		2.8061815	30.0	2.8170000	0.0000000	0		0.0000000	75mee1	0
93	zr	g	pu241f	es	cu		3.1279410	30.0	3.1400000	30.0000000%	0		0.0000000	72sid1	0
93	zr	g	pu241f	es	cu		3.1379026	15.0	3.1500000	15.0000000%	0		0.0000000	77cro1	0
93	zr	g	pu241f	ms	cu	su	0.0000000	0.0	2.9830000	0.0310000	148 nd g	pu241f	1.9080000	77mae1	0
93	nb	m	pu242f	es	cu		2.2740108	30.0	2.2810000	0.0000000	0		0.0000000	75mee1	0
93	zr	g	pu242f	es	cu		2.3427993	30.0	2.3500000	30.0000000%	0		0.0000000	72sid1	0
93	zr	g	pu242f	ms	cu		2.8103623	2.6	2.8190000	0.0720000	0		0.0000000	79mae1	0
93	y	g	pu242f	rc	cu		3.3098272	18.1	3.3200000	0.6000000	0		0.0000000	83gud1	0
93			th232h	cm	cu		0.0000000	0.0	5.5000000	3.8000000%	0		0.0000000	77cro1	0
93	nb	m	th232h	es	cu		5.3622130	30.0	5.2990000	0.0000000	0		0.0000000	75mee1	0
93	y	g	th232h	rc	cu		5.1872465	10.8	5.8000000	0.4000000	97 zr g	th232h	3.8000000	64lyl1	0
93	y	g	th232h	rc	cu		5.9699192	10.6	5.7600000	0.6000000	99 mo g	th232h	2.0000000	68the1	0
93	y	g	th232h	rc	re		5.3632250	9.4	0.0530000	0.0050000	0		0.0100000	69net1	0
93	y	g	th232h	cm	cu		0.0000000	0.0	5.4800000	10.1000000%	0		0.0000000	73net2	0
93	y	g	th232h	rc	cu		5.5777555	6.5	5.4300000	0.2800000	140 ba g	th232h	5.9000000	73cha1	0
93	y	g	th232h	cm	cu		0.0000000	0.0	5.7800000	0.0000000	0		0.0000000	69gun2	0
93	y	g	th232h	rc	cu		6.4763471	15.0	6.4000000	0.0000000	0		0.0000000	71bla2	0
93	y	g	th232h	es	cu		5.7983546	8.0	5.7300000	8.0000000%	0		0.0000000	75mee3	0
93	y	g	th232h	es	cu		5.5150144	3.8	5.4500000	3.8000000%	0		0.0000000	77cro1	0
93	kr	g	th232h	ms	in		0.7083505	14.3	0.7000000	0.1000000	0		0.0000000	72boc1	0

93	kr g	th232h	rc	fc	1.1300947	15.3	0.2000000	0.0300000	93	th232h	1.0000000	77feu1	0
93		np237f	sp	cu	5.0796037	5.5	5.0900000	0.2800000	0		0.0000000	80naq1	0
93	nb m	np237f	es	cu	4.8889938	30.0	4.8990000	0.0000000	0		0.0000000	75mee1	0
93	zr g	np237f	ms	cu	5.1105404	2.0	5.1210000	0.0640000	0		0.0000000	77mae2	0
93	y g	np237f	rc	cu	4.9384551	5.2	5.7200000	0.0800000	140	la g	np237f	6.3500000	69ste1	0
93	y g	np237f	rc	cu	5.6735827	5.4	5.7800000	0.2800000	140	ba g	np237f	5.5800000	77bla2	0
93	y g	np237f	cm	cu	0.0000000	0.0	5.4100000	10.0000000%	0			0.0000000	77cro1	0
93	y g	np237f	cm	cu	0.0000000	0.0	5.7200000	0.0000000	0			0.0000000	69gun2	0
93	y g	np237f	es	cu	4.4908088	30.0	4.5000000	30.0000000%	0			0.0000000	72sid1	0
93		cf252s	sp	cu	0.9275243	15.0	0.9110000	0.0000000	0			0.0000000	65sch1	0
93		cf252s	es	cu	0.8170563	15.0	0.8025000	15.0000000%	0			0.0000000	87wah1	36
93	nb m	cf252s	es	cu	0.9254881	30.0	0.9090000	0.0000000	0			0.0000000	75mee1	0
93	y g	cf252s	rc	cu	0.8450551	10.0	0.8300000	0.0300000	0			0.0000000	60ner1	0
93	y g	cf252s	rc	cu	0.9728471	5.4	1.0000000	0.0400000	147	nd g	cf252s	4.4800000	73sko1	0
93	y g	cf252s	rc	cu	0.7126971	10.0	0.7000000	0.0700000	0			0.0000000	75fly2	0
93	y g	cf252s	rc	cu	1.0124977	13.8	0.1670000	0.0230000	140	ba g	cf252s	1.0000000	75bla1	0
93	y g	cf252s	cm	cu	0.0000000	0.0	0.8300000	0.0000000	0			0.0000000	69gun2	0
93	y g	cf252s	sp	cu	0.8867988	15.0	0.8710000	0.0000000	0			0.0000000	63fra1	0
93	y g	cf252s	rc	cu	0.9478871	6.2	0.9310000	0.0580000	0			0.0000000	84che1	0
93	y g	cf252s	rc	cu	0.9478871	6.2	0.9310000	0.0580000	0			0.0000000	86che1	0
94		u233f	cm	cu	0.0000000	0.0	6.6390000	0.0000000	0			0.0000000	63wea1	0
94	zr g	u233f	ms	cu	6.7161634	2.0	6.7400000	0.0700000	0			0.0000000	74mae1	0
94		u233f	cm	cu	0.0000000	0.0	7.0700000	5.0000000%	0			0.0000000	77cro1	0
94	zr g	u233f	ms	cu	6.8277673	2.0	6.8520000	0.0990000	0			0.0000000	80mae1	0
94	zr g	u233f	ms	cu	6.6942412	2.0	6.7180000	0.0630000	0			0.0000000	81mae1	0
94	zr g	u233f	ms	cu	6.7779442	2.0	6.8020000	0.0630000	0			0.0000000	81mae1	0
94	zr g	u233f	cm	cu	0.0000000	0.0	6.7600000	0.0670000	0			0.0000000	81mae1	0
94		u233he	cm	cu	0.0000000	0.0	5.4240000	0.0000000	0			0.0000000	63wea1	0
94		u233he	es	cu	5.0238813	20.0	5.3100000	20.0000000%	0			0.0000000	77cro1	0
94		u236f	es	cu	5.7783083	30.0	5.7400000	30.0000000%	0			0.0000000	72sid1	0
94	y g	u236f	rc	cu	5.0263455	6.1	4.8200000	0.2800000	140	ba g	u236f	5.4400000	80gud1	0
94	y g	u236f	rc	cu	4.8273507	27.9	4.7000000	1.3000000	97	zr g	u236f	5.3400000	84gud1	0
94	y g	u236f	rc	cu	4.8478926	15.4	4.7200000	0.7000000	97	zr g	u236f	5.3400000	84gud1	0
94		pu239h	cm	cu	0.0000000	0.0	4.7210000	0.0000000	0			0.0000000	63wea1	0
94		pu239h	es	cu	3.4871016	12.0	3.5160000	12.0000000%	0			0.0000000	75mee5	0

0measured nuclide	fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
94	pu240f	es	cu		4.1408389	30.0	4.1700000	30.0000000%	0		0.0000000	72sid1	0
94	pu240f	es	cu		4.1904893	15.0	4.2200000	15.0000000%	0		0.0000000	77cro1	0
94	pu240f	es	cu		3.7833502	30.1	0.0397000	0.0000000	99	pu240f	0.0618000	77mye1	0
94	zr g pu240f	ms	cu		3.9263494	2.0	3.9540000	0.0480000	0		0.0000000	79mae1	0
94	pu241f	es	cu		3.7256368	30.0	3.7400000	30.0000000%	0		0.0000000	72sid1	0
94	pu241f	es	cu		3.7355984	15.0	3.7500000	15.0000000%	0		0.0000000	77cro1	0
94	zr g pu241f	ms	cu	su	0.0000000	0.0	3.4240000	0.0340000	148 nd g	pu241f	1.9080000	77mae1	0
94	pu241f	ms	cu		3.2962920	2.0	3.3090000	0.0550000	0		0.0000000	80mae4	0
94	pu242f	es	cu		3.4493982	30.0	3.4600000	30.0000000%	0		0.0000000	72sid1	0
94	zr g pu242f	ms	cu		3.1243971	2.6	3.1340000	0.0810000	0		0.0000000	79mae1	0
94	th232h	es	cu		6.6366174	20.0	6.4200000	20.0000000%	0		0.0000000	77cro1	0
94	th232h	es	cu		5.1687051	8.0	5.0000000	8.0000000%	0		0.0000000	75mee3	0
94	kr g th232h	rc	fc		0.3875006	99.9	0.0700000	0.0700000	94	th232h	1.0000000	77feu1	0
94	np237f	es	cu		4.9498692	30.0	4.9600000	30.0000000%	0		0.0000000	72sid1	0
94	zr g np237f	ms	cu		5.1105404	2.0	5.1210000	0.0640000	0		0.0000000	77mae2	0
94	np237f	sp	cu		5.3290931	5.4	5.3400000	0.2900000	0		0.0000000	80naq1	0
94	cf252s	sp	cu		1.1241146	15.0	1.0960000	0.0000000	0		0.0000000	63fra1	0
94	cf252s	sp	cu		1.0553959	15.0	1.0290000	0.0000000	0		0.0000000	65sch1	0
94	cf252s	es	cu		1.0861655	15.0	1.0590000	15.0000000%	0		0.0000000	87wah1	36
94	cf252s	rc	cu		1.0759089	7.6	1.0490000	0.0800000	0		0.0000000	83li 1	0
94	y g cf252s	rc	cu		1.0871911	11.3	1.0600000	0.1200000	0		0.0000000	76thi1	0
94	sr g cf252s	rc	in		0.5230825	15.7	0.5100000	0.0800000	0		0.0000000	71che1	36
95	u233f	cm	cu		0.0000000	0.0	6.0890000	0.0000000	0		0.0000000	63wea1	0
95	u233f	es	cu		6.4471183	30.0	6.4700000	30.0000000%	0		0.0000000	72sid1	0
95	mo g u233f	ms	cu		6.2677549	2.0	6.2900000	0.0500000	0		0.0000000	74mae1	0
95	u233f	cm	cu		0.0000000	0.0	6.5700000	5.0000000%	0		0.0000000	77cro1	0
95	mo g u233f	ms	cu		6.3345179	2.0	6.3570000	0.0560000	0		0.0000000	80mae1	0
95	u233f	rc	cu		5.8942242	6.4	6.1800000	0.0600000	140 ba g	u233f	6.2600000	77bla1	0
95	mo g u233f	ms	cu		6.3155851	2.0	6.3380000	0.0570000	0		0.0000000	81mae1	0
95	mo g u233f	ms	cu		6.2478256	2.0	6.2700000	0.0540000	0		0.0000000	81mae1	0
95	mo g u233f	cm	cu		0.0000000	0.0	6.3040000	0.0520000	0		0.0000000	81mae1	0
95	zr g u233f	cm	cu		0.0000000	0.0	6.5890000	10.1000000%	0		0.0000000	73net2	0
95	zr g u233f	rc	cu		6.3773659	5.0	6.4000000	4.6000000%	0		0.0000000	81lau1	0

95 u233he cm cu 0.0000000 0.0 5.3310000 0.0000000 0 0.0000000 63wea1 0
95 u233he es cu 5.1299522 7.0 5.2000000 7.0000000% 0 0.0000000 77cro1 0
95 zr g u233he rc cu 5.0080767 6.4 0.0520000 0.0020000 97 zr g u233he 0.0480000 72net2 0
95 zr g u233he cm cu 0.0000000 0.0 5.1900000 7.9000000% 0 0.0000000 73net2 0
95 zr g u233he rc cu 4.9485429 10.6 4.5800000 0.4500000 140 ba g u233he 4.0100000 75cav1 0
95 zr g u233he rc cu 5.0608951 5.5 5.1300000 5.5000000% 0 0.0000000 81lau1 0
95 u236f es cu 5.8789757 30.0 5.8400000 30.0000000% 0 0.0000000 72sid1 0
95 u236f rc cu 6.3721501 5.4 6.4700000 0.0700000 140 ba g u236f 5.7600000 77bla1 0
95 pu239h cm cu 0.0000000 0.0 5.0250000 0.0000000 0 0.0000000 63wea1 0
95 pu239h es cu 3.8013139 12.0 3.8170000 12.0000000% 0 0.0000000 75mee5 0
95 zr g pu239h cm cu 0.0000000 0.0 3.8500000 9.9000000% 0 0.0000000 73net2 0
95 zr g pu239h rc cu 3.9437262 5.0 3.9600000 3.9000000% 0 0.0000000 81lau1 0
95 pu240f es cu 4.5678319 30.0 4.6000000 30.0000000% 0 0.0000000 72sid1 0
95 pu240f es cu 4.6274123 15.0 4.6600000 15.0000000% 0 0.0000000 77cro1 0
95 pu240f es cu 4.2503129 30.1 0.0446000 0.0000000 99 pu240f 0.0618000 77mye1 0
95 mo g pu240f ms cu 4.4387410 2.0 4.4700000 0.0680000 0 0.0000000 79mae1 0
95 zr g pu240f rc cu 4.2789009 6.4 0.0449000 3.0000000% 99 mo g pu240f 0.0618000 77mye1 0
95 pu241f es cu 4.4627949 30.0 4.4800000 30.0000000% 0 0.0000000 72sid1 0
95 pu241f es cu 4.4827181 15.0 4.5000000 15.0000000% 0 0.0000000 77cro1 0
95 mo g pu241f ms cu su 0.0000000 0.0 3.9290000 0.0300000 148 nd g pu241f 1.9080000 77mae1 0
95 pu241f ms cu 3.7764409 2.0 3.7910000 0.0460000 0 0.0000000 80mae4 0
95 zr g pu241f rc cu 3.8760569 9.9 3.8910000 0.3860000 0 0.0000000 72and1 0
95 pu242f es cu 4.1210517 30.0 4.1300000 30.0000000% 0 0.0000000 72sid1 0
95 mo g pu242f ms cu 3.6231329 2.0 3.6310000 0.0360000 0 0.0000000 79mae1 0
95 zr g pu242f rc cu 3.2329800 11.7 3.2400000 0.3800000 0 0.0000000 83gud1 0
95 th232h es cu 5.8155163 17.4 5.6800000 17.4000000% 0 0.0000000 77cro1 0
95 th232h es cu 4.6483176 8.0 4.5400000 8.0000000% 0 0.0000000 75mee3 0
95 nb g th232h rc in 0.1770251 21.1 0.1729000 0.0364000 0 0.0000000 72rao1 0
95 nb m th232h rc in 0.0175080 21.1 0.0171000 0.0036000 0 0.0000000 72rao1 0
95 zr g th232h es cu 4.5356931 10.1 4.4300000 10.1000000% 0 0.0000000 73net2 0
95 zr g th232h rc cu 4.9783445 7.8 4.7900000 0.3200000 140 ba g th232h 5.9000000 73cha1 0
95 zr g th232h cm cu 0.0000000 0.0 4.8000000 17.4000000% 0 0.0000000 77cro1 0
95 zr g th232h rc cu x4 0.0000000 0.0 6.7000000 1.5000000 0 0.0000000 60vla1 0
95 zr g th232h cm cu x3 0.0000000 0.0 6.7000000 0.0000000 0 0.0000000 69gun2 0
95 np237f es cu 5.2424176 30.0 5.2500000 30.0000000% 0 0.0000000 72sid1 0
95 np237f cm cu 0.0000000 0.0 5.5000000 0.0000000 0 0.0000000 73lar3 0

95 mo g np237f ms cu 5.6458341 2.0 5.6540000 0.0500000 0 0.0000000 77mae2 0
95 np237f sp cu 5.6817821 5.3 5.6900000 0.3000000 0 0.0000000 80naq1 0
95 zr g np237f rc cu x5 0.0000000 0.0 0.9200000 0.0200000 140 ba g u235t 0.0000000 67ste3 7
95 zr g np237f rc cu 5.1725187 5.0 5.1800000 0.1100000 0 0.0000000 67ste3 0
95 zr g np237f rc cu 5.7583279 5.7 5.7000000 0.1200000 97 zr g np237f 6.0400000 69ste1 0
95 zr g np237f rc cu 5.5020421 5.1 5.5100000 0.2800000 0 0.0000000 73mce2 0
95 zr g np237f rc cu 6.0412622 5.0 6.0500000 3.8000000% 0 0.0000000 75dud1 0
95 zr g np237f rc cu 5.6318544 5.0 5.6400000 3.8000000% 0 0.0000000 75mce1 0
95 zr g np237f bm cu 5.9214355 5.0 5.9300000 5.0000000% 0 0.0000000 76gil1 0
95 zr g np237f rc cu 5.6769837 5.4 5.7800000 0.1200000 140 ba g np237f 5.5800000 77bla2 0
95 zr g np237f cm cu 0.0000000 0.0 5.8200000 5.7000000% 0 0.0000000 77cro1 0
95 zr g np237f bm cu 5.9214355 4.0 5.9300000 4.0000000% 0 0.0000000 77gil1 0
95 zr g np237f rc re 5.3495999 5.4 0.8570000 3.9000000% 137 cs g np237f 1.0000000 77kel1 0
95 zr g np237f cm cu 0.0000000 0.0 5.7000000 0.0000000 0 0.0000000 69gun2 0
95 zr g np237f rc cu 6.2739257 5.0 6.2830000 3.9000000% 0 0.0000000 75for1 0
95 zr g np237f rc cu 5.1126054 8.0 5.1200000 8.0000000% 0 0.0000000 87nai1 0
95 zr g np237f rc re 5.3495632 5.4 0.9761000 3.1000000% 140 ba g np237f 1.0000000 73mce1 0
95 cf252s sp cu 1.3582073 15.0 1.3460000 0.0000000 0 0.0000000 63fra1 0
95 cf252s sp cu 1.2300555 15.0 1.2190000 0.0000000 0 0.0000000 65sch1 0
95 cf252s es cu 1.3117901 15.0 1.3000000 15.0000000% 0 0.0000000 87wah1 36
95 cf252s rc cu 1.1856565 5.0 1.1750000 0.0350000 0 0.0000000 83li 1 0
95 nb g cf252s rc cu 1.2798858 5.2 0.2130000 0.0070000 140 ba g cf252s 1.0000000 75bla1 0
95 zr g cf252s rc cu 1.3824250 30.0 1.3700000 0.0000000 0 0.0000000 60ner1 0
95 zr g cf252s rc cu 1.3016994 5.0 1.2900000 0.0400000 0 0.0000000 73sko1 0
95 zr g cf252s rc cu 1.3622436 5.2 1.3500000 0.0700000 0 0.0000000 73sko1 0
95 zr g cf252s rc cu 1.3117901 9.2 1.3000000 0.1200000 0 0.0000000 75fly2 0
95 zr g cf252s rc cu 1.2618593 5.2 0.2100000 0.0100000 140 ba g cf252s 1.0000000 75bla1 0
95 zr g cf252s rc cu 1.2410713 8.5 1.2000000 0.1000000 140 ba g cf252s 5.8100000 71har2 0
95 zr g cf252s cm cu 0.0000000 0.0 1.3700000 0.0000000 0 0.0000000 69gun2 0
95 zr g cf252s rc cu 1.2007925 5.0 1.1900000 0.0400000 0 0.0000000 76thi1 0
95 zr g cf252s rc cu 1.1604297 5.0 1.1500000 0.0400000 0 0.0000000 84che1 0
95 zr g cf252s rc cu 1.1604297 5.0 1.1500000 0.0400000 0 0.0000000 86che1 0
96 nb g u233f cm cu 0.0000000 0.0 0.0066720 90.0000000% 0 0.0000000 73net2 0
96 u233f cm cu 0.0000000 0.0 5.6780000 0.0000000 0 0.0000000 63wea1 0
96 zr g u233f ms cu 5.6798415 2.0 5.7000000 0.0700000 0 0.0000000 74mae1 0
96 u233f cm cu 0.0000000 0.0 5.9300000 5.0000000% 0 0.0000000 77cro1 0

96 zr g u233f ms cu 5.8133676 2.0 5.8340000 0.0900000 0 0.0000000 80mae1 0
96 zr g u233f ms cu 5.6509440 2.0 5.6710000 0.0540000 0 0.0000000 81mae1 0
96 zr g u233f ms cu 5.7256788 2.0 5.7460000 0.0900000 0 0.0000000 81mae1 0
96 zr g u233f cm cu 0.0000000 0.0 5.7090000 0.0610000 0 0.0000000 81mae1 0
96 nb g u233he rc fi 0.0186045 20.1 0.0041000 0.0005000 96 u233he 1.0000000 72net2 0
96 nb g u233he rc in 0.0189223 10.0 0.0002000 0.0000200 0 0.0100000 72net2 0
96 nb g u233he cm cu 0.0000000 0.0 0.0204000 10.9000000% 0 0.0000000 73net2 0
96 u233he cm cu 0.0000000 0.0 5.1440000 0.0000000 0 0.0000000 63wea1 0
96 u233he es cu 4.7873520 20.0 5.0600000 20.0000000% 0 0.0000000 77cro1 0
96 u236f es cu 6.0419388 30.0 5.9300000 30.0000000% 0 0.0000000 72sid1 0
96 nb g pu239h cm cu 0.0000000 0.0 0.0125000 90.0000000% 0 0.0000000 73net2 0
96 pu239h cm cu 0.0000000 0.0 5.4340000 0.0000000 0 0.0000000 63wea1 0
96 pu239h es cu 4.3380496 12.0 4.3740000 12.0000000% 0 0.0000000 75mee5 0
96 nb g pu240f rc in 0.0022109 6.4 0.0000232 0.0000008 99 mo g pu240f 0.0618000 77mye1 0
96 pu240f es cu 4.9153844 30.0 4.9500000 30.0000000% 0 0.0000000 72sid1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

96 pu240f es cu 4.9749648 15.0 5.0100000 15.0000000% 0 0.0000000 77cro1 0
96 pu240f es cu 4.6886859 30.1 0.0492000 0.0000000 99 pu240f 0.0618000 77mye1 0
96 zr g pu240f ms cu 4.7267130 2.0 4.7600000 0.0600000 0 0.0000000 79mae1 0
96 pu241f es cu 4.6719884 30.0 4.6900000 30.0000000% 0 0.0000000 72sid1 0
96 pu241f es cu 4.6919116 15.0 4.7100000 15.0000000% 0 0.0000000 77cro1 0
96 zr g pu241f ms cu su 0.0000000 0.0 4.4010000 0.0610000 148 nd g pu241f 1.9080000 77mae1 0
96 pu241f ms cu 4.2844823 2.0 4.3010000 0.0700000 0 0.0000000 80mae4 0
96 pu242f es cu 4.5859051 30.0 4.6000000 30.0000000% 0 0.0000000 72sid1 0
96 zr g pu242f ms cu 4.2788488 2.6 4.2920000 0.1100000 0 0.0000000 79mae1 0
96 nb g th232h rc in x4 0.0000000 0.0 0.0870000 0.0200000 0 0.0000000 72rao1 0
96 nb g th232h rc fi 0.0000367 32.9 0.0000094 0.0000030 96 th232h 1.0000000 73net1 0
96 nb g th232h cm cu 0.0000000 0.0 0.0000380 14.9000000% 0 0.0000000 73net2 0
96 nb g th232h rc fi 0.0000585 99.9 0.0000150 0.0000150 96 th232h 1.0000000 73wol1 0
96 nb g th232h rc fi 0.0001288 61.1 0.0000330 0.0000200 96 th232h 1.0000000 82wen1 0
96 th232h es cu 4.6725094 20.0 4.5200000 20.0000000% 0 0.0000000 77cro1 0
96 th232h es cu 3.6284310 8.0 3.5100000 8.0000000% 0 0.0000000 75mee3 0
96 np237f es cu 5.5586233 30.0 5.5700000 30.0000000% 0 0.0000000 72sid1 0

96 zr g np237f ms cu 5.5216989 2.0 5.5330000 0.0760000 0 0.0000000 77mae2 0
96 np237f rc cu 5.4867704 15.0 5.4980000 0.0000000 0 0.0000000 70kuz1 0
96 np237f sp cu 5.2292973 5.3 5.2400000 0.2800000 0 0.0000000 80naq1 0
96 cf252s sp cu 1.5590838 15.0 1.4830000 0.0000000 0 0.0000000 63fra1 0
96 cf252s sp cu 1.6137516 15.0 1.5350000 0.0000000 0 0.0000000 65sch1 0
96 cf252s es cu 1.6127003 15.0 1.5340000 15.0000000% 0 0.0000000 87wah1 36
96 sr g cf252s rc in x1 0.0000000 0.0 0.3400000 0.0500000 0 0.0000000 71che1 36
97 u233f cm cu 0.0000000 0.0 5.5140000 0.0000000 0 0.0000000 63wea1 0
97 mo g u233f ms cu 5.4207610 2.0 5.4400000 0.0400000 0 0.0000000 74mae1 0
97 u233f cm cu 0.0000000 0.0 5.6500000 5.0000000% 0 0.0000000 77cro1 0
97 mo g u233f ms cu 5.4396938 2.0 5.4590000 0.0430000 0 0.0000000 80mae1 0
97 u233f rc cu 5.3791949 6.4 5.6400000 0.1200000 140 ba g u233f 6.2600000 77bla1 0
97 mo g u233f ms cu 5.4715806 2.0 5.4910000 0.0510000 0 0.0000000 81mae1 0
97 mo g u233f ms cu 5.3809024 2.0 5.4000000 0.0470000 0 0.0000000 81mae1 0
97 mo g u233f cm cu 0.0000000 0.0 5.4450000 0.0620000 0 0.0000000 81mae1 0
97 zr g u233f cm cu 0.0000000 0.0 5.9280000 10.1000000% 0 0.0000000 73net2 0
97 zr g u233f rc cu 5.4905134 5.0 5.5100000 3.6000000% 0 0.0000000 81lau1 0
97 u233he cm cu 0.0000000 0.0 4.9000000 0.0000000 0 0.0000000 63wea1 0
97 u233he es cu 4.7452058 7.0 4.8100000 7.0000000% 0 0.0000000 77cro1 0
97 zr g u233he rc cu rp 4.6346609 6.4 0.0480000 0.0000000 no. relative values = 7 72net2
97 zr g u233he cm cu 0.0000000 0.0 4.8000000 7.9000000% 0 0.0000000 73net2 0
97 zr g u233he rc cu rp 4.4625550 11.1 0.0480000 0.0000000 no. relative values = 4 72net2
97 zr g u233he rc cu 4.8080820 10.9 4.4500000 0.4500000 140 ba g u233he 4.0100000 75cav1 0
97 zr g u233he rc cu rp 4.9003620 12.3 0.0480000 0.0000000 no. relative values = 4 72net2
97 zr g u233he rc cu 4.7846669 5.7 4.8500000 5.7000000% 0 0.0000000 81lau1 0
97 u236f es cu 6.1303888 30.0 6.1100000 30.0000000% 0 0.0000000 72sid1 0
97 u236f rc cu 4.9571389 5.4 5.0500000 0.0800000 140 ba g u236f 5.7600000 77bla1 0
97 zr g u236f rc cu 4.9577163 5.4 4.7700000 0.2300000 140 ba g u236f 5.4400000 77fer1 0
97 zr g u236f rc cu 6.0906117 5.4 5.8600000 0.2100000 140 ba g u236f 5.4400000 80gud1 0
97 zr g u236f rc cu rp 5.6789106 5.1 5.3400000 0.0000000 no. relative values = 36 84gud1
97 pu239h cm cu x3 0.0000000 0.0 5.5880000 0.0000000 0 0.0000000 63wea1 0
97 pu239h es cu 4.5726736 12.0 4.5860000 12.0000000% 0 0.0000000 75mee5 0
97 zr g pu239h rc re 4.5458070 10.8 0.9600000 0.0400000 99 mo g pu239h 1.0000000 58pro1 0
97 zr g pu239h es cu 4.2974756 9.9 4.3100000 9.9000000% 0 0.0000000 73net2 0
97 zr g pu239h cm cu 0.0000000 0.0 3.9900000 10.0000000% 0 0.0000000 77cro1 0
97 zr g pu239h rc cu x5 0.0000000 0.0 0.8500000 1.4000000% 99 mo g u235t 0.0000000 76for1 7

97 zr g pu239h rc cu 4.4460426 5.0 4.4590000 1.4000000% 0 0.0000000 76for1 0
97 zr g pu239h rc cu 4.3642809 5.0 4.3770000 1.4000000% 0 0.0000000 76for1 0
97 zr g pu239h rc cu 4.3872141 5.0 4.4000000 4.5000000% 0 0.0000000 81lau1 0
97 pu240f es cu 5.2430766 30.0 5.2800000 30.0000000% 0 0.0000000 72sid1 0
97 pu240f es cu 5.3125871 15.0 5.3500000 15.0000000% 0 0.0000000 77cro1 0
97 pu240f es cu 5.0984695 30.1 0.0535000 0.0000000 99 pu240f 0.0618000 77mye1 0
97 mo g pu240f ms cu 5.1686011 2.0 5.2050000 0.0760000 0 0.0000000 79mae1 0
97 zr g pu240f rc cu 5.0317588 6.4 0.0528000 3.0000000% 99 mo g pu240f 0.0618000 77mye1 0
97 pu241f es cu 5.0903754 30.0 5.1100000 30.0000000% 0 0.0000000 72sid1 0
97 pu241f es cu 5.1102986 15.0 5.1300000 15.0000000% 0 0.0000000 77cro1 0
97 mo g pu241f ms cu su 0.0000000 0.0 4.6650000 0.0310000 148 nd g pu241f 1.9080000 77mae1 0
97 pu241f ms cu 4.4847104 2.0 4.5020000 0.0490000 0 0.0000000 80mae4 0
97 zr g pu241f rc cu 4.0852504 5.0 4.1010000 0.0700000 0 0.0000000 72and1 0
97 pu242f es cu 4.9093401 30.0 4.9200000 30.0000000% 0 0.0000000 72sid1 0
97 mo g pu242f ms cu 4.4403584 2.0 4.4500000 0.0410000 0 0.0000000 79mae1 0
97 zr g pu242f rc cu 4.7696434 6.7 4.7800000 0.3200000 0 0.0000000 83gud1 0
97 th232h es cu 3.3861788 8.3 3.3300000 8.3000000% 0 0.0000000 77cro1 0
97 nb g th232h rc cu 3.5387093 15.0 3.4800000 0.0000000 0 0.0000000 71bla2 0
97 zr g th232h rc cu rp 3.9297062 10.2 3.8000000 0.0000000 no. relative values = 11 64lyl1
97 zr g th232h rc re 2.9370449 6.0 1.4100000 0.0800000 99 mo g th232h 1.0000000 69lyl1 0
97 zr g th232h rc cu 3.6607338 15.0 3.6000000 0.0000000 0 0.0000000 71bla1 0
97 zr g th232h cm cu 0.0000000 0.0 3.3680000 10.1000000% 0 0.0000000 73net2 0
97 zr g th232h rc cu 3.6747275 11.7 3.5600000 0.3900000 140 ba g th232h 5.9000000 73cha1 0
97 zr g th232h cm cu 0.0000000 0.0 3.2400000 8.3000000% 0 0.0000000 77cro1 0
97 zr g th232h cm cu 0.0000000 0.0 3.8000000 0.0000000 0 0.0000000 69gun2 0
97 zr g th232h rc cu x4 0.0000000 0.0 8.1490000 1.4000000% 0 0.0000000 76for1 0
97 zr g th232h rc cu rp 4.3016388 16.8 8.1490000 0.0000000 no. relative values = 1 76for1
97 zr g th232h rc cu 3.1138882 15.1 2.9300000 0.0000000 99 mo g th232h 1.9600000 68lyl1 0
97 zr g th232h es cu 3.0912863 8.0 3.0400000 8.0000000% 0 0.0000000 75mee3 0
97 zr g th232h rc cu rp 4.3016388 16.8 8.1490000 0.0000000 no. relative values = 1 76for1
97 np237f es cu 5.7117388 30.0 5.7200000 30.0000000% 0 0.0000000 72sid1 0
97 mo g np237f ms cu 6.0961828 2.0 6.1050000 0.0490000 0 0.0000000 77mae2 0
97 np237f rc cu 5.7706536 15.0 5.7790000 0.0000000 0 0.0000000 70kuz1 0
97 np237f sp cu 5.6817821 5.3 5.6900000 0.3000000 0 0.0000000 80naq1 0
97 nb g np237f rc cu 6.3939730 5.4 6.5100000 0.2800000 140 ba g np237f 5.5800000 77bla2 0
97 zr g np237f rc cu x5 0.0000000 0.0 1.0800000 0.0200000 140 ba g u235t 0.0000000 67ste3 7

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 97 zr g   np237f   rc    cu        5.6118832  5.0   5.6200000  0.1000000     0                    0.0000000   67ste3      0
 97 zr g   np237f   rc    cu    x4   0.0000000  0.0   6.9500000  0.1650000   140 ba g      np237f      5.3000000   68nam1      0
 97 zr g   np237f   rc    cu    rp   5.9986323 15.9   6.0400000  0.0000000  no. relative values =    1            69ste1
 97 zr g   np237f   rc    cu    x4   0.0000000  0.0   7.2000000  0.7000000     0                    0.0000000   73kir1      0
 97 zr g   np237f   cm    cu        0.0000000  0.0   5.9600000  0.0000000     0                    0.0000000   75mce1      0
 97 zr g   np237f   rc    cu        6.4546643  5.0   6.4640000  3.1000000%    0                    0.0000000   76gil2      0
 97 zr g   np237f   cm    cu        0.0000000  0.0   5.8900000 10.8000000%    0                    0.0000000   77cro1      0
 97 zr g   np237f   bm    cu        6.3707856  3.8   6.3800000  3.8000000%    0                    0.0000000   77gil1      0
 97 zr g   np237f   rc    cu        5.6714123 30.3   5.7000000  0.0000000    99 mo g      np237f      6.1400000   56for1      0
 97 zr g   np237f   rc    re    x5   0.0000000  0.0   1.0400000  0.0000000    99 mo g      u235t       0.0000000   56for1      7
 97 zr g   np237f   rc    re        6.2110167 30.0   6.2200000  0.0000000     0                    0.0000000   56for1      0
 97 zr g   np237f   cm    cu        0.0000000  0.0   5.8700000  0.0000000     0                    0.0000000   69gun2      0
 97 zr g   np237f   rc    cu        6.1770658  5.0   6.1860000  1.4000000%    0                    0.0000000   76for1      0
 97 zr g   np237f   rc    cu        6.3608000  5.0   6.3700000  2.7000000%    0                    0.0000000   87nai1      0
 97        cf252s   sp    cu        1.7325721 15.0   1.7170000  0.0000000     0                    0.0000000   63fra1      0
 97        cf252s   rc    cu        1.6649644  5.0   1.6500000  0.0600000     0                    0.0000000   73sko1      0
 97        cf252s   sp    cu        1.7628441 15.0   1.7470000  0.0000000     0                    0.0000000   65sch1      0
 97        cf252s   es    cu        1.6952365 15.0   1.6800000 15.0000000%    0                    0.0000000   87wah1     36
 97        cf252s   rc    cu        1.6982637  5.0   1.6830000  0.0540000     0                    0.0000000   83li 1      0
 97 nb g   cf252s   rc    cu        1.4541426  9.6   0.2420000  0.0230000   140 ba g      cf252s      1.0000000   75bla1      0
 97 zr g   cf252s   rc    cu        2.1190456 14.3   2.1000000  0.3000000     0                    0.0000000   58cun1      0
 97 zr g   cf252s   rc    cu        1.5539668 10.0   1.5400000  0.1500000     0                    0.0000000   60ner1      0
 97 zr g   cf252s   rc    cu        1.6548737  5.0   1.6400000  0.0700000     0                    0.0000000   73sko1      0
 97 zr g   cf252s   rc    cu        1.9172317  9.5   1.9000000  0.1800000     0                    0.0000000   75fly2      0
 97 zr g   cf252s   rc    cu        1.6344082  5.2   0.2720000  0.0110000   140 ba g      cf252s      1.0000000   75bla1      0
 97 zr g   cf252s   rc    cu        1.8616070  5.7   1.8000000  0.1000000   140 ba g      cf252s      5.8100000   71har2      0
 97 zr g   cf252s   cm    cu        0.0000000  0.0   1.8200000  0.0000000     0                    0.0000000   69gun2      0
 97 zr g   cf252s   rc    cu        1.6246016  5.0   1.6100000  0.0600000     0                    0.0000000   76thi1      0
 97 zr g   cf252s   rc    cu    x4   0.0000000  0.0   7.2000000  0.7000000     0                    0.0000000   74kir1      0
 97 zr g   cf252s   rc    cu        1.5842389  5.0   1.5700000  0.0500000     0                    0.0000000   84che1      0
 97 zr g   cf252s   rc    cu        1.5842389  5.0   1.5700000  0.0500000     0                    0.0000000   86che1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value       no.   treatment

 98        u233f    cm    cu        0.0000000  0.0   5.2510000  0.0000000     0                    0.0000000   63wea1      0
```

98	mo	g	u233f	ms	cu		5.1218220	2.0	5.1400000	0.0300000	0			0.0000000	74mae1	0
98			u233f	cm	cu		0.0000000	0.0	5.3200000	5.0000000%	0			0.0000000	77cro1	0
98	mo	g	u233f	ms	cu		5.1686557	2.0	5.1870000	0.0420000	0			0.0000000	80mae1	0
98	mo	g	u233f	ms	cu		5.1616805	2.0	5.1800000	0.0480000	0			0.0000000	81mae1	0
98	mo	g	u233f	ms	cu		5.0998998	2.0	5.1180000	0.0440000	0			0.0000000	81mae1	0
98	mo	g	u233f	cm	cu		0.0000000	0.0	5.1490000	0.0510000	0			0.0000000	81mae1	0
98			u233he	cm	cu		0.0000000	0.0	4.5120000	0.0000000	0			0.0000000	63wea1	0
98			u233he	es	cu		3.9453079	20.0	4.1700000	20.0000000%	0			0.0000000	77cro1	0
98			u236f	es	cu		6.0091527	30.0	5.9300000	30.0000000%	0			0.0000000	72sid1	0
98			pu239h	cm	cu		0.0000000	0.0	5.5660000	0.0000000	0			0.0000000	63wea1	0
98			pu239h	es	cu		4.8627017	12.0	4.9030000	12.0000000%	0			0.0000000	75mee5	0
98			pu240f	es	cu		5.4019578	30.0	5.4400000	30.0000000%	0			0.0000000	72sid1	0
98			pu240f	es	cu		5.4714682	15.0	5.5100000	15.0000000%	0			0.0000000	77cro1	0
98			pu240f	es	cu		5.5273127	30.1	0.0580000	0.0000000	99		pu240f	0.0618000	77mye1	0
98	mo	g	pu240f	ms	cu		5.5022515	2.0	5.5410000	0.0920000	0			0.0000000	79mae1	0
98			pu241f	es	cu		5.3792617	30.0	5.4000000	30.0000000%	0			0.0000000	72sid1	0
98	mo	g	pu241f	ms	cu	su	0.0000000	0.0	4.9770000	0.0320000	148	nd g	pu241f	1.9080000	77mae1	0
98			pu241f	ms	cu		4.7965083	2.0	4.8150000	0.0520000	0			0.0000000	80mae4	0
98			pu241f	es	cu	x3	0.0000000	0.0	5.4000000	15.0000000%	0			0.0000000	77cro1	0
98			pu242f	es	cu		5.2585817	30.0	5.2700000	30.0000000%	0			0.0000000	72sid1	0
98	mo	g	pu242f	ms	cu		4.8315091	2.0	4.8420000	0.0430000	0			0.0000000	79mae1	0
98			th232h	es	cu		2.8427878	20.0	2.7500000	20.0000000%	0			0.0000000	77cro1	0
98			th232h	es	cu		2.6877267	8.0	2.6000000	8.0000000%	0			0.0000000	75mee3	0
98			np237f	es	cu		5.7881535	30.0	5.8000000	30.0000000%	0			0.0000000	72sid1	0
98	mo	g	np237f	ms	cu		6.1055040	2.0	6.1180000	0.0490000	0			0.0000000	77mae2	0
98			np237f	rc	cu		5.9727757	15.0	5.9850000	0.0000000	0			0.0000000	70kuz1	0
98			np237f	sp	cu		6.1374386	5.0	6.1500000	0.3100000	0			0.0000000	80naq1	0
98			cf252s	sp	cu		2.2287645	15.0	2.1200000	0.0000000	0			0.0000000	63fra1	0
98			cf252s	sp	cu		2.3433566	15.0	2.2290000	0.0000000	0			0.0000000	65sch1	0
98			cf252s	es	cu		2.3170740	15.0	2.2040000	15.0000000%	0			0.0000000	87wah1	36
98	zr	g	cf252s	rc	in	x1	0.0000000	0.0	0.3000000	0.0500000	0			0.0000000	71che1	36
99			u233f	cm	cu		0.0000000	0.0	4.8080000	0.0000000	0			0.0000000	63wea1	0
99			u233f	cm	cu		0.0000000	0.0	5.1500000	8.0000000%	0			0.0000000	77cro1	0
99			u233f	es	cu		4.7608957	5.1	4.8090000	0.2440000	0			0.0000000	81mae1	0
99			u233f	es	cu		4.6846659	5.1	4.7320000	0.2390000	0			0.0000000	81mae1	0
99			u233f	cm	cu		0.0000000	0.0	4.7710000	0.2440000	0			0.0000000	81mae1	0

99 mo g u233f rc cu 4.7024858 10.0 4.7500000 0.3500000 0 0.0000000 61bon1 0
99 mo g u233f rc cu rp 4.5508990 16.8 4.7500000 0.0000000 no. relative values = 8 65bun2
99 mo g u233f cm cu 0.0000000 0.0 4.8900000 10.1000000% 0 0.0000000 73net2 0
99 mo g u233f es cu 4.7024858 30.0 4.7500000 30.0000000% 0 0.0000000 72sid1 0
99 mo g u233f es cu 4.7123858 5.0 4.7600000 0.2400000 0 0.0000000 74mae1 0
99 mo g u233f rc cu 4.8608854 5.0 4.9100000 3.5000000% 0 0.0000000 81lau1 0
99 mo g u233f rc cu 4.3682917 6.4 4.6100000 0.1000000 140 ba g u233f 6.2600000 77bla1 0
99 u233he cm cu 0.0000000 0.0 4.1940000 0.0000000 0 0.0000000 63wea1 0
99 mo g u233he rc cu 3.0828657 10.8 3.5000000 0.3000000 141 ce g u233he 5.0000000 61bon1 0
99 mo g u233he rc cu 3.5909665 5.5 3.6400000 0.2000000 0 0.0000000 69bor1 0
99 mo g u233he rc cu 3.6597458 8.9 0.0380000 0.0030000 97 zr g u233he 0.0480000 72net2 0
99 mo g u233he cm cu 0.0000000 0.0 3.7700000 7.9000000% 0 0.0000000 73net2 0
99 mo g u233he rc cu rp 2.9572234 32.6 3.8700000 0.0000000 no. relative values = 1 75jam1
99 mo g u233he rc cu 4.0517545 11.1 3.7500000 0.3900000 140 ba g u233he 4.0100000 75cav1 0
99 mo g u233he es cu 3.5811012 4.5 3.6300000 4.5000000% 0 0.0000000 77cro1 0
99 mo g u233he rc cu 4.3407288 5.0 4.4000000 5.0000000% 0 0.0000000 81lau1 0
99 tc m u236f rc cu 6.0396733 19.1 5.9000000 1.1000000 97 zr g u236f 5.3400000 84gud1 0
99 tc m u236f rc cu 5.1286039 14.5 5.0100000 0.7000000 97 zr g u236f 5.3400000 84gud1 0
99 mo g u236f es cu 6.0701886 30.0 6.0500000 30.0000000% 0 0.0000000 72sid1 0
99 mo g u236f rc cu 5.8307733 5.4 5.6100000 0.2500000 140 ba g u236f 5.4400000 77fer1 0
99 mo g u236f rc cu 5.7580186 5.4 5.5400000 0.2600000 140 ba g u236f 5.4400000 80gud1 0
99 mo g u236f rc cu 5.8307733 5.4 5.9400000 0.1000000 140 ba g u236f 5.7600000 77bla1 0
99 mo g u236f rc cu 5.4561794 12.3 5.3300000 0.6200000 97 zr g u236f 5.3400000 84gud1 0
99 mo g u236f rc cu 5.9373059 15.4 5.8000000 0.8600000 97 zr g u236f 5.3400000 84gud1 0
99 pu239h cm cu 0.0000000 0.0 5.5800000 0.0000000 0 0.0000000 63wea1 0
99 mo g pu239h rc re rp 4.7069426 13.2 1.0000000 0.0000000 no. relative values = 6 58pro1
99 mo g pu239h rc cu 3.5290374 10.8 4.1600000 0.4000000 140 ba g pu239h 4.3500000 61bon1 0
99 mo g pu239h rc re rp 3.8763098 38.8 2.5200000 0.0000000 no. relative values = 1 66cun1
99 mo g pu239h cm cu 0.0000000 0.0 4.1600000 10.0000000% 0 0.0000000 77cro1 0
99 mo g pu239h es cu 5.0851800 9.9 5.1000000 9.9000000% 0 0.0000000 73net2 0
99 mo g pu239h es cu 4.2954814 12.0 4.3080000 12.0000000% 0 0.0000000 75mee5 0
99 mo g pu239h rc cu 5.0253543 5.0 5.0400000 3.6000000% 0 0.0000000 81lau1 0
99 pu240f es cu 6.1485851 5.8 6.2100000 0.3630000 0 0.0000000 79mae1 0
99 mo g pu240f rc cu rp 5.8899693 3.6 0.0618000 0.0000000 no. relative values = 22 77mye1
99 mo g pu240f es cu 5.6535299 30.0 5.7100000 30.0000000% 0 0.0000000 72sid1 0
99 mo g pu240f es cu 5.7228376 15.0 5.7800000 15.0000000% 0 0.0000000 77cro1 0

99 mo g pu240f rc cu rp 5.7757140 16.8 0.0618000 0.0000000 no. relative values = 1 77mye1
99 pu241f es cu 5.3575310 5.1 5.3990000 0.2750000 0 0.0000000 80mae4 0
99 mo g pu241f es cu 5.4081393 30.0 5.4500000 30.0000000% 0 0.0000000 72sid1 0
99 mo g pu241f es cu 5.4379089 15.0 5.4800000 15.0000000% 0 0.0000000 77cro1 0
99 mo g pu241f es cu 5.7298637 6.2 5.6320000 0.3420000 148 nd g pu241f 1.9080000 77mae1 0
99 pu242f es cu 5.4166012 30.0 5.4500000 30.0000000% 0 0.0000000 72sid1 0
99 pu242f es cu 5.4374725 5.4 5.4710000 0.2960000 0 0.0000000 79mae1 0
99 tc m th232h rc in x1 0.0000000 0.0 0.0036000 0.0007000 0 0.0000000 72rao1 0
99 mo g th232h rc cu x4 0.0000000 0.0 1.8400000 0.0900000 97 zr g th232h 3.8000000 64lyl1 0
99 mo g th232h rc cu rp 2.3291772 15.0 2.0000000 0.0000000 no. relative values = 4 66gan1
99 mo g th232h rc cu rp 1.7115484 42.6 2.0000000 0.0000000 no. relative values = 1 68gan1
99 mo g th232h rc cu rp 2.1700540 13.7 2.0000000 0.0000000 no. relative values = 5 68the1
99 mo g th232h rc re rp 2.1453680 12.2 1.0000000 0.0000000 no. relative values = 2 69lyl1
99 mo g th232h rc cu rp 2.1443943 7.8 2.0000000 0.0000000 no. relative values = 10 70gev1
99 mo g th232h es cu 2.3899915 10.1 2.3700000 10.1000000% 0 0.0000000 73net2 0
99 mo g th232h rc cu 2.0575650 10.3 2.0100000 0.1900000 140 ba g th232h 5.9000000 73cha1 0
99 mo g th232h rc cu 2.0168705 10.0 2.0000000 0.2000000 0 0.0000000 60vla1 0
99 mo g th232h rc cu rp 1.9531198 42.3 2.0000000 0.0000000 no. relative values = 1 70gev1
99 mo g th232h rc cu 2.0948081 10.8 0.3500000 10.0000000% 89 sr g th232h 1.0000000 76lis1 0
99 mo g th232h rc re 2.1546598 15.5 0.3600000 0.0000000 89 sr g th232h 1.0000000 73dub1 0
99 mo g th232h es cu 1.9361957 30.0 1.9200000 0.0000000 0 0.0000000 69gun2 0
99 mo g th232h rc cu rp 2.1096938 8.4 1.9600000 0.0000000 no. relative values = 5 68lyl1
99 mo g th232h rc cu rp 1.8800890 28.3 2.0000000 0.0000000 no. relative values = 2 68mo 1
99 mo g th232h rc cu rp 2.0907725 10.1 1.9600000 0.0000000 no. relative values = 11 64bro1
99 mo g th232h rc cu rp 1.8529551 34.2 2.0000000 0.0000000 no. relative values = 1 70gev1
99 mo g th232h es cu 1.9765331 8.0 1.9600000 8.0000000% 0 0.0000000 75mee3 0
99 mo g th232h es cu 1.9765331 4.5 1.9600000 4.5000000% 0 0.0000000 77cro1 0
99 mo g th232h cm cu 0.0000000 0.0 1.9700000 4.5000000% 0 0.0000000 77cro1 0
99 mo g th232h rc cu 2.0168705 5.0 2.0000000 0.1000000 0 0.0000000 68mo 1 0
99 mo g th232h rc cu 2.0168705 5.0 2.0000000 0.0800000 0 0.0000000 70gev1 0
99 mo g th232h rc cu 1.9765331 10.0 1.9600000 0.1500000 0 0.0000000 64bro1 0
99 mo g th232h rc cu 1.9765331 10.0 1.9600000 0.1500000 0 0.0000000 64bro1 0
99 np237f rc cu 6.0893598 15.0 6.1070000 0.0000000 0 0.0000000 70kuz1 0
99 np237f sp cu 6.0325244 5.1 6.0500000 0.3100000 0 0.0000000 80naq1 0
99 mo g np237f rc cu x5 0.0000000 0.0 1.1200000 0.0400000 140 ba g u235t 0.0000000 67ste3 7
99 mo g np237f rc cu 5.9826688 5.0 6.0000000 0.2100000 0 0.0000000 67ste3 0

99 mo g np237f rc cu 7.2073393 5.4 6.9800000 0.0040000 140 ba g np237f 5.3000000 68nam1 0
99 mo g np237f rc cu 5.8486609 5.2 6.7800000 0.2400000 140 la g np237f 6.3500000 69ste1 0
99 mo g np237f rc cu 5.3353156 5.4 5.4400000 0.1600000 140 ba g np237f 5.5800000 77bla2 0
99 mo g np237f rc re 6.6538240 20.1 7.8300000 20.0000000% 140 ba g np237f 6.4400000 65iye1 0
99 mo g np237f cm cu 0.0000000 0.0 6.6800000 7.3000000% 0 0.0000000 77cro1 0
99 mo g np237f rc cu rp 6.4597261 31.6 6.1400000 0.0000000 no. relative values = 4 56for1
99 mo g np237f cm cu 0.0000000 0.0 6.9200000 0.0000000 0 0.0000000 69gun2 0
99 mo g np237f es cu 6.2518889 30.0 6.2700000 30.0000000% 0 0.0000000 72sid1 0
99 mo g np237f es cu 6.3167012 5.1 6.3350000 0.3250000 0 0.0000000 77mae2 0
99 cf252s sp cu 3.1260968 15.0 3.0980000 0.0000000 0 0.0000000 65sch1 0
99 cf252s es cu 2.7063240 15.0 2.6820000 15.0000000% 0 0.0000000 87wah1 36
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

99 cf252s rc cu 2.5731268 5.0 2.5500000 0.1100000 0 0.0000000 83li 1 0
99 mo g cf252s rc cu 2.2199525 22.7 2.2000000 0.5000000 0 0.0000000 55gle2 0
99 mo g cf252s rc cu 3.0272080 15.0 3.0000000 0.4500000 0 0.0000000 58cun1 0
99 mo g cf252s rc cu 2.5933082 10.0 2.5700000 0.0300000 0 0.0000000 60ner1 0
99 mo g cf252s rc cu 2.7850314 5.0 2.7600000 0.0800000 0 0.0000000 73sko1 0
99 mo g cf252s rc cu 2.6235803 5.0 2.6000000 0.1300000 0 0.0000000 75fly2 0
99 mo g cf252s rc cu 2.2593290 5.2 0.3760000 0.0160000 140 ba g cf252s 1.0000000 75bla1 0
99 mo g cf252s rc cu 2.7924105 5.2 2.7000000 0.1000000 140 ba g cf252s 5.8100000 71har2 0
99 mo g cf252s cm cu 0.0000000 0.0 2.5900000 0.0000000 0 0.0000000 69gun2 0
99 mo g cf252s sp cu 2.6356891 15.0 2.6120000 0.0000000 0 0.0000000 63fra1 0
99 mo g cf252s rc cu 2.8052128 5.0 2.7800000 0.1200000 0 0.0000000 76thi1 0
99 mo g cf252s rc cu 2.5428547 5.0 2.5200000 0.0900000 0 0.0000000 84che1 0
99 mo g cf252s rc cu 2.5428547 5.0 2.5200000 0.0900000 0 0.0000000 86che1 0
99 mo g cf252s rc re 2.1597659 20.1 0.5000000 0.1000000 147 nd g cf252s 1.0000000 75don1 0
99 mo g cf252s rc cu 2.7244872 5.6 2.7000000 0.1500000 0 0.0000000 88bha1 0
99 nb m cf252s rc fc 0.7702212 10.5 0.2900000 0.0300000 99 mo g cf252s 1.0000000 71har1 0
100 u233f cm cu 0.0000000 0.0 4.4080000 0.0000000 0 0.0000000 63wea1 0
100 mo g u233f ms cu 4.3645098 2.0 4.3800000 0.0400000 0 0.0000000 74mae1 0
100 u233f cm cu 0.0000000 0.0 4.5100000 5.0000000% 0 0.0000000 77cro1 0
100 mo g u233f ms cu 4.3107007 2.0 4.3260000 0.0380000 0 0.0000000 80mae1 0
100 mo g u233f ms cu 4.4223046 2.0 4.4380000 0.0430000 0 0.0000000 81mae1 0

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100 mo g   u233f    ms    cu        4.3316265  2.0   4.3470000  0.0390000     0                    0.0000000   81mae1      0
100 mo g   u233f    cm    cu        0.0000000  0.0   4.3920000  0.0570000     0                    0.0000000   81mae1      0
100        u233he   cm    cu        0.0000000  0.0   3.5570000  0.0000000     0                    0.0000000   63wea1      0
100        u233he   es    cu        3.0843414 20.0   3.2600000 20.0000000%    0                    0.0000000   77cro1      0
100        u236f    es    cu        5.7760827 30.0   5.7000000 30.0000000%    0                    0.0000000   72sid1      0
100        pu239h   cm    cu        0.0000000  0.0   5.5290000  0.0000000     0                    0.0000000   63wea1      0
100        pu239h   es    cu        5.1146141 12.0   5.1570000 12.0000000%    0                    0.0000000   75mee5      0
100        pu240f   es    cu        5.9481116 30.0   5.9900000 30.0000000%    0                    0.0000000   72sid1      0
100        pu240f   es    cu        6.0275521 15.0   6.0700000 15.0000000%    0                    0.0000000   77cro1      0
100        pu240f   es    cu        6.1944022 30.1   0.0650000  0.0000000    99          pu240f     0.0618000   77mye1      0
100 mo g   pu240f   ms    cu        6.8318878  2.0   6.8800000  0.1030000     0                    0.0000000   79mae1      0
100        pu241f   es    cu        5.9072262 30.0   5.9300000 30.0000000%    0                    0.0000000   72sid1      0
100        pu241f   es    cu        5.9371110 15.0   5.9600000 15.0000000%    0                    0.0000000   77cro1      0
100 mo g   pu241f   ms    cu    su  0.0000000  0.0   6.2870000  0.0460000   148 nd g    pu241f     1.9080000   77mae1      0
100        pu241f   ms    cu        5.9610189  2.0   5.9840000  0.0670000     0                    0.0000000   80mae4      0
100        pu242f   es    cu        5.7175851 30.0   5.7300000 30.0000000%    0                    0.0000000   72sid1      0
100 mo g   pu242f   ms    cu        6.0857856  2.0   6.0990000  0.0590000     0                    0.0000000   79mae1      0
100        th232h   cm    cu        0.0000000  0.0   1.8400000 20.0000000%    0                    0.0000000   77cro1      0
100        th232h   es    cu        1.6381736  5.0   1.6000000  5.0000000%    0                    0.0000000   75mee3      0
100        np237f   es    cu        6.1422067 30.0   6.1600000 30.0000000%    0                    0.0000000   72sid1      0
100 mo g   np237f   ms    cu        6.5340715  2.0   6.5530000  0.0570000     0                    0.0000000   77mae2      0
100        np237f   rc    cu        6.3047358 15.0   6.3230000  0.0000000     0                    0.0000000   70kuz1      0
100        np237f   sp    cu        5.8131599  5.1   5.8300000  0.3000000     0                    0.0000000   80naq1      0
100        cf252s   sp    cu        3.3088337 15.0   3.1930000  0.0000000     0                    0.0000000   63fra1      0
100        cf252s   sp    cu        3.6166081 15.0   3.4900000  0.0000000     0                    0.0000000   65sch1      0
100        cf252s   es    cu        3.5907012 15.0   3.4650000 15.0000000%    0                    0.0000000   87wah1     36
100 zr g   cf252s   rc    in        1.8652993 15.0   1.8000000  0.2700000     0                    0.0000000   71che1     36
101        u233f    cm    cu        0.0000000  0.0   3.4880000  0.0000000     0                    0.0000000   63wea1      0
101 ru g   u233f    ms    cu        3.7135463  5.3   3.7400000  0.2000000     0                    0.0000000   74mae1      0
101        u233f    cm    cu        0.0000000  0.0   4.3000000 20.0000000%    0                    0.0000000   77cro1      0
101 ru g   u233f    ms    re    rp  4.0379400  2.5   0.4968000  0.0000000  no. relative values =    2          80mae1
101 ru g   u233f    ms    re    rp  3.8438754  2.5   0.4600000  0.0000000  no. relative values =    2          81mae1
101 ru g   u233f    ms    re    rp  3.8394368  2.5   0.4586000  0.0000000  no. relative values =    2          81mae1
101 mo g   u233f    cm    cu    x3  0.0000000  0.0   2.6780000 15.0000000%    0                    0.0000000   73net2      0
101        u233he   cm    cu        0.0000000  0.0   3.3220000  0.0000000     0                    0.0000000   63wea1      0
101        u233he   es    cu        2.7437393 20.0   2.9000000 20.0000000%    0                    0.0000000   77cro1      0
```

101 mo g u233he cm cu 0.0000000 0.0 2.9240000 8.1000000% 0 0.0000000 73net2 0
101 u236f es cu 5.4561726 30.0 5.4200000 30.0000000% 0 0.0000000 72sid1 0
101 tc g u236f rc cu 5.5667629 13.9 5.4200000 0.7200000 97 zr g u236f 5.3400000 84gud1 0
101 tc g u236f rc cu 4.9299746 23.3 4.8000000 1.1000000 97 zr g u236f 5.3400000 84gud1 0
101 mo g u236f rc cu 4.9742050 8.4 4.7700000 0.3900000 140 ba g u236f 5.4400000 80gud1 0
101 mo g u236f rc cu 5.1456609 12.4 5.0100000 0.5900000 97 zr g u236f 5.3400000 84gud1 0
101 mo g u236f rc cu 5.4229720 8.4 5.2800000 0.3900000 97 zr g u236f 5.3400000 84gud1 0
101 pu239h cm cu 0.0000000 0.0 5.3290000 0.0000000 0 0.0000000 63wea1 0
101 pu239h es cu 4.9975839 12.0 5.0390000 12.0000000% 0 0.0000000 75mee5 0
101 mo g pu239h cm cu 0.0000000 0.0 5.1900000 10.0000000% 0 0.0000000 73net2 0
101 pu240f es cu 5.8667825 30.0 5.9500000 30.0000000% 0 0.0000000 72sid1 0
101 pu240f es cu 5.9358035 15.0 6.0200000 15.0000000% 0 0.0000000 77cro1 0
101 pu240f es cu 6.4346613 30.1 0.0680000 0.0000000 99 pu240f 0.0618000 77mye1 0
101 ru g pu240f ms cu 6.5244538 3.8 6.6170000 0.2490000 0 0.0000000 79mae1 0
101 pu241f es cu 5.9837064 30.0 6.0000000 30.0000000% 0 0.0000000 72sid1 0
101 pu241f es cu 6.0136250 15.0 6.0300000 15.0000000% 0 0.0000000 77cro1 0
101 ru g pu241f ms cu 6.4947105 1.2 6.3520000 0.0410000 148 nd g pu241f 1.9080000 77mae1 0
101 pu242f es cu 5.9632306 30.0 6.0000000 30.0000000% 0 0.0000000 72sid1 0
101 ru g pu242f ms cu 5.9910591 5.6 6.0280000 0.3350000 0 0.0000000 79mae1 0
101 th232h cm cu 0.0000000 0.0 1.5800000 20.0000000% 0 0.0000000 77cro1 0
101 th232h es cu 1.3310160 5.0 1.3000000 5.0000000% 0 0.0000000 75mee3 0
101 mo g th232h rc cu su 0.0000000 0.0 1.6000000 0.2000000 99 mo g th232h 2.0000000 66gan3 0
101 mo g th232h rc cu 1.6778601 12.7 1.6000000 0.2000000 99 mo g th232h 2.0000000 68gan1 0
101 mo g th232h cm cu x3 0.0000000 0.0 1.1800000 10.1000000% 0 0.0000000 73net2 0
101 mo g th232h cm cu 0.0000000 0.0 1.5200000 14.0000000% 0 0.0000000 77cro1 0
101 mo g th232h cm cu 0.0000000 0.0 1.6000000 0.0000000 0 0.0000000 69gun2 0
101 np237f es cu 6.1374386 30.0 6.1500000 30.0000000% 0 0.0000000 72sid1 0
101 ru g np237f ms cu 6.1593937 2.0 6.1720000 0.0840000 0 0.0000000 77mae2 0
101 np237f rc cu 6.3669689 15.0 6.3800000 0.0000000 0 0.0000000 70kuz1 0
101 np237f sp cu 5.8679901 5.1 5.8800000 0.3000000 0 0.0000000 80naq1 0
101 cf252s sp cu 3.8132898 15.0 3.7650000 0.0000000 0 0.0000000 63fra1 0
101 cf252s sp cu 4.4503574 15.0 4.3940000 0.0000000 0 0.0000000 65sch1 0
101 cf252s es cu 3.8436746 15.0 3.7950000 15.0000000% 0 0.0000000 87wah1 36
101 cf252s rc cu 3.9601496 5.0 3.9100000 0.1300000 0 0.0000000 83li 1 0
101 tc g cf252s rc cu 4.0513039 5.2 4.0000000 0.2100000 0 0.0000000 76thi1 0
101 tc g cf252s rc fi x1 0.0000000 0.0 0.0070000 29.0000000% 101 cf252s 1.0000000 84sri1 0

101 mo g cf252s rc cu 4.1525865 19.5 4.1000000 0.8000000 0 0.0000000 58cun1 0
101 mo g cf252s rc cu 3.8408827 5.2 3.7000000 0.1000000 140 ba g cf252s 5.8100000 71har2 0
101 mo g cf252s cm cu x3 0.0000000 0.0 4.1000000 0.0000000 0 0.0000000 69gun2 0
101 mo g cf252s rc cu 3.2714279 12.4 3.2300000 0.4000000 0 0.0000000 80top1 0
102 ru g u233f ms re su 0.0000000 0.0 0.3386000 0.0002000 101 ru g u233f 0.4968000 80mae1 0
102 ru g u233f ms re 2.9381620 2.1 0.3496000 0.0003000 101 ru g u233f 0.4600000 81mae1 0
102 ru g u233f ms re 2.9328005 2.1 0.3479000 0.0003000 101 ru g u233f 0.4586000 81mae1 0
102 u233f cm cu x3 0.0000000 0.0 1.3500000 20.0000000% 0 0.0000000 77cro1 0
102 u233f cm cu x3 0.0000000 0.0 2.5960000 0.0000000 0 0.0000000 63wea1 0
102 ru g u233f ms cu su 0.0000000 0.0 2.8300000 0.1700000 0 0.0000000 74mae1 0
102 u233he cm cu 0.0000000 0.0 2.3150000 0.0000000 0 0.0000000 63wea1 0
102 u233he es cu 2.5072100 20.0 2.6500000 20.0000000% 0 0.0000000 77cro1 0
102 u236f es cu 5.1962712 30.0 5.1000000 30.0000000% 0 0.0000000 72sid1 0
102 pu239h cm cu 0.0000000 0.0 5.1690000 0.0000000 0 0.0000000 63wea1 0
102 pu239h es cu 5.4766141 12.0 5.5220000 12.0000000% 0 0.0000000 75mee5 0
102 pu240f es cu 5.8667825 30.0 5.9500000 30.0000000% 0 0.0000000 72sid1 0
102 pu240f es cu 5.9358035 15.0 6.0200000 15.0000000% 0 0.0000000 77cro1 0
102 pu240f es cu 6.6239161 30.1 0.0700000 0.0000000 99 pu240f 0.0618000 77mye1 0
102 ru g pu240f ms cu 6.7265866 3.8 6.8220000 0.2570000 0 0.0000000 79mae1 0
102 pu241f es cu 5.8939508 30.0 5.9100000 30.0000000% 0 0.0000000 72sid1 0
102 pu241f es cu 5.9238694 15.0 5.9400000 15.0000000% 0 0.0000000 77cro1 0
102 ru g pu241f ms cu 6.8730233 1.2 6.7220000 0.0430000 148 nd g pu241f 1.9080000 77mae1 0
102 pu242f es cu 5.9532919 30.0 5.9900000 30.0000000% 0 0.0000000 72sid1 0
102 ru g pu242f ms cu 6.4363136 5.6 6.4760000 0.3600000 0 0.0000000 79mae1 0
102 th232h cm cu 0.0000000 0.0 0.6960000 22.0000000% 0 0.0000000 77cro1 0
102 th232h es cu 1.0238585 5.0 1.0000000 5.0000000% 0 0.0000000 75mee3 0
102 mo g th232h rc cu su 0.0000000 0.0 0.7000000 0.1500000 99 mo g th232h 2.0000000 66gan3 0
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102 mo g th232h rc cu x1 0.0000000 0.0 0.7000000 0.1500000 99 mo g th232h 2.0000000 68gan1 0
102 mo g th232h cm cu x3 0.0000000 0.0 0.7000000 0.0000000 0 0.0000000 69gun2 0
102 mo g th232h cm cu x3 0.0000000 0.0 0.6700000 22.0000000% 0 0.0000000 77cro1 0
102 np237f es cu 6.2319467 30.0 6.2500000 30.0000000% 0 0.0000000 72sid1 0
102 ru g np237f ms cu 5.8590270 2.0 5.8760000 0.0790000 0 0.0000000 77mae2 0

102		np237f	rc	cu		6.1302413	15.0	6.1480000	0.0000000	0			0.0000000	70kuz1	0
102		np237f	sp	cu		5.0054996	5.6	5.0200000	0.2800000	0			0.0000000	80naq1	0
102		cf252s	sp	cu		4.4411210	15.0	4.3620000	0.0000000	0			0.0000000	63fra1	0
102		cf252s	sp	cu		5.5122029	15.0	5.4140000	0.0000000	0			0.0000000	65sch1	0
102		cf252s	es	cu		3.8444917	15.0	3.7760000	15.0000000%	0			0.0000000	87wah1	36
102	mo g	cf252s	es	fc		4.1047724	6.4	0.9984300	5.0000000%	102		cf252s	1.0000000	74mee5	0
102	mo g	cf252s	rc	in		0.4683438	15.2	0.4600000	0.0700000	0			0.0000000	71che1	36
102	mo g	cf252s	rc	cu		3.8610297	5.2	3.7000000	0.1000000	140	ba g	cf252s	5.8100000	71har2	0
102	zr g	cf252s	rc	in		1.4559383	15.4	1.4300000	0.2200000	0			0.0000000	71che1	36
103		u233f	es	cu	x3	0.0000000	0.0	0.4100000	30.0000000%	0			0.0000000	72sid1	0
103		u233f	es	cu		1.9991878	7.8	2.0400000	0.1600000	0			0.0000000	74mae1	0
103		u233f	cm	cu		0.0000000	0.0	0.4180000	11.0000000%	0			0.0000000	77cro1	0
103		u233f	es	cu		1.8806085	30.0	1.9190000	0.0000000	0			0.0000000	63wea1	0
103		u233f	rc	cu		1.5383108	6.4	1.6400000	0.0400000	140	ba g	u233f	6.2600000	77bla1	0
103	ru g	u233f	rc	cu	x4	0.0000000	0.0	0.4130000	0.0450000	0			0.0000000	61bon1	0
103	ru g	u233f	es	cu	x3	0.0000000	0.0	0.4250000	15.1000000%	0			0.0000000	73net2	0
103	ru g	u233f	rc	cu		1.6463900	5.0	1.6800000	4.9000000%	0			0.0000000	81lau1	0
103		u233he	cm	cu		0.0000000	0.0	1.6890000	0.0000000	0			0.0000000	63wea1	0
103		u233he	es	cu		2.2856123	13.0	2.3300000	13.0000000%	0			0.0000000	77cro1	0
103	ru g	u233he	rc	cu		2.0231832	13.6	2.3100000	0.3000000	141	ce g	u233he	5.0000000	61bon1	0
103	ru g	u233he	rc	cu	x4	0.0000000	0.0	3.5000000	0.0000000	97	zr g	u233he	5.5000000	71bla1	0
103	ru g	u233he	es	cu	cm	2.3738978	8.1	2.4200000	8.1000000%	0			0.0000000	73net2	0
103	ru g	u233he	rc	cu		2.4818022	11.9	2.5300000	0.3000000	0			0.0000000	75cav1	0
103	ru g	u233he	rc	cu		2.7564681	5.3	2.8100000	5.3000000%	0			0.0000000	81lau1	0
103		u236f	es	cu		4.1575633	30.0	4.1300000	30.0000000%	0			0.0000000	72sid1	0
103		u236f	rc	cu		4.1561783	5.4	4.2200000	0.0700000	140	ba g	u236f	5.7600000	77bla1	0
103		pu239h	cm	cu		0.0000000	0.0	4.8240000	0.0000000	0			0.0000000	63wea1	0
103		pu239h	es	cu		5.1380260	12.0	5.1530000	12.0000000%	0			0.0000000	75mee5	0
103	ru g	pu239h	rc	cu		5.3020393	13.4	6.2500000	0.8000000	140	ba g	pu239h	4.3500000	61bon1	0
103	ru g	pu239h	es	cu	cm	5.1749184	9.9	5.1900000	9.9000000%	0			0.0000000	73net2	0
103	ru g	pu239h	cm	cu		0.0000000	0.0	6.2500000	13.0000000%	0			0.0000000	77cro1	0
103	ru g	pu239h	rc	cu		5.2148022	5.0	5.2300000	3.7000000%	0			0.0000000	81lau1	0
103		pu240f	es	cu		5.8519171	30.0	5.9700000	30.0000000%	0			0.0000000	72sid1	0
103		pu240f	es	cu		5.9205326	15.0	6.0400000	15.0000000%	0			0.0000000	77cro1	0
103		pu240f	es	cu		6.7261049	30.1	0.0715000	0.0000000	99		pu240f	0.0618000	77mye1	0
103		pu240f	es	cu		6.7919487	8.9	6.9290000	0.6160000	0			0.0000000	79mae1	0

103	ru g	pu240f	rc	cu		6.6696597	6.4	0.0709000	3.0000000%	99 mo g	pu240f	0.0618000	77mye1	0
103		pu241f	es	cu		5.9439916	30.0	5.9900000	30.0000000%	0		0.0000000	72sid1	0
103		pu241f	es	cu		5.9737612	15.0	6.0200000	15.0000000%	0		0.0000000	77cro1	0
103		pu241f	es	cu		7.0605920	5.2	6.9400000	0.3510000	148 nd g	pu241f	1.9080000	77mae1	0
103	ru g	pu241f	rc	cu		6.0888702	5.0	6.1360000	0.0040000	0		0.0000000	72and1	0
103		pu242f	es	cu		5.9380869	30.0	5.9900000	30.0000000%	0		0.0000000	72sid1	0
103		pu242f	es	cu		6.6012890	9.2	6.6590000	0.6140000	0		0.0000000	79mae1	0
103		th232h	cm	cu		0.0000000	0.0	0.9400000	9.0000000%	0		0.0000000	77cro1	0
103		th232h	es	cu		0.8338338	5.0	0.8200000	5.0000000%	0		0.0000000	75mee3	0
103	ru g	th232h	rc	cu	x4	0.0000000	0.0	0.7500000	0.1300000	99 mo g	th232h	2.0000000	66gan1	0
103	ru g	th232h	rc	cu		0.8644494	6.3	0.8300000	0.0500000	99 mo g	th232h	2.0000000	70gev1	0
103	ru g	th232h	rc	cu		1.0168705	15.0	1.0000000	0.0000000	0		0.0000000	71bla1	0
103	ru g	th232h	es	cu	cm	1.1388950	10.1	1.1200000	10.1000000%	0		0.0000000	73net2	0
103	ru g	th232h	rc	cu		1.1664163	8.1	1.1300000	0.0800000	140 ba g	th232h	5.9000000	73cha1	0
103	ru g	th232h	cm	cu		0.0000000	0.0	0.9310000	9.1000000%	0		0.0000000	77cro1	0
103	ru g	th232h	cm	cu		0.0000000	0.0	0.7500000	0.0000000	0		0.0000000	69gun2	0
103	ru g	th232h	rc	cu		0.8540343	11.2	0.8200000	0.0900000	99 mo g	th232h	2.0000000	87li 1	0
103	mo m	th232h	rc	re	x1	0.0000000	0.0	0.0150000	0.0020000	99 mo g	th232h	1.0000000	66gan2	0
103		np237f	es	cu		5.8081127	30.0	5.8200000	30.0000000%	0		0.0000000	72sid1	0
103		np237f	cm	cu		0.0000000	0.0	5.3000000	0.0000000	0		0.0000000	73lar3	0
103		np237f	es	cu		5.0267119	5.2	5.0370000	0.2620000	0		0.0000000	77mae2	0
103		np237f	sp	cu		4.8001756	5.6	4.8100000	0.2700000	0		0.0000000	80naq1	0
103	ru g	np237f	rc	cu	x4	0.0000000	0.0	4.0400000	0.2700000	140 ba g	np237f	5.3000000	68nam1	0
103	ru g	np237f	rc	cu		5.7382556	5.0	5.7500000	4.2000000%	0		0.0000000	75dud1	0
103	ru g	np237f	cm	cu		0.0000000	0.0	5.7500000	0.0000000	0		0.0000000	75mce1	0
103	ru g	np237f	bm	cu		5.9079084	4.3	5.9200000	4.3000000%	0		0.0000000	76gil1	0
103	ru g	np237f	rc	cu		5.3987378	5.4	5.5000000	0.1600000	140 ba g	np237f	5.5800000	77bla2	0
103	ru g	np237f	rc	re		5.2545843	20.8	5.4800000	20.0000000%	105 ru g	np237f	3.2300000	65iye1	0
103	ru g	np237f	cm	cu		0.0000000	0.0	5.5900000	10.2000000%	0		0.0000000	77cro1	0
103	ru g	np237f	bm	cu		5.8779697	4.3	5.8900000	4.3000000%	0		0.0000000	77gil1	0
103	ru g	np237f	rc	re		5.8454750	5.4	0.9370000	4.2000000%	137 cs g	np237f	1.0000000	77kel1	0
103	ru g	np237f	cm	cu		0.0000000	0.0	5.4800000	0.0000000	0		0.0000000	69gun2	0
103	ru g	np237f	rc	cu		4.7303186	13.5	4.7400000	13.5000000%	0		0.0000000	87nai1	0
103		cf252s	sp	cu		5.1412083	15.0	5.0950000	0.0000000	0		0.0000000	63fra1	0
103		cf252s	sp	cu		5.6063892	15.0	5.5560000	0.0000000	0		0.0000000	65sch1	0
103		cf252s	es	cu		5.5004370	15.0	5.4510000	15.0000000%	0		0.0000000	87wah1	36

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103        cf252s   rc    cu        5.6406976  5.0   5.5900000  0.1600000     0                    0.0000000   83li 1      0
103 ru g   cf252s   rc    cu        5.7214231  5.0   5.6700000  0.2300000     0                    0.0000000   73sko1      0
103 ru g   cf252s   rc    cu        4.8838956  9.5   4.8400000  0.4600000     0                    0.0000000   75fly2      0
103 ru g   cf252s   rc    cu        5.8706500  5.2   0.9770000  0.0390000   140 ba g      cf252s      1.0000000   75bla1      0
103 ru g   cf252s   rc    cu    rp   4.9520669 37.9   1.0000000  0.0000000  no. relative values =    2            75bla1
103 ru g   cf252s   rc    cu        4.9642853  8.5   4.8000000  0.4000000   140 ba g      cf252s      5.8100000   71har2      0
103 ru g   cf252s   rc    cu        5.2572513  5.0   5.2100000  0.2600000     0                    0.0000000   76thi1      0
103 ru g   cf252s   rc    cu        5.2269792  5.0   5.1800000  0.2100000     0                    0.0000000   84che1      0
103 ru g   cf252s   rc    cu        5.2269792  5.0   5.1800000  0.2100000     0                    0.0000000   86che1      0
103 ru g   cf252s   rc    re        6.0473445 14.4   1.4000000  0.2000000   147 nd g      cf252s      1.0000000   75don1      0
103 tc g   cf252s   rc    fi        0.2473473 22.1   0.0450000 22.0000000%  103          cf252s      1.0000000   84sri1      0
104        u233f    cm    cu        0.0000000  0.0   1.2260000  0.0000000     0                    0.0000000   63wea1      0
104 ru g   u233f    ms    cu        1.2337982  5.6   1.2400000  0.0700000     0                    0.0000000   74mae1      0
104 ru g   u233f    ms    re        1.2835582  2.1   0.1646000  0.0002000   101 ru g      u233f       0.4968000   80mae1      0
104        u233f    cm    cu    x3  0.0000000  0.0   0.3090000 20.0000000%    0                    0.0000000   77cro1      0
104 ru g   u233f    ms    re        1.2776005  2.1   0.1517000  0.0008000   101 ru g      u233f       0.4600000   81mae1      0
104 ru g   u233f    ms    re        1.2823455  2.1   0.1518000  0.0003000   101 ru g      u233f       0.4586000   81mae1      0
104 tc g   u233f    rc    cu    x4  0.0000000  0.0   1.6800000  0.1700000     0                    0.0000000   77gud1      0
104        u233he   cm    cu        0.0000000  0.0   1.4230000  0.0000000     0                    0.0000000   63wea1      0
104        u233he   es    cu        1.9773845 20.0   2.0900000 20.0000000%    0                    0.0000000   77cro1      0
104        u236f    es    cu        3.5355022 30.0   3.4700000 30.0000000%    0                    0.0000000   72sid1      0
104        pu239h   cm    cu        0.0000000  0.0   4.4230000  0.0000000     0                    0.0000000   63wea1      0
104        pu239h   es    cu        5.4419018 12.0   5.4870000 12.0000000%    0                    0.0000000   75mee5      0
104        pu240f   es    cu        5.6498595 30.0   5.7300000 30.0000000%    0                    0.0000000   72sid1      0
104        pu240f   es    cu        5.7090203 15.0   5.7900000 15.0000000%    0                    0.0000000   77cro1      0
104        pu240f   es    cu        6.6523043 30.1   0.0703000  0.0000000    99          pu240f      0.0618000   77mye1      0
104 ru g   pu240f   ms    cu        6.9326635  3.8   7.0310000  0.2650000     0                    0.0000000   79mae1      0
104        pu241f   es    cu        5.8440866 30.0   5.8600000 30.0000000%    0                    0.0000000   72sid1      0
104        pu241f   es    cu        5.8640323 15.0   5.8800000 15.0000000%    0                    0.0000000   77cro1      0
104 ru g   pu241f   ms    cu        7.3177965  1.2   7.1570000  0.0460000   148 nd g      pu241f      1.9080000   77mae1      0
104        pu242f   es    cu        5.9234758 30.0   5.9600000 30.0000000%    0                    0.0000000   72sid1      0
104 ru g   pu242f   ms    cu        6.8020584  5.5   6.8440000  0.3780000     0                    0.0000000   79mae1      0
104 tc g   pu242f   rc    cu        5.4861722 10.0   5.5200000  0.5500000     0                    0.0000000   83gud1      0
104        th232h   cm    cu        0.0000000  0.0   0.9930000 20.0000000%    0                    0.0000000   77cro1      0
104        th232h   es    cu        0.9624270  5.0   0.9400000  5.0000000%    0                    0.0000000   75mee3      0
104        np237f   es    cu        5.7364704 30.0   5.7600000 30.0000000%    0                    0.0000000   72sid1      0
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104 ru g np237f ms cu 4.1798553 2.0 4.1970000 0.0570000 0 0.0000000 77mae2 0
104 np237f sp cu 3.5554166 6.4 3.5700000 0.2300000 0 0.0000000 80naq1 0
104 cf252s sp cu 5.9184402 15.0 5.8130000 0.0000000 0 0.0000000 63fra1 0
104 cf252s sp cu 6.0233085 15.0 5.9160000 0.0000000 0 0.0000000 65sch1 0
104 cf252s es cu 6.0711610 15.0 5.9630000 15.0000000% 0 0.0000000 87wah1 36
104 cf252s rc cu 5.5488558 5.0 5.4500000 0.2000000 0 0.0000000 83li 1 0
104 tc g cf252s rc cu 5.6710325 5.2 5.5700000 0.2900000 0 0.0000000 76thi1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

104 tc g cf252s rc cu 5.5997628 7.3 5.5000000 0.4000000 0 0.0000000 80top1 0
104 tc g cf252s rc fi 0.4492506 28.3 0.0780000 28.0000000% 104 cf252s 1.0000000 84sri1 0
104 mo g cf252s rc in 3.4311274 15.1 3.3700000 0.5100000 0 0.0000000 71che1 36
105 u233f cm cu 0.0000000 0.0 0.5985000 0.0000000 0 0.0000000 63wea1 0
105 u233f es cu 0.7643953 6.4 0.7800000 0.0500000 0 0.0000000 74mae1 0
105 u233f cm cu 0.0000000 0.0 0.2250000 20.0000000% 0 0.0000000 77cro1 0
105 u233f rc cu 0.9661342 7.1 1.0300000 0.0600000 140 ba g u233f 6.2600000 77bla1 0
105 rh g u233f cm cu 0.0000000 0.0 0.1750000 20.1000000% 0 0.0000000 73net2 0
105 u233he cm cu 0.0000000 0.0 1.2890000 0.0000000 0 0.0000000 63wea1 0
105 u233he es cu 1.8049471 11.2 1.8400000 11.2000000% 0 0.0000000 77cro1 0
105 rh g u233he rc cu 1.9535933 10.1 0.0204000 0.0019000 97 zr g u233he 0.0480000 72net2 0
105 rh g u233he cm cu x3 0.0000000 0.0 2.0400000 9.9000000% 0 0.0000000 73net2 0
105 ru g u233he rc cu 1.5989477 12.3 1.6300000 0.2000000 0 0.0000000 69bor1 0
105 ru g u233he rc cu 1.9123551 14.6 1.7800000 0.2500000 140 ba g u233he 4.0100000 75cav1 0
105 u236f es cu 2.0797687 30.0 2.0700000 30.0000000% 0 0.0000000 72sid1 0
105 u236f rc cu 2.4574099 5.4 2.5000000 0.0700000 140 ba g u236f 5.7600000 77bla1 0
105 ru g u236f rc cu 2.4562535 5.5 2.3600000 0.1200000 140 ba g u236f 5.4400000 77fer1 0
105 ru g u236f rc cu 2.5187006 8.5 2.4200000 0.2000000 140 ba g u236f 5.4400000 80gud1 0
105 pu239h cm cu 0.0000000 0.0 4.0170000 0.0000000 0 0.0000000 63wea1 0
105 pu239h es cu 4.1509028 12.0 4.1630000 12.0000000% 0 0.0000000 75mee5 0
105 rh g pu239h es cu 4.3074466 10.0 4.3200000 10.0000000% 0 0.0000000 73net2 0
105 rh g pu239h rc cu 4.2875047 5.0 4.3000000 4.6000000% 0 0.0000000 81lau1 0
105 pu240f es cu 5.2931914 30.0 5.4000000 30.0000000% 0 0.0000000 72sid1 0
105 pu240f es cu 5.3422024 15.0 5.4500000 15.0000000% 0 0.0000000 77cro1 0
105 pu240f es cu 6.1146408 30.1 0.0650000 0.0000000 99 pu240f 0.0618000 77mye1 0

105 pu240f es cu 6.0695261 9.1 6.1920000 0.5640000 0 0.0000000 79mae1 0
105 rh g pu240f rc cu 5.3996963 6.4 0.0574000 3.0000000% 99 mo g pu240f 0.0618000 77mye1 0
105 pu241f es cu 5.5589534 30.0 5.6200000 30.0000000% 0 0.0000000 72sid1 0
105 pu241f es cu 5.5787361 15.0 5.6400000 15.0000000% 0 0.0000000 77cro1 0
105 pu241f es cu 6.7316921 5.1 6.6380000 0.3350000 148 nd g pu241f 1.9080000 77mae1 0
105 rh g pu241f rc cu x2 0.0000000 0.0 0.9960000 0.0170000 0 0.0000000 72and1 0
105 pu242f es cu 5.7549535 30.0 5.7800000 30.0000000% 0 0.0000000 72sid1 0
105 pu242f es cu 6.2965962 9.3 6.3240000 0.5870000 0 0.0000000 79mae1 0
105 rh g pu242f rc cu 7.4475869 6.3 7.4800000 0.4700000 0 0.0000000 83gud1 0
105 ru g pu242f rc cu 6.8900135 6.2 6.9200000 0.4300000 0 0.0000000 83gud1 0
105 th232h cm cu 0.0000000 0.0 0.9900000 7.0000000% 0 0.0000000 77cro1 0
105 th232h es cu 1.1490637 5.0 1.1300000 5.0000000% 0 0.0000000 75mee3 0
105 rh g th232h cm cu 0.0000000 0.0 1.1600000 10.1000000% 0 0.0000000 73net2 0
105 ru g th232h rc cu 1.0874512 10.8 1.2100000 0.1000000 97 zr g th232h 3.8000000 64lyl1 0
105 ru g th232h rc cu 0.9581848 11.1 0.9200000 0.1000000 99 mo g th232h 2.0000000 66gan1 0
105 ru g th232h rc cu 1.0415053 9.2 1.0000000 0.0900000 99 mo g th232h 2.0000000 70gev1 0
105 ru g th232h rc cu 0.9702932 10.4 0.9400000 0.0900000 140 ba g th232h 5.9000000 73cha1 0
105 ru g th232h cm cu 0.0000000 0.0 0.9840000 7.0000000% 0 0.0000000 77cro1 0
105 ru g th232h cm cu 0.0000000 0.0 1.0600000 0.0000000 0 0.0000000 69gun2 0
105 ru g th232h rc cu 1.1769010 10.8 1.1300000 0.1200000 99 mo g th232h 2.0000000 87li 1 0
105 np237f es cu 3.7690814 30.0 3.7800000 30.0000000% 0 0.0000000 72sid1 0
105 np237f es cu 3.3233725 5.2 3.3330000 0.1740000 0 0.0000000 77mae2 0
105 np237f sp cu 3.4998613 6.6 3.5100000 0.2300000 0 0.0000000 80naq1 0
105 rh g np237f rc cu 2.8834242 5.4 2.9400000 0.1200000 140 ba g np237f 5.5800000 77bla2 0
105 rh g np237f rc cu 2.8395678 6.3 2.7500000 0.1640000 140 ba g np237f 5.3000000 68nam1 0
105 ru g np237f rc re rp 3.4560855 44.0 3.2300000 0.0000000 no. relative values = 2 65iye1
105 ru g np237f cm cu 0.0000000 0.0 3.0900000 9.1000000% 0 0.0000000 77cro1 0
105 ru g np237f cm cu 0.0000000 0.0 3.2300000 0.0000000 0 0.0000000 69gun2 0
105 ru g np237f rc cu 2.9315077 6.5 2.9400000 6.5000000% 0 0.0000000 87nai1 0
105 cf252s sp cu 6.5004247 15.0 6.4420000 0.0000000 0 0.0000000 63fra1 0
105 cf252s sp cu 5.9888265 15.0 5.9350000 0.0000000 0 0.0000000 65sch1 0
105 cf252s es cu 6.1966948 15.0 6.1410000 15.0000000% 0 0.0000000 87wah1 36
105 cf252s rc cu 5.9736905 5.0 5.9200000 0.2700000 0 0.0000000 83li 1 0
105 rh g cf252s rc cu 6.0443253 10.0 5.9900000 0.2100000 0 0.0000000 60ner1 0
105 rh g cf252s rc cu 6.0342346 6.2 5.9800000 0.3700000 0 0.0000000 73sko1 0
105 rh g cf252s rc cu 5.1462536 13.7 5.1000000 0.7000000 0 0.0000000 75goe1 0

105 rh g cf252s rc cu 6.7299161 5.2 1.1200000 0.0400000 140 ba g cf252s 1.0000000 75bla1 0
105 rh g cf252s es fc 6.2679503 5.4 1.0000000 5.0000000% 105 cf252s 1.0000000 74mee5 0
105 rh g cf252s cm cu 0.0000000 0.0 7.5900000 0.0000000 0 0.0000000 69gun2 0
105 rh g cf252s rc cu 6.1855950 5.0 6.1300000 0.1500000 0 0.0000000 76thi1 0
105 ru g cf252s rc cu x4 0.0000000 0.0 9.2000000 1.4000000 0 0.0000000 55gle2 0
105 ru g cf252s rc cu 5.8526022 9.5 5.8000000 0.5500000 0 0.0000000 75fly2 0
105 ru g cf252s rc cu 5.3480675 5.7 5.3000000 0.3000000 0 0.0000000 75goe1 0
105 ru g cf252s rc cu 7.3654579 15.2 1.3400000 0.2000000 103 ru g cf252s 1.0000000 75bla1 0
105 ru g cf252s es fc 6.2679315 5.4 0.9999970 5.0000000% 105 cf252s 1.0000000 74mee5 0
105 ru g cf252s rc cu 7.2652992 5.0 7.2000000 0.3000000 0 0.0000000 84nai1 0
105 ru g cf252s rc fi 0.0689475 55.0 0.0110000 55.0000000% 105 cf252s 1.0000000 84sri1 0
105 ru g cf252s rc cu 5.7516952 6.5 5.7000000 0.3700000 0 0.0000000 84che1 0
105 ru g cf252s rc cu 5.7516952 6.5 5.7000000 0.3700000 0 0.0000000 86che1 0
105 tc g cf252s rc fi 2.1248351 19.1 0.3390000 19.0000000% 105 cf252s 1.0000000 84sri1 0
105 tc g cf252s rc fc 6.1990028 5.4 0.9890000 1.0000000% 105 cf252s 1.0000000 84sri1 0
106 u233f es cu x3 0.0000000 0.0 0.3662000 0.0000000 0 0.0000000 63wea1 0
106 u233f es cu x3 0.0000000 0.0 0.1600000 30.0000000% 0 0.0000000 72sid1 0
106 u233f cm cu 0.0000000 0.0 0.1610000 13.0000000% 0 0.0000000 77cro1 0
106 u233f rc cu 0.2736448 6.4 0.2900000 0.0100000 140 ba g u233f 6.2600000 77bla1 0
106 ru g u233f rc cu x4 0.0000000 0.0 0.1600000 0.0200000 0 0.0000000 61bon1 0
106 ru g u233f es cu x3 0.0000000 0.0 0.1649000 15.1000000% 0 0.0000000 73net2 0
106 ru g u233f ms cu 0.3253317 9.1 0.3300000 0.0300000 0 0.0000000 74mae1 0
106 ru g u233f ms re 0.3229316 12.8 0.0387000 0.0049000 101 ru g u233f 0.4600000 81mae1 0
106 ru g u233f ms re 0.3490273 4.3 0.0417000 0.0016000 101 ru g u233f 0.4586000 81mae1 0
106 u233he cm cu 0.0000000 0.0 1.1970000 0.0000000 0 0.0000000 63wea1 0
106 u233he es cu 1.4717054 14.0 1.5300000 14.0000000% 0 0.0000000 77cro1 0
106 ru g u233he rc cu 1.3054181 13.8 1.5200000 0.2000000 141 ce g u233he 5.0000000 61bon1 0
106 ru g u233he cm cu 0.0000000 0.0 1.9370000 8.1000000% 0 0.0000000 73net2 0
106 u236f es cu 1.3526474 30.0 1.3400000 30.0000000% 0 0.0000000 72sid1 0
106 u236f rc cu 0.9974568 6.3 1.0100000 0.0600000 140 ba g u236f 5.7600000 77bla1 0
106 pu239h cm cu 0.0000000 0.0 3.5130000 0.0000000 0 0.0000000 63wea1 0
106 pu239h es cu 3.5114728 12.0 3.5320000 12.0000000% 0 0.0000000 75mee5 0
106 ru g pu239h rc cu 3.5187525 12.7 4.1600000 0.5000000 140 ba g pu239h 4.3500000 61bon1 0
106 ru g pu239h es cu cm 3.5850427 10.0 3.6060000 10.0000000% 0 0.0000000 73net2 0
106 ru g pu239h cm cu x3 0.0000000 0.0 4.1600000 12.0000000% 0 0.0000000 77cro1 0
106 pu240f es cu 4.9793701 30.0 5.0500000 30.0000000% 0 0.0000000 72sid1 0

106 pu240f es cu 5.0188106 15.0 5.0900000 15.0000000% 0 0.0000000 77cro1 0
106 pu240f es cu 4.8638470 30.1 0.0514000 0.0000000 99 pu240f 0.0618000 77mye1 0
106 ru g pu240f rc cu 4.8449198 6.4 0.0512000 3.0000000% 99 mo g pu240f 0.0618000 77mye1 0
106 ru g pu240f ms cu 5.2712302 5.1 5.3460000 0.2750000 0 0.0000000 79mae1 0
106 pu241f es cu 5.2257703 30.0 5.2400000 30.0000000% 0 0.0000000 72sid1 0
106 pu241f es cu 5.2457160 15.0 5.2600000 15.0000000% 0 0.0000000 77cro1 0
106 ru g pu241f ms cu 6.2544308 1.4 6.1170000 0.0560000 148 nd g pu241f 1.9080000 77mae1 0
106 pu242f es cu 5.4265399 30.0 5.4600000 30.0000000% 0 0.0000000 72sid1 0
106 ru g pu242f ms cu 5.7704195 5.6 5.8060000 0.3280000 0 0.0000000 79mae1 0
106 th232h cm cu 0.0000000 0.0 1.0800000 10.0000000% 0 0.0000000 77cro1 0
106 th232h es cu 1.1999072 5.0 1.1800000 5.0000000% 0 0.0000000 75mee3 0
106 rh m th232h rc in x1 0.0000000 0.0 0.0079000 0.0014000 0 0.0000000 72rao1 0
106 rh m th232h rc in x1 0.0000000 0.0 0.0001500 0.0000700 0 0.0000000 87li 1 0
106 ru g th232h rc cu 1.1144106 9.6 1.0700000 0.1000000 99 mo g th232h 2.0000000 66gan1 0
106 ru g th232h es cu cm 1.2304133 10.1 1.2100000 10.1000000% 0 0.0000000 73net2 0
106 ru g th232h cm cu 0.0000000 0.0 1.0700000 10.0000000% 0 0.0000000 77cro1 0
106 ru g th232h cm cu x3 0.0000000 0.0 1.0700000 0.0000000 0 0.0000000 69gun2 0
106 ru g th232h rc cu 1.2289762 12.9 1.1800000 0.1500000 99 mo g th232h 2.0000000 87li 1 0
106 np237f sp cu 2.1773482 8.2 2.1900000 0.1800000 0 0.0000000 80naq1 0
106 np237f cm cu x3 0.0000000 0.0 3.2200000 30.0000000% 0 0.0000000 72sid1 0
106 ru g np237f rc cu x4 0.0000000 0.0 1.5600000 0.0200000 140 ba g np237f 5.3000000 68nam1 0
106 ru g np237f rc cu x4 0.0000000 0.0 1.7600000 0.0600000 140 ba g np237f 5.5800000 77bla2 0
106 ru g np237f rc re 1.9678716 20.8 2.0600000 20.0000000% 105 ru g np237f 3.2300000 65iye1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

106 ru g np237f ms cu 2.4547364 6.4 2.4690000 0.1590000 0 0.0000000 77mae2 0
106 ru g np237f cm cu 0.0000000 0.0 2.0600000 0.0000000 0 0.0000000 69gun2 0
106 ru g np237f cm cu x3 0.0000000 0.0 1.8100000 12.4000000% 0 0.0000000 77cro1 0
106 cf252s sp cu 6.7022385 15.0 6.6420000 0.0000000 0 0.0000000 63fra1 0
106 cf252s sp cu 5.7940761 15.0 5.7420000 0.0000000 0 0.0000000 65sch1 0
106 cf252s es cu 6.0947788 15.0 6.0400000 15.0000000% 0 0.0000000 87wah1 36
106 cf252s rc cu 6.1149602 5.0 6.0600000 0.2500000 0 0.0000000 83li 1 0
106 rh g cf252s rc cu 5.9837812 6.1 5.9300000 0.3600000 0 0.0000000 76thi1 0
106 ru g cf252s rc cu 6.0846881 9.6 6.0300000 0.5800000 0 0.0000000 75fly2 0

106	ru g	cf252s	rc	cu	7.0904473	5.2	1.1800000	0.0200000	140	ba g	cf252s	1.0000000	75bla1	0
106	ru g	cf252s	rc	cu	6.4310342	15.3	1.1700000	0.0000000	103	ru g	cf252s	1.0000000	75bla1	0
106	ru g	cf252s	rc	in	0.1614511	18.7	0.1600000	0.0300000	0			0.0000000	71che1	36
106	ru g	cf252s	rc	cu	5.9985114	5.4	5.8000000	0.3000000	140	ba g	cf252s	5.8100000	71har2	0
106	ru g	cf252s	rc	cu	6.5690414	5.0	6.5100000	0.2900000	0			0.0000000	84che1	0
106	ru g	cf252s	rc	cu	6.5690414	5.0	6.5100000	0.2900000	0			0.0000000	86che1	0
106	tc g	cf252s	rc	cu	5.5599721	5.0	5.5100000	0.2000000	0			0.0000000	80top1	0
106	mo g	cf252s	rc	in	3.4005637	15.1	3.3700000	0.5100000	0			0.0000000	71che1	36
107		u233f	cm	cu	0.0000000	0.0	0.2858000	0.0000000	0			0.0000000	63wea1	0
107		u233f	cm	cu	0.0000000	0.0	0.1470000	20.0000000%	0			0.0000000	77cro1	0
107	pd g	u233f	es	cu	0.1457561	6.7	0.1500000	0.0100000	0			0.0000000	74mae1	0
107		u233he	cm	cu	0.0000000	0.0	1.0940000	0.0000000	0			0.0000000	63wea1	0
107	pd g	u233he	es	cu	1.4226488	20.0	1.5400000	20.0000000%	0			0.0000000	77cro1	0
107	pd g	u236f	cm	cu	x3 0.0000000	0.0	0.9700000	30.0000000%	0			0.0000000	72sid1	0
107	pd g	u236f	es	cu	0.6160174	30.0	0.6000000	30.0000000%	0			0.0000000	89rid1	0
107		pu239h	cm	cu	0.0000000	0.0	2.9400000	0.0000000	0			0.0000000	63wea1	0
107	pd g	pu239h	es	cu	2.8622797	12.0	2.8860000	12.0000000%	0			0.0000000	75mee5	0
107		pu240f	es	cu	3.1790605	29.3	3.3100000	0.9700000	0			0.0000000	79mae1	0
107	pd g	pu240f	es	cu	4.0722708	30.0	4.2400000	30.0000000%	0			0.0000000	72sid1	0
107	pd g	pu240f	es	cu	4.1010840	15.0	4.2700000	15.0000000%	0			0.0000000	77cro1	0
107	pd g	pu240f	es	cu	3.6131885	30.1	0.0392000	0.0000000	99		pu240f	0.0618000	77mye1	0
107	pd g	pu241f	es	cu	4.8033313	30.0	4.9100000	30.0000000%	0			0.0000000	72sid1	0
107	pd g	pu241f	es	cu	4.8131140	15.0	4.9200000	15.0000000%	0			0.0000000	77cro1	0
107	pd g	pu241f	es	cu	5.0750678	17.8	5.0600000	0.9000000	148	nd g	pu241f	1.9080000	77mae1	0
107		pu242f	es	cu	5.0116004	25.7	5.1000000	1.3100000	0			0.0000000	79mae1	0
107	pd g	pu242f	es	cu	5.0312537	30.0	5.1200000	30.0000000%	0			0.0000000	72sid1	0
107		th232h	cm	cu	0.0000000	0.0	1.1500000	20.0000000%	0			0.0000000	77cro1	0
107		th232h	es	cu	1.2286302	5.0	1.2000000	5.0000000%	0			0.0000000	75mee3	0
107	pd g	th232h	es	cu	1.0238585	8.0	1.0000000	8.0000000%	0			0.0000000	75mee3	0
107	pd g	th232h	es	cu	1.1774373	20.0	1.1500000	20.0000000%	0			0.0000000	77cro1	0
107		np237f	sp	cu	1.7357025	9.1	1.7500000	0.1600000	0			0.0000000	80naq1	0
107	pd g	np237f	es	cu	1.8646404	30.0	1.8800000	30.0000000%	0			0.0000000	72sid1	0
107	pd g	np237f	es	cu	1.6266012	14.0	1.6400000	0.2300000	0			0.0000000	77mae2	0
107		cf252s	sp	cu	6.6198306	15.0	6.5360000	0.0000000	0			0.0000000	65sch1	0
107		cf252s	es	cu	7.2336032	15.0	7.1420000	15.0000000%	0			0.0000000	87wah1	36
107		cf252s	rc	cu	6.7150363	5.0	6.6300000	0.2200000	0			0.0000000	83li 1	0

107	pd	g	cf252s	sp	cu	6.3727011	15.0	6.2920000	0.0000000	0			0.0000000	63fra1	0
107	rh	g	cf252s	rc	cu	6.2795211	14.5	6.2000000	0.9000000	0			0.0000000	75goe1	0
107	rh	g	cf252s	rc	cu	6.6947798	5.6	6.6100000	0.3700000	0			0.0000000	76thi1	0
107	ru	g	cf252s	rc	cu	6.3808037	14.3	6.3000000	0.9000000	0			0.0000000	75goe1	0
107	ru	g	cf252s	rc	cu	6.4314450	5.2	6.3500000	0.3300000	0			0.0000000	84nai1	0
108			u233f	cm	cu	0.0000000	0.0	0.2030000	0.0000000	0			0.0000000	63wea1	0
108			u233f	es	cu	0.0975512	30.0	0.1100000	30.0000000%	0			0.0000000	75mee1	0
108			u233f	cm	cu	0.0000000	0.0	0.1280000	20.0000000%	0			0.0000000	77cro1	0
108			u233he	cm	cu	0.0000000	0.0	1.0550000	0.0000000	0			0.0000000	63wea1	0
108			u233he	es	cu	1.4318868	20.0	1.5500000	20.0000000%	0			0.0000000	77cro1	0
108			u236f	es	cu	0.3839688	30.0	0.3700000	30.0000000%	0			0.0000000	72sid1	0
108			pu239h	cm	cu	0.0000000	0.0	2.1740000	0.0000000	0			0.0000000	63wea1	0
108			pu239h	es	cu	2.3981262	12.0	2.4180000	12.0000000%	0			0.0000000	75mee5	0
108			pu240f	es	cu	3.0157854	30.0	3.1400000	30.0000000%	0			0.0000000	72sid1	0
108			pu240f	es	cu	3.0253899	15.0	3.1500000	15.0000000%	0			0.0000000	77cro1	0
108			pu240f	es	cu	2.4886757	30.1	0.0270000	0.0000000	99	pu240f		0.0618000	77mye1	0
108			pu240f	es	cu	1.9785089	29.6	2.0600000	0.6100000	0			0.0000000	79mae1	0
108			pu241f	es	cu	3.6391838	30.0	3.7200000	30.0000000%	0			0.0000000	72sid1	0
108			pu241f	es	cu	3.6489665	15.0	3.7300000	15.0000000%	0			0.0000000	77cro1	0
108			pu241f	es	cu	3.3599757	17.6	3.3500000	0.5900000	148	nd	g	pu241f	1.9080000	77mae1	0
108			pu242f	es	cu	4.2647737	30.0	4.3400000	30.0000000%	0			0.0000000	72sid1	0
108			pu242f	es	cu	4.4907870	25.4	4.5700000	1.1600000	0			0.0000000	79mae1	0
108			th232h	cm	cu	0.0000000	0.0	1.1700000	20.0000000%	0			0.0000000	77cro1	0
108			th232h	es	cu	1.2798231	5.0	1.2500000	5.0000000%	0			0.0000000	75mee3	0
108			np237f	es	cu	1.1213724	30.0	1.1400000	30.0000000%	0			0.0000000	72sid1	0
108			np237f	es	cu	0.8852940	14.4	0.9000000	0.1300000	0			0.0000000	77mae2	0
108			np237f	sp	cu	1.5049998	9.8	1.5300000	0.1500000	0			0.0000000	80naq1	0
108			cf252s	sp	cu	6.0101094	15.0	5.9340000	0.0000000	0			0.0000000	63fra1	0
108			cf252s	sp	cu	6.2947135	15.0	6.2150000	0.0000000	0			0.0000000	65sch1	0
108			cf252s	es	cu	6.7170619	15.0	6.6320000	15.0000000%	0			0.0000000	87wah1	36
108	ru	g	cf252s	rc	cu	6.0769559	15.0	6.0000000	0.9000000	0			0.0000000	75goe1	0
108	ru	g	cf252s	rc	in	1.9648824	14.9	1.9400000	0.2900000	0			0.0000000	71che1	36
108	ru	g	cf252s	rc	cu	5.9655451	5.0	5.8900000	0.2900000	0			0.0000000	84nai1	0
108	ru	g	cf252s	rc	cu	5.9655451	5.0	5.8900000	0.2900000	0			0.0000000	87nai1	0
108	ru	g	cf252s	rc	cu	5.9655451	5.0	5.8900000	0.2900000	0			0.0000000	89man1	0
109			u233f	cm	cu	0.0000000	0.0	0.1518000	0.0000000	0			0.0000000	63wea1	0

109		u233f	cm	cu		0.0000000	0.0	0.1110000	20.0000000%	0			0.0000000	77cro1	0
109	pd g	u233f	es	cu		0.0852818	20.1	0.0927000	20.1000000%	0			0.0000000	73net2	0
109		u233he	cm	cu		0.0000000	0.0	0.9955000	0.0000000	0			0.0000000	63wea1	0
109		u233he	es	cu		1.4428485	16.4	1.5000000	16.4000000%	0			0.0000000	77cro1	0
109	pd g	u233he	rc	cu	x4	0.0000000	0.0	1.2000000	0.1200000	112	ag g	u233he	1.0800000	69bor1	0
109	pd g	u233he	rc	cu		1.5335015	13.7	1.7900000	0.2000000	115	in g	u233he	1.5700000	75jam1	0
109	pd g	u233he	cm	cu	x3	0.0000000	0.0	1.7200000	8.1000000%	0			0.0000000	73net2	0
109		u236f	es	cu		0.1540044	30.0	0.1500000	30.0000000%	0			0.0000000	72sid1	0
109		pu239h	cm	cu		0.0000000	0.0	1.5960000	0.0000000	0			0.0000000	63wea1	0
109		pu239h	es	cu		2.4090590	12.0	2.4190000	12.0000000%	0			0.0000000	75mee5	0
109	pd g	pu239h	cm	cu		0.0000000	0.0	2.2300000	10.0000000%	0			0.0000000	73net2	0
109	pd g	pu239h	rc	cu		2.4877343	5.0	2.4980000	1.4000000%	0			0.0000000	76for1	0
109		pu240f	es	cu		2.1074743	30.0	2.1500000	30.0000000%	0			0.0000000	72sid1	0
109		pu240f	es	cu		2.1172765	15.0	2.1600000	15.0000000%	0			0.0000000	77cro1	0
109		pu240f	es	cu		1.6932851	30.1	0.0180000	0.0000000	99		pu240f	0.0618000	77mye1	0
109		pu240f	es	cu		1.1860670	29.8	1.2100000	0.3600000	0			0.0000000	79mae1	0
109	pd g	pu240f	rc	cu		1.6932846	6.4	0.0180000	4.7000000%	99	mo g	pu240f	0.0618000	77mye1	0
109		pu241f	es	cu		2.7196051	30.0	2.7800000	30.0000000%	0			0.0000000	72sid1	0
109		pu241f	es	cu		2.2266108	17.6	2.2200000	0.3900000	148	nd g	pu241f	1.9080000	77mae1	0
109		pu241f	es	cu	x3	0.0000000	0.0	2.7800000	15.0000000%	0			0.0000000	77cro1	0
109		pu242f	es	cu		3.2496762	30.0	3.2900000	30.0000000%	0			0.0000000	72sid1	0
109		pu242f	es	cu		3.1509019	25.7	3.1900000	0.8200000	0			0.0000000	79mae1	0
109		th232h	cm	cu		0.0000000	0.0	1.1500000	7.2000000%	0			0.0000000	77cro1	0
109		th232h	es	cu		1.3219317	5.0	1.3000000	5.0000000%	0			0.0000000	75mee3	0
109	pd g	th232h	rc	cu		1.6371615	15.0	1.6100000	0.0000000	0			0.0000000	65for1	0
109	pd g	th232h	rc	cu		1.1456558	9.3	1.1000000	0.1000000	99	mo g	th232h	2.0000000	66gan1	0
109	pd g	th232h	rc	cu		1.3331267	11.9	1.2800000	0.1500000	99	mo g	th232h	2.0000000	70gev1	0
109	pd g	th232h	cm	cu		0.0000000	0.0	1.3800000	10.1000000%	0			0.0000000	73net2	0
109	pd g	th232h	cm	cu		0.0000000	0.0	1.1400000	7.2000000%	0			0.0000000	77cro1	0
109	pd g	th232h	cm	cu		0.0000000	0.0	1.1000000	0.0000000	0			0.0000000	69gun2	0
109	pd g	th232h	rc	cu		1.5558119	5.0	1.5300000	0.0700000	0			0.0000000	65for2	0
109	pd g	th232h	rc	cu		1.5558119	5.0	1.5300000	0.0700000	0			0.0000000	65for2	0
109		np237f	es	cu		0.4463235	15.6	0.4500000	0.0700000	0			0.0000000	77mae2	0
109		np237f	sp	cu		0.8728104	12.5	0.8800000	0.1100000	0			0.0000000	80naq1	0
109	pd g	np237f	rc	cu	x4	0.0000000	0.0	0.2990000	0.0030000	140	ba g	np237f	5.3000000	68nam1	0
109	pd g	np237f	es	cu		0.5455065	30.0	0.5500000	30.0000000%	0			0.0000000	72sid1	0

109 pd g np237f rc re 0.3803782 20.1 0.4500000 20.0000000% 140 ba g np237f 6.4400000 65iye1 0
109 pd g np237f cm cu 0.0000000 0.0 0.3610000 16.2000000% 0 0.0000000 77cro1 0
109 pd g np237f es cu 0.4463235 30.0 0.4500000 0.0000000 0 0.0000000 69gun2 0
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nuclide material tech. type value err. value nuclide material value no. treatment

109 cf252s sp cu 5.8794548 15.0 5.8050000 0.0000000 0 0.0000000 63fra1 0
109 cf252s sp cu 5.4165934 15.0 5.3480000 0.0000000 0 0.0000000 65sch1 0
109 cf252s es cu 6.5722278 15.0 6.4890000 15.0000000% 0 0.0000000 87wah1 36
109 cf252s rc cu 5.9655451 5.4 5.8900000 0.3200000 0 0.0000000 83li 1 0
109 pd g cf252s rc cu x4 0.0000000 0.0 6.8000000 1.3000000 0 0.0000000 55gle2 0
109 pd g cf252s rc cu 5.7629799 10.4 5.6900000 0.5900000 0 0.0000000 60ner1 0
109 pd g cf252s rc cu x4 0.0000000 0.0 7.6500000 0.3500000 0 0.0000000 73sko1 0
109 pd g cf252s rc cu 5.9452885 9.5 5.8700000 0.5600000 0 0.0000000 75fly2 0
109 pd g cf252s cm cu 0.0000000 0.0 6.2400000 0.0000000 0 0.0000000 69gun2 0
109 pd g cf252s rc cu 6.0769559 8.2 6.0000000 0.4900000 0 0.0000000 76thi1 0
109 pd g cf252s rc cu 6.5631124 5.0 6.4800000 0.3200000 0 0.0000000 84che1 0
109 pd g cf252s rc cu 6.5631124 5.0 6.4800000 0.3200000 0 0.0000000 86che1 0
109 pd g cf252s rc re 5.2027355 25.1 1.2000000 0.3000000 147 nd g cf252s 1.0000000 75don1 0
109 rh g cf252s rc cu 5.2464386 5.0 5.1800000 0.2000000 0 0.0000000 80top1 0
109 rh g cf252s es in 0.2633348 30.0 0.2600000 0.0000000 0 0.0000000 89rid1 0
109 ru g cf252s rc cu 4.1323300 7.4 4.0800000 0.3000000 0 0.0000000 84nai1 0
109 ru g cf252s rc cu 4.1323300 7.4 4.0800000 0.3000000 0 0.0000000 89man1 0
110 u233f cm cu 0.0000000 0.0 0.1113000 0.0000000 0 0.0000000 63wea1 0
110 u233f es cu 0.0798146 30.0 0.0900000 30.0000000% 0 0.0000000 75mee1 0
110 u233f cm cu 0.0000000 0.0 0.0949000 20.0000000% 0 0.0000000 77cro1 0
110 u233he cm cu 0.0000000 0.0 0.9365000 0.0000000 0 0.0000000 63wea1 0
110 u233he es cu 1.3210310 20.0 1.4300000 20.0000000% 0 0.0000000 77cro1 0
110 u236f es cu 0.1141529 30.0 0.1100000 30.0000000% 0 0.0000000 72sid1 0
110 pu239h cm cu 0.0000000 0.0 1.4240000 0.0000000 0 0.0000000 63wea1 0
110 pu239h es cu 1.7435508 12.0 1.7580000 12.0000000% 0 0.0000000 75mee5 0
110 pu240f es cu 1.1423071 30.0 1.2100000 30.0000000% 0 0.0000000 72sid1 0
110 pu240f es cu 0.9966070 30.1 0.0110000 0.0000000 99 pu240f 0.0618000 77mye1 0
110 pu240f es cu x3 0.0000000 0.0 1.2100000 15.0000000% 0 0.0000000 77cro1 0
110 pu240f es cu 0.6513982 31.9 0.6900000 0.2200000 0 0.0000000 79mae1 0

110 pu241f es cu 1.6738850 30.0 1.7000000 30.0000000% 0 0.0000000 72sid1 0
110 pu241f es cu 1.3830171 7.4 1.3700000 0.1000000 148 nd g pu241f 1.9080000 77mae1 0
110 pu241f es cu x3 0.0000000 0.0 1.7000000 15.0000000% 0 0.0000000 77cro1 0
110 pu242f es cu 2.2208268 30.0 2.2600000 30.0000000% 0 0.0000000 72sid1 0
110 pu242f es cu 1.9751602 25.4 2.0100000 0.5100000 0 0.0000000 79mae1 0
110 ag m th232h rc fi 0.0001415 30.5 0.0001000 30.0000000% 110 th232h 1.0000000 73wol1 0
110 th232h cm cu 0.0000000 0.0 1.2200000 20.0000000% 0 0.0000000 77cro1 0
110 th232h es cu 1.3822090 5.0 1.3500000 5.0000000% 0 0.0000000 75mee3 0
110 np237f es cu 0.2075736 14.3 0.2100000 0.0300000 0 0.0000000 77mae2 0
110 np237f sp cu 0.4448006 17.8 0.4500000 0.0800000 0 0.0000000 80naq1 0
110 np237f cm cu x3 0.0000000 0.0 0.3100000 30.0000000% 0 0.0000000 72sid1 0
110 cf252s sp cu 5.9335598 15.0 5.6440000 0.0000000 0 0.0000000 63fra1 0
110 cf252s sp cu 5.2260322 15.0 4.9710000 0.0000000 0 0.0000000 65sch1 0
110 cf252s es cu 6.5296492 15.0 6.2110000 15.0000000% 0 0.0000000 87wah1 36
110 ru g cf252s rc in 3.6690510 16.9 3.4900000 0.5900000 0 0.0000000 71che1 36
111 u233f cm cu 0.0000000 0.0 0.0808000 0.0000000 0 0.0000000 63wea1 0
111 u233f es cu x3 0.0000000 0.0 0.1100000 30.0000000% 0 0.0000000 72sid1 0
111 u233f es re 0.0716039 12.4 1.0000000 5.0000000% 111 ag g u233f 0.9970000 74mee5 0
111 cd g u233f es cu 0.0804574 30.0 0.0828000 0.0000000 0 0.0000000 75mee1 0
111 u233f cm cu 0.0000000 0.0 0.0884000 10.8000000% 0 0.0000000 77cro1 0
111 u233f rc cu 0.0558038 17.1 0.0600000 0.0100000 140 ba g u233f 6.2600000 77bla1 0
111 ag g u233f rc cu 0.0813319 10.0 0.0837000 0.0080000 0 0.0000000 61bon1 0
111 ag g u233f rc cu x4 0.0000000 0.0 0.1300000 15.0000000% 99 mo g u233f 4.7500000 65bun2 0
111 ag g u233f cm cu 0.0000000 0.0 0.0862000 15.1000000% 0 0.0000000 73net2 0
111 u233he cm cu 0.0000000 0.0 0.9655000 0.0000000 0 0.0000000 63wea1 0
111 u233he es cu 1.3340913 8.7 1.3600000 8.7000000% 0 0.0000000 77cro1 0
111 ag g u233he rc cu 1.0685210 10.8 1.2200000 0.1200000 141 ce g u233he 5.0000000 61bon1 0
111 ag g u233he es cu 1.6087572 7.9 1.6400000 7.9000000% 0 0.0000000 73net2 0
111 ag g u233he rc cu 1.1869489 12.4 1.2100000 0.1500000 0 0.0000000 69bor1 0
111 ag g u233he rc cu 1.5705358 6.4 0.0164000 0.0007000 97 zr g u233he 0.0480000 72net2 0
111 ag g u233he rc cu 1.5463992 12.9 1.7700000 0.1800000 115 in g u233he 1.5700000 75jam1 0
111 u236f es cu 0.0635946 30.0 0.0630000 30.0000000% 0 0.0000000 72sid1 0
111 u236f rc cu 0.0987581 30.1 0.1000000 0.0300000 140 ba g u236f 5.7600000 77bla1 0
111 ag g u236f rc cu 0.0652097 6.9 0.0646000 6.9000000% 0 0.0000000 76for1 0
111 pu239h cm cu 0.0000000 0.0 1.2810000 0.0000000 0 0.0000000 63wea1 0
111 pu239h es re 1.5409842 9.4 1.0000000 5.0000000% 111 ag g pu239h 0.9970000 74mee5 0

111 pu239h es cu 1.4798932 12.0 1.4860000 12.0000000% 0 0.0000000 75mee5 0
111 ag g pu239h rc re 1.6080298 10.8 0.3400000 0.0200000 99 mo g pu239h 1.0000000 58pro1 0
111 ag g pu239h rc cu 1.2370612 10.8 1.4600000 0.1400000 140 ba g pu239h 4.3500000 61bon1 0
111 ag g pu239h rc re 1.8767855 12.6 1.0000000 12.0000000% 99 mo g pu239h 2.5200000 66cun1 0
111 ag g pu239h cm cu 0.0000000 0.0 1.8200000 10.0000000% 0 0.0000000 73net2 0
111 ag g pu239h rc re x5 0.0000000 0.0 121.0000000 0.8700000% 99 mo g u235t 0.0000000 64oth1 7
111 ag g pu239h rc cu 1.7029727 10.0 1.7100000 0.8700000% 0 0.0000000 64oth1 0
111 ag g pu239h cm cu 0.0000000 0.0 1.3700000 5.6000000% 0 0.0000000 77cro1 0
111 ag g pu239h rc cu x1 0.0000000 0.0 2.1060000 2.9000000% 0 0.0000000 76for1 0
111 ag g pu239h rc cu x1 0.0000000 0.0 2.0450000 2.9000000% 0 0.0000000 76for1 0
111 pu240f es cu 0.5783302 30.0 0.5900000 30.0000000% 0 0.0000000 72sid1 0
111 pu240f es cu 0.5783302 15.0 0.5900000 15.0000000% 0 0.0000000 77cro1 0
111 pu240f es cu 0.4421356 30.1 0.0047000 0.0000000 99 pu240f 0.0618000 77mye1 0
111 pu240f es cu 0.3626816 29.7 0.3700000 0.1100000 0 0.0000000 79mae1 0
111 ag g pu240f rc cu 0.4712975 6.4 0.0050100 3.0000000% 99 mo g pu240f 0.0618000 77mye1 0
111 pu241f es cu 0.8723489 30.0 0.9000000 30.0000000% 0 0.0000000 72sid1 0
111 pu241f es cu 0.5664386 17.6 0.5700000 0.1000000 148 nd g pu241f 1.9080000 77mae1 0
111 pu241f es cu x3 0.0000000 0.0 0.9000000 15.0000000% 0 0.0000000 77cro1 0
111 pu242f es cu 1.2971201 30.0 1.3200000 30.0000000% 0 0.0000000 72sid1 0
111 pu242f es cu 1.1693734 25.2 1.1900000 0.3000000 0 0.0000000 79mae1 0
111 th232h es cu 1.2143151 6.9 1.2000000 6.9000000% 0 0.0000000 77cro1 0
111 th232h es cu 1.4167009 5.0 1.4000000 5.0000000% 0 0.0000000 75mee3 0
111 ag g th232h rc cu 1.3415293 13.9 1.5000000 0.2000000 97 zr g th232h 3.8000000 64lyl1 0
111 ag g th232h rc cu x4 0.0000000 0.0 1.5000000 0.1500000 0 0.0000000 66gan1 0
111 ag g th232h rc cu 1.2540976 6.9 1.2100000 0.0800000 99 mo g th232h 2.0000000 70gev1 0
111 ag g th232h rc cu x4 0.0000000 0.0 1.0200000 0.1000000 0 0.0000000 72rao1 0
111 ag g th232h es cu 1.4369395 10.1 1.4200000 10.1000000% 0 0.0000000 73net2 0
111 ag g th232h es cu 1.2041958 6.9 1.1900000 6.9000000% 0 0.0000000 77cro1 0
111 ag g th232h rc cu x4 0.0000000 0.0 1.8500000 0.0000000 0 0.0000000 65for1 0
111 ag g th232h rc cu 1.2851501 11.8 1.2700000 0.1500000 0 0.0000000 60vla1 0
111 ag g th232h es cu 1.4369395 30.0 1.4200000 0.0000000 0 0.0000000 69gun2 0
111 ag g th232h rc cu x1 0.0000000 0.0 3.8680000 2.9000000% 0 0.0000000 76for1 0
111 ag g th232h rc cu 1.1950837 10.2 1.1300000 0.1100000 99 mo g th232h 1.9600000 64bro1 0
111 ag g th232h rc cu 1.1504532 14.6 1.1100000 0.1600000 99 mo g th232h 2.0000000 87li 1 0
111 np237f es re 0.0948915 7.5 1.0000000 5.0000000% 111 ag g np237f 0.9970000 74mee5 0
111 np237f es cu 0.0995915 20.0 0.1000000 0.0200000 0 0.0000000 77mae2 0

111 np237f sp cu x4 0.0000000 0.0 0.4000000 0.0800000 0 0.0000000 80naq1 0
111 np237f cm cu x3 0.0000000 0.0 0.1500000 30.0000000% 0 0.0000000 72sid1 0
111 ag g np237f rc cu 0.0876631 5.4 0.0850000 0.0012000 140 ba g np237f 5.3000000 68nam1 0
111 ag g np237f rc cu 0.1051151 5.9 0.1220000 0.0070000 140 la g np237f 6.3500000 69ste1 0
111 ag g np237f rc re 0.1103396 20.1 0.1300000 20.0000000% 140 ba g np237f 6.4400000 65iye1 0
111 ag g np237f cm cu 0.0000000 0.0 0.0915000 6.4000000% 0 0.0000000 77cro1 0
111 ag g np237f rc cu 0.0754189 30.3 0.0760000 0.0000000 99 mo g np237f 6.1400000 56for1 0
111 ag g np237f rc re x5 0.0000000 0.0 5.3000000 0.0000000 99 mo g u235t 0.0000000 56for1 7
111 ag g np237f rc re 0.1004878 30.0 0.1009000 0.0000000 0 0.0000000 56for1 0
111 ag g np237f cm cu 0.0000000 0.0 0.1030000 0.0000000 0 0.0000000 69gun2 0
111 ag g np237f rc cu 0.1043719 5.0 0.1048000 2.9000000% 0 0.0000000 76for1 0
111 ag g np237f rc cu 0.0838560 5.0 0.0842000 2.7000000% 0 0.0000000 76for1 0
111 ag g np237f rc cu x4 0.0000000 0.0 0.0590000 0.0020000 140 ba g np237f 5.5800000 77bla2 0
111 cf252s sp cu 5.0524102 15.0 5.0070000 0.0000000 0 0.0000000 63fra1 0
111 cf252s sp cu 4.9757209 15.0 4.9310000 0.0000000 0 0.0000000 65sch1 0
111 cf252s es cu 5.5488723 15.0 5.4990000 15.0000000% 0 0.0000000 87wah1 36
111 cf252s rc cu 5.3379768 5.0 5.2900000 0.2300000 0 0.0000000 83li 1 0
111 ag g cf252s rc cu x4 0.0000000 0.0 4.5000000 0.9000000 0 0.0000000 55gle2 0
111 ag g cf252s rc cu 5.2370699 10.0 5.1900000 0.2900000 0 0.0000000 60ner1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

111 ag g cf252s rc cu 5.1563443 5.0 5.1100000 0.1800000 0 0.0000000 73sko1 0
111 ag g cf252s rc cu 5.3278861 5.0 5.2800000 0.2500000 0 0.0000000 75fly2 0
111 ag g cf252s rc cu 4.7469944 6.5 0.7900000 0.0500000 140 ba g cf252s 1.0000000 75bla1 0
111 ag g cf252s cm cu x3 0.0000000 0.0 4.8400000 0.0000000 0 0.0000000 69gun2 0
111 ag g cf252s rc cu 5.2168885 6.2 5.1700000 0.3200000 0 0.0000000 76thi1 0
111 ag g cf252s rc cu 5.1260722 5.0 5.0800000 0.2100000 0 0.0000000 84che1 0
111 ag g cf252s rc cu 5.1260722 5.0 5.0800000 0.2100000 0 0.0000000 86che1 0
111 pd m cf252s rc fi 0.1727445 5.4 0.0330000 0.0010000 111 cf252s 1.0000000 71pac1 0
111 pd m cf252s rc fc 0.1936833 5.4 0.0370000 0.0010000 111 cf252s 1.0000000 71pac1 0
112 u233f cm cu 0.0000000 0.0 0.0713000 0.0000000 0 0.0000000 63wea1 0
112 u233f es cu 0.0648126 30.0 0.0687000 30.0000000% 0 0.0000000 75mee1 0
112 u233f cm cu 0.0000000 0.0 0.0766000 20.0000000% 0 0.0000000 77cro1 0
112 pd g u233f es cu 0.0648503 20.1 0.0687400 20.1000000% 0 0.0000000 73net2 0

112		u233he	es	cu		1.7460901	10.9	1.7800000	10.9000000%	0			0.0000000	77cro1	0
112		u233he	cm	cu	x3	0.0000000	0.0	0.9363000	0.0000000	0			0.0000000	63wea1	0
112	ag g	u233he	rc	cu		1.6867402	13.4	1.5700000	0.2000000	140	ba g	u233he	4.0100000	75cav1	0
112	ag g	u233he	rc	cu	x1	0.0000000	0.0	1.0800000	0.1000000	0			0.0000000	69bor1	0
112	pd g	u233he	cm	cu		0.0000000	0.0	1.7500000	7.9000000%	0			0.0000000	73net2	0
112	pd g	u233he	rc	cu	x4	0.0000000	0.0	1.8000000	0.0000000	0			0.0000000	71bla1	0
112	pd g	u233he	rc	cu		1.6758766	7.5	0.0175000	0.0011000	97	zr g	u233he	0.0480000	72net2	0
112	pd g	u233he	rc	cu		1.6599766	9.9	1.9000000	0.1100000	115	in g	u233he	1.5700000	75jam1	0
112		u236f	es	cu		0.0529254	30.0	0.0510000	30.0000000%	0			0.0000000	72sid1	0
112		pu239h	cm	cu		0.0000000	0.0	1.2090000	0.0000000	0			0.0000000	63wea1	0
112		pu239h	es	cu		1.3992261	12.0	1.4050000	12.0000000%	0			0.0000000	75mee5	0
112	pd g	pu239h	cm	cu		0.0000000	0.0	1.6540000	10.0000000%	0			0.0000000	73net2	0
112	pd g	pu239h	rc	cu		1.3743288	5.0	1.3800000	1.3000000%	0			0.0000000	76for1	0
112		pu240f	es	cu		0.2744618	30.0	0.2800000	30.0000000%	0			0.0000000	72sid1	0
112		pu240f	es	cu		0.2744618	15.0	0.2800000	15.0000000%	0			0.0000000	77cro1	0
112		pu240f	es	cu		0.2201271	30.1	0.0023400	0.0000000	99		pu240f	0.0618000	77mye1	0
112		pu240f	es	cu		0.1568353	31.2	0.1600000	0.0500000	0			0.0000000	79mae1	0
112	pd g	pu240f	rc	cu		0.2201270	6.4	0.0023400	3.0000000%	99	mo g	pu240f	0.0618000	77mye1	0
112		pu241f	es	cu		0.4070961	30.0	0.4200000	30.0000000%	0			0.0000000	72sid1	0
112		pu241f	es	cu		0.2881880	17.3	0.2900000	0.0500000	148	nd g	pu241f	1.9080000	77mae1	0
112		pu241f	es	cu	x3	0.0000000	0.0	0.4200000	15.0000000%	0			0.0000000	77cro1	0
112		pu242f	es	cu		0.6535763	30.0	0.6700000	30.0000000%	0			0.0000000	72sid1	0
112		pu242f	es	cu		0.6535763	25.4	0.6700000	0.1700000	0			0.0000000	79mae1	0
112		th232h	cm	cu		0.0000000	0.0	1.2500000	7.7000000%	0			0.0000000	77cro1	0
112		th232h	es	cu		1.4337874	5.0	1.4100000	5.0000000%	0			0.0000000	75mee3	0
112	ag g	th232h	rc	cu		1.1593488	10.8	1.2900000	0.1000000	97	zr g	th232h	3.8000000	64lyl1	0
112	ag g	th232h	rc	in		0.0142362	21.4	0.0140000	0.0030000	0			0.0000000	72rao1	0
112	ag g	th232h	rc	cu		1.1999072	5.9	1.1800000	0.0700000	0			0.0000000	72rao1	0
112	ag g	th232h	es	fc		1.4968128	6.4	1.0000000	5.0000000%	112		th232h	1.0000000	74mee5	0
112	ag g	th232h	rc	cu		1.7547856	10.8	1.7000000	0.1700000	140	ba g	th232h	5.9000000	73cha1	0
112	ag g	th232h	cm	cu		0.0000000	0.0	1.2900000	0.0000000	0			0.0000000	69gun2	0
112	ag g	th232h	rc	cu		1.4028438	13.0	1.3200000	0.1700000	99	mo g	th232h	1.9600000	64bro1	0
112	ag g	th232h	rc	fi		0.0050892	41.4	0.0034000	0.0014000	112		th232h	1.0000000	82wen1	0
112	ag g	th232h	rc	fi		0.0050892	41.4	0.0034000	0.0014000	112		th232h	1.0000000	82wen1	0
112	ag g	th232h	rc	cu		1.3852020	7.1	1.3300000	0.0900000	99	mo g	th232h	2.0000000	70gev1	0
112	ag m	th232h	rc	in	x6	0.0000000	0.0	0.0062000	0.0021000	0			0.0000000	87li 1	0

112	pd g	th232h	rc	cu	x4	0.0000000	0.0	1.7700000	0.0000000	0					0.0000000	65for1	0		
112	pd g	th232h	rc	cu		1.3747870	6.4	1.3200000	0.0800000	99	mo g	th232h			2.0000000	70gev1	0		
112	pd g	th232h	cm	cu		0.0000000	0.0	1.4300000	10.1000000%	0					0.0000000	73net2	0		
112	pd g	th232h	cm	cu		0.0000000	0.0	1.2400000	7.7000000%	0					0.0000000	77cro1	0		
112	pd g	th232h	rc	cu		1.8303669	15.0	1.8000000	0.0000000	0					0.0000000	71bla1	0		
112	pd g	th232h	rc	cu	x1	0.0000000	0.0	2.7930000	1.3000000%	0					0.0000000	76for1	0		
112	pd g	th232h	rc	cu		1.2914665	10.7	1.2400000	0.1300000	99	mo g	th232h			2.0000000	87li 1	0		
112	pd g	th232h	rc	cu		1.7388486	5.0	1.7100000	0.0500000	0					0.0000000	65for2	0		
112	pd g	th232h	rc	cu		1.7388486	5.0	1.7100000	0.0500000	0					0.0000000	65for2	0		
112		np237f	es	cu		0.0700232	12.0	0.0706000	12.0000000%	0					0.0000000	75mee4	0		
112		np237f	sp	cu		0.1487745	53.3	0.1500000	0.0800000	0					0.0000000	80naq1	0		
112	pd g	np237f	rc	cu		0.0739513	5.4	0.0720000	0.0030000	140	ba g	np237f			5.3000000	68nam1	0		
112	pd g	np237f	es	cu		0.0991830	30.0	0.1000000	30.0000000%	0					0.0000000	72sid1	0		
112	pd g	np237f	rc	re		0.0532529	20.1	0.0630000	20.0000000%	140	ba g	np237f			6.4400000	65iye1	0		
112	pd g	np237f	cm	cu		0.0000000	0.0	0.0594000	12.5000000%	0					0.0000000	77cro1	0		
112	pd g	np237f	cm	cu		0.0000000	0.0	0.0630000	0.0000000	0					0.0000000	69gun2	0		
112		cf252s	sp	cu		4.2295613	15.0	4.1760000	0.0000000	0					0.0000000	63fra1	0		
112		cf252s	rc	cu		3.8284822	5.0	3.7800000	0.1100000	0					0.0000000	73sko1	0		
112		cf252s	sp	cu		4.3824980	15.0	4.3270000	0.0000000	0					0.0000000	65sch1	0		
112		cf252s	es	cu		4.3804724	15.0	4.3250000	15.0000000%	0					0.0000000	87wah1	36		
112		cf252s	rc	cu	x4	0.0000000	0.0	5.3100000	0.1800000	0					0.0000000	83li 1	0		
112	ag g	cf252s	rc	fi		0.0376971	44.5	0.0090000	0.0040000	112		cf252s			1.0000000	70tro1	0		
112	ag g	cf252s	rc	cu		5.4763513	7.1	0.9080000	0.0630000	140	ba g	cf252s			1.0000000	75bla1	0		
112	ag g	cf252s	rc	cu		4.7501539	5.1	4.6900000	0.2400000	0					0.0000000	76thi1	0		
112	ag g	cf252s	rc	cu		4.3247670	6.8	4.2700000	0.2900000	0					0.0000000	86che1	0		
112	pd g	cf252s	rc	cu		4.5577169	20.0	4.5000000	0.9000000	0					0.0000000	55gle2	0		
112	pd g	cf252s	rc	cu		3.6968148	10.0	3.6500000	0.1800000	0					0.0000000	60ner1	0		
112	pd g	cf252s	rc	cu		3.8183540	5.0	3.7700000	0.1100000	0					0.0000000	73sko1	0		
112	pd g	cf252s	rc	cu		4.4665626	9.5	4.4100000	0.4200000	0					0.0000000	75fly2	0		
112	pd g	cf252s	es	fc		4.1852192	5.7	0.9992000	5.0000000%	112		cf252s			1.0000000	74mee5	0		
112	pd g	cf252s	rc	in		0.7798760	15.6	0.7700000	0.1200000	0					0.0000000	71che1	36		
112	pd g	cf252s	rc	cu		3.8993800	5.5	3.8500000	0.2100000	0					0.0000000	73sko1	0		
112	pd g	cf252s	cm	cu		0.0000000	0.0	4.0700000	0.0000000	0					0.0000000	69gun2	0		
112	pd g	cf252s	rc	cu		4.3247670	6.8	4.2700000	0.2900000	0					0.0000000	84che1	0		
112	ru g	cf252s	rc	in		0.9824412	15.5	0.9700000	0.1500000	0					0.0000000	71che1	36		
113		u233f	cm	cu		0.0000000	0.0	0.0649000	0.0000000	0					0.0000000	63wea1	0		

113 u233f es cu 0.0628314 30.0 0.0666000 30.0000000% 0 0.0000000 75mee1 0
113 u233f cm cu 0.0000000 0.0 0.0695000 20.0000000% 0 0.0000000 77cro1 0
113 ag g u233f es cu 0.0559539 21.0 0.0593100 21.0000000% 0 0.0000000 73net2 0
113 u233he cm cu 0.0000000 0.0 0.9217000 0.0000000 0 0.0000000 63wea1 0
113 u233he es cu 1.2458059 19.7 1.2700000 19.7000000% 0 0.0000000 77cro1 0
113 ag g u233he rc cu x1 0.0000000 0.0 1.0600000 0.1100000 0 0.0000000 69bor1 0
113 ag g u233he es cu 1.3951064 10.0 1.4222000 10.0000000% 0 0.0000000 73net2 0
113 ag g u233he rc cu 1.6578047 13.6 1.6900000 0.2300000 0 0.0000000 75cav1 0
113 ag g u233he rc cu 1.6676141 8.8 1.7000000 0.1500000 0 0.0000000 75jam1 0
113 u236f es cu 0.0410678 30.0 0.0400000 30.0000000% 0 0.0000000 72sid1 0
113 pu239h cm cu 0.0000000 0.0 1.0950000 0.0000000 0 0.0000000 63wea1 0
113 pu239h es cu 1.2952659 12.0 1.3060000 12.0000000% 0 0.0000000 75mee5 0
113 ag g pu239h cm cu 0.0000000 0.0 1.3950000 12.0000000% 0 0.0000000 73net2 0
113 ag g pu239h rc re x4 0.0000000 0.0 1.0000000 12.0000000% 99 mo g pu239h 2.9500000 66cun1 0
113 ag g pu239h cm cu 0.0000000 0.0 1.0900000 12.0000000% 0 0.0000000 77cro1 0
113 pu240f es cu 0.1440662 30.0 0.1500000 30.0000000% 0 0.0000000 72sid1 0
113 pu240f es cu 0.1465553 30.1 0.0015900 0.0000000 99 pu240f 0.0618000 77mye1 0
113 pu240f es cu x3 0.0000000 0.0 0.1500000 15.0000000% 0 0.0000000 77cro1 0
113 pu240f es cu 0.0864397 22.2 0.0900000 0.0200000 0 0.0000000 79mae1 0
113 ag g pu240f rc cu 0.1465553 10.5 0.0015900 9.7000000% 99 mo g pu240f 0.0618000 77mye1 0
113 pu241f es cu 0.2132408 30.0 0.2200000 30.0000000% 0 0.0000000 72sid1 0
113 pu241f es cu 0.2132408 15.0 0.2200000 15.0000000% 0 0.0000000 77cro1 0
113 pu242f es cu 0.3121559 30.0 0.3200000 30.0000000% 0 0.0000000 72sid1 0
113 pu242f es cu 0.3219107 24.2 0.3300000 0.0800000 0 0.0000000 79mae1 0
113 th232h cm cu 0.0000000 0.0 1.1800000 6.6000000% 0 0.0000000 77cro1 0
113 th232h es cu 1.4236187 5.0 1.4000000 5.0000000% 0 0.0000000 75mee3 0
113 ag g th232h cm cu 0.0000000 0.0 1.1700000 6.6000000% 0 0.0000000 77cro1 0
113 ag g th232h cm cu 0.0000000 0.0 1.2300000 0.0000000 0 0.0000000 69gun2 0
113 ag g th232h cm cu 0.0000000 0.0 1.2870000 12.0000000% 0 0.0000000 73net2 0
113 ag g th232h rc cu 1.1083888 5.0 1.0900000 0.0500000 0 0.0000000 72rao1 0
113 ag g th232h rc cu 1.1690365 10.2 1.1000000 0.0800000 99 mo g th232h 1.9600000 64bro1 0
113 ag g th232h rc cu 1.2498063 8.6 1.2000000 0.1000000 99 mo g th232h 2.0000000 66gan1 0
113 ag g th232h rc cu 1.1323872 10.8 1.2600000 0.0700000 97 zr g th232h 3.8000000 64lyl1 0
113 ag g th232h rc cu 1.3122966 6.7 1.2600000 0.0800000 99 mo g th232h 2.0000000 70gev1 0
113 ag g th232h rc cu 1.3015942 5.0 1.2800000 0.0400000 0 0.0000000 65for2 0
1

0measured nuclide	fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
113 ag g	th232h	rc	cu		1.3015942	5.0	1.2800000	0.0400000	0		0.0000000	65for2	0
113 ag g	th232h	rc	cu		1.4372773	8.9	1.3800000	0.1200000	99 mo g	th232h	2.0000000	87li 1	0
113 ag g	th232h	rc	cu		1.6722075	10.1	1.6200000	0.1500000	140 ba g	th232h	5.9000000	73cha1	0
113	np237f	es	cu		0.0595098	30.0	0.0600000	30.0000000%	0		0.0000000	72sid1	0
113	np237f	es	cu		0.0499882	12.0	0.0504000	12.0000000%	0		0.0000000	75mee4	0
113	np237f	sp	cu	x4	0.0000000	0.0	0.1800000	0.0500000	0		0.0000000	80naq1	0
113 ag g	np237f	rc	cu		0.0462195	7.0	0.0450000	0.0030000	140 ba g	np237f	5.3000000	68nam1	0
113 ag g	np237f	rc	re		0.0481812	20.1	0.0570000	20.0000000%	140 ba g	np237f	6.4400000	65iye1	0
113 ag g	np237f	cm	cu		0.0000000	0.0	0.0457000	8.3000000%	0		0.0000000	77cro1	0
113 ag g	np237f	cm	cu		0.0000000	0.0	0.0570000	0.0000000	0		0.0000000	69gun2	0
113	cf252s	sp	cu		3.4474176	15.0	3.3860000	0.0000000	0		0.0000000	63fra1	0
113	cf252s	sp	cu		3.8740177	15.0	3.8050000	0.0000000	0		0.0000000	65sch1	0
113	cf252s	es	cu		4.3393071	15.0	4.2620000	15.0000000%	0		0.0000000	87wah1	36
113	cf252s	rc	cu		4.6936194	5.0	4.6100000	0.1600000	0		0.0000000	83li 1	0
113	cf252s	rc	cu	x4	0.0000000	0.0	3.2100000	0.1100000	0		0.0000000	73sko1	0
113 ag g	cf252s	rc	cu		3.9469220	9.2	0.6510000	0.0590000	140 ba g	cf252s	1.0000000	75bla1	0
113 ag g	cf252s	rc	cu	x4	0.0000000	0.0	0.3770000	0.0800000	111 ag g	cf252s	1.0000000	75bla1	0
113 ag g	cf252s	cm	cu		0.0000000	0.0	4.2100000	0.0000000	0		0.0000000	69gun2	0
113 ag g	cf252s	rc	cu		4.2761825	19.0	4.2000000	0.8000000	0		0.0000000	55gle2	0
113 ag g	cf252s	rc	cu		4.3067266	10.0	4.2300000	0.3800000	0		0.0000000	60ner1	0
113 ag g	cf252s	rc	cu		4.9685168	6.1	4.8800000	0.3000000	0		0.0000000	76thi1	0
113 ag g	cf252s	rc	cu		4.3067266	7.1	4.2300000	0.3000000	0		0.0000000	84che1	0
113 ag g	cf252s	rc	cu		4.3067266	7.1	4.2300000	0.3000000	0		0.0000000	86che1	0
113 ag g	cf252s	rc	cu	x4	0.0000000	0.0	2.9900000	0.1000000	0		0.0000000	73sko1	0
114	u233f	cm	cu		0.0000000	0.0	0.0627000	0.0000000	0		0.0000000	63wea1	0
114	u233f	es	cu		0.0558702	30.0	0.0630000	30.0000000%	0		0.0000000	75mee1	0
114	u233f	cm	cu		0.0000000	0.0	0.0644000	20.0000000%	0		0.0000000	77cro1	0
114	u233he	cm	cu		0.0000000	0.0	0.9169000	0.0000000	0		0.0000000	63wea1	0
114	u233he	es	cu		1.2286512	20.0	1.3300000	20.0000000%	0		0.0000000	77cro1	0
114	u236f	es	cu		0.0363214	30.0	0.0350000	30.0000000%	0		0.0000000	72sid1	0
114	pu239h	cm	cu		0.0000000	0.0	1.0980000	0.0000000	0		0.0000000	63wea1	0
114	pu239h	es	cu		1.2565864	12.0	1.2670000	12.0000000%	0		0.0000000	75mee5	0
114	pu240f	es	cu		0.0920882	30.0	0.1000000	30.0000000%	0		0.0000000	72sid1	0

114 pu240f es cu 0.0901443 30.1 0.0010200 0.0000000 99 pu240f 0.0618000 77mye1 0
114 pu240f es cu x3 0.0000000 0.0 0.1000000 15.0000000% 0 0.0000000 77cro1 0
114 pu241f es cu x3 0.0000000 0.0 0.1000000 30.0000000% 0 0.0000000 72sid1 0
114 pu241f es cu 0.1369585 15.0 0.1400000 15.0000000% 0 0.0000000 75mee1 0
114 pu241f es cu 0.0978275 15.0 0.1000000 15.0000000% 0 0.0000000 77cro1 0
114 pu242f es cu 0.1560779 30.0 0.1600000 30.0000000% 0 0.0000000 72sid1 0
114 pu242f es cu 0.1170584 25.0 0.1200000 0.0300000 0 0.0000000 79mae1 0
114 th232h cm cu 0.0000000 0.0 1.1800000 20.0000000% 0 0.0000000 77cro1 0
114 th232h es cu 1.3310160 5.0 1.3000000 5.0000000% 0 0.0000000 75mee3 0
114 np237f es cu 0.0550850 30.0 0.0560000 30.0000000% 0 0.0000000 72sid1 0
114 np237f es cu 0.0498716 12.0 0.0507000 12.0000000% 0 0.0000000 75mee4 0
114 np237f sp cu 0.0885294 44.4 0.0900000 0.0400000 0 0.0000000 80naq1 0
114 cf252s sp cu 3.0508842 15.0 2.9020000 0.0000000 0 0.0000000 63fra1 0
114 cf252s sp cu 3.4325076 15.0 3.2650000 0.0000000 0 0.0000000 65sch1 0
114 cf252s es cu 3.5544588 15.0 3.3810000 15.0000000% 0 0.0000000 87wah1 36
114 pd g cf252s rc in 1.5559299 15.5 1.4800000 0.2300000 0 0.0000000 71che1 36
115 u233f cm cu 0.0000000 0.0 0.0611000 0.0000000 0 0.0000000 63wea1 0
115 u233f cm cu 0.0000000 0.0 0.0561000 11.0000000% 0 0.0000000 77cro1 0
115 in g u233f es cu 0.0551307 17.1 0.0600000 0.0100000 140 ba g u233f 6.2600000 77bla1 0
115 cd g u233f rc cu 0.0499194 11.5 0.0520000 0.0060000 0 0.0000000 61bon1 0
115 cd g u233f rc cu x4 0.0000000 0.0 0.1010000 15.0000000% 99 mo g u233f 4.7500000 65bun2 0
115 cd g u233f cm cu 0.0000000 0.0 0.0538700 16.1000000% 0 0.0000000 73net2 0
115 cd g u233f rc cu sm 0.0000000 0.0 0.0600000 0.0100000 140 ba g u233f 6.2600000 77bla1 0
115 cd m u233f rc cu 0.0038400 30.0 0.0040000 0.0000000 0 0.0000000 61bon1 0
115 cd m u233f cm cu 0.0000000 0.0 0.0038250 47.0000000% 0 0.0000000 73net2 0
115 u233he cm cu 0.0000000 0.0 0.9024000 0.0000000 0 0.0000000 63wea1 0
115 u233he rc cu rp 1.2832187 38.8 1.5700000 0.0000000 no. relative values = 1 75jam1
115 in g u233he rc cu x1 0.0000000 0.0 1.0300000 0.1300000 0 0.0000000 69bor1 0
115 in g u233he es cu 1.4724074 11.1 0.0155000 0.0016000 97 zr g u233he 0.0480000 72net2 0
115 in g u233he es cu 1.4012043 20.0 1.4400000 20.0000000% 0 0.0000000 77cro1 0
115 cd g u233he rc cu 0.8514156 18.8 0.9800000 0.1800000 141 ce g u233he 5.0000000 61bon1 0
115 cd g u233he cm cu 0.0000000 0.0 1.4400000 7.9000000% 0 0.0000000 73net2 0
115 cd g u233he es fc 1.1871882 20.3 0.8430000 0.1570000 115 u233he 1.0000000 74mee5 0
115 cd g u233he rc cu sm 0.0000000 0.0 0.0155000 0.0016000 97 zr g u233he 0.0480000 72net2 0
115 cd g u233he rc cu 1.5277019 12.7 1.5700000 0.2000000 0 0.0000000 75jam1 0
115 cd m u233he rc cu x1 0.0000000 0.0 0.0700000 0.0000000 141 ce g u233he 5.0000000 61bon1 0

115	cd m	u233he	cm	cu		0.0000000	0.0	0.1080000	7.9000000%	0		0.0000000	73net2	0	
115	cd m	u233he	rc	fc	x1	0.0000000	0.0	0.0750000	0.0010000	115	u233he	1.0000000	72net2	0	
115		u236f	es	cu		0.0379877	30.0	0.0370000	30.0000000%	0		0.0000000	75mee1	0	
115	in g	u236f	es	cu		0.0379877	30.0	0.0370000	30.0000000%	0		0.0000000	72sid1	0	
115	in g	u236f	es	cu	x1	0.0000000	0.0	0.0600000	0.0100000	140	ba g	u236f	5.7600000	77bla1	0
115	cd g	u236f	rc	cu	sm	0.0000000	0.0	0.0600000	0.0100000	140	ba g	u236f	5.7600000	77bla1	0
115		pu239h	es	cu		1.0636110	30.0	1.0680000	0.0000000	0		0.0000000	63wea1	0	
115		pu239h	es	cu		1.2946576	8.0	1.3000000	8.0000000%	0		0.0000000	77cro1	0	
115	in g	pu239h	es	cu		1.0217836	12.0	1.0260000	12.0000000%	0		0.0000000	75mee5	0	
115	cd g	pu239h	rc	re		1.3242598	10.8	0.2800000	0.0200000	99	mo g	pu239h	1.0000000	58pro1	0
115	cd g	pu239h	rc	cu		1.0421817	10.8	1.2300000	0.1000000	140	ba g	pu239h	4.3500000	61bon1	0
115	cd g	pu239h	es	cu		1.2747398	9.9	1.2800000	9.9000000%	0		0.0000000	73net2	0	
115	cd g	pu239h	rc	cu	x4	0.0000000	0.0	0.8600000	10.0000000%	0		0.0000000	64oth1	0	
115	cd g	pu239h	rc	cu	x5	0.0000000	0.0	133.0000000	1.9000000%	99	mo g	u235t	0.0000000	76for1	7
115	cd g	pu239h	rc	cu	x4	0.0000000	0.0	0.8420000	1.9000000%	0		0.0000000	76for1	0	
115	cd g	pu239h	rc	cu	x5	0.0000000	0.0	121.8000000	1.9000000%	99	mo g	u235t	0.0000000	76for1	7
115	cd g	pu239h	rc	cu	x4	0.0000000	0.0	0.7780000	1.9000000%	0		0.0000000	76for1	0	
115	cd m	pu239h	rc	cu		0.0593112	30.3	0.0700000	0.0000000	140	ba g	pu239h	4.3500000	61bon1	0
115	cd m	pu239h	cm	cu		0.0000000	0.0	0.0830000	9.9000000%	0		0.0000000	73net2	0	
115	cd m	pu239h	rc	re	x5	0.0000000	0.0	133.0000000	0.9900000%	99	mo g	u235t	0.0000000	64oth1	7
115	cd m	pu239h	rc	cu		0.1442049	30.0	0.1448000	30.0000000%	0		0.0000000	64oth1	36	
115	in g	pu240f	es	cu		0.0611464	30.1	0.0006500	0.0000000	99	pu240f	0.0618000	77mye1	0	
115	in g	pu240f	cm	cu	x3	0.0000000	0.0	0.1000000	30.0000000%	0		0.0000000	72sid1	0	
115	in g	pu240f	cm	cu	x3	0.0000000	0.0	0.1000000	15.0000000%	0		0.0000000	77cro1	0	
115	cd g	pu240f	rc	cu		0.0573835	6.4	0.0006100	3.0000000%	99	mo g	pu240f	0.0618000	77mye1	0
115	cd m	pu240f	rc	cu		0.0038005	6.4	0.0000404	3.0000000%	99	mo g	pu240f	0.0618000	77mye1	0
115	in g	pu241f	es	cu		0.1076103	30.0	0.1100000	30.0000000%	0		0.0000000	72sid1	0	
115	in g	pu241f	es	cu		0.1076103	15.0	0.1100000	15.0000000%	0		0.0000000	77cro1	0	
115	cd g	pu241f	es	cu		0.0950884	30.0	0.0972000	0.0000000	0		0.0000000	75mee1	0	
115	cd m	pu241f	es	cu		0.0085648	30.0	0.0087550	0.0000000	0		0.0000000	75mee1	0	
115	in g	pu242f	es	cu		0.1080933	30.0	0.1100000	30.0000000%	0		0.0000000	72sid1	0	
115	cd g	pu242f	es	cu		0.0989545	30.0	0.1007000	0.0000000	0		0.0000000	75mee1	0	
115	cd m	pu242f	es	cu		0.0089265	30.0	0.0090840	0.0000000	0		0.0000000	75mee1	0	
115		th232h	cm	cu		0.0000000	0.0	1.2800000	0.0000000	0		0.0000000	69gun2	0	
115		th232h	rc	cu		1.3256273	10.7	1.3100000	0.1400000	0		0.0000000	70gev1	0	
115	in g	th232h	cm	cu		0.0000000	0.0	1.1400000	20.0000000%	0		0.0000000	77cro1	0	

115 in g th232h es cu 1.2446730 5.0 1.2300000 5.0000000% 0 0.0000000 75mee3 0
115 in m th232h rc in x1 0.0000000 0.0 0.0190000 0.0040000 0 0.0000000 72rao1 0
115 in m th232h rc in ul 0.0000000 0.0 0.0010000 0.0000000 0 0.0000000 87li 1 0
115 cd g th232h rc cu 1.2437332 8.6 1.2000000 0.1000000 99 mo g th232h 2.0000000 70gev1 0
115 cd g th232h rc cu 1.1333608 7.1 1.1200000 0.0800000 0 0.0000000 72rao1 0
115 cd g th232h cm cu 0.0000000 0.0 1.3300000 9.9000000% 0 0.0000000 73net2 0
115 cd g th232h es fc 1.1479248 15.9 0.8645000 0.1355000 115 th232h 1.0000000 74mee5 0
115 cd g th232h rc fc 1.2204254 5.7 0.9191000 0.0127000 115 th232h 1.0000000 72rao3 0
115 cd g th232h rc cu 1.6127212 10.9 1.5700000 0.1600000 140 ba g th232h 5.9000000 73cha1 0
115 cd g th232h rc cu 1.0827643 11.2 1.0700000 0.1200000 0 0.0000000 60vla1 0
115 cd g th232h rc cu 0.9609445 10.8 0.1600000 10.0000000% 89 sr g th232h 1.0000000 76lis1 0
115 cd g th232h rc re 0.9609445 15.5 0.1600000 0.0000000 89 sr g th232h 1.0000000 73dub1 0
115 cd g th232h rc cu sm 0.0000000 0.0 1.3100000 0.1400000 99 mo g th232h 2.0000000 70gev1 0
115 cd g th232h rc cu nr 1.5546665 13.5 1.5000000 0.2000000 99 mo g th232h 2.0000000 68mo 1 0
115 cd g th232h rc cu 1.2748265 8.4 1.2300000 0.1000000 99 mo g th232h 2.0000000 87li 1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

115 cd m th232h rc cu 0.1071744 18.0 0.0880000 0.0150000 115 cd g th232h 1.0000000 72rao3 0
115 cd m th232h cm cu 0.0000000 0.0 0.0974000 9.9000000% 0 0.0000000 73net2 0
115 cd m th232h rc fc 0.1074229 16.0 0.0809000 0.0127000 115 th232h 1.0000000 72rao3 0
115 ag g th232h rc cu x1 0.0000000 0.0 1.2400000 0.2000000 99 mo g th232h 2.0000000 66gan1 0
115 ag g th232h rc cu 0.9512135 6.4 0.9400000 0.0600000 0 0.0000000 72rao1 0
115 ag g th232h cm cu 0.0000000 0.0 1.2500000 0.0000000 0 0.0000000 69gun2 0
115 ag g th232h rc cu x1 0.0000000 0.0 1.7200000 0.5000000 99 mo g th232h 1.9600000 64bro1 0
115 np237f cm cu 0.0000000 0.0 0.0410000 15.0000000% 0 0.0000000 77cro1 0
115 np237f rc cu 0.0526938 15.0 0.0530000 0.0000000 0 0.0000000 70kuz1 0
115 np237f sp cu 0.0894801 44.4 0.0900000 0.0400000 0 0.0000000 80naq1 0
115 in g np237f es cu 0.0576649 30.0 0.0580000 30.0000000% 0 0.0000000 72sid1 0
115 in g np237f es cu 0.0501088 12.0 0.0504000 12.0000000% 0 0.0000000 75mee4 0
115 cd g np237f rc cu 0.0455872 5.8 0.0530000 0.0030000 140 la g np237f 6.3500000 69ste1 0
115 cd g np237f rc re 0.0516868 20.1 0.0610000 20.0000000% 140 ba g np237f 6.4400000 65iye1 0
115 cd g np237f rc cu 0.0422127 5.4 0.0410000 0.0010000 140 ba g np237f 5.3000000 68nam1 0
115 cd g np237f rc cu 0.0312933 12.7 0.0320000 0.0040000 140 ba g np237f 5.5800000 77bla2 0
115 cd g np237f rc cu 0.0356640 30.3 0.0360000 0.0000000 99 mo g np237f 6.1400000 56for1 0

115 cd g np237f rc re x5 0.0000000 0.0 3.5000000 0.0000000 99 mo g u235t 0.0000000 56for1 7
115 cd g np237f rc re 0.0325409 30.0 0.0327300 0.0000000 0 0.0000000 56for1 0
115 cd g np237f cm cu 0.0000000 0.0 0.0480000 0.0000000 0 0.0000000 69gun2 0
115 cf252s es cu 2.4116757 15.0 2.3900000 15.0000000% 0 0.0000000 87wah1 36
115 cf252s rc cu 2.9969359 5.0 2.9700000 0.0900000 0 0.0000000 83li 1 0
115 cf252s sp cu 2.8354848 15.0 2.8100000 0.0000000 0 0.0000000 65sch1 0
115 in g cf252s rc cu x4 0.0000000 0.0 0.5050000 0.0290000 140 ba g cf252s 1.0000000 75bla1 0
115 in g cf252s sp cu 2.4732289 15.0 2.4510000 0.0000000 0 0.0000000 63fra1 0
115 in g cf252s cm cu x3 0.0000000 0.0 2.0100000 0.0800000 0 0.0000000 73sko1 0
115 in g cf252s es cu 2.4621292 9.4 2.4400000 0.2300000 0 0.0000000 75fly2 0
115 in g cf252s es fc 2.8261345 2.2 0.9667000 1.0000000% 115 cf252s 1.0000000 89rid1 0
115 in g cf252s es cu 2.3359955 15.0 2.3150000 15.0000000% 0 0.0000000 89wah1 0
115 in m cf252s rc cu 3.0070266 6.0 2.9800000 0.1800000 0 0.0000000 76thi1 0
115 cd g cf252s rc cu 2.8253941 17.9 2.8000000 0.5000000 0 0.0000000 55gle2 0
115 cd g cf252s rc cu 2.3006781 10.0 2.2800000 0.1300000 0 0.0000000 60ner1 0
115 cd g cf252s rc cu 2.1997712 9.6 2.1800000 0.2100000 0 0.0000000 75fly2 0
115 cd g cf252s rc cu 3.2507898 10.4 0.5410000 0.0560000 140 ba g cf252s 1.0000000 75bla1 0
115 cd g cf252s cm cu 0.0000000 0.0 2.5400000 0.0000000 0 0.0000000 69gun2 0
115 cd g cf252s rc cu sm 0.0000000 0.0 2.0100000 0.0800000 0 0.0000000 73sko1 0
115 cd g cf252s es fc 2.6820066 9.2 0.9174000 0.0826000 115 cf252s 1.0000000 74mee5 0
115 cd g cf252s rc cu 2.5125827 5.0 2.4900000 0.1200000 0 0.0000000 84che1 0
115 cd g cf252s rc cu 2.5125827 5.0 2.4900000 0.1200000 0 0.0000000 86che1 0
115 cd g cf252s rc cu x4 0.0000000 0.0 1.8900000 0.0800000 0 0.0000000 73sko1 0
115 cd m cf252s es fi x3 0.0000000 0.0 0.0300000 0.0000000 115 cf252s 1.0000000 70tro2 0
115 cd m cf252s rc cu 0.2623580 9.6 0.2600000 0.0250000 0 0.0000000 75fly2 0
115 cd m cf252s es fc 0.2338789 30.1 0.0800000 0.0000000 115 cf252s 1.0000000 70tro2 0
115 cd m cf252s es fc 0.2414800 5.4 0.0826000 5.0000000% 115 cf252s 1.0000000 74mee5 0
115 cd m cf252s rc cu 0.1664964 11.5 0.1650000 0.0190000 0 0.0000000 84che1 0
115 cd m cf252s rc cu 0.1664964 11.5 0.1650000 0.0190000 0 0.0000000 86che1 0
115 ag g cf252s rc fc 1.6371525 9.1 0.5600000 0.0500000 115 cf252s 1.0000000 71pac1 0
115 ag g cf252s es fc 2.0891235 40.0 0.7146000 0.2854000 115 cf252s 1.0000000 74mee5 0
116 u233f cm cu 0.0000000 0.0 0.0606000 0.0000000 0 0.0000000 63wea1 0
116 u233f es cu 0.0654801 30.0 0.0680000 30.0000000% 0 0.0000000 75mee1 0
116 u233f cm cu 0.0000000 0.0 0.0604000 20.9000000% 0 0.0000000 77cro1 0
116 u233he cm cu 0.0000000 0.0 0.9167000 0.0000000 0 0.0000000 63wea1 0
116 u233he es cu 1.3814948 20.0 1.3700000 20.0000000% 0 0.0000000 77cro1 0

116		u236f	es	cu		0.0373591	30.0	0.0360000	30.0000000%	0				0.0000000	72sid1	0
116		pu239h	cm	cu		0.0000000	0.0	1.0580000	0.0000000	0				0.0000000	63wea1	0
116		pu239h	es	cu		1.1564165	12.0	1.1660000	12.0000000%	0				0.0000000	75mee5	0
116		pu240f	es	cu		0.0782750	30.0	0.0850000	30.0000000%	0				0.0000000	72sid1	0
116		pu240f	es	cu		0.0512585	30.1	0.0005800	0.0000000	99		pu240f		0.0618000	77mye1	0
116		pu240f	es	cu	x3	0.0000000	0.0	0.0850000	15.0000000%	0				0.0000000	77cro1	0
116		pu241f	es	cu		0.0969277	30.0	0.1000000	30.0000000%	0				0.0000000	72sid1	0
116		pu241f	es	cu		0.0969277	15.0	0.1000000	15.0000000%	0				0.0000000	77cro1	0
116		pu242f	es	cu		0.0975487	30.0	0.1000000	30.0000000%	0				0.0000000	72sid1	0
116	in m	th232h	rc	in	x1	0.0000000	0.0	0.0083000	0.0033000	0				0.0000000	87li 1	0
116		th232h	cm	cu		0.0000000	0.0	1.0900000	20.0000000%	0				0.0000000	77cro1	0
116		th232h	es	cu		1.2723700	5.0	1.2000000	5.0000000%	0				0.0000000	75mee3	0
116		np237f	es	cu		0.0523876	30.0	0.0530000	30.0000000%	0				0.0000000	72sid1	0
116		np237f	es	cu		0.0470500	12.0	0.0476000	12.0000000%	0				0.0000000	75mee4	0
116		np237f	sp	cu	ul	0.0000000	0.0	0.0100000	0.0100000	0				0.0000000	80naq1	0
116		cf252s	es	cu		1.9207324	15.0	1.8270000	15.0000000%	0				0.0000000	87wah1	36
116		cf252s	sp	cu		2.0258628	15.0	1.9270000	0.0000000	0				0.0000000	63fra1	0
116		cf252s	sp	cu		2.3034071	15.0	2.1910000	0.0000000	0				0.0000000	65sch1	0
116	ag g	cf252s	rc	cu		1.6820864	75.0	1.6000000	1.2000000	0				0.0000000	80top1	36
116	pd g	cf252s	rc	in		0.9146345	14.9	0.8700000	0.1300000	0				0.0000000	71che1	36
117		u233f	cm	cu		0.0000000	0.0	0.0614000	0.0000000	0				0.0000000	63wea1	0
117		u233f	cm	cu		0.0000000	0.0	0.0601000	10.0000000%	0				0.0000000	77cro1	0
117	sn g	u233f	ms	re	nr	0.0576026	12.4	0.2100000	0.0200000	126	sn g	u233f		1.0000000	69lae1	0
117	sn g	u233f	es	cu		0.0690829	8.0	0.0700000	8.0000000%	0				0.0000000	75mee1	0
117	sn g	u233f	ms	cu	x4	0.0000000	0.0	0.0800000	0.0150000	126	sn g	u233f		1.0000000	83ros1	0
117		u233he	cm	cu		0.0000000	0.0	0.9169000	0.0000000	0				0.0000000	63wea1	0
117		u233he	es	cu		1.3209914	20.0	1.3100000	20.0000000%	0				0.0000000	77cro1	0
117		u236f	es	cu		0.0376984	30.0	0.0370000	30.0000000%	0				0.0000000	72sid1	0
117		pu239h	cm	cu		0.0000000	0.0	1.0470000	0.0000000	0				0.0000000	63wea1	0
117		pu239h	es	cu		1.1514576	12.0	1.1610000	12.0000000%	0				0.0000000	75mee5	0
117		pu240f	es	cu		0.0802447	30.0	0.0850000	30.0000000%	0				0.0000000	72sid1	0
117		pu240f	es	cu		0.0471123	30.1	0.0005200	0.0000000	99		pu240f		0.0618000	77mye1	0
117		pu240f	es	cu	x3	0.0000000	0.0	0.0850000	15.0000000%	0				0.0000000	77cro1	0
117		pu241f	es	cu		0.0880448	30.0	0.0900000	30.0000000%	0				0.0000000	72sid1	0
117		pu241f	es	cu		0.0880448	15.0	0.0900000	15.0000000%	0				0.0000000	77cro1	0
117		pu242f	es	cu		0.0982667	30.0	0.1000000	30.0000000%	0				0.0000000	72sid1	0

117 th232h cm cu 0.0000000 0.0 1.0700000 20.0000000% 0 0.0000000 77cro1 0
117 th232h es cu 1.1677618 5.0 1.1200000 5.0000000% 0 0.0000000 75mee3 0
117 in g th232h rc in su 0.0000000 0.0 0.0160000 0.0040000 0 0.0000000 72rao2 36
117 in g th232h rc fi x1 0.0000000 0.0 0.0112000 0.0026000 117 th232h 1.0000000 73net1 0
117 in g th232h rc in x1 0.0000000 0.0 0.0132800 0.0033200 0 0.0000000 73rao1 0
117 in g th232h rc fi x1 0.0000000 0.0 0.0140000 0.0040000 117 th232h 1.0000000 73rao1 0
117 in m th232h rc in x1 0.0000000 0.0 0.0027200 0.0006800 0 0.0000000 73rao1 0
117 cd g th232h rc cu 1.5981689 11.9 1.5100000 0.1700000 140 ba g th232h 5.9000000 73cha1 0
117 cd g th232h rc cu 1.1960521 10.0 1.1200000 0.1100000 99 mo g th232h 2.0000000 87li 1 0
117 cd m th232h rc cu 0.2669759 12.2 0.2500000 0.0300000 99 mo g th232h 2.0000000 87li 1 0
117 np237f es cu 0.0474454 30.0 0.0480000 30.0000000% 0 0.0000000 72sid1 0
117 np237f es cu 0.0424043 12.0 0.0429000 12.0000000% 0 0.0000000 75mee4 0
117 np237f sp cu 0.0395378 75.0 0.0400000 0.0300000 0 0.0000000 80naq1 0
117 cf252s es cu 1.2677059 15.0 1.2360000 15.0000000% 0 0.0000000 87wah1 36
117 cf252s rc cu 1.3846302 9.6 1.3500000 0.1300000 0 0.0000000 83li 1 0
117 cf252s sp cu 1.4554002 15.0 1.4190000 0.0000000 0 0.0000000 65sch1 0
117 cf252s sp cu 1.5630936 15.0 1.5240000 0.0000000 0 0.0000000 63fra1 0
117 in g cf252s rc cu ul 0.0000000 0.0 1.0000000 0.0000000 0 0.0000000 55gle2 0
117 in g cf252s cm cu 0.0000000 0.0 1.0000000 0.0000000 0 0.0000000 69gun2 0
117 cd g cf252s rc cu x1 0.0000000 0.0 0.3630000 0.0600000 115 cd g cf252s 1.0000000 75bla1 0
117 cd g cf252s rc cu sm 0.0000000 0.0 1.5600000 0.1300000 0 0.0000000 76thi1 0
117 cd g cf252s rc cu 1.3948867 8.8 1.3600000 0.1200000 0 0.0000000 84che1 0
117 cd g cf252s rc cu 1.3948867 8.8 1.3600000 0.1200000 0 0.0000000 86che1 0
117 cd m cf252s rc cu x1 0.0000000 0.0 0.0470000 0.0050000 115 cd g cf252s 1.0000000 75bla1 0
118 sn g u233f ms re nr 0.0576026 12.4 0.2100000 0.0200000 126 sn g u233f 1.0000000 69lae1 0
118 sn g u233f es cu 0.0760899 8.0 0.0771000 8.0000000% 0 0.0000000 75mee1 0
118 u233f cm cu x3 0.0000000 0.0 0.0625000 0.0000000 0 0.0000000 63wea1 0
118 u233f cm cu x3 0.0000000 0.0 0.0601000 10.0000000% 0 0.0000000 77cro1 0
118 cd g u233f cm cu 0.0000000 0.0 0.0620500 15.1000000% 0 0.0000000 73net2 0
118 u233he cm cu 0.0000000 0.0 0.9326000 0.0000000 0 0.0000000 63wea1 0
118 u233he es cu 1.2850695 20.0 1.2700000 20.0000000% 0 0.0000000 77cro1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

118 cd g u233he cm cu 0.0000000 0.0 1.5500000 8.1000000% 0 0.0000000 73net2 0

118		u236f	es	cu		0.0362954	30.0	0.0380000	30.0000000%	0				0.0000000	72sid1	0
118		pu239h	cm	cu		0.0000000	0.0	1.0260000	0.0000000	0				0.0000000	63wea1	0
118		pu239h	es	cu		1.2596365	12.0	1.2670000	12.0000000%	0				0.0000000	75mee5	0
118	cd g	pu239h	es	cu		1.2487004	10.0	1.2560000	10.0000000%	0				0.0000000	73net2	0
118		pu240f	es	cu		0.0736706	30.0	0.0800000	30.0000000%	0				0.0000000	72sid1	0
118		pu240f	es	cu		0.0441884	30.1	0.0005000	0.0000000	99		pu240f		0.0618000	77mye1	0
118		pu240f	es	cu	x3	0.0000000	0.0	0.0800000	15.0000000%	0				0.0000000	77cro1	0
118		pu241f	es	cu		0.0833578	30.0	0.0860000	30.0000000%	0				0.0000000	72sid1	0
118		pu241f	es	cu		0.0833578	15.0	0.0860000	15.0000000%	0				0.0000000	77cro1	0
118		pu242f	es	cu		0.0877938	30.0	0.0900000	30.0000000%	0				0.0000000	72sid1	0
118		th232h	cm	cu		0.0000000	0.0	1.0200000	20.0000000%	0				0.0000000	77cro1	0
118		th232h	es	cu		1.1133238	5.0	1.0500000	5.0000000%	0				0.0000000	75mee3	0
118	ag g	th232h	cm	cu		0.0000000	0.0	1.4200000	10.1000000%	0				0.0000000	73net2	0
118		np237f	es	cu		0.0454416	30.0	0.0470000	30.0000000%	0				0.0000000	72sid1	0
118		np237f	es	cu		0.0549167	12.0	0.0568000	12.0000000%	0				0.0000000	75mee4	0
118		np237f	sp	cu		0.0290053	66.7	0.0300000	0.0200000	0				0.0000000	80naq1	0
118		cf252s	es	cu		0.7876370	15.0	0.7492000	15.0000000%	0				0.0000000	87wah1	36
118		cf252s	sp	cu		0.8526075	15.0	0.8110000	0.0000000	0				0.0000000	63fra1	36
118		cf252s	sp	cu	ul	0.0000000	0.0	1.1230000	0.0000000	0				0.0000000	65sch1	0
118	pd g	cf252s	rc	in		0.3364173	15.6	0.3200000	0.0500000	0				0.0000000	71che1	36
119		u233f	cm	cu		0.0000000	0.0	0.0668000	0.0000000	0				0.0000000	63wea1	0
119		u233f	cm	cu		0.0000000	0.0	0.0742000	11.0000000%	0				0.0000000	77cro1	0
119	sn g	u233f	ms	re	nr	0.0713175	14.0	0.2600000	0.0300000	126	sn g	u233f		1.0000000	69lae1	0
119	sn g	u233f	es	cu		0.0760899	8.0	0.0771000	8.0000000%	0				0.0000000	75mee1	0
119	sn g	u233f	ms	cu	x4	0.0000000	0.0	0.0950000	0.0260000	126	sn g	u233f		1.0000000	83ros1	0
119		u233he	cm	cu		0.0000000	0.0	0.9476000	0.0000000	0				0.0000000	63wea1	0
119		u233he	es	cu		1.2201523	20.0	1.2100000	20.0000000%	0				0.0000000	77cro1	0
119		u236f	es	cu		0.0353402	30.0	0.0370000	30.0000000%	0				0.0000000	72sid1	0
119		pu239h	cm	cu		0.0000000	0.0	1.0170000	0.0000000	0				0.0000000	63wea1	0
119		pu239h	es	cu		1.2518594	12.0	1.3050000	12.0000000%	0				0.0000000	75mee5	0
119		pu240f	es	cu		0.0736706	30.0	0.0800000	30.0000000%	0				0.0000000	72sid1	0
119		pu240f	es	cu		0.0433046	30.1	0.0004900	0.0000000	99		pu240f		0.0618000	77mye1	0
119		pu240f	es	cu	x3	0.0000000	0.0	0.0800000	15.0000000%	0				0.0000000	77cro1	0
119		pu241f	es	cu		0.0823885	30.0	0.0850000	30.0000000%	0				0.0000000	72sid1	0
119		pu241f	es	cu		0.0823885	15.0	0.0850000	15.0000000%	0				0.0000000	77cro1	0
119		pu242f	es	cu		0.0877938	30.0	0.0900000	30.0000000%	0				0.0000000	72sid1	0

119		th232h	cm	cu		0.0000000	0.0	1.0000000	20.0000000%	0			0.0000000	77cro1	0
119		th232h	es	cu		1.0603084	5.0	1.0000000	5.0000000%	0			0.0000000	75mee3	0
119		np237f	es	cu		0.0454416	30.0	0.0470000	30.0000000%	0			0.0000000	72sid1	0
119		np237f	es	cu		0.0553034	12.0	0.0572000	12.0000000%	0			0.0000000	75mee4	0
119		np237f	sp	cu		0.0290053	66.7	0.0300000	0.0200000	0			0.0000000	80naq1	0
119		cf252s	es	cu		0.4465939	15.0	0.4248000	15.0000000%	0			0.0000000	87wah1	36
119		cf252s	sp	cu		0.3216990	15.0	0.3060000	0.0000000	0			0.0000000	63fra1	0
119		cf252s	sp	cu	ul	0.0000000	0.0	0.7310000	0.0000000	0			0.0000000	65sch1	0
120		u233f	cm	cu		0.0000000	0.0	0.0667000	0.0000000	0			0.0000000	63wea1	0
120		u233f	cm	cu		0.0000000	0.0	0.0832000	10.0000000%	0			0.0000000	77cro1	0
120	sn g	u233f	ms	re	nr	0.0795465	13.1	0.2900000	0.0300000	126	sn g	u233f	1.0000000	69lae1	0
120	sn g	u233f	es	cu		0.0682934	8.0	0.0692000	8.0000000%	0			0.0000000	75mee1	0
120	sn g	u233f	ms	cu		0.0249611	69.7	0.0910000	0.0630000	126	sn g	u233f	1.0000000	83ros1	0
120		u233he	cm	cu		0.0000000	0.0	0.9863000	0.0000000	0			0.0000000	63wea1	0
120		u233he	es	cu		1.1596489	20.0	1.1500000	20.0000000%	0			0.0000000	77cro1	0
120		u236f	es	cu		0.0382057	30.0	0.0400000	30.0000000%	0			0.0000000	72sid1	0
120		pu239h	cm	cu		0.0000000	0.0	1.0230000	0.0000000	0			0.0000000	63wea1	0
120		pu239h	es	cu		1.2480223	12.0	1.3010000	12.0000000%	0			0.0000000	75mee5	0
120		pu240f	es	cu		0.0856347	30.0	0.0850000	30.0000000%	0			0.0000000	72sid1	0
120		pu240f	es	cu		0.0483431	30.1	0.0005000	0.0000000	99		pu240f	0.0618000	77mye1	0
120		pu240f	es	cu	x3	0.0000000	0.0	0.0850000	15.0000000%	0			0.0000000	77cro1	0
120		pu241f	es	cu		0.0865055	30.0	0.0850000	30.0000000%	0			0.0000000	72sid1	0
120		pu241f	es	cu		0.0865055	15.0	0.0850000	15.0000000%	0			0.0000000	77cro1	0
120		pu242f	es	cu		0.0829164	30.0	0.0850000	30.0000000%	0			0.0000000	72sid1	0
120		th232h	cm	cu		0.0000000	0.0	0.9680000	20.0000000%	0			0.0000000	77cro1	0
120		th232h	es	cu		0.9754837	5.0	0.9200000	5.0000000%	0			0.0000000	75mee3	0
120		np237f	es	cu		0.0454416	30.0	0.0470000	30.0000000%	0			0.0000000	72sid1	0
120		np237f	es	cu		0.0550134	12.0	0.0569000	12.0000000%	0			0.0000000	75mee4	0
120		np237f	sp	cu		0.0290053	66.7	0.0300000	0.0200000	0			0.0000000	80naq1	0
120		cf252s	es	cu		0.2571490	15.0	0.2446000	15.0000000%	0			0.0000000	87wah1	36
120		cf252s	sp	cu		0.2207738	15.0	0.2100000	0.0000000	0			0.0000000	63fra1	0
120		cf252s	sp	cu	ul	0.0000000	0.0	0.4040000	0.0000000	0			0.0000000	65sch1	0
120	cd g	cf252s	rc	in	x1	0.0000000	0.0	0.3000000	0.1000000	0			0.0000000	71che1	36
121		u233f	cm	cu		0.0000000	0.0	0.1111000	0.0000000	0			0.0000000	63wea1	0
121		u233f	es	cu		0.0652444	30.0	0.0670000	30.0000000%	0			0.0000000	75mee1	0
121		u233f	cm	cu		0.0000000	0.0	0.0755000	20.0000000%	0			0.0000000	77cro1	0

121 sn g u233f es cu 0.0821885 15.1 0.0844000 15.1000000% 0 0.0000000 73net2 0
121 u233he cm cu 0.0000000 0.0 1.0240000 0.0000000 0 0.0000000 63wea1 0
121 u233he es cu 1.1548245 27.9 1.1500000 27.9000000% 0 0.0000000 77cro1 0
121 sn g u233he es cu 1.7372577 8.1 1.7300000 8.1000000% 0 0.0000000 73net2 0
121 sn g u233he rc cu x1 0.0000000 0.0 1.0600000 0.0700000 0 0.0000000 69bor1 0
121 sn g u233he rc cu 1.8066356 20.4 2.0200000 0.3800000 115 in g u233he 1.5700000 75jam1 0
121 u236f es cu 0.0374624 30.0 0.0400000 30.0000000% 0 0.0000000 72sid1 0
121 pu239h cm cu 0.0000000 0.0 1.0360000 0.0000000 0 0.0000000 63wea1 0
121 pu239h es re 1.3919663 12.4 1.0000000 5.0000000% 121 sn g pu239h 0.9870000 74mee5 0
121 pu239h es cu 1.5150815 12.0 1.5600000 12.0000000% 0 0.0000000 75mee5 0
121 sn g pu239h es cu 1.3985368 10.0 1.4400000 10.0000000% 0 0.0000000 73net2 0
121 pu240f es cu 0.0856347 30.0 0.0850000 30.0000000% 0 0.0000000 72sid1 0
121 pu240f es cu 0.0502768 30.1 0.0005200 0.0000000 99 pu240f 0.0618000 77mye1 0
121 pu240f es cu x3 0.0000000 0.0 0.0850000 15.0000000% 0 0.0000000 77cro1 0
121 pu241f es cu 0.0915941 30.0 0.0900000 30.0000000% 0 0.0000000 72sid1 0
121 pu241f es cu 0.0915941 15.0 0.0900000 15.0000000% 0 0.0000000 77cro1 0
121 pu242f es cu 0.0820412 30.0 0.0900000 30.0000000% 0 0.0000000 72sid1 0
121 th232h cm cu 0.0000000 0.0 0.9230000 7.4000000% 0 0.0000000 77cro1 0
121 th232h es cu 0.9224683 5.0 0.8700000 5.0000000% 0 0.0000000 75mee3 0
121 sn g th232h rc cu 1.0099758 10.9 0.9300000 0.1000000 99 mo g th232h 2.0000000 70gev1 0
121 sn g th232h rc cu x4 0.0000000 0.0 0.1200000 10.0000000% 89 sr g th232h 1.0000000 76lis1 0
121 sn g th232h rc re x4 0.0000000 0.0 0.1000000 0.0000000 89 sr g th232h 1.0000000 73dub1 0
121 sn g th232h rc cu 1.0859955 10.2 1.0000000 0.1000000 99 mo g th232h 2.0000000 68mo 1 0
121 sn g th232h cm cu x3 0.0000000 0.0 1.0000000 0.0000000 0 0.0000000 69gun2 0
121 sn g th232h cm cu x3 0.0000000 0.0 0.9180000 7.4000000% 0 0.0000000 77cro1 0
121 sn g th232h es cu 1.4314163 10.1 1.3500000 10.1000000% 0 0.0000000 73net2 0
121 np237f es cu 0.0491711 30.0 0.0500000 30.0000000% 0 0.0000000 72sid1 0
121 np237f es cu 0.0672660 12.0 0.0684000 12.0000000% 0 0.0000000 75mee4 0
121 np237f sp cu 0.0590053 50.0 0.0600000 0.0300000 0 0.0000000 80naq1 0
121 sn g np237f rc re 0.0653733 20.1 0.0780000 20.0000000% 140 ba g np237f 6.4400000 65iye1 0
121 sn g np237f rc cu 0.0478645 5.4 0.0470000 0.0013000 140 ba g np237f 5.3000000 68nam1 0
121 sn g np237f cm cu 0.0000000 0.0 0.0541000 11.3000000% 0 0.0000000 77cro1 0
121 sn g np237f cm cu 0.0000000 0.0 0.0780000 0.0000000 0 0.0000000 69gun2 0
121 cf252s es cu 0.1076677 15.0 0.1067000 15.0000000% 0 0.0000000 87wah1 36
121 cf252s rc cu 0.1029251 9.8 0.1020000 0.0100000 0 0.0000000 75fly2 0
121 cf252s sp cu ul 0.0000000 0.0 0.2100000 0.0000000 0 0.0000000 63fra1 0

121 cf252s sp cu ul 0.0000000 0.0 0.2160000 0.0000000 0 0.0000000 65sch1 0
121 sn g cf252s cm cu x3 0.0000000 0.0 0.1420000 0.0000000 0 0.0000000 69gun2 0
121 sn g cf252s es cu 0.1068604 11.0 0.1059000 11.0000000% 0 0.0000000 89wah1 0
121 sn g cf252s es cu 0.1068604 11.0 0.1059000 11.0000000% 0 0.0000000 89wah1 0
121 sn g cf252s es cu 0.1078695 15.0 0.1069000 15.0000000% 0 0.0000000 88wah1 0
121 sn g cf252s es cu su 0.0000000 0.0 0.1069000 15.0000000% 0 0.0000000 88wah1 0
121 sn g cf252s es fc 0.1185703 2.2 0.9999000 1.0000000% 121 cf252s 1.0000000 88wah1 0
121 sn g cf252s es fc 0.1185703 2.2 0.9999000 1.0000000% 121 cf252s 1.0000000 88wah1 0
121 sn g cf252s rc cu su 0.0000000 0.0 0.0713000 0.0070000 0 0.0000000 84che1 0
121 sn g cf252s rc cu x4 0.0000000 0.0 0.0890000 0.0080000 0 0.0000000 75fly2 0
121 sn g cf252s rc cu x4 0.0000000 0.0 0.1420000 0.0080000 0 0.0000000 60ner1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

121 sn g cf252s rc cu x4 0.0000000 0.0 0.0713000 0.0070000 0 0.0000000 86che1 0
122 u233f cm cu x3 0.0000000 0.0 0.1417000 0.0000000 0 0.0000000 63wea1 0
122 sn g u233f ms re nr 0.0795465 13.1 0.2900000 0.0300000 126 sn g u233f 1.0000000 69lae1 0
122 sn g u233f es cu 0.0657274 8.0 0.0666000 8.0000000% 0 0.0000000 75mee1 0
122 sn g u233f ms cu 0.0521167 16.3 0.1900000 0.0270000 126 sn g u233f 1.0000000 83ros1 0
122 u233f es cu 0.0821100 10.0 0.0832000 10.0000000% 0 0.0000000 77cro1 0
122 u233f es cu 0.0819126 10.0 0.0830000 10.0000000% 0 0.0000000 91jam2 0
122 u233f es cu 0.0600034 16.0 0.0608000 16.0000000% 0 0.0000000 89rid1 0
122 u233he cm cu 0.0000000 0.0 1.0850000 0.0000000 0 0.0000000 63wea1 0
122 u233he es cu 1.2344762 20.0 1.2200000 20.0000000% 0 0.0000000 77cro1 0
122 u236f es cu 0.0505743 30.0 0.0540000 30.0000000% 0 0.0000000 72sid1 0
122 pu239h cm cu 0.0000000 0.0 1.0660000 0.0000000 0 0.0000000 63wea1 0
122 pu239h es cu 1.4581044 12.0 1.5200000 12.0000000% 0 0.0000000 75mee5 0
122 pu240f es cu 0.0957093 30.0 0.0950000 30.0000000% 0 0.0000000 72sid1 0
122 pu240f es cu 0.0560780 30.1 0.0005800 0.0000000 99 pu240f 0.0618000 77mye1 0
122 pu240f es cu x3 0.0000000 0.0 0.0950000 15.0000000% 0 0.0000000 77cro1 0
122 pu241f es cu 0.0946472 30.0 0.0930000 30.0000000% 0 0.0000000 72sid1 0
122 pu241f es cu 0.0946472 15.0 0.0930000 15.0000000% 0 0.0000000 77cro1 0
122 pu242f es cu 0.0838644 30.0 0.0920000 30.0000000% 0 0.0000000 72sid1 0
122 th232h cm cu 0.0000000 0.0 0.9890000 20.0000000% 0 0.0000000 77cro1 0
122 th232h es cu 0.8482467 5.0 0.8000000 5.0000000% 0 0.0000000 75mee3 0

122		np237f	es	cu		0.0502758	30.0	0.0520000	30.0000000%	0				0.0000000	72sid1	0
122		np237f	es	cu		0.0604277	12.0	0.0625000	12.0000000%	0				0.0000000	75mee4	0
122		np237f	sp	cu		0.0870159	44.4	0.0900000	0.0400000	0				0.0000000	80naq1	0
122		cf252s	es	cu		0.0884643	15.0	0.0824800	15.0000000%	0				0.0000000	87wah1	36
122		cf252s	sp	cu	ul	0.0000000	0.0	0.1450000	0.0000000	0				0.0000000	63fra1	0
122		cf252s	sp	cu	ul	0.0000000	0.0	0.2260000	0.0000000	0				0.0000000	65sch1	36
123		u233f	cm	cu		0.0000000	0.0	0.1920000	0.0000000	0				0.0000000	63wea1	0
123		u233f	es	cu		0.0758075	30.0	0.0800000	30.0000000%	0				0.0000000	75mee1	0
123		u233f	cm	cu		0.0000000	0.0	0.0948000	20.0000000%	0				0.0000000	77cro1	0
123		u233he	cm	cu		0.0000000	0.0	1.1660000	0.0000000	0				0.0000000	63wea1	0
123		u233he	es	cu		1.3512431	20.0	1.3400000	20.0000000%	0				0.0000000	77cro1	0
123		u236f	es	cu		0.0711786	30.0	0.0760000	30.0000000%	0				0.0000000	72sid1	0
123		pu239h	cm	cu		0.0000000	0.0	1.1080000	0.0000000	0				0.0000000	63wea1	0
123		pu239h	es	cu		1.7295805	12.0	1.8030000	12.0000000%	0				0.0000000	75mee5	0
123		pu240f	es	cu		0.1108213	30.0	0.1100000	30.0000000%	0				0.0000000	72sid1	0
123		pu240f	es	cu		0.0628460	30.1	0.0006500	0.0000000	99		pu240f		0.0618000	77mye1	0
123		pu240f	es	cu	x3	0.0000000	0.0	0.1100000	15.0000000%	0				0.0000000	77cro1	0
123		pu241f	es	cu		0.1017712	30.0	0.1000000	30.0000000%	0				0.0000000	72sid1	0
123		pu241f	es	cu		0.1017712	15.0	0.1000000	15.0000000%	0				0.0000000	77cro1	0
123		pu242f	es	cu		0.0884222	30.0	0.0970000	30.0000000%	0				0.0000000	72sid1	0
123		th232h	cm	cu		0.0000000	0.0	1.0200000	20.0000000%	0				0.0000000	77cro1	0
123		th232h	es	cu		0.8058344	5.0	0.7600000	5.0000000%	0				0.0000000	75mee3	0
123		np237f	es	cu		0.0667122	12.0	0.0690000	12.0000000%	0				0.0000000	75mee4	0
123		np237f	es	cu	x3	0.0000000	0.0	0.0570000	30.0000000%	0				0.0000000	72sid1	0
123		np237f	sp	cu		0.1450264	33.3	0.1500000	0.0500000	0				0.0000000	80naq1	0
123		cf252s	rc	cu		0.0414511	10.0	0.0400000	0.0040000	0				0.0000000	75fly2	0
123		cf252s	sp	cu		0.0362697	15.0	0.0350000	0.0000000	0				0.0000000	65sch1	0
123		cf252s	sp	cu	ul	0.0000000	0.0	0.1610000	0.0000000	0				0.0000000	63fra1	0
123		cf252s	es	cu		0.0432646	15.0	0.0417500	15.0000000%	0				0.0000000	87wah1	36
123	sn g	cf252s	rc	cu		0.0048705	10.6	0.0047000	0.0005000	0				0.0000000	75fly2	0
124		u233f	cm	cu	x3	0.0000000	0.0	0.2629000	0.0000000	0				0.0000000	63wea1	0
124		u233f	cm	cu		0.0000000	0.0	0.1200000	10.0000000%	0				0.0000000	77cro1	0
124	sn g	u233f	ms	re	nr	0.1145717	12.4	0.4200000	0.0400000	126	sn g	u233f		1.0000000	69lae1	0
124	sn g	u233f	ms	cu		0.0927486	11.9	0.3400000	0.0300000	126	sn g	u233f		1.0000000	83ros1	0
124		u233he	cm	cu		0.0000000	0.0	1.2690000	0.0000000	0				0.0000000	63wea1	0
124		u233he	es	cu		1.4874427	20.0	1.4700000	20.0000000%	0				0.0000000	77cro1	0

124		u236f	es	cu		0.0936560	30.0	0.1000000	30.0000000%	0			0.0000000	72sid1	0
124		pu239h	cm	cu		0.0000000	0.0	1.1780000	0.0000000	0			0.0000000	63wea1	0
124		pu239h	es	cu		1.8130378	12.0	1.8900000	12.0000000%	0			0.0000000	75mee5	0
124		pu240f	es	cu		0.1208960	30.0	0.1200000	30.0000000%	0			0.0000000	72sid1	0
124		pu240f	es	cu		0.0986199	30.1	0.0010200	0.0000000	99	pu240f		0.0618000	77mye1	0
124		pu240f	es	cu	x3	0.0000000	0.0	0.1200000	15.0000000%	0			0.0000000	77cro1	0
124		pu241f	es	cu		0.1119483	30.0	0.1100000	30.0000000%	0			0.0000000	72sid1	0
124		pu241f	es	cu		0.1119483	15.0	0.1100000	15.0000000%	0			0.0000000	77cro1	0
124		pu242f	es	cu		0.1002726	30.0	0.1100000	30.0000000%	0			0.0000000	72sid1	0
124	sb g	th232h	rc	in		0.0368998	25.0	0.0680000	0.0170000	0			0.0000000	69rao1	37
124	sb g	th232h	rc	in	ul	0.0000000	0.0	0.0012000	0.0000000	0			0.0000000	87li 1	0
124	sb m	th232h	rc	in		0.0368998	25.0	0.0680000	0.0170000	0			0.0000000	69rao1	37
124		th232h	cm	cu		0.0000000	0.0	1.0600000	20.0000000%	0			0.0000000	77cro1	0
124		th232h	es	cu		0.7597023	5.0	0.7000000	5.0000000%	0			0.0000000	75mee3	0
124		np237f	es	cu		0.0618780	30.0	0.0640000	30.0000000%	0			0.0000000	72sid1	0
124		np237f	es	cu		0.0744469	12.0	0.0770000	12.0000000%	0			0.0000000	75mee4	0
124		np237f	sp	cu	x4	0.0000000	0.0	0.3200000	0.0700000	0			0.0000000	80naq1	0
124		cf252s	es	cu		0.0253337	15.0	0.0236200	15.0000000%	0			0.0000000	87wah1	36
124		cf252s	sp	cu	ul	0.0000000	0.0	0.0360000	0.0000000	0			0.0000000	65sch1	0
124		cf252s	sp	cu	ul	0.0000000	0.0	0.1610000	0.0000000	0			0.0000000	63fra1	0
125		u233f	cm	cu	x3	0.0000000	0.0	0.3546000	0.0000000	0			0.0000000	63wea1	0
125		u233f	cm	cu		0.0000000	0.0	0.1420000	11.0000000%	0			0.0000000	77cro1	0
125		u233f	rc	cu		0.1429064	27.0	0.1500000	0.0400000	140	ba g	u233f	6.2600000	77bla1	0
125		u233f	cm	cu		0.0000000	0.0	0.1500000	50.0000000%	0			0.0000000	81koc1	36
125	sb g	u233f	cm	cu	x4	0.0000000	0.0	0.1720000	15.1000000%	0			0.0000000	73net2	0
125	sb g	u233f	rc	cu		0.1403469	10.6	0.1410000	0.0150000	0			0.0000000	74mae1	0
125	sb g	u233f	rc	cu		0.1433330	5.0	0.1440000	0.0030000	0			0.0000000	81mae1	0
125	sb g	u233f	rc	cu		0.1503006	5.0	0.1510000	0.0020000	0			0.0000000	81mae1	0
125	sb g	u233f	cm	cu		0.0000000	0.0	0.1480000	0.0040000	0			0.0000000	81mae1	0
125	sb g	u233f	rc	cu	x4	0.0000000	0.0	0.1190000	12.2000000%	0			0.0000000	86dic2	0
125		u233he	rc	cu		1.5144793	6.0	1.5100000	0.0900000	0			0.0000000	69bor1	0
125		u233he	es	cu		1.3550077	30.0	1.3510000	30.0000000%	0			0.0000000	63wea1	36
125		u233he	es	cu		1.5245090	6.0	1.5200000	6.0000000%	0			0.0000000	77cro1	0
125	sb g	u233he	cm	cu		0.0000000	0.0	2.0390000	8.1000000%	0			0.0000000	73net2	0
125		u236f	es	cu		0.1623740	30.0	0.1700000	30.0000000%	0			0.0000000	72sid1	0
125		u236f	rc	cu		0.1775473	79.0	0.1900000	0.1500000	140	ba g	u236f	5.7600000	77bla1	0

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 125        u236f    cm    cu        0.0000000  0.0   0.0800000 99.0000000%    0                    0.0000000   81koc1     36
 125        pu239h   cm    cu        0.0000000  0.0   1.2300000  0.0000000     0                   0.0000000   63wea1      0
 125        pu239h   es    cu        2.0929491 12.0   2.1550000 12.0000000%    0                    0.0000000   75mee5      0
 125 sb g   pu239h   es    cu        1.8928807 10.0   1.9490000 10.0000000%    0                    0.0000000   73net2      0
 125        pu240f   es    cu        0.1602987 30.0   0.1600000 30.0000000%    0                    0.0000000   72sid1      0
 125        pu240f   rc    cu    su  0.0000000  0.0   0.0380000  0.0000000     0                   0.0000000   76koc2      0
 125        pu240f   es    cu    x3  0.0000000  0.0   0.1600000 15.0000000%    0                    0.0000000   77cro1      0
 125        pu240f   es    cu        0.1528765 30.1   0.0015900  0.0000000    99          pu240f    0.0618000   77mye1      0
 125        pu240f   cm    cu        0.0000000  0.0   0.0800000 50.0000000%    0                    0.0000000   81koc1     36
 125 sb g   pu240f   rc    cu    x1  0.0000000  0.0   0.0900000  0.0000000     0                    0.0000000   76mae3      0
 125 sb g   pu240f   rc    cu    x1  0.0000000  0.0   0.0800000 62.0000000%    0                    0.0000000   77koc1      0
 125 sb g   pu240f   rc    cu        0.0849583  9.5   0.0848000  9.5000000%    0                    0.0000000   86dic2      0
 125 sb g   pu240f   rc    cu        0.0849583  9.5   0.0848000  9.5000000%    0                    0.0000000   86dic2      0
 125 sb g   pu240f   rc    cu        0.0891661 12.4   0.0890000  0.0110000     0                   0.0000000   79mae1      0
 125        pu241f   es    cu        0.1417534 30.0   0.1400000 30.0000000%    0                    0.0000000   72sid1      0
 125        pu241f   es    cu        0.1417534 15.0   0.1400000 15.0000000%    0                    0.0000000   77cro1      0
 125        pu241f   es    cu        0.1832669 24.9   0.1810000  0.0450000     0                   0.0000000   80mae4      0
 125        pu241f   cm    cu        0.0000000  0.0   0.0900000 50.0000000%    0                    0.0000000   81koc1     36
 125 sb g   pu241f   rc    cu    x1  0.0000000  0.0   0.0600000  0.0000000     0                    0.0000000   76mae3      0
 125 sb g   pu241f   rc    cu    x1  0.0000000  0.0   0.0900000 11.0000000%    0                    0.0000000   77koc1      0
 125 sb g   pu241f   rc    cu    x1  0.0000000  0.0   0.0580000  0.0090000   148 nd g     pu241f    1.9080000   77mae1      0
 125        pu242f   es    cu        0.1259356 30.0   0.1300000 30.0000000%    0                    0.0000000   72sid1      0
 125        pu242f   cm    cu    x3  0.0000000  0.0   0.0600000  0.0000000     0                   0.0000000   81koc1     36
 125        pu242f   es    cu        0.1356229 20.0   0.1400000 20.0000000%    0                    0.0000000   89rid1      0
 125 sb g   pu242f   rc    cu    su  0.0000000  0.0   0.0590000  0.0090000     0                    0.0000000   76mae3      0
 125 sb g   pu242f   cm    cu    x1  0.0000000  0.0   0.0590000  0.0090000     0                    0.0000000   78cun1      0
 125 sb g   pu242f   rc    cu    x1  0.0000000  0.0   0.0550000  0.0060000     0                    0.0000000   79mae1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value      no.   treatment

 125 sb g   pu242f   es    fc        0.1248661 23.0   1.0000000 20.0000000%  125          pu242f    1.0000000   89rid1      0
 125        th232h   cm    cu        0.0000000  0.0   1.1100000 20.0000000%    0                    0.0000000   77cro1      0
 125        th232h   es    cu        0.7210097  5.0   0.6800000  5.0000000%    0                   0.0000000   75mee3      0
 125 sb g   th232h   cm    cu        0.0000000  0.0   1.1300000 10.1000000%    0                    0.0000000   73net2      0
 125 sb g   th232h   rc    cu        0.7384769 10.5   0.6800000  0.0700000    99 mo g      th232h    2.0000000   87li 1      0
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125 sn g th232h rc cu x1 0.0000000 0.0 0.5200000 0.0400000 99 mo g th232h 2.0000000 70gev1 0
125 sn g th232h rc cu x4 0.0000000 0.0 0.0500000 10.0000000% 89 sr g th232h 1.0000000 76lis1 0
125 sn g th232h rc re 0.2957728 15.5 0.0470000 0.0000000 89 sr g th232h 1.0000000 73dub1 0
125 sn g th232h cm cu x3 0.0000000 0.0 0.5800000 0.0000000 0 0.0000000 69gun2 0
125 sn g th232h rc cu x1 0.0000000 0.0 0.5800000 0.1000000 99 mo g th232h 2.0000000 68mo 1 0
125 np237f rc cu 0.1289511 5.4 0.1260000 0.0030000 140 ba g np237f 5.3000000 68nam1 0
125 np237f es cu 0.0988277 30.0 0.1000000 30.0000000% 0 0.0000000 72sid1 0
125 np237f rc cu 0.1225464 20.0 0.1240000 20.0000000% 0 0.0000000 65iye1 0
125 np237f rc cu 0.1083217 30.3 0.1100000 0.0000000 99 mo g np237f 6.1400000 56for1 0
125 np237f cm cu 0.0000000 0.0 0.1170000 0.0000000 0 0.0000000 69gun2 0
125 np237f sp cu x4 0.0000000 0.0 0.5300000 0.0900000 0 0.0000000 80naq1 0
125 np237f cm cu 0.0000000 0.0 0.0900000 90.0000000% 0 0.0000000 81koc1 36
125 sb g np237f rc cu 0.1555308 6.6 0.1600000 0.0100000 140 ba g np237f 5.5800000 77bla2 0
125 sb g np237f rc cu 0.0849918 10.5 0.0860000 0.0090000 0 0.0000000 77mae2 0
125 sn g np237f cm cu x3 0.0000000 0.0 0.1110000 8.6000000% 0 0.0000000 77cro1 0
125 sn g np237f rc re x5 0.0000000 0.0 4.7000000 0.0000000 99 mo g u235t 0.0000000 56for1 7
125 sn g np237f rc re 0.0565295 30.0 0.0572000 0.0000000 0 0.0000000 56for1 0
125 cf252s es cu 0.0179380 15.0 0.0173100 15.0000000% 0 0.0000000 87wah1 36
125 cf252s sp cu ul 0.0000000 0.0 0.0680000 0.0000000 0 0.0000000 65sch1 0
125 cf252s sp cu ul 0.0000000 0.0 0.1850000 0.0000000 0 0.0000000 63fra1 0
125 sb g cf252s rc cu x4 0.0000000 0.0 0.0050000 0.0000000 140 ba g cf252s 1.0000000 75bla1 0
125 sb g cf252s rc cu 0.0178240 9.3 0.0172000 0.0016000 0 0.0000000 75fly2 0
125 sn g cf252s rc cu 0.0096374 10.0 0.0093000 0.0004000 0 0.0000000 60ner1 0
125 sn g cf252s rc cu 0.0084975 9.8 0.0082000 0.0008000 0 0.0000000 75fly2 0
125 sn g cf252s rc cu 0.0049367 27.5 0.0800000 0.0220000 140 ba g cf252s 100.0000000 75bla1 0
125 sn g cf252s cm cu x3 0.0000000 0.0 0.0093000 0.0000000 0 0.0000000 69gun2 0
125 sn g cf252s rc cu 0.0078757 14.5 0.0076000 0.0011000 0 0.0000000 84che1 0
125 sn g cf252s rc cu 0.0078757 14.5 0.0076000 0.0011000 0 0.0000000 86che1 0
126 u233f cm cu x3 0.0000000 0.0 0.4650000 0.0000000 0 0.0000000 63wea1 0
126 u233f cm cu x3 0.0000000 0.0 0.2030000 20.0000000% 0 0.0000000 77cro1 0
126 u233f es cu 0.3497298 24.9 0.3530000 0.0880000 0 0.0000000 81mae1 0
126 u233f es cu 0.3576556 24.9 0.3610000 0.0900000 0 0.0000000 81mae1 0
126 u233f cm cu 0.0000000 0.0 0.3570000 0.0890000 0 0.0000000 81mae1 0
126 u233f cm cu 0.0000000 0.0 0.3400000 50.0000000% 0 0.0000000 81koc1 36
126 sb g u233f cm cu x3 0.0000000 0.0 0.0082680 47.0000000% 0 0.0000000 73net2 0
126 sb m u233f es cu 0.2672510 30.0 0.2697500 0.0000000 0 0.0000000 75mee1 0

126	sn	g	u233f	es	cu		0.2635357	8.0	0.2660000	8.0000000%	0				0.0000000	75mee1	0		
126	sn	g	u233f	es	cu		0.2972208	13.3	0.3000000	0.0400000	0				0.0000000	74mae1	0		
126			u233he	cm	cu		0.0000000	0.0	1.5860000	0.0000000	0				0.0000000	63wea1	0		
126	sb	g	u233he	cm	cu		0.0000000	0.0	0.2231000	33.0000000%	0				0.0000000	73net2	0		
126	sb	m	u233he	es	cu		1.8652600	30.0	1.8497400	0.0000000	0				0.0000000	75mee1	0		
126	sn	g	u233he	es	cu		1.9663612	20.0	1.9500000	20.0000000%	0				0.0000000	77cro1	0		
126			u236f	cm	cu		0.0000000	0.0	0.2900000	99.0000000%	0				0.0000000	81koc1	36		
126	sb	m	u236f	es	cu		0.2355283	30.0	0.2465900	0.0000000	0				0.0000000	75mee1	0		
126	sn	g	u236f	es	cu		0.2483368	30.0	0.2600000	30.0000000%	0				0.0000000	72sid1	0		
126			pu239h	cm	cu		0.0000000	0.0	1.3030000	0.0000000	0				0.0000000	63wea1	0		
126	sb	g	pu239h	cm	cu		0.0000000	0.0	0.2016000	46.0000000%	0				0.0000000	73net2	0		
126	sb	m	pu239h	es	cu		1.7882836	30.0	1.8975600	0.0000000	0				0.0000000	75mee1	0		
126	sn	g	pu239h	es	cu		2.0318405	12.0	2.1560000	12.0000000%	0				0.0000000	75mee5	0		
126			pu240f	cm	cu		0.0000000	0.0	0.2150000	50.0000000%	0				0.0000000	81koc1	36		
126			pu240f	es	cu		0.1907093	21.1	0.1900000	0.0400000	0				0.0000000	79mae1	0		
126	sb	m	pu240f	es	cu		0.2860740	30.0	0.2850100	0.0000000	0				0.0000000	75mee1	0		
126	sn	g	pu240f	es	cu		0.3211946	30.0	0.3200000	30.0000000%	0				0.0000000	72sid1	0		
126	sn	g	pu240f	es	cu		0.1605973	30.0	0.1600000	0.0000000	0				0.0000000	76mae3	0		
126	sn	g	pu240f	es	cu		0.3211946	15.0	0.3200000	15.0000000%	0				0.0000000	77cro1	0		
126	sn	g	pu240f	es	cu		0.2254073	30.1	0.0023400	0.0000000	99			pu240f	0.0618000	77mye1	0		
126			pu241f	es	cu	su	0.0000000	0.0	0.1100000	0.0000000	0				0.0000000	76mae3	0		
126			pu241f	es	cu		0.3250202	24.9	0.3210000	0.0800000	0				0.0000000	80mae4	0		
126			pu241f	cm	cu		0.0000000	0.0	0.1550000	50.0000000%	0				0.0000000	81koc1	36		
126	sb	m	pu241f	es	cu		0.1969764	30.0	0.1945400	0.0000000	0				0.0000000	75mee1	0		
126	sn	g	pu241f	es	cu		0.2430058	30.0	0.2400000	30.0000000%	0				0.0000000	72sid1	0		
126	sn	g	pu241f	es	cu		0.2430058	15.0	0.2400000	15.0000000%	0				0.0000000	77cro1	0		
126	sn	g	pu241f	es	cu		0.1557137	13.4	0.1500000	0.0200000	148	nd	g	pu241f	1.9080000	77mae1	0		
126			pu242f	cm	cu		0.0000000	0.0	0.1750000	50.0000000%	0				0.0000000	81koc1	36		
126			pu242f	cm	cu	x3	0.0000000	0.0	0.1300000	0.0300000	0				0.0000000	79mae1	0		
126	sb	m	pu242f	es	cu		0.1701870	30.0	0.1780600	0.0000000	0				0.0000000	75mee1	0		
126	sn	g	pu242f	es	cu		0.1624834	30.0	0.1700000	30.0000000%	0				0.0000000	72sid1	0		
126	sn	g	pu242f	es	cu		0.1720412	30.0	0.1800000	0.0000000	0				0.0000000	76mae3	0		
126			th232h	es	cu		0.9542775	8.0	0.9000000	8.0000000%	0				0.0000000	89rid1	0		
126			th232h	es	cu		0.8482467	5.0	0.8000000	5.0000000%	0				0.0000000	89rid1	0		
126	sb	g	th232h	rc	in	x1	0.0000000	0.0	0.0103700	0.0024400	0				0.0000000	69rao1	0		
126	sb	g	th232h	cm	cu		0.0000000	0.0	0.0026180	90.0000000%	0				0.0000000	73net2	0		

126	sb	g	th232h	rc	in	x1	0.0000000	0.0	0.0320000	0.0060000	0		0.0000000	87li 1	0
126	sn	g	th232h	cm	cu		0.0000000	0.0	1.1500000	20.0000000%	0		0.0000000	77cro1	0
126			np237f	sp	cu	x4	0.0000000	0.0	0.7600000	0.1100000	0		0.0000000	80naq1	0
126			np237f	cm	cu		0.0000000	0.0	0.1500000	90.0000000%	0		0.0000000	81koc1	36
126	sb	m	np237f	es	cu		0.1600318	30.0	0.1655200	0.0000000	0		0.0000000	75mee1	0
126	sn	g	np237f	es	cu		0.1353580	30.0	0.1400000	30.0000000%	0		0.0000000	72sid1	0
126	sn	g	np237f	es	cu		0.1740317	16.7	0.1800000	0.0300000	0		0.0000000	77mae2	0
126			cf252s	es	cu		0.0270883	15.0	0.0275700	15.0000000%	0		0.0000000	87wah1	36
126			cf252s	sp	cu	ul	0.0000000	0.0	0.0880000	0.0000000	0		0.0000000	65sch1	0
126			cf252s	sp	cu	ul	0.0000000	0.0	0.1770000	0.0000000	0		0.0000000	63fra1	0
126	sb	m	cf252s	es	cu		0.0251920	30.0	0.0256400	0.0000000	0		0.0000000	75mee1	0
126	sn	g	cf252s	es	cu		0.0294758	30.0	0.0300000	30.0000000%	0		0.0000000	75mee1	0
127			u233f	cm	cu	x3	0.0000000	0.0	0.6240000	0.0000000	0		0.0000000	63wea1	0
127			u233f	es	cu	su	0.0000000	0.0	0.6300000	0.0800000	0		0.0000000	74mae1	0
127			u233f	rc	cu	x4	0.0000000	0.0	0.4900000	0.0100000	140	ba g	u233f	6.2600000	77bla1	0
127			u233f	es	cu		0.7223632	14.9	0.7360000	0.1100000	0		0.0000000	81mae1	0
127			u233f	es	cu		0.7714367	24.8	0.7860000	0.1950000	0		0.0000000	81mae1	0
127			u233f	es	cu		0.7468999	20.2	0.7610000	0.1540000	0		0.0000000	81mae1	0
127			u233f	es	cu		0.7508258	40.0	0.7650000	40.0000000%	0		0.0000000	81koc1	36
127			u233f	cm	cu	x3	0.0000000	0.0	0.3180000	20.0000000%	0		0.0000000	77cro1	0
127	sb	g	u233f	cm	cu	x3	0.0000000	0.0	0.3436000	15.1000000%	0		0.0000000	73net2	0
127			u233he	cm	cu		0.0000000	0.0	1.8930000	0.0000000	0		0.0000000	63wea1	0
127			u233he	es	cu		2.1745518	9.1	2.1700000	9.1000000%	0		0.0000000	77cro1	0
127	sb	g	u233he	rc	cu		2.2046147	5.5	2.2000000	0.1200000	0		0.0000000	69bor1	0
127	sb	g	u233he	rc	cu	x4	0.0000000	0.0	2.7000000	0.0000000	0		0.0000000	71bla1	0
127	sb	g	u233he	cm	cu		0.0000000	0.0	2.3950000	8.1000000%	0		0.0000000	73net2	0
127	sb	g	u233he	rc	cu		2.1730869	11.3	1.9800000	0.2100000	140	ba g	u233he	4.0100000	75cav1	0
127	sb	g	u233he	rc	cu		2.2758900	15.5	2.5500000	0.3400000	115	in g	u233he	1.5700000	75jam1	0
127			u236f	es	cu		0.3534023	30.0	0.3700000	30.0000000%	0		0.0000000	72sid1	0
127			u236f	cm	cu		0.0000000	0.0	0.3850000	99.0000000%	0		0.0000000	81koc1	36
127			u236f	rc	cu	x1	0.0000000	0.0	0.2000000	0.0300000	140	ba g	u236f	5.7600000	77bla1	0
127			pu239h	cm	cu		0.0000000	0.0	1.6250000	0.0000000	0		0.0000000	63wea1	0
127			pu239h	es	cu		2.3188070	12.0	2.3670000	12.0000000%	0		0.0000000	75mee5	0
127	sb	g	pu239h	cm	cu		0.0000000	0.0	2.0600000	9.9000000%	0		0.0000000	73net2	0
127	sb	g	pu239h	rc	cu		2.1258180	5.0	2.1700000	4.4000000%	0		0.0000000	81lau1	0
127			pu240f	es	cu		0.3706907	30.0	0.3700000	30.0000000%	0		0.0000000	72sid1	0

127 pu240f es cu 0.2905413 30.0 0.2900000 0.0000000 0 0.0000000 76mae3 0
127 pu240f es cu 0.3706907 15.0 0.3700000 15.0000000% 0 0.0000000 77cro1 0
127 pu240f es cu 0.4518992 30.1 0.0047000 0.0000000 99 pu240f 0.0618000 77mye1 0
127 pu240f cm cu 0.0000000 0.0 0.4200000 40.0000000% 0 0.0000000 81koc1 36
127 pu240f es cu 0.4007467 22.5 0.4000000 0.0900000 0 0.0000000 79mae1 0
127 sb g pu240f rc cu 0.4297848 6.4 0.0044700 3.0000000% 99 mo g pu240f 0.0618000 77mye1 0
127 pu241f es cu 0.3256677 30.0 0.3200000 30.0000000% 0 0.0000000 72sid1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

127 pu241f es cu su 0.0000000 0.0 0.2300000 0.0000000 0 0.0000000 76mae3 0
127 pu241f es cu 0.3338912 15.7 0.3200000 0.0500000 148 nd g pu241f 1.9080000 77mae1 0
127 pu241f es cu x3 0.0000000 0.0 0.3200000 15.0000000% 0 0.0000000 77cro1 0
127 pu241f es cu x4 0.0000000 0.0 0.5490000 0.1370000 0 0.0000000 80mae4 0
127 pu241f cm cu 0.0000000 0.0 0.3050000 30.0000000% 0 0.0000000 81koc1 36
127 pu242f es cu 0.2580619 30.0 0.2700000 30.0000000% 0 0.0000000 72sid1 0
127 pu242f es cu 0.3154089 30.0 0.3300000 0.0000000 0 0.0000000 76mae3 0
127 pu242f cm cu 0.0000000 0.0 0.3400000 40.0000000% 0 0.0000000 81koc1 36
127 pu242f es cu 0.2676197 21.4 0.2800000 0.0600000 0 0.0000000 79mae1 0
127 th232h cm cu 0.0000000 0.0 1.1200000 6.5000000% 0 0.0000000 77cro1 0
127 th232h es cu 0.9383800 5.0 0.9000000 5.0000000% 0 0.0000000 75mee3 0
127 sb g th232h rc cu 1.0426444 15.0 1.0000000 0.0000000 0 0.0000000 71bla1 0
127 sb g th232h cm cu 0.0000000 0.0 1.1200000 10.1000000% 0 0.0000000 73net2 0
127 sb g th232h rc cu 1.1324773 9.3 1.0700000 0.0900000 140 ba g th232h 5.9000000 73cha1 0
127 sb g th232h cm cu 0.0000000 0.0 1.1100000 6.5000000% 0 0.0000000 77cro1 0
127 sb g th232h cm cu 0.0000000 0.0 1.2100000 0.0000000 0 0.0000000 69gun2 0
127 sb g th232h rc cu 1.2921634 16.6 1.2100000 0.2000000 99 mo g th232h 2.0000000 68mo 1 0
127 sb g th232h rc cu 1.3028424 8.4 1.2200000 0.1000000 99 mo g th232h 2.0000000 87li 1 0
127 np237f es cu x3 0.0000000 0.0 0.2100000 30.0000000% 0 0.0000000 72sid1 0
127 np237f es cu 0.3613251 18.9 0.3700000 0.0700000 0 0.0000000 77mae2 0
127 np237f sp cu x4 0.0000000 0.0 1.3500000 0.1400000 0 0.0000000 80naq1 0
127 np237f cm cu 0.0000000 0.0 0.3300000 90.0000000% 0 0.0000000 81koc1 36
127 sb g np237f rc cu x4 0.0000000 0.0 0.9160000 0.0400000 140 ba g np237f 5.3000000 68nam1 0
127 sb g np237f rc cu 0.2881610 7.0 0.3000000 0.0200000 140 ba g np237f 5.5800000 77bla2 0
127 sb g np237f rc re 0.4951984 20.1 0.5950000 20.0000000% 140 ba g np237f 6.4400000 65iye1 0

127 sb g np237f cm cu 0.0000000 0.0 0.5280000 31.1000000% 0 0.0000000 77cro1 0
127 sb g np237f rc cu 0.3308411 30.3 0.3400000 0.0000000 99 mo g np237f 6.1400000 56for1 0
127 sb g np237f rc re x5 0.0000000 0.0 3.0000000 0.0000000 99 mo g u235t 0.0000000 56for1 7
127 sb g np237f rc re 0.3622040 30.0 0.3709000 0.0000000 0 0.0000000 56for1 0
127 sb g np237f cm cu 0.0000000 0.0 0.4700000 0.0000000 0 0.0000000 69gun2 0
127 sb g np237f rc cu 0.3817351 5.0 0.3909000 3.0000000% 0 0.0000000 76for1 0
127 cf252s es cu 0.0883811 15.0 0.0891600 15.0000000% 0 0.0000000 87wah1 36
127 cf252s sp cu ul 0.0000000 0.0 0.1710000 0.0000000 0 0.0000000 65sch1 0
127 cf252s sp cu ul 0.0000000 0.0 0.1770000 0.0000000 0 0.0000000 63fra1 0
127 cf252s rc cu x4 0.0000000 0.0 0.1480000 0.0300000 0 0.0000000 83li 1 0
127 te m cf252s rc cu 0.0218078 9.1 0.0220000 0.0020000 0 0.0000000 75fly2 0
127 sb g cf252s rc cu 0.1090390 15.0 0.1100000 15.0000000% 0 0.0000000 73sko1 36
127 sb g cf252s rc cu 0.0743448 15.0 0.0750000 15.0000000% 0 0.0000000 75fly2 36
127 sb g cf252s rc cu 0.1180565 15.1 0.0200000 15.0000000% 140 ba g cf252s 1.0000000 75bla1 36
127 sb g cf252s rc cu rp 0.0949619 16.8 1.0000000 0.0000000 no. relative values = 1 75bla1
127 sb g cf252s rc cu 0.1288643 15.0 0.1300000 15.0000000% 0 0.0000000 60ner1 36
127 sb g cf252s cm cu x3 0.0000000 0.0 0.1300000 0.0000000 0 0.0000000 69gun2 0
127 sb g cf252s rc cu 0.1367944 15.0 0.1380000 15.0000000% 0 0.0000000 76thi1 36
127 sb g cf252s rc cu 0.0741466 15.0 0.0748000 15.0000000% 0 0.0000000 86che1 36
127 sb g cf252s rc cu su 0.0000000 0.0 0.0748000 0.0055000 0 0.0000000 84che1 0
127 sb g cf252s es cu 0.0883415 15.0 0.0891200 15.0000000% 0 0.0000000 88wah1 36
127 sb g cf252s es cu 0.1002168 15.0 0.1011000 15.0000000% 0 0.0000000 89rid1 36
127 sb g cf252s es cu 0.1372901 15.0 0.1385000 15.0000000% 0 0.0000000 91jam2 36
127 sb g cf252s es fc 0.1046696 16.0 1.0000000 15.0000000% 127 cf252s 1.0000000 89rid1 36
128 u233f cm cu 0.0000000 0.0 0.8799000 0.0000000 0 0.0000000 63wea1 0
128 u233f es cu 1.1294389 7.0 1.1400000 0.0800000 0 0.0000000 74mae1 0
128 u233f cm cu 0.0000000 0.0 0.4670000 20.0000000% 0 0.0000000 77cro1 0
128 u233f es cu 1.2839937 14.8 1.2960000 0.1920000 0 0.0000000 81mae1 0
128 u233f es cu 1.3275860 14.9 1.3400000 0.1990000 0 0.0000000 81mae1 0
128 u233f cm cu 0.0000000 0.0 1.3180000 0.1970000 0 0.0000000 81mae1 0
128 u233f cm cu 0.0000000 0.0 1.4300000 20.0000000% 0 0.0000000 81koc1 36
128 u233he cm cu 0.0000000 0.0 2.1090000 0.0000000 0 0.0000000 63wea1 0
128 u233he es cu 2.5411437 20.0 2.5200000 20.0000000% 0 0.0000000 77cro1 0
128 u236f cm cu 0.0000000 0.0 0.5750000 20.0000000% 0 0.0000000 81koc1 36
128 u236f es cu 0.4775707 30.0 0.5000000 30.0000000% 0 0.0000000 75mee1 0
128 u236f es cu 0.6112905 30.0 0.6400000 30.0000000% 0 0.0000000 72sid1 0

128	sb g	u236f	rc	cu	x1	0.0000000	0.0	0.1100000	0.0300000	97	zr g	u236f	5.3400000	84gud1	0
128	sb g	u236f	rc	cu	x1	0.0000000	0.0	0.3600000	0.0500000	97	zr g	u236f	5.3400000	84gud1	0
128		pu239h	cm	cu		0.0000000	0.0	2.0020000	0.0000000	0			0.0000000	63wea1	0
128		pu239h	es	cu		2.7157195	12.0	2.8310000	12.0000000%	0			0.0000000	75mee5	0
128		pu240f	es	cu		0.6223146	30.0	0.6200000	30.0000000%	0			0.0000000	72sid1	0
128		pu240f	es	cu		0.5620906	30.0	0.5600000	0.0000000	0			0.0000000	76mae3	0
128		pu240f	es	cu		0.6223146	15.0	0.6200000	15.0000000%	0			0.0000000	77cro1	0
128		pu240f	es	cu		1.0596069	30.1	0.0110000	0.0000000	99		pu240f	0.0618000	77mye1	0
128		pu240f	cm	cu		0.0000000	0.0	0.8100000	40.0000000%	0			0.0000000	81koc1	36
128		pu240f	es	cu		0.7427626	18.9	0.7400000	0.1400000	0			0.0000000	79mae1	0
128		pu241f	es	cu		0.5265125	30.0	0.5200000	30.0000000%	0			0.0000000	72sid1	0
128		pu241f	es	cu	su	0.0000000	0.0	0.4500000	0.0000000	0			0.0000000	76mae3	0
128		pu241f	es	cu		0.5265125	15.0	0.5200000	15.0000000%	0			0.0000000	77cro1	0
128		pu241f	es	cu		0.6643785	9.4	0.6400000	0.0600000	148	nd g	pu241f	1.9080000	77mae1	0
128		pu241f	es	cu		0.9234219	19.8	0.9120000	0.1810000	0			0.0000000	80mae4	0
128		pu241f	cm	cu		0.0000000	0.0	0.5700000	20.0000000%	0			0.0000000	81koc1	36
128		pu242f	es	cu		0.4109874	30.0	0.4300000	30.0000000%	0			0.0000000	72sid1	0
128		pu242f	es	cu		0.5447973	30.0	0.5700000	0.0000000	0			0.0000000	76mae3	0
128		pu242f	cm	cu		0.0000000	0.0	0.5400000	40.0000000%	0			0.0000000	81koc1	36
128		pu242f	es	cu		0.5352394	17.9	0.5600000	0.1000000	0			0.0000000	79mae1	0
128	sn g	pu242f	rc	cu		0.6021443	65.1	0.6300000	0.4100000	0			0.0000000	83gud1	0
128		th232h	cm	cu		0.0000000	0.0	1.2600000	20.0000000%	0			0.0000000	77cro1	0
128		th232h	es	cu		1.1663392	5.0	1.1000000	5.0000000%	0			0.0000000	75mee3	0
128	sb g	th232h	rc	in	x1	0.0000000	0.0	0.3400000	0.0200000	0			0.0000000	87li 1	0
128		np237f	es	cu		0.7226503	16.2	0.7400000	0.1200000	0			0.0000000	77mae2	0
128		np237f	es	cu	x3	0.0000000	0.0	0.5600000	30.0000000%	0			0.0000000	72sid1	0
128		np237f	sp	cu		1.7382669	9.0	1.7800000	0.1600000	0			0.0000000	80naq1	0
128		np237f	cm	cu		0.0000000	0.0	0.7970000	80.0000000%	0			0.0000000	81koc1	36
128		cf252s	sp	cu		0.2141911	15.0	0.2180000	0.0000000	0			0.0000000	63fra1	0
128		cf252s	sp	cu	ul	0.0000000	0.0	0.3930000	50.0000000%	121		cf252s	0.2160000	65sch1	36
128		cf252s	es	cu		0.1735145	15.0	0.1766000	15.0000000%	0			0.0000000	87wah1	36
128		cf252s	rc	cu	x1	0.0000000	0.0	0.2930000	0.0320000	0			0.0000000	83li 1	0
128	sb g	cf252s	rc	cu	sm	0.0000000	0.0	0.2600000	0.0270000	0			0.0000000	76thi1	0
128	sb g	cf252s	es	fc		0.0049622	32.1	0.0261000	30.0000000%	128		cf252s	1.0000000	89rid1	0
128	sb m	cf252s	es	fc		0.1851590	32.1	0.9739000	30.0000000%	128		cf252s	1.0000000	89rid1	0
129		u233f	cm	cu		0.0000000	0.0	1.3820000	0.0000000	0			0.0000000	63wea1	0

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 129        u233f    cm    cu        0.0000000  0.0   0.8220000 44.6000000%    0                  0.0000000   77cro1      0
 129        u233f    es    cu        2.0032679 14.7   2.0220000  0.2980000     0                 0.0000000   81mae1      0
 129        u233f    es    cu        2.0607306 14.7   2.0800000  0.3060000     0                 0.0000000   81mae1      0
 129        u233f    cm    cu        0.0000000  0.0   2.0510000  0.3030000     0                 0.0000000   81mae1      0
 129        u233f    cm    cu        0.0000000  0.0   1.9450000 10.0000000%    0                  0.0000000   81koc1     36
 129 i  g   u233f    es    cu        1.7635098  6.7   1.7800000  0.1200000     0                 0.0000000   74mae1      0
 129 i  g   u233f    rc    cu        1.6025862  6.4   1.6900000  0.0800000   140 ba g      u233f      6.2600000   77bla1      0
 129 te g   u233f    rc    cu    x1   0.0000000  0.0   0.9680000  0.0000000     0                 0.0000000   61bon1      0
 129 te m   u233f    rc    cu    x1   0.0000000  0.0   0.6020000  0.0500000     0                 0.0000000   61bon1      0
 129        u233he   cm    cu        0.0000000  0.0   2.3380000  0.0000000     0                 0.0000000   63wea1      0
 129 i  g   u233he   es    cu        2.8335769 20.0   2.8100000 20.0000000%    0                  0.0000000   77cro1      0
 129        u236f    cm    cu        0.0000000  0.0   0.9600000 20.0000000%    0                  0.0000000   81koc1     36
 129 i  g   u236f    es    cu        1.1219197 30.0   1.1400000 30.0000000%    0                  0.0000000   72sid1      0
 129 i  g   u236f    rc    cu        1.0013437  7.9   1.0400000  0.0800000   140 ba g      u236f      5.7600000   77bla1      0
 129 sb g   u236f    rc    cu        0.5020437 18.4   0.5000000  0.0900000    97 zr g      u236f      5.3400000   84gud1      0
 129 sb g   u236f    rc    cu        0.2409810 58.5   0.2400000  0.1400000    97 zr g      u236f      5.3400000   84gud1      0
 129        pu239h   cm    cu        0.0000000  0.0   2.4550000  0.0000000     0                 0.0000000   63wea1      0
 129 i  g   pu239h   es    cu        3.3872150 12.0   3.5310000 12.0000000%    0                  0.0000000   75mee5      0
 129        pu240f   cm    cu        0.0000000  0.0   1.4600000 40.0000000%    0                  0.0000000   81koc1     36
 129        pu240f   es    cu        1.2565995 16.8   1.2500000  0.2100000     0                 0.0000000   79mae1      0
 129 i  g   pu240f   es    cu        1.0153324 30.0   1.0100000 30.0000000%    0                  0.0000000   72sid1      0
 129 i  g   pu240f   es    cu        1.0454908 30.0   1.0400000  0.0000000     0                 0.0000000   76mae3      0
 129 i  g   pu240f   es    cu    x3   0.0000000  0.0   1.0100000 25.0000000%    0                  0.0000000   77cro1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value      no.   treatment

 129 i  g   pu240f   es    cu    x4   0.0000000  0.0   0.0180000 40.0000000%   99          pu240f      0.0618000   77mye1     36
 129        pu241f   es    cu    su   0.0000000  0.0   0.8300000  0.0000000     0                 0.0000000   76mae3      0
 129        pu241f   es    cu        1.4265222 14.9   1.4140000  0.2100000     0                 0.0000000   80mae4      0
 129        pu241f   cm    cu        0.0000000  0.0   1.0650000 20.0000000%    0                  0.0000000   81koc1     36
 129 i  g   pu241f   es    cu        0.8575275 30.0   0.8500000 30.0000000%    0                  0.0000000   72sid1      0
 129 i  g   pu241f   es    cu        0.8575275 15.0   0.8500000 15.0000000%    0                  0.0000000   77cro1      0
 129 i  g   pu241f   es    cu        1.1584503  9.9   1.1200000  0.1100000   148 nd g      pu241f      1.9080000   77mae1      0
 129        pu242f   cm    cu        0.0000000  0.0   1.0700000 30.0000000%    0                  0.0000000   81koc1     36
 129        pu242f   es    cu        1.3690493 10.0   1.4000000 10.0000000%    0                  0.0000000   87rid1      0
```

129		pu242f	es	cu		1.0365659	16.0	1.0600000	0.1700000	0			0.0000000	79mae1	0
129	i g	pu242f	es	cu		0.6747457	30.0	0.6900000	30.0000000%	0			0.0000000	72sid1	0
129	i g	pu242f	es	cu		0.9974502	30.0	1.0200000	0.0000000	0			0.0000000	76mae3	0
129	sb g	pu242f	rc	cu	x1	0.0000000	0.0	2.2300000	0.7400000	0			0.0000000	83gud1	0
129	i g	th232h	es	cu		1.2511733	5.0	1.2000000	5.0000000%	0			0.0000000	75mee3	0
129	i g	th232h	es	cu		1.3345849	11.1	1.2800000	11.1000000%	0			0.0000000	77cro1	0
129	te g	th232h	rc	cu	x1	0.0000000	0.0	0.7300000	0.1500000	0			0.0000000	60vla1	0
129	te g	th232h	rc	cu	x4	0.0000000	0.0	1.6000000	0.1000000	0			0.0000000	68mo 1	0
129	te m	th232h	cm	cu	x3	0.0000000	0.0	1.1600000	0.0000000	0			0.0000000	69gun2	0
129	sb g	th232h	cm	cu		0.0000000	0.0	1.1900000	0.0000000	0			0.0000000	69gun1	0
129	sb g	th232h	es	cu		1.3137320	11.1	1.2600000	11.1000000%	0			0.0000000	77cro1	0
129	sb g	th232h	rc	cu		1.0965841	10.8	1.1900000	0.0900000	97 zr g	th232h		3.8000000	64lyl1	0
129	sb g	th232h	rc	cu		1.2814843	10.2	1.2000000	0.1200000	99 mo g	th232h		2.0000000	87li 1	0
129	sb g	th232h	rc	cu	x4	0.0000000	0.0	0.9290000	0.0320000	99 mo g	th232h		1.9600000	68lyl1	0
129	sb g	th232h	rc	cu	x4	0.0000000	0.0	1.4800000	0.1400000	140 ba g	th232h		5.9000000	73cha1	0
129		np237f	cm	cu		0.0000000	0.0	2.9200000	9.1000000%	0			0.0000000	77cro1	0
129		np237f	sp	cu		2.4093827	7.8	2.4500000	0.1900000	0			0.0000000	80naq1	0
129		np237f	cm	cu		0.0000000	0.0	1.5200000	50.0000000%	0			0.0000000	81koc1	36
129	i g	np237f	rc	cu		1.5089741	5.4	1.5600000	0.0500000	140 ba g	np237f		5.5800000	77bla2	0
129	i g	np237f	es	cu		0.9440846	30.0	0.9600000	30.0000000%	0			0.0000000	72sid1	0
129	i g	np237f	es	cu		1.3177848	14.9	1.3400000	0.2000000	0			0.0000000	77mae2	0
129	te g	np237f	rc	cu	x4	0.0000000	0.0	2.6000000	0.0000000	140 ba g	np237f		5.3000000	68nam1	0
129	te g	np237f	rc	re	x4	0.0000000	0.0	3.1800000	20.0000000%	140 ba g	np237f		6.4400000	65iye1	0
129	te m	np237f	cm	cu	x3	0.0000000	0.0	3.1800000	0.0000000	0			0.0000000	69gun2	0
129	sb g	np237f	rc	cu	x1	0.0000000	0.0	1.0700000	10.3000000%	0			0.0000000	87nai1	0
129	xe g	cf252s	es	cu		0.6112010	30.0	0.6150000	0.0000000	0			0.0000000	69gun2	0
129		cf252s	sp	cu		0.5535593	15.0	0.5570000	0.0000000	0			0.0000000	65sch1	0
129		cf252s	es	cu	x4	0.0000000	0.0	0.4392000	15.0000000%	0			0.0000000	87wah1	36
129		cf252s	rc	cu		0.5237446	10.2	0.5270000	0.0540000	0			0.0000000	83li 1	0
129	i g	cf252s	sp	cu	x1	0.0000000	0.0	0.3870000	0.0000000	0			0.0000000	63fra1	0
129	te m	cf252s	rc	cu	x1	0.0000000	0.0	0.1110000	0.0110000	0			0.0000000	75fly2	0
129	sb g	cf252s	rc	cu		0.6112010	10.0	0.6150000	0.0170000	0			0.0000000	60ner1	0
129	sb g	cf252s	rc	cu	x4	0.0000000	0.0	0.3300000	0.0320000	0			0.0000000	75fly2	0
129	sb g	cf252s	rc	cu		0.6443089	9.4	6.1400000	0.0190000	127 sb g	cf252s		1.0000000	75bla1	0
129	sb g	cf252s	es	fc		0.5821450	6.4	0.9948000	5.0000000%	129	cf252s		1.0000000	74mee5	0
129	sb g	cf252s	rc	cu		0.5664790	12.3	0.5700000	0.0700000	0			0.0000000	76thi1	0

129	sb	g	cf252s	rc	cu	su	0.0000000	0.0	0.4020000	0.0270000	0					0.0000000	84che1	0
129	sb	g	cf252s	rc	cu	x4	0.0000000	0.0	0.4020000	0.0270000	0					0.0000000	86che1	0
130			u233f	cm	cu	x3	0.0000000	0.0	1.6200000	20.0000000%	0					0.0000000	77cro1	0
130			u233f	cm	cu		0.0000000	0.0	2.5850000	10.0000000%	0					0.0000000	81koc1	36
130			u233f	cm	cu		0.0000000	0.0	2.7150000	0.0000000	0					0.0000000	63wea1	0
130			u233f	cm	cu		0.0000000	0.0	2.5800000	0.1800000	0					0.0000000	74mae1	0
130			u233f	es	cu		2.7909021	14.6	2.8660000	0.4180000	0					0.0000000	81mae1	0
130			u233f	cm	cu		0.0000000	0.0	2.8590000	0.4170000	0					0.0000000	81mae1	0
130			u233f	cm	cu		0.0000000	0.0	2.8520000	0.4160000	0					0.0000000	81mae1	0
130			u233he	cm	cu		0.0000000	0.0	2.9650000	0.0000000	0					0.0000000	63wea1	0
130			u233he	es	cu		3.1360940	20.0	3.1100000	20.0000000%	0					0.0000000	77cro1	0
130			u236f	es	cu	x3	0.0000000	0.0	2.0700000	30.0000000%	0					0.0000000	72sid1	0
130			u236f	cm	cu		0.0000000	0.0	1.9250000	20.0000000%	0					0.0000000	81koc1	0
130			u236f	es	cu		1.7429043	15.0	1.8000000	15.0000000%	0					0.0000000	75mee1	0
130	sb	g	u236f	rc	cu	x1	0.0000000	0.0	0.8300000	0.1100000	97	zr	g	u236f	5.3400000	84gud1	0	
130	sb	g	u236f	rc	cu	x1	0.0000000	0.0	0.8200000	0.3800000	97	zr	g	u236f	5.3400000	84gud1	0	
130	sb	m	u236f	rc	cu	x1	0.0000000	0.0	0.8390000	0.0500000	140	ba	g	u236f	5.4400000	80gud1	0	
130			pu239h	cm	cu		0.0000000	0.0	2.9910000	0.0000000	0					0.0000000	63wea1	0
130			pu239h	es	cu		4.3378607	12.0	4.5220000	12.0000000%	0					0.0000000	75mee5	0
130			pu240f	es	cu		1.8970559	30.0	1.8900000	30.0000000%	0					0.0000000	72sid1	0
130			pu240f	es	cu		1.9873919	30.0	1.9800000	0.0000000	0					0.0000000	76mae3	0
130			pu240f	es	cu		1.8970559	15.0	1.8900000	15.0000000%	0					0.0000000	77cro1	0
130			pu240f	es	cu		2.6008532	30.1	0.0270000	0.0000000	99			pu240f	0.0618000	77mye1	0	
130			pu240f	cm	cu		0.0000000	0.0	2.4850000	20.0000000%	0					0.0000000	81koc1	36
130			pu240f	es	cu		2.0777279	16.9	2.0700000	0.3500000	0					0.0000000	79mae1	0
130			pu241f	es	cu		1.5435494	30.0	1.5300000	30.0000000%	0					0.0000000	72sid1	0
130			pu241f	es	cu	su	0.0000000	0.0	1.6600000	0.0000000	0					0.0000000	76mae3	0
130			pu241f	es	cu		1.5435494	15.0	1.5300000	15.0000000%	0					0.0000000	77cro1	0
130			pu241f	es	cu		1.8824818	9.9	1.8200000	0.1800000	148	nd	g	pu241f	1.9080000	77mae1	0	
130			pu241f	es	cu		2.2053589	14.7	2.1860000	0.3220000	0					0.0000000	80mae4	0
130			pu241f	cm	cu		0.0000000	0.0	2.2600000	20.0000000%	0					0.0000000	81koc1	36
130			pu242f	es	cu		1.1334200	30.0	1.1700000	30.0000000%	0					0.0000000	72sid1	0
130			pu242f	es	cu		1.7146610	30.0	1.7700000	0.0000000	0					0.0000000	76mae3	0
130			pu242f	cm	cu		0.0000000	0.0	1.9200000	30.0000000%	0					0.0000000	81koc1	36
130			pu242f	es	cu		2.2280906	10.0	2.3000000	10.0000000%	0					0.0000000	87rid1	0
130			pu242f	es	cu		1.7727851	15.8	1.8300000	0.2900000	0					0.0000000	79mae1	0

130	sb	m	pu242f	rc	cu	x1	0.0000000	0.0	0.7100000	0.0700000	0				0.0000000	83gud1	0		
130	i	g	th232h	rc	in		0.0195786	22.7	0.0180400	0.0041000	0				0.0000000	73rao1	18		
130	i	g	th232h	rc	fi		0.0322506	27.8	0.0123000	0.0032800	130	th232h	1.0000000	73rao1	40				
130	i	g	th232h	rc	fi	x4	0.0000000	0.0	0.0008330	0.0002100	130	th232h	1.0000000	82wen1	0				
130	i	m	th232h	rc	in		0.0042977	22.7	0.0039600	0.0009000	0				0.0000000	73rao1	18		
130	i	m	th232h	rc	fi		0.0070794	27.8	0.0027000	0.0007200	130	th232h	1.0000000	73rao1	40				
130			th232h	es	cu		2.0946077	20.0	1.9300000	20.0000000%	0				0.0000000	77cro1	0		
130			th232h	es	cu		2.4853117	8.1	2.2900000	8.1000000%	0				0.0000000	75mee3	0		
130	in	g	th232h	rc	in	su	0.0000000	0.0	0.0220000	0.0050000	0				0.0000000	72rao2	36		
130			np237f	es	cu		2.0214677	30.0	2.0700000	30.0000000%	0				0.0000000	72sid1	0		
130			np237f	es	cu		2.3534962	14.5	2.4100000	0.3500000	0				0.0000000	77mae2	0		
130			np237f	sp	cu		2.8613045	7.2	2.9300000	0.2100000	0				0.0000000	80naq1	0		
130			np237f	cm	cu		0.0000000	0.0	2.3700000	40.0000000%	0				0.0000000	81koc1	36		
130	sb	g	np237f	rc	cu		0.6249948	20.3	0.6400000	20.3000000%	0				0.0000000	87nai1	0		
130	i	g	cf252s	rc	fi	ul	0.0000000	0.0	0.0012000	0.0000000	130	cf252s	1.0000000	70tro2	0				
130			cf252s	sp	cu		0.7392706	15.0	0.7580000	0.0000000	0				0.0000000	63fra1	0		
130			cf252s	sp	cu		1.0542895	15.0	1.0810000	0.0000000	0				0.0000000	65sch1	0		
130			cf252s	es	cu		0.7476581	15.0	0.7666000	15.0000000%	0				0.0000000	87wah1	36		
131			u233f	cm	cu	x3	0.0000000	0.0	2.9610000	0.0000000	0				0.0000000	63wea1	0		
131			u233f	es	cu		3.5941043	30.0	3.6000000	30.0000000%	0				0.0000000	72sid1	0		
131			u233f	cm	cu		0.0000000	0.0	3.8000000	5.0000000%	0				0.0000000	77cro1	0		
131			u233f	cm	cu		0.0000000	0.0	3.7250000	10.0000000%	0				0.0000000	81koc1	36		
131	xe	g	u233f	ms	cu		3.7238914	2.0	3.7300000	0.0200000	0				0.0000000	74mae1	0		
131	xe	g	u233f	ms	cu		3.7718128	2.0	3.7780000	0.0300000	0				0.0000000	80mae1	0		
131	xe	g	u233f	ms	cu		3.7418620	2.0	3.7480000	0.0320000	0				0.0000000	81mae1	0		
131	xe	g	u233f	ms	cu		3.7278849	2.0	3.7340000	0.0280000	0				0.0000000	81mae1	0		
131	xe	g	u233f	cm	cu		0.0000000	0.0	3.7410000	0.0290000	0				0.0000000	81mae1	0		
131	xe	m	u233f	cm	cu		0.0000000	0.0	0.0387100	51.0000000%	0				0.0000000	73net2	0		
131	i	g	u233f	rc	cu	x4	0.0000000	0.0	4.8000000	0.6500000	0				0.0000000	77gud1	0		
131	i	g	u233f	cm	cu	x3	0.0000000	0.0	3.5400000	10.1000000%	0				0.0000000	73net2	0		
131	i	g	u233f	rc	cu		3.8037604	5.0	3.8100000	3.6000000%	0				0.0000000	81lau1	0		
131	i	g	u233f	rc	cu		3.8891922	6.4	4.0700000	0.0500000	140	ba	g	u233f	6.2600000	77bla1	0		
131	te	g	u233f	cm	cu		0.0000000	0.0	2.4790000	14.0000000%	0				0.0000000	73net2	0		
131	te	m	u233f	cm	cu	x3	0.0000000	0.0	1.2450000	24.0000000%	0				0.0000000	73net2	0		
131	sb	g	u233f	cm	cu		0.0000000	0.0	2.0060000	18.0000000%	0				0.0000000	73net2	0		
131	sn	g	u233f	cm	cu		0.0000000	0.0	0.3660000	33.0000000%	0				0.0000000	73net2	0		

131 u233he cm cu 0.0000000 0.0 3.5000000 0.0000000 0 0.0000000 63wea1 0
131 u233he es cu 3.4672577 8.0 3.4600000 8.0000000% 0 0.0000000 77cro1 0
131 xe m u233he cm cu 0.0000000 0.0 0.0432200 50.0000000% 0 0.0000000 73net2 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

131 i g u233he rc cu 3.4071318 7.4 3.4000000 0.2500000 0 0.0000000 69bor1 0
131 i g u233he cm cu 0.0000000 0.0 3.7870000 8.1000000% 0 0.0000000 73net2 0
131 i g u233he rc cu 4.6397118 5.3 4.6300000 5.3000000% 0 0.0000000 81lau1 0
131 te g u233he cm cu 0.0000000 0.0 2.0030000 17.0000000% 0 0.0000000 73net2 0
131 te m u233he cm cu x3 0.0000000 0.0 1.9320000 17.0000000% 0 0.0000000 73net2 0
131 sb g u233he cm cu 0.0000000 0.0 1.1000000 33.0000000% 0 0.0000000 73net2 0
131 sn g u233he cm cu x3 0.0000000 0.0 0.0785400 45.0000000% 0 0.0000000 73net2 0
131 u236f es cu 3.2570345 30.0 3.2700000 30.0000000% 0 0.0000000 72sid1 0
131 u236f rc cu 2.9721269 5.4 3.0500000 0.0800000 140 ba g u236f 5.7600000 77bla1 0
131 xe g u236f ms cu 2.9067985 2.2 0.3770000 0.0030000 134 xe g u236f 1.0000000 84tep1 0
131 u236f cm cu 0.0000000 0.0 3.2300000 20.0000000% 0 0.0000000 81koc1 36
131 i g u236f rc cu 2.9715537 5.4 2.8800000 0.1400000 140 ba g u236f 5.4400000 77fer1 0
131 i g u236f rc cu 3.3326800 5.4 3.2300000 0.1500000 140 ba g u236f 5.4400000 80gud1 0
131 te m u236f rc cu x1 0.0000000 0.0 0.9000000 0.1100000 140 ba g u236f 5.4400000 80gud1 0
131 te m u236f rc cu x1 0.0000000 0.0 0.7200000 0.1500000 97 zr g u236f 5.3400000 84gud1 0
131 te m u236f rc cu x1 0.0000000 0.0 0.7100000 0.1000000 97 zr g u236f 5.3400000 84gud1 0
131 pu239h cm cu 0.0000000 0.0 3.5370000 0.0000000 0 0.0000000 63wea1 0
131 xe g pu239h ms re rp 4.2712692 2.9 20.5000000 0.0000000 no. relative values = 3 77pet1
131 pu239h es cu 4.9114860 12.0 4.9620000 12.0000000% 0 0.0000000 75mee5 0
131 xe m pu239h cm cu 0.0000000 0.0 0.0377000 14.9000000% 0 0.0000000 73net2 0
131 i g pu239h es cu 4.6521532 9.9 4.7000000 9.9000000% 0 0.0000000 73net2 0
131 i g pu239h rc cu 4.5036802 5.0 4.5500000 4.8000000% 0 0.0000000 81lau1 0
131 te g pu239h cm cu 0.0000000 0.0 2.5420000 18.0000000% 0 0.0000000 73net2 0
131 te m pu239h cm cu 0.0000000 0.0 2.3580000 18.0000000% 0 0.0000000 73net2 0
131 sb g pu239h cm cu 0.0000000 0.0 1.4500000 23.0000000% 0 0.0000000 73net2 0
131 sn g pu239h cm cu 0.0000000 0.0 0.1116000 46.0000000% 0 0.0000000 73net2 0
131 pu240f es cu 3.4532199 30.0 3.4500000 30.0000000% 0 0.0000000 72sid1 0
131 xe g pu240f ms cu 3.4632293 6.0 3.4600000 0.0000000 0 0.0000000 76mae3 0
131 pu240f rc cu su 0.0000000 0.0 4.2300000 0.0000000 0 0.0000000 76koc2 0

131 pu240f es cu 3.4432106 15.0 3.4400000 15.0000000% 0 0.0000000 77cro1 0
131 pu240f es cu 3.7655201 30.1 0.0392000 0.0000000 99 pu240f 0.0618000 77mye1 0
131 xe g pu240f ms cu 4.0337613 5.1 4.0300000 5.1000000% 0 0.0000000 77koc1 0
131 pu240f cm cu 0.0000000 0.0 4.0450000 20.0000000% 0 0.0000000 81koc1 36
131 xe g pu240f ms cu 3.4211901 2.0 3.4180000 0.0350000 0 0.0000000 79mae1 0
131 i g pu240f rc cu 3.7655188 6.6 0.0392000 5.2000000% 99 mo g pu240f 0.0618000 77mye1 0
131 te m pu240f rc cu 0.7386949 6.4 0.0076900 3.0000000% 99 mo g pu240f 0.0618000 77mye1 0
131 xe g pu241f ms cu su 0.0000000 0.0 3.1300000 0.0000000 0 0.0000000 76mae3 0
131 xe g pu241f ms cu su 0.0000000 0.0 3.6800000 0.0000000 0 0.0000000 76koc1 0
131 xe g pu241f ms cu 3.5887314 2.4 3.7400000 1.9000000% 134 xe g pu241f 7.8800000 77koc1 0
131 xe g pu241f ms cu su 0.0000000 0.0 3.1470000 0.0280000 148 nd g pu241f 1.9080000 77mae1 0
131 pu241f ms cu 3.2010714 2.0 3.1940000 0.0330000 0 0.0000000 80mae4 0
131 pu241f es cu x3 0.0000000 0.0 2.8500000 30.0000000% 0 0.0000000 72sid1 0
131 pu241f es cu x3 0.0000000 0.0 2.8500000 15.0000000% 0 0.0000000 77cro1 0
131 pu241f cm cu x3 0.0000000 0.0 3.7400000 10.0000000% 0 0.0000000 81koc1 36
131 i g pu241f rc cu x2 0.0000000 0.0 1.7450000 0.0160000 0 0.0000000 72and1 0
131 xe g pu242f ms cu 3.1425350 6.0 3.1600000 0.0000000 0 0.0000000 76mae3 0
131 pu242f rc cu su 0.0000000 0.0 3.3200000 0.0000000 0 0.0000000 76koc2 0
131 xe g pu242f ms cu 3.2104318 4.1 3.1500000 4.0000000% 134 xe g pu242f 7.2500000 77koc1 0
131 xe g pu242f ms cu 3.1425350 6.0 3.1600000 0.1900000 0 0.0000000 78cun1 0
131 pu242f cm cu 0.0000000 0.0 3.1650000 15.0000000% 0 0.0000000 81koc1 36
131 xe g pu242f ms cu 3.0719274 2.0 3.0890000 0.0240000 0 0.0000000 79mae1 0
131 pu242f cm cu x3 0.0000000 0.0 2.2500000 30.0000000% 0 0.0000000 72sid1 0
131 i g pu242f rc cu 3.1723692 6.6 3.1900000 0.2100000 0 0.0000000 83gud1 0
131 te m pu242f rc cu 0.4077340 14.6 0.4100000 0.0600000 0 0.0000000 83gud1 0
131 th232h es cu 2.6587433 11.8 2.5500000 11.8000000% 0 0.0000000 77cro1 0
131 xe g th232h ms re rp 2.8427955 4.5 14.1500000 0.0000000 no. relative values = 3 77pet1
131 th232h es cu 2.8985516 8.0 2.7800000 8.0000000% 0 0.0000000 75mee3 0
131 xe m th232h cm cu 0.0000000 0.0 0.0312800 51.0000000% 0 0.0000000 73net2 0
131 i g th232h rc cu 2.9194045 15.0 2.8000000 0.0000000 0 0.0000000 71bla1 0
131 i g th232h cm cu 0.0000000 0.0 2.8700000 10.1000000% 0 0.0000000 73net2 0
131 i g th232h rc cu 3.0269954 7.8 2.8600000 0.1900000 140 ba g th232h 5.9000000 73cha1 0
131 i g th232h cm cu 0.0000000 0.0 2.4600000 11.8000000% 0 0.0000000 77cro1 0
131 i g th232h rc cu 2.6588621 5.7 2.4400000 0.1300000 99 mo g th232h 1.9600000 68lyl1 0
131 i g th232h rc cu x4 0.0000000 0.0 1.5900000 0.2100000 99 mo g th232h 1.9600000 64bro1 0
131 te g th232h cm cu 0.0000000 0.0 2.5430000 12.0000000% 0 0.0000000 73net2 0

131 te m th232h cm cu x3 0.0000000 0.0 0.3976000 33.0000000% 0 0.0000000 73net2 0
131 sb g th232h cm cu 0.0000000 0.0 2.5520000 12.0000000% 0 0.0000000 73net2 0
131 sn g th232h cm cu x3 0.0000000 0.0 1.2010000 24.0000000% 0 0.0000000 73net2 0
131 np237f es cu 3.4299184 30.0 3.4400000 30.0000000% 0 0.0000000 72sid1 0
131 xe g np237f ms cu 3.7090978 2.0 3.7200000 0.0460000 0 0.0000000 77mae2 0
131 np237f ms re 3.6103166 1.1 0.7460000 0.0030000 132 np237f 1.0000000 73tra1 0
131 xe g np237f ms re 3.5552678 1.1 16.0500000 0.0500000 136 xe g np237f 29.9500000 79tep1 0
131 np237f cm cu x3 0.0000000 0.0 2.7800000 7.4000000% 0 0.0000000 77cro1 0
131 np237f cm cu x3 0.0000000 0.0 3.3000000 0.0000000 0 0.0000000 73lar3 0
131 np237f sp cu x4 0.0000000 0.0 4.3000000 0.2600000 0 0.0000000 80naq1 0
131 np237f cm cu 0.0000000 0.0 4.2070000 20.0000000% 0 0.0000000 81koc1 36
131 xe g np237f ms cu x4 0.0000000 0.0 13.8000000 0.5000000 136 xe g np237f 31.1000000 72pet2 0
131 i g np237f cm cu 0.0000000 0.0 3.3300000 0.0000000 0 0.0000000 75mce1 0
131 i g np237f es fc 3.5895011 5.1 0.9999990 5.0000000% 131 np237f 1.0000000 74mee5 0
131 i g np237f rc cu 3.9915103 5.4 4.0700000 0.1600000 140 ba g np237f 5.5800000 77bla2 0
131 i g np237f rc cu 3.4598305 8.1 3.4700000 0.2800000 0 0.0000000 67ste2 0
131 i g np237f cm cu 0.0000000 0.0 3.4700000 0.0000000 0 0.0000000 69gun2 0
131 i g np237f rc cu nr 2.9932146 8.2 3.4700000 0.2800000 140 la g np237f 6.3500000 69ste1 0
131 i g np237f rc cu 3.7290392 6.2 3.7400000 6.2000000% 0 0.0000000 87nai1 0
131 i g np237f rc in x1 0.0000000 0.0 0.0349000 0.0120000 135 i g np237f 1.0000000 87red2 0
131 te g np237f rc fc sm 0.0000000 0.0 0.9620000 0.0760000 131 np237f 1.0000000 87red2 0
131 te m np237f rc cu 0.7079192 11.3 0.7100000 11.3000000% 0 0.0000000 87nai1 0
131 cf252s sp cu 1.2820313 15.0 1.2900000 0.0000000 0 0.0000000 63fra1 0
131 xe g cf252s cm cu 0.0000000 0.0 1.2700000 0.0000000 0 0.0000000 69gun2 0
131 cf252s sp cu 1.7073875 15.0 1.7180000 0.0000000 0 0.0000000 65sch1 0
131 cf252s es cu 1.2790499 15.0 1.2870000 15.0000000% 0 0.0000000 87wah1 36
131 cf252s ms re 1.4449158 8.1 1.7300000 0.0200000 136 cf252s 4.9530000 69sri1 0
131 cf252s rc cu 1.7590663 5.0 1.7700000 0.0600000 0 0.0000000 83li 1 0
131 i g cf252s rc cu 1.2621549 14.2 1.2700000 0.1800000 0 0.0000000 60ner1 0
131 i g cf252s rc cu 1.7093751 9.3 1.7200000 0.1600000 0 0.0000000 75fly2 0
131 i g cf252s rc cu 1.6925659 5.2 0.2860000 0.0120000 140 ba g cf252s 1.0000000 75bla1 0
131 i g cf252s rc cu 1.6037949 5.7 0.2710000 0.0150000 140 ba g cf252s 1.0000000 75bla1 0
131 i g cf252s rc cu 1.8334789 5.7 1.8000000 0.1000000 140 ba g cf252s 5.8100000 71har2 0
131 i g cf252s rc cu 1.6000546 5.6 1.6100000 0.0900000 0 0.0000000 76thi1 0
131 i g cf252s rc cu 1.3416607 6.7 1.3500000 0.0900000 0 0.0000000 84che1 0
131 i g cf252s rc cu 1.3416607 6.7 1.3500000 0.0900000 0 0.0000000 86che1 0

131 i g cf252s rc cu x4 0.0000000 0.0 1.2100000 0.0700000 0 0.0000000 73sko1 0
131 te g cf252s rc fi x1 0.0000000 0.0 0.1400000 0.0300000 131 cf252s 1.0000000 70tro2 0
131 te m cf252s rc fc 0.3020857 6.6 0.1900000 0.0100000 131 cf252s 1.0000000 71tro1 0
131 sb g cf252s rc fc x1 0.0000000 0.0 0.6500000 0.0300000 131 cf252s 1.0000000 71tro1 0
131 sb g cf252s rc cu 1.1925873 16.7 1.2000000 0.2000000 0 0.0000000 80top1 0
132 u233f cm cu 0.0000000 0.0 4.0800000 0.0000000 0 0.0000000 63wea1 0
132 xe g u233f ms cu 5.0283272 2.0 5.0400000 0.0300000 0 0.0000000 74mae1 0
132 u233f cm cu 0.0000000 0.0 5.0600000 4.6000000% 0 0.0000000 77cro1 0
132 xe g u233f ms cu 5.1081419 2.0 5.1200000 0.0370000 0 0.0000000 80mae1 0
132 u233f rc cu 4.3640128 6.4 4.5700000 0.0800000 140 ba g u233f 6.2600000 77bla1 0
132 xe g u233f ms cu 5.0602531 2.0 5.0720000 0.0430000 0 0.0000000 81mae1 0
132 xe g u233f ms cu 5.0223411 2.0 5.0340000 0.0380000 0 0.0000000 81mae1 0
132 xe g u233f cm cu 0.0000000 0.0 5.0530000 0.0420000 0 0.0000000 81mae1 0
132 u233f cm cu 0.0000000 0.0 5.1050000 10.0000000% 0 0.0000000 81koc1 36
132 te g u233f rc cu 4.3499021 10.0 4.3600000 0.4000000 0 0.0000000 61bon1 0
132 te g u233f rc cu 5.1017005 15.5 5.1700000 15.0000000% 99 mo g u233f 4.7500000 65bun2 0
132 te g u233f cm cu 0.0000000 0.0 4.2850000 11.0000000% 0 0.0000000 73net2 0
132 te g u233f rc cu 4.6092999 5.0 4.6200000 3.5000000% 0 0.0000000 81lau1 0
132 te g u233f rc cu 4.4895778 8.0 4.5000000 0.3600000 0 0.0000000 77gud1 0
1
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nuclide material tech. type value err. value nuclide material value no. treatment

132 u233he cm cu 0.0000000 0.0 4.1020000 0.0000000 0 0.0000000 63wea1 0
132 u233he es cu 3.8079708 5.1 3.8000000 5.1000000% 0 0.0000000 77cro1 0
132 i g u233he rc cu 3.9582855 7.6 3.9500000 0.3000000 0 0.0000000 69bor1 0
132 i g u233he rc cu 4.6096489 15.0 4.6000000 0.0000000 0 0.0000000 71bla1 0
132 te g u233he rc cu 3.5609812 10.8 3.9800000 0.3500000 141 ce g u233he 5.0000000 61bon1 0
132 te g u233he cm cu 0.0000000 0.0 3.2200000 13.0000000% 0 0.0000000 73net2 0
132 te g u233he rc cu 3.6437619 8.3 3.3200000 0.2400000 140 ba g u233he 4.0100000 75cav1 0
132 te g u233he rc cu 3.1305262 10.2 0.0320000 0.0030000 97 zr g u233he 0.0480000 72net2 0
132 te g u233he rc cu 3.1465864 5.3 3.1400000 5.3000000% 0 0.0000000 81lau1 0
132 u236f es cu 4.8307699 30.0 4.8500000 30.0000000% 0 0.0000000 72sid1 0
132 u236f rc cu 4.2097011 5.4 4.3200000 0.0400000 140 ba g u236f 5.7600000 77bla1 0
132 xe g u236f ms cu 4.3486323 2.1 0.5640000 0.0040000 134 xe g u236f 1.0000000 84tep1 0
132 u236f cm cu 0.0000000 0.0 4.6800000 20.0000000% 0 0.0000000 81koc1 36

132 te g u236f rc cu 4.2097011 5.4 4.0800000 0.1800000 140 ba g u236f 5.4400000 77fer1 0
132 te g u236f rc cu 4.9525895 5.4 4.8000000 0.2000000 140 ba g u236f 5.4400000 80gud1 0
132 te g u236f rc cu 4.0344073 12.0 3.9700000 0.4500000 97 zr g u236f 5.3400000 84gud1 0
132 te g u236f rc cu 4.8981973 9.4 4.8200000 0.4100000 97 zr g u236f 5.3400000 84gud1 0
132 te m u236f rc cu 2.4592609 16.6 2.4200000 0.3900000 97 zr g u236f 5.3400000 84gud1 0
132 pu239h cm cu 0.0000000 0.0 4.1170000 0.0000000 0 0.0000000 63wea1 0
132 xe g pu239h ms re 5.2488061 3.1 24.9000000 0.3000000 131 xe g pu239h 20.5000000 77pet1 0
132 pu239h es cu 5.4440090 12.0 5.5000000 12.0000000% 0 0.0000000 75mee5 0
132 te g pu239h rc cu x1 0.0000000 0.0 4.5800000 0.5000000 140 ba g pu239h 4.3500000 61bon1 0
132 te g pu239h cm cu 0.0000000 0.0 3.0400000 21.0000000% 0 0.0000000 73net2 0
132 te g pu239h cm cu 0.0000000 0.0 4.5800000 12.0000000% 0 0.0000000 77cro1 0
132 te g pu239h rc cu 3.1179324 5.0 3.1500000 3.7000000% 0 0.0000000 81lau1 0
132 pu240f es cu 4.9530407 30.0 4.9400000 30.0000000% 0 0.0000000 72sid1 0
132 xe g pu240f ms cu 4.6923543 20.0 4.6800000 20.0000000% 0 0.0000000 76mae3 36
132 pu240f rc cu su 0.0000000 0.0 5.5700000 0.0000000 0 0.0000000 76koc2 0
132 pu240f es cu 4.9229615 15.0 4.9100000 15.0000000% 0 0.0000000 77cro1 0
132 pu240f es cu 4.9458600 30.1 0.0514000 0.0000000 99 pu240f 0.0618000 77mye1 0
132 xe g pu240f ms cu su 0.0000000 0.0 5.6800000 1.5000000% 0 0.0000000 77koc1 0
132 pu240f es cu 5.6849678 20.0 5.6700000 20.0000000% 0 0.0000000 81koc1 36
132 te g pu240f rc cu x1 0.0000000 0.0 0.0507000 3.0000000% 99 mo g pu240f 0.0618000 77mye1 0
132 pu241f es cu 4.4899185 30.0 4.4800000 30.0000000% 0 0.0000000 72sid1 0
132 xe g pu241f ms cu su 0.0000000 0.0 4.5700000 0.0000000 0 0.0000000 76mae3 0
132 xe g pu241f ms cu su 0.0000000 0.0 5.0000000 0.0000000 0 0.0000000 76koc1 0
132 pu241f es cu 4.4798964 15.0 4.4700000 15.0000000% 0 0.0000000 77cro1 0
132 xe g pu241f ms cu 4.8649380 2.3 5.0700000 1.8000000% 134 xe g pu241f 7.8800000 77koc1 0
132 xe g pu241f ms cu su 0.0000000 0.0 4.5940000 0.0380000 148 nd g pu241f 1.9080000 77mae1 0
132 pu241f ms cu 4.6171997 2.0 4.6070000 0.0460000 0 0.0000000 80mae4 0
132 pu241f cm cu 0.0000000 0.0 5.0750000 10.0000000% 0 0.0000000 81koc1 36
132 te g pu241f rc cu 4.4067348 5.0 4.3970000 0.0340000 0 0.0000000 72and1 0
132 pu242f es cu 4.0341721 30.0 4.0500000 30.0000000% 0 0.0000000 72sid1 0
132 xe g pu242f ms cu 4.5720618 6.0 4.5900000 0.0000000 0 0.0000000 76mae3 0
132 pu242f rc cu su 0.0000000 0.0 4.5200000 0.0000000 0 0.0000000 76koc2 0
132 xe g pu242f ms cu 4.4712955 2.2 4.3800000 2.0000000% 134 xe g pu242f 7.2500000 77koc1 0
132 pu242f cm cu 0.0000000 0.0 4.4050000 15.0000000% 0 0.0000000 81koc1 36
132 xe g pu242f ms cu 4.5720618 6.1 4.5900000 0.2800000 0 0.0000000 78cun1 0
132 xe g pu242f ms cu 4.4754409 2.0 4.4930000 0.0350000 0 0.0000000 79mae1 0

132 i g pu242f rc cu 4.6218664 8.2 4.6400000 0.3800000 0 0.0000000 83gud1 0
132 th232h es cu 3.2758903 6.2 3.1800000 6.2000000% 0 0.0000000 77cro1 0
132 xe g th232h ms re 3.8531969 4.3 18.8000000 0.3000000 131 xe g th232h 14.1500000 77pet1 0
132 th232h es cu 3.3480010 8.0 3.2500000 8.0000000% 0 0.0000000 75mee3 0
132 i g th232h rc cu 3.5025242 15.0 3.4000000 0.0000000 0 0.0000000 71bla1 0
132 i g th232h rc in su 0.0000000 0.0 0.1100000 0.0200000 0 0.0000000 72rao2 0
132 i g th232h rc cu 3.4194753 8.6 3.2700000 0.2500000 140 ba g th232h 5.9000000 73cha1 0
132 i g th232h rc fi 0.1271502 19.6 0.0360000 0.0070000 132 th232h 1.0000000 73rao1 0
132 i g th232h rc in 0.1133170 18.2 0.1100000 0.0200000 0 0.0000000 73rao1 0
132 i g th232h rc cu 3.3375952 10.2 3.1000000 0.1500000 99 mo g th232h 1.9600000 64bro1 0
132 i g th232h rc cu x4 0.0000000 0.0 5.8400000 0.0000000 0 0.0000000 71bla2 0
132 i g th232h rc fi 0.1271502 19.6 0.0360000 0.0070000 132 th232h 1.0000000 82wen1 0
132 te g th232h rc cu 2.7769036 10.8 3.0500000 0.2000000 97 zr g th232h 3.8000000 64lyl1 0
132 te g th232h es cu 3.4489562 10.1 3.3480000 10.1000000% 0 0.0000000 73net2 0
132 te g th232h rc cu 3.7122744 8.1 3.5500000 0.2500000 140 ba g th232h 5.9000000 73cha1 0
132 te g th232h es cu 3.2346841 6.2 3.1400000 6.2000000% 0 0.0000000 77cro1 0
132 te g th232h rc cu 2.8844317 21.4 2.8000000 0.6000000 0 0.0000000 60vla1 0
132 te g th232h es cu 2.7608132 30.0 2.6800000 0.0000000 0 0.0000000 69gun2 0
132 te g th232h rc cu 2.4267547 9.3 2.3000000 0.2100000 99 mo g th232h 2.0000000 87li 1 0
132 te g th232h es cu 3.4510165 8.0 3.3500000 8.0000000% 0 0.0000000 89rid1 36
132 te g th232h es cu 3.1955382 6.0 3.1020000 6.0000000% 0 0.0000000 91jam2 36
132 te g th232h es fc 3.3963228 6.6 0.9616000 6.0000000% 132 th232h 1.0000000 89rid1 36
132 np237f es cu 5.0950242 30.0 5.1100000 30.0000000% 0 0.0000000 72sid1 0
132 np237f cm cu x3 0.0000000 0.0 4.5000000 0.0000000 0 0.0000000 73lar3 0
132 xe g np237f ms cu 5.0332059 2.0 5.0480000 0.0330000 0 0.0000000 77mae2 0
132 np237f ms re rp 4.8190273 2.2 1.0000000 0.0000000 no. relative values = 3 73tra1
132 np237f cm cu x3 0.0000000 0.0 3.7500000 12.0000000% 0 0.0000000 77cro1 0
132 xe g np237f ms re 4.8422526 1.1 21.8600000 0.0900000 136 xe g np237f 29.9500000 79tep1 0
132 np237f sp cu 5.0352000 5.5 5.0500000 0.2800000 0 0.0000000 80naq1 0
132 xe g np237f ms cu 4.6077348 2.5 21.6000000 0.5000000 136 xe g np237f 31.1000000 72pet2 0
132 np237f cm cu 0.0000000 0.0 5.4870000 15.0000000% 0 0.0000000 81koc1 36
132 i g np237f rc cu 5.1977899 6.5 5.3000000 0.3300000 140 ba g np237f 5.5800000 77bla2 0
132 i g np237f rc in x1 0.0000000 0.0 0.0885000 0.0110000 135 i g np237f 1.0000000 87red2 0
132 te g np237f rc cu x4 0.0000000 0.0 6.7200000 0.2200000 0 0.0000000 67ste2 0
132 te g np237f rc cu x4 0.0000000 0.0 6.3300000 0.0360000 140 ba g np237f 5.3000000 68nam1 0
132 te g np237f rc cu 5.7966577 5.2 6.7200000 0.2200000 140 la g np237f 6.3500000 69ste1 0

132 te g np237f rc cu 5.0850535 9.8 5.1000000 0.5000000 0 0.0000000 73kir1 0
132 te g np237f cm cu 0.0000000 0.0 5.9700000 0.0000000 0 0.0000000 75mce1 0
132 te g np237f rc re 4.8010876 20.1 5.6500000 20.0000000% 140 ba g np237f 6.4400000 65iye1 0
132 te g np237f rc cu 5.0668679 30.3 5.1000000 0.0000000 99 mo g np237f 6.1400000 56for1 0
132 te g np237f rc re x5 0.0000000 0.0 1.1500000 0.0000000 99 mo g u235t 0.0000000 56for1 7
132 te g np237f rc re 4.9642087 30.0 4.9788000 0.0000000 0 0.0000000 56for1 0
132 te g np237f cm cu 0.0000000 0.0 5.8200000 0.0000000 0 0.0000000 69gun2 0
132 te g np237f rc cu 4.8517393 5.0 4.8660000 3.8000000% 0 0.0000000 76for1 0
132 te g np237f rc cu 3.6692151 23.0 3.6800000 23.0000000% 0 0.0000000 87nai1 36
132 te g np237f rc fc 4.2394603 7.0 0.8760000 0.0610000 132 np237f 1.0000000 87red2 0
132 cf252s sp cu 1.6218846 15.0 1.6290000 0.0000000 0 0.0000000 63fra1 0
132 cf252s rc cu 1.8618319 5.0 1.8700000 0.0600000 0 0.0000000 73sko1 0
132 xe g cf252s cm cu 0.0000000 0.0 2.2700000 0.0000000 0 0.0000000 69gun2 0
132 cf252s sp cu 2.3188270 15.0 2.3290000 0.0000000 0 0.0000000 65sch1 0
132 cf252s es cu 1.9793165 15.0 1.9880000 15.0000000% 0 0.0000000 87wah1 36
132 cf252s ms re 2.1252991 8.1 2.5400000 0.0300000 136 cf252s 4.9530000 69sri1 0
132 cf252s rc cu 2.3496916 5.0 2.3600000 0.1100000 0 0.0000000 83li 1 0
132 i g cf252s rc cu 2.1284523 5.2 0.3590000 0.0150000 140 ba g cf252s 1.0000000 75bla1 0
132 i g cf252s rc cu 2.1206962 7.5 2.1300000 0.1600000 0 0.0000000 76thi1 0
132 i g cf252s rc cu x4 0.0000000 0.0 5.1000000 0.5000000 0 0.0000000 74kir1 0
132 te g cf252s rc cu 2.3656058 8.6 0.3990000 0.0340000 140 ba g cf252s 1.0000000 75bla1 0
132 te g cf252s rc cu 1.9116135 5.0 1.9200000 0.0800000 0 0.0000000 73sko1 0
132 te g cf252s rc cu 2.1406089 5.0 2.1500000 0.0900000 0 0.0000000 86che1 0
132 te g cf252s rc cu 2.2700410 5.0 2.2800000 0.1100000 0 0.0000000 75fly2 0
132 te g cf252s rc cu 2.4001073 5.2 2.3520000 0.0100000 140 ba g cf252s 5.8100000 71har2 0
132 te g cf252s rc cu su 0.0000000 0.0 2.1500000 0.0900000 0 0.0000000 84che1 0
132 te g cf252s rc cu x4 0.0000000 0.0 1.7500000 0.0300000 0 0.0000000 60ner1 0
132 te g cf252s rc cu x4 0.0000000 0.0 1.7800000 0.0800000 0 0.0000000 73sko1 0
132 te g cf252s rc cu x4 0.0000000 0.0 1.7900000 0.0600000 0 0.0000000 73sko1 0
132 te g cf252s rc cu x4 0.0000000 0.0 1.8800000 0.1700000 0 0.0000000 88bha1 0
132 te g cf252s rc cu x4 0.0000000 0.0 2.8000000 0.4000000 0 0.0000000 55gle2 0
132 te g cf252s rc in x1 0.0000000 0.0 0.2000000 0.1000000 0 0.0000000 71che1 36
132 te g cf252s rc re 2.1310053 20.1 0.5000000 0.1000000 147 nd g cf252s 1.0000000 75don1 0
133 cs g u233f ms cu 6.0001575 2.0 6.0100000 0.0400000 0 0.0000000 74mae1 0
133 u233f cm cu 0.0000000 0.0 6.1800000 5.0000000% 0 0.0000000 77cro1 0

0measured nuclide	fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
133 cs g	u233f	ms	cu		6.1389299	2.0	6.1490000	0.0460000	0		0.0000000	80mae1	0
133	u233f	rc	cu		6.0965716	6.4	6.3800000	0.1000000	140 ba g	u233f	6.2600000	77bla1	0
133	u233f	cm	cu	x3	0.0000000	0.0	4.7280000	0.0000000	0		0.0000000	63wea1	0
133 cs g	u233f	ms	cu		6.0071461	2.0	6.0170000	0.0510000	0		0.0000000	81mae1	0
133 cs g	u233f	ms	cu		6.0091428	2.0	6.0190000	0.0460000	0		0.0000000	81mae1	0
133 cs g	u233f	cm	cu		0.0000000	0.0	6.0180000	0.0460000	0		0.0000000	81mae1	0
133	u233f	cm	cu		0.0000000	0.0	6.1100000	10.0000000%	0		0.0000000	81koc1	36
133 xe g	u233f	cm	cu		0.0000000	0.0	5.5200000	10.1000000%	0		0.0000000	73net2	0
133 xe m	u233f	cm	cu		0.0000000	0.0	0.1933000	46.0000000%	0		0.0000000	73net2	0
133 i g	u233f	cm	cu		0.0000000	0.0	5.4740000	10.1000000%	0		0.0000000	73net2	0
133 i g	u233f	rc	cu		5.5309272	5.0	5.5400000	3.7000000%	0		0.0000000	81lau1	0
133 i g	u233f	rc	cu		5.0916478	12.7	5.1000000	0.6500000	0		0.0000000	77gud1	0
133 te g	u233f	cm	cu		0.0000000	0.0	1.8890000	24.0000000%	0		0.0000000	73net2	0
133 te m	u233f	cm	cu		0.0000000	0.0	2.9600000	18.0000000%	0		0.0000000	73net2	0
133 sb g	u233f	cm	cu	x3	0.0000000	0.0	0.5364000	46.0000000%	0		0.0000000	73net2	0
133 sn g	u233f	cm	cu		0.0000000	0.0	0.0115100	90.0000000%	0		0.0000000	73net2	0
133	u233he	cm	cu		0.0000000	0.0	4.7540000	0.0000000	0		0.0000000	63wea1	0
133	u233he	es	cu		4.4832600	7.1	4.4700000	7.1000000%	0		0.0000000	77cro1	0
133 xe g	u233he	cm	cu		0.0000000	0.0	4.8190000	10.1000000%	0		0.0000000	73net2	0
133 xe m	u233he	cm	cu	x3	0.0000000	0.0	0.3142000	46.0000000%	0		0.0000000	73net2	0
133 i g	u233he	rc	cu		4.3729337	7.3	4.3600000	0.3200000	0		0.0000000	69bor1	0
133 i g	u233he	rc	cu		4.4531710	15.0	4.4400000	0.0000000	0		0.0000000	71bla1	0
133 i g	u233he	cm	cu		0.0000000	0.0	4.5740000	11.0000000%	0		0.0000000	73net2	0
133 te g	u233he	cm	cu	x3	0.0000000	0.0	1.0520000	33.0000000%	0		0.0000000	73net2	0
133 te m	u233he	cm	cu	x3	0.0000000	0.0	1.9620000	24.0000000%	0		0.0000000	73net2	0
133 sb g	u233he	cm	cu	x3	0.0000000	0.0	0.1249000	46.0000000%	0		0.0000000	73net2	0
133 sn g	u233he	cm	cu		0.0000000	0.0	0.0008540	90.0000000%	0		0.0000000	73net2	0
133	u236f	es	cu		5.4365439	30.0	5.4800000	30.0000000%	0		0.0000000	72sid1	0
133	u236f	rc	cu		6.9300035	5.4	7.1400000	0.1200000	140 ba g	u236f	5.7600000	77bla1	0
133	u236f	cm	cu		0.0000000	0.0	6.1950000	20.0000000%	0		0.0000000	81koc1	36
133 i g	u236f	rc	cu		6.9265779	5.4	6.7400000	0.3100000	140 ba g	u236f	5.4400000	77fer1	0
133 i g	u236f	rc	cu		7.6562322	5.4	7.4500000	0.3500000	140 ba g	u236f	5.4400000	80gud1	0
133 i g	u236f	rc	cu		5.8908769	8.1	5.8200000	0.4100000	97 zr g	u236f	5.3400000	84gud1	0

133 i g u236f rc cu 5.7997809 9.9 5.7300000 0.5200000 97 zr g u236f 5.3400000 84gud1 0
133 te m u236f rc cu x1 0.0000000 0.0 2.0800000 0.1400000 140 ba g u236f 5.4400000 80gud1 0
133 pu239h cm cu 0.0000000 0.0 4.8410000 0.0000000 0 0.0000000 63wea1 0
133 pu239h es cu 5.4319556 12.0 5.5930000 12.0000000% 0 0.0000000 75mee5 0
133 xe g pu239h cm cu 0.0000000 0.0 4.7690000 14.9000000% 0 0.0000000 73net2 0
133 xe g pu239h rc fi x1 0.0000000 0.0 0.0310000 0.0003000 133 pu239h 1.0000000 72ale1 0
133 xe g pu239h rc fi x1 0.0000000 0.0 0.0254000 0.0010000 133 pu239h 1.0000000 74wol2 0
133 xe g pu239h rc fi 0.0803355 10.7 0.0170000 0.0012000 133 pu239h 1.0000000 84for1 0
133 xe m pu239h cm cu 0.0000000 0.0 0.1550000 14.9000000% 0 0.0000000 73net2 0
133 xe m pu239h rc fi x1 0.0000000 0.0 0.0890000 0.0007000 133 pu239h 1.0000000 72ale1 0
133 xe m pu239h rc fi x1 0.0000000 0.0 0.0745000 0.0030000 133 pu239h 1.0000000 74wol2 0
133 xe m pu239h rc fi 0.2717231 16.2 0.0575000 0.0081000 133 pu239h 1.0000000 84for1 0
133 i g pu239h cm cu 0.0000000 0.0 4.5550000 14.9000000% 0 0.0000000 73net2 0
133 i g pu239h rc cu 4.1276258 9.0 4.2500000 9.0000000% 0 0.0000000 81lau1 0
133 te g pu239h cm cu 0.0000000 0.0 1.0860000 35.0000000% 0 0.0000000 73net2 0
133 te m pu239h cm cu 0.0000000 0.0 2.0070000 26.0000000% 0 0.0000000 73net2 0
133 sb g pu239h cm cu 0.0000000 0.0 0.1384000 47.0000000% 0 0.0000000 73net2 0
133 sn g pu239h cm cu 0.0000000 0.0 0.0010330 90.0000000% 0 0.0000000 73net2 0
133 pu240f es cu 5.7226693 30.0 5.7200000 30.0000000% 0 0.0000000 72sid1 0
133 cs g pu240f ms cu 7.1033133 6.0 7.1000000 0.0000000 0 0.0000000 76mae3 0
133 pu240f rc cu su 0.0000000 0.0 6.9000000 0.0000000 0 0.0000000 76koc2 0
133 pu240f es cu 5.6826506 15.0 5.6800000 15.0000000% 0 0.0000000 77cro1 0
133 pu240f es cu 6.2409361 30.1 0.0650000 0.0000000 99 pu240f 0.0618000 77mye1 0
133 cs g pu240f ms cu 6.8732059 2.0 6.8700000 0.5000000% 0 0.0000000 77koc1 0
133 pu240f cm cu 0.0000000 0.0 6.8900000 20.0000000% 0 0.0000000 81koc1 36
133 cs g pu240f ms cu 6.9722521 2.0 6.9690000 0.0610000 0 0.0000000 79mae1 0
133 i g pu240f rc cu 7.2586862 6.4 0.0756000 3.6000000% 99 mo g pu240f 0.0618000 77mye1 0
133 pu241f es cu 5.5386572 30.0 5.5300000 30.0000000% 0 0.0000000 72sid1 0
133 cs g pu241f ms cu su 0.0000000 0.0 6.7000000 0.0000000 0 0.0000000 76mae3 0
133 cs g pu241f ms cu su 0.0000000 0.0 6.6400000 0.0000000 0 0.0000000 76koc1 0
133 pu241f es cu 5.5286416 15.0 5.5200000 15.0000000% 0 0.0000000 77cro1 0
133 cs g pu241f ms cu su 0.0000000 0.0 6.7330000 0.0430000 148 nd g pu241f 1.9080000 77mae1 0
133 pu241f ms cu 6.5612556 2.0 6.5510000 0.0660000 0 0.0000000 80mae4 0
133 pu241f cm cu 0.0000000 0.0 6.6750000 10.0000000% 0 0.0000000 81koc1 36
133 xe g pu241f ms cu 6.4056724 1.6 6.6800000 0.7000000% 134 xe g pu241f 7.8800000 77koc1 0
133 i g pu241f rc cu x2 0.0000000 0.0 4.0070000 0.5640000 0 0.0000000 72and1 0

133 cs g pu242f ms cu 6.9507387 6.0 6.9700000 0.0000000 0 0.0000000 76mae3 0
133 pu242f rc cu su 0.0000000 0.0 6.4900000 0.0000000 0 0.0000000 76koc2 0
133 cs g pu242f ms cu 6.9507387 6.0 6.9700000 0.4200000 0 0.0000000 78cun1 0
133 pu242f cm cu 0.0000000 0.0 6.4600000 15.0000000% 0 0.0000000 81koc1 36
133 cs g pu242f ms cu 6.8081339 2.0 6.8270000 0.0460000 0 0.0000000 79mae1 0
133 pu242f cm cu x3 0.0000000 0.0 5.3500000 30.0000000% 0 0.0000000 72sid1 0
133 xe g pu242f ms cu 6.5715682 1.1 6.4300000 0.3000000% 134 xe g pu242f 7.2500000 77koc1 0
133 i g pu242f rc cu 7.0205453 6.0 7.0400000 0.4200000 0 0.0000000 83gud1 0
133 th232h cm cu 0.0000000 0.0 4.5800000 7.0000000% 0 0.0000000 77cro1 0
133 th232h es cu 4.6155224 8.0 4.3530000 8.0000000% 0 0.0000000 75mee3 0
133 th232h cm cu x3 0.0000000 0.0 4.5800000 7.0000000% 0 0.0000000 77cro1 0
133 xe g th232h rc re x1 0.0000000 0.0 2.3400000 0.1200000 99 mo g th232h 1.0000000 69lyl1 0
133 xe g th232h cm cu 0.0000000 0.0 3.8800000 10.1000000% 0 0.0000000 73net2 0
133 xe m th232h cm cu 0.0000000 0.0 0.1140000 46.0000000% 0 0.0000000 73net2 0
133 i g th232h rc cu x4 0.0000000 0.0 5.8000000 0.0000000 0 0.0000000 71bla1 0
133 i g th232h rc fi su 0.0000000 0.0 8.0000000 2.0000000 133 th232h 100.0000000 71qai1 0
133 i g th232h rc in su 0.0000000 0.0 0.4400000 0.1000000 0 0.0000000 72rao2 0
133 i g th232h cm cu 0.0000000 0.0 3.8780000 10.1000000% 0 0.0000000 73net2 0
133 i g th232h rc cu 4.6819950 8.0 4.3500000 0.3000000 140 ba g th232h 5.9000000 73cha1 0
133 i g th232h cm cu 0.0000000 0.0 4.4800000 7.0000000% 0 0.0000000 77cro1 0
133 i g th232h rc in x4 0.0000000 0.0 0.4400000 0.1000000 0 0.0000000 73rao1 0
133 i g th232h rc fi x1 0.0000000 0.0 0.1200000 0.1200000 133 th232h 1.0000000 71den2 0
133 i g th232h rc fi su 0.0000000 0.0 0.0800000 0.0200000 133 th232h 1.0000000 71den1 0
133 i g th232h rc fi 0.3955065 25.6 0.0800000 0.0200000 133 th232h 1.0000000 71den2 0
133 i g th232h rc cu x4 0.0000000 0.0 3.7800000 0.1800000 99 mo g th232h 1.9600000 64bro1 0
133 i g th232h rc cu 4.7935074 16.0 5.2800000 0.0000000 135 i g th232h 5.9600000 71bla2 0
133 te g th232h cm cu 0.0000000 0.0 2.0740000 18.0000000% 0 0.0000000 73net2 0
133 te m th232h cm cu 0.0000000 0.0 1.8970000 24.0000000% 0 0.0000000 73net2 0
133 sb g th232h cm cu x3 0.0000000 0.0 1.3420000 24.0000000% 0 0.0000000 73net2 0
133 sn g th232h cm cu x3 0.0000000 0.0 0.1199000 46.0000000% 0 0.0000000 73net2 0
133 np237f es cu 5.7958282 30.0 5.8300000 30.0000000% 0 0.0000000 72sid1 0
133 np237f cm cu 0.0000000 0.0 6.4000000 8.4000000% 0 0.0000000 77cro1 0
133 cs g np237f ms cu 6.6647053 2.0 6.7040000 0.0490000 0 0.0000000 77mae2 0
133 np237f ms re 6.3694509 1.8 1.3200000 0.0200000 132 np237f 1.0000000 73tra1 0
133 np237f sp cu 5.7162971 5.2 5.7500000 0.3000000 0 0.0000000 80naq1 0
133 np237f cm cu 0.0000000 0.0 6.8700000 15.0000000% 0 0.0000000 81koc1 36

133 i g np237f rc cu su 0.0000000 0.0 6.4200000 0.5800000 0 0.0000000 67ste2 0
133 i g np237f rc cu x1 0.0000000 0.0 6.4200000 0.5800000 140 la g np237f 6.3500000 69ste1 0
133 i g np237f rc cu 6.5514774 6.3 6.7000000 0.4000000 140 ba g np237f 5.5800000 77bla2 0
133 i g np237f cm cu 0.0000000 0.0 6.4200000 0.0000000 0 0.0000000 69gun2 0
133 i g np237f rc cu 7.4162741 15.0 7.4600000 15.0000000% 0 0.0000000 87nai1 36
133 i g np237f rc in x1 0.0000000 0.0 0.3110000 0.0400000 135 i g np237f 1.0000000 87red2 0
133 te g np237f rc fc sm 0.0000000 0.0 0.8020000 0.0310000 133 np237f 1.0000000 87red2 0
133 te m np237f rc cu 3.6584301 9.2 3.6800000 9.2000000% 0 0.0000000 87nai1 0
133 cf252s sp cu x4 0.0000000 0.0 2.1120000 0.0000000 0 0.0000000 63fra1 0
133 cf252s sp cu 2.8305818 15.0 2.8430000 0.0000000 0 0.0000000 65sch1 0
133 cf252s es cu 3.0864593 15.0 3.1000000 15.0000000% 0 0.0000000 87wah1 36
133 cf252s rc cu 3.1461972 5.0 3.1600000 0.1100000 0 0.0000000 83li 1 0
133 xe g cf252s rc cu 3.0765030 5.2 3.0900000 0.1600000 0 0.0000000 76thi1 0
133 i g cf252s rc cu 4.7790337 14.6 4.8000000 0.7000000 0 0.0000000 55gle2 0
133 i g cf252s rc cu 2.7579007 10.0 2.7700000 0.2000000 0 0.0000000 60ner1 0
1
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133 i g cf252s rc cu 3.2656730 5.0 3.2800000 0.1500000 0 0.0000000 73sko1 0
133 i g cf252s rc cu 3.1661098 9.4 3.1800000 0.3000000 0 0.0000000 75fly2 0
133 i g cf252s rc cu 3.9797698 7.8 3.9000000 0.3000000 140 ba g cf252s 5.8100000 71har2 0
133 i g cf252s cm cu 0.0000000 0.0 3.7800000 0.0000000 0 0.0000000 69gun2 0
133 i g cf252s rc cu 3.0068087 9.6 3.0200000 0.2900000 0 0.0000000 84che1 0
133 i g cf252s rc cu 3.0068087 9.6 3.0200000 0.2900000 0 0.0000000 86che1 0
133 i g cf252s rc re 2.5572063 16.8 0.6000000 0.1000000 147 nd g cf252s 1.0000000 75don1 0
133 te g cf252s rc cu sm 0.0000000 0.0 3.1400000 6.4000000% 0 0.0000000 80top1 0
134 cs g u233f cm cu 0.0000000 0.0 0.0016600 90.0000000% 0 0.0000000 73net2 0
134 xe g u233f ms cu 6.2896826 2.0 6.3000000 0.0300000 0 0.0000000 74mae1 0
134 u233f cm cu 0.0000000 0.0 6.4900000 5.0000000% 0 0.0000000 77cro1 0
134 xe g u233f ms cu 6.3925139 2.0 6.4030000 0.0440000 0 0.0000000 80mae1 0
134 u233f rc cu 5.9991252 5.4 4.6300000 0.1200000 135 xe g u233f 4.9400000 77bla1 0
134 xe g u233f ms cu 6.3146416 2.0 6.3250000 0.0560000 0 0.0000000 81mae1 0
134 xe g u233f ms cu 6.2986678 2.0 6.3090000 0.0480000 0 0.0000000 81mae1 0
134 xe g u233f cm cu 0.0000000 0.0 6.3170000 0.0490000 0 0.0000000 81mae1 0
134 u233f cm cu 0.0000000 0.0 6.2050000 10.0000000% 0 0.0000000 81koc1 36

134 u233f cm cu x3 0.0000000 0.0 5.2940000 0.0000000 0 0.0000000 63wea1 0
134 i g u233f cm cu 0.0000000 0.0 5.6360000 11.0000000% 0 0.0000000 73net2 0
134 te g u233f rc cu 4.2929580 10.5 4.3000000 0.4500000 0 0.0000000 77gud1 0
134 cs g u233he cm cu 0.0000000 0.0 0.0156300 90.0000000% 0 0.0000000 73net2 0
134 u233he cm cu 0.0000000 0.0 5.3230000 0.0000000 0 0.0000000 63wea1 0
134 u233he es cu 4.7340016 6.0 4.7200000 6.0000000% 0 0.0000000 77cro1 0
134 i g u233he rc cu 4.6637939 7.5 4.6500000 0.3500000 0 0.0000000 69bor1 0
134 i g u233he cm cu 0.0000000 0.0 3.8790000 14.0000000% 0 0.0000000 73net2 0
134 u236f es cu 6.9324038 30.0 6.9600000 30.0000000% 0 0.0000000 72sid1 0
134 u236f rc cu x1 0.0000000 0.0 8.1700000 0.1500000 140 ba g u236f 5.7600000 77bla1 0
134 u236f cm cu 0.0000000 0.0 7.5550000 20.0000000% 0 0.0000000 81koc1 36
134 xe g u236f ms cu rp 7.7616423 2.1 1.0000000 0.0000000 no. relative values = 4 84tep1
134 i g u236f rc cu 7.9550969 5.4 7.7100000 0.3600000 140 ba g u236f 5.4400000 77fer1 0
134 i g u236f rc cu 7.6042885 5.9 7.3700000 0.4100000 140 ba g u236f 5.4400000 80gud1 0
134 i g u236f rc cu 7.5403784 10.5 7.4200000 0.7200000 97 zr g u236f 5.3400000 84gud1 0
134 i g u236f rc cu 6.9611310 12.6 6.8500000 0.8200000 97 zr g u236f 5.3400000 84gud1 0
134 te g u236f rc cu 6.8304464 7.2 6.6200000 0.4600000 140 ba g u236f 5.4400000 80gud1 0
134 te g u236f rc cu 6.2802613 9.6 6.1800000 0.5400000 97 zr g u236f 5.3400000 84gud1 0
134 te g u236f rc cu 6.6969129 11.4 6.5900000 0.7000000 97 zr g u236f 5.3400000 84gud1 0
134 cs g pu239h cm cu 0.0000000 0.0 0.0808000 9.9000000% 0 0.0000000 73net2 0
134 pu239h es cu 5.3301413 30.0 5.4080000 0.0000000 0 0.0000000 63wea1 0
134 xe g pu239h ms re 5.9820761 3.0 28.5000000 0.3000000 131 xe g pu239h 20.5000000 77pet1 0
134 pu239h es cu 5.7933747 12.0 5.8780000 12.0000000% 0 0.0000000 75mee5 0
134 i g pu239h cm cu 0.0000000 0.0 4.0480000 14.0000000% 0 0.0000000 73net2 0
134 cs g pu240f rc in ul 0.0000000 0.0 0.0000041 0.0000000 99 mo g pu240f 0.0618000 77mye1 0
134 pu240f es cu 6.3459172 30.0 6.3400000 30.0000000% 0 0.0000000 72sid1 0
134 xe g pu240f ms cu 7.2367479 6.0 7.2300000 0.0000000 0 0.0000000 76mae3 0
134 pu240f rc cu su 0.0000000 0.0 8.1700000 0.0000000 0 0.0000000 76koc2 0
134 pu240f es cu 6.2858612 15.0 6.2800000 15.0000000% 0 0.0000000 77cro1 0
134 pu240f es cu 6.7529608 30.1 0.0703000 0.0000000 99 pu240f 0.0618000 77mye1 0
134 xe g pu240f ms cu 7.9974572 2.3 7.9900000 2.3000000% 0 0.0000000 77koc1 0
134 pu240f cm cu 0.0000000 0.0 8.0150000 20.0000000% 0 0.0000000 81koc1 36
134 xe g pu240f ms cu 7.1566732 2.0 7.1500000 0.0670000 0 0.0000000 79mae1 0
134 pu241f es cu 6.1095496 30.0 6.1000000 30.0000000% 0 0.0000000 72sid1 0
134 xe g pu241f ms cu su 0.0000000 0.0 7.7600000 0.0000000 0 0.0000000 76mae3 0
134 xe g pu241f ms cu su 0.0000000 0.0 7.7400000 0.0000000 0 0.0000000 76koc1 0

134 pu241f es cu 6.0895183 15.0 6.0800000 15.0000000% 0 0.0000000 77cro1 0
134 xe g pu241f ms cu 7.5563919 2.3 7.8800000 1.8000000% 134 xe g pu241f 7.8800000 77koc1 0
134 xe g pu241f ms cu rp 7.5905022 1.9 7.8800000 0.0000000 no. relative values = 6 77koc1
134 xe g pu241f ms cu su 0.0000000 0.0 7.7980000 0.0860000 148 nd g pu241f 1.9080000 77mae1 0
134 pu241f ms cu 7.5177507 2.0 7.5060000 0.0710000 0 0.0000000 80mae4 0
134 pu241f cm cu 0.0000000 0.0 7.8700000 10.0000000% 0 0.0000000 81koc1 36
134 xe g pu242f ms cu 7.5690254 6.0 7.5900000 0.0000000 0 0.0000000 76mae3 0
134 pu242f rc cu su 0.0000000 0.0 7.3600000 0.0000000 0 0.0000000 76koc2 0
134 xe g pu242f ms cu 7.4096220 1.1 7.2500000 0.3000000% 134 xe g pu242f 7.2500000 77koc1 0
134 xe g pu242f ms cu rp 7.4200614 2.1 7.2500000 0.0000000 no. relative values = 6 77koc1
134 pu242f cm cu x3 0.0000000 0.0 5.8800000 30.0000000% 0 0.0000000 72sid1 0
134 xe g pu242f ms cu 7.5690254 6.1 7.5900000 0.4600000 0 0.0000000 78cun1 0
134 pu242f cm cu 0.0000000 0.0 7.2900000 15.0000000% 0 0.0000000 81koc1 36
134 xe g pu242f ms cu 7.4832631 2.0 7.5040000 0.0510000 0 0.0000000 79mae1 0
134 i g pu242f rc cu 6.8111256 5.6 6.8300000 0.3800000 0 0.0000000 83gud1 0
134 te g pu242f rc cu sm 0.0000000 0.0 6.7500000 0.7800000 0 0.0000000 83gud1 0
134 cs g th232h cm cu 0.0000000 0.0 0.0000215 90.0000000% 0 0.0000000 73net2 0
134 cs g th232h rc fi 0.0004640 50.9 0.0000670 0.0000340 134 th232h 1.0000000 82wen1 0
134 cs m th232h rc in x1 0.0000000 0.0 0.0430000 0.0040000 0 0.0000000 72rao1 0
134 th232h es cu 6.9127327 6.0 6.6300000 6.0000000% 0 0.0000000 77cro1 0
134 xe g th232h ms re 5.9535946 4.8 28.7000000 0.7500000 131 xe g th232h 14.1500000 77pet1 0
134 th232h es cu 7.5070400 8.0 7.2000000 8.0000000% 0 0.0000000 75mee3 0
134 th232h es cu 7.0899822 6.0 6.8000000 6.0000000% 0 0.0000000 89rid1 0
134 th232h es cu 6.0243996 6.1 5.7780000 6.1000000% 0 0.0000000 91jam2 0
134 i g th232h rc fi su 0.0000000 0.0 15.2000000 0.5000000 134 th232h 100.0000000 71qai1 0
134 i g th232h rc in su 0.0000000 0.0 0.6400000 0.1500000 0 0.0000000 72rao2 36
134 i g th232h cm cu x3 0.0000000 0.0 4.4040000 10.1000000% 0 0.0000000 73net2 0
134 i g th232h rc fi x1 0.0000000 0.0 0.0592800 0.0019500 134 th232h 1.0000000 71den1 40
134 i g th232h rc fi x1 0.0000000 0.0 0.0592800 0.0019500 134 th232h 1.0000000 71den2 40
134 i g th232h cm cu 0.0000000 0.0 6.4800000 6.0000000% 0 0.0000000 77cro1 0
134 i g th232h rc fi x1 0.0000000 0.0 0.0370500 0.0097500 134 th232h 1.0000000 73rao1 40
134 i g th232h rc in x1 0.0000000 0.0 0.2496000 0.0585000 0 0.0000000 73rao1 18
134 i g th232h rc cu 7.2900768 10.2 6.6900000 0.3600000 99 mo g th232h 1.9600000 64bro1 0
134 i g th232h rc cu x4 0.0000000 0.0 4.8600000 0.0000000 0 0.0000000 71bla2 0
134 i g th232h rc fi 1.1081169 31.5 0.1600000 0.0500000 134 th232h 1.0000000 82wen1 0
134 i m th232h rc fi x1 0.0000000 0.0 0.0927200 0.0030500 134 th232h 1.0000000 71den1 40

134 i m th232h rc fi x1 0.0000000 0.0 0.0927200 0.0030500 134 th232h 1.0000000 71den2 40
134 i m th232h rc fi x1 0.0000000 0.0 0.0579500 0.0152500 134 th232h 1.0000000 73rao1 40
134 i m th232h rc in x1 0.0000000 0.0 0.3904000 0.0915000 0 0.0000000 73rao1 18
134 np237f es cu 6.6124797 30.0 6.6400000 30.0000000% 0 0.0000000 72sid1 0
134 xe g np237f cm cu 0.0000000 0.0 6.4200000 15.8000000% 0 0.0000000 77cro1 0
134 xe g np237f ms cu 7.4639361 2.0 7.4950000 0.0460000 0 0.0000000 77mae2 0
134 np237f ms re 7.1055013 1.1 1.4700000 0.0060000 132 np237f 1.0000000 73tra1 0
134 xe g np237f ms re 7.1085158 1.1 32.1300000 0.1600000 136 xe g np237f 29.9500000 79tep1 0
134 np237f sp cu 5.9153810 5.1 5.9400000 0.3000000 0 0.0000000 80naq1 0
134 xe g np237f ms cu 7.1375548 2.9 33.5000000 0.9000000 136 xe g np237f 31.1000000 72pet2 0
134 np237f cm cu 0.0000000 0.0 7.9370000 15.0000000% 0 0.0000000 81koc1 36
134 i g np237f rc cu 5.7301982 5.4 5.8500000 0.2800000 140 ba g np237f 5.5800000 77bla2 0
134 i g np237f rc cu 6.0249250 11.6 6.0500000 11.6000000% 0 0.0000000 87nai1 0
134 i g np237f rc in sm 0.0000000 0.0 0.4660000 0.0410000 135 i g np237f 1.0000000 87red2 0
134 te g np237f rc fc x1 0.0000000 0.0 0.5890000 0.0260000 134 np237f 1.0000000 87ram2 0
134 te g np237f rc cu 3.6647478 24.0 3.6800000 24.0000000% 0 0.0000000 87nai1 36
134 te g np237f rc fc 4.0076166 7.5 0.5690000 0.0420000 134 np237f 1.0000000 87red2 0
134 te g np237f rc fc 4.1484819 5.2 0.5890000 0.0260000 134 np237f 1.0000000 87ram2 0
134 xe g cf252s cm cu 0.0000000 0.0 4.2000000 0.0000000 0 0.0000000 69gun2 0
134 cf252s rc cu 4.1740555 5.0 4.2000000 0.1000000 0 0.0000000 79top1 0
134 cf252s sp cu 3.4714229 15.0 3.4930000 0.0000000 0 0.0000000 65sch1 0
134 cf252s ms re 3.6832823 8.1 4.4100000 0.0400000 136 cf252s 4.9530000 69sri1 0
134 cf252s es cu 3.3452074 15.0 3.3660000 15.0000000% 0 0.0000000 87wah1 36
134 cf252s sp cu 2.9168698 15.0 2.9350000 0.0000000 0 0.0000000 63fra1 0
134 cf252s rc cu 3.6373913 6.3 3.6600000 0.2300000 0 0.0000000 83li 1 0
134 i g cf252s rc cu 4.1740555 14.3 4.2000000 0.6000000 0 0.0000000 55gle2 0
134 i g cf252s rc fi 0.3511207 12.2 0.0906000 11.5000000% 134 cf252s 1.0000000 70tro1 40
134 i g cf252s rc in 0.4074673 12.2 0.4100000 0.0500000 0 0.0000000 79top1 0
134 i g cf252s rc cu 3.6274530 5.0 3.6500000 0.1500000 0 0.0000000 76thi1 0
134 i g cf252s sp fi 0.3778617 22.6 0.0975000 22.2000000% 134 cf252s 1.0000000 76thi1 40
134 i g cf252s rc cu 3.7761910 13.7 3.7000000 0.5000000 139 cf252s 5.7000000 78ert1 0
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134 i g cf252s rc in nr 0.4184428 12.4 0.4100000 0.0500000 139 cf252s 5.7000000 78ert1 0

134 i g cf252s rc fi x1 0.0000000 0.0 0.2680000 0.0480000 134 cf252s 1.0000000 83li 1 0
134 i g cf252s es in 0.3466454 12.0 0.3488000 12.0000000% 0 0.0000000 88wah1 0
134 i g cf252s es in 0.3388936 11.0 0.3410000 11.0000000% 0 0.0000000 89rid1 0
134 i g cf252s es fi 0.4301810 11.7 0.1110000 11.0000000% 134 cf252s 1.0000000 91jam2 0
134 i m cf252s rc fi 0.6216309 12.2 0.1604000 11.5000000% 134 cf252s 1.0000000 70tro1 40
134 i m cf252s rc in 0.6857377 7.2 0.6900000 0.0500000 0 0.0000000 79top1 0
134 i m cf252s sp fi 0.6685245 22.6 0.1725000 22.2000000% 134 cf252s 1.0000000 76thi1 40
134 i m cf252s rc in nr 0.7042086 7.5 0.6900000 0.0500000 139 cf252s 5.7000000 78ert1 0
134 i m cf252s es in 0.6141825 12.0 0.6180000 12.0000000% 0 0.0000000 88wah1 0
134 i m cf252s es in 0.6012628 11.0 0.6050000 11.0000000% 0 0.0000000 89rid1 0
134 i m cf252s es fi 0.7208438 11.7 0.1860000 11.0000000% 134 cf252s 1.0000000 91jam2 0
134 te g cf252s rc in x4 0.0000000 0.0 1.5000000 0.2300000 0 0.0000000 71che1 36
134 te g cf252s rc fc x4 0.0000000 0.0 0.7910000 0.0000000 134 cf252s 1.0000000 78man1 0
134 te g cf252s rc cu 3.0808505 12.9 3.1000000 0.4000000 0 0.0000000 79top1 0
134 te g cf252s rc cu 3.1638357 13.1 3.1000000 0.4000000 139 cf252s 5.7000000 78ert1 0
134 te g cf252s rc cu 3.6771442 10.0 3.7000000 0.3700000 0 0.0000000 84che1 0
134 te g cf252s rc cu x4 0.0000000 0.0 3.7000000 0.3700000 0 0.0000000 86che1 0
135 u233f cm cu 0.0000000 0.0 6.5600000 5.0000000% 0 0.0000000 77cro1 0
135 u233f cm cu 0.0000000 0.0 6.4800000 10.0000000% 0 0.0000000 81koc1 36
135 u233f cm cu x3 0.0000000 0.0 5.5540000 0.0000000 0 0.0000000 63wea1 0
135 cs g u233f ms cu 6.5502552 2.0 6.5610000 0.0460000 0 0.0000000 80mae1 0
135 cs g u233f ms cu 6.3545761 2.0 6.3650000 0.0540000 0 0.0000000 81mae1 0
135 cs g u233f ms cu 6.3895188 2.0 6.4000000 0.0490000 0 0.0000000 81mae1 0
135 cs g u233f cm cu 0.0000000 0.0 6.3830000 0.0510000 0 0.0000000 81mae1 0
135 xe g u233f cm cu 0.0000000 0.0 6.3360000 10.1000000% 0 0.0000000 73net2 0
135 xe g u233f ms cu 6.3595679 2.0 6.3700000 0.0500000 0 0.0000000 74mae1 0
135 xe g u233f rc cu rp 6.7256270 15.8 4.9400000 0.0000000 no. relative values = 1 77bla1
135 xe g u233f ms cu x4 0.0000000 0.0 6.9090000 0.0600000 0 0.0000000 81mae1 0
135 xe g u233f rc cu x4 0.0000000 0.0 5.4000000 8.0000000% 0 0.0000000 81lau1 0
135 xe m u233f cm cu 0.0000000 0.0 1.7270000 33.0000000% 0 0.0000000 73net2 0
135 i g u233f cm cu 0.0000000 0.0 4.6780000 14.0000000% 0 0.0000000 73net2 0
135 te g u233f cm cu 0.0000000 0.0 1.3710000 33.0000000% 0 0.0000000 73net2 0
135 sb g u233f cm cu 0.0000000 0.0 0.0157300 90.0000000% 0 0.0000000 73net2 0
135 cs g u233he es cu 5.1251585 8.0 5.1100000 8.0000000% 0 0.0000000 77cro1 0
135 xe g u233he rc cu x1 0.0000000 0.0 3.4600000 7.0000000% 0 0.0000000 81lau1 0
135 xe g u233he rc cu 4.9747135 7.3 4.9600000 0.3600000 0 0.0000000 69bor1 0

135	xe	g	u233he	cm	cu	0.0000000	0.0	5.1090000	10.1000000%	0			0.0000000	73net2	0
135	xe	m	u233he	cm	cu	0.0000000	0.0	2.0770000	24.0000000%	0			0.0000000	73net2	0
135	i	g	u233he	cm	cu	0.0000000	0.0	2.3480000	24.0000000%	0			0.0000000	73net2	0
135	te	g	u233he	cm	cu	0.0000000	0.0	0.3001000	46.0000000%	0			0.0000000	73net2	0
135	sb	g	u233he	cm	cu	0.0000000	0.0	0.0010970	90.0000000%	0			0.0000000	73net2	0
135			u236f	cm	cu	0.0000000	0.0	6.9250000	20.0000000%	0			0.0000000	81koc1	36
135	cs	g	u236f	es	cu	6.4941484	30.0	6.5200000	30.0000000%	0			0.0000000	72sid1	0
135	xe	g	u236f	rc	cu	5.6542064	6.2	5.4800000	0.3200000	140	ba	g	u236f	5.4400000	77fer1	0
135	xe	g	u236f	rc	cu	6.3558232	5.4	6.1600000	0.2900000	140	ba	g	u236f	5.4400000	80gud1	0
135	xe	g	u236f	rc	cu	5.6616582	5.4	5.8100000	0.0800000	140	ba	g	u236f	5.7600000	77bla1	0
135	xe	g	u236f	ms	cu	5.8751556	2.7	0.7620000	0.0140000	134	xe	g	u236f	1.0000000	84tep1	0
135	i	g	u236f	rc	cu	6.5209096	5.4	6.3200000	0.2600000	140	ba	g	u236f	5.4400000	80gud1	0
135	i	g	u236f	rc	cu	6.0770166	6.8	5.9800000	0.3300000	97	zr	g	u236f	5.3400000	84gud1	0
135	i	g	u236f	rc	cu	6.8290220	8.2	6.7200000	0.4800000	97	zr	g	u236f	5.3400000	84gud1	0
135			pu239h	cm	cu	0.0000000	0.0	5.6720000	0.0000000	0			0.0000000	63wea1	0
135	cs	g	pu239h	es	cu	5.8161100	12.0	6.0630000	12.0000000%	0			0.0000000	75mee5	0
135	xe	g	pu239h	rc	fi	1.1621897	13.0	0.1900000	0.0120000	135			pu239h	1.0000000	72ale1	0
135	xe	g	pu239h	cm	cu	0.0000000	0.0	5.0930000	10.0000000%	0			0.0000000	73net2	0
135	xe	g	pu239h	rc	fi	1.1560729	12.4	0.1890000	0.0030000	135			pu239h	1.0000000	74wol2	0
135	xe	g	pu239h	rc	fi	0.7156642	24.2	0.1170000	0.0250000	135			pu239h	1.0000000	84for1	0
135	xe	m	pu239h	cm	cu	0.0000000	0.0	2.0190000	23.0000000%	0			0.0000000	73net2	0
135	xe	m	pu239h	rc	fi	1.6270656	12.4	0.2660000	0.0040000	135			pu239h	1.0000000	74wol2	0
135	xe	m	pu239h	rc	fi	1.6515327	13.1	0.2700000	0.0180000	135			pu239h	1.0000000	72ale1	0
135	xe	m	pu239h	rc	fi	1.9390218	13.1	0.3170000	0.0210000	135			pu239h	1.0000000	84for1	0
135	i	g	pu239h	cm	cu	0.0000000	0.0	2.4470000	23.0000000%	0			0.0000000	73net2	0
135	te	g	pu239h	cm	cu	0.0000000	0.0	0.3351000	46.0000000%	0			0.0000000	73net2	0
135	sb	g	pu239h	cm	cu	0.0000000	0.0	0.0013370	90.0000000%	0			0.0000000	73net2	0
135			pu240f	rc	cu	su 0.0000000	0.0	7.2700000	0.0000000	0			0.0000000	76koc2	0
135			pu240f	cm	cu	0.0000000	0.0	7.2500000	10.0000000%	0			0.0000000	81koc1	36
135	cs	g	pu240f	ms	cu	7.7836306	6.0	7.7800000	0.0000000	0			0.0000000	76mae3	0
135	cs	g	pu240f	ms	cu	7.2333739	2.0	7.2300000	0.8000000%	0			0.0000000	77koc1	0
135	cs	g	pu240f	es	cu	6.8632013	30.0	6.8600000	30.0000000%	0			0.0000000	72sid1	0
135	cs	g	pu240f	es	cu	6.7931686	15.0	6.7900000	15.0000000%	0			0.0000000	77cro1	0
135	cs	g	pu240f	es	cu	6.8650297	30.1	0.0715000	0.0000000	99			pu240f	0.0618000	77mye1	0
135	cs	g	pu240f	ms	cu	7.6415643	2.0	7.6380000	0.0620000	0			0.0000000	79mae1	0
135	xe	g	pu240f	rc	cu	6.9706431	6.4	0.0726000	4.1000000%	99	mo	g	pu240f	0.0618000	77mye1	0

135 i g pu240f rc cu 6.8746287 6.4 0.0716000 3.0000000% 99 mo g pu240f 0.0618000 77mye1 0
135 pu241f ms cu 7.2032591 2.0 7.1920000 0.0700000 0 0.0000000 80mae4 0
135 pu241f cm cu 0.0000000 0.0 7.2150000 10.0000000% 0 0.0000000 81koc1 36
135 cs g pu241f ms cu su 0.0000000 0.0 7.3100000 0.0000000 0 0.0000000 76mae3 0
135 cs g pu241f ms cu su 0.0000000 0.0 7.1400000 0.0000000 0 0.0000000 76koc1 0
135 cs g pu241f es cu 6.7205045 30.0 6.7100000 30.0000000% 0 0.0000000 72sid1 0
135 cs g pu241f es cu 6.7004732 15.0 6.6900000 15.0000000% 0 0.0000000 77cro1 0
135 cs g pu241f ms cu su 0.0000000 0.0 7.3510000 0.0430000 148 nd g pu241f 1.9080000 77mae1 0
135 xe g pu241f rc cu x2 0.0000000 0.0 1.7000000 0.2480000 0 0.0000000 72and1 0
135 xe g pu241f ms cu 6.9234962 1.9 7.2200000 1.3000000% 134 xe g pu241f 7.8800000 77koc1 0
135 pu242f rc cu su 0.0000000 0.0 6.8900000 0.0000000 0 0.0000000 76koc2 0
135 pu242f cm cu 0.0000000 0.0 7.0800000 15.0000000% 0 0.0000000 81koc1 36
135 cs g pu242f ms cu 7.0905932 6.0 7.1300000 0.0000000 0 0.0000000 76mae3 0
135 cs g pu242f ms cu 7.0905932 6.0 7.1300000 0.4300000 0 0.0000000 78cun1 0
135 cs g pu242f ms cu 6.9434111 2.0 6.9820000 0.0430000 0 0.0000000 79mae1 0
135 cs g pu242f cm cu x3 0.0000000 0.0 6.5700000 30.0000000% 0 0.0000000 72sid1 0
135 xe g pu242f ms cu 7.1750573 3.6 7.0400000 3.5000000% 134 xe g pu242f 7.2500000 77koc1 0
135 xe g pu242f rc cu 6.9513669 5.9 6.9900000 0.4100000 0 0.0000000 83gud1 0
135 i g pu242f rc cu 6.7922512 5.6 6.8300000 0.3800000 0 0.0000000 83gud1 0
135 th232h es cu 5.4186109 8.0 5.2600000 8.0000000% 0 0.0000000 75mee3 0
135 cs g th232h es cu 4.8108200 6.1 4.6700000 6.1000000% 0 0.0000000 77cro1 0
135 cs g th232h rc fi 0.0054052 30.1 0.0010000 0.0003000 135 th232h 1.0000000 82wen1 0
135 cs m th232h rc in x1 0.0000000 0.0 0.1200000 0.0300000 0 0.0000000 72rao1 0
135 xe g th232h rc re 5.7398025 5.4 2.7200000 0.0900000 99 mo g th232h 1.0000000 69lyl1 0
135 xe g th232h rc fi ul 0.0000000 0.0 2.0000000 0.0000000 135 th232h 100.0000000 71qai1 0
135 xe g th232h cm cu 0.0000000 0.0 5.0390000 10.1000000% 0 0.0000000 73net2 0
135 xe g th232h rc fi ul 0.0000000 0.0 0.0100000 0.0100000 135 th232h 1.0000000 71den1 0
135 xe g th232h es fc 5.4049988 5.7 0.9999700 5.0000000% 135 th232h 1.0000000 74mee5 0
135 xe m th232h cm cu 0.0000000 0.0 0.8496000 33.0000000% 0 0.0000000 73net2 0
135 i g th232h rc fi su 0.0000000 0.0 47.0000000 8.0000000 135 th232h 100.0000000 71qai1 0
135 i g th232h cm cu 0.0000000 0.0 4.8130000 10.1000000% 0 0.0000000 73net2 0
135 i g th232h rc fi su 0.0000000 0.0 0.4700000 0.0800000 135 th232h 1.0000000 71den1 0
135 i g th232h rc fi 2.5404256 17.3 0.4700000 0.0800000 135 th232h 1.0000000 71den2 0
135 i g th232h rc cu 4.4651864 7.1 4.2700000 0.2500000 140 ba g th232h 5.9000000 73cha1 0
135 i g th232h cm cu 0.0000000 0.0 4.5900000 6.1000000% 0 0.0000000 77cro1 0
135 i g th232h rc cu 5.1032908 10.2 4.7400000 0.2400000 99 mo g th232h 1.9600000 64bro1 0

135 i g th232h rc cu rp 5.4210652 63.7 5.9600000 0.0000000 no. relative values = 1 71bla2
135 te g th232h cm cu 0.0000000 0.0 2.9920000 18.0000000% 0 0.0000000 73net2 0
135 sb g th232h cm cu x3 0.0000000 0.0 0.1462000 46.0000000% 0 0.0000000 73net2 0
135 np237f sp cu 5.6467074 5.3 5.6800000 0.3000000 0 0.0000000 80naq1 0
135 np237f cm cu 0.0000000 0.0 7.5100000 10.0000000% 0 0.0000000 81koc1 36
135 cs g np237f ms cu 7.5405414 2.0 7.5850000 0.0520000 0 0.0000000 77mae2 0
135 cs g np237f es cu 6.2233078 30.0 6.2600000 30.0000000% 0 0.0000000 72sid1 0
135 xe g np237f rc cu su 0.0000000 0.0 5.3500000 0.1300000 0 0.0000000 67ste2 0
135 xe g np237f rc cu x1 0.0000000 0.0 5.3500000 0.1300000 140 la g np237f 6.3500000 69ste1 0
135 xe g np237f cm cu 0.0000000 0.0 5.0600000 10.0000000% 0 0.0000000 77cro1 0
135 xe g np237f cm cu 0.0000000 0.0 5.3500000 0.0000000 0 0.0000000 69gun2 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

135 xe g np237f rc cu 6.9291462 5.0 6.9700000 4.3000000% 0 0.0000000 87nai1 0
135 i g np237f rc cu 6.4536942 6.4 6.6000000 0.4000000 140 ba g np237f 5.5800000 77bla2 0
135 i g np237f rc fc 6.6106300 15.4 0.9160000 0.1400000 135 np237f 1.0000000 87ram2 0
135 i g np237f rc cu 6.3127802 5.0 6.3500000 3.9000000% 0 0.0000000 87nai1 0
135 i g np237f rc fc 6.5673290 5.4 0.9100000 0.0200000 135 np237f 1.0000000 87red2 0
135 i g np237f rc fc 6.6106300 5.4 0.9160000 0.0140000 135 np237f 1.0000000 87ram2 0
135 cf252s sp cu 4.0133927 15.0 4.0310000 0.0000000 0 0.0000000 65sch1 0
135 cf252s es cu 4.0900564 15.0 4.1080000 15.0000000% 0 0.0000000 87wah1 36
135 cf252s rc cu 4.2115235 5.0 4.2300000 0.1700000 0 0.0000000 83li 1 0
135 cs g cf252s sp cu 3.5882578 15.0 3.6040000 0.0000000 0 0.0000000 63fra1 0
135 xe g cf252s rc cu 4.3110867 10.0 4.3300000 0.0800000 0 0.0000000 60ner1 0
135 xe g cf252s rc cu 3.8530959 5.0 3.8700000 0.1400000 0 0.0000000 73sko1 0
135 xe g cf252s rc cu 3.6818075 10.6 0.6210000 0.0650000 140 ba g cf252s 1.0000000 75bla1 0
135 xe g cf252s cm cu 0.0000000 0.0 4.1600000 0.0000000 0 0.0000000 69gun2 0
135 xe g cf252s rc cu 3.8630523 5.0 3.8800000 0.1400000 0 0.0000000 73sko1 0
135 xe g cf252s rc cu 4.4803441 5.0 4.5000000 0.1400000 0 0.0000000 76thi1 0
135 xe g cf252s rc fi 0.1052571 11.8 0.0870000 0.0100000 135 cf252s 1.0000000 76thi1 39
135 xe g cf252s rc fi 0.3587836 14.2 0.0860000 0.0120000 135 cf252s 1.0000000 83li 1 0
135 xe m cf252s rc fi 0.2576984 11.8 0.0870000 0.0100000 135 cf252s 1.0000000 76thi1 39
135 i g cf252s rc cu 3.9825281 15.0 4.0000000 0.6000000 0 0.0000000 55gle2 0
135 i g cf252s rc cu 4.0323097 9.6 4.0500000 0.3900000 0 0.0000000 75fly2 0

135 i g cf252s rc cu 3.4209387 5.2 0.5770000 0.0200000 140 ba g cf252s 1.0000000 75bla1 0
135 i g cf252s rc cu 4.5002012 9.2 4.4100000 0.4000000 140 ba g cf252s 5.8100000 71har2 0
135 i g cf252s rc fc 4.0676047 15.3 0.9750000 0.0000000 135 cf252s 1.0000000 78man1 0
135 i g cf252s rc cu 4.7790337 5.0 4.8000000 0.1000000 0 0.0000000 80top1 0
135 i g cf252s rc cu 4.5301257 8.6 4.5500000 0.3900000 0 0.0000000 84che1 0
135 i g cf252s rc cu 4.5301257 8.6 4.5500000 0.3900000 0 0.0000000 86che1 0
135 sb g cf252s sp re x1 0.0000000 0.0 14.0000000 45.0000000% 138 i g cf252s 8.2000000 77mak1 36
136 cs g u233f rc cu x1 0.0000000 0.0 0.1100000 0.0000000 0 0.0000000 61bon1 0
136 cs g u233f es cu 0.1649172 46.0 0.1653000 46.0000000% 0 0.0000000 73net2 0
136 cs g u233f rc cu 0.1157313 7.3 0.1160000 7.3000000% 0 0.0000000 81lau1 0
136 cs g u233f ms in 0.1070515 2.0 0.1073000 1.5000000% 0 0.0000000 85cha1 0
136 u233f cm cu 0.0000000 0.0 6.6880000 0.0000000 0 0.0000000 63wea1 0
136 xe g u233f ms cu 6.8640657 2.0 6.8800000 0.0400000 0 0.0000000 74mae1 0
136 u233f cm cu 0.0000000 0.0 7.1000000 5.0000000% 0 0.0000000 77cro1 0
136 xe g u233f ms cu 7.0506326 2.0 7.0670000 0.0530000 0 0.0000000 80mae1 0
136 xe g u233f ms cu 6.8760379 2.0 6.8920000 0.0520000 0 0.0000000 81mae1 0
136 xe g u233f cm cu 0.0000000 0.0 6.9000000 0.0530000 0 0.0000000 81mae1 0
136 u233f cm cu 0.0000000 0.0 6.6900000 10.0000000% 0 0.0000000 81koc1 36
136 cs g u233he cm cu 0.0000000 0.0 0.9220000 7.9000000% 0 0.0000000 73net2 0
136 cs g u233he rc fi x1 0.0000000 0.0 0.1740000 0.0110000 136 u233he 1.0000000 72net2 0
136 cs g u233he rc in x1 0.0000000 0.0 0.0092000 0.0004000 0 0.0100000 72net2 0
136 cs g u233he rc cu 0.4501687 30.3 0.5000000 0.0000000 141 ce g u233he 5.0000000 61bon1 0
136 cs g u233he rc cu 0.8440227 6.0 0.8370000 6.0000000% 0 0.0000000 81lau1 0
136 u233he cm cu 0.0000000 0.0 5.5900000 0.0000000 0 0.0000000 63wea1 0
136 u233he es cu 4.8402737 20.0 4.8000000 20.0000000% 0 0.0000000 75mee1 0
136 u233he cm cu x3 0.0000000 0.0 5.8100000 20.0000000% 0 0.0000000 77cro1 0
136 cs g u236f rc in 0.0042222 5.0 0.0042460 4.5000000% 0 0.0000000 76for1 0
136 u236f es cu 6.3840010 30.0 6.4200000 30.0000000% 0 0.0000000 72sid1 0
136 xe g u236f ms cu 6.5813323 2.1 0.8550000 0.0050000 134 xe g u236f 1.0000000 84tep1 0
136 u236f cm cu 0.0000000 0.0 6.1950000 20.0000000% 0 0.0000000 81koc1 36
136 cs g pu239h rc fi 0.8551598 10.9 0.1580000 0.0160000 136 pu239h 1.0000000 72kno1 0
136 cs g pu239h rc fi x1 0.0000000 0.0 0.1510000 0.0080000 136 pu239h 1.0000000 72pri1 0
136 cs g pu239h cm cu 0.0000000 0.0 0.7660000 10.0000000% 0 0.0000000 73net2 0
136 cs g pu239h rc re x5 0.0000000 0.0 162.0000000 1.6200000% 99 mo g u235t 0.0000000 64oth1 7
136 cs g pu239h rc cu 0.6008206 10.0 0.6070000 1.6200000% 0 0.0000000 64oth1 0
136 cs g pu239h rc in 0.7493926 5.0 0.7571000 2.7000000% 0 0.0000000 76for1 0

136 cs g pu239h rc cu 0.7888864 5.0 0.7970000 4.4000000% 0 0.0000000 81lau1 0
136 pu239h cm cu 0.0000000 0.0 5.5800000 0.0000000 0 0.0000000 63wea1 0
136 xe g pu239h ms re 5.4279822 3.1 25.7500000 0.3000000 131 xe g pu239h 20.5000000 77pet1 0
136 pu239h es cu 6.0111758 12.0 6.0730000 12.0000000% 0 0.0000000 75mee5 0
136 cs g pu240f rc in 0.0587721 6.4 0.0006120 0.0000180 99 mo g pu240f 0.0618000 77mye1 0
136 cs g pu240f ms in 0.0495327 8.2 0.0495000 8.2000000% 0 0.0000000 85cha1 0
136 pu240f es cu 7.2547847 30.0 7.2500000 30.0000000% 0 0.0000000 72sid1 0
136 xe g pu240f ms cu 6.6643953 6.0 6.6600000 0.0000000 0 0.0000000 76mae3 0
136 pu240f rc cu su 0.0000000 0.0 6.8500000 0.0000000 0 0.0000000 76koc2 0
136 pu240f es cu 7.1647253 15.0 7.1600000 15.0000000% 0 0.0000000 77cro1 0
136 pu240f es cu 6.7223066 30.1 0.0700000 0.0000000 99 pu240f 0.0618000 77mye1 0
136 xe g pu240f ms cu 6.6844085 2.7 6.6800000 2.7000000% 0 0.0000000 77koc1 0
136 pu240f cm cu 0.0000000 0.0 6.7050000 10.0000000% 0 0.0000000 81koc1 36
136 xe g pu240f ms cu 6.5893458 2.0 6.5850000 0.0660000 0 0.0000000 79mae1 0
136 cs g pu241f ms in 0.0158350 2.0 0.0158000 1.3000000% 0 0.0000000 85cha1 0
136 pu241f es cu 7.1357634 30.0 7.1200000 30.0000000% 0 0.0000000 72sid1 0
136 xe g pu241f ms cu su 0.0000000 0.0 6.9300000 0.0000000 0 0.0000000 76mae3 0
136 xe g pu241f ms cu su 0.0000000 0.0 6.7300000 0.0000000 0 0.0000000 76koc1 0
136 pu241f es cu 7.1157191 15.0 7.1000000 15.0000000% 0 0.0000000 77cro1 0
136 xe g pu241f ms cu 6.5249661 1.7 6.8000000 0.9000000% 134 xe g pu241f 7.8800000 77koc1 0
136 xe g pu241f ms cu su 0.0000000 0.0 6.9660000 0.0790000 148 nd g pu241f 1.9080000 77mae1 0
136 pu241f ms cu 6.8651656 2.0 6.8500000 0.0690000 0 0.0000000 80mae4 0
136 pu241f cm cu 0.0000000 0.0 6.8050000 10.0000000% 0 0.0000000 81koc1 36
136 cs g pu242f ms in 0.0080552 4.4 0.0081000 4.4000000% 0 0.0000000 85cha1 0
136 pu242f es cu 6.9613116 30.0 7.0000000 30.0000000% 0 0.0000000 72sid1 0
136 xe g pu242f ms cu 6.9812011 6.0 7.0200000 0.0000000 0 0.0000000 76mae3 0
136 pu242f rc cu su 0.0000000 0.0 6.5600000 0.0000000 0 0.0000000 76koc2 0
136 xe g pu242f ms cu 6.7979591 3.0 6.6700000 2.8000000% 134 xe g pu242f 7.2500000 77koc1 0
136 pu242f cm cu 0.0000000 0.0 6.7050000 15.0000000% 0 0.0000000 81koc1 36
136 xe g pu242f ms cu 6.8827483 2.0 6.9210000 0.0510000 0 0.0000000 79mae1 0
136 cs g th232h rc in x4 0.0000000 0.0 0.0980000 0.0160000 0 0.0000000 69rao1 0
136 cs g th232h rc fi 0.0164035 13.1 0.0022300 6.7000000% 136 th232h 1.0000000 73net1 0
136 cs g th232h cm cu 0.0000000 0.0 0.0146000 9.9000000% 0 0.0000000 73net2 0
136 cs g th232h rc fi 0.0139761 23.9 0.0019000 0.0004000 136 th232h 1.0000000 82wen1 0
136 th232h es cu 6.3987221 20.0 5.7100000 20.0000000% 0 0.0000000 77cro1 0
136 xe g th232h ms re x1 0.0000000 0.0 38.2500000 0.4000000 131 xe g th232h 14.1500000 77pet1 0

136 cs g np237f rc in 0.0513762 5.0 0.0515900 4.5000000% 0 0.0000000 76for1 0
136 cs g np237f ms in 0.0615439 2.0 0.0618000 1.5000000% 0 0.0000000 85cha1 0
136 np237f es cu 6.4232672 30.0 6.4500000 30.0000000% 0 0.0000000 72sid1 0
136 xe g np237f cm cu 0.0000000 0.0 6.9200000 5.0000000% 0 0.0000000 77cro1 0
136 xe g np237f ms cu 6.8116508 2.0 6.8400000 0.0470000 0 0.0000000 77mae2 0
136 np237f ms re x4 0.0000000 0.0 1.3660000 0.0090000 132 np237f 1.0000000 73tra1 0
136 xe g np237f ms re rp 6.6267345 3.0 29.9500000 0.0000000 no. relative values = 3 79tep1
136 np237f sp cu x4 0.0000000 0.0 5.4900000 0.2900000 0 0.0000000 80naq1 0
136 xe g np237f ms cu rp 6.7811613 5.6 31.1000000 0.0000000 no. relative values = 2 72pet2
136 np237f cm cu 0.0000000 0.0 6.5900000 10.0000000% 0 0.0000000 81koc1 36
136 xe g np237f ms re 6.6027992 1.2 1.3660000 0.0090000 132 xe g np237f 1.0000000 73tra1 0
136 cs g cf252s rc in 0.0345676 30.0 0.0350000 30.0000000% 0 0.0000000 60ner1 0
136 cs g cf252s rc fi lt 0.0411109 31.0 0.0100000 30.0000000% 136 cf252s 1.0000000 62wah1 0
136 cs g cf252s rc cu 0.0375305 5.3 0.0380000 0.0020000 0 0.0000000 73sko1 0
136 cs g cf252s rc in 0.0352877 50.0 0.0060000 0.0030000 140 ba g cf252s 1.0000000 75bla1 0
136 cs g cf252s rc in 0.0207406 9.5 0.0210000 0.0020000 0 0.0000000 69gun1 0
136 cs g cf252s rc fi 0.0316554 12.0 0.0077000 9.0000000% 136 cf252s 1.0000000 79bla1 0
136 cf252s sp cu 4.1886045 15.0 4.2410000 0.0000000 0 0.0000000 63fra1 0
136 xe g cf252s rc in 0.7407341 40.0 0.7500000 0.3000000 0 0.0000000 71che1 36
136 cf252s sp cu 4.8918081 15.0 4.9530000 0.0000000 0 0.0000000 65sch1 0
136 cf252s es cu 3.5920667 15.0 3.6370000 15.0000000% 0 0.0000000 87wah1 36
136 i m cf252s rc in 0.5925873 16.7 0.6000000 0.1000000 0 0.0000000 80top1 0
136 te g cf252s rc in 0.6715989 29.4 0.6800000 0.2000000 0 0.0000000 71che1 36
136 te g cf252s rc in 0.7999928 24.7 0.8100000 0.2000000 0 0.0000000 71che1 36
137 u233f cm cu 0.0000000 0.0 6.6800000 0.0000000 0 0.0000000 63wea1 0
137 u233f es cu 6.3396007 30.0 6.3500000 30.0000000% 0 0.0000000 72sid1 0
137 ba g u233f ms cu 6.7389456 2.0 6.7500000 0.0400000 0 0.0000000 74mae1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

137 u233f cm cu 0.0000000 0.0 6.8800000 4.7000000% 0 0.0000000 77cro1 0
137 ba g u233f ms cu 6.8627426 2.0 6.8740000 0.0520000 0 0.0000000 80mae1 0
137 u233f rc cu 5.9150123 6.4 6.1900000 0.1100000 140 ba g u233f 6.2600000 77bla1 0
137 ba g u233f ms cu 6.7429391 2.0 6.7540000 0.0570000 0 0.0000000 81mae1 0
137 ba g u233f ms cu 6.7519243 2.0 6.7630000 0.0520000 0 0.0000000 81mae1 0

137	ba	g	u233f	cm	cu		0.0000000	0.0	6.7580000	0.0510000	0				0.0000000	81mae1	0		
137			u233f	cm	cu		0.0000000	0.0	6.7050000	10.0000000%	0				0.0000000	81koc1	36		
137	cs	g	u233f	rc	cu		6.2697153	10.0	6.2800000	0.5000000	0				0.0000000	61bon1	0		
137	cs	g	u233f	cm	cu		0.0000000	0.0	6.5260000	10.1000000%	0				0.0000000	73net2	0		
137	cs	g	u233f	rc	cu		6.1898464	12.0	6.2000000	12.0000000%	0				0.0000000	81lau1	0		
137	xe	g	u233f	cm	cu		0.0000000	0.0	5.9040000	11.0000000%	0				0.0000000	73net2	0		
137	i	g	u233f	cm	cu	x3	0.0000000	0.0	1.2510000	33.0000000%	0				0.0000000	73net2	0		
137	i	g	u233f	rc	cu		1.3977072	50.0	1.4000000	0.7000000	0				0.0000000	81wal1	0		
137			u233he	cm	cu		0.0000000	0.0	5.4260000	0.0000000	0				0.0000000	63wea1	0		
137			u233he	es	cu		5.0605928	5.9	5.0500000	5.9000000%	0				0.0000000	77cro1	0		
137	cs	g	u233he	rc	cu		4.9892761	6.4	0.0510000	0.0020000	97	zr	g	u233he	0.0480000	72net2	0		
137	cs	g	u233he	cm	cu		0.0000000	0.0	5.1400000	7.9000000%	0				0.0000000	73net2	0		
137	cs	g	u233he	rc	cu	x4	0.0000000	0.0	4.7000000	0.5000000	141	ce	g	u233he	5.0000000	61bon1	0		
137	xe	g	u233he	es	in		3.1566074	9.5	3.1500000	0.3000000	0				0.0000000	72boc1	0		
137	xe	g	u233he	cm	cu		0.0000000	0.0	3.8500000	12.0000000%	0				0.0000000	73net2	0		
137	i	g	u233he	cm	cu	x3	0.0000000	0.0	0.3336000	45.0000000%	0				0.0000000	73net2	0		
137			u236f	rc	cu		5.9788265	5.4	6.1600000	0.0700000	140	ba	g	u236f	5.7600000	77bla1	0		
137			u236f	es	cu	x3	0.0000000	0.0	6.4400000	30.0000000%	0				0.0000000	72sid1	0		
137			u236f	cm	cu		0.0000000	0.0	6.0700000	20.0000000%	0				0.0000000	81koc1	36		
137	cs	g	u236f	rc	cu		6.0198811	5.0	6.0680000	4.0000000%	0				0.0000000	76for1	0		
137			pu239h	es	cu		5.4242646	30.0	5.5370000	0.0000000	0				0.0000000	63wea1	0		
137			pu239h	es	cu		4.4514825	12.0	4.5440000	12.0000000%	0				0.0000000	75mee5	0		
137	cs	g	pu239h	rc	cu		4.2507278	16.2	5.1000000	0.8000000	140	ba	g	pu239h	4.3500000	61bon1	0		
137	cs	g	pu239h	cm	cu		0.0000000	0.0	4.6800000	9.9000000%	0				0.0000000	73net2	0		
137	cs	g	pu239h	es	cu		4.9961621	16.0	5.1000000	16.0000000%	0				0.0000000	77cro1	0		
137	xe	g	pu239h	cm	cu	x3	0.0000000	0.0	3.5830000	14.0000000%	0				0.0000000	73net2	0		
137	xe	g	pu239h	rc	cu		2.8474691	5.4	2.4800000	0.0500000	88	kr	g	pu239h	1.4600000	74bal1	0		
137	xe	g	pu239h	rc	cu		2.8589508	5.4	2.4900000	0.0500000	88	kr	g	pu239h	1.4600000	74bal1	0		
137	xe	g	pu239h	rc	cu		2.7088467	5.4	2.3000000	0.1100000	138	xe	g	pu239h	1.5100000	74bal1	0		
137	xe	g	pu239h	rc	cu		2.7677347	5.4	2.3500000	0.0600000	138	xe	g	pu239h	1.5100000	74bal1	0		
137	xe	g	pu239h	rc	cu		2.6873537	5.7	2.4100000	5.0000000%	89	kr	g	pu239h	1.3900000	74bal1	0		
137	i	g	pu239h	cm	cu	x3	0.0000000	0.0	0.3328000	46.0000000%	0				0.0000000	73net2	0		
137			pu240f	es	cu		7.0966172	30.0	7.0900000	30.0000000%	0				0.0000000	72sid1	0		
137			pu240f	rc	cu	su	0.0000000	0.0	6.4100000	0.0000000	0				0.0000000	76koc2	0		
137			pu240f	es	cu		7.0065332	15.0	7.0000000	15.0000000%	0				0.0000000	77cro1	0		
137			pu240f	es	cu		6.5320246	30.1	0.0680000	0.0000000	99			pu240f	0.0618000	77mye1	0		

137 pu240f cm cu 0.0000000 0.0 6.3400000 10.0000000% 0 0.0000000 81koc1 36
137 cs g pu240f ms cu 6.9064399 6.0 6.9000000 0.0000000 0 0.0000000 76mae3 0
137 cs g pu240f ms cu 6.3258985 2.0 6.3200000 1.7000000% 0 0.0000000 77koc1 0
137 cs g pu240f rc cu nr 5.8211847 6.4 0.0606000 3.0000000% 99 mo g pu240f 0.0618000 77mye1 0
137 cs g pu240f ms cu 6.7933344 2.0 6.7870000 0.0640000 0 0.0000000 79mae1 0
137 i g pu240f rc cu 2.7025200 14.8 2.7000000 0.4000000 0 0.0000000 81wal1 0
137 pu241f es cu 7.2560290 30.0 7.2400000 30.0000000% 0 0.0000000 72sid1 0
137 pu241f es cu 7.2259626 15.0 7.2100000 15.0000000% 0 0.0000000 77cro1 0
137 ba g pu241f ms cu su 0.0000000 0.0 6.5830000 0.0410000 148 nd g pu241f 1.9080000 77mae1 0
137 pu241f ms cu 6.3790918 2.0 6.3650000 0.0990000 0 0.0000000 80mae4 0
137 pu241f cm cu 0.0000000 0.0 6.3050000 10.0000000% 0 0.0000000 81koc1 36
137 cs g pu241f ms cu su 0.0000000 0.0 6.5500000 0.0000000 0 0.0000000 76mae3 0
137 cs g pu241f ms cu su 0.0000000 0.0 6.2600000 0.0000000 0 0.0000000 76koc1 0
137 cs g pu241f rc cu 6.3239701 5.0 6.3100000 0.9000000% 0 0.0000000 77koc1 0
137 i g pu241f rc cu 3.9086344 12.8 3.9000000 0.5000000 0 0.0000000 81wal1 0
137 pu242f rc cu su 0.0000000 0.0 6.2100000 0.0000000 0 0.0000000 76koc2 0
137 pu242f cm cu 0.0000000 0.0 6.3100000 15.0000000% 0 0.0000000 81koc1 36
137 pu242f cm cu x3 0.0000000 0.0 7.3800000 30.0000000% 0 0.0000000 72sid1 0
137 cs g pu242f ms cu 6.4242962 6.0 6.4600000 0.0000000 0 0.0000000 76mae3 0
137 cs g pu242f rc cu 6.2353463 5.0 6.2700000 2.4000000% 0 0.0000000 77koc1 0
137 cs g pu242f ms cu 6.4242962 6.0 6.4600000 0.3900000 0 0.0000000 78cun1 0
137 cs g pu242f ms cu 6.3049594 2.0 6.3400000 0.0440000 0 0.0000000 79mae1 0
137 i g pu242f rc cu 3.4806558 45.7 3.5000000 1.6000000 0 0.0000000 81wal1 0
137 th232h es cu 4.9859462 30.0 4.8400000 0.0000000 0 0.0000000 72boc1 0
137 th232h ms cu rp 5.8858316 16.1 4.8400000 0.0000000 no. relative values = 1 72boc1
137 th232h es cu 6.3045435 20.0 6.1200000 20.0000000% 0 0.0000000 77cro1 0
137 th232h rc cu 5.5803951 5.7 5.4200000 0.1100000 139 th232h 5.8000000 77feu1 0
137 th232h es cu 5.3052940 8.0 5.1500000 8.0000000% 0 0.0000000 75mee3 0
137 cs g th232h es cu 5.8512757 10.1 5.6800000 10.1000000% 0 0.0000000 73net2 0
137 cs g th232h es fc 5.7676122 5.7 0.9999960 5.0000000% 137 th232h 1.0000000 74mee5 0
137 xe g th232h ms in 1.9160868 13.4 1.8600000 0.2500000 0 0.0000000 72boc1 0
137 xe g th232h es cu 5.7647427 10.1 5.5960000 10.1000000% 0 0.0000000 73net2 0
137 i g th232h rc fc 2.8838176 16.2 0.5000000 0.0800000 137 th232h 1.0000000 71gri1 0
137 i g th232h es cu 3.0976736 18.0 3.0070000 18.0000000% 0 0.0000000 73net2 0
137 np237f es cu 6.4232672 30.0 6.4500000 30.0000000% 0 0.0000000 72sid1 0
137 np237f cm cu 0.0000000 0.0 5.9000000 0.0000000 0 0.0000000 73lar3 0

137	ba g	np237f	ms	cu	6.3694910	2.0	6.3960000	0.0450000	0			0.0000000	77mae2	0
137		np237f	sp	cu	5.4971217	5.3	5.5200000	0.2900000	0			0.0000000	80naq1	0
137		np237f	cm	cu	0.0000000	0.0	6.2030000	10.0000000%	0			0.0000000	81koc1	36
137	cs g	np237f	es	cu	6.4232672	30.0	6.4500000	30.0000000%	0			0.0000000	72sid1	0
137	cs g	np237f	cm	cu	0.0000000	0.0	5.9000000	0.0000000	0			0.0000000	73lar3	0
137	cs g	np237f	ms	cu	6.3694910	2.0	6.3960000	0.0450000	0			0.0000000	77mae2	0
137	cs g	np237f	sp	cu	5.4971217	5.3	5.5200000	0.2900000	0			0.0000000	80naq1	0
137	cs g	np237f	cm	cu	0.0000000	0.0	6.2030000	10.0000000%	0			0.0000000	81koc1	36
137	cs g	np237f	rc	cu	6.0311476	15.1	6.4000000	0.0000000	140	ba g	np237f	5.8000000	70mce1	0
137	cs g	np237f	rc	cu	6.4133086	5.0	6.4400000	0.3100000	0			0.0000000	73mce2	0
137	cs g	np237f	rc	cu	6.5626869	5.0	6.5900000	4.2000000%	0			0.0000000	74mce1	0
137	cs g	np237f	rc	cu	5.9554880	5.8	6.0800000	0.3300000	140	ba g	np237f	5.5800000	77bla2	0
137	cs g	np237f	bm	cu	6.4730600	5.2	6.5000000	5.2000000%	0			0.0000000	77gil1	0
137	cs g	np237f	rc	cu	5.7799446	5.0	5.8040000	4.0000000%	0			0.0000000	76for1	0
137	cs g	np237f	rc	re	6.2254636	5.4	1.1390000	2.6000000%	140	ba g	np237f	1.0000000	73mce1	0
137	i g	np237f	rc	cu	2.3900529	20.8	2.4000000	0.5000000	0			0.0000000	81wal1	0
137		cf252s	sp	cu	4.5510340	15.0	4.5710000	0.0000000	0			0.0000000	63fra1	0
137		cf252s	rc	cu	4.8288153	5.0	4.8500000	0.1800000	0			0.0000000	73sko1	0
137		cf252s	sp	cu	5.4411290	15.0	5.4650000	0.0000000	0			0.0000000	65sch1	0
137		cf252s	es	cu	4.8985096	15.0	4.9200000	15.0000000%	0			0.0000000	87wah1	36
137		cf252s	rc	cu	5.4062819	5.0	5.4300000	0.1700000	0			0.0000000	83li 1	0
137	cs g	cf252s	rc	cu	4.3807809	30.0	4.4000000	0.0000000	0			0.0000000	60ner1	0
137	cs g	cf252s	rc	cu	4.8188590	5.0	4.8400000	0.1800000	0			0.0000000	73sko1	0
137	cs g	cf252s	rc	cu	4.4288409	6.8	0.7470000	0.0500000	140	ba g	cf252s	1.0000000	75bla1	0
137	cs g	cf252s	rc	cu	5.3063597	5.2	5.2000000	0.2000000	140	ba g	cf252s	5.8100000	71har2	0
137	cs g	cf252s	cm	cu	0.0000000	0.0	4.4000000	0.0000000	0			0.0000000	69gun2	0
137	cs g	cf252s	rc	cu	5.3963256	6.6	5.4200000	0.3600000	0			0.0000000	76thi1	0
137	xe g	cf252s	rc	cu	4.5799073	5.0	4.6000000	0.2000000	0			0.0000000	80top1	0
137	xe g	cf252s	rc	cu	4.0920476	5.0	4.1100000	0.1300000	0			0.0000000	89man1	0
137	xe g	cf252s	rc	cu	4.0920476	5.0	4.1100000	0.1300000	0			0.0000000	90nai1	0
137	i g	cf252s	sp	re	1.7294934	29.7	13.5000000	25.0000000%	138	i g	cf252s	8.2000000	77mak1	36
138		u233f	cm	cu	0.0000000	0.0	6.2320000	0.0000000	0			0.0000000	63wea1	0
138	ba g	u233f	ms	cu	6.5048994	2.0	6.5200000	0.1000000	0			0.0000000	74mae1	0
138		u233f	cm	cu	0.0000000	0.0	6.7100000	5.0000000%	0			0.0000000	77cro1	0
138	ba g	u233f	ms	cu	6.7632996	2.0	6.7790000	0.0830000	0			0.0000000	80mae1	0
138	ba g	u233f	ms	cu	6.6296099	2.0	6.6450000	0.0620000	0			0.0000000	81mae1	0

138 ba g u233f ms cu 6.4051310 2.0 6.4200000 0.0870000 0 0.0000000 81mae1 0
138 ba g u233f cm cu 0.0000000 0.0 6.5320000 0.1230000 0 0.0000000 81mae1 0
138 u233f cm cu 0.0000000 0.0 6.4200000 10.0000000% 0 0.0000000 81koc1 36
138 cs g u233f cm cu 0.0000000 0.0 6.7670000 10.1000000% 0 0.0000000 73net2 0
138 u233he cm cu 0.0000000 0.0 5.2830000 0.0000000 0 0.0000000 63wea1 0
138 u233he es cu 6.5989197 20.0 6.5600000 20.0000000% 0 0.0000000 77cro1 0
138 cs g u233he cm cu 0.0000000 0.0 4.6940000 13.0000000% 0 0.0000000 73net2 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

138 xe g u233he ms in 1.9313911 10.4 1.9200000 0.2000000 0 0.0000000 72boc1 0
138 u236f es cu 6.2955553 30.0 6.4400000 30.0000000% 0 0.0000000 72sid1 0
138 u236f cm cu 0.0000000 0.0 5.9900000 20.0000000% 0 0.0000000 81koc1 36
138 cs g u236f rc cu x1 0.0000000 0.0 8.3900000 0.5400000 140 ba g u236f 5.4400000 80gud1 0
138 xe g u236f rc cu 6.4405325 15.4 6.3600000 0.9700000 140 ba g u236f 5.4400000 80gud1 0
138 pu239h cm cu x3 0.0000000 0.0 5.2750000 0.0000000 0 0.0000000 63wea1 0
138 pu239h rc cu rp 3.7753381 45.1 3.4100000 0.0000000 no. relative values = 2 74bal1
138 pu239h es cu 4.1699868 12.0 4.3470000 12.0000000% 0 0.0000000 75mee5 0
138 cs g pu239h es cu x3 0.0000000 0.0 4.2420000 11.0000000% 0 0.0000000 73net2 0
138 cs g pu239h rc fi 1.0042101 32.1 0.5070000 30.0000000% 138 pu239h 1.0000000 74bal1 37
138 cs g pu239h rc cu 3.7638927 18.8 3.2400000 0.0000000 138 pu239h 3.4100000 74bal1 0
138 cs m pu239h rc fi 1.0042101 32.1 0.5070000 30.0000000% 138 pu239h 1.0000000 74bal1 37
138 xe g pu239h rc fi 1.6439731 32.1 0.4150000 30.0000000% 138 pu239h 1.0000000 74bal1 0
138 xe g pu239h rc cu 1.8551113 5.4 1.6500000 0.0500000 88 kr g pu239h 1.4600000 74bal1 0
138 xe g pu239h rc cu 1.7876527 5.4 1.5900000 0.0400000 88 kr g pu239h 1.4600000 74bal1 0
138 xe g pu239h rc cu 1.8326251 5.4 1.6300000 0.0500000 88 kr g pu239h 1.4600000 74bal1 0
138 xe g pu239h rc cu 1.7988958 5.4 1.6000000 0.0300000 88 kr g pu239h 1.4600000 74bal1 0
138 xe g pu239h rc cu 1.7541599 18.8 1.5100000 0.0000000 138 pu239h 3.4100000 74bal1 0
138 xe g pu239h rc cu x1 0.0000000 0.0 1.5400000 5.0000000% 89 kr g pu239h 1.3900000 74bal1 0
138 xe g pu239h rc cu rp 1.7797650 4.4 1.5100000 0.0000000 no. relative values = 13 74bal1
138 i g pu239h rc fi 0.1069573 32.1 0.0270000 30.0000000% 138 pu239h 1.0000000 74bal1 0
138 i g pu239h rc cu 0.1045526 18.8 0.0900000 0.0000000 138 pu239h 3.4100000 74bal1 0
138 pu240f es cu 6.5443161 30.0 6.5400000 30.0000000% 0 0.0000000 72sid1 0
138 ba g pu240f ms cu 6.5943491 6.0 6.5900000 0.0000000 0 0.0000000 76mae3 0
138 pu240f es cu 6.4642633 15.0 6.4600000 15.0000000% 0 0.0000000 77cro1 0

138 pu240f es cu 6.2421418 30.1 0.0650000 0.0000000 99 pu240f 0.0618000 77mye1 0
138 pu240f cm cu 0.0000000 0.0 6.1500000 10.0000000% 0 0.0000000 81koc1 36
138 ba g pu240f ms cu 6.4332428 2.0 6.4290000 0.1130000 0 0.0000000 79mae1 0
138 pu241f es cu 6.7721434 30.0 6.7300000 30.0000000% 0 0.0000000 72sid1 0
138 ba g pu241f ms cu su 0.0000000 0.0 6.4100000 0.0000000 0 0.0000000 76mae3 0
138 pu241f es cu 6.7419555 15.0 6.7000000 15.0000000% 0 0.0000000 77cro1 0
138 ba g pu241f ms cu su 0.0000000 0.0 6.4410000 0.0400000 148 nd g pu241f 1.9080000 77mae1 0
138 pu241f ms cu 6.0335471 5.8 5.9960000 0.3480000 0 0.0000000 80mae4 0
138 pu241f cm cu 0.0000000 0.0 6.3650000 10.0000000% 0 0.0000000 81koc1 36
138 ba g pu242f ms cu 6.2452910 6.0 6.2800000 0.0000000 0 0.0000000 76mae3 0
138 ba g pu242f ms cu 6.2452910 6.1 6.2800000 0.3800000 0 0.0000000 78cun1 0
138 pu242f cm cu 0.0000000 0.0 6.2500000 15.0000000% 0 0.0000000 81koc1 36
138 ba g pu242f ms cu 6.1846282 2.0 6.2190000 0.0690000 0 0.0000000 79mae1 0
138 pu242f cm cu x3 0.0000000 0.0 6.9200000 30.0000000% 0 0.0000000 72sid1 0
138 th232h ms cu 5.8153017 3.2 4.8800000 0.0000000 137 th232h 4.8400000 72boc1 0
138 th232h es cu 6.7372083 20.0 6.5400000 20.0000000% 0 0.0000000 77cro1 0
138 th232h rc cu 5.6318747 10.4 5.4700000 0.5500000 139 th232h 5.8000000 77feu1 0
138 th232h es cu 5.3671032 8.0 5.2100000 8.0000000% 0 0.0000000 75mee3 0
138 cs g th232h cm cu 0.0000000 0.0 5.7850000 10.1000000% 0 0.0000000 73net2 0
138 cs g th232h rc cu x4 0.0000000 0.0 7.4000000 0.0000000 0 0.0000000 71bla2 0
138 xe g th232h ms in 2.8329240 21.8 2.7500000 0.6000000 0 0.0000000 72boc1 0
138 xe g th232h rc fc 5.3944377 5.7 0.9090000 0.0090000 138 th232h 1.0000000 77feu1 0
138 np237f es cu 6.2332491 30.0 6.2700000 30.0000000% 0 0.0000000 72sid1 0
138 ba g np237f ms cu 6.1895070 2.0 6.2260000 0.0410000 0 0.0000000 77mae2 0
138 np237f sp cu 5.6765315 5.3 5.7100000 0.3000000 0 0.0000000 80naq1 0
138 np237f cm cu 0.0000000 0.0 6.2900000 10.0000000% 0 0.0000000 81koc1 36
138 cs g np237f rc cu 6.4420183 9.7 6.4800000 9.7000000% 0 0.0000000 87nai1 0
138 xe g np237f rc fc 5.3978513 9.7 0.8850000 0.0840000 138 np237f 1.0000000 87ram2 0
138 xe g np237f rc fc 5.3978513 9.7 0.8850000 0.0840000 138 np237f 1.0000000 87ram2 0
138 cf252s sp cu 5.0249548 15.0 5.0470000 0.0000000 0 0.0000000 63fra1 0
138 cf252s sp cu 5.2429982 15.0 5.2660000 0.0000000 0 0.0000000 65sch1 0
138 cf252s es cu 5.8204648 15.0 5.8460000 15.0000000% 0 0.0000000 87wah1 36
138 cf252s rc cu 5.0777233 5.0 5.1000000 0.2300000 0 0.0000000 83li 1 0
138 cs g cf252s rc cu 6.2724818 14.3 6.3000000 0.9000000 0 0.0000000 55gle2 0
138 cs g cf252s rc cu 4.9184222 30.0 4.9400000 0.0000000 0 0.0000000 60ner1 0
138 cs g cf252s rc fi 0.6090826 27.4 0.1100000 0.0300000 138 cf252s 1.0000000 70tro1 0

138	cs	g	cf252s	rc	in	ul	0.0000000	0.0	1.0000000	0.0000000	138	cs	m	cf252s	1.3000000	78aum1	0
138	cs	g	cf252s	cm	cu		0.0000000	0.0	5.6200000	0.0000000	0			0.0000000	69gun2	0	
138	cs	g	cf252s	rc	cu		5.2270681	5.0	5.2500000	0.1900000	0			0.0000000	76thi1	0	
138	cs	g	cf252s	rc	cu		5.5854957	5.0	5.6100000	0.1000000	0			0.0000000	80top1	0	
138	cs	g	cf252s	rc	fi		0.6090826	27.4	0.1100000	0.0300000	138			cf252s	1.0000000	72eic1	0
138	xe	g	cf252s	rc	in		2.2899537	15.2	2.3000000	0.3500000	0			0.0000000	71che1	36	
138	xe	g	cf252s	rc	fc		4.7065475	5.7	0.8500000	0.0300000	138			cf252s	1.0000000	82ram1	0
138	xe	g	cf252s	rc	cu		5.2171118	5.0	5.2400000	0.1600000	0			0.0000000	89man1	0	
138	xe	g	cf252s	rc	cu		5.2171118	5.0	5.2400000	0.1600000	0			0.0000000	90nai1	0	
138	i	g	cf252s	sp	re		1.0505071	18.9	8.2000000	10.0000000%	138	i	g	cf252s	8.2000000	77mak1	36
139			u233f	cm	cu		0.0000000	0.0	6.3370000	0.0000000	0			0.0000000	63wea1	0	
139			u233f	cm	cu		0.0000000	0.0	6.5500000	5.0000000%	0			0.0000000	77cro1	0	
139	la	g	u233f	ms	cu	su	0.0000000	0.0	6.3700000	0.0600000	0			0.0000000	74mae1	0	
139	la	g	u233f	ms	cu	su	0.0000000	0.0	6.1430000	0.0490000	0			0.0000000	80mae1	0	
139	la	g	u233f	ms	cu		5.8298424	7.5	5.8490000	0.4400000	0			0.0000000	81mae1	0	
139	la	g	u233f	ms	cu		5.8776851	2.0	5.8970000	0.0800000	0			0.0000000	81mae1	0	
139	la	g	u233f	cm	cu		0.0000000	0.0	5.8730000	0.2340000	0			0.0000000	81mae1	0	
139			u233f	cm	cu		0.0000000	0.0	6.2900000	10.0000000%	0			0.0000000	81koc1	36	
139	ba	g	u233f	cm	cu		0.0000000	0.0	6.8770000	10.1000000%	0			0.0000000	73net2	0	
139	ba	g	u233f	rc	cu		7.9737970	10.0	8.0000000	0.8000000	0			0.0000000	77gud1	0	
139			u233he	cm	cu		0.0000000	0.0	4.9890000	0.0000000	0			0.0000000	63wea1	0	
139			u233he	es	cu		5.8923338	5.0	5.8800000	5.0000000%	0			0.0000000	77cro1	0	
139	ba	g	u233he	rc	cu		5.8021450	5.0	5.7900000	0.2400000	0			0.0000000	69bor1	0	
139	ba	g	u233he	cm	cu		0.0000000	0.0	4.7990000	8.1000000%	0			0.0000000	73net2	0	
139	xe	g	u233he	ms	in		0.9820556	10.2	0.9800000	0.1000000	0			0.0000000	72boc1	0	
139			u236f	es	cu		6.0315907	30.0	6.1000000	30.0000000%	0			0.0000000	72sid1	0	
139			u236f	cm	cu		0.0000000	0.0	5.8800000	20.0000000%	0			0.0000000	81koc1	36	
139	ba	g	u236f	rc	cu		5.8281508	5.4	5.6900000	0.2000000	140	ba	g	u236f	5.4400000	80gud1	0
139	ba	g	u236f	rc	cu		6.1941971	12.4	6.1400000	0.7200000	97	zr	g	u236f	5.3400000	84gud1	0
139	ba	g	u236f	rc	cu		6.5573748	8.3	6.5000000	0.4700000	97	zr	g	u236f	5.3400000	84gud1	0
139			pu239h	cm	cu		0.0000000	0.0	5.0230000	0.0000000	0			0.0000000	63wea1	0	
139			pu239h	es	cu		3.9965130	12.0	4.1150000	12.0000000%	0			0.0000000	75mee5	0	
139	ba	g	pu239h	es	cu		4.1606468	10.0	4.2840000	10.0000000%	0			0.0000000	73net2	0	
139			pu240f	es	cu		5.8909758	30.0	5.8800000	30.0000000%	0			0.0000000	72sid1	0	
139	la	g	pu240f	es	cu		6.3117598	30.0	6.3000000	0.0000000	0			0.0000000	76mae3	0	
139			pu240f	es	cu		5.8208451	15.0	5.8100000	15.0000000%	0			0.0000000	77cro1	0	

139 pu240f es cu 5.9419931 30.1 0.0618000 0.0000000 99 pu240f 0.0618000 77mye1 0
139 pu240f cm cu 0.0000000 0.0 5.8500000 10.0000000% 0 0.0000000 81koc1 36
139 la g pu240f ms cu 5.9961718 5.3 5.9850000 0.3160000 0 0.0000000 79mae1 0
139 pu241f es cu 6.1190992 30.0 6.1000000 30.0000000% 0 0.0000000 72sid1 0
139 la g pu241f ms cu su 0.0000000 0.0 6.1800000 0.0000000 0 0.0000000 76mae3 0
139 pu241f es cu 6.0990365 15.0 6.0800000 15.0000000% 0 0.0000000 77cro1 0
139 la g pu241f ms cu 6.3857159 2.2 6.2090000 0.1240000 148 nd g pu241f 1.9080000 77mae1 0
139 pu241f es cu 5.6606683 6.7 5.6430000 0.3760000 0 0.0000000 80mae4 0
139 pu241f cm cu 0.0000000 0.0 6.1000000 10.0000000% 0 0.0000000 81koc1 36
139 pu242f es cu 6.2950147 30.0 6.3300000 30.0000000% 0 0.0000000 72sid1 0
139 la g pu242f ms cu 5.9568938 6.0 5.9900000 0.0000000 0 0.0000000 76mae3 0
139 la g pu242f ms cu 5.9568938 6.0 5.9900000 0.3600000 0 0.0000000 78cun1 0
139 pu242f cm cu 0.0000000 0.0 6.0800000 15.0000000% 0 0.0000000 81koc1 36
139 la g pu242f ms cu 6.0334683 2.0 6.0670000 0.1240000 0 0.0000000 79mae1 0
139 ba g pu242f rc cu 5.8375571 6.3 5.8700000 0.3700000 0 0.0000000 83gud1 0
139 th232h ms cu 5.6864510 6.0 5.5200000 0.0000000 0 0.0000000 72boc1 0
139 th232h es cu 6.0367034 7.5 5.8600000 7.5000000% 0 0.0000000 77cro1 0
139 th232h rc cu rp 6.1348706 13.3 5.8000000 0.0000000 no. relative values = 3 77feu1
139 th232h es cu 5.4804202 8.0 5.3200000 8.0000000% 0 0.0000000 75mee3 0
139 ba g th232h rc cu 5.4809705 10.8 6.0200000 0.3300000 97 zr g th232h 3.8000000 64lyl1 0
139 ba g th232h cm cu 0.0000000 0.0 5.8000000 10.1000000% 0 0.0000000 73net2 0
139 ba g th232h es fc 5.9716387 5.7 0.9999997 5.0000000% 139 th232h 1.0000000 74mee5 0
139 ba g th232h cm cu 0.0000000 0.0 5.6800000 7.5000000% 0 0.0000000 77cro1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

139 ba g th232h cm cu 0.0000000 0.0 6.0200000 0.0000000 0 0.0000000 69gun2 0
139 ba g th232h rc cu 5.7492769 10.2 5.3400000 0.3700000 99 mo g th232h 1.9600000 64bro1 0
139 xe g th232h ms in 3.4819211 13.3 3.3800000 0.4500000 0 0.0000000 72boc1 0
139 xe g th232h rc fc 4.8668870 5.7 0.8150000 0.0100000 139 th232h 1.0000000 77feu1 0
139 la g np237f ms cu 5.6477015 2.4 5.6810000 0.1380000 0 0.0000000 77mae2 0
139 np237f es cu x3 0.0000000 0.0 5.9400000 30.0000000% 0 0.0000000 72sid1 0
139 np237f sp cu 5.6268246 5.3 5.6600000 0.3000000 0 0.0000000 80naq1 0
139 np237f cm cu 0.0000000 0.0 6.1600000 10.0000000% 0 0.0000000 81koc1 36
139 ba g np237f rc cu 5.6127583 5.4 5.7400000 0.2800000 140 ba g np237f 5.5800000 77bla2 0

139 ba g np237f rc cu 5.0800483 12.1 5.1100000 12.1000000% 0 0.0000000 87nai1 0
139 cf252s sp cu 5.5617686 15.0 5.5790000 0.0000000 0 0.0000000 63fra1 0
139 cf252s sp cu 5.5468149 15.0 5.5640000 0.0000000 0 0.0000000 65sch1 0
139 cf252s rc cu rp 5.9139642 45.6 5.7000000 0.0000000 no. relative values = 1 78ert1
139 cf252s es cu 6.1888258 15.0 6.2080000 15.0000000% 0 0.0000000 87wah1 36
139 cf252s rc cu 5.6026419 5.0 5.6200000 0.2500000 0 0.0000000 83li 1 0
139 ba g cf252s rc cu 6.1808505 14.5 6.2000000 0.9000000 0 0.0000000 55gle2 0
139 ba g cf252s rc cu 5.7123022 10.0 5.7300000 0.1600000 0 0.0000000 60ner1 0
139 ba g cf252s rc cu 6.2207270 5.0 6.2400000 0.2000000 0 0.0000000 73sko1 0
139 ba g cf252s rc cu 6.0113756 9.6 6.0300000 0.5800000 0 0.0000000 75fly2 0
139 ba g cf252s rc cu 5.8240607 5.2 5.7000000 0.2000000 140 ba g cf252s 5.8100000 71har2 0
139 ba g cf252s cm cu 0.0000000 0.0 5.9600000 0.0000000 0 0.0000000 69gun2 0
139 ba g cf252s rc cu 5.6425184 6.0 5.6600000 0.3400000 0 0.0000000 84che1 0
139 ba g cf252s rc cu 5.6425184 6.0 5.6600000 0.3400000 0 0.0000000 86che1 0
139 ba g cf252s rc cu 6.0612212 5.0 6.0800000 0.2100000 0 0.0000000 89man1 0
139 cs g cf252s rc fc 5.7012392 5.4 0.9770000 0.0060000 139 cf252s 1.0000000 82ram1 0
139 xe g cf252s rc fc 3.9097546 10.2 0.6700000 0.0100000 139 cf252s 1.0000000 62wah1 0
139 xe g cf252s rc cu 3.8480779 7.5 3.8600000 0.2900000 0 0.0000000 89man1 0
139 xe g cf252s rc cu 3.8480779 7.5 3.8600000 0.2900000 0 0.0000000 90nai1 0
139 i g cf252s sp re 0.4145748 25.6 3.2300000 20.0000000% 138 i g cf252s 8.2000000 77mak1 36
140 u233f cm cu 0.0000000 0.0 6.4960000 0.0000000 0 0.0000000 63wea1 0
140 u233f es cu 6.3352932 30.0 6.3500000 30.0000000% 0 0.0000000 72sid1 0
140 u233f cm cu 0.0000000 0.0 6.3900000 4.2000000% 0 0.0000000 77cro1 0
140 ce g u233f ms cu su 0.0000000 0.0 6.2600000 0.0500000 0 0.0000000 74mae1 0
140 ce g u233f ms cu su 0.0000000 0.0 6.0400000 0.0680000 0 0.0000000 80mae1 0
140 ce g u233f ms cu 5.9811154 2.0 5.9950000 0.0730000 0 0.0000000 81mae1 0
140 ce g u233f ms cu 5.9831107 2.0 5.9970000 0.0540000 0 0.0000000 81mae1 0
140 ce g u233f cm cu 0.0000000 0.0 5.9960000 0.0550000 0 0.0000000 81mae1 0
140 u233f cm cu 0.0000000 0.0 6.1700000 10.0000000% 0 0.0000000 81koc1 36
140 ba g u233f cm cu 0.0000000 0.0 6.5510000 10.1000000% 0 0.0000000 73net2 0
140 ba g u233f rc cu 6.0659185 5.0 6.0800000 3.7000000% 0 0.0000000 81lau1 0
140 ba g u233f rc cu 6.2953858 10.0 6.3100000 0.5000000 0 0.0000000 61bon1 0
140 ba g u233f rc cu rp 6.2401957 3.9 6.2600000 0.0000000 no. relative values = 18 77bla1
140 cs g u233f cm cu 0.0000000 0.0 4.7110000 14.0000000% 0 0.0000000 73net2 0
140 xe g u233f cm cu x3 0.0000000 0.0 1.3070000 33.0000000% 0 0.0000000 73net2 0
140 u233he cm cu 0.0000000 0.0 4.7810000 0.0000000 0 0.0000000 63wea1 0

140 u233he es cu 4.5891720 10.0 4.5700000 10.0000000% 0 0.0000000 77cro1 0
140 la g u233he rc cu 5.6737028 15.0 5.6500000 0.0000000 0 0.0000000 71bla1 0
140 ba g u233he cm cu 0.0000000 0.0 5.6000000 0.0000000 0 0.0000000 69bor1 0
140 ba g u233he cm cu 0.0000000 0.0 4.0100000 7.9000000% 0 0.0000000 73net2 0
140 ba g u233he rc cu 5.5634734 11.0 5.6700000 0.5800000 99 mo g u233he 3.8700000 75jam1 0
140 ba g u233he rc cu rp 4.3298253 4.7 4.0100000 0.0000000 no. relative values = 13 75cav1
140 ba g u233he rc cu 4.4084168 5.7 4.3900000 5.7000000% 0 0.0000000 81lau1 0
140 cs g u233he cm cu x3 0.0000000 0.0 1.7600000 23.0000000% 0 0.0000000 73net2 0
140 xe g u233he ms in 0.3916361 10.3 0.3900000 0.0400000 0 0.0000000 72boc1 0
140 xe g u233he cm cu x3 0.0000000 0.0 0.2098000 45.0000000% 0 0.0000000 73net2 0
140 u236f es cu 5.9562895 30.0 5.9800000 30.0000000% 0 0.0000000 72sid1 0
140 u236f es cu 5.6076772 5.0 5.6300000 5.0000000% 0 0.0000000 75mee1 0
140 u236f cm cu 0.0000000 0.0 5.7450000 20.0000000% 0 0.0000000 81koc1 36
140 ba g u236f rc cu 6.2829890 5.0 6.3080000 1.5000000% 0 0.0000000 76for1 0
140 ba g u236f rc cu rp 5.5647882 4.1 5.4400000 0.0000000 no. relative values = 17 77fer1
140 ba g u236f rc cu 5.6129348 5.4 5.4400000 0.2300000 140 ba g u236f 5.4400000 80gud1 0
140 ba g u236f rc cu rp 5.5915512 3.8 5.4400000 0.0000000 no. relative values = 25 80gud1
140 ba g u236f rc cu rp 5.5828488 3.5 5.7600000 0.0000000 no. relative values = 24 77bla1
140 ba g u236f rc cu 5.2843622 7.0 5.2000000 0.3000000 97 zr g u236f 5.3400000 84gud1 0
140 ba g u236f rc cu 5.0506308 10.1 4.9700000 0.4600000 97 zr g u236f 5.3400000 84gud1 0
140 pu239h cm cu 0.0000000 0.0 4.8890000 0.0000000 0 0.0000000 63wea1 0
140 pu239h es cu 3.6912821 12.0 3.7680000 12.0000000% 0 0.0000000 75mee5 0
140 ba g pu239h rc re 2.9774874 10.8 0.6400000 0.0300000 99 mo g pu239h 1.0000000 58pro1 0
140 ba g pu239h rc cu rp 4.1548831 14.9 4.3500000 0.0000000 no. relative values = 6 61bon1
140 ba g pu239h cm cu 0.0000000 0.0 3.6400000 9.9000000% 0 0.0000000 73net2 0
140 ba g pu239h rc re x5 0.0000000 0.0 0.7520000 0.9000000% 99 mo g u235t 0.0000000 64oth1 7
140 ba g pu239h rc cu 3.4679243 10.0 3.5400000 0.9000000% 0 0.0000000 64oth1 0
140 ba g pu239h cm cu 0.0000000 0.0 3.1800000 14.6000000% 0 0.0000000 77cro1 0
140 ba g pu239h rc cu 4.0997919 5.0 4.1850000 1.5000000% 0 0.0000000 76for1 0
140 ba g pu239h rc cu 3.5267027 5.0 3.6000000 3.8000000% 0 0.0000000 81lau1 0
140 cs g pu239h cm cu 0.0000000 0.0 1.6730000 23.0000000% 0 0.0000000 73net2 0
140 xe g pu239h cm cu 0.0000000 0.0 0.2138000 46.0000000% 0 0.0000000 73net2 0
140 pu240f es cu 5.4535967 30.0 5.4500000 30.0000000% 0 0.0000000 72sid1 0
140 ce g pu240f ms cu 4.9632734 6.0 4.9600000 0.0000000 0 0.0000000 76mae3 0
140 pu240f es cu 5.3935571 15.0 5.3900000 15.0000000% 0 0.0000000 77cro1 0
140 pu240f es cu 5.5699112 30.1 0.0580000 0.0000000 99 pu240f 0.0618000 77mye1 0

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140        pu240f   cm    cu        0.0000000  0.0   5.4350000 10.0000000%    0                    0.0000000   81koc1     36
140 ce g   pu240f   ms    cu        5.5736759  2.0   5.5700000  0.0950000     0                    0.0000000   79mae1      0
140 ba g   pu240f   rc    cu        5.2433973  6.4   0.0546000  3.0000000%   99 mo g      pu240f      0.0618000   77mye1      0
140        pu241f   es    cu        5.5622875 30.0   5.5500000 30.0000000%    0                    0.0000000   72sid1      0
140 ce g   pu241f   ms    cu    su  0.0000000  0.0   5.9900000  0.0000000     0                    0.0000000   76mae3      0
140        pu241f   es    cu        5.5422432 15.0   5.5300000 15.0000000%    0                    0.0000000   77cro1      0
140 ce g   pu241f   ms    cu    su  0.0000000  0.0   5.3790000  0.0480000   148 nd g      pu241f      1.9080000   77mae1      0
140        pu241f   ms    cu        5.3007096  2.0   5.2890000  0.0930000     0                    0.0000000   80mae4      0
140        pu241f   cm    cu        0.0000000  0.0   5.7200000 10.0000000%    0                    0.0000000   81koc1     36
140 ba g   pu241f   rc    cu    x2  0.0000000  0.0   2.6070000  0.1840000     0                    0.0000000   72and1      0
140        pu242f   es    cu        5.5859946 30.0   5.6300000 30.0000000%    0                    0.0000000   72sid1      0
140 ce g   pu242f   ms    cu        4.9113097  6.0   4.9500000  0.0000000     0                    0.0000000   76mae3      0
140        pu242f   cm    cu        0.0000000  0.0   5.7750000 15.0000000%    0                    0.0000000   81koc1     36
140 ce g   pu242f   ms    cu        4.9113097  6.1   4.9500000  0.3000000     0                    0.0000000   78cun1      0
140 ce g   pu242f   ms    cu        5.5165418  2.0   5.5600000  0.0680000     0                    0.0000000   79mae1      0
140 la g   pu242f   rc    cu        6.4392727 12.0   6.4900000  0.7800000     0                    0.0000000   83gud1      0
140 ba g   pu242f   rc    cu        6.6476313 10.3   6.7000000  0.6900000     0                    0.0000000   83gud1      0
140        th232h   ms    cu    x4  0.0000000  0.0   6.3400000  0.0000000   137          th232h      4.8400000   72boc1      0
140        th232h   es    cu        5.9233865  3.6   5.7500000  3.6000000%    0                    0.0000000   77cro1      0
140        th232h   rc    cu        6.4143655 11.7   6.2300000  0.7100000   139          th232h      5.8000000   77feu1      0
140        th232h   es    cu        5.7791649  8.0   5.6100000  8.0000000%    0                    0.0000000   75mee3      0
140 la g   th232h   rc    cu        6.0779096 15.0   5.9000000  0.0000000     0                    0.0000000   71bla1      0
140 la g   th232h   rc    fi    ul  0.0000000  0.0   0.0064000  0.0200000   140          th232h      1.0000000   82wen1      0
140 ba g   th232h   rc    re        5.9748942  5.0   0.0580000  0.0020000     0                    0.0100000   69net1      0
140 ba g   th232h   cm    cu        0.0000000  0.0   5.7290000 10.1000000%    0                    0.0000000   73net2      0
140 ba g   th232h   rc    cu    rp  6.0805910  5.1   5.9000000  0.0000000  no. relative values =   23            73cha1
140 ba g   th232h   cm    cu        0.0000000  0.0   5.7100000  3.6000000%    0                    0.0000000   77cro1      0
140 ba g   th232h   rc    re        5.5026631 15.5   0.9000000  0.0000000    89 sr g      th232h      1.0000000   73dub1      0
140 ba g   th232h   rc    cu    rp  5.9271766 14.4   5.9000000  0.0000000  no. relative values =    2            73cha1
140 ba g   th232h   rc    cu        6.4275624 10.2   5.9700000  0.3500000    99 mo g      th232h      1.9600000   64bro1      0
140 cs g   th232h   cm    cu        0.0000000  0.0   5.4380000 11.0000000%    0                    0.0000000   73net2      0
140 xe g   th232h   ms    in        3.2140810 12.8   3.1200000  0.4000000     0                    0.0000000   72boc1      0
140 xe g   th232h   cm    cu    x3  0.0000000  0.0   3.2800000 18.0000000%    0                    0.0000000   73net2      0
140 xe g   th232h   rc    fc        3.7640197 11.8   0.6100000  0.0700000   140          th232h      1.0000000   77feu1      0
140        np237f   es    cu    x3  0.0000000  0.0   6.1700000 30.0000000%    0                    0.0000000   72sid1      0
140        np237f   cm    cu        0.0000000  0.0   5.4100000  0.0000000     0                    0.0000000   73lar3      0
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 140 ce g   np237f   ms    cu        5.4642585  2.0   5.4870000  0.0360000     0                    0.0000000   77mae2      0
 140        np237f   sp    cu        5.4672460  5.3   5.4900000  0.2900000     0                    0.0000000   80naq1      0
 140        np237f   cm    cu        0.0000000  0.0   5.5930000  5.0000000%    0                    0.0000000   81koc1     36
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value      no.   treatment

 140 la g   np237f   rc    cu    rp   4.9734848  5.6   6.3500000  0.0000000  no. relative values =    9            69ste1
 140 la g   np237f   rc    cu        6.0548007  5.0   6.0800000  4.4000000%    0                    0.0000000   87nai1      0
 140 ba g   np237f   rc    cu        5.7759612 15.0   5.8000000  0.0000000     0                    0.0000000   68koh1      0
 140 ba g   np237f   rc    cu        5.7759612 15.0   5.8000000  0.0000000     0                    0.0000000   68wec1      0
 140 ba g   np237f   rc    cu    su   0.0000000  0.0   5.4000000  0.2000000     0                    0.0000000   71lar4      0
 140 ba g   np237f   rc    cu    su   0.0000000  0.0   5.6100000  0.2000000     0                    0.0000000   73dud1      0
 140 ba g   np237f   rc    cu    rp   5.4429641  6.1   5.5800000  0.0000000  no. relative values =    7            77bla2
 140 ba g   np237f   rc    cu    su   0.0000000  0.0   5.8000000  0.0000000   137 cs g      np237f      6.4000000   70mce1      0
 140 ba g   np237f   rc    cu    rp   5.2345421  6.7   5.3000000  0.0000000  no. relative values =    6            68nam1
 140 ba g   np237f   rc    cu    rp   5.4589320  8.1   6.4400000  0.0000000  no. relative values =    4            65iye1
 140 ba g   np237f   rc    cu        5.8755467 10.2   5.9000000  0.6000000     0                    0.0000000   73kir1      0
 140 ba g   np237f   rc    cu        5.6265829  5.0   5.6500000  0.2300000     0                    0.0000000   73mce2      0
 140 ba g   np237f   rc    cu        5.7660026  5.0   5.7900000  2.1000000%    0                    0.0000000   75dud1      0
 140 ba g   np237f   cm    cu    su   0.0000000  0.0   5.7900000  0.0000000     0                    0.0000000   75mce1      0
 140 ba g   np237f   bm    cu    su   0.0000000  0.0   5.7100000  3.6000000%    0                    0.0000000   76gil1      0
 140 ba g   np237f   es    fc        5.4691894  5.2   0.9997000  5.0000000%  140          np237f      1.0000000   74mee5      0
 140 ba g   np237f   cm    cu        0.0000000  0.0   5.7700000  4.3000000%    0                    0.0000000   77cro1      0
 140 ba g   np237f   bm    cu        5.7162099  3.6   5.7400000  3.6000000%    0                    0.0000000   77gil1      0
 140 ba g   np237f   rc    re        5.4160628  5.4   0.8700000  3.4000000%  137 cs g      np237f      1.0000000   77kel1      0
 140 ba g   np237f   rc    cu        5.3875776  5.0   5.4100000  0.2000000     0                    0.0000000   72lar1      0
 140 ba g   np237f   rc    cu        4.9614696 30.3   5.0000000  0.0000000    99 mo g      np237f      6.1400000   56for1      0
 140 ba g   np237f   rc    re    x5   0.0000000  0.0   0.8000000  0.0000000    99 mo g      u235t       0.0000000   56for1      7
 140 ba g   np237f   rc    re        5.0593437 30.0   5.0804000  0.0000000     0                    0.0000000   56for1      0
 140 ba g   np237f   cm    cu        0.0000000  0.0   5.9300000  0.0000000     0                    0.0000000   69gun2      0
 140 ba g   np237f   rc    cu        5.3188636  5.0   5.3410000  1.5000000%    0                    0.0000000   76for1      0
 140 ba g   np237f   rc    cu        5.0350448  5.0   5.0560000  1.5000000%    0                    0.0000000   76for1      0
 140 ba g   np237f   rc    cu        6.3734744 17.0   6.4000000 17.0000000%    0                    0.0000000   87nai1     36
 140        cf252s   sp    cu        5.6955338 15.0   5.7080000  0.0000000     0                    0.0000000   63fra1      0
 140        cf252s   rc    cu        6.4957823  5.0   6.5100000  0.1800000     0                    0.0000000   73sko1      0
```

140 cf252s sp cu 5.7933198 15.0 5.8060000 0.0000000 0 0.0000000 65sch1 0
140 cf252s es cu 6.2922278 15.0 6.3060000 15.0000000% 0 0.0000000 87wah1 36
140 cf252s rc cu 5.7474202 5.0 5.7600000 0.1800000 0 0.0000000 83li 1 0
140 ba g cf252s rc cu 6.3061972 10.0 6.3200000 0.5400000 0 0.0000000 60ner1 0
140 ba g cf252s rc cu 6.1972851 5.4 6.5000000 0.2400000 147 nd g cf252s 4.4800000 73sko1 0
140 ba g cf252s rc cu 6.3960007 5.0 6.4100000 0.2300000 0 0.0000000 73sko1 0
140 ba g cf252s rc cu 6.4758259 5.0 6.4900000 0.1700000 0 0.0000000 73sko1 0
140 ba g cf252s rc cu 5.7573984 5.0 5.7700000 0.2800000 0 0.0000000 75fly2 0
140 ba g cf252s rc cu rp 5.8969577 3.8 1.0000000 0.0000000 no. relative values = 28 75bla1
140 ba g cf252s es fc 5.9432985 5.2 0.9994000 5.0000000% 140 cf252s 1.0000000 74mee5 0
140 ba g cf252s rc in 0.5188643 15.4 0.5200000 0.0800000 0 0.0000000 71che1 36
140 ba g cf252s rc cu rp 5.7422363 4.4 5.8100000 0.0000000 no. relative values = 17 71har2
140 ba g cf252s cm cu 0.0000000 0.0 6.3200000 0.0000000 0 0.0000000 69gun2 0
140 ba g cf252s rc cu 5.4879881 5.0 5.5000000 0.2200000 0 0.0000000 76thi1 0
140 ba g cf252s rc cu 5.8871145 10.2 5.9000000 0.6000000 0 0.0000000 74kir1 0
140 ba g cf252s rc cu 5.7573984 5.0 5.7700000 0.2000000 0 0.0000000 84che1 0
140 ba g cf252s rc cu 5.7573984 5.0 5.7700000 0.2000000 0 0.0000000 86che1 0
140 ba g cf252s rc fc 5.9349729 5.2 0.9980000 0.0020000 140 cf252s 1.0000000 87sri2 0
140 ba g cf252s rc re 5.1256315 16.8 1.2000000 0.2000000 147 nd g cf252s 1.0000000 75don1 0
140 ba g cf252s rc fc 5.9337835 5.2 0.9978000 0.0018000 140 cf252s 1.0000000 89man1 0
140 xe g cf252s rc fc 2.6760900 10.1 0.4500000 0.0100000 140 cf252s 1.0000000 62wah1 0
140 xe g cf252s rc in x1 0.0000000 0.0 1.5000000 0.2300000 0 0.0000000 71che1 36
140 i g cf252s sp re 0.1175480 43.1 0.9150000 40.0000000% 138 i g cf252s 8.2000000 77mak1 36
141 u233f cm cu 0.0000000 0.0 6.8170000 0.0000000 0 0.0000000 63wea1 0
141 u233f cm cu 0.0000000 0.0 7.0000000 7.7000000% 0 0.0000000 77cro1 0
141 u233f rc cu 6.7356552 6.4 7.0700000 0.1200000 140 ba g u233f 6.2600000 77bla1 0
141 u233f es cu su 0.0000000 0.0 6.3100000 0.1900000 0 0.0000000 74mae1 0
141 u233f es cu 6.0448694 4.8 6.0730000 0.2890000 0 0.0000000 81mae1 0
141 u233f es cu 6.0329250 4.7 6.0610000 0.2870000 0 0.0000000 81mae1 0
141 u233f cm cu 0.0000000 0.0 6.0670000 0.2880000 0 0.0000000 81mae1 0
141 u233f cm cu 0.0000000 0.0 6.1300000 10.0000000% 0 0.0000000 81koc1 36
141 ce g u233f rc cu 6.7386408 10.0 6.7700000 0.6000000 0 0.0000000 61bon1 0
141 ce g u233f rc cu 6.7241249 15.5 6.8300000 15.0000000% 99 mo g u233f 4.7500000 65bun2 0
141 ce g u233f cm cu 0.0000000 0.0 6.0900000 15.1000000% 0 0.0000000 73net2 0
141 ce g u233f rc cu 6.2608642 5.0 6.2900000 3.6000000% 0 0.0000000 81lau1 0
141 la g u233f cm cu 0.0000000 0.0 6.0890000 15.1000000% 0 0.0000000 73net2 0

141 ba g u233f cm cu 0.0000000 0.0 5.9320000 15.1000000% 0 0.0000000 73net2 0
141 cs g u233f cm cu x3 0.0000000 0.0 2.6030000 26.0000000% 0 0.0000000 73net2 0
141 xe g u233f cm cu 0.0000000 0.0 0.3103000 47.0000000% 0 0.0000000 73net2 0
141 u233he cm cu 0.0000000 0.0 4.5290000 0.0000000 0 0.0000000 63wea1 0
141 u233he es cu 4.6998377 8.7 4.6900000 8.7000000% 0 0.0000000 77cro1 0
141 ce g u233he rc cu rp 5.1558817 15.2 5.0000000 0.0000000 no. relative values = 6 61bon1
141 ce g u233he cm cu 0.0000000 0.0 4.1800000 7.9000000% 0 0.0000000 73net2 0
141 ce g u233he rc cu 4.1088156 8.2 0.0420000 0.0030000 97 zr g u233he 0.0480000 72net2 0
141 ce g u233he rc cu 4.7412781 7.4 4.3200000 0.2700000 140 ba g u233he 4.0100000 75cav1 0
141 ce g u233he rc cu 4.2488938 6.1 4.2400000 6.1000000% 0 0.0000000 81lau1 0
141 la g u233he cm cu 0.0000000 0.0 4.1710000 7.9000000% 0 0.0000000 73net2 0
141 ba g u233he cm cu 0.0000000 0.0 3.7740000 9.0000000% 0 0.0000000 73net2 0
141 cs g u233he cm cu x3 0.0000000 0.0 0.7995000 33.0000000% 0 0.0000000 73net2 0
141 xe g u233he ms in 0.0941972 21.3 0.0940000 0.0200000 0 0.0000000 72boc1 0
141 xe g u233he cm cu x3 0.0000000 0.0 0.0348500 90.0000000% 0 0.0000000 73net2 0
141 u236f es cu 5.6547993 30.0 5.7000000 30.0000000% 0 0.0000000 72sid1 0
141 u236f rc cu 5.4158755 5.4 5.5800000 0.1200000 140 ba g u236f 5.7600000 77bla1 0
141 u236f cm cu 0.0000000 0.0 5.5050000 20.0000000% 0 0.0000000 81koc1 36
141 ba g u236f rc cu 5.4158755 5.4 5.2700000 0.2500000 140 ba g u236f 5.4400000 77fer1 0
141 ba g u236f rc cu 5.1384018 9.0 5.0000000 0.4400000 140 ba g u236f 5.4400000 80gud1 0
141 pu239h cm cu 0.0000000 0.0 4.5280000 0.0000000 0 0.0000000 63wea1 0
141 pu239h es cu 3.3621232 12.0 3.4320000 12.0000000% 0 0.0000000 75mee5 0
141 ce g pu239h es cu 3.5169063 9.9 3.5900000 9.9000000% 0 0.0000000 73net2 0
141 ce g pu239h rc cu 3.6050738 5.0 3.6800000 4.1000000% 0 0.0000000 81lau1 0
141 la g pu239h cm cu 0.0000000 0.0 3.5840000 9.9000000% 0 0.0000000 73net2 0
141 ba g pu239h cm cu 0.0000000 0.0 3.2700000 11.0000000% 0 0.0000000 73net2 0
141 cs g pu239h cm cu 0.0000000 0.0 0.7366000 33.0000000% 0 0.0000000 73net2 0
141 xe g pu239h cm cu 0.0000000 0.0 0.0347600 90.0000000% 0 0.0000000 73net2 0
141 pu240f es cu 4.8664147 30.0 4.8600000 30.0000000% 0 0.0000000 72sid1 0
141 pu240f es cu 4.9365071 30.0 4.9300000 0.0000000 0 0.0000000 76mae3 0
141 pu240f es cu 4.7762960 15.0 4.7700000 15.0000000% 0 0.0000000 77cro1 0
141 pu240f es cu 5.1411513 30.1 0.0535000 0.0000000 99 pu240f 0.0618000 77mye1 0
141 pu240f cm cu 0.0000000 0.0 5.1400000 10.0000000% 0 0.0000000 81koc1 36
141 pu240f es cu 5.2288926 5.5 5.2220000 0.2870000 0 0.0000000 79mae1 0
141 ce g pu240f rc cu 4.7087164 6.4 0.0490000 3.0000000% 99 mo g pu240f 0.0618000 77mye1 0
141 pu241f es cu 5.1326266 30.0 5.1100000 30.0000000% 0 0.0000000 72sid1 0

141 pu241f es cu su 0.0000000 0.0 5.4000000 0.0000000 0 0.0000000 76mae3 0
141 pu241f es cu 5.1125381 15.0 5.0900000 15.0000000% 0 0.0000000 77cro1 0
141 pu241f es cu 5.1757291 5.0 5.0260000 0.2440000 148 nd g pu241f 1.9080000 77mae1 0
141 pu241f es cu 4.9739270 4.8 4.9520000 0.2400000 0 0.0000000 80mae4 0
141 pu241f cm cu 0.0000000 0.0 4.6850000 10.0000000% 0 0.0000000 81koc1 36
141 pu242f es cu 5.2762100 30.0 5.3600000 30.0000000% 0 0.0000000 72sid1 0
141 pu242f es cu 4.6954331 30.0 4.7700000 0.0000000 0 0.0000000 76mae3 0
141 pu242f cm cu 0.0000000 0.0 5.2550000 3.0000000% 0 0.0000000 81koc1 36
141 pu242f es cu 5.0183057 5.2 5.0980000 0.2630000 0 0.0000000 79mae1 0
141 th232h ms cu ca 6.1966329 3.2 5.2000000 0.0000000 137 th232h 4.8400000 72boc1 0
141 th232h es cu 6.0676081 8.1 5.8900000 8.1000000% 0 0.0000000 77cro1 0
141 th232h es cu 5.7276572 8.0 5.5600000 8.0000000% 0 0.0000000 75mee3 0
141 ce g th232h rc cu 6.0985401 12.3 5.7800000 0.7000000 99 mo g th232h 2.0000000 68the1 0
141 ce g th232h cm cu 0.0000000 0.0 5.5800000 10.1000000% 0 0.0000000 73net2 0
141 ce g th232h rc cu 5.9500962 9.7 5.6900000 0.5000000 140 ba g th232h 5.9000000 73cha1 0
141 ce g th232h cm cu 0.0000000 0.0 5.6900000 8.1000000% 0 0.0000000 77cro1 0
141 ce g th232h rc cu 6.0779096 13.6 5.9000000 0.8000000 0 0.0000000 60vla1 0
141 ce g th232h cm cu 0.0000000 0.0 5.8400000 0.0000000 0 0.0000000 69gun2 0
141 la g th232h cm cu 0.0000000 0.0 5.5800000 10.1000000% 0 0.0000000 73net2 0
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nuclide material tech. type value err. value nuclide material value no. treatment

141 ba g th232h cm cu 0.0000000 0.0 5.5680000 10.1000000% 0 0.0000000 73net2 0
141 cs g th232h cm cu x3 0.0000000 0.0 4.4710000 12.0000000% 0 0.0000000 73net2 0
141 xe g th232h ms in 1.4834220 13.9 1.4400000 0.2000000 0 0.0000000 72boc1 0
141 xe g th232h cm cu x3 0.0000000 0.0 1.5850000 33.0000000% 0 0.0000000 73net2 0
141 xe g th232h rc fc 1.7638169 18.1 0.2800000 0.0500000 141 th232h 1.0000000 77feu1 0
141 np237f es cu 5.2263157 30.0 5.2700000 30.0000000% 0 0.0000000 72sid1 0
141 np237f es cu 5.1608628 4.8 5.2040000 0.2510000 0 0.0000000 77mae2 0
141 np237f sp cu 5.1965643 5.3 5.2400000 0.2800000 0 0.0000000 80naq1 0
141 np237f cm cu 0.0000000 0.0 5.0470000 5.0000000% 0 0.0000000 81koc1 36
141 ce g np237f rc cu 5.1040773 5.4 4.9700000 0.2340000 140 ba g np237f 5.3000000 68nam1 0
141 ce g np237f rc cu 5.7226066 5.2 6.6700000 0.1100000 140 la g np237f 6.3500000 69ste1 0
141 ce g np237f rc cu 6.1452998 5.4 6.3000000 0.1600000 140 ba g np237f 5.5800000 77bla2 0
141 ce g np237f rc cu 6.1009393 20.1 4.3100000 20.0000000% 144 ce g np237f 2.9000000 65iye1 0

141	ce g	np237f	cm	cu		0.0000000	0.0	4.1400000	11.3000000%	0		0.0000000	77cro1	0
141	ce g	np237f	cm	cu		0.0000000	0.0	5.4900000	0.0000000	0		0.0000000	69gun2	0
141		cf252s	sp	cu		5.7551694	15.0	5.7730000	0.0000000	0		0.0000000	63fra1	0
141		cf252s	sp	cu		5.8409038	15.0	5.8590000	0.0000000	0		0.0000000	65sch1	0
141		cf252s	es	cu		6.1130606	15.0	6.1320000	15.0000000%	0		0.0000000	87wah1	36
141		cf252s	rc	cu		5.7621478	5.0	5.7800000	0.2600000	0		0.0000000	83li 1	0
141	ce g	cf252s	rc	cu		5.8817771	10.0	5.9000000	0.3000000	0		0.0000000	60ner1	0
141	ce g	cf252s	rc	cu		6.0868845	5.4	6.3900000	0.2400000	147	nd g	cf252s	4.4800000	73sko1	0
141	ce g	cf252s	rc	cu		6.3503255	9.6	6.3700000	0.6100000	0		0.0000000	75fly2	0
141	ce g	cf252s	rc	cu		6.2154450	5.2	1.0470000	0.0210000	140	ba g	cf252s	1.0000000	75bla1	0
141	ce g	cf252s	rc	cu		5.9262151	7.0	5.8000000	0.4000000	140	ba g	cf252s	5.8100000	71har2	0
141	ce g	cf252s	cm	cu		0.0000000	0.0	5.9000000	0.0000000	0		0.0000000	69gun2	0
141	ce g	cf252s	rc	cu		6.1110667	5.9	6.1300000	0.3600000	0		0.0000000	76thi1	0
141	ce g	cf252s	rc	cu		5.9814683	11.2	6.0000000	0.6700000	0		0.0000000	85tom1	0
141	ce g	cf252s	rc	cu		5.9515609	5.0	5.9700000	0.2900000	0		0.0000000	84che1	0
141	ce g	cf252s	rc	cu		5.9515609	5.0	5.9700000	0.2900000	0		0.0000000	86che1	0
141	ce g	cf252s	rc	re		6.4012307	26.7	1.5000000	0.4000000	147	nd g	cf252s	1.0000000	75don1	0
141	la g	cf252s	rc	cu		5.8582691	5.4	6.1500000	0.2300000	147	nd g	cf252s	4.4800000	73sko1	0
141	ba g	cf252s	rc	cu		5.9814683	5.0	6.0000000	0.2000000	0		0.0000000	80top1	0
141	ba g	cf252s	rc	cu		5.6425184	5.0	5.6600000	0.1000000	0		0.0000000	89man1	0
141	cs g	cf252s	rc	cu		4.8250511	5.0	4.8400000	0.2000000	0		0.0000000	73sko1	0
141	xe g	cf252s	rc	fc		1.0230556	10.2	0.1720000	0.0050000	141		cf252s	1.0000000	62wah1	0
142		u233f	cm	cu		0.0000000	0.0	6.5300000	5.0000000%	0		0.0000000	77cro1	0
142		u233f	rc	cu	x4	0.0000000	0.0	7.8200000	0.1000000	140	ba g	u233f	6.2600000	77bla1	0
142		u233f	cm	cu	x3	0.0000000	0.0	6.9080000	0.0000000	0		0.0000000	63wea1	0
142	ce g	u233f	ms	cu	su	0.0000000	0.0	6.3600000	0.0500000	0		0.0000000	74mae1	0
142	ce g	u233f	ms	cu	su	0.0000000	0.0	6.0180000	0.0680000	0		0.0000000	80mae1	0
142	ce g	u233f	ms	cu		6.1357564	2.0	6.1500000	0.0740000	0		0.0000000	81mae1	0
142	ce g	u233f	ms	cu		6.1088189	2.0	6.1230000	0.0550000	0		0.0000000	81mae1	0
142	ce g	u233f	cm	cu		0.0000000	0.0	6.1370000	0.0560000	0		0.0000000	81mae1	0
142		u233f	cm	cu		0.0000000	0.0	6.0350000	3.0000000%	0		0.0000000	81koc1	36
142	la g	u233f	cm	cu		0.0000000	0.0	6.5560000	10.1000000%	0		0.0000000	73net2	0
142	la g	u233f	rc	cu	x4	0.0000000	0.0	7.8000000	0.8500000	0		0.0000000	77gud1	0
142		u233he	cm	cu		0.0000000	0.0	4.2840000	0.0000000	0		0.0000000	63wea1	0
142		u233he	es	cu		4.3965820	20.0	4.3600000	20.0000000%	0		0.0000000	77cro1	0
142	la g	u233he	cm	cu		0.0000000	0.0	3.5600000	8.1000000%	0		0.0000000	73net2	0

142		u236f	es	cu		5.6051958	30.0	5.6500000	30.0000000%	0			0.0000000	72sid1	0
142		u236f	rc	cu		5.6973457	5.4	5.8700000	0.0900000	140	ba g	u236f	5.7600000	77bla1	0
142		u236f	cm	cu		0.0000000	0.0	5.3500000	20.0000000%	0			0.0000000	81koc1	36
142	la g	u236f	rc	cu		5.6933492	5.4	5.5400000	0.2500000	140	ba g	u236f	5.4400000	77fer1	0
142	la g	u236f	rc	cu		4.9431425	5.4	4.8100000	0.1700000	140	ba g	u236f	5.4400000	80gud1	0
142	la g	u236f	rc	cu		4.9900383	11.3	4.9300000	0.5200000	97	zr g	u236f	5.3400000	84gud1	0
142	la g	u236f	rc	cu		5.2430829	11.7	5.1800000	0.5700000	97	zr g	u236f	5.3400000	84gud1	0
142		pu239h	cm	cu	x3	0.0000000	0.0	4.2660000	0.0000000	0			0.0000000	63wea1	0
142		pu239h	es	cu		2.9951996	12.0	3.0840000	12.0000000%	0			0.0000000	75mee5	0
142	la g	pu239h	es	cu		3.1117443	10.0	3.2040000	10.0000000%	0			0.0000000	73net2	0
142		pu240f	es	cu		5.3835505	30.0	5.3800000	30.0000000%	0			0.0000000	72sid1	0
142	ce g	pu240f	ms	cu		4.9232470	6.0	4.9200000	0.0000000	0			0.0000000	76mae3	0
142		pu240f	es	cu		5.3135044	15.0	5.3100000	15.0000000%	0			0.0000000	77cro1	0
142		pu240f	es	cu		4.7248212	30.1	0.0492000	0.0000000	99		pu240f	0.0618000	77mye1	0
142		pu240f	cm	cu		0.0000000	0.0	4.6800000	3.0000000%	0			0.0000000	81koc1	36
142	ce g	pu240f	ms	cu		4.8772166	2.0	4.8740000	0.0840000	0			0.0000000	79mae1	0
142		pu241f	es	cu		5.0110698	30.0	5.0000000	30.0000000%	0			0.0000000	72sid1	0
142	ce g	pu241f	ms	cu	su	0.0000000	0.0	4.8000000	0.0000000	0			0.0000000	76mae3	0
142	ce g	pu241f	ms	cu	su	0.0000000	0.0	4.4300000	0.0000000	0			0.0000000	76koc1	0
142		pu241f	es	cu		4.9910255	15.0	4.9800000	15.0000000%	0			0.0000000	77cro1	0
142	ce g	pu241f	ms	cu	su	0.0000000	0.0	4.6730000	0.0530000	148	nd g	pu241f	1.9080000	77mae1	0
142		pu241f	ms	cu		4.6262196	2.0	4.6160000	0.0810000	0			0.0000000	80mae4	0
142		pu241f	cm	cu		0.0000000	0.0	4.6100000	5.0000000%	0			0.0000000	81koc1	36
142		pu242f	es	cu		4.5745762	30.0	4.6000000	30.0000000%	0			0.0000000	72sid1	0
142	ce g	pu242f	ms	cu		4.5546868	6.0	4.5800000	0.0000000	0			0.0000000	76mae3	0
142	ce g	pu242f	ms	cu		4.5546868	5.9	4.5800000	0.2700000	0			0.0000000	78cun1	0
142		pu242f	cm	cu		0.0000000	0.0	4.6550000	3.0000000%	0			0.0000000	81koc1	36
142	ce g	pu242f	ms	cu		4.6113717	2.0	4.6370000	0.0570000	0			0.0000000	79mae1	0
142	la g	pu242f	rc	cu		4.6044104	8.0	4.6300000	0.3700000	0			0.0000000	83gud1	0
142		th232h	es	cu		5.5030005	8.0	5.1900000	8.0000000%	0			0.0000000	77cro1	0
142		th232h	es	cu		5.1743049	8.0	4.8800000	8.0000000%	0			0.0000000	75mee3	0
142	la g	th232h	cm	cu		0.0000000	0.0	5.2700000	10.1000000%	0			0.0000000	73net2	0
142	la g	th232h	rc	cu		5.5215251	8.8	5.1300000	0.4000000	140	ba g	th232h	5.9000000	73cha1	0
142	la g	th232h	cm	cu		0.0000000	0.0	5.0400000	8.0000000%	0			0.0000000	77cro1	0
142	la g	th232h	rc	cu		5.6620467	15.0	5.3400000	0.0000000	0			0.0000000	71bla2	0
142	xe g	th232h	ms	in		0.7740251	17.8	0.7300000	0.1300000	0			0.0000000	72boc1	0

142 xe g th232h rc fc 0.5734680 20.8 0.1000000 0.0200000 142 th232h 1.0000000 77feu1 0
142 i g th232h es cu 0.0318093 30.0 0.0300000 0.0000000 0 0.0000000 74mee2 0
142 np237f es cu x3 0.0000000 0.0 5.8600000 30.0000000% 0 0.0000000 72sid1 0
142 ce g np237f ms cu 4.8921561 2.0 4.9210000 0.0330000 0 0.0000000 77mae2 0
142 np237f sp cu 4.4736238 5.8 4.5000000 0.2600000 0 0.0000000 80naq1 0
142 np237f cm cu 0.0000000 0.0 4.5430000 5.0000000% 0 0.0000000 81koc1 36
142 la g np237f rc cu 4.3024628 9.1 4.4000000 0.3900000 140 ba g np237f 5.5800000 77bla2 0
142 la g np237f rc cu 4.2350305 5.0 4.2600000 4.7000000% 0 0.0000000 87nai1 0
142 cf252s sp cu 5.8602901 15.0 5.8860000 0.0000000 0 0.0000000 63fra1 0
142 cf252s rc cu 6.2426128 7.8 6.2700000 0.4900000 0 0.0000000 73sko1 0
142 cf252s sp cu 5.5964476 15.0 5.6210000 0.0000000 0 0.0000000 65sch1 0
142 cf252s es cu 6.0076436 15.0 6.0340000 15.0000000% 0 0.0000000 87wah1 36
142 cf252s rc cu 6.1231370 5.0 6.1500000 0.2400000 0 0.0000000 83li 1 0
142 la g cf252s rc cu 5.9553987 8.1 6.2600000 0.4900000 147 nd g cf252s 4.4800000 73sko1 0
142 la g cf252s rc cu 6.1629622 8.4 6.1900000 0.5200000 0 0.0000000 76thi1 0
142 ba g cf252s rc in 2.8873329 15.2 2.9000000 0.4400000 0 0.0000000 71che1 36
142 ba g cf252s rc fc 5.4895758 5.7 0.9150000 0.0340000 142 cf252s 1.0000000 87sri2 0
142 ba g cf252s rc cu 5.3863693 5.0 5.4100000 0.1000000 0 0.0000000 89man1 0
142 ba g cf252s rc fc 5.4895758 5.7 0.9150000 0.0340000 142 cf252s 1.0000000 89man1 0
143 u233f cm cu 0.0000000 0.0 6.0930000 0.0000000 0 0.0000000 63wea1 0
143 nd g u233f ms cu 5.5309272 2.0 5.5400000 0.0300000 0 0.0000000 74mae1 0
143 u233f cm cu 0.0000000 0.0 5.6600000 6.3000000% 0 0.0000000 77cro1 0
143 nd g u233f ms cu 5.4810091 2.0 5.4900000 0.0530000 0 0.0000000 80mae1 0
143 u233f rc cu 5.5901163 6.4 5.8500000 0.0900000 140 ba g u233f 6.2600000 77bla1 0
143 nd g u233f ms cu 5.5478994 2.0 5.5570000 0.0480000 0 0.0000000 81mae1 0
143 nd g u233f ms cu 5.5329240 2.0 5.5420000 0.0430000 0 0.0000000 81mae1 0
143 nd g u233f cm cu 0.0000000 0.0 5.5490000 0.0430000 0 0.0000000 81mae1 0
143 u233f cm cu 0.0000000 0.0 5.6550000 3.0000000% 0 0.0000000 81koc1 36
143 pr g u233f rc cu 4.9471757 15.5 5.0100000 15.0000000% 99 mo g u233f 4.7500000 65bun2 0
143 ce g u233f cm cu 0.0000000 0.0 5.2100000 10.1000000% 0 0.0000000 73net2 0
143 ce g u233f rc cu 5.3711893 5.0 5.3800000 3.7000000% 0 0.0000000 81lau1 0
143 la g u233f cm cu 0.0000000 0.0 5.1280000 10.1000000% 0 0.0000000 73net2 0
143 ba g u233f cm cu 0.0000000 0.0 3.8750000 14.0000000% 0 0.0000000 73net2 0
143 cs g u233f cm cu x3 0.0000000 0.0 0.3432000 46.0000000% 0 0.0000000 73net2 0
143 xe g u233f cm cu 0.0000000 0.0 0.0051060 90.0000000% 0 0.0000000 73net2 0

0measured nuclide	fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
143	u233he	es	cu		3.3470059	7.0	3.3400000	7.0000000%	0		0.0000000	77cro1	0
143	u233he	cm	cu	x3	0.0000000	0.0	4.0080000	0.0000000	0		0.0000000	63wea1	0
143 ce g	u233he	rc	cu		3.2087894	6.5	0.0328000	0.0017000	97 zr g	u233he	0.0480000	72net2	0
143 ce g	u233he	cm	cu		0.0000000	0.0	3.2800000	7.9000000%	0		0.0000000	73net2	0
143 ce g	u233he	rc	cu		3.1608520	6.8	2.8800000	0.1600000	140 ba g	u233he	4.0100000	75cav1	0
143 ce g	u233he	rc	cu		3.1766494	5.5	3.1700000	5.5000000%	0		0.0000000	81lau1	0
143 la g	u233he	cm	cu		0.0000000	0.0	3.0070000	9.0000000%	0		0.0000000	73net2	0
143 ba g	u233he	cm	cu		0.0000000	0.0	1.5680000	23.0000000%	0		0.0000000	73net2	0
143 cs g	u233he	cm	cu		0.0000000	0.0	0.0506000	50.0000000%	0		0.0000000	73net2	0
143 xe g	u233he	cm	cu		0.0000000	0.0	0.0002363	90.0000000%	0		0.0000000	73net2	0
143	u236f	es	cu		5.3274162	30.0	5.3700000	30.0000000%	0		0.0000000	72sid1	0
143	u236f	rc	cu		5.9788159	5.4	6.1600000	0.0800000	140 ba g	u236f	5.7600000	77bla1	0
143	u236f	cm	cu		0.0000000	0.0	5.2000000	20.0000000%	0		0.0000000	81koc1	36
143 ce g	u236f	rc	cu		5.9810996	5.4	5.8200000	0.2600000	140 ba g	u236f	5.4400000	77fer1	0
143 ce g	u236f	rc	cu		5.3439378	5.4	5.2000000	0.2500000	140 ba g	u236f	5.4400000	80gud1	0
143	pu239h	cm	cu		0.0000000	0.0	3.9930000	0.0000000	0		0.0000000	63wea1	0
143	pu239h	es	cu		2.5735133	12.0	2.6270000	12.0000000%	0		0.0000000	75mee5	0
143 ce g	pu239h	es	cu		2.6940090	9.9	2.7500000	9.9000000%	0		0.0000000	73net2	0
143 ce g	pu239h	rc	cu		2.8703441	5.0	2.9300000	4.0000000%	0		0.0000000	81lau1	0
143 la g	pu239h	cm	cu		0.0000000	0.0	2.5450000	11.0000000%	0		0.0000000	73net2	0
143 ba g	pu239h	cm	cu		0.0000000	0.0	1.3760000	18.0000000%	0		0.0000000	73net2	0
143 cs g	pu239h	cm	cu		0.0000000	0.0	0.0480300	51.0000000%	0		0.0000000	73net2	0
143 xe g	pu239h	cm	cu		0.0000000	0.0	0.0002450	90.0000000%	0		0.0000000	73net2	0
143	pu240f	es	cu		5.1033658	30.0	5.1000000	30.0000000%	0		0.0000000	72sid1	0
143 nd g	pu240f	ms	re		4.4025149	2.5	2.4800000	0.0000000	148 nd g	pu240f	1.0000000	73rob1	0
143 nd g	pu240f	ms	cu		4.7431282	6.0	4.7400000	0.0000000	0		0.0000000	76mae3	0
143	pu240f	ms	cu	su	0.0000000	0.0	4.2300000	0.0000000	0		0.0000000	76koc2	0
143	pu240f	es	cu		5.0433262	15.0	5.0400000	15.0000000%	0		0.0000000	77cro1	0
143	pu240f	es	cu		4.2830696	30.1	0.0446000	0.0000000	99	pu240f	0.0618000	77mye1	0
143 nd g	pu240f	ms	cu		4.2027718	2.0	4.2000000	0.7000000%	0		0.0000000	77koc1	0
143	pu240f	cm	cu		0.0000000	0.0	4.2150000	3.0000000%	0		0.0000000	81koc1	36
143 nd g	pu240f	ms	cu		4.6540694	2.0	4.6510000	0.0570000	0		0.0000000	79mae1	0
143 ce g	pu240f	rc	cu		4.2638616	6.4	0.0444000	3.0000000%	99 mo g	pu240f	0.0618000	77mye1	0

143	nd g	pu241f	ms	re		4.6804438	1.8	2.3900000	0.0000000	148	nd g	pu241f	1.0000000	73rob1	0
143	nd g	pu241f	ms	cu	su	0.0000000	0.0	4.5800000	0.0000000	0			0.0000000	76mae3	0
143	nd g	pu241f	ms	cu	su	0.0000000	0.0	4.1000000	0.0000000	0			0.0000000	76koc1	0
143		pu241f	es	cu		5.4460220	15.0	5.4400000	15.0000000%	0			0.0000000	77cro1	0
143	nd g	pu241f	ms	cu		4.6617119	1.2	4.3800000	0.7000000%	148	nd g	pu241f	1.8400000	77koc1	0
143		pu241f	es	cu		5.4660441	30.0	5.4600000	0.0000000	0			0.0000000	72sid1	0
143	nd g	pu241f	ms	cu	su	0.0000000	0.0	4.6000000	0.0330000	148	nd g	pu241f	1.9080000	77mae1	0
143		pu241f	ms	cu		4.6681618	2.0	4.6630000	0.0900000	0			0.0000000	80mae4	0
143		pu241f	cm	cu		0.0000000	0.0	4.3850000	5.0000000%	0			0.0000000	81koc1	36
143	ce g	pu241f	rc	cu	x2	0.0000000	0.0	3.2500000	0.0030000	0			0.0000000	72and1	0
143		pu242f	es	cu		5.7972548	30.0	5.8200000	30.0000000%	0			0.0000000	72sid1	0
143	nd g	pu242f	ms	cu		4.6318273	6.0	4.6500000	0.0000000	0			0.0000000	76mae3	0
143		pu242f	ms	cu	su	0.0000000	0.0	4.5200000	0.0000000	0			0.0000000	76koc2	0
143	nd g	pu242f	ms	cu		4.5131248	1.5	4.4600000	0.5000000%	148	nd g	pu242f	1.9700000	77koc1	0
143		pu242f	cm	cu		0.0000000	0.0	4.5000000	3.0000000%	0			0.0000000	81koc1	36
143	nd g	pu242f	ms	cu		4.6318273	6.0	4.6500000	0.2800000	0			0.0000000	78cun1	0
143	nd g	pu242f	ms	cu		4.5800305	2.0	4.5980000	0.0320000	0			0.0000000	79mae1	0
143	ce g	pu242f	rc	cu		3.9345630	7.6	3.9500000	0.3000000	0			0.0000000	83gud1	0
143		th232h	es	cu		5.0889616	5.5	4.9400000	5.5000000%	0			0.0000000	77cro1	0
143		th232h	es	cu		4.9653431	8.0	4.8200000	8.0000000%	0			0.0000000	75mee3	0
143	pr g	th232h	es	fc		5.2739595	5.7	1.0000000	5.0000000%	143		th232h	1.0000000	74mee5	0
143	pr g	th232h	rc	cu	x4	0.0000000	0.0	5.2600000	0.5000000	99	mo g	th232h	2.0000000	68the1	0
143	ce g	th232h	rc	cu		4.9529035	10.8	5.4400000	0.4100000	97	zr g	th232h	3.8000000	64lyl1	0
143	ce g	th232h	rc	cu		4.9447400	15.0	4.8000000	0.0000000	0			0.0000000	71bla1	0
143	ce g	th232h	cm	cu		0.0000000	0.0	4.9100000	10.1000000%	0			0.0000000	73net2	0
143	ce g	th232h	es	fc		5.2739595	5.7	1.0000000	5.0000000%	143		th232h	1.0000000	74mee5	0
143	ce g	th232h	rc	cu		4.8207282	9.6	4.6100000	0.4000000	140	ba g	th232h	5.9000000	73cha1	0
143	ce g	th232h	cm	cu		0.0000000	0.0	4.8700000	5.5000000%	0			0.0000000	77cro1	0
143	ce g	th232h	es	cu	x3	0.0000000	0.0	5.3500000	0.0000000	0			0.0000000	69gun2	0
143	la g	th232h	cm	cu		0.0000000	0.0	4.9060000	10.1000000%	0			0.0000000	73net2	0
143	ba g	th232h	cm	cu		0.0000000	0.0	4.6060000	11.0000000%	0			0.0000000	73net2	0
143	cs g	th232h	cm	cu	x3	0.0000000	0.0	1.3120000	33.0000000%	0			0.0000000	73net2	0
143	xe g	th232h	cm	cu	x3	0.0000000	0.0	0.0846200	51.0000000%	0			0.0000000	73net2	0
143		np237f	es	cu	x3	0.0000000	0.0	4.3800000	30.0000000%	0			0.0000000	72sid1	0
143	nd g	np237f	ms	cu		4.6873636	2.0	4.7150000	0.0330000	0			0.0000000	77mae2	0
143		np237f	sp	cu		4.1853236	5.9	4.2100000	0.2500000	0			0.0000000	80naq1	0

143		np237f	cm	cu		0.0000000	0.0	4.5470000	5.0000000%	0					0.0000000	81koc1	36
143	ce g	np237f	rc	cu		4.7647459	5.2	5.5400000	0.1200000	140	la g	np237f	6.3500000	69ste1	0		
143	ce g	np237f	rc	cu		4.8109357	5.4	4.9200000	0.1600000	140	ba g	np237f	5.5800000	77bla2	0		
143	ce g	np237f	cm	cu		0.0000000	0.0	5.2300000	10.0000000%	0					0.0000000	77cro1	0
143	ce g	np237f	cm	cu		0.0000000	0.0	5.5400000	0.0000000	0					0.0000000	69gun2	0
143	ce g	np237f	rc	cu		3.3701299	27.0	3.3900000	27.0000000%	0					0.0000000	87nai1	36
143		cf252s	sp	cu		6.0043972	15.0	6.0230000	0.0000000	0					0.0000000	63fra1	0
143		cf252s	sp	cu		5.6674412	15.0	5.6850000	0.0000000	0					0.0000000	65sch1	0
143		cf252s	es	cu		6.4390506	15.0	6.4590000	15.0000000%	0					0.0000000	87wah1	36
143		cf252s	rc	cu		6.2805417	5.0	6.3000000	0.2300000	0					0.0000000	83li 1	0
143	pr g	cf252s	rc	cu		7.3771442	20.3	7.4000000	1.5000000	0					0.0000000	58cun1	0
143	pr g	cf252s	rc	cu		6.4107563	5.4	6.7300000	0.2500000	147	nd g	cf252s	4.4800000	73sko1	0		
143	pr g	cf252s	rc	cu		7.1079781	5.0	7.1300000	0.1800000	0					0.0000000	73sko1	0
143	pr g	cf252s	es	fc		6.2345660	5.4	1.0000000	5.0000000%	143		cf252s	1.0000000	74mee5	0		
143	pr g	cf252s	cm	cu		0.0000000	0.0	7.0400000	0.0000000	0					0.0000000	69gun2	0
143	pr g	cf252s	rc	cu		5.8419007	9.4	5.8600000	0.5500000	0					0.0000000	84che1	0
143	pr g	cf252s	rc	cu		5.8419007	9.4	5.8600000	0.5500000	0					0.0000000	86che1	0
143	ce g	cf252s	rc	cu	x4	0.0000000	0.0	7.8000000	1.5000000	0					0.0000000	55gle2	0
143	ce g	cf252s	rc	cu		5.9216536	10.0	5.9400000	0.3500000	0					0.0000000	60ner1	0
143	ce g	cf252s	rc	cu		6.3059742	5.4	6.6200000	0.2600000	147	nd g	cf252s	4.4800000	73sko1	0		
143	ce g	cf252s	rc	cu		6.2705726	7.5	6.2900000	0.4700000	0					0.0000000	73sko1	0
143	ce g	cf252s	rc	cu		5.9116845	5.0	5.9300000	0.2800000	0					0.0000000	75fly2	0
143	ce g	cf252s	rc	cu		6.3816651	13.9	1.0750000	0.1490000	140	ba g	cf252s	1.0000000	75bla1	0		
143	ce g	cf252s	rc	cu		5.9483055	5.3	1.0020000	0.0510000	140	ba g	cf252s	1.0000000	75bla1	0		
143	ce g	cf252s	es	fc		6.2345535	5.4	0.9999980	5.0000000%	143		cf252s	1.0000000	74mee5	0		
143	ce g	cf252s	rc	cu		6.5392718	5.2	6.4000000	0.2000000	140	ba g	cf252s	5.8100000	71har2	0		
143	ce g	cf252s	rc	cu		6.1110667	5.1	6.1300000	0.3100000	0					0.0000000	76thi1	0
143	ce g	cf252s	rc	cu		6.1808505	11.5	6.2000000	0.7100000	0					0.0000000	85tom1	0
143	ce g	cf252s	rc	re	x4	0.0000000	0.0	1.1000000	0.3000000	147	nd g	cf252s	1.0000000	75don1	0		
143	cs g	cf252s	sp	re		0.7174840	47.8	5.5900000	45.0000000%	138	i g	cf252s	8.2000000	77mak1	36		
144	nd g	u233f	ms	cu		4.3927942	2.0	4.4000000	0.0200000	0					0.0000000	74mae1	0
144		u233f	cm	cu		0.0000000	0.0	4.4400000	5.3000000%	0					0.0000000	77cro1	0
144	nd g	u233f	ms	cu		4.2989481	2.0	4.3060000	0.0410000	0					0.0000000	80mae1	0
144		u233f	rc	cu	x4	0.0000000	0.0	5.5100000	0.0900000	140	ba g	u233f	6.2600000	77bla1	0		
144		u233f	cm	cu	x3	0.0000000	0.0	5.0140000	0.0000000	0					0.0000000	63wea1	0
144	nd g	u233f	ms	cu		4.4197500	2.0	4.4270000	0.0380000	0					0.0000000	81mae1	0

144 nd g u233f ms cu 4.4047745 2.0 4.4120000 0.0340000 0 0.0000000 81mae1 0
144 nd g u233f cm cu 0.0000000 0.0 4.4200000 0.0340000 0 0.0000000 81mae1 0
144 u233f cm cu 0.0000000 0.0 4.5000000 3.0000000% 0 0.0000000 81koc1 36
144 ce g u233f rc cu 4.1374583 15.5 4.1900000 15.0000000% 99 mo g u233f 4.7500000 65bun2 0
144 ce g u233f cm cu 0.0000000 0.0 4.3780000 10.1000000% 0 0.0000000 73net2 0
144 ce g u233f rc cu 4.5125977 5.0 4.5200000 4.8000000% 0 0.0000000 81lau1 0
144 la g u233f cm cu 0.0000000 0.0 4.0140000 11.0000000% 0 0.0000000 73net2 0
144 ba g u233f cm cu 0.0000000 0.0 2.0930000 24.0000000% 0 0.0000000 73net2 0
144 cs g u233f cm cu 0.0000000 0.0 0.0675400 51.0000000% 0 0.0000000 73net2 0
144 xe g u233f cm cu 0.0000000 0.0 0.0003154 90.0000000% 0 0.0000000 73net2 0
144 u233he es cu 2.5976831 12.0 2.5900000 12.0000000% 0 0.0000000 77cro1 0
144 u233he cm cu x3 0.0000000 0.0 3.7060000 0.0000000 0 0.0000000 63wea1 0
144 ce g u233he rc cu 2.4380527 7.6 0.0249000 0.0016000 97 zr g u233he 0.0480000 72net2 0
144 ce g u233he cm cu 0.0000000 0.0 2.4900000 7.9000000% 0 0.0000000 73net2 0
144 ce g u233he rc cu 2.4372084 8.0 2.4300000 8.0000000% 0 0.0000000 81lau1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

144 la g u233he cm cu 0.0000000 0.0 1.8070000 12.0000000% 0 0.0000000 73net2 0
144 ba g u233he cm cu 0.0000000 0.0 0.5108000 33.0000000% 0 0.0000000 73net2 0
144 cs g u233he cm cu 0.0000000 0.0 0.0055390 90.0000000% 0 0.0000000 73net2 0
144 xe g u233he cm cu 0.0000000 0.0 0.0000078 90.0000000% 0 0.0000000 73net2 0
144 u236f es cu 4.8909053 30.0 4.9300000 30.0000000% 0 0.0000000 72sid1 0
144 u236f rc cu 5.2508757 5.4 5.4100000 0.0900000 140 ba g u236f 5.7600000 77bla1 0
144 u236f cm cu 0.0000000 0.0 4.8850000 20.0000000% 0 0.0000000 81koc1 36
144 ce g u236f rc cu 4.9861441 5.0 5.0260000 4.4000000% 0 0.0000000 76for1 0
144 pu239h cm cu 0.0000000 0.0 3.7490000 0.0000000 0 0.0000000 63wea1 0
144 pu239h es cu 2.6295889 12.0 2.6680000 12.0000000% 0 0.0000000 75mee5 0
144 ce g pu239h es cu 2.6315601 9.9 2.6700000 9.9000000% 0 0.0000000 73net2 0
144 ce g pu239h rc re x5 0.0000000 0.0 0.5980000 0.8500000% 99 mo g u235t 0.0000000 64oth1 7
144 ce g pu239h rc cu 2.4147275 10.0 2.4500000 0.8500000% 0 0.0000000 64oth1 0
144 ce g pu239h cm cu 0.0000000 0.0 2.1800000 10.0000000% 0 0.0000000 77cro1 0
144 ce g pu239h rc cu 2.8316376 5.0 2.8730000 4.5000000% 0 0.0000000 76for1 0
144 ce g pu239h rc cu 2.5527119 7.3 2.5900000 7.3000000% 0 0.0000000 81lau1 0
144 la g pu239h cm cu 0.0000000 0.0 1.9880000 14.0000000% 0 0.0000000 73net2 0

144	ba	g	pu239h	cm	cu		0.0000000	0.0	0.5935000	33.0000000%	0		0.0000000	73net2	0
144	cs	g	pu239h	cm	cu		0.0000000	0.0	0.0069990	90.0000000%	0		0.0000000	73net2	0
144	xe	g	pu239h	cm	cu		0.0000000	0.0	0.0000109	90.0000000%	0		0.0000000	73net2	0
144			pu240f	es	cu		4.0237519	30.0	4.0200000	30.0000000%	0		0.0000000	72sid1	0
144	nd	g	pu240f	ms	cu		4.1538733	6.0	4.1500000	0.0000000	0		0.0000000	76mae3	0
144			pu240f	ms	cu	su	0.0000000	0.0	3.7200000	0.0000000	0		0.0000000	76koc2	0
144			pu240f	es	cu		3.9837146	15.0	3.9800000	15.0000000%	0		0.0000000	77cro1	0
144			pu240f	es	cu		3.8135497	30.1	0.0397000	0.0000000	99	pu240f	0.0618000	77mye1	0
144	nd	g	pu240f	ms	cu		3.5433039	3.7	3.5400000	3.7000000%	0		0.0000000	77koc1	0
144			pu240f	cm	cu		0.0000000	0.0	3.5950000	3.0000000%	0		0.0000000	81koc1	36
144	nd	g	pu240f	ms	cu		4.0778023	2.0	4.0740000	0.0490000	0		0.0000000	79mae1	0
144	ce	g	pu240f	rc	cu		3.8135484	6.4	0.0397000	3.0000000%	99	mo g pu240f	0.0618000	77mye1	0
144			pu241f	es	cu		4.3596307	30.0	4.3500000	30.0000000%	0		0.0000000	72sid1	0
144	nd	g	pu241f	ms	cu	su	0.0000000	0.0	4.1900000	0.0000000	0		0.0000000	76mae3	0
144	nd	g	pu241f	ms	cu	su	0.0000000	0.0	3.1200000	0.0000000	0		0.0000000	76koc1	0
144			pu241f	es	cu		4.3496086	15.0	4.3400000	15.0000000%	0		0.0000000	77cro1	0
144			pu241f	ms	cu		4.1762256	2.0	4.1670000	0.0800000	0		0.0000000	80mae4	0
144			pu241f	cm	cu		0.0000000	0.0	4.0000000	5.0000000%	0		0.0000000	81koc1	36
144	ce	g	pu241f	rc	cu		4.0088558	5.0	4.0000000	2.2000000%	0		0.0000000	77koc1	0
144	ce	g	pu241f	ms	cu	su	0.0000000	0.0	4.2030000	0.0280000	148	nd g pu241f	1.9080000	77mae1	0
144			pu242f	es	cu		4.6541341	30.0	4.6800000	30.0000000%	0		0.0000000	72sid1	0
144	nd	g	pu242f	ms	cu		4.2961238	6.0	4.3200000	0.0000000	0		0.0000000	76mae3	0
144			pu242f	ms	cu	su	0.0000000	0.0	4.1600000	0.0000000	0		0.0000000	76koc2	0
144	nd	g	pu242f	ms	cu		4.2961238	6.0	4.3200000	0.2600000	0		0.0000000	78cun1	0
144			pu242f	cm	cu		0.0000000	0.0	4.1650000	3.0000000%	0		0.0000000	81koc1	36
144	nd	g	pu242f	ms	cu		4.2613172	2.0	4.2850000	0.0280000	0		0.0000000	79mae1	0
144	ce	g	pu242f	rc	cu		4.1171186	5.0	4.1400000	0.7000000%	0		0.0000000	77koc1	0
144			th232h	es	cu		3.7959040	20.0	3.5800000	20.0000000%	0		0.0000000	77cro1	0
144			th232h	es	cu		4.1245996	8.0	3.8900000	8.0000000%	0		0.0000000	75mee3	0
144	ce	g	th232h	rc	cu	x4	0.0000000	0.0	5.1200000	1.5400000	99	mo g th232h	2.0000000	68the1	0
144	ce	g	th232h	es	cu		4.5063106	10.1	4.2500000	10.1000000%	0		0.0000000	73net2	0
144	ce	g	th232h	cm	cu		0.0000000	0.0	5.1200000	0.0000000	0		0.0000000	69gun2	0
144	la	g	th232h	cm	cu		0.0000000	0.0	4.2160000	10.1000000%	0		0.0000000	73net2	0
144	ba	g	th232h	cm	cu		0.0000000	0.0	3.4560000	12.0000000%	0		0.0000000	73net2	0
144	cs	g	th232h	cm	cu		0.0000000	0.0	0.4249000	46.0000000%	0		0.0000000	73net2	0
144	xe	g	th232h	cm	cu		0.0000000	0.0	0.0093720	90.0000000%	0		0.0000000	73net2	0

144 np237f es cu x3 0.0000000 0.0 4.5100000 30.0000000% 0 0.0000000 72sid1 0
144 np237f sp cu 3.2210091 6.8 3.2400000 0.2200000 0 0.0000000 80naq1 0
144 np237f cm cu 0.0000000 0.0 4.0070000 5.0000000% 0 0.0000000 81koc1 36
144 ce g np237f rc cu 4.4371085 5.4 4.3100000 0.1580000 140 ba g np237f 5.3000000 68nam1 0
144 ce g np237f rc cu 4.3605165 5.2 5.0700000 0.1700000 140 la g np237f 6.3500000 69ste1 0
144 ce g np237f rc cu 4.2046795 5.4 4.3000000 0.1100000 140 ba g np237f 5.5800000 77bla2 0
144 ce g np237f rc cu x4 0.0000000 0.0 2.9000000 20.0000000% 0 0.0000000 65iye1 0
144 ce g np237f rc cu rp 3.5728208 63.3 2.9000000 0.0000000 no. relative values = 1 65iye1
144 ce g np237f cm cu 0.0000000 0.0 2.8300000 14.8000000% 0 0.0000000 77cro1 0
144 ce g np237f ms cu 4.1495346 2.0 4.1740000 0.0270000 0 0.0000000 77mae2 0
144 ce g np237f rc cu 3.6651582 30.3 3.7000000 0.0000000 99 mo g np237f 6.1400000 56for1 0
144 ce g np237f rc re x5 0.0000000 0.0 0.7500000 0.0000000 99 mo g u235t 0.0000000 56for1 7
144 ce g np237f rc re 4.1315407 30.0 4.1559000 0.0000000 0 0.0000000 56for1 0
144 ce g np237f cm cu 0.0000000 0.0 3.8900000 0.0000000 0 0.0000000 69gun2 0
144 ce g np237f rc cu 4.0680152 5.0 4.0920000 4.5000000% 0 0.0000000 76for1 0
144 cf252s sp cu 6.0283231 15.0 6.0470000 0.0000000 0 0.0000000 63fra1 0
144 cf252s sp cu 5.5727346 15.0 5.5900000 0.0000000 0 0.0000000 65sch1 0
144 cf252s es cu 5.9256412 15.0 5.9440000 15.0000000% 0 0.0000000 87wah1 36
144 cf252s rc cu 6.1409741 5.0 6.1600000 0.2800000 0 0.0000000 83li 1 0
144 ce g cf252s rc cu 5.9535255 5.4 6.2500000 0.2300000 147 nd g cf252s 4.4800000 73sko1 0
144 ce g cf252s rc cu 6.2506343 5.0 6.2700000 0.3000000 0 0.0000000 75fly2 0
144 ce g cf252s rc in 0.1993823 25.0 0.2000000 0.0500000 0 0.0000000 71che1 36
144 ce g cf252s rc cu 5.8240389 5.2 5.7000000 0.2000000 140 ba g cf252s 5.8100000 71har2 0
144 ce g cf252s rc fi 0.0588093 15.1 0.0100000 0.0000000 144 cf252s 1.0000000 76klo1 0
144 ce g cf252s rc cu 6.1908196 6.1 6.2100000 0.3800000 0 0.0000000 76thi1 0
144 ce g cf252s rc cu 5.6823948 6.1 5.7000000 0.3500000 0 0.0000000 84che1 0
144 ce g cf252s rc cu 5.6823948 6.1 5.7000000 0.3500000 0 0.0000000 86che1 0
144 la g cf252s rc fi 1.7760404 15.1 0.3020000 0.0000000 144 cf252s 1.0000000 76klo1 0
144 la g cf252s rc cu 5.3833214 5.0 5.4000000 0.2000000 0 0.0000000 80top1 0
144 la g cf252s rc cu 5.3543715 13.9 4.7800000 0.6500000 149 nd g cf252s 2.4200000 91ram1 0
144 ba g cf252s rc in 3.5888810 15.0 3.6000000 0.5400000 0 0.0000000 71che1 36
144 ba g cf252s rc fi 3.5226762 15.1 0.5990000 0.0000000 144 cf252s 1.0000000 76klo1 0
144 cs g cf252s rc fi 0.5234026 15.1 0.0890000 0.0000000 144 cf252s 1.0000000 76klo1 0
144 xe g cf252s rc fc ul 0.0000000 0.0 0.0070000 0.0000000 144 cf252s 1.0000000 62wah1 0
145 nd g u233f ms cu 3.1947594 2.0 3.2000000 0.0200000 0 0.0000000 74mae1 0
145 u233f cm cu 0.0000000 0.0 3.2400000 5.0000000% 0 0.0000000 77cro1 0

145 nd g u233f ms cu 3.1957578 2.0 3.2010000 0.0280000 0 0.0000000 80mae1 0
145 u233f cm cu x3 0.0000000 0.0 3.4880000 0.0000000 0 0.0000000 63wea1 0
145 nd g u233f ms cu 3.2107332 2.0 3.2160000 0.0280000 0 0.0000000 81mae1 0
145 nd g u233f ms cu 3.1977545 2.0 3.2030000 0.0250000 0 0.0000000 81mae1 0
145 nd g u233f cm cu 0.0000000 0.0 3.2090000 0.0250000 0 0.0000000 81mae1 0
145 u233f cm cu 0.0000000 0.0 3.2850000 3.0000000% 0 0.0000000 81koc1 36
145 pr g u233f cm cu 0.0000000 0.0 3.2300000 10.1000000% 0 0.0000000 73net2 0
145 u233he cm cu 0.0000000 0.0 3.1730000 0.0000000 0 0.0000000 63wea1 0
145 u233he es cu 2.1288938 20.0 2.1200000 20.0000000% 0 0.0000000 77cro1 0
145 pr g u233he es cu 2.0083904 8.1 2.0000000 8.1000000% 0 0.0000000 73net2 0
145 u236f cm cu x3 0.0000000 0.0 3.7700000 30.0000000% 0 0.0000000 72sid1 0
145 u236f cm cu x3 0.0000000 0.0 3.6900000 20.0000000% 0 0.0000000 81koc1 36
145 u236f es cu 4.1528985 5.0 4.2000000 5.0000000% 0 0.0000000 89rid1 0
145 pu239h cm cu 0.0000000 0.0 3.1840000 0.0000000 0 0.0000000 63wea1 0
145 pu239h es cu 2.1016900 12.0 2.1640000 12.0000000% 0 0.0000000 75mee5 0
145 pr g pu239h es cu 2.1949257 10.0 2.2600000 10.0000000% 0 0.0000000 73net2 0
145 pu240f es cu 3.3422042 30.0 3.3400000 30.0000000% 0 0.0000000 72sid1 0
145 nd g pu240f ms re 3.0533571 2.5 1.7200000 0.0000000 148 nd g pu240f 1.0000000 73rob1 0
145 nd g pu240f ms cu 3.2621514 6.0 3.2600000 0.0000000 0 0.0000000 76mae3 0
145 pu240f ms cu su 0.0000000 0.0 2.9600000 0.0000000 0 0.0000000 76koc2 0
145 pu240f es cu 3.3121844 15.0 3.3100000 15.0000000% 0 0.0000000 77cro1 0
145 pu240f es cu 3.2747236 30.1 0.0341000 0.0000000 99 pu240f 0.0618000 77mye1 0
145 nd g pu240f ms cu 2.9319337 2.0 2.9300000 0.5000000% 0 0.0000000 77koc1 0
145 pu240f cm cu 0.0000000 0.0 2.9550000 3.0000000% 0 0.0000000 81koc1 36
145 nd g pu240f ms cu 3.2051138 2.0 3.2030000 0.0380000 0 0.0000000 79mae1 0
145 pu241f es cu 3.5238966 30.0 3.5200000 30.0000000% 0 0.0000000 72sid1 0
145 nd g pu241f ms re 3.3291860 1.8 1.7000000 0.0000000 148 nd g pu241f 1.0000000 73rob1 0
145 nd g pu241f ms cu su 0.0000000 0.0 3.2600000 0.0000000 0 0.0000000 76mae3 0
145 nd g pu241f ms cu su 0.0000000 0.0 2.6600000 0.0000000 0 0.0000000 76koc1 0
145 pu241f es cu 3.5138855 15.0 3.5100000 15.0000000% 0 0.0000000 77cro1 0
145 nd g pu241f ms cu 3.3206715 1.1 3.1200000 0.3000000% 148 nd g pu241f 1.8400000 77koc1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

145 nd g pu241f ms cu su 0.0000000 0.0 3.2740000 0.0210000 148 nd g pu241f 1.9080000 77mae1 0

145		pu241f	ms	cu		3.3386918	2.0	3.3350000	0.0640000	0				0.0000000	80mae4	0			
145		pu241f	cm	cu		0.0000000	0.0	3.1200000	5.0000000%	0				0.0000000	81koc1	36			
145	nd g	pu242f	ms	cu		3.4165952	6.0	3.4300000	0.0000000	0				0.0000000	76mae3	0			
145		pu242f	ms	cu	su	0.0000000	0.0	3.3800000	0.0000000	0				0.0000000	76koc2	0			
145	nd g	pu242f	ms	cu		3.3494267	1.5	3.3100000	0.6000000%	148	nd g	pu242f		1.9700000	77koc1	0			
145	nd g	pu242f	ms	cu		3.4165952	6.1	3.4300000	0.2100000	0				0.0000000	78cun1	0			
145		pu242f	cm	cu		0.0000000	0.0	3.3400000	3.0000000%	0				0.0000000	81koc1	36			
145	nd g	pu242f	ms	cu		3.3936851	2.0	3.4070000	0.0220000	0				0.0000000	79mae1	0			
145		pu242f	cm	cu	x3	0.0000000	0.0	3.7000000	30.0000000%	0				0.0000000	72sid1	0			
145		th232h	es	cu		2.4189351	5.0	2.3200000	5.0000000%	0				0.0000000	77cro1	0			
145		th232h	es	cu		2.7421549	8.0	2.6300000	8.0000000%	0				0.0000000	75mee3	0			
145	pr g	th232h	rc	cu	x4	0.0000000	0.0	5.0600000	0.5000000	99	mo g	th232h		2.0000000	68the1	0			
145	pr g	th232h	es	cu		3.5241382	10.1	3.3800000	10.1000000%	0				0.0000000	73net2	0			
145	pr g	th232h	cm	cu		0.0000000	0.0	2.3100000	5.0000000%	0				0.0000000	77cro1	0			
145	pr g	th232h	cm	cu	x3	0.0000000	0.0	5.0600000	0.0000000	0				0.0000000	69gun2	0			
145	pr g	th232h	rc	cu		2.5934802	5.4	2.3800000	0.0600000	99	mo g	th232h		1.9600000	68lyl1	0			
145		np237f	es	cu	x3	0.0000000	0.0	3.4200000	30.0000000%	0				0.0000000	72sid1	0			
145	nd g	np237f	ms	cu		3.4745145	2.0	3.4950000	0.0220000	0				0.0000000	77mae2	0			
145		np237f	sp	cu		3.1613608	6.9	3.1800000	0.2200000	0				0.0000000	80naq1	0			
145		np237f	cm	cu		0.0000000	0.0	3.3500000	5.0000000%	0				0.0000000	81koc1	36			
145		cf252s	sp	cu		5.4968336	15.0	5.5310000	0.0000000	0				0.0000000	63fra1	0			
145		cf252s	sp	cu		5.1639030	15.0	5.1960000	0.0000000	0				0.0000000	65sch1	0			
145		cf252s	es	cu		5.2891247	15.0	5.3220000	15.0000000%	0				0.0000000	87wah1	36			
145	pr g	cf252s	rc	cu		5.3178320	5.4	5.6000000	0.2000000	147	nd g	cf252s		4.4800000	73sko1	0			
145	ce g	cf252s	rc	cu		4.1541791	17.0	4.1800000	0.7100000	0				0.0000000	85tom1	0			
145	ce g	cf252s	rc	cu		4.6901019	5.7	4.2000000	0.2100000	149	nd g	cf252s		2.4200000	91ram1	0			
146		u233f	cm	cu		0.0000000	0.0	2.5940000	0.0000000	0				0.0000000	63wea1	0			
146	nd g	u233f	ms	cu		2.3860859	2.0	2.3900000	0.0100000	0				0.0000000	74mae1	0			
146		u233f	cm	cu		0.0000000	0.0	2.4100000	5.0000000%	0				0.0000000	77cro1	0			
146	nd g	u233f	ms	cu		2.3571334	2.0	2.3610000	0.0250000	0				0.0000000	80mae1	0			
146	nd g	u233f	ms	cu		2.3950712	2.0	2.3990000	0.0210000	0				0.0000000	81mae1	0			
146	nd g	u233f	ms	cu		2.3880827	2.0	2.3920000	0.0190000	0				0.0000000	81mae1	0			
146	nd g	u233f	cm	cu		0.0000000	0.0	2.3950000	0.0190000	0				0.0000000	81mae1	0			
146		u233f	cm	cu		0.0000000	0.0	2.4650000	3.0000000%	0				0.0000000	81koc1	36			
146		u233he	cm	cu		0.0000000	0.0	2.6060000	0.0000000	0				0.0000000	63wea1	0			
146		u233he	es	cu		1.6291039	20.0	1.6100000	20.0000000%	0				0.0000000	77cro1	0			

146 u236f es cu 3.0114687 30.0 3.0600000 30.0000000% 0 0.0000000 72sid1 0
146 u236f cm cu 0.0000000 0.0 3.1600000 20.0000000% 0 0.0000000 81koc1 36
146 pr g u236f rc cu 3.3837748 12.0 3.3700000 0.3800000 97 zr g u236f 5.3400000 84gud1 0
146 pr g u236f rc cu 3.7050828 16.0 3.6900000 0.5700000 97 zr g u236f 5.3400000 84gud1 0
146 pu239h cm cu 0.0000000 0.0 2.6960000 0.0000000 0 0.0000000 63wea1 0
146 pu239h es cu 1.7439697 12.0 1.8180000 12.0000000% 0 0.0000000 75mee5 0
146 pu240f es cu 2.8313206 30.0 2.8300000 30.0000000% 0 0.0000000 72sid1 0
146 nd g pu240f ms re 2.5735538 2.5 1.4500000 0.0000000 148 nd g pu240f 1.0000000 73rob1 0
146 nd g pu240f ms cu 2.6612413 6.0 2.6600000 0.0000000 0 0.0000000 76mae3 0
146 pu240f ms cu su 0.0000000 0.0 2.4800000 0.0000000 0 0.0000000 76koc2 0
146 pu240f es cu 2.8113113 15.0 2.8100000 15.0000000% 0 0.0000000 77cro1 0
146 pu240f es cu 2.7460119 30.1 0.0286000 0.0000000 99 pu240f 0.0618000 77mye1 0
146 nd g pu240f ms cu 2.4511433 2.0 2.4500000 0.8000000% 0 0.0000000 77koc1 0
146 pu240f cm cu 0.0000000 0.0 2.4650000 3.0000000% 0 0.0000000 81koc1 36
146 nd g pu240f ms cu 2.6232236 2.0 2.6220000 0.0310000 0 0.0000000 79mae1 0
146 pu241f es cu 3.0133320 30.0 3.0100000 30.0000000% 0 0.0000000 72sid1 0
146 nd g pu241f ms re 2.8004329 1.8 1.4300000 0.0000000 148 nd g pu241f 1.0000000 73rob1 0
146 nd g pu241f ms cu su 0.0000000 0.0 2.7300000 0.0000000 0 0.0000000 76mae3 0
146 pu241f es cu 3.0033209 15.0 3.0000000 15.0000000% 0 0.0000000 77cro1 0
146 nd g pu241f ms cu 2.8204421 1.1 2.6500000 0.4000000% 148 nd g pu241f 1.8400000 77koc1 0
146 nd g pu241f ms cu su 0.0000000 0.0 2.7380000 0.0180000 148 nd g pu241f 1.9080000 77mae1 0
146 pu241f ms cu 2.7610530 2.0 2.7580000 0.0530000 0 0.0000000 80mae4 0
146 pu241f cm cu 0.0000000 0.0 2.6550000 5.0000000% 0 0.0000000 81koc1 36
146 nd g pu242f ms cu 2.9285101 6.0 2.9400000 0.0000000 0 0.0000000 76mae3 0
146 pu242f ms cu su 0.0000000 0.0 2.9200000 0.0000000 0 0.0000000 76koc2 0
146 nd g pu242f ms cu 2.9041857 1.5 2.8700000 0.5000000% 148 nd g pu242f 1.9700000 77koc1 0
146 nd g pu242f ms cu 2.9285101 6.1 2.9400000 0.1800000 0 0.0000000 78cun1 0
146 pu242f cm cu 0.0000000 0.0 2.8850000 3.0000000% 0 0.0000000 81koc1 36
146 nd g pu242f ms cu 2.9105805 2.0 2.9220000 0.0190000 0 0.0000000 79mae1 0
146 pu242f cm cu x3 0.0000000 0.0 3.1800000 30.0000000% 0 0.0000000 72sid1 0
146 th232h es cu 2.3876357 20.0 2.2000000 20.0000000% 0 0.0000000 77cro1 0
146 th232h es cu 2.4636059 8.0 2.2700000 8.0000000% 0 0.0000000 75mee3 0
146 np237f es cu x3 0.0000000 0.0 3.0500000 30.0000000% 0 0.0000000 72sid1 0
146 nd g np237f ms cu 2.7915412 2.0 2.8080000 0.0180000 0 0.0000000 77mae2 0
146 np237f sp cu 2.9028848 7.2 2.9200000 0.2100000 0 0.0000000 80naq1 0
146 np237f cm cu 0.0000000 0.0 2.7270000 5.0000000% 0 0.0000000 81koc1 36

146		cf252s	sp	cu		4.9194226	15.0	4.9500000	0.0000000	0			0.0000000	63fra1	0
146		cf252s	sp	cu		4.5835105	15.0	4.6120000	0.0000000	0			0.0000000	65sch1	0
146		cf252s	es	cu		4.5974240	15.0	4.6260000	15.0000000%	0			0.0000000	87wah1	36
146		cf252s	rc	cu	x4	0.0000000	0.0	5.5300000	0.1600000	0			0.0000000	83li 1	0
146	ce g	cf252s	rc	in		1.0335757	15.4	1.0400000	0.1600000	0			0.0000000	71che1	36
146	ce g	cf252s	rc	cu		5.1480018	6.2	5.1800000	0.3200000	0			0.0000000	76thi1	0
146	ce g	cf252s	rc	cu		3.7964029	5.0	3.8200000	0.1000000	0			0.0000000	80top1	0
146	ce g	cf252s	rc	cu		4.0547968	10.0	4.0800000	0.4100000	0			0.0000000	85tom1	0
146	ce g	cf252s	rc	fc		4.3581533	6.4	0.9890000	0.0060000	146		cf252s	1.0000000	87sri2	0
146	ce g	cf252s	rc	fc		4.3581533	6.4	0.9890000	0.0060000	146		cf252s	1.0000000	89man1	0
146	ce g	cf252s	es	fc		4.3361201	4.5	0.9840000	2.0000000%	146		cf252s	1.0000000	89rid1	0
146	ce g	cf252s	rc	cu		4.6231004	8.9	4.1400000	0.3500000	149	nd g	cf252s	2.4200000	91ram1	0
146	ba g	cf252s	rc	in		1.0037610	14.9	1.0100000	0.1500000	0			0.0000000	71che1	36
147		u233f	cm	cu		0.0000000	0.0	1.7980000	0.0000000	0			0.0000000	63wea1	0
147	sm g	u233f	ms	cu		1.6772487	2.0	1.6800000	0.0100000	0			0.0000000	74mae1	0
147		u233f	cm	cu		0.0000000	0.0	1.6900000	4.7000000%	0			0.0000000	77cro1	0
147	sm g	u233f	ms	cu		1.7002110	2.0	1.7030000	0.0140000	0			0.0000000	80mae1	0
147		u233f	rc	cu		1.7295915	6.4	1.8100000	0.0300000	140	ba g	u233f	6.2600000	77bla1	0
147	sm g	u233f	ms	cu		1.6792454	2.0	1.6820000	0.0150000	0			0.0000000	81mae1	0
147	sm g	u233f	ms	cu		1.6822405	2.0	1.6850000	0.0130000	0			0.0000000	81mae1	0
147	sm g	u233f	cm	cu		0.0000000	0.0	1.6830000	0.0130000	0			0.0000000	81mae1	0
147		u233f	cm	cu		0.0000000	0.0	1.6650000	3.0000000%	0			0.0000000	81koc1	36
147	nd g	u233f	rc	cu		1.6984316	15.5	1.7200000	15.0000000%	99	mo g	u233f	4.7500000	65bun2	0
147	nd g	u233f	cm	cu		0.0000000	0.0	1.6700000	10.1000000%	0			0.0000000	73net2	0
147	nd g	u233f	rc	cu		1.7571177	5.0	1.7600000	4.9000000%	0			0.0000000	81lau1	0
147		u233he	cm	cu	x3	0.0000000	0.0	2.0770000	0.0000000	0			0.0000000	63wea1	0
147		u233he	es	cu		1.2035597	9.0	1.2000000	9.0000000%	0			0.0000000	77cro1	0
147	nd g	u233he	rc	cu		1.1651738	7.8	0.0119000	0.0008000	97	zr g	u233he	0.0480000	72net2	0
147	nd g	u233he	cm	cu		0.0000000	0.0	1.1900000	7.9000000%	0			0.0000000	73net2	0
147	nd g	u233he	rc	cu		1.1424084	19.6	1.0400000	0.2000000	140	ba g	u233he	4.0100000	75cav1	0
147	nd g	u233he	rc	cu		1.3239157	6.5	1.3200000	6.5000000%	0			0.0000000	81lau1	0
147		u236f	es	cu		2.3606030	30.0	2.3700000	30.0000000%	0			0.0000000	72sid1	0
147		u236f	rc	cu		2.2997400	5.4	2.3600000	0.0500000	140	ba g	u236f	5.7600000	77bla1	0
147		u236f	cm	cu		0.0000000	0.0	2.5000000	20.0000000%	0			0.0000000	81koc1	36
147	nd g	u236f	rc	cu		2.3386902	5.0	2.3480000	3.3000000%	0			0.0000000	76for1	0
147	nd g	u236f	rc	cu		2.2211581	5.0	2.2300000	3.3000000%	0			0.0000000	76for1	0

147 nd g u236f rc cu 2.2281304 5.0 2.2370000 3.3000000% 0 0.0000000 76for1 0
147 nd g u236f rc cu 2.2390867 5.0 2.2480000 3.3000000% 0 0.0000000 76for1 0
147 nd g u236f rc cu 2.2600035 5.0 2.2690000 3.3000000% 0 0.0000000 76for1 0
147 nd g u236f rc cu 2.2619955 5.0 2.2710000 3.3000000% 0 0.0000000 76for1 0
147 nd g u236f rc cu 2.3257418 5.0 2.3350000 3.3000000% 0 0.0000000 76for1 0
147 nd g u236f rc cu 2.3755435 5.0 2.3850000 3.3000000% 0 0.0000000 76for1 0
147 nd g u236f rc cu 2.4004444 5.0 2.4100000 3.3000000% 0 0.0000000 76for1 0
147 pu239h cm cu 0.0000000 0.0 2.2230000 0.0000000 0 0.0000000 63wea1 0
147 pu239h es cu 1.7202472 12.0 1.7560000 12.0000000% 0 0.0000000 75mee5 0
147 nd g pu239h cm cu 0.0000000 0.0 1.6700000 9.9000000% 0 0.0000000 73net2 0
147 nd g pu239h rc re x5 0.0000000 0.0 0.9430000 1.1500000% 99 mo g u235t 0.0000000 64oth1 7
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

147 nd g pu239h rc cu 1.5478306 10.0 1.5800000 1.1500000% 0 0.0000000 64oth1 0
147 nd g pu239h cm cu 0.0000000 0.0 1.4700000 10.0000000% 0 0.0000000 77cro1 0
147 nd g pu239h rc cu 1.8476003 5.0 1.8860000 2.7000000% 0 0.0000000 76for1 0
147 nd g pu239h rc cu 1.6066090 5.0 1.6400000 4.2000000% 0 0.0000000 81lau1 0
147 pu240f es cu 2.1814387 30.0 2.1800000 30.0000000% 0 0.0000000 72sid1 0
147 sm g pu240f ms cu 2.2614915 6.0 2.2600000 0.0000000 0 0.0000000 76mae3 0
147 pu240f es cu 2.1714321 15.0 2.1700000 15.0000000% 0 0.0000000 77cro1 0
147 pu240f es cu 2.2087579 30.1 0.0230000 0.0000000 99 pu240f 0.0618000 77mye1 0
147 sm g pu240f ms cu 2.1974493 2.0 2.1960000 0.0430000 0 0.0000000 79mae1 0
147 pu240f cm cu x3 0.0000000 0.0 2.0050000 3.0000000% 0 0.0000000 81koc1 36
147 nd g pu240f rc cu 2.1799472 6.4 0.0227000 3.0000000% 99 mo g pu240f 0.0618000 77mye1 0
147 pu241f es cu 2.4253578 30.0 2.4200000 30.0000000% 0 0.0000000 72sid1 0
147 sm g pu241f ms cu su 0.0000000 0.0 2.2300000 0.0000000 0 0.0000000 76mae3 0
147 sm g pu241f ms cu su 0.0000000 0.0 2.1800000 0.0000000 0 0.0000000 76koc1 0
147 pu241f es cu 2.4153356 15.0 2.4100000 15.0000000% 0 0.0000000 77cro1 0
147 sm g pu241f ms cu su 0.0000000 0.0 2.2400000 0.0170000 148 nd g pu241f 1.9080000 77mae1 0
147 pu241f ms cu 2.2199039 2.0 2.2150000 0.0270000 0 0.0000000 80mae4 0
147 pu241f cm cu 0.0000000 0.0 2.1650000 5.0000000% 0 0.0000000 81koc1 36
147 sm g pu242f ms cu 2.3867354 6.0 2.4000000 0.0000000 0 0.0000000 76mae3 0
147 sm g pu242f ms cu 2.3867354 5.8 2.4000000 0.1400000 0 0.0000000 78cun1 0
147 pu242f cm cu 0.0000000 0.0 2.3750000 3.0000000% 0 0.0000000 81koc1 36

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147 sm g   pu242f   ms    cu        2.3668460  2.0   2.3800000  0.0170000     0                    0.0000000   79mae1      0
147        pu242f   cm    cu    x3   0.0000000  0.0   2.6600000 30.0000000%    0                    0.0000000   72sid1      0
147        th232h   es    cu        1.8976129  6.2   1.8200000  6.2000000%    0                    0.0000000   77cro1      0
147        th232h   es    cu        1.7829220  8.0   1.7100000  8.0000000%    0                    0.0000000   75mee3      0
147 nd g   th232h   rc    cu        1.8154362  7.3   1.7000000  0.1200000    99 mo g      th232h      2.0000000   68the1      0
147 nd g   th232h   rc    re        1.8871865  7.2   0.0181000  0.0013000     0                    0.0100000   69net1      0
147 nd g   th232h   cm    cu        0.0000000  0.0   1.7000000 10.1000000%    0                    0.0000000   73net2      0
147 nd g   th232h   cm    cu        0.0000000  0.0   1.8100000  6.2000000%    0                    0.0000000   77cro1      0
147 nd g   th232h   cm    cu        0.0000000  0.0   1.7000000  0.0000000     0                    0.0000000   69gun2      0
147 nd g   th232h   rc    cu        1.9686054 10.5   1.8600000  0.1800000   140 ba g      th232h      5.9000000   73cha1      0
147        np237f   cm    cu    x3   0.0000000  0.0   2.6800000 30.0000000%    0                    0.0000000   72sid1      0
147 sm g   np237f   ms    cu        2.2049995  2.0   2.2180000  0.0160000     0                    0.0000000   77mae2      0
147        np237f   sp    cu    x4   0.0000000  0.0   2.7600000  0.2000000     0                    0.0000000   80naq1      0
147        np237f   cm    cu    x3   0.0000000  0.0   2.1000000  5.0000000%    0                    0.0000000   81koc1     36
147 nd g   np237f   rc    cu        2.4193051  5.4   2.3500000  0.0130000   140 ba g      np237f      5.3000000   68nam1      0
147 nd g   np237f   rc    cu        2.7608004  5.2   3.2100000  0.1500000   140 la g      np237f      6.3500000   69ste1      0
147 nd g   np237f   rc    cu        2.2392363  5.4   2.2900000  0.0600000   140 ba g      np237f      5.5800000   77bla2      0
147 nd g   np237f   es    cu        2.4256982  8.3   2.4400000  8.3000000%    0                    0.0000000   77cro1      0
147 nd g   np237f   rc    cu        2.1562867  5.0   2.1690000  3.3000000%    0                    0.0000000   76for1      0
147 nd g   np237f   cm    cu    x3   0.0000000  0.0   3.2100000  0.0000000     0                    0.0000000   69gun2      0
147 nd g   np237f   es    cu        2.2606712  2.3   2.2740000  2.3000000%    0                    0.0000000   91jam2      0
147        cf252s   sp    cu        4.3166263 15.0   4.3300000  0.0000000     0                    0.0000000   63fra1      0
147        cf252s   sp    cu        4.4571908 15.0   4.4710000  0.0000000     0                    0.0000000   65sch1      0
147        cf252s   es    cu        4.2697714 15.0   4.2830000 15.0000000%    0                    0.0000000   87wah1     36
147        cf252s   rc    cu        4.0175528  5.0   4.0300000  0.1800000     0                    0.0000000   83li 1      0
147 nd g   cf252s   rc    cu        3.9876455 20.0   4.0000000  0.8000000     0                    0.0000000   58cun1      0
147 nd g   cf252s   rc    cu        4.6755144 10.0   4.6900000  0.0800000     0                    0.0000000   60ner1      0
147 nd g   cf252s   rc    cu        4.4661630  5.0   4.4800000  0.1400000     0                    0.0000000   73sko1      0
147 nd g   cf252s   rc    cu    rp   4.2085648  4.0   4.4800000  0.0000000  no. relative values =   17            73sko1
147 nd g   cf252s   rc    cu        4.1670896  9.6   4.1800000  0.4000000     0                    0.0000000   75fly2      0
147 nd g   cf252s   rc    cu        4.2979773 17.7   0.7240000  0.1280000   140 ba g      cf252s      1.0000000   75bla1      0
147 nd g   cf252s   rc    cu        4.7254004  6.3   0.7960000  0.0490000   140 ba g      cf252s      1.0000000   75bla1      0
147 nd g   cf252s   rc    cu        4.5979255  5.2   4.5000000  0.2000000   140 ba g      cf252s      5.8100000   71har2      0
147 nd g   cf252s   cm    cu        0.0000000  0.0   4.3400000  0.0000000     0                    0.0000000   69gun2      0
147 nd g   cf252s   rc    cu        4.0873366  5.1   4.1000000  0.2100000     0                    0.0000000   76thi1      0
147 nd g   cf252s   rc    cu    x4   0.0000000  0.0   3.3000000  0.3700000     0                    0.0000000   85tom1      0
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147 nd g cf252s rc cu 4.1272131 5.0 4.1400000 0.1600000 0 0.0000000 84che1 0
147 nd g cf252s rc cu 4.1272131 5.0 4.1400000 0.1600000 0 0.0000000 86che1 0
147 pr g cf252s rc cu 4.9063069 10.2 4.3800000 0.4300000 149 nd g cf252s 2.4200000 91ram1 0
147 ce g cf252s rc cu 4.2118069 11.0 3.7600000 0.4000000 149 nd g cf252s 2.4200000 91ram1 0
148 u233f cm cu 0.0000000 0.0 1.2060000 0.0000000 0 0.0000000 63wea1 0
148 nd g u233f ms cu 1.1980348 2.0 1.2000000 0.0100000 0 0.0000000 74mae1 0
148 u233f cm cu 0.0000000 0.0 1.2100000 5.0000000% 0 0.0000000 77cro1 0
148 nd g u233f ms cu 1.1980348 2.0 1.2000000 0.0120000 0 0.0000000 80mae1 0
148 u233f es cu x3 0.0000000 0.0 1.1400000 30.0000000% 0 0.0000000 72sid1 0
148 nd g u233f ms cu 1.2020282 2.0 1.2040000 0.0110000 0 0.0000000 81mae1 0
148 nd g u233f ms cu 1.1920446 2.0 1.1940000 0.0090000 0 0.0000000 81mae1 0
148 nd g u233f cm cu 0.0000000 0.0 1.1990000 0.0100000 0 0.0000000 81mae1 0
148 u233f cm cu 0.0000000 0.0 1.2250000 3.0000000% 0 0.0000000 81koc1 36
148 u233he cm cu 0.0000000 0.0 1.6580000 0.0000000 0 0.0000000 63wea1 0
148 u233he es cu 0.8843707 20.0 0.8740000 20.0000000% 0 0.0000000 77cro1 0
148 u236f es cu 1.7288059 30.0 1.8100000 30.0000000% 0 0.0000000 72sid1 0
148 u236f cm cu 0.0000000 0.0 1.8050000 20.0000000% 0 0.0000000 81koc1 36
148 pu239h cm cu 0.0000000 0.0 1.8000000 0.0000000 0 0.0000000 63wea1 0
148 pu239h es cu 1.2959862 12.0 1.3510000 12.0000000% 0 0.0000000 75mee5 0
148 pu240f es cu 1.8412143 30.0 1.8400000 30.0000000% 0 0.0000000 72sid1 0
148 nd g pu240f ms cu 2.0013199 5.0 2.0000000 0.1000000 0 0.0000000 73rob1 0
148 nd g pu240f ms re rp 1.7823812 8.0 1.0000000 0.0000000 no. relative values = 4 73rob1
148 nd g pu240f ms cu 1.8412143 6.0 1.8400000 0.0000000 0 0.0000000 76mae3 0
148 pu240f ms cu su 0.0000000 0.0 1.6800000 0.0000000 0 0.0000000 76koc2 0
148 pu240f es cu 1.8312077 15.0 1.8300000 15.0000000% 0 0.0000000 77cro1 0
148 pu240f es cu 1.7958162 30.1 0.0187000 0.0000000 99 pu240f 0.0618000 77mye1 0
148 nd g pu240f ms cu 1.6811087 2.0 1.6800000 0.3000000% 0 0.0000000 77koc1 0
148 pu240f cm cu 0.0000000 0.0 1.6900000 3.0000000% 0 0.0000000 81koc1 36
148 nd g pu240f ms cu 1.8212011 2.0 1.8200000 0.0240000 0 0.0000000 79mae1 0
148 pu241f es cu 1.9421475 30.0 1.9400000 30.0000000% 0 0.0000000 72sid1 0
148 nd g pu241f ms re rp 1.9579575 7.9 1.0000000 0.0000000 no. relative values = 4 73rob1
148 nd g pu241f ms cu su 0.0000000 0.0 1.9000000 0.0000000 0 0.0000000 76mae3 0
148 nd g pu241f ms cu su 0.0000000 0.0 1.8500000 0.0000000 0 0.0000000 76koc1 0
148 pu241f es cu 1.9421475 15.0 1.9400000 15.0000000% 0 0.0000000 77cro1 0
148 nd g pu241f ms cu rp 1.9623796 1.7 1.8400000 0.0000000 no. relative values = 4 77koc1
148 nd g pu241f ms cu su 0.0000000 0.0 1.9080000 0.0150000 148 nd g pu241f 1.9080000 77mae1 0

148 nd g pu241f ms cu rp 1.9515190 1.2 1.9080000 0.0000000 no. relative values = 9 77mae1
148 pu241f ms cu 1.9601675 2.0 1.9580000 0.0380000 0 0.0000000 80mae4 0
148 nd g pu241f ms cu x4 0.0000000 0.0 2.0500000 0.1500000 0 0.0000000 73rob1 36
148 pu241f cm cu x3 0.0000000 0.0 1.8450000 5.0000000% 0 0.0000000 81koc1 36
148 pu242f es cu 2.0320275 30.0 2.0400000 30.0000000% 0 0.0000000 72sid1 0
148 nd g pu242f ms cu 2.0220665 6.0 2.0300000 0.0000000 0 0.0000000 76mae3 0
148 pu242f ms cu su 0.0000000 0.0 1.9800000 0.0000000 0 0.0000000 76koc2 0
148 nd g pu242f ms cu 1.9934654 2.1 1.9700000 0.0000000% 148 nd g pu242f 1.9700000 77koc1 0
148 nd g pu242f ms cu rp 1.9952035 2.0 1.9700000 0.0000000 no. relative values = 5 77koc1
148 pu242f cm cu 0.0000000 0.0 1.9750000 3.0000000% 0 0.0000000 81koc1 36
148 nd g pu242f ms cu 2.0220665 5.9 2.0300000 0.1200000 0 0.0000000 78cun1 0
148 nd g pu242f ms cu 2.0101134 2.0 2.0180000 0.0160000 0 0.0000000 79mae1 0
148 th232h es cu 1.4976987 20.0 1.3800000 20.0000000% 0 0.0000000 77cro1 0
148 th232h es cu 0.9984658 8.1 0.9200000 8.1000000% 0 0.0000000 75mee3 0
148 nd g np237f ms cu 1.6403287 9.1 1.6500000 0.1500000 0 0.0000000 73mce2 0
148 nd g np237f ms cu 1.6800943 8.3 1.6900000 8.3000000% 0 0.0000000 75mce1 0
148 nd g np237f ms cu 1.7298012 2.0 1.7400000 0.0130000 0 0.0000000 77mae2 0
148 nd g np237f sp cu 1.7795081 8.9 1.7900000 0.1600000 0 0.0000000 80naq1 0
148 np237f es cu x3 0.0000000 0.0 1.8700000 30.0000000% 0 0.0000000 72sid1 0
148 np237f cm cu 0.0000000 0.0 1.6800000 5.0000000% 0 0.0000000 81koc1 36
148 nd g np237f ms re 1.5965149 8.2 0.2926000 8.0000000% 140 ba g np237f 1.0000000 73mce1 0
148 cf252s sp cu 4.5224287 15.0 4.5790000 0.0000000 0 0.0000000 63fra1 0
148 cf252s sp cu 3.6977447 15.0 3.7440000 0.0000000 0 0.0000000 65sch1 0
148 cf252s es cu 3.6315725 15.0 3.6770000 15.0000000% 0 0.0000000 87wah1 36
148 pr g cf252s rc cu x4 0.0000000 0.0 4.8100000 0.1500000 149 nd g cf252s 2.4200000 91ram1 0
148 ce g cf252s rc in 2.2814611 13.9 2.3100000 0.3200000 0 0.0000000 71che1 36
149 u233f cm cu 0.0000000 0.0 0.7996000 0.0000000 0 0.0000000 63wea1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

149 sm g u233f ms cu 0.7058422 2.0 0.7070000 0.0060000 0 0.0000000 74mae1 0
149 u233f cm cu 0.0000000 0.0 0.7140000 4.7000000% 0 0.0000000 77cro1 0
149 sm g u233f ms cu 0.7208176 2.0 0.7220000 0.0070000 0 0.0000000 80mae1 0
149 u233f rc cu 0.7166816 15.5 0.7500000 0.0000000 140 ba g u233f 6.2600000 77bla1 0
149 sm g u233f ms cu 0.7048438 2.0 0.7060000 0.0060000 0 0.0000000 81mae1 0

149 sm g u233f ms cu 0.7108340 2.0 0.7120000 0.0050000 0 0.0000000 81mae1 0
149 sm g u233f cm cu 0.0000000 0.0 0.7090000 0.0060000 0 0.0000000 81mae1 0
149 u233f cm cu 0.0000000 0.0 0.7950000 3.0000000% 0 0.0000000 81koc1 36
149 pm g u233f rc cu 0.8116923 15.5 0.8220000 15.0000000% 99 mo g u233f 4.7500000 65bun2 0
149 pm g u233f cm cu 0.0000000 0.0 0.8550000 10.1000000% 0 0.0000000 73net2 0
149 u233he cm cu x3 0.0000000 0.0 1.3110000 0.0000000 0 0.0000000 63wea1 0
149 u233he es cu 0.6216665 20.0 0.6180000 20.0000000% 0 0.0000000 77cro1 0
149 pm g u233he es cu 0.6156309 10.1 0.6120000 10.1000000% 0 0.0000000 73net2 0
149 u236f es cu 1.4663687 30.0 1.4900000 30.0000000% 0 0.0000000 72sid1 0
149 u236f rc cu 1.3287037 8.2 1.3800000 0.1100000 140 ba g u236f 5.7600000 77bla1 0
149 u236f cm cu 0.0000000 0.0 1.4650000 20.0000000% 0 0.0000000 81koc1 36
149 pu239h cm cu 0.0000000 0.0 1.3330000 0.0000000 0 0.0000000 63wea1 0
149 pu239h es cu 1.0552072 12.0 1.1000000 12.0000000% 0 0.0000000 75mee5 0
149 pm g pu239h cm cu 0.0000000 0.0 1.2000000 10.0000000% 0 0.0000000 73net2 0
149 pu240f es cu 1.5207093 30.0 1.5200000 30.0000000% 0 0.0000000 72sid1 0
149 sm g pu240f ms cu 1.3506300 6.0 1.3500000 0.0000000 0 0.0000000 76mae3 0
149 pu240f ms cu su 0.0000000 0.0 1.3200000 0.0000000 0 0.0000000 76koc2 0
149 pu240f es cu 1.5107047 15.0 1.5100000 15.0000000% 0 0.0000000 77cro1 0
149 pu240f es cu 1.3922088 30.1 0.0145000 0.0000000 99 pu240f 0.0618000 77mye1 0
149 sm g pu240f ms cu 1.3206160 2.0 1.3200000 0.7000000% 0 0.0000000 77koc1 0
149 pu240f cm cu 0.0000000 0.0 1.3300000 3.0000000% 0 0.0000000 81koc1 36
149 sm g pu240f ms cu 1.3436267 2.0 1.3430000 0.0180000 0 0.0000000 79mae1 0
149 pm g pu240f rc cu 1.3538026 6.4 0.0141000 3.0000000% 99 mo g pu240f 0.0618000 77mye1 0
149 pu241f es cu 1.6325518 30.0 1.6300000 30.0000000% 0 0.0000000 72sid1 0
149 sm g pu241f ms cu su 0.0000000 0.0 1.4500000 0.0000000 0 0.0000000 76mae3 0
149 sm g pu241f ms cu su 0.0000000 0.0 1.4200000 0.0000000 0 0.0000000 76koc1 0
149 pu241f es cu 1.6325518 15.0 1.6300000 15.0000000% 0 0.0000000 77cro1 0
149 sm g pu241f ms cu 1.4608544 1.6 1.4300000 0.7000000% 149 sm g pu241f 1.4300000 77koc1 0
149 sm g pu241f ms cu rp 1.4656497 2.7 1.4300000 0.0000000 no. relative values = 3 77koc1
149 sm g pu241f ms cu su 0.0000000 0.0 1.4550000 0.0100000 148 nd g pu241f 1.9080000 77mae1 0
149 pu241f ms cu 1.4472622 2.0 1.4450000 0.0150000 0 0.0000000 80mae4 0
149 pu241f cm cu 0.0000000 0.0 1.4350000 5.0000000% 0 0.0000000 81koc1 36
149 sm g pu242f ms cu 1.6136689 6.0 1.6200000 0.0000000 0 0.0000000 76mae3 0
149 pu242f ms cu su 0.0000000 0.0 1.6400000 0.0000000 0 0.0000000 76koc2 0
149 sm g pu242f ms cu 1.5672216 1.5 1.6300000 0.6000000% 149 sm g pu242f 1.6300000 77koc1 0
149 sm g pu242f ms cu rp 1.5393728 2.5 1.6300000 0.0000000 no. relative values = 3 77koc1

149 pu242f es cu x3 0.0000000 0.0 1.7300000 30.0000000% 0 0.0000000 72sid1 0
149 sm g pu242f ms cu 1.6136689 5.6 1.6200000 0.0900000 0 0.0000000 78cun1 0
149 pu242f cm cu 0.0000000 0.0 1.6400000 3.0000000% 0 0.0000000 81koc1 36
149 sm g pu242f ms cu 1.5957392 2.0 1.6020000 0.0100000 0 0.0000000 79mae1 0
149 nd g pu242f rc cu 1.5040988 9.3 1.5100000 0.1400000 0 0.0000000 83gud1 0
149 th232h es cu 1.0539465 9.0 0.9940000 9.0000000% 0 0.0000000 77cro1 0
149 th232h es cu 0.7316128 8.1 0.6900000 8.1000000% 0 0.0000000 75mee3 0
149 pm g th232h rc cu 0.7167570 10.8 0.6600000 0.0700000 99 mo g th232h 2.0000000 68the1 0
149 pm g th232h es cu 0.5874108 10.1 0.5540000 10.1000000% 0 0.0000000 73net2 0
149 pm g th232h cm cu 0.0000000 0.0 0.6600000 0.0000000 0 0.0000000 69gun2 0
149 nd g th232h rc cu 1.0763207 10.8 1.0000000 0.1000000 140 ba g th232h 5.9000000 73cha1 0
149 nd g th232h cm cu 0.0000000 0.0 0.9870000 9.0000000% 0 0.0000000 77cro1 0
149 np237f es cu x3 0.0000000 0.0 2.0000000 30.0000000% 0 0.0000000 72sid1 0
149 sm g np237f ms cu 1.2675267 2.0 1.2750000 0.0080000 0 0.0000000 77mae2 0
149 np237f sp cu 1.7496840 9.1 1.7600000 0.1600000 0 0.0000000 80naq1 0
149 np237f cm cu 0.0000000 0.0 1.2730000 5.0000000% 0 0.0000000 81koc1 36
149 pm g np237f rc cu 1.6169174 7.6 1.8800000 0.1400000 140 la g np237f 6.3500000 69ste1 0
149 pm g np237f cm cu 0.0000000 0.0 1.6200000 10.0000000% 0 0.0000000 77cro1 0
149 pm g np237f cm cu 0.0000000 0.0 1.8800000 0.0000000 0 0.0000000 69gun2 0
149 nd g np237f rc cu 1.6329802 6.9 1.6700000 0.1100000 140 ba g np237f 5.5800000 77bla2 0
149 cf252s sp cu 3.1790531 15.0 3.1930000 0.0000000 0 0.0000000 63fra1 0
149 cf252s sp cu 2.7389837 15.0 2.7510000 0.0000000 0 0.0000000 65sch1 0
149 cf252s es cu 2.7300230 15.0 2.7420000 15.0000000% 0 0.0000000 87wah1 36
149 cf252s rc cu 2.8574639 6.3 2.8700000 0.1800000 0 0.0000000 83li 1 0
149 pm g cf252s rc cu 2.6384249 30.0 2.6500000 0.0000000 0 0.0000000 60ner1 0
149 pm g cf252s rc cu 2.9681439 5.4 3.1200000 0.1100000 147 nd g cf252s 4.4800000 73sko1 0
149 pm g cf252s rc cu 2.9371145 9.5 2.9500000 0.2800000 0 0.0000000 75fly2 0
149 pm g cf252s es fc 2.7075968 5.7 1.0000000 5.0000000% 149 cf252s 1.0000000 74mee5 0
149 pm g cf252s cm cu 0.0000000 0.0 2.6500000 0.0000000 0 0.0000000 69gun2 0
149 pm g cf252s rc cu x4 0.0000000 0.0 0.6470000 0.0520000 140 ba g cf252s 1.0000000 75bla1 0
149 nd g cf252s rc cu 2.6827454 5.7 2.8200000 0.1500000 147 nd g cf252s 4.4800000 73sko1 0
149 nd g cf252s es fc 2.7072448 5.7 0.9998700 5.0000000% 149 cf252s 1.0000000 74mee5 0
149 nd g cf252s rc cu 2.7280318 7.3 2.7400000 0.2000000 0 0.0000000 76thi1 0
149 nd g cf252s rc cu 2.4094295 5.0 2.4200000 0.1000000 0 0.0000000 80top1 0
149 nd g cf252s rc cu 2.4094295 11.2 2.4200000 0.2700000 0 0.0000000 85tom1 0
150 u233f cm cu 0.0000000 0.0 0.5055000 0.0000000 0 0.0000000 63wea1 0

150		u233f	es	cu		0.5287725	30.0	0.5300000	30.0000000%	0				0.0000000	72sid1	0			
150	nd g	u233f	ms	cu		0.4639230	2.0	0.4650000	0.0040000	0				0.0000000	74mae1	0			
150		u233f	cm	cu		0.0000000	0.0	0.4660000	5.0000000%	0				0.0000000	77cro1	0			
150	nd g	u233f	ms	cu		0.4808837	2.0	0.4820000	0.0060000	0				0.0000000	80mae1	0			
150	nd g	u233f	ms	cu		0.4679138	2.0	0.4690000	0.0040000	0				0.0000000	81mae1	0			
150	nd g	u233f	ms	cu		0.4619277	2.0	0.4630000	0.0040000	0				0.0000000	81mae1	0			
150	nd g	u233f	cm	cu		0.0000000	0.0	0.4660000	0.0040000	0				0.0000000	81mae1	0			
150		u233f	cm	cu		0.0000000	0.0	0.4850000	3.0000000%	0				0.0000000	81koc1	36			
150		u233he	cm	cu		0.0000000	0.0	0.9777000	0.0000000	0				0.0000000	63wea1	0			
150		u233he	es	cu		0.4340904	20.0	0.4290000	20.0000000%	0				0.0000000	77cro1	0			
150		u236f	es	cu		0.7398826	30.0	0.7900000	30.0000000%	0				0.0000000	72sid1	0			
150		u236f	cm	cu		0.0000000	0.0	1.0250000	30.0000000%	0				0.0000000	81koc1	36			
150		pu239h	cm	cu		0.0000000	0.0	0.9520000	0.0000000	0				0.0000000	63wea1	0			
150		pu239h	es	cu		0.9386425	12.0	0.9960000	12.0000000%	0				0.0000000	75mee5	0			
150		pu240f	es	cu	x3	0.0000000	0.0	1.1700000	30.0000000%	0				0.0000000	72sid1	0			
150	nd g	pu240f	ms	re		1.0775510	2.5	0.6070000	0.0000000	148	nd g	pu240f		1.0000000	73rob1	0			
150	nd g	pu240f	ms	cu		1.1007259	6.0	1.1000000	0.0000000	0				0.0000000	76mae3	0			
150		pu240f	ms	cu	su	0.0000000	0.0	1.0200000	0.0000000	0				0.0000000	76koc2	0			
150		pu240f	es	cu		1.1707721	15.0	1.1700000	15.0000000%	0				0.0000000	77cro1	0			
150		pu240f	es	cu		1.0659658	30.1	0.0111000	0.0000000	99		pu240f		0.0618000	77mye1	0			
150	nd g	pu240f	ms	cu		1.0106666	6.0	1.0100000	0.0000000	0				0.0000000	77koc1	0			
150		pu240f	cm	cu		0.0000000	0.0	1.0200000	3.0000000%	0				0.0000000	81koc1	36			
150	nd g	pu240f	ms	cu		1.0947220	2.0	1.0940000	0.0160000	0				0.0000000	79mae1	0			
150		pu241f	es	cu	x3	0.0000000	0.0	1.3000000	30.0000000%	0				0.0000000	72sid1	0			
150	nd g	pu241f	ms	re		1.2357155	1.8	0.6310000	0.0000000	148	nd g	pu241f		1.0000000	73rob1	0			
150	nd g	pu241f	ms	cu	su	0.0000000	0.0	1.1900000	0.0000000	0				0.0000000	76mae3	0			
150	nd g	pu241f	ms	cu	su	0.0000000	0.0	1.1600000	0.0000000	0				0.0000000	76koc1	0			
150		pu241f	es	cu		1.3014391	15.0	1.3000000	15.0000000%	0				0.0000000	77cro1	0			
150	nd g	pu241f	ms	cu		1.2239654	1.3	1.1500000	0.9000000%	148	nd g	pu241f		1.8400000	77koc1	0			
150	nd g	pu241f	ms	cu	su	0.0000000	0.0	1.1920000	0.0120000	148	nd g	pu241f		1.9080000	77mae1	0			
150		pu241f	ms	cu		1.2363671	2.0	1.2350000	0.0250000	0				0.0000000	80mae4	0			
150		pu241f	cm	cu		0.0000000	0.0	1.1550000	5.0000000%	0				0.0000000	81koc1	36			
150	nd g	pu242f	ms	cu		1.3248022	6.0	1.3300000	0.0000000	0				0.0000000	76mae3	0			
150		pu242f	ms	cu	su	0.0000000	0.0	1.3200000	0.0000000	0				0.0000000	76koc2	0			
150	nd g	pu242f	ms	cu		1.3154859	2.1	1.3000000	0.0000000%	148	nd g	pu242f		1.9700000	77koc1	0			
150		pu242f	cm	cu		0.0000000	0.0	1.3050000	3.0000000%	0				0.0000000	81koc1	36			

150 nd g pu242f ms cu 1.3248022 6.0 1.3300000 0.0800000 0 0.0000000 78cun1 0
150 nd g pu242f ms cu 1.3228100 2.0 1.3280000 0.0130000 0 0.0000000 79mae1 0
150 pu242f cm cu x3 0.0000000 0.0 1.4300000 30.0000000% 0 0.0000000 72sid1 0
150 th232h es cu 0.5969089 20.0 0.5500000 20.0000000% 0 0.0000000 77cro1 0
150 th232h es cu 0.3798511 8.1 0.3500000 8.1000000% 0 0.0000000 75mee3 0
150 np237f es cu x3 0.0000000 0.0 0.9000000 30.0000000% 0 0.0000000 72sid1 0
150 nd g np237f ms cu 0.9812148 2.0 0.9870000 0.0100000 0 0.0000000 77mae2 0
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0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

150 np237f sp cu 1.3122630 10.6 1.3200000 0.1400000 0 0.0000000 80naq1 0
150 np237f cm cu 0.0000000 0.0 0.9600000 5.0000000% 0 0.0000000 81koc1 36
150 pm g cf252s rc in x1 0.0000000 0.0 0.0200000 0.0090000 0 0.0000000 69gun1 0
150 pm g cf252s cm in x1 0.0000000 0.0 0.0200000 0.0090000 0 0.0000000 76gae1 0
150 pm g cf252s es in 0.0019552 99.9 0.0019900 0.0079700 0 0.0000000 87wah1 0
150 cf252s sp cu 2.5349224 15.0 2.5800000 0.0000000 0 0.0000000 63fra1 0
150 nd g cf252s rc in 0.1473792 20.0 0.1500000 0.0300000 0 0.0000000 71che1 36
150 cf252s sp cu 2.3423469 15.0 2.3840000 0.0000000 0 0.0000000 65sch1 0
150 cf252s es cu 2.4494425 15.0 2.4930000 15.0000000% 0 0.0000000 87wah1 36
150 ce g cf252s rc in gt 0.9628775 15.0 0.9800000 0.0000000 0 0.0000000 71che1 36
150 ce g cf252s es in 0.9530522 11.0 0.9700000 11.0000000% 0 0.0000000 87wah1 0
151 u233f cm cu 0.0000000 0.0 0.2827000 0.0000000 0 0.0000000 63wea1 0
151 u233f cm cu 0.0000000 0.0 0.3110000 4.7000000% 0 0.0000000 77cro1 0
151 u233f rc cu 0.2580054 8.4 0.2700000 0.0200000 140 ba g u233f 6.2600000 77bla1 0
151 u233f cm cu 0.0000000 0.0 0.3200000 3.0000000% 0 0.0000000 81koc1 36
151 sm g u233f cm cu 0.0000000 0.0 0.3650000 10.1000000% 0 0.0000000 73net2 0
151 sm g u233f ms cu 0.3084940 2.0 0.3090000 0.0030000 0 0.0000000 74mae1 0
151 sm g u233f ms cu 0.3094923 2.0 0.3100000 0.0030000 0 0.0000000 80mae1 0
151 sm g u233f ms cu 0.3074956 2.0 0.3080000 0.0030000 0 0.0000000 81mae1 0
151 sm g u233f ms cu 0.3104907 2.0 0.3110000 0.0020000 0 0.0000000 81mae1 0
151 sm g u233f cm cu 0.0000000 0.0 0.3100000 0.0030000 0 0.0000000 81mae1 0
151 pm g u233f rc cu 0.3436362 15.5 0.3480000 15.0000000% 99 mo g u233f 4.7500000 65bun2 0
151 u233he es cu 0.3113005 20.0 0.3100000 20.0000000% 0 0.0000000 77cro1 0
151 sm g u233he es cu 0.3002544 10.1 0.2990000 10.1000000% 0 0.0000000 73net2 0
151 pm g u233he rc cu 0.5279114 17.1 0.4800000 0.0800000 140 ba g u233he 4.0100000 75cav1 0

151 u236f es cu 0.5963181 30.0 0.6100000 30.0000000% 0 0.0000000 72sid1 0
151 u236f rc cu 0.3825606 12.7 0.4000000 0.0500000 140 ba g u236f 5.7600000 77bla1 0
151 u236f cm cu 0.0000000 0.0 0.7400000 50.0000000% 0 0.0000000 81koc1 36
151 pu239h es cu 0.7261744 12.0 0.7570000 12.0000000% 0 0.0000000 75mee5 0
151 sm g pu239h es cu 0.7578306 15.0 0.7900000 15.0000000% 0 0.0000000 73net2 0
151 pu240f es cu 0.9404387 30.0 0.9400000 30.0000000% 0 0.0000000 72sid1 0
151 pu240f ms cu su 0.0000000 0.0 0.8600000 0.0000000 0 0.0000000 76koc2 0
151 pu240f es cu 0.9374373 15.0 0.9370000 15.0000000% 0 0.0000000 77cro1 0
151 pu240f es cu 0.8065210 30.1 0.0084000 0.0000000 99 pu240f 0.0618000 77mye1 0
151 pu240f cm cu 0.0000000 0.0 0.8650000 3.0000000% 0 0.0000000 81koc1 36
151 sm g pu240f ms cu 0.8503967 6.0 0.8500000 0.0000000 0 0.0000000 76mae3 0
151 sm g pu240f ms cu 0.8503967 2.0 0.8500000 1.8000000% 0 0.0000000 77koc1 0
151 sm g pu240f ms cu 0.8493962 2.0 0.8490000 0.0110000 0 0.0000000 79mae1 0
151 pm g pu240f rc cu 0.8084410 6.4 0.0084200 3.0000000% 99 mo g pu240f 0.0618000 77mye1 0
151 pu241f es cu 1.0022140 30.0 1.0000000 30.0000000% 0 0.0000000 72sid1 0
151 pu241f es cu 1.0012117 15.0 0.9990000 15.0000000% 0 0.0000000 77cro1 0
151 eu g pu241f ms cu 0.9132839 3.9 0.9000000 3.3000000% 151 eu g pu241f 0.9000000 77koc1 0
151 eu g pu241f ms cu rp 0.9230997 8.1 0.9000000 0.0000000 no. relative values = 2 77koc1
151 pu241f ms cu 0.9080058 2.0 0.9060000 0.0140000 0 0.0000000 80mae4 0
151 pu241f cm cu 0.0000000 0.0 0.8950000 5.0000000% 0 0.0000000 81koc1 36
151 sm g pu241f ms cu su 0.0000000 0.0 0.9000000 0.0000000 0 0.0000000 76mae3 0
151 sm g pu241f ms cu su 0.0000000 0.0 0.9140000 0.0070000 148 nd g pu241f 1.9080000 77mae1 0
151 pu242f es cu 1.0441967 30.0 1.0500000 30.0000000% 0 0.0000000 72sid1 0
151 pu242f ms cu su 0.0000000 0.0 1.0500000 0.0000000 0 0.0000000 76koc2 0
151 eu g pu242f ms cu 0.9824989 2.8 1.0200000 2.0000000% 151 eu g pu242f 1.0200000 77koc1 0
151 eu g pu242f ms cu rp 0.9767291 4.2 1.0200000 0.0000000 no. relative values = 2 77koc1
151 pu242f cm cu 0.0000000 0.0 1.0200000 3.0000000% 0 0.0000000 81koc1 36
151 sm g pu242f ms cu 0.9944731 6.0 1.0000000 0.0000000 0 0.0000000 76mae3 0
151 sm g pu242f ms cu 0.9944731 6.0 1.0000000 0.0600000 0 0.0000000 78cun1 0
151 sm g pu242f ms cu 0.9914897 2.0 0.9970000 0.0070000 0 0.0000000 79mae1 0
151 th232h es cu 0.3054948 20.0 0.2930000 20.0000000% 0 0.0000000 77cro1 0
151 th232h es cu 0.1876760 8.1 0.1800000 8.1000000% 0 0.0000000 75mee3 0
151 sm g th232h es cu 0.2523200 10.1 0.2420000 10.1000000% 0 0.0000000 73net2 0
151 sm g th232h es fc 0.2424362 6.4 1.0000000 5.0000000% 151 th232h 1.0000000 74mee5 0
151 pm g th232h rc cu 0.1708646 18.9 0.1600000 0.0300000 99 mo g th232h 2.0000000 68the1 0
151 pm g th232h es fc 0.2424362 6.4 1.0000000 5.0000000% 151 th232h 1.0000000 74mee5 0

151	pm	g	th232h	cm	cu		0.0000000	0.0	0.1600000	0.0000000	0				0.0000000	69gun2	0
151			np237f	es	cu	x3	0.0000000	0.0	0.9400000	30.0000000%	0				0.0000000	72sid1	0
151			np237f	sp	cu		1.0836111	11.9	1.0900000	0.1300000	0				0.0000000	80naq1	0
151			np237f	cm	cu		0.0000000	0.0	0.6430000	5.0000000%	0				0.0000000	81koc1	36
151	sm	g	np237f	ms	cu		0.7078267	2.0	0.7120000	0.0050000	0				0.0000000	77mae2	0
151	pm	g	np237f	rc	cu		0.9202668	5.2	1.0700000	0.0500000	140	la	g	np237f	6.3500000	69ste1	0
151	pm	g	np237f	rc	cu		0.5964778	18.1	0.6100000	0.1100000	140	ba	g	np237f	5.5800000	77bla2	0
151	pm	g	np237f	cm	cu		0.0000000	0.0	0.9360000	40.0000000%	0				0.0000000	77cro1	0
151	pm	g	np237f	cm	cu		0.0000000	0.0	1.0700000	0.0000000	0				0.0000000	69gun2	0
151			cf252s	sp	cu		2.0231243	15.0	2.0320000	0.0000000	0				0.0000000	63fra1	0
151			cf252s	sp	cu		2.0977967	15.0	2.1070000	0.0000000	0				0.0000000	65sch1	0
151			cf252s	es	cu		1.8658144	15.0	1.8740000	15.0000000%	0				0.0000000	87wah1	36
151			cf252s	rc	cu		2.1605215	5.1	2.1700000	0.1100000	0				0.0000000	83li 1	0
151	pm	g	cf252s	rc	cu		2.1704778	30.0	2.1800000	0.0000000	0				0.0000000	60ner1	0
151	pm	g	cf252s	rc	cu		1.9026563	5.4	2.0000000	0.0700000	147	nd	g	cf252s	4.4800000	73sko1	0
151	pm	g	cf252s	rc	cu		1.6726618	9.5	1.6800000	0.1600000	0				0.0000000	75fly2	0
151	pm	g	cf252s	rc	cu		1.7430714	12.3	0.2940000	0.0360000	140	ba	g	cf252s	1.0000000	75bla1	0
151	pm	g	cf252s	es	fc		1.9403765	5.7	0.9999700	5.0000000%	151			cf252s	1.0000000	74mee5	0
151	pm	g	cf252s	cm	cu		0.0000000	0.0	2.1800000	0.0000000	0				0.0000000	69gun2	0
151	pm	g	cf252s	rc	cu		1.9813077	6.5	1.9900000	0.1300000	0				0.0000000	76thi1	0
151	pm	g	cf252s	rc	cu	x4	0.0000000	0.0	1.4000000	0.1400000	0				0.0000000	85tom1	0
151	nd	g	cf252s	rc	cu		1.7124871	5.8	1.7200000	0.1000000	0				0.0000000	80top1	0
151	nd	g	cf252s	rc	cu	x4	0.0000000	0.0	0.9400000	0.1200000	0				0.0000000	85tom1	0
151	nd	g	cf252s	rc	cu	x4	0.0000000	0.0	1.2100000	0.0600000	149	nd	g	cf252s	2.4200000	91ram1	0
152			u233f	cm	cu	x3	0.0000000	0.0	0.1718000	0.0000000	0				0.0000000	63wea1	0
152	sm	g	u233f	ms	cu		0.1915553	2.0	0.1920000	0.0020000	0				0.0000000	74mae1	0
152			u233f	es	cu		0.1915553	5.0	0.1920000	5.0000000%	0				0.0000000	77cro1	0
152	sm	g	u233f	ms	cu	su	0.0000000	0.0	0.2130000	0.0020000	0				0.0000000	80mae1	0
152	sm	g	u233f	ms	cu		0.1915553	2.0	0.1920000	0.0020000	0				0.0000000	81mae1	0
152	sm	g	u233f	ms	cu		0.1935507	2.0	0.1940000	0.0020000	0				0.0000000	81mae1	0
152	sm	g	u233f	cm	cu		0.0000000	0.0	0.1930000	0.0020000	0				0.0000000	81mae1	0
152			u233f	cm	cu	x3	0.0000000	0.0	0.2300000	3.0000000%	0				0.0000000	81koc1	36
152			u233he	es	cu		0.1974150	31.0	0.0021000	0.0000000	161	tb	g	u233he	0.0000500	70net1	0
152			u233he	es	cu		0.2248711	20.0	0.2230000	20.0000000%	0				0.0000000	77cro1	0
152			u236f	cm	cu	x3	0.0000000	0.0	0.4200000	30.0000000%	0				0.0000000	72sid1	0
152			u236f	cm	cu	x3	0.0000000	0.0	0.5600000	50.0000000%	0				0.0000000	81koc1	36

152 u236f es cu 0.3151966 20.0 0.3300000 20.0000000% 0 0.0000000 89rid1 0
152 pu239h es cu 0.5400021 12.0 0.5730000 12.0000000% 0 0.0000000 75mee5 0
152 pu240f es cu 0.7705082 30.0 0.7700000 30.0000000% 0 0.0000000 72sid1 0
152 sm g pu240f ms cu 0.6404224 6.0 0.6400000 0.0000000 0 0.0000000 76mae3 0
152 pu240f ms cu su 0.0000000 0.0 0.7000000 0.0000000 0 0.0000000 76koc2 0
152 pu240f es cu 0.7685068 15.0 0.7680000 15.0000000% 0 0.0000000 77cro1 0
152 pu240f es cu 0.6050076 30.1 0.0063000 0.0000000 99 pu240f 0.0618000 77mye1 0
152 sm g pu240f ms cu 0.6704422 5.3 0.6700000 5.3000000% 0 0.0000000 77koc1 0
152 pu240f cm cu 0.0000000 0.0 0.6650000 3.0000000% 0 0.0000000 81koc1 36
152 sm g pu240f ms cu 0.6464263 2.2 0.6460000 0.0140000 0 0.0000000 79mae1 0
152 pu241f es cu 0.8413150 30.0 0.8400000 30.0000000% 0 0.0000000 72sid1 0
152 sm g pu241f ms cu su 0.0000000 0.0 0.7000000 0.0000000 0 0.0000000 76mae3 0
152 pu241f es cu 0.8403135 15.0 0.8390000 15.0000000% 0 0.0000000 77cro1 0
152 sm g pu241f ms cu 0.7253193 2.0 0.7100000 1.4000000% 149 sm g pu241f 1.4300000 77koc1 0
152 sm g pu241f ms cu su 0.0000000 0.0 0.7050000 0.0060000 148 nd g pu241f 1.9080000 77mae1 0
152 pu241f ms cu 0.7361506 2.0 0.7350000 0.0080000 0 0.0000000 80mae4 0
152 pu241f cm cu 0.0000000 0.0 0.7100000 5.0000000% 0 0.0000000 81koc1 36
152 pu242f es cu 0.8950258 30.0 0.9000000 30.0000000% 0 0.0000000 72sid1 0
152 sm g pu242f ms cu 0.7657443 6.0 0.7700000 0.0000000 0 0.0000000 76mae3 0
152 pu242f ms cu su 0.0000000 0.0 0.8400000 0.0000000 0 0.0000000 76koc2 0
152 sm g pu242f ms cu 0.8159356 1.9 0.8500000 1.2000000% 149 sm g pu242f 1.6300000 77koc1 0
152 sm g pu242f ms cu 0.7657443 6.0 0.7700000 0.0460000 0 0.0000000 78cun1 0
152 pu242f cm cu 0.0000000 0.0 0.8450000 3.0000000% 0 0.0000000 81koc1 36
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nuclide material tech. type value err. value nuclide material value no. treatment

152 sm g pu242f ms cu 0.7657443 2.0 0.7700000 0.0060000 0 0.0000000 79mae1 0
152 th232h es cu 0.1638786 20.0 0.1510000 20.0000000% 0 0.0000000 77cro1 0
152 th232h es cu 0.1237229 8.1 0.1140000 8.1000000% 0 0.0000000 75mee3 0
152 np237f es cu x3 0.0000000 0.0 0.6500000 30.0000000% 0 0.0000000 72sid1 0
152 sm g np237f ms cu 0.4553155 2.0 0.4580000 0.0040000 0 0.0000000 77mae2 0
152 np237f sp cu 0.6958970 14.3 0.7000000 0.1000000 0 0.0000000 80naq1 0
152 np237f cm cu 0.0000000 0.0 0.4500000 5.0000000% 0 0.0000000 81koc1 36
152 cf252s sp cu 1.5838353 15.0 1.6120000 0.0000000 0 0.0000000 63fra1 0
152 cf252s sp cu 1.9021744 15.0 1.9360000 0.0000000 0 0.0000000 65sch1 0

152 cf252s es cu 1.6801230 15.0 1.7100000 15.0000000% 0 0.0000000 87wah1 36
152 nd g cf252s rc in gt 0.5895168 15.0 0.6000000 0.0000000 0 0.0000000 71che1 36
152 nd g cf252s rc cu x4 0.0000000 0.0 2.4700000 0.0600000 149 nd g cf252s 2.4200000 91ram1 0
153 u233f es cu 0.0905533 30.0 0.0914000 0.0000000 0 0.0000000 63wea1 0
153 u233f es cu 0.1119532 5.3 0.1130000 0.0060000 0 0.0000000 74mae1 0
153 u233f es cu 0.1079902 15.0 0.1090000 15.0000000% 0 0.0000000 77cro1 0
153 u233f rc cu x4 0.0000000 0.0 0.1600000 0.0000000 140 ba g u233f 6.2600000 77bla1 0
153 u233f es cu x4 0.0000000 0.0 0.0670000 0.0070000 0 0.0000000 81mae1 0
153 u233f es cu 0.0782681 10.1 0.0790000 0.0080000 0 0.0000000 81mae1 0
153 u233f es cu 0.0723237 12.3 0.0730000 0.0090000 0 0.0000000 81mae1 0
153 u233f es cu 0.1133402 19.7 0.1144000 19.7000000% 0 0.0000000 91jam2 0
153 u233f es cu 0.1094763 11.0 0.1105000 11.0000000% 0 0.0000000 89rid1 0
153 sm g u233f rc cu 0.1234695 15.5 0.1260000 15.0000000% 99 mo g u233f 4.7500000 65bun2 0
153 sm g u233f cm cu 0.0000000 0.0 0.1250000 15.1000000% 0 0.0000000 73net2 0
153 u233he es cu 0.1446041 10.0 0.1440000 10.0000000% 0 0.0000000 77cro1 0
153 sm g u233he rc cu 0.1411686 9.2 0.0014400 0.0001200 97 zr g u233he 0.0480000 72net2 0
153 sm g u233he cm cu x3 0.0000000 0.0 0.1440000 8.9000000% 0 0.0000000 73net2 0
153 u236f es cu 0.2528713 30.0 0.2700000 30.0000000% 0 0.0000000 72sid1 0
153 u236f rc cu x4 0.0000000 0.0 0.0400000 0.0000000 140 ba g u236f 5.7600000 77bla1 0
153 pu239h es cu 0.4499020 12.0 0.4690000 12.0000000% 0 0.0000000 75mee5 0
153 sm g pu239h es cu 0.4697590 15.0 0.4897000 15.0000000% 0 0.0000000 73net2 0
153 pu240f es cu 0.5610453 30.0 0.5600000 30.0000000% 0 0.0000000 72sid1 0
153 pu240f es cu 0.4708773 30.0 0.4700000 0.0000000 0 0.0000000 76mae3 0
153 pu240f es cu 0.5600434 15.0 0.5590000 15.0000000% 0 0.0000000 77cro1 0
153 pu240f es cu 0.4518992 30.1 0.0047000 0.0000000 99 pu240f 0.0618000 77mye1 0
153 eu g pu240f ms cu 0.4608587 21.0 0.4600000 21.0000000% 0 0.0000000 77koc1 0
153 pu240f es cu 0.4768885 11.3 0.4760000 0.0540000 0 0.0000000 79mae1 0
153 sm g pu240f rc cu 0.5268950 6.4 0.0054800 3.0000000% 99 mo g pu240f 0.0618000 77mye1 0
153 pu241f es cu 0.6327896 30.0 0.6300000 30.0000000% 0 0.0000000 72sid1 0
153 pu241f es cu su 0.0000000 0.0 0.5300000 0.0000000 0 0.0000000 76mae3 0
153 pu241f es cu 0.6327896 15.0 0.6300000 15.0000000% 0 0.0000000 77cro1 0
153 eu g pu241f ms cu 0.5390108 4.3 0.5300000 3.8000000% 151 eu g pu241f 0.9000000 77koc1 0
153 pu241f es cu 0.5529977 5.1 0.5370000 0.0270000 148 nd g pu241f 1.9080000 77mae1 0
153 pu241f es cu 0.5584619 9.9 0.5560000 0.0550000 0 0.0000000 80mae4 0
153 pu242f es cu 0.6945286 30.0 0.7000000 30.0000000% 0 0.0000000 72sid1 0
153 pu242f es cu 0.5953103 30.0 0.6000000 0.0000000 0 0.0000000 76mae3 0

153 eu g pu242f ms cu 0.6246613 2.5 0.6500000 1.5000000% 151 eu g pu242f 1.0200000 77koc1 0
153 pu242f es cu 0.5953103 10.3 0.6000000 0.0620000 0 0.0000000 79mae1 0
153 th232h es cu 0.0912926 11.0 0.0861000 11.0000000% 0 0.0000000 77cro1 0
153 th232h es cu 0.0869453 8.1 0.0820000 8.1000000% 0 0.0000000 75mee3 0
153 sm g th232h rc cu 0.0923096 11.9 0.0850000 0.0100000 99 mo g th232h 2.0000000 68the1 0
153 sm g th232h rc re 0.0911865 10.5 0.0008600 0.0000900 0 0.0100000 69net1 0
153 sm g th232h cm cu 0.0000000 0.0 0.0870000 10.1000000% 0 0.0000000 73net2 0
153 sm g th232h cm cu 0.0000000 0.0 0.0860000 11.0000000% 0 0.0000000 77cro1 0
153 sm g th232h cm cu 0.0000000 0.0 0.0850000 0.0000000 0 0.0000000 69gun2 0
153 np237f es cu x3 0.0000000 0.0 0.4400000 30.0000000% 0 0.0000000 72sid1 0
153 np237f es cu 0.3182253 5.0 0.3220000 0.0160000 0 0.0000000 77mae2 0
153 np237f sp cu x4 0.0000000 0.0 0.7500000 0.1100000 0 0.0000000 80naq1 0
153 sm g np237f rc cu 0.3761963 16.0 0.4400000 0.0700000 140 la g np237f 6.3500000 69ste1 0
153 sm g np237f cm cu 0.0000000 0.0 0.4240000 10.0000000% 0 0.0000000 77cro1 0
153 sm g np237f cm cu 0.0000000 0.0 0.4400000 0.0000000 0 0.0000000 69gun2 0
153 pm g np237f rc cu 0.4277096 5.4 0.4400000 0.0200000 140 ba g np237f 5.5800000 77bla2 0
153 cf252s sp cu 1.3401207 15.0 1.3460000 0.0000000 0 0.0000000 63fra1 0
153 cf252s sp cu 1.5034044 15.0 1.5100000 0.0000000 0 0.0000000 65sch1 0
153 cf252s es cu 1.3729766 15.0 1.3790000 15.0000000% 0 0.0000000 87wah1 36
153 cf252s rc cu 1.3988630 5.0 1.4050000 0.0660000 0 0.0000000 83li 1 0
153 sm g cf252s rc cu 1.2943216 23.1 1.3000000 0.3000000 0 0.0000000 58cun1 0
153 sm g cf252s rc cu 1.4038412 10.0 1.4100000 0.0300000 0 0.0000000 60ner1 0
153 sm g cf252s rc cu 1.2272133 5.4 1.2900000 0.0500000 147 nd g cf252s 4.4800000 73sko1 0
153 sm g cf252s rc cu 1.1648895 9.4 1.1700000 0.1100000 0 0.0000000 75fly2 0
153 sm g cf252s rc cu 1.4881324 10.8 0.2510000 0.0270000 140 ba g cf252s 1.0000000 75bla1 0
153 sm g cf252s cm cu 0.0000000 0.0 1.3500000 0.0000000 0 0.0000000 69gun2 0
153 sm g cf252s rc cu 1.3042780 6.1 1.3100000 0.0800000 0 0.0000000 76thi1 0
153 sm g cf252s rc cu 1.3441032 11.9 1.3500000 0.1600000 0 0.0000000 85tom1 0
153 sm g cf252s rc cu 1.2246274 5.0 1.2300000 0.0500000 0 0.0000000 84che1 0
153 sm g cf252s rc cu 1.2246274 5.0 1.2300000 0.0500000 0 0.0000000 86che1 0
153 sm g cf252s rc re x4 0.0000000 0.0 2.4000000 0.6000000 147 nd g cf252s 1.0000000 75don1 0
154 u233f cm cu x3 0.0000000 0.0 0.0506000 0.0000000 0 0.0000000 63wea1 0
154 sm g u233f ms cu su 0.0000000 0.0 0.0330000 0.0010000 0 0.0000000 74mae1 0
154 u233f cm cu x3 0.0000000 0.0 0.0330000 5.0000000% 0 0.0000000 77cro1 0
154 sm g u233f ms cu 0.0437962 2.3 0.0440000 0.0010000 0 0.0000000 80mae1 0
154 sm g u233f cm cu x3 0.0000000 0.0 0.0330000 0.0010000 0 0.0000000 81mae1 0

154 sm g u233f ms cu x4 0.0000000 0.0 0.0340000 0.0010000 0 0.0000000 81mae1 0
154 sm g u233f cm cu x3 0.0000000 0.0 0.0330000 0.0010000 0 0.0000000 81mae1 0
154 u233f es cu 0.0414073 8.0 0.0416000 8.0000000% 0 0.0000000 75mee1 0
154 u233he es cu 0.0921270 31.0 0.0009800 0.0000000 161 tb g u233he 0.0000500 70net1 0
154 u233he es cu 0.0993265 20.0 0.0985000 20.0000000% 0 0.0000000 77cro1 0
154 u236f es cu 0.1311184 30.0 0.1400000 30.0000000% 0 0.0000000 72sid1 0
154 pu239h es cu 0.3213625 12.0 0.3410000 12.0000000% 0 0.0000000 75mee5 0
154 pu240f es cu 0.4105412 30.0 0.4100000 30.0000000% 0 0.0000000 72sid1 0
154 sm g pu240f ms cu 0.3003960 6.0 0.3000000 0.0000000 0 0.0000000 76mae3 0
154 pu240f ms cu su 0.0000000 0.0 0.4300000 0.0000000 0 0.0000000 76koc2 0
154 pu240f es cu 0.4095398 15.0 0.4090000 15.0000000% 0 0.0000000 77cro1 0
154 pu240f es cu 0.3267274 30.1 0.0034000 0.0000000 99 pu240f 0.0618000 77mye1 0
154 sm g pu240f ms cu 0.3404488 26.0 0.3400000 26.0000000% 0 0.0000000 77koc1 0
154 sm g pu240f ms cu 0.3064039 2.9 0.3060000 0.0090000 0 0.0000000 79mae1 0
154 pu241f es cu 0.4509963 30.0 0.4500000 30.0000000% 0 0.0000000 72sid1 0
154 sm g pu241f ms cu su 0.0000000 0.0 0.3700000 0.0000000 0 0.0000000 76mae3 0
154 pu241f es cu 0.4509963 15.0 0.4500000 15.0000000% 0 0.0000000 77cro1 0
154 sm g pu241f ms cu 0.3884504 5.5 0.3800000 5.3000000% 149 sm g pu241f 1.4300000 77koc1 0
154 sm g pu241f ms cu su 0.0000000 0.0 0.3700000 0.0050000 148 nd g pu241f 1.9080000 77mae1 0
154 pu241f ms cu 0.3788369 2.0 0.3780000 0.0050000 0 0.0000000 80mae4 0
154 pu242f es cu 0.4773471 30.0 0.4800000 30.0000000% 0 0.0000000 72sid1 0
154 sm g pu242f ms cu 0.4276234 6.0 0.4300000 0.0000000 0 0.0000000 76mae3 0
154 pu242f ms cu su 0.0000000 0.0 0.4800000 0.0000000 0 0.0000000 76koc2 0
154 sm g pu242f ms cu 0.4511644 2.5 0.4700000 2.1000000% 149 sm g pu242f 1.6300000 77koc1 0
154 sm g pu242f ms cu 0.4276234 6.0 0.4300000 0.0260000 0 0.0000000 78cun1 0
154 sm g pu242f ms cu 0.4276234 2.0 0.4300000 0.0040000 0 0.0000000 79mae1 0
154 th232h es cu 0.0587141 20.0 0.0541000 20.0000000% 0 0.0000000 77cro1 0
154 th232h es cu 0.0545900 8.1 0.0503000 8.1000000% 0 0.0000000 75mee3 0
154 np237f es cu x3 0.0000000 0.0 0.2700000 30.0000000% 0 0.0000000 72sid1 0
154 sm g np237f ms cu 0.1849098 2.0 0.1860000 0.0020000 0 0.0000000 77mae2 0
154 np237f sp cu 0.4075968 19.5 0.4100000 0.0800000 0 0.0000000 80naq1 0
154 cf252s sp cu 1.1092742 15.0 1.1290000 0.0000000 0 0.0000000 63fra1 0
154 sm g cf252s rc in 0.0393011 50.0 0.0400000 0.0200000 0 0.0000000 71che1 36
154 cf252s sp cu 0.9894058 15.0 1.0070000 0.0000000 0 0.0000000 65sch1 0
154 cf252s es cu 1.1023965 15.0 1.1220000 15.0000000% 0 0.0000000 87wah1 36
154 nd g cf252s rc in gt 0.3930112 15.0 0.4000000 0.0000000 0 0.0000000 71che1 36

155 u233f cm cu 0.0000000 0.0 0.0254000 0.0000000 0 0.0000000 63wea1 0
155 u233f cm cu x3 0.0000000 0.0 0.0210000 20.0000000% 0 0.0000000 77cro1 0
155 eu g u233f cm cu x3 0.0000000 0.0 0.0344000 15.1000000% 0 0.0000000 73net2 0
1
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nuclide material tech. type value err. value nuclide material value no. treatment

155 u233he es cu 0.0620447 31.0 0.0006600 0.0000000 161 tb g u233he 0.0000500 70net1 0
155 u233he es cu 0.0667554 20.0 0.0662000 20.0000000% 0 0.0000000 77cro1 0
155 eu g u233he cm cu 0.0000000 0.0 0.0633000 10.1000000% 0 0.0000000 73net2 0
155 u236f es cu 0.0936560 30.0 0.1000000 30.0000000% 0 0.0000000 72sid1 0
155 pu239h es cu 0.2292677 12.0 0.2390000 12.0000000% 0 0.0000000 75mee5 0
155 eu g pu239h es cu 0.2398198 15.0 0.2500000 15.0000000% 0 0.0000000 73net2 0
155 pu240f es cu 0.3005600 30.0 0.3000000 30.0000000% 0 0.0000000 72sid1 0
155 pu240f es cu 0.3005600 15.0 0.3000000 15.0000000% 0 0.0000000 77cro1 0
155 pu240f es cu 0.2326800 30.1 0.0024200 0.0000000 99 pu240f 0.0618000 77mye1 0
155 eu g pu240f rc cu 0.2326799 6.4 0.0024200 3.0000000% 99 mo g pu240f 0.0618000 77mye1 0
155 eu g pu240f rc cu 0.2003733 14.0 0.2000000 14.0000000% 0 0.0000000 86dic2 0
155 eu g pu240f rc cu 0.2063845 16.3 0.2060000 16.3000000% 0 0.0000000 86dic2 0
155 pu241f es cu 0.3358449 30.0 0.3300000 30.0000000% 0 0.0000000 72sid1 0
155 pu241f es cu 0.3358449 15.0 0.3300000 15.0000000% 0 0.0000000 77cro1 0
155 pu242f es cu 0.3281649 30.0 0.3600000 30.0000000% 0 0.0000000 72sid1 0
155 th232h es cu 0.0347292 20.0 0.0320000 20.0000000% 0 0.0000000 77cro1 0
155 th232h es cu 0.0307137 8.1 0.0283000 8.1000000% 0 0.0000000 75mee3 0
155 eu g th232h es cu 0.0324501 10.1 0.0299000 10.1000000% 0 0.0000000 73net2 0
155 np237f es cu x3 0.0000000 0.0 0.1800000 30.0000000% 0 0.0000000 72sid1 0
155 np237f es cu 0.1169880 12.0 0.1210000 12.0000000% 0 0.0000000 75mee4 0
155 np237f sp cu 0.2417107 24.0 0.2500000 0.0600000 0 0.0000000 80naq1 0
155 cf252s sp cu 0.9371749 15.0 0.9430000 0.0000000 0 0.0000000 63fra1 0
155 cf252s sp cu 0.8626381 15.0 0.8680000 0.0000000 0 0.0000000 65sch1 0
155 cf252s es cu 0.8774461 15.0 0.8829000 15.0000000% 0 0.0000000 87wah1 36
155 cf252s rc cu 0.6966697 5.6 0.7010000 0.0390000 0 0.0000000 83li 1 0
155 eu g cf252s rc cu 0.8328235 5.0 0.8380000 0.0350000 0 0.0000000 76thi1 0
155 sm g cf252s rc cu 0.6956759 11.2 0.7000000 11.1800000% 0 0.0000000 85tom1 0
155 sm g cf252s rc cu 0.7816647 6.4 0.7000000 0.0400000 149 nd g cf252s 2.4200000 91ram1 0
156 u233f cm cu 0.0000000 0.0 0.0131000 0.0000000 0 0.0000000 63wea1 0

156 u233f cm cu 0.0000000 0.0 0.0163000 15.0000000% 0 0.0000000 77cro1 0
156 eu g u233f rc cu 0.0176677 15.5 0.0182000 15.0000000% 99 mo g u233f 4.7500000 65bun2 0
156 eu g u233f es cu cm 0.0184517 15.1 0.0188000 15.1000000% 0 0.0000000 73net2 0
156 eu g u233f rc cu 0.0164887 15.8 0.0168000 15.8000000% 0 0.0000000 85dic2 0
156 u233he es cu 0.0402056 31.0 0.0004300 0.0000000 161 tb g u233he 0.0000500 70net1 0
156 u233he es cu 0.0441305 6.0 0.0440000 6.0000000% 0 0.0000000 77cro1 0
156 eu g u233he cm cu 0.0000000 0.0 0.0437000 7.9000000% 0 0.0000000 73net2 0
156 eu g u233he rc cu 0.0430821 6.4 0.0004400 0.0000200 97 zr g u233he 0.0480000 72net2 0
156 u236f es cu 0.0405402 30.0 0.0410000 30.0000000% 0 0.0000000 72sid1 0
156 eu g u236f rc cu 0.0335396 5.0 0.0339200 3.0000000% 0 0.0000000 76for1 0
156 pu239h es cu 0.2047447 12.0 0.2090000 12.0000000% 0 0.0000000 75mee5 0
156 eu g pu239h es cu cm 0.1949483 9.9 0.1990000 9.9000000% 0 0.0000000 73net2 0
156 eu g pu239h rc re x5 0.0000000 0.0 19.3000000 1.5900000% 99 mo g u235t 0.0000000 64oth1 7
156 eu g pu239h rc cu 0.1889725 10.0 0.1929000 1.5900000% 0 0.0000000 64oth1 0
156 eu g pu239h cm cu 0.0000000 0.0 0.1700000 10.0000000% 0 0.0000000 77cro1 0
156 eu g pu239h rc cu 0.2250232 5.0 0.2297000 1.7000000% 0 0.0000000 76for1 0
156 pu240f es cu 0.2103920 30.0 0.2100000 30.0000000% 0 0.0000000 72sid1 0
156 pu240f es cu 0.2103920 15.0 0.2100000 15.0000000% 0 0.0000000 77cro1 0
156 pu240f es cu 0.1653759 30.1 0.0017200 0.0000000 99 pu240f 0.0618000 77mye1 0
156 eu g pu240f rc cu 0.1653758 6.4 0.0017200 3.0000000% 99 mo g pu240f 0.0618000 77mye1 0
156 pu241f es cu 0.2442508 30.0 0.2400000 30.0000000% 0 0.0000000 72sid1 0
156 pu241f es cu 0.2442508 15.0 0.2400000 15.0000000% 0 0.0000000 77cro1 0
156 pu242f es cu 0.2370080 30.0 0.2600000 30.0000000% 0 0.0000000 72sid1 0
156 th232h es cu 0.0206205 20.0 0.0190000 20.0000000% 0 0.0000000 77cro1 0
156 th232h es cu 0.0177987 8.1 0.0164000 8.1000000% 0 0.0000000 75mee3 0
156 eu g th232h rc cu x4 0.0000000 0.0 0.0560000 0.0070000 0 0.0000000 65for1 0
156 eu g th232h rc cu x4 0.0000000 0.0 0.0360000 0.0070000 99 mo g th232h 2.0000000 68the1 0
156 eu g th232h es cu cm 0.0185584 10.1 0.0171000 10.1000000% 0 0.0000000 73net2 0
156 eu g th232h cm cu x3 0.0000000 0.0 0.0360000 0.0000000 0 0.0000000 69gun2 0
156 np237f es cu x3 0.0000000 0.0 0.1000000 30.0000000% 0 0.0000000 72sid1 0
156 np237f es cu 0.0963753 12.0 0.0980000 12.0000000% 0 0.0000000 75mee4 0
156 np237f sp cu ul 0.0000000 0.0 0.2800000 0.0600000 0 0.0000000 80naq1 0
156 eu g np237f rc cu 0.0916554 5.4 0.0900000 0.0012000 140 ba g np237f 5.3000000 68nam1 0
156 eu g np237f cm cu 0.0000000 0.0 0.0900000 15.0000000% 0 0.0000000 77cro1 0
156 eu g np237f rc cu x4 0.0000000 0.0 0.2300000 0.0000000 99 mo g np237f 6.1400000 56for1 0
156 eu g np237f rc re x5 0.0000000 0.0 8.3000000 0.0000000 99 mo g u235t 0.0000000 56for1 7

156 eu g np237f rc re 0.1088254 30.0 0.1106600 0.0000000 0 0.0000000 56for1 0
156 eu g np237f cm cu x3 0.0000000 0.0 0.2300000 0.0000000 0 0.0000000 69gun2 0
156 eu g np237f rc cu 0.1103399 5.0 0.1122000 1.7000000% 0 0.0000000 76for1 0
156 cf252s sp cu 0.7706192 15.0 0.7740000 0.0000000 0 0.0000000 63fra1 0
156 cf252s sp cu 0.7546891 15.0 0.7580000 0.0000000 0 0.0000000 65sch1 0
156 cf252s es cu 0.6753372 15.0 0.6783000 15.0000000% 0 0.0000000 87wah1 36
156 cf252s rc cu 0.6929599 6.2 0.6960000 0.0430000 0 0.0000000 83li 1 0
156 eu g cf252s rc cu 0.6999293 10.0 0.7030000 0.0080000 0 0.0000000 60ner1 0
156 eu g cf252s rc cu 0.6469032 5.4 0.6800000 0.0200000 147 nd g cf252s 4.4800000 73sko1 0
156 eu g cf252s es fc 0.6737527 5.7 0.9999880 5.0000000% 156 cf252s 1.0000000 74mee5 0
156 eu g cf252s cm cu 0.0000000 0.0 0.7000000 0.0000000 0 0.0000000 69gun2 0
156 eu g cf252s rc cu 0.6969424 12.9 0.7000000 0.0900000 0 0.0000000 84che1 0
156 eu g cf252s rc cu 0.6969424 12.9 0.7000000 0.0900000 0 0.0000000 86che1 0
156 sm g cf252s rc cu x4 0.0000000 0.0 0.5300000 0.0200000 147 nd g cf252s 4.4800000 73sko1 0
156 sm g cf252s rc cu 0.7168551 9.7 0.7200000 0.0700000 0 0.0000000 75fly2 0
156 sm g cf252s es fc 0.6689770 5.7 0.9929000 5.0000000% 156 cf252s 1.0000000 74mee5 0
156 sm g cf252s rc in gt 0.0995632 15.0 0.1000000 0.0000000 0 0.0000000 71che1 36
156 sm g cf252s rc cu 0.6113181 6.4 0.6140000 0.0390000 0 0.0000000 76thi1 0
157 u233f cm cu 0.0000000 0.0 0.0107000 15.0000000% 0 0.0000000 77cro1 0
157 eu g u233f rc cu 0.0101132 15.5 0.0105000 15.0000000% 99 mo g u233f 4.7500000 65bun2 0
157 eu g u233f cm cu 0.0000000 0.0 0.0108900 15.1000000% 0 0.0000000 73net2 0
157 u233he es cu 0.0281661 20.0 0.0280000 20.0000000% 0 0.0000000 77cro1 0
157 eu g u233he es cu 0.0273614 10.1 0.0272000 10.1000000% 0 0.0000000 73net2 0
157 u236f es cu x4 0.0000000 0.0 0.0450000 30.0000000% 0 0.0000000 72sid1 0
157 u236f es cu 0.0234140 30.0 0.0250000 30.0000000% 0 0.0000000 75mee1 0
157 pu239h es cu 0.1103171 12.0 0.1150000 12.0000000% 0 0.0000000 75mee5 0
157 eu g pu239h es cu 0.1139624 15.0 0.1188000 15.0000000% 0 0.0000000 73net2 0
157 pu240f es cu 0.1403696 30.0 0.1400000 30.0000000% 0 0.0000000 72sid1 0
157 pu240f es cu 0.1403696 15.0 0.1400000 15.0000000% 0 0.0000000 77cro1 0
157 pu240f es cu 0.1058453 30.1 0.0011000 0.0000000 99 pu240f 0.0618000 77mye1 0
157 eu g pu240f rc cu 0.1279765 8.7 0.0013300 7.7000000% 99 mo g pu240f 0.0618000 77mye1 0
157 pu241f es cu 0.1628339 30.0 0.1600000 30.0000000% 0 0.0000000 72sid1 0
157 pu241f es cu 0.1628339 15.0 0.1600000 15.0000000% 0 0.0000000 77cro1 0
157 pu242f es cu 0.1640825 30.0 0.1800000 30.0000000% 0 0.0000000 72sid1 0
157 th232h es cu 0.0130235 20.0 0.0120000 20.0000000% 0 0.0000000 77cro1 0
157 th232h es cu 0.0102017 8.1 0.0094000 8.1000000% 0 0.0000000 75mee3 0

157 eu g th232h rc cu 0.0133390 50.0 0.0120000 0.0060000 99 mo g th232h 2.0000000 68the1 0
157 eu g th232h es cu 0.0105273 10.1 0.0097000 10.1000000% 0 0.0000000 73net2 0
157 eu g th232h cm cu x3 0.0000000 0.0 0.0120000 0.0000000 0 0.0000000 69gun2 0
157 np237f es cu x3 0.0000000 0.0 0.0610000 30.0000000% 0 0.0000000 72sid1 0
157 np237f es cu 0.0322151 12.0 0.0338000 12.0000000% 0 0.0000000 75mee4 0
157 np237f sp cu ul 0.0000000 0.0 0.2200000 0.0600000 0 0.0000000 80naq1 0
157 cf252s sp cu 0.5555469 15.0 0.5590000 0.0000000 0 0.0000000 65sch1 0
157 cf252s es cu 0.5494846 15.0 0.5529000 15.0000000% 0 0.0000000 87wah1 36
157 cf252s rc cu 0.5197693 22.9 0.5230000 0.1200000 0 0.0000000 83li 1 0
157 cf252s sp cu x4 0.0000000 0.0 0.6370000 0.0000000 0 0.0000000 63fra1 0
157 eu g cf252s rc cu 0.5317757 5.4 0.5600000 0.0200000 147 nd g cf252s 4.4800000 73sko1 0
157 eu g cf252s es fc 0.5344358 6.4 0.9998500 5.0000000% 157 cf252s 1.0000000 74mee5 0
157 eu g cf252s rc cu 0.5565407 10.7 0.5600000 0.0600000 0 0.0000000 76thi1 0
157 eu g cf252s rc cu x4 0.0000000 0.0 0.0720000 0.0090000 140 ba g cf252s 1.0000000 75bla1 0
158 u233f es cu 0.0033166 30.0 0.0035000 30.0000000% 0 0.0000000 75mee1 0
158 u233f cm cu 0.0000000 0.0 0.0041000 20.0000000% 0 0.0000000 77cro1 0
158 u233he es cu 0.0169213 31.0 0.0001800 0.0000000 161 tb g u233he 0.0000500 70net1 0
158 u233he es cu 0.0171426 20.0 0.0170000 20.0000000% 0 0.0000000 77cro1 0
158 u236f es cu 0.0112387 30.0 0.0120000 30.0000000% 0 0.0000000 72sid1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

158 pu239h es cu 0.0730369 12.0 0.0775000 12.0000000% 0 0.0000000 75mee5 0
158 pu240f es cu 0.0906720 30.0 0.0900000 30.0000000% 0 0.0000000 72sid1 0
158 pu240f es cu 0.0647797 30.1 0.0006700 0.0000000 99 pu240f 0.0618000 77mye1 0
158 pu240f es cu x3 0.0000000 0.0 0.0900000 15.0000000% 0 0.0000000 77cro1 0
158 pu241f es cu 0.1119483 30.0 0.1100000 30.0000000% 0 0.0000000 72sid1 0
158 pu241f es cu 0.1119483 15.0 0.1100000 15.0000000% 0 0.0000000 77cro1 0
158 pu242f es cu 0.1093883 30.0 0.1200000 30.0000000% 0 0.0000000 72sid1 0
158 th232h es cu 0.0065117 30.0 0.0000600 0.0000000 0 0.0100000 69net1 0
158 th232h cm cu 0.0000000 0.0 0.0071000 20.0000000% 0 0.0000000 77cro1 0
158 th232h es cu 0.0062296 8.1 0.0057400 8.1000000% 0 0.0000000 75mee3 0
158 np237f es cu x3 0.0000000 0.0 0.0310000 30.0000000% 0 0.0000000 72sid1 0
158 np237f es cu 0.0127717 12.0 0.0134000 12.0000000% 0 0.0000000 75mee4 0
158 np237f sp cu ul 0.0000000 0.0 0.1300000 0.0400000 0 0.0000000 80naq1 0

158 cf252s sp cu 0.4912640 15.0 0.5000000 0.0000000 0 0.0000000 63fra1 0
158 cf252s sp cu 0.3822034 15.0 0.3890000 0.0000000 0 0.0000000 65sch1 0
158 cf252s es cu 0.5363621 15.0 0.5459000 15.0000000% 0 0.0000000 87wah1 36
158 sm g cf252s rc in gt 0.1473792 15.0 0.1500000 0.0000000 0 0.0000000 71che1 36
159 u233f cm cu 0.0000000 0.0 0.0018300 15.0000000% 0 0.0000000 77cro1 0
159 gd g u233f rc cu 0.0017337 15.5 0.0018000 15.0000000% 99 mo g u233f 4.7500000 65bun2 0
159 gd g u233f cm cu 0.0000000 0.0 0.0019000 15.1000000% 0 0.0000000 73net2 0
159 u233he es cu 0.0107635 12.0 0.0107000 12.0000000% 0 0.0000000 77cro1 0
159 gd g u233he rc cu 0.0105078 11.0 0.0001070 0.0000110 97 zr g u233he 0.0480000 72net2 0
159 gd g u233he cm cu x3 0.0000000 0.0 0.0107000 10.9000000% 0 0.0000000 73net2 0
159 u236f es cu 0.0044018 30.0 0.0047000 30.0000000% 0 0.0000000 72sid1 0
159 pu239h es cu 0.0513214 12.0 0.0535000 12.0000000% 0 0.0000000 75mee5 0
159 gd g pu239h es cu 0.0536045 15.0 0.0558800 15.0000000% 0 0.0000000 73net2 0
159 pu240f es cu 0.0551027 30.0 0.0550000 30.0000000% 0 0.0000000 72sid1 0
159 pu240f es cu 0.0551027 15.0 0.0550000 15.0000000% 0 0.0000000 77cro1 0
159 pu240f es cu 0.0365365 30.1 0.0003800 0.0000000 99 pu240f 0.0618000 77mye1 0
159 gd g pu240f rc cu 0.0311522 6.4 0.0003240 3.0000000% 99 mo g pu240f 0.0618000 77mye1 0
159 pu241f es cu 0.0651335 30.0 0.0640000 30.0000000% 0 0.0000000 72sid1 0
159 pu241f es cu 0.0651335 15.0 0.0640000 15.0000000% 0 0.0000000 77cro1 0
159 pu242f es cu 0.0656330 30.0 0.0720000 30.0000000% 0 0.0000000 72sid1 0
159 th232h es cu 0.0043846 8.1 0.0040400 8.1000000% 0 0.0000000 75mee3 0
159 th232h cm cu x3 0.0000000 0.0 0.0044000 10.0000000% 0 0.0000000 77cro1 0
159 gd g th232h rc re 0.0047753 9.1 0.0000440 0.0000040 0 0.0100000 69net1 0
159 gd g th232h cm cu x3 0.0000000 0.0 0.0029600 10.1000000% 0 0.0000000 73net2 0
159 gd g th232h cm cu x3 0.0000000 0.0 0.0044000 10.0000000% 0 0.0000000 77cro1 0
159 np237f es cu x3 0.0000000 0.0 0.0180000 30.0000000% 0 0.0000000 72sid1 0
159 np237f es cu 0.0064907 12.0 0.0068100 12.0000000% 0 0.0000000 75mee4 0
159 np237f sp cu ul 0.0000000 0.0 0.0900000 0.0400000 0 0.0000000 80naq1 0
159 cf252s sp cu 0.3836192 15.0 0.3870000 0.0000000 0 0.0000000 63fra1 0
159 cf252s sp cu 0.2805277 15.0 0.2830000 0.0000000 0 0.0000000 65sch1 0
159 cf252s es cu 0.3497180 15.0 0.3528000 15.0000000% 0 0.0000000 87wah1 36
159 gd g cf252s rc cu 0.3409756 5.4 0.3600000 0.0100000 147 nd g cf252s 4.4800000 73sko1 0
160 tb g u233f es cu 0.0000023 90.0 0.0000024 90.0000000% 0 0.0000000 73net2 0
160 u233f es cu 0.0004169 30.0 0.0004400 30.0000000% 0 0.0000000 75mee1 0
160 u233f cm cu 0.0000000 0.0 0.0008700 20.0000000% 0 0.0000000 77cro1 0
160 tb g u233he rc in 0.0000303 26.7 0.0000003 0.0000001 0 0.0100000 72net2 0

160 tb g u233he rc fi 0.0000302 28.7 0.0042000 0.0010000 160 u233he 1.0000000 72net2 0
160 tb g u233he cm cu 0.0000000 0.0 0.0000300 30.9000000% 0 0.0000000 73net2 0
160 u233he es cu 0.0070505 31.0 0.0000750 0.0000000 161 tb g u233he 0.0000500 70net1 0
160 u233he es cu 0.0070587 20.0 0.0070000 20.0000000% 0 0.0000000 77cro1 0
160 u236f es cu 0.0019668 30.0 0.0021000 30.0000000% 0 0.0000000 72sid1 0
160 tb g pu239h cm cu 0.0000000 0.0 0.0005500 50.0000000% 0 0.0000000 73net2 0
160 pu239h es cu 0.0331729 12.0 0.0352000 12.0000000% 0 0.0000000 89rid1 0
160 tb g pu240f rc in ul 0.0000000 0.0 0.0000011 0.0000000 99 mo g pu240f 0.0618000 77mye1 0
160 pu240f cm cu x3 0.0000000 0.0 0.0330000 15.0000000% 0 0.0000000 77cro1 0
160 pu240f es cu 0.0193966 30.1 0.0002000 0.0000000 99 pu240f 0.0618000 77mye1 0
160 pu240f cm cu x3 0.0000000 0.0 0.0330000 30.0000000% 0 0.0000000 72sid1 0
160 pu241f es cu 0.0396908 30.0 0.0390000 30.0000000% 0 0.0000000 72sid1 0
160 pu241f es cu 0.0396908 15.0 0.0390000 15.0000000% 0 0.0000000 77cro1 0
160 pu242f es cu 0.0410206 30.0 0.0450000 30.0000000% 0 0.0000000 72sid1 0
160 tb g th232h cm cu 0.0000000 0.0 0.0000001 90.0000000% 0 0.0000000 73net2 0
160 th232h es cu 0.0018450 30.0 0.0000170 0.0000000 0 0.0100000 69net1 0
160 th232h cm cu 0.0000000 0.0 0.0022500 20.0000000% 0 0.0000000 77cro1 0
160 th232h es cu 0.0017148 8.1 0.0015800 8.1000000% 0 0.0000000 75mee3 0
160 np237f es cu x3 0.0000000 0.0 0.0077000 30.0000000% 0 0.0000000 72sid1 0
160 np237f es cu 0.0025067 12.0 0.0026300 12.0000000% 0 0.0000000 75mee4 0
160 np237f sp cu ul 0.0000000 0.0 0.0600000 0.0300000 0 0.0000000 80naq1 0
160 cf252s sp cu 0.2849331 15.0 0.2900000 0.0000000 0 0.0000000 63fra1 0
160 cf252s es cu 0.2853262 15.0 0.2904000 15.0000000% 0 0.0000000 87wah1 36
160 cf252s sp cu x4 0.0000000 0.0 0.3590000 0.0000000 0 0.0000000 65sch1 0
161 u233f es cu 0.0000948 30.0 0.0001000 30.0000000% 0 0.0000000 75mee1 0
161 u233f cm cu 0.0000000 0.0 0.0004720 15.0000000% 0 0.0000000 77cro1 0
161 tb g u233f rc cu x1 0.0000000 0.0 0.0004900 30.0000000% 99 mo g u233f 4.7500000 65bun2 0
161 tb g u233f cm cu x3 0.0000000 0.0 0.0005100 20.1000000% 0 0.0000000 73net2 0
161 u233he es cu 0.0047139 7.0 0.0047000 7.0000000% 0 0.0000000 77cro1 0
161 tb g u233he rc cu 0.0046019 7.5 0.0000470 0.0000030 97 zr g u233he 0.0480000 72net2 0
161 tb g u233he cm cu x3 0.0000000 0.0 0.0047000 7.9000000% 0 0.0000000 73net2 0
161 u236f es cu 0.0008899 30.0 0.0009000 30.0000000% 0 0.0000000 72sid1 0
161 tb g u236f rc cu 0.0004820 5.0 0.0004875 3.0000000% 0 0.0000000 76for1 0
161 pu239h es cu 0.0177315 12.0 0.0181000 12.0000000% 0 0.0000000 75mee5 0
161 tb g pu239h cm cu x3 0.0000000 0.0 0.0263000 9.9000000% 0 0.0000000 73net2 0
161 tb g pu239h rc re x5 0.0000000 0.0 254.0000000 3.0000000% 99 mo g u235t 0.0000000 64oth1 7

161 tb g pu239h rc cu 0.0161641 10.0 0.0165000 3.0000000% 0 0.0000000 64oth1 0
161 tb g pu239h cm cu 0.0000000 0.0 0.0140000 15.0000000% 0 0.0000000 77cro1 0
161 tb g pu239h rc cu 0.0192401 5.6 0.0196400 5.6000000% 0 0.0000000 76for1 0
161 pu240f es cu 0.0190502 30.0 0.0190000 30.0000000% 0 0.0000000 72sid1 0
161 pu240f es cu 0.0190502 15.0 0.0190000 15.0000000% 0 0.0000000 77cro1 0
161 pu240f es cu 0.0094298 30.1 0.0000980 0.0000000 99 pu240f 0.0618000 77mye1 0
161 tb g pu240f rc cu 0.0107770 6.4 0.0001120 3.0000000% 99 mo g pu240f 0.0618000 77mye1 0
161 pu241f es cu 0.0234074 30.0 0.0230000 30.0000000% 0 0.0000000 72sid1 0
161 pu241f es cu 0.0234074 15.0 0.0230000 15.0000000% 0 0.0000000 77cro1 0
161 pu242f es cu 0.0237008 30.0 0.0260000 30.0000000% 0 0.0000000 72sid1 0
161 th232h cm cu 0.0000000 0.0 0.0010600 50.0000000% 0 0.0000000 77cro1 0
161 th232h es cu 0.0010179 8.1 0.0009600 8.1000000% 0 0.0000000 75mee3 0
161 tb g th232h rc re 0.0011239 5.7 0.0000106 0.0000006 0 0.0100000 69net1 0
161 tb g th232h es cu cm 0.0009119 10.1 0.0008600 10.1000000% 0 0.0000000 73net2 0
161 tb g th232h cm cu 0.0000000 0.0 0.0010600 5.0000000% 0 0.0000000 77cro1 0
161 np237f es cu x3 0.0000000 0.0 0.0043000 30.0000000% 0 0.0000000 72sid1 0
161 np237f es cu 0.0007787 12.0 0.0008170 12.0000000% 0 0.0000000 75mee4 0
161 np237f sp cu ul 0.0000000 0.0 0.0400000 0.0300000 0 0.0000000 80naq1 0
161 cf252s sp cu 0.2176472 15.0 0.2190000 0.0000000 0 0.0000000 63fra1 0
161 cf252s sp cu 0.1659684 15.0 0.1670000 0.0000000 0 0.0000000 65sch1 0
161 cf252s es cu 0.1960812 15.0 0.1973000 15.0000000% 0 0.0000000 87wah1 36
161 tb g cf252s rc cu 0.1490734 30.0 0.1500000 0.0000000 0 0.0000000 60ner1 0
161 tb g cf252s rc cu 0.1899199 5.4 0.2000000 0.0100000 147 nd g cf252s 4.4800000 73sko1 0
161 tb g cf252s rc cu 0.2186410 9.1 0.2200000 0.0200000 0 0.0000000 75fly2 0
161 tb g cf252s es fc 0.1925053 6.4 0.9999950 5.0000000% 161 cf252s 1.0000000 74mee5 0
161 tb g cf252s cm cu 0.0000000 0.0 0.1500000 0.0000000 0 0.0000000 69gun2 0
161 tb g cf252s rc cu 0.1888263 10.5 0.1900000 0.0200000 0 0.0000000 84che1 0
161 tb g cf252s rc cu 0.1888263 10.5 0.1900000 0.0200000 0 0.0000000 86che1 0
162 u233f es cu 0.0000227 30.0 0.0000240 30.0000000% 0 0.0000000 75mee1 0
162 u233he es cu 0.0027489 31.0 0.0000290 0.0000000 161 tb g u233he 0.0000500 70net1 0
162 u236f es cu 0.0002060 30.0 0.0002200 30.0000000% 0 0.0000000 75mee1 0
162 pu239h es cu 0.0090472 12.0 0.0096000 12.0000000% 0 0.0000000 75mee5 0
162 pu240f es cu 0.0090672 30.0 0.0090000 30.0000000% 0 0.0000000 72sid1 0
162 pu240f es cu 0.0046409 30.1 0.0000480 0.0000000 99 pu240f 0.0618000 77mye1 0
162 pu241f es cu 0.0112755 30.0 0.0110000 30.0000000% 0 0.0000000 75mee1 0

0measured nuclide	fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
162	pu241f	es	cu		0.0123006	30.0	0.0120000	0.0000000	0		0.0000000	72sid1	0
162	pu242f	es	cu		0.0127620	30.0	0.0140000	30.0000000%	0		0.0000000	72sid1	0
162	th232h	es	cu		0.0005426	30.0	0.0000050	0.0000000	0		0.0100000	69net1	0
162	th232h	es	cu		0.0005079	8.1	0.0004680	8.1000000%	0		0.0000000	75mee3	0
162	np237f	es	cu	x3	0.0000000	0.0	0.0015000	30.0000000%	0		0.0000000	72sid1	0
162	np237f	es	cu		0.0003031	12.0	0.0003180	12.0000000%	0		0.0000000	75mee4	0
162	np237f	sp	cu	ul	0.0000000	0.0	0.0100000	0.0100000	0		0.0000000	80naq1	0
162	cf252s	sp	cu	ul	0.0000000	0.0	0.1870000	0.0000000	0		0.0000000	63fra1	0
162	cf252s	sp	cu	ul	0.0000000	0.0	0.1000000	0.0000000	0		0.0000000	65sch1	0
162	cf252s	es	cu		0.1195707	15.0	0.1226000	15.0000000%	0		0.0000000	87wah1	36
163	u233f	es	cu		0.0000104	30.0	0.0000110	30.0000000%	0		0.0000000	75mee1	0
163	u233he	es	cu		0.0017062	31.0	0.0000180	0.0000000	161	tb g	u233he	0.0000500	70net1	0
163	u236f	es	cu		0.0001124	30.0	0.0001200	30.0000000%	0		0.0000000	75mee1	0
163	pu239h	es	cu		0.0031948	12.0	0.0033900	12.0000000%	0		0.0000000	75mee5	0
163	pu240f	es	cu		0.0023205	30.1	0.0000240	0.0000000	99		pu240f	0.0618000	77mye1	0
163	pu240f	es	cu		0.0020149	30.0	0.0020000	0.0000000	0		0.0000000	72sid1	0
163	pu241f	es	cu		0.0063553	30.0	0.0062000	30.0000000%	0		0.0000000	75mee1	0
163	pu241f	es	cu		0.0041002	30.0	0.0040000	0.0000000	0		0.0000000	72sid1	0
163	pu242f	es	cu		0.0054694	30.0	0.0060000	30.0000000%	0		0.0000000	72sid1	0
163	th232h	es	cu		0.0002713	30.0	0.0000025	0.0000000	0		0.0100000	69net1	0
163	th232h	es	cu		0.0002540	8.1	0.0002340	8.1000000%	0		0.0000000	75mee3	0
163	np237f	es	cu		0.0001296	12.0	0.0001360	12.0000000%	0		0.0000000	75mee4	0
163	np237f	sp	cu	ul	0.0000000	0.0	0.0100000	0.0100000	0		0.0000000	80naq1	0
163	cf252s	sp	cu	ul	0.0000000	0.0	0.1560000	0.0000000	0		0.0000000	63fra1	0
163	cf252s	sp	cu	ul	0.0000000	0.0	0.1370000	0.0000000	0		0.0000000	65sch1	0
163	cf252s	es	cu		0.0758386	15.0	0.0777600	15.0000000%	0		0.0000000	87wah1	36
164	u233f	es	cu		0.0000035	30.0	0.0000037	30.0000000%	0		0.0000000	75mee1	0
164	u233he	es	cu		0.0010427	31.0	0.0000110	0.0000000	161	tb g	u233he	0.0000500	70net1	0
164	u236f	es	cu		0.0000450	30.0	0.0000480	30.0000000%	0		0.0000000	75mee1	0
164	pu239h	es	cu		0.0018283	12.0	0.0019400	12.0000000%	0		0.0000000	75mee5	0
164	pu240f	es	cu		0.0011638	30.1	0.0000120	0.0000000	99		pu240f	0.0618000	77mye1	0
164	pu241f	es	cu		0.0033134	30.0	0.0032000	30.0000000%	0		0.0000000	75mee1	0
164	pu242f	es	cu		0.0013674	30.0	0.0015000	0.0000000	0		0.0000000	89rid1	0

164		th232h	es	cu		0.0001411	30.0	0.0000013	0.0000000	0			0.0100000	69net1	0
164		th232h	es	cu		0.0001313	8.1	0.0001210	8.1000000%	0			0.0000000	75mee3	0
164		np237f	es	cu		0.0000562	12.0	0.0000590	12.0000000%	0			0.0000000	75mee4	0
164		cf252s	sp	cu	ul	0.0000000	0.0	0.0700000	0.0000000	0			0.0000000	65sch1	0
164		cf252s	sp	cu	ul	0.0000000	0.0	0.1020000	0.0000000	0			0.0000000	63fra1	0
164		cf252s	es	cu		0.0472041	15.0	0.0484000	15.0000000%	0			0.0000000	87wah1	36
165		u233f	es	cu		0.0000012	30.0	0.0000012	30.0000000%	0			0.0000000	75mee1	0
165		u233he	es	cu		0.0006256	31.0	0.0000066	0.0000000	161	tb	g	u233he	0.0000500	70net1	0
165		u236f	es	cu		0.0000172	30.0	0.0000180	30.0000000%	0			0.0000000	75mee1	0
165		pu239h	es	cu		0.0007370	12.0	0.0007820	12.0000000%	0			0.0000000	75mee5	0
165		pu240f	es	cu		0.0005704	30.1	0.0000059	0.0000000	99			pu240f	0.0618000	77mye1	0
165		pu241f	es	cu		0.0015376	30.0	0.0015000	30.0000000%	0			0.0000000	75mee1	0
165		pu242f	es	cu		0.0009375	30.0	0.0010000	0.0000000	0			0.0000000	89rid1	0
165		th232h	es	cu		0.0000792	30.0	0.0000007	0.0000000	0			0.0100000	69net1	0
165		th232h	es	cu		0.0000723	8.1	0.0000666	8.1000000%	0			0.0000000	75mee3	0
165		np237f	es	cu		0.0000192	12.0	0.0000199	12.0000000%	0			0.0000000	75mee4	0
165		cf252s	sp	cu	ul	0.0000000	0.0	0.0709000	0.0000000	0			0.0000000	63fra1	0
165		cf252s	es	cu		0.0286443	15.0	0.0293700	15.0000000%	0			0.0000000	87wah1	36
166		u233f	es	cu		0.0000007	30.0	0.0000071	30.0000000%	0			10.0000000	75mee1	0
166	dy	g	u233f	cm	cu		0.0000000	0.0	0.0000158	50.1000000%	0		0.0000000	73net2	0
166	dy	g	u233he	rc	cu		0.0002357	9.2	0.0000024	0.0000002	97	zr	g	u233he	0.0480000	72net2	0
166	dy	g	u233he	cm	cu		0.0000000	0.0	0.0002370	9.0000000%	0			0.0000000	73net2	0
166		u236f	es	cu		0.0000103	30.0	0.0000110	30.0000000%	0			0.0000000	75mee1	0
166		pu239h	es	cu		0.0005051	12.0	0.0005360	12.0000000%	0			0.0000000	75mee5	0
166		pu240f	es	cu		0.0003032	30.0	0.0003000	0.0000000	0			0.0000000	75mee1	0
166		pu241f	es	cu		0.0006213	30.0	0.0006000	30.0000000%	0			0.0000000	75mee1	0
166		pu242f	es	cu		0.0004558	30.0	0.0005000	0.0000000	0			0.0000000	89rid1	0
166		th232h	es	cu		0.0000285	8.1	0.0000269	8.1000000%	0			0.0000000	75mee3	0
166	dy	g	th232h	rc	re		0.0000307	6.9	0.0000003	0.0000000	0		0.0100000	69net1	0
166	dy	g	th232h	cm	cu	x3	0.0000000	0.0	0.0000272	10.1000000%	0		0.0000000	73net2	0
166	dy	g	th232h	cm	cu	x3	0.0000000	0.0	0.0000290	7.0000000%	0		0.0000000	77cro1	0
166		np237f	es	cu		0.0000112	12.0	0.0000118	12.0000000%	0			0.0000000	75mee4	0
166		cf252s	sp	cu	ul	0.0000000	0.0	0.0468000	0.0000000	0			0.0000000	63fra1	0
166		cf252s	es	cu		0.0195818	15.0	0.0199300	15.0000000%	0			0.0000000	87wah1	36
166	dy	g	cf252s	rc	cu		0.0176855	10.0	0.0180000	0.0016000	0		0.0000000	60ner1	0
166	dy	g	cf252s	cm	cu	x3	0.0000000	0.0	0.0180000	0.0000000	0		0.0000000	69gun2	0

167		u233f	es	cu		0.0000001	30.0	0.0000099	30.0000000%	0			100.0000000	75mee1	0
167		u233he	es	cu		0.0002180	31.0	0.0000023	0.0000000	161	tb	g	u233he	0.0000500	70net1	0
167		u236f	es	cu		0.0000049	30.0	0.0000052	30.0000000%	0			0.0000000	75mee1	0
167		pu239h	es	cu		0.0002742	12.0	0.0002910	12.0000000%	0			0.0000000	75mee5	0
167		pu240f	es	cu		0.0001819	30.0	0.0001800	0.0000000	0			0.0000000	75mee1	0
167		pu241f	es	cu		0.0003106	30.0	0.0003000	30.0000000%	0			0.0000000	75mee1	0
167		pu242f	es	cu		0.0001823	30.0	0.0002000	0.0000000	0			0.0000000	89rid1	0
167		th232h	es	cu		0.0000174	30.0	0.0000002	0.0000000	0			0.0100000	69net1	0
167		th232h	es	cu		0.0000158	8.1	0.0000146	8.1000000%	0			0.0000000	75mee3	0
167		np237f	es	cu		0.0000016	12.0	0.0000016	12.0000000%	0			0.0000000	75mee4	0
167		cf252s	sp	cu	ul	0.0000000	0.0	0.0258000	0.0000000	0			0.0000000	63fra1	0
167		cf252s	es	cu		0.0095676	15.0	0.0098100	15.0000000%	0			0.0000000	87wah1	36
168		u233f	es	cu		0.0000000	30.0	0.0000026	30.0000000%	0			100.0000000	75mee1	0
168		u233he	es	cu		0.0001327	31.0	0.0000014	0.0000000	161	tb	g	u233he	0.0000500	70net1	0
168		u236f	es	cu		0.0000012	30.0	0.0000013	30.0000000%	0			0.0000000	75mee1	0
168		pu239h	es	cu		0.0001376	12.0	0.0001460	12.0000000%	0			0.0000000	75mee5	0
168		pu240f	es	cu		0.0000910	30.0	0.0000900	0.0000000	0			0.0000000	75mee1	0
168		pu241f	es	cu		0.0001243	30.0	0.0001200	30.0000000%	0			0.0000000	75mee1	0
168		pu242f	es	cu		0.0000729	30.0	0.0000800	0.0000000	0			0.0000000	89rid1	0
168		th232h	es	cu		0.0000087	30.0	0.0000001	0.0000000	0			0.0100000	69net1	0
168		th232h	es	cu		0.0000080	8.1	0.0000073	8.1000000%	0			0.0000000	75mee3	0
168		np237f	es	cu		0.0000004	12.0	0.0000004	12.0000000%	0			0.0000000	75mee4	0
168		cf252s	sp	cu	ul	0.0000000	0.0	0.0129000	0.0000000	0			0.0000000	63fra1	0
168		cf252s	es	cu		0.0052510	15.0	0.0053840	15.0000000%	0			0.0000000	87wah1	36
169		u233f	es	cu		0.0000000	30.0	0.0000087	30.0000000%	0			1000.0000000	75mee1	0
169	er	g	u233he	rc	cu		0.0000825	8.2	0.0000008	0.0000001	97	zr	g	u233he	0.0480000	72net2	0
169	er	g	u233he	cm	cu		0.0000000	0.0	0.0000840	9.9000000%	0			0.0000000	73net2	0
169		u236f	es	cu		0.0000003	30.0	0.0000032	30.0000000%	0			10.0000000	75mee1	0
169		pu239h	es	cu		0.0000642	12.0	0.0000681	12.0000000%	0			0.0000000	75mee5	0
169		pu240f	es	cu		0.0000402	30.0	0.0000400	0.0000000	0			0.0000000	75mee1	0
169	er	g	pu240f	rc	cu	le	0.0001061	15.5	0.0000011	0.0000000	99	mo	g	pu240f	0.0618000	77mye1	0
169		pu241f	es	cu		0.0000590	30.0	0.0000570	30.0000000%	0			0.0000000	75mee1	0
169		pu242f	es	cu		0.0000438	30.0	0.0000480	0.0000000	0			0.0000000	89rid1	0
169		th232h	es	cu		0.0000039	8.1	0.0000036	8.1000000%	0			0.0000000	75mee3	0
169	er	g	th232h	rc	re	x4	0.0000000	0.0	0.0000002	0.0000001	0			0.0100000	69net1	0
169	er	g	th232h	es	cu		0.0000038	25.1	0.0000035	25.1000000%	0			0.0000000	73net2	0

169 er g th232h cm cu x3 0.0000000 0.0 0.0000230 35.0000000% 0 0.0000000 77cro1 0
169 np237f es cu 0.0000001 12.0 0.0000001 12.0000000% 0 0.0000000 75mee4 0
169 cf252s es cu 0.0018355 99.0 0.0019020 99.0000000% 0 0.0000000 87wah1 36
169 er g cf252s rc cu 0.0016599 23.8 0.0017200 0.0004100 0 0.0000000 60ner1 0
169 er g cf252s cm cu x3 0.0000000 0.0 0.0017200 0.0000000 0 0.0000000 69gun2 0
170 u233f es cu 0.0000000 30.0 0.0000026 30.0000000% 0 1000.0000000 75mee1 0
170 u233he es cu 0.0000427 31.0 0.0000005 0.0000000 161 tb g u233he 0.0000500 70net1 0
170 u236f es cu 0.0000001 30.0 0.0000097 30.0000000% 0 100.0000000 75mee1 0
170 pu239h es cu 0.0000464 12.0 0.0000492 12.0000000% 0 0.0000000 75mee5 0
170 pu240f es cu 0.0000202 30.0 0.0000200 0.0000000 0 0.0000000 75mee1 0
170 pu241f es cu 0.0000166 30.0 0.0000160 30.0000000% 0 0.0000000 75mee1 0
170 pu242f es cu 0.0000210 30.0 0.0000230 0.0000000 0 0.0000000 89rid1 0
170 th232h es cu 0.0000018 30.0 0.0000017 0.0000000 0 0.0000000 69net1 0
170 th232h es cu 0.0000017 8.1 0.0000016 8.1000000% 0 0.0000000 75mee3 0
170 np237f es cu 0.0000004 12.0 0.0000004 12.0000000% 0 0.0000000 75mee4 0
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0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

170 cf252s es cu 0.0013970 99.0 0.0015020 99.0000000% 0 0.0000000 87wah1 36
171 u233f es cu 0.0000000 30.0 0.0000008 30.0000000% 0 1000.0000000 75mee1 0
171 u233he es cu 0.0000237 31.0 0.0000002 0.0000000 161 tb g u233he 0.0000500 70net1 0
171 u236f es cu 0.0000000 30.0 0.0000032 30.0000000% 0 100.0000000 75mee1 0
171 pu239h es cu 0.0000367 12.0 0.0000389 12.0000000% 0 0.0000000 75mee5 0
171 pu240f es cu 0.0000111 30.0 0.0000110 0.0000000 0 0.0000000 75mee1 0
171 pu241f es cu 0.0000058 30.0 0.0000056 30.0000000% 0 0.0000000 75mee1 0
171 pu242f es cu 0.0000119 30.0 0.0000130 0.0000000 0 0.0000000 89rid1 0
171 th232h es cu 0.0000009 30.0 0.0000008 0.0000000 0 0.0000000 69net1 0
171 th232h es cu 0.0000008 8.1 0.0000008 8.1000000% 0 0.0000000 75mee3 0
171 np237f es cu 0.0000001 12.0 0.0000001 12.0000000% 0 0.0000000 75mee4 0
171 cf252s es cu 0.0007080 99.0 0.0007612 99.0000000% 0 0.0000000 87wah1 36
172 u233f es cu 0.0000000 30.0 0.0000003 30.0000000% 0 1000.0000000 75mee1 0
172 tm g u233he cm cu 0.0000000 0.0 0.0000181 10.9000000% 0 0.0000000 73net2 0
172 er g u233he rc cu 0.0000179 9.2 0.0000002 0.0000000 97 zr g u233he 0.0480000 72net2 0
172 u236f es cu 0.0000000 30.0 0.0000086 30.0000000% 0 1000.0000000 75mee1 0
172 pu239h es cu 0.0000184 12.0 0.0000195 12.0000000% 0 0.0000000 75mee5 0

172		pu240f	es	cu		0.0000061	30.0	0.0000060	0.0000000	0	0.0000000	75mee1	0
172		pu241f	es	cu		0.0000017	30.0	0.0000016	30.0000000%	0	0.0000000	75mee1	0
172		pu242f	es	cu		0.0000064	30.0	0.0000070	0.0000000	0	0.0000000	89rid1	0
172		th232h	es	cu		0.0000004	30.0	0.0000004	0.0000000	0	0.0000000	69net1	0
172		th232h	es	cu		0.0000004	8.1	0.0000004	8.1000000%	0	0.0000000	75mee3	0
172	tm g	th232h	cm	cu		0.0000000	0.0	0.0000003	25.1000000%	0	0.0000000	73net2	0
172		np237f	es	cu		0.0000005	12.0	0.0000005	12.0000000%	0	0.0000000	75mee4	0
172		cf252s	es	cu		0.0003459	99.0	0.0003719	99.0000000%	0	0.0000000	87wah1	0
172	tm g	cf252s	cm	cu		0.0000000	0.0	0.0004400	0.0000000	0	0.0000000	69gun2	0
172	tm g	cf252s	rc	cu	ul	0.0000000	0.0	0.0004400	0.0000000	0	0.0000000	60ner1	0

1 Appendix C

Set C Yields Evaluated and Compiled
for
Los Alamos report LA-UR-94-3106 (ENDF-349)

T. R. England and B. F. Rider
October, 1994

Set C Contains yields for:
u234f, u237f, pu240h, u234he, u236he, pu238f, am241f, am243f, np238f, cm242f

Note: print landscape with page control parameter set
1

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    mass number     66            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide      24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g
half life                                  0.23s    54.6 h    5.10 m    stable     9.49h     2.27h
lambda           0.0       0.0       0.0 3.014e+00 3.526e-06 2.265e-03       0.0 2.029e-05 8.482e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u234f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  3.92e-06n      0.0       0.0
zp 26.88 ri 4.80e-11p 1.93e-08p 1.32e-06p 1.87e-06p 7.06e-07p 5.13e-09p 6.02e-12p       0.0       0.0
sig0.554 cc 4.80e-11p 1.93e-08p 1.34e-06p 3.21e-06p 3.92e-06p 3.92e-06p 3.92e-06p       0.0       0.0
         rc 4.80e-11p 1.93e-08p 1.34e-06p 3.21e-06p 3.92e-06o 3.92e-06o 3.92e-06n       0.0       0.0
 u237f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  4.46e-07n      0.0       0.0
zp 26.51 ri 5.15e-11p 9.84e-09p 2.64e-07p 1.54e-07p 1.80e-08p 3.22e-11p       0.0       0.0       0.0
sig0.536 cc 5.15e-11p 9.89e-09p 2.74e-07p 4.28e-07p 4.46e-07p 4.46e-07p 4.46e-07p       0.0       0.0
         rc 5.15e-11p 9.89e-09p 2.74e-07p 4.28e-07p 4.46e-07o 4.46e-07o 4.46e-07n       0.0       0.0
 pu240h  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0  6.13e-05o      0.0  6.19e-05n      0.0       0.0
zp 26.85 ri 7.99e-09p 1.10e-06p 1.71e-05p 3.40e-05p 9.30e-06p 3.15e-07p 1.15e-09p       0.0       0.0
```

sig0.643 cc 7.99e-09p 1.11e-06p 1.82e-05p 5.22e-05p 6.15e-05p 6.18e-05p 6.18e-05p 0.0 0.0
rc 7.99e-09p 1.11e-06p 1.82e-05p 5.22e-05p 6.15e-05o 6.18e-05n 6.18e-05m 0.0 0.0
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.000444l 0.0 0.0 0.0 0.0
zp 26.88 ri 3.71e-08p 6.45e-06p 0.000116p 0.000251p 7.04e-05p 2.29e-06p 7.47e-09p 2.23e-12p 0.0
sig0.632 cc 3.71e-08p 6.48e-06p 0.000122p 0.000374p 0.000444p 0.000446p 0.000446p 2.23e-12p 0.0
rc 3.71e-08p 6.48e-06p 0.000122p 0.000374o 0.000444k 0.000446k 0.000446k 2.23e-12p 0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.000185k 0.0 0.0 0.0 0.0
zp 26.64 ri 5.13e-08p 6.01e-06p 6.95e-05p 9.38e-05p 1.52e-05p 2.57e-07p 3.88e-10p 0.0 0.0
sig0.621 cc 5.13e-08p 6.06e-06p 7.56e-05p 0.000169p 0.000185p 0.000185p 0.000185p 0.0 0.0
rc 5.13e-08p 6.06e-06p 7.56e-05p 0.000169n 0.000185k 0.000185k 0.000185k 0.0 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.22e-06n 0.0 0.0
zp 26.90 ri 1.84e-11p 6.88e-09p 3.62e-07p 6.26e-07p 2.27e-07p 2.56e-09p 3.94e-12p 0.0 0.0
sig0.569 cc 1.84e-11p 6.90e-09p 3.68e-07p 9.94e-07p 1.22e-06p 1.22e-06p 1.22e-06p 0.0 0.0
rc 1.84e-11p 6.90e-09p 3.68e-07p 9.94e-07p 1.22e-06o 1.22e-06o 1.22e-06n 0.0 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 9.34e-07n 0.0 0.0
zp 27.11 ri 1.72e-12p 1.99e-09p 1.27e-07p 5.74e-07p 2.24e-07p 6.60e-09p 1.12e-11p 0.0 0.0
sig0.565 cc 1.72e-12p 1.99e-09p 1.29e-07p 7.03e-07p 9.28e-07p 9.34e-07p 9.34e-07p 0.0 0.0
rc 1.72e-12p 1.99e-09p 1.29e-07p 7.03e-07p 9.28e-07p 9.34e-07o 9.34e-07n 0.0 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.99e-07n 0.0 0.0
zp 26.88 ri 1.68e-11p 5.16e-09p 1.25e-07p 2.94e-07p 7.36e-08p 1.70e-09p 2.99e-12p 0.0 0.0
sig0.598 cc 1.68e-11p 5.17e-09p 1.30e-07p 4.24e-07p 4.97e-07p 4.99e-07p 4.99e-07p 0.0 0.0
rc 1.68e-11p 5.17e-09p 1.30e-07p 4.24e-07p 4.97e-07o 4.99e-07o 4.99e-07n 0.0 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.29e-07n 0.0 0.0
zp 26.75 ri 1.18e-12p 1.13e-09p 4.03e-08p 7.83e-08p 9.62e-09p 5.22e-11p 0.0 0.0 0.0
sig0.524 cc 1.18e-12p 1.13e-09p 4.14e-08p 1.20e-07p 1.29e-07p 1.29e-07p 1.29e-07p 0.0 0.0
rc 1.18e-12p 1.13e-09p 4.14e-08p 1.20e-07p 1.29e-07p 1.29e-07o 1.29e-07n 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 9.98e-07n 0.0 0.0
zp 27.29 ri 2.55e-12p 1.62e-09p 1.00e-07p 5.16e-07p 3.57e-07p 2.29e-08p 1.56e-10p 0.0 0.0
sig0.611 cc 2.55e-12p 1.62e-09p 1.02e-07p 6.18e-07p 9.75e-07p 9.98e-07p 9.98e-07p 0.0 0.0

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        rc 2.55e-12p 1.62e-09p 1.02e-07p 6.18e-07p 9.75e-07p 9.98e-07o 9.98e-07n      0.0       0.0

  co, ni, cu half lives from 89wal1; ga half life 90bur1.
1

    mass number     67            LA-UR-94-3106 (ENDF-349)                              percent yields
 nuclide      24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g
 half life                                        21. s    2.580d    stable    3.261d    19.0 m
 lambda          0.0       0.0       0.0       0.0 3.301e-02 3.110e-06       0.0 2.460e-06 6.080e-04
  z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
  z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
  z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
  u234f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  9.29e-06n      0.0       0.0
 zp 27.26 ri 3.57e-12p 5.98e-09p 9.53e-07p 4.65e-06p 3.58e-06p 9.92e-08p 2.90e-10p      0.0       0.0
 sig0.554 cc 3.57e-12p 5.98e-09p 9.59e-07p 5.61e-06p 9.19e-06p 9.29e-06p 9.29e-06p      0.0       0.0
        rc 3.57e-12p 5.98e-09p 9.59e-07p 5.61e-06p 9.19e-06p 9.29e-06o 9.29e-06n      0.0       0.0
  u237f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.39e-06n      0.0       0.0
 zp 26.88 ri 7.89e-12p 6.19e-09p 4.03e-07p 7.70e-07p 2.06e-07p 1.47e-09p      0.0       0.0       0.0
 sig0.536 cc 7.89e-12p 6.20e-09p 4.10e-07p 1.18e-06p 1.39e-06p 1.39e-06p 1.39e-06p      0.0       0.0
        rc 7.89e-12p 6.20e-09p 4.10e-07p 1.18e-06p 1.39e-06o 1.39e-06o 1.39e-06n      0.0       0.0
  pu240h  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.000133o 0.000132n      0.0       0.0
 zp 27.23 ri 1.45e-09p 4.73e-07p 1.66e-05p 7.09e-05p 4.14e-05p 3.15e-06p 2.70e-08p 2.37e-11p      0.0
 sig0.643 cc 1.45e-09p 4.75e-07p 1.70e-05p 8.79e-05p 0.000129p 0.000132p 0.000132p 2.38e-11p      0.0
        rc 1.45e-09p 4.75e-07p 1.70e-05p 8.79e-05p 0.000129o 0.000132n 0.000132m 2.37e-11p      0.0
  u234he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.001052k      0.0       0.0       0.0
 zp 27.26 ri 6.63e-09p 2.82e-06p 0.000118p 0.000562p 0.000344p 2.58e-05p 2.05e-07p 1.53e-10p      0.0
 sig0.632 cc 6.63e-09p 2.82e-06p 0.000121p 0.000682p 0.001026p 0.001052p 0.001052p 1.53e-10p      0.0
        rc 6.63e-09p 2.82e-06p 0.000121p 0.000682p 0.001026m 0.001052k 0.001052k 1.53e-10p      0.0
  u236he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.000406k      0.0       0.0       0.0
 zp 27.01 ri 1.05e-08p 2.99e-06p 7.99e-05p 0.000235p 8.45e-05p 3.37e-06p 1.26e-08p 3.97e-12p      0.0
 sig0.621 cc 1.05e-08p 3.00e-06p 8.29e-05p 0.000318p 0.000403p 0.000406p 0.000406p 3.97e-12p      0.0
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        rc 1.05e-08p 3.00e-06p 8.29e-05p 0.000318p 0.000403m 0.000406k 0.000406k 3.97e-12p      0.0
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.04e-06n      0.0       0.0
zp 27.29 ri 1.05e-12p 1.45e-09p 1.89e-07p 1.01e-06p 8.04e-07p 3.08e-08p 1.24e-10p      0.0       0.0
sig0.569 cc 1.05e-12p 1.45e-09p 1.90e-07p 1.20e-06p 2.01e-06p 2.04e-06p 2.04e-06p      0.0       0.0
        rc 1.05e-12p 1.45e-09p 1.90e-07p 1.20e-06p 2.01e-06p 2.04e-06o 2.04e-06n      0.0       0.0
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.87e-06n      0.0       0.0
zp 27.49 ri      0.0  3.87e-10p 7.28e-08p 8.69e-07p 8.57e-07p 6.97e-08p 3.58e-10p      0.0       0.0
sig0.565 cc      0.0  3.87e-10p 7.32e-08p 9.42e-07p 1.80e-06p 1.87e-06p 1.87e-06p      0.0       0.0
        rc      0.0  3.87e-10p 7.32e-08p 9.42e-07p 1.80e-06p 1.87e-06o 1.87e-06n      0.0       0.0
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  8.98e-07n      0.0       0.0
zp 27.26 ri 1.71e-12p 1.43e-09p 8.93e-08p 4.97e-07p 2.93e-07p 1.72e-08p 8.19e-11p      0.0       0.0
sig0.598 cc 1.71e-12p 1.43e-09p 9.08e-08p 5.88e-07p 8.81e-07p 8.98e-07p 8.98e-07p      0.0       0.0
        rc 1.71e-12p 1.43e-09p 9.08e-08p 5.88e-07p 8.81e-07p 8.98e-07o 8.98e-07n      0.0       0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.47e-07n      0.0       0.0
zp 27.13 ri      0.0  5.25e-10p 6.32e-08p 3.54e-07p 1.27e-07p 2.37e-09p 1.59e-12p      0.0       0.0
sig0.524 cc      0.0  5.25e-10p 6.37e-08p 4.18e-07p 5.45e-07p 5.47e-07p 5.47e-07p      0.0       0.0
        rc      0.0  5.25e-10p 6.37e-08p 4.18e-07p 5.45e-07p 5.47e-07o 5.47e-07n      0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.99e-06n      0.0       0.0
zp 27.67 ri      0.0  5.54e-10p 8.35e-08p 1.06e-06p 1.59e-06p 2.52e-07p 4.19e-09p 5.33e-12p      0.0
sig0.611 cc      0.0  5.54e-10p 8.40e-08p 1.14e-06p 2.74e-06p 2.99e-06p 2.99e-06p 5.33e-12p      0.0
        rc      0.0  5.54e-10p 8.40e-08p 1.14e-06p 2.74e-06p 2.99e-06o 2.99e-06n 5.33e-12p      0.0

  ni, cu half lives from 89wal1; ga half life from 90bur1.
1

    mass number     68            LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide      24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu m   29 cu g   30 zn g   31 ga g   32 ge g
half life                                   19. s     3.79m     31. s    stable    68.06m    287. d
lambda          0.0       0.0       0.0       0.0 3.648e-02 3.048e-03 2.236e-02       0.0 1.697e-04 2.795e-08
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0   50.0000       0.0       0.0
```

```
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0   50.0000       0.0       0.0       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.68e-05n      0.0       0.0
zp 27.64 ri      0.0  1.04e-09p 6.65e-07p 7.03e-06p 1.80e-05p 8.00e-07p 2.96e-07p 1.30e-08p 2.19e-12p       0.0
sig0.554 cc      0.0  1.04e-09p 6.66e-07p 7.70e-06p 2.57e-05p 8.00e-07p 2.64e-05p 2.68e-05p 2.19e-12p       0.0
         rc      0.0  1.04e-09p 6.66e-07p 7.70e-06p 2.57e-05p 8.00e-07p 2.64e-05o 2.68e-05n 2.19e-12p       0.0
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.98e-06n      0.0       0.0
zp 27.26 ri      0.0  8.06e-10p 2.10e-07p 9.16e-07p 8.39e-07p 1.13e-08p 4.19e-09p 3.75e-11p       0.0       0.0
sig0.536 cc      0.0  8.06e-10p 2.11e-07p 1.13e-06p 1.97e-06p 1.13e-08p 1.98e-06p 1.98e-06p       0.0       0.0
         rc      0.0  8.06e-10p 2.11e-07p 1.13e-06p 1.97e-06p 1.13e-08p 1.98e-06o 1.98e-06n       0.0       0.0
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000245n      0.0       0.0
zp 27.61 ri 1.63e-10p 1.27e-07p 1.02e-05p 9.58e-05p 0.000119p 1.63e-05p 3.58e-06p 3.99e-07p 8.41e-10p       0.0
sig0.643 cc 1.63e-10p 1.27e-07p 1.04e-05p 0.000106p 0.000225p 1.63e-05p 0.000237p 0.000245p 8.42e-10p       0.0
         rc 1.63e-10p 1.27e-07p 1.04e-05p 0.000106p 0.000225p 1.63e-05p 0.000237o 0.000245n 8.42e-10p       0.0
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001472n      0.0       0.0
zp 27.64 ri 4.97e-10p 5.22e-07p 5.20e-05p 0.000555p 0.000737p 0.000102p 2.25e-05p 2.37e-06p 4.38e-09p       0.0
sig0.632 cc 4.97e-10p 5.23e-07p 5.26e-05p 0.000608p 0.001344p 0.000102p 0.001418p 0.001472p 4.38e-09p       0.0
         rc 4.97e-10p 5.23e-07p 5.26e-05p 0.000608p 0.001344p 0.000102p 0.001418o 0.001472n 4.38e-09p       0.0
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000787n      0.0       0.0
zp 27.39 ri 1.24e-09p 9.00e-07p 5.82e-05p 0.000388p 0.000310p 2.39e-05p 5.24e-06p 2.72e-07p 2.21e-10p       0.0
sig0.621 cc 1.24e-09p 9.01e-07p 5.91e-05p 0.000447p 0.000757p 2.39e-05p 0.000775p 0.000787p 2.21e-10p       0.0
         rc 1.24e-09p 9.01e-07p 5.91e-05p 0.000447p 0.000757p 2.39e-05p 0.000775o 0.000787n 2.21e-10p       0.0
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.12e-06n      0.0       0.0
zp 27.67 ri      0.0  3.09e-10p 1.40e-07p 1.69e-06p 3.94e-06p 2.50e-07p 9.23e-08p 4.79e-09p 1.60e-12p       0.0
sig0.569 cc      0.0  3.10e-10p 1.40e-07p 1.83e-06p 5.77e-06p 2.50e-07p 5.99e-06p 6.12e-06p 1.60e-12p       0.0
         rc      0.0  3.10e-10p 1.40e-07p 1.83e-06p 5.77e-06p 2.50e-07p 5.99e-06o 6.12e-06n 1.60e-12p       0.0
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.71e-06n      0.0       0.0
zp 27.87 ri      0.0  7.50e-11p 4.27e-08p 1.41e-06p 3.50e-06p 5.50e-07p 2.03e-07p 1.14e-08p 9.53e-12p       0.0
sig0.565 cc      0.0  7.50e-11p 4.27e-08p 1.45e-06p 4.94e-06p 5.50e-07p 5.42e-06p 5.71e-06p 9.53e-12p       0.0
         rc      0.0  7.50e-11p 4.27e-08p 1.45e-06p 4.94e-06p 5.50e-07p 5.42e-06o 5.71e-06n 9.53e-12p       0.0
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 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.20e-06n      0.0       0.0
zp 27.63 ri      0.0  3.96e-10p 6.34e-08p 8.41e-07p 1.13e-06p 1.16e-07p 4.30e-08p 1.96e-09p 1.78e-12p       0.0
sig0.598 cc      0.0  3.96e-10p 6.38e-08p 9.05e-07p 2.03e-06p 1.16e-07p 2.14e-06p 2.20e-06p 1.78e-12p       0.0
         rc      0.0  3.96e-10p 6.38e-08p 9.05e-07p 2.03e-06p 1.16e-07p 2.14e-06o 2.20e-06n 1.78e-12p       0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.29e-06n      0.0       0.0
zp 27.51 ri      0.0  1.48e-10p 6.28e-08p 1.07e-06p 1.09e-06p 4.79e-08p 1.77e-08p 1.60e-10p       0.0       0.0
sig0.524 cc      0.0  1.48e-10p 6.29e-08p 1.14e-06p 2.22e-06p 4.79e-08p 2.26e-06p 2.29e-06p       0.0       0.0
         rc      0.0  1.48e-10p 6.29e-08p 1.14e-06p 2.22e-06p 4.79e-08p 2.26e-06o 2.29e-06n       0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.99e-06n      0.0       0.0
zp 28.06 ri      0.0  5.23e-11p 2.18e-08p 6.61e-07p 2.41e-06p 6.30e-07p 2.33e-07p 3.80e-08p 1.24e-10p       0.0
sig0.611 cc      0.0  5.23e-11p 2.18e-08p 6.82e-07p 3.09e-06p 6.30e-07p 3.64e-06p 3.99e-06p 1.24e-10p       0.0
         rc      0.0  5.23e-11p 2.18e-08p 6.82e-07p 3.09e-06p 6.30e-07p 3.64e-06o 3.99e-06n 1.24e-10p       0.0

  ni, cu half lives from 89wal1; ga, ge half lives from 90bur1.
1

    mass number     69            LA-UR-94-3106 (ENDF-349)                                percent yields
nuclide       25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn m   30 zn g   31 ga g   32 ge g   33 as g
half life                                 10. s     2.8 m    13.76h     56. m    stable    39.2 h     15. m
lambda            0.0       0.0       0.0 6.931e-02 4.126e-03 1.399e-05 2.063e-04       0.0 4.912e-06 7.702e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.19e-05n      0.0       0.0
zp 28.02 ri 1.34e-10p 2.11e-07p 8.43e-06p 4.38e-05p 9.25e-06p 2.14e-07p 4.38e-08p 1.82e-10p       0.0       0.0
sig0.554 cc 1.34e-10p 2.12e-07p 8.64e-06p 5.24e-05p 6.17e-05p 2.14e-07p 6.19e-05p 6.19e-05p       0.0       0.0
         rc 1.34e-10p 2.12e-07p 8.64e-06p 5.24e-05p 6.17e-05p 2.14e-07p 6.19e-05o 6.19e-05n       0.0       0.0
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.95e-06n      0.0       0.0
zp 27.63 ri 1.76e-10p 1.21e-07p 1.88e-06p 3.69e-06p 2.47e-07p 1.33e-09p 2.72e-10p       0.0       0.0       0.0
sig0.536 cc 1.76e-10p 1.21e-07p 2.01e-06p 5.70e-06p 5.94e-06p 1.33e-09p 5.95e-06p 5.95e-06p       0.0       0.0
         rc 1.76e-10p 1.21e-07p 2.01e-06p 5.70e-06p 5.94e-06p 1.33e-09p 5.95e-06o 5.95e-06n       0.0       0.0
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 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000501n      0.0       0.0
zp 27.99 ri 2.71e-08p 5.12e-06p 0.000107p 0.000282p 0.000102p 4.15e-06p 5.13e-07p 2.34e-08p 1.18e-11p       0.0
sig0.643 cc 2.71e-08p 5.15e-06p 0.000112p 0.000394p 0.000496p 4.15e-06p 0.000501p 0.000501p 1.18e-11p       0.0
         rc 2.71e-08p 5.15e-06p 0.000112p 0.000394p 0.000496o 4.15e-06p 0.000501o 0.000501n 1.18e-11p       0.0
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.002060n      0.0       0.0
zp 28.02 ri 6.90e-08p 1.66e-05p 0.000407p 0.001177p 0.000440p 1.74e-05p 2.15e-06p 8.87e-08p 3.71e-11p       0.0
sig0.632 cc 6.90e-08p 1.67e-05p 0.000424p 0.001600p 0.002041p 1.74e-05p 0.002060p 0.002060p 3.71e-11p       0.0
         rc 6.90e-08p 1.67e-05p 0.000424p 0.001600p 0.002041o 1.74e-05p 0.002060o 0.002060n 3.71e-11p       0.0
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001096n      0.0       0.0
zp 27.77 ri 1.37e-07p 2.19e-05p 0.000339p 0.000602p 0.000130p 2.64e-06p 3.26e-07p 6.15e-09p 1.06e-12p       0.0
sig0.621 cc 1.37e-07p 2.21e-05p 0.000361p 0.000963p 0.001093p 2.64e-06p 0.001096p 0.001096p 1.06e-12p       0.0
         rc 1.37e-07p 2.21e-05p 0.000361p 0.000963p 0.001093o 2.64e-06p 0.001096o 0.001096n 1.06e-12p       0.0
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.04e-05n      0.0       0.0
zp 28.05 ri 6.08e-11p 6.99e-08p 2.77e-06p 1.38e-05p 3.63e-06p 1.02e-07p 2.09e-08p 1.47e-10p       0.0       0.0
sig0.569 cc 6.08e-11p 6.99e-08p 2.84e-06p 1.66e-05p 2.03e-05p 1.02e-07p 2.04e-05p 2.04e-05p       0.0       0.0
         rc 6.08e-11p 6.99e-08p 2.84e-06p 1.66e-05p 2.03e-05p 1.02e-07p 2.04e-05o 2.04e-05n       0.0       0.0
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.34e-06n      0.0       0.0
zp 28.26 ri 4.61e-12p 8.34e-09p 8.14e-07p 5.36e-06p 3.03e-06p 1.11e-07p 2.27e-08p 3.53e-10p       0.0       0.0
sig0.565 cc 4.61e-12p 8.34e-09p 8.22e-07p 6.18e-06p 9.21e-06p 1.11e-07p 9.34e-06p 9.34e-06p       0.0       0.0
         rc 4.61e-12p 8.34e-09p 8.22e-07p 6.18e-06p 9.21e-06p 1.11e-07p 9.34e-06o 9.34e-06n       0.0       0.0
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.99e-06n      0.0       0.0
zp 28.01 ri 6.57e-11p 2.84e-08p 9.48e-07p 2.98e-06p 1.00e-06p 2.66e-08p 5.44e-09p 7.92e-11p       0.0       0.0
sig0.598 cc 6.57e-11p 2.84e-08p 9.76e-07p 3.96e-06p 4.96e-06p 2.66e-08p 4.99e-06p 4.99e-06p       0.0       0.0
         rc 6.57e-11p 2.84e-08p 9.76e-07p 3.96e-06p 4.96e-06o 2.66e-08p 4.99e-06o 4.99e-06n       0.0       0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.97e-06n      0.0       0.0
zp 27.88 ri 2.01e-11p 3.01e-08p 1.62e-06p 4.50e-06p 8.05e-07p 5.56e-09p 1.14e-09p 1.88e-12p       0.0       0.0
sig0.524 cc 2.01e-11p 3.02e-08p 1.65e-06p 6.16e-06p 6.96e-06p 5.56e-09p 6.97e-06p 6.97e-06p       0.0       0.0
         rc 2.01e-11p 3.02e-08p 1.65e-06p 6.16e-06p 6.96e-06p 5.56e-09p 6.97e-06o 6.97e-06n       0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.99e-06n      0.0       0.0
zp 28.44 ri 4.31e-12p 4.52e-09p 3.57e-07p 2.91e-06p 2.46e-06p 2.08e-07p 4.27e-08p 2.20e-09p 1.68e-12p       0.0
sig0.611 cc 4.31e-12p 4.52e-09p 3.62e-07p 3.27e-06p 5.73e-06p 2.08e-07p 5.98e-06p 5.99e-06p 1.68e-12p       0.0
        rc 4.31e-12p 4.52e-09p 3.62e-07p 3.27e-06p 5.73e-06p 2.08e-07p 5.98e-06o 5.99e-06n 1.68e-12p       0.0

  ni, cu, zn half lives from 89wal1.
1

    mass number     70            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide      24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu m   29 cu g   30 zn g   31 ga g   32 ge g
half life                                                   47. s      5. s    stable    21.1 m    stable
lambda           0.0       0.0       0.0       0.0       0.0 1.475e-02 1.386e-01       0.0 5.475e-04       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000   50.0000   50.0000  100.0000       0.0  100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000206n      0.0       0.0
zp 28.40 ri      0.0  1.19e-11p 7.91e-08p 7.45e-06p 0.000135p 4.50e-05p 1.27e-05p 6.04e-06p 1.05e-08p 2.77e-12p
sig0.554 cc      0.0  1.19e-11p 7.91e-08p 7.53e-06p 0.000143p 0.000116p 8.41e-05p 0.000206p 1.05e-08p 1.05e-08p
        rc      0.0  1.19e-11p 7.91e-08p 7.53e-06p 0.000143p 0.000116p 8.41e-05p 0.000206n 1.05e-08p 1.05e-08p
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.19e-05n      0.0       0.0
zp 28.01 ri      0.0  1.17e-11p 3.45e-08p 1.36e-06p 9.05e-06p 1.10e-06p 3.09e-07p 3.69e-08p 1.30e-11p       0.0
sig0.536 cc      0.0  1.17e-11p 3.45e-08p 1.40e-06p 1.04e-05p 6.32e-06p 5.53e-06p 1.19e-05p 1.30e-11p 1.30e-11p
        rc      0.0  1.17e-11p 3.45e-08p 1.40e-06p 1.04e-05p 6.32e-06p 5.53e-06p 1.19e-05n 1.30e-11p 1.30e-11p
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001001n      0.0       0.0
zp 28.37 ri      0.0  4.06e-09p 1.82e-06p 8.66e-05p 0.000494p 0.000323p 5.71e-05p 3.88e-05p 4.57e-07p 5.55e-10p
sig0.643 cc      0.0  4.06e-09p 1.83e-06p 8.85e-05p 0.000582p 0.000614p 0.000348p 0.001001p 4.57e-07p 4.58e-07p
        rc      0.0  4.06e-09p 1.83e-06p 8.85e-05p 0.000582p 0.000614p 0.000348p 0.001001n 4.57e-07p 4.58e-07p
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.003434n      0.0       0.0
zp 28.40 ri 1.17e-12p 7.68e-09p 4.55e-06p 0.000261p 0.001670p 0.001156p 0.000204p 0.000138p 1.52e-06p 1.58e-09p
sig0.632 cc 1.17e-12p 7.68e-09p 4.55e-06p 0.000266p 0.001936p 0.002124p 0.001172p 0.003434p 1.52e-06p 1.52e-06p
        rc 1.17e-12p 7.68e-09p 4.55e-06p 0.000266p 0.001936p 0.002124p 0.001172p 0.003434n 1.52e-06p 1.52e-06p
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001994n      0.0       0.0
zp 28.14 ri 4.38e-12p 2.06e-08p 8.08e-06p 0.000291p 0.001131p 0.000455p 8.03e-05p 2.87e-05p 1.47e-07p 6.40e-11p
sig0.621 cc 4.38e-12p 2.06e-08p 8.10e-06p 0.000299p 0.001430p 0.001170p 0.000795p 0.001994p 1.47e-07p 1.47e-07p
        rc 4.38e-12p 2.06e-08p 8.10e-06p 0.000299p 0.001430p 0.001170p 0.000795p 0.001994m 1.47e-07p 1.47e-07p
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  7.14e-05n      0.0       0.0
zp 28.43 ri      0.0  6.91e-12p 2.86e-08p 2.78e-06p 4.23e-05p 1.84e-05p 5.20e-06p 2.60e-06p 7.87e-09p 3.03e-12p
sig0.569 cc      0.0  6.91e-12p 2.86e-08p 2.81e-06p 4.51e-05p 4.10e-05p 2.78e-05p 7.14e-05p 7.87e-09p 7.88e-09p
        rc      0.0  6.91e-12p 2.86e-08p 2.81e-06p 4.51e-05p 4.10e-05p 2.78e-05p 7.14e-05n 7.87e-09p 7.88e-09p
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.08e-05n      0.0       0.0
zp 28.64 ri      0.0       0.0  1.52e-09p 4.43e-07p 7.85e-06p 8.68e-06p 2.45e-06p 1.34e-06p 1.06e-08p 4.45e-12p
sig0.565 cc      0.0       0.0  1.52e-09p 4.44e-07p 8.29e-06p 1.28e-05p 6.60e-06p 2.08e-05p 1.06e-08p 1.06e-08p
        rc      0.0       0.0  1.52e-09p 4.44e-07p 8.29e-06p 1.28e-05p 6.60e-06p 2.08e-05n 1.06e-08p 1.06e-08p
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.60e-05n      0.0       0.0
zp 28.39 ri      0.0  1.04e-11p 1.23e-08p 1.07e-06p 8.04e-06p 4.94e-06p 1.39e-06p 5.08e-07p 3.38e-09p 1.61e-12p
sig0.598 cc      0.0  1.04e-11p 1.23e-08p 1.08e-06p 9.13e-06p 9.51e-06p 5.96e-06p 1.60e-05p 3.38e-09p 3.38e-09p
        rc      0.0  1.04e-11p 1.23e-08p 1.08e-06p 9.13e-06p 9.51e-06p 5.96e-06p 1.60e-05n 3.38e-09p 3.38e-09p
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.59e-05n      0.0       0.0
zp 28.26 ri      0.0  1.15e-12p 6.41e-09p 1.18e-06p 9.64e-06p 3.87e-06p 1.09e-06p 1.39e-07p 1.45e-10p       0.0
sig0.524 cc      0.0  1.15e-12p 6.42e-09p 1.19e-06p 1.08e-05p 9.28e-06p 6.50e-06p 1.59e-05p 1.45e-10p 1.45e-10p
        rc      0.0  1.15e-12p 6.42e-09p 1.19e-06p 1.08e-05p 9.28e-06p 6.50e-06p 1.59e-05n 1.45e-10p 1.45e-10p
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.50e-05n      0.0       0.0
zp 28.82 ri      0.0       0.0  1.14e-09p 2.21e-07p 4.47e-06p 6.42e-06p 1.81e-06p 2.05e-06p 4.34e-08p 9.09e-11p
sig0.611 cc      0.0       0.0  1.14e-09p 2.22e-07p 4.69e-06p 8.76e-06p 4.16e-06p 1.50e-05p 4.34e-08p 4.35e-08p
        rc      0.0       0.0  1.14e-09p 2.22e-07p 4.69e-06p 8.76e-06p 4.16e-06p 1.50e-05n 4.34e-08p 4.35e-08p

  cu half life from 89wal1.
1

    mass number     71            LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide       25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn m   30 zn g   31 ga g   32 ge m   32 ge g   33 as g
half life                                   20. s    3.97 h     2.4 m    stable    11.8 d    0.020s     64. h
```

lambda 0.0 0.0 0.0 0.0 3.466e-02 4.850e-05 4.814e-03 0.0 6.799e-07 3.466e+01 3.008e-06
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 0.0 100.0000 100.0000 0.0 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 99.9500 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0500 0.0 0.0 100.0000 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000516n 0.0 0.0 0.0
zp 28.78 ri 0.0 1.22e-08p 4.66e-06p 0.000186p 0.000265p 4.96e-05p 1.02e-05p 4.17e-07p 1.39e-10p 1.39e-10p 0.0
sig0.554 cc 0.0 1.22e-08p 4.67e-06p 0.000191p 0.000456p 4.96e-05p 0.000466p 0.000516p 1.39e-10p 2.79e-10p 0.0
rc 0.0 1.22e-08p 4.67e-06p 0.000191p 0.000456p 4.96e-05p 0.000466o 0.000516n 1.39e-10p 2.79e-10p 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.78e-05n 0.0 0.0 0.0
zp 28.38 ri 0.0 7.38e-09p 1.15e-06p 1.72e-05p 8.82e-06p 4.73e-07p 9.69e-08p 8.30e-10p 0.0 0.0 0.0
sig0.536 cc 0.0 7.38e-09p 1.16e-06p 1.84e-05p 2.72e-05p 4.73e-07p 2.73e-05p 2.78e-05p 0.0 0.0 0.0
rc 0.0 7.38e-09p 1.16e-06p 1.84e-05p 2.72e-05p 4.73e-07p 2.73e-05o 2.78e-05n 0.0 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.002146n 0.0 0.0 0.0
zp 28.75 ri 4.65e-10p 5.03e-07p 5.54e-05p 0.000694p 0.001136p 0.000225p 2.79e-05p 6.89e-06p 1.00e-08p 1.00e-08p 5.75e-12p
sig0.643 cc 4.65e-10p 5.03e-07p 5.59e-05p 0.000750p 0.001885p 0.000225p 0.001913p 0.002146p 1.00e-08p 2.00e-08p 5.75e-12p
rc 4.65e-10p 5.03e-07p 5.59e-05p 0.000750p 0.001885p 0.000225p 0.001913o 0.002146n 1.00e-08p 2.00e-08p 5.75e-12p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.005298n 0.0 0.0 0.0
zp 28.78 ri 5.58e-10p 8.20e-07p 0.000113p 0.001631p 0.002881p 0.000583p 7.21e-05p 1.71e-05p 2.20e-08p 2.20e-08p 1.03e-11p
sig0.632 cc 5.58e-10p 8.21e-07p 0.000114p 0.001745p 0.004626p 0.000583p 0.004698p 0.005298p 2.20e-08p 4.40e-08p 1.03e-11p
rc 5.58e-10p 8.21e-07p 0.000114p 0.001745p 0.004626p 0.000583p 0.004698o 0.005298n 2.20e-08p 4.40e-08p 1.03e-11p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.003088n 0.0 0.0 0.0
zp 28.52 ri 1.72e-09p 1.72e-06p 0.000152p 0.001344p 0.001412p 0.000157p 1.94e-05p 2.24e-06p 1.26e-09p 1.26e-09p 0.0
sig0.621 cc 1.72e-09p 1.73e-06p 0.000153p 0.001497p 0.002909p 0.000157p 0.002928p 0.003088p 1.26e-09p 2.52e-09p 0.0
rc 1.72e-09p 1.73e-06p 0.000153p 0.001497p 0.002909p 0.000157p 0.002928o 0.003088n 1.26e-09p 2.52e-09p 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000183n 0.0 0.0 0.0
zp 28.82 ri 0.0 4.66e-09p 1.63e-06p 5.85e-05p 9.83e-05p 2.05e-05p 4.21e-06p 2.65e-07p 1.37e-10p 1.37e-10p 0.0
sig0.569 cc 0.0 4.67e-09p 1.63e-06p 6.01e-05p 0.000158p 2.05e-05p 0.000163p 0.000183p 1.37e-10p 2.73e-10p 0.0
rc 0.0 4.67e-09p 1.63e-06p 6.01e-05p 0.000158p 2.05e-05p 0.000163o 0.000183n 1.37e-10p 2.73e-10p 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.32e-05n 0.0 0.0 0.0

```
zp 29.02 ri      0.0  1.30e-10p 1.15e-07p 5.75e-06p 2.07e-05p 5.39e-06p 1.10e-06p 1.49e-07p 9.71e-11p 9.71e-11p      0.0
sig0.565 cc      0.0  1.30e-10p 1.16e-07p 5.87e-06p 2.66e-05p 5.39e-06p 2.77e-05p 3.32e-05p 9.71e-11p 1.94e-10p      0.0
         rc      0.0  1.30e-10p 1.16e-07p 5.87e-06p 2.66e-05p 5.39e-06p 2.77e-05p 3.32e-05n 9.71e-11p 1.94e-10p      0.0
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.50e-05n      0.0       0.0       0.0
zp 28.77 ri      0.0  1.79e-09p 4.13e-07p 7.67e-06p 1.41e-05p 2.28e-06p 4.66e-07p 4.81e-08p 3.16e-11p 3.16e-11p      0.0
sig0.598 cc      0.0  1.79e-09p 4.15e-07p 8.09e-06p 2.22e-05p 2.28e-06p 2.26e-05p 2.50e-05p 3.16e-11p 6.32e-11p      0.0
         rc      0.0  1.79e-09p 4.15e-07p 8.09e-06p 2.22e-05p 2.28e-06p 2.26e-05o 2.50e-05n 3.16e-11p 6.32e-11p      0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.38e-05n      0.0       0.0       0.0
zp 28.64 ri      0.0  1.00e-09p 6.61e-07p 1.68e-05p 2.42e-05p 1.79e-06p 3.66e-07p 8.11e-09p      0.0       0.0       0.0
sig0.524 cc      0.0  1.00e-09p 6.62e-07p 1.74e-05p 4.16e-05p 1.79e-06p 4.20e-05p 4.38e-05p      0.0       0.0       0.0
         rc      0.0  1.00e-09p 6.62e-07p 1.74e-05p 4.16e-05p 1.79e-06p 4.20e-05o 4.38e-05n      0.0       0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.59e-05n      0.0       0.0       0.0
zp 29.21 ri      0.0  1.20e-10p 6.48e-08p 3.17e-06p 1.43e-05p 6.63e-06p 1.36e-06p 4.42e-07p 1.19e-09p 1.19e-09p      0.0
sig0.611 cc      0.0  1.20e-10p 6.49e-08p 3.24e-06p 1.75e-05p 6.63e-06p 1.89e-05p 2.59e-05p 1.19e-09p 2.38e-09p      0.0
         rc      0.0  1.20e-10p 6.49e-08p 3.24e-06p 1.75e-05p 6.63e-06p 1.89e-05p 2.59e-05n 1.19e-09p 2.38e-09p      0.0

  cu, zn half lives from 89wal1.
1

    mass number     72            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g   33 as g   34 se g
half life              0.124s    3.83 s     6.6 s    46.5 h    14.10h    stable    26.0 h    8.40 d
lambda            0.0 5.590e+00 1.810e-01 1.050e-01 4.141e-06 1.366e-05       0.0 7.405e-06 9.551e-07
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000634m      0.0       0.0
zp 29.16 ri 7.00e-10p 6.67e-07p 0.000102p 0.000298p 0.000230p 3.73e-06p 1.04e-08p      0.0       0.0
sig0.554 cc 7.00e-10p 6.68e-07p 0.000103p 0.000401p 0.000630p 0.000634p 0.000634p      0.0       0.0
         rc 7.00e-10p 6.68e-07p 0.000103p 0.000401p 0.000630o 0.000634n 0.000634m      0.0       0.0
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  4.96e-05n      0.0       0.0
```

zp 28.76 ri 8.55e-10p 3.67e-07p 2.06e-05p 2.31e-05p 5.48e-06p 2.18e-08p 1.01e-11p 0.0 0.0
sig0.536 cc 8.55e-10p 3.68e-07p 2.09e-05p 4.41e-05p 4.95e-05p 4.96e-05p 4.96e-05p 0.0 0.0
rc 8.55e-10p 3.68e-07p 2.09e-05p 4.41e-05p 4.95e-05o 4.96e-05o 4.96e-05n 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.004504k 0.0 0.004535n 0.0 0.0
zp 29.13 ri 9.90e-08p 2.57e-05p 0.000725p 0.002536p 0.001214p 7.44e-05p 5.12e-07p 3.57e-10p 0.0
sig0.643 cc 9.90e-08p 2.58e-05p 0.000751p 0.003286p 0.004500p 0.004574p 0.004575p 3.58e-10p 0.0
rc 9.90e-08p 2.58e-05p 0.000751p 0.003286p 0.004500k 0.004574k 0.004575k 3.57e-10p 0.0
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.010249j 0.0 0.0 0.0 0.0
zp 29.16 ri 1.34e-07p 4.49e-05p 0.001503p 0.005805p 0.002896p 0.000175p 1.10e-06p 6.46e-10p 0.0
sig0.632 cc 1.34e-07p 4.51e-05p 0.001548p 0.007353p 0.010249p 0.010424p 0.010425p 6.46e-10p 0.0
rc 1.34e-07p 4.51e-05p 0.001548p 0.007353p 0.010249j 0.010424j 0.010425j 6.46e-10p 0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.004661j 0.0 0.0 0.0 0.0
zp 28.90 ri 2.54e-07p 5.55e-05p 0.001153p 0.002688p 0.000765p 2.36e-05p 6.75e-08p 1.62e-11p 0.0
sig0.621 cc 2.54e-07p 5.57e-05p 0.001208p 0.003896p 0.004661p 0.004684p 0.004685p 1.62e-11p 0.0
rc 2.54e-07p 5.57e-05p 0.001208p 0.003896o 0.004661j 0.004684j 0.004685j 1.62e-11p 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000428n 0.0 0.0
zp 29.20 ri 5.37e-10p 4.82e-07p 5.76e-05p 0.000209p 0.000157p 4.02e-06p 1.48e-08p 1.22e-12p 0.0
sig0.569 cc 5.37e-10p 4.82e-07p 5.81e-05p 0.000267p 0.000424p 0.000428p 0.000428p 1.22e-12p 0.0
rc 5.37e-10p 4.82e-07p 5.81e-05p 0.000267p 0.000424p 0.000428o 0.000428n 1.22e-12p 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000135n 0.0 0.0
zp 29.40 ri 1.83e-11p 5.04e-08p 7.33e-06p 6.92e-05p 5.49e-05p 3.52e-06p 1.40e-08p 2.86e-12p 0.0
sig0.565 cc 1.83e-11p 5.04e-08p 7.38e-06p 7.66e-05p 0.000131p 0.000135p 0.000135p 2.86e-12p 0.0
rc 1.83e-11p 5.04e-08p 7.38e-06p 7.66e-05p 0.000131p 0.000135o 0.000135n 2.86e-12p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.99e-05n 0.0 0.0
zp 29.15 ri 2.27e-10p 1.42e-07p 6.72e-06p 2.90e-05p 1.34e-05p 6.02e-07p 2.15e-09p 0.0 0.0
sig0.598 cc 2.27e-10p 1.42e-07p 6.86e-06p 3.59e-05p 4.93e-05p 4.99e-05p 4.99e-05p 0.0 0.0
rc 2.27e-10p 1.42e-07p 6.86e-06p 3.59e-05p 4.93e-05o 4.99e-05o 4.99e-05n 0.0 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000159n 0.0 0.0
zp 29.02 ri 1.25e-10p 3.04e-07p 2.56e-05p 0.000105p 2.79e-05p 3.65e-07p 1.67e-10p 0.0 0.0

```
sig0.524 cc 1.25e-10p 3.04e-07p 2.59e-05p 0.000131p 0.000159p 0.000159p 0.000159p      0.0       0.0
         rc 1.25e-10p 3.04e-07p 2.59e-05p 0.000131p 0.000159p 0.000159o 0.000159n      0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  6.39e-05n      0.0       0.0
zp 29.59 ri 1.38e-11p 1.89e-08p 2.43e-06p 2.47e-05p 3.25e-05p 4.13e-06p 5.89e-08p 5.86e-11p      0.0
sig0.611 cc 1.38e-11p 1.89e-08p 2.45e-06p 2.71e-05p 5.97e-05p 6.38e-05p 6.39e-05p 5.86e-11p      0.0
         rc 1.38e-11p 1.89e-08p 2.45e-06p 2.71e-05p 5.97e-05p 6.38e-05o 6.39e-05n 5.86e-11p      0.0

  co, ni half lives from 80eng2; cu, zn, ga half lives from 89wal1; as, se half lives 90bur1.

1

    mass number     73            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge m   32 ge g   33 as g   34 se m   34 se g
half life              0.129s    0.491s     3.9 s     24. s    4.87 h    0.53 s    stable    80.30d    39.8 m    7.15 h
lambda            0.0 5.373e+00 1.412e+00 1.777e-01 2.888e-02 3.954e-05 1.308e+00       0.0 9.991e-08 2.903e-04 2.693e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001074m      0.0       0.0       0.0
zp 29.54 ri 2.57e-11p 1.03e-07p 3.79e-05p 0.000392p 0.000608p 3.64e-05p 4.21e-08p 2.06e-07p 3.94e-11p      0.0       0.0
sig0.554 cc 2.57e-11p 1.03e-07p 3.80e-05p 0.000430p 0.001037p 0.001074p 0.001074p 0.001074p 3.94e-11p      0.0       0.0
         rc 2.57e-11p 1.03e-07p 3.80e-05p 0.000430p 0.001037p 0.001074o 0.001074n 0.001074m 3.94e-11p      0.0       0.0
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000298n      0.0       0.0       0.0
zp 29.14 ri 1.59e-10p 2.94e-07p 4.27e-05p 0.000165p 8.90e-05p 1.41e-06p 3.18e-10p 1.55e-09p      0.0       0.0       0.0
sig0.536 cc 1.59e-10p 2.95e-07p 4.30e-05p 0.000208p 0.000297p 0.000298p 0.000298p 0.000298p      0.0       0.0       0.0
         rc 1.59e-10p 2.95e-07p 4.30e-05p 0.000208p 0.000297o 0.000298o 0.000298n 0.000298m      0.0       0.0       0.0
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.008372j      0.0  0.009035n      0.0       0.0       0.0
zp 29.51 ri 1.20e-08p 7.47e-06p 0.000483p 0.003667p 0.003730p 0.000509p 9.35e-07p 7.56e-06p 1.43e-08p      0.0  2.07e-12p
sig0.643 cc 1.20e-08p 7.48e-06p 0.000490p 0.004158p 0.007888p 0.008397p 0.008398p 0.008405p 1.37e-08p      0.0  1.99e-12p
         rc 1.20e-08p 7.48e-06p 0.000490p 0.004157p 0.007888m 0.008396j 0.008397j 0.008405i 1.43e-08p      0.0  2.07e-12p
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.014800n      0.0       0.0       0.0
```

zp 29.54 ri 1.12e-08p 9.24e-06p 0.000731p 0.006295p 0.006815p 0.000935p 1.55e-06p 1.26e-05p 2.06e-08p 0.0 2.39e-12p
sig0.632 cc 1.12e-08p 9.25e-06p 0.000741p 0.007036p 0.013851p 0.014786p 0.014788p 0.014800p 2.06e-08p 0.0 2.39e-12p
rc 1.12e-08p 9.25e-06p 0.000741p 0.007036p 0.013851p 0.014786o 0.014788n 0.014800m 2.06e-08p 0.0 2.39e-12p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.008177n 0.0 0.0 0.0
zp 29.27 ri 3.24e-08p 1.75e-05p 0.000853p 0.004383p 0.002727p 0.000196p 1.51e-07p 1.22e-06p 8.27e-10p 0.0 0.0
sig0.621 cc 3.24e-08p 1.75e-05p 0.000870p 0.005253p 0.007980p 0.008175p 0.008176p 0.008177p 8.27e-10p 0.0 0.0
rc 3.24e-08p 1.75e-05p 0.000870p 0.005253p 0.007980p 0.008175o 0.008176n 0.008177m 8.27e-10p 0.0 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000461m 0.0 0.0 0.0
zp 29.58 ri 1.51e-11p 4.92e-08p 1.45e-05p 0.000164p 0.000261p 2.12e-05p 3.33e-08p 1.63e-07p 5.91e-11p 0.0 0.0
sig0.569 cc 1.51e-11p 4.92e-08p 1.46e-05p 0.000179p 0.000440p 0.000461p 0.000461p 0.000461p 5.91e-11p 0.0 0.0
rc 1.51e-11p 4.92e-08p 1.46e-05p 0.000179p 0.000440p 0.000461p 0.000461n 0.000461m 5.91e-11p 0.0 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000349n 0.0 0.0 0.0
zp 29.78 ri 1.06e-12p 9.16e-09p 4.00e-06p 0.000103p 0.000206p 3.54e-05p 7.07e-08p 3.45e-07p 2.66e-10p 0.0 0.0
sig0.565 cc 1.06e-12p 9.16e-09p 4.01e-06p 0.000107p 0.000313p 0.000349p 0.000349p 0.000349p 2.66e-10p 0.0 0.0
rc 1.06e-12p 9.16e-09p 4.01e-06p 0.000107p 0.000313p 0.000349o 0.000349n 0.000349m 2.66e-10p 0.0 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000120n 0.0 0.0 0.0
zp 29.53 ri 2.35e-11p 4.03e-08p 5.00e-06p 5.23e-05p 5.62e-05p 6.27e-06p 1.02e-08p 4.97e-08p 4.15e-11p 0.0 0.0
sig0.598 cc 2.35e-11p 4.04e-08p 5.04e-06p 5.73e-05p 0.000114p 0.000120p 0.000120p 0.000120p 4.15e-11p 0.0 0.0
rc 2.35e-11p 4.04e-08p 5.04e-06p 5.73e-05p 0.000114p 0.000120o 0.000120n 0.000120m 4.15e-11p 0.0 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000299m 0.0 0.0 0.0
zp 29.40 ri 4.87e-12p 4.44e-08p 1.30e-05p 0.000160p 0.000121p 5.22e-06p 1.49e-09p 7.28e-09p 0.0 0.0 0.0
sig0.524 cc 4.87e-12p 4.44e-08p 1.31e-05p 0.000173p 0.000294p 0.000299p 0.000299p 0.000299p 0.0 0.0 0.0
rc 4.87e-12p 4.44e-08p 1.31e-05p 0.000173p 0.000294p 0.000299o 0.000299n 0.000299l 0.0 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000200n 0.0 0.0 0.0
zp 29.98 ri 1.22e-12p 4.74e-09p 1.55e-06p 4.05e-05p 0.000119p 3.73e-05p 2.22e-07p 1.08e-06p 3.64e-09p 0.0 0.0
sig0.611 cc 1.22e-12p 4.74e-09p 1.55e-06p 4.20e-05p 0.000161p 0.000198p 0.000199p 0.000200p 3.64e-09p 0.0 0.0
rc 1.22e-12p 4.74e-09p 1.55e-06p 4.20e-05p 0.000161p 0.000198o 0.000199n 0.000200m 3.64e-09p 0.0 0.0

co, ni half lives from 80eng2; cu, zn, ga half lives from 89wal1; as half life 73bro1; se half life 90bur1.

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    mass number     74            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g   33 as m   33 as g   34 se g
half life              0.092s    0.900s    0.648s    1.60 m     8.1 m    stable    8.0  s    17.76d    stable
lambda            0.0 7.534e+00 7.702e-01 1.070e+00 7.220e-03 1.426e-03       0.0 8.664e-02 4.517e-07       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  -67.3000   32.7000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 u234f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.004143m      0.0       0.0       0.0
zp 29.93 ri 1.49e-12p 1.58e-08p 2.45e-05p 0.000585p 0.003117p 0.000405p 1.12e-05p 3.40e-09p 1.26e-09p       0.0
sig0.554 cc 1.49e-12p 1.58e-08p 2.45e-05p 0.000610p 0.003727p 0.004132p 0.004143p 3.40e-09p 4.66e-09p 1.52e-09p
         rc 1.49e-12p 1.58e-08p 2.45e-05p 0.000610p 0.003727p 0.004132o 0.004143m 3.40e-09p 4.66e-09p 1.52e-09o
 u237f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.000991n      0.0       0.0       0.0
zp 29.51 ri 1.27e-11p 6.56e-08p 3.79e-05p 0.000336p 0.000594p 2.29e-05p 1.24e-07p 6.05e-12p 2.24e-12p       0.0
sig0.536 cc 1.27e-11p 6.56e-08p 3.80e-05p 0.000374p 0.000968p 0.000991p 0.000991p 6.05e-12p 8.28e-12p 2.71e-12p
         rc 1.27e-11p 6.56e-08p 3.80e-05p 0.000374p 0.000968p 0.000991o 0.000991n 6.05e-12p 8.28e-12p 2.71e-12o
 pu240h  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.016347n      0.0       0.0       0.0
zp 29.89 ri 1.11e-09p 1.66e-06p 0.000250p 0.004207p 0.009097p 0.002692p 9.92e-05p 3.26e-07p 7.15e-08p 1.58e-10p
sig0.643 cc 1.11e-09p 1.66e-06p 0.000251p 0.004459p 0.013556p 0.016248p 0.016347p 3.26e-07p 3.97e-07p 1.30e-07p
         rc 1.11e-09p 1.66e-06p 0.000251p 0.004459p 0.013556p 0.016248o 0.016347n 3.26e-07p 3.97e-07p 1.30e-07p
 u234he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.022567n      0.0       0.0       0.0
zp 29.92 ri 7.06e-10p 1.45e-06p 0.000277p 0.005444p 0.012807p 0.003899p 0.000139p 4.08e-07p 8.95e-08p 1.63e-10p
sig0.632 cc 7.06e-10p 1.45e-06p 0.000279p 0.005723p 0.018530p 0.022428p 0.022567p 4.08e-07p 4.97e-07p 1.63e-07p
         rc 7.06e-10p 1.45e-06p 0.000279p 0.005723p 0.018530p 0.022428o 0.022567n 4.08e-07p 4.97e-07p 1.63e-07p
 u236he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.013944n      0.0       0.0       0.0
zp 29.65 ri 2.64e-09p 3.65e-06p 0.000437p 0.005171p 0.007129p 0.001183p 2.04e-05p 2.59e-08p 5.69e-09p 4.04e-12p
sig0.621 cc 2.64e-09p 3.65e-06p 0.000441p 0.005612p 0.012740p 0.013924p 0.013944p 2.59e-08p 3.16e-08p 1.03e-08p
         rc 2.64e-09p 3.65e-06p 0.000441p 0.005612p 0.012740p 0.013924o 0.013944n 2.59e-08p 3.16e-08p 1.03e-08p
 pu238f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.001267m      0.0       0.0       0.0
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zp 29.96 ri       0.0  6.98e-09p 7.28e-06p 0.000192p 0.000902p 0.000161p 5.05e-06p 2.88e-09p 1.07e-09p       0.0
sig0.569 cc       0.0  6.99e-09p 7.29e-06p 0.000199p 0.001101p 0.001262p 0.001267p 2.88e-09p 3.95e-09p 1.29e-09p
         rc       0.0  6.99e-09p 7.29e-06p 0.000199p 0.001101p 0.001262o 0.001267m 2.88e-09p 3.95e-09p 1.29e-09o
 am241f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.000685n      0.0       0.0       0.0
zp 30.16 ri       0.0  8.19e-10p 1.10e-06p 8.10e-05p 0.000414p 0.000183p 6.17e-06p 8.86e-09p 3.28e-09p 1.20e-12p
sig0.565 cc       0.0  8.20e-10p 1.10e-06p 8.21e-05p 0.000496p 0.000679p 0.000685p 8.86e-09p 1.21e-08p 3.97e-09p
         rc       0.0  8.20e-10p 1.10e-06p 8.21e-05p 0.000496p 0.000679o 0.000685n 8.86e-09p 1.21e-08p 3.97e-09o
 am243f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.000280n      0.0       0.0       0.0
zp 29.90 ri 1.76e-12p 8.16e-09p 2.64e-06p 6.73e-05p 0.000165p 4.33e-05p 1.05e-06p 1.42e-09p 5.26e-10p       0.0
sig0.598 cc 1.76e-12p 8.17e-09p 2.65e-06p 7.00e-05p 0.000235p 0.000278p 0.000280p 1.42e-09p 1.95e-09p 6.38e-10p
         rc 1.76e-12p 8.17e-09p 2.65e-06p 7.00e-05p 0.000235p 0.000278o 0.000280n 1.42e-09p 1.95e-09p 6.38e-10o
 np238f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.000648m      0.0       0.0       0.0
zp 29.77 ri       0.0  4.95e-09p 5.09e-06p 0.000193p 0.000397p 5.17e-05p 3.00e-07p 4.20e-11p 1.56e-11p       0.0
sig0.524 cc       0.0  4.95e-09p 5.09e-06p 0.000198p 0.000596p 0.000648p 0.000648p 4.20e-11p 5.76e-11p 1.88e-11p
         rc       0.0  4.95e-09p 5.09e-06p 0.000198p 0.000596p 0.000648o 0.000648m 4.20e-11p 5.76e-11p 1.88e-11o
 cm242f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.000399n      0.0       0.0       0.0
zp 30.36 ri       0.0  5.37e-10p 4.77e-07p 2.98e-05p 0.000211p 0.000145p 1.28e-05p 6.45e-08p 2.38e-08p 5.73e-11p
sig0.611 cc       0.0  5.37e-10p 4.78e-07p 3.03e-05p 0.000242p 0.000386p 0.000399p 6.45e-08p 8.83e-08p 2.89e-08p
         rc       0.0  5.37e-10p 4.78e-07p 3.03e-05p 0.000242p 0.000386o 0.000399n 6.45e-08p 8.83e-08p 2.89e-08o

  co, ni, cu half lives 80eng2; zn, ga half lives 89wal1.
1

    mass number     75            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge m   32 ge g   33 as g   34 se g   35 br g
half life     0.082s    0.231s     1.3 s    10.2 s    2.10 m    48.9 s    1.380h    stable    119.8d     97. m
lambda      8.453e+00 3.001e+00 5.332e-01 6.796e-02 5.501e-03 1.417e-02 1.395e-04       0.0 6.697e-08 1.191e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000    4.0000   96.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 u234f   xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.011764m      0.0       0.0
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zp 30.31 ri 1.88e-09p 7.33e-06p 0.000682p 0.007548p 0.003317p 0.000185p 2.52e-05p 3.60e-07p 5.53e-11p       0.0
sig0.554 cc 1.88e-09p 7.33e-06p 0.000689p 0.008237p 0.011554p 0.000647p 0.011764p 0.011764p 5.53e-11p       0.0
        rc 1.88e-09p 7.33e-06p 0.000689p 0.008237p 0.011554o 0.000647o 0.011764n 0.011764m 5.53e-11p       0.0
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.003172n      0.0       0.0
zp 29.89 ri 1.06e-08p 1.71e-05p 0.000579p 0.002258p 0.000312p 4.03e-06p 5.49e-07p 1.34e-09p       0.0       0.0
sig0.536 cc 1.06e-08p 1.72e-05p 0.000597p 0.002855p 0.003167p 0.000131p 0.003172p 0.003172p       0.0       0.0
        rc 1.06e-08p 1.72e-05p 0.000597p 0.002855p 0.003167p 0.000131o 0.003172o 0.003172n       0.0       0.0
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.032695n      0.0       0.0
zp 30.26 ri 2.90e-07p 0.000101p 0.003788p 0.017243p 0.010688p 0.000797p 6.93e-05p 7.99e-06p 7.52e-09p       0.0
sig0.643 cc 2.90e-07p 0.000102p 0.003890p 0.021133p 0.031821p 0.002070p 0.032687p 0.032695p 7.52e-09p       0.0
        rc 2.90e-07p 0.000102p 0.003890p 0.021133p 0.031821p 0.002070o 0.032687o 0.032695n 7.52e-09p       0.0
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.034342n      0.0       0.0
zp 30.31 ri 1.50e-07p 7.19e-05p 0.003369p 0.017809p 0.012072p 0.000931p 8.09e-05p 9.01e-06p 7.57e-09p       0.0
sig0.632 cc 1.50e-07p 7.20e-05p 0.003441p 0.021249p 0.033321p 0.002264p 0.034333p 0.034342p 7.57e-09p       0.0
        rc 1.50e-07p 7.20e-05p 0.003441p 0.021249p 0.033321p 0.002264o 0.034333o 0.034342n 7.57e-09p       0.0
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.019920n      0.0       0.0
zp 30.03 ri 4.47e-07p 0.000134p 0.003752p 0.011528p 0.004324p 0.000166p 1.44e-05p 7.06e-07p 2.34e-10p       0.0
sig0.621 cc 4.47e-07p 0.000135p 0.003887p 0.015415p 0.019739p 0.000955p 0.019919p 0.019920p 2.34e-10p       0.0
        rc 4.47e-07p 0.000135p 0.003887p 0.015415p 0.019739o 0.000955o 0.019919o 0.019920n 2.34e-10p       0.0
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.002433m      0.0       0.0
zp 30.34 ri 5.94e-10p 1.60e-06p 0.000142p 0.001458p 0.000774p 5.01e-05p 6.84e-06p 1.58e-07p 3.93e-11p       0.0
sig0.569 cc 5.94e-10p 1.60e-06p 0.000144p 0.001602p 0.002376p 0.000145p 0.002433p 0.002433p 3.93e-11p       0.0
        rc 5.94e-10p 1.60e-06p 0.000144p 0.001602p 0.002376o 0.000145o 0.002433n 0.002433m 3.93e-11p       0.0
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001350n      0.0       0.0
zp 30.55 ri 4.31e-11p 1.86e-07p 4.16e-05p 0.000581p 0.000663p 5.55e-05p 7.57e-06p 3.85e-07p 1.24e-10p       0.0
sig0.565 cc 4.31e-11p 1.86e-07p 4.18e-05p 0.000623p 0.001286p 0.000107p 0.001349p 0.001350p 1.24e-10p       0.0
        rc 4.31e-11p 1.86e-07p 4.18e-05p 0.000623p 0.001286p 0.000107p 0.001349o 0.001350n 1.24e-10p       0.0
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000699n      0.0       0.0
zp 30.28 ri 1.13e-09p 9.99e-07p 6.55e-05p 0.000382p 0.000236p 1.28e-05p 1.74e-06p 7.27e-08p 2.58e-11p       0.0
```

sig0.598 cc 1.13e-09p 1.00e-06p 6.65e-05p 0.000449p 0.000684p 4.01e-05p 0.000699p 0.000699p 2.58e-11p 0.0
rc 1.13e-09p 1.00e-06p 6.65e-05p 0.000449p 0.000684p 4.01e-05o 0.000699o 0.000699n 2.58e-11p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.002890m 0.0 0.0
zp 30.15 ri 6.39e-10p 2.43e-06p 0.000313p 0.001855p 0.000706p 1.23e-05p 1.68e-06p 1.00e-08p 0.0 0.0
sig0.524 cc 6.39e-10p 2.43e-06p 0.000315p 0.002170p 0.002876p 0.000127p 0.002890p 0.002890p 0.0 0.0
rc 6.39e-10p 2.43e-06p 0.000315p 0.002170p 0.002876o 0.000127o 0.002890n 0.002890m 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000898n 0.0 0.0
zp 30.74 ri 4.94e-11p 1.12e-07p 1.85e-05p 0.000299p 0.000482p 8.49e-05p 1.16e-05p 1.76e-06p 2.89e-09p 0.0
sig0.611 cc 4.94e-11p 1.12e-07p 1.86e-05p 0.000317p 0.000800p 0.000117p 0.000896p 0.000898p 2.89e-09p 0.0
rc 4.94e-11p 1.12e-07p 1.86e-05p 0.000317p 0.000800p 0.000117p 0.000896o 0.000898n 2.89e-09p 0.0

co, ni half lives 80eng2; cu, zn, ga, ge half lives 89wal1; se, br half lives 90bur1.

1

mass number 76 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 26 fe g 27 co g 28 ni g 29 cu g 30 zn g 31 ga g 32 ge g 33 as g 34 se g
half life 0.305s 0.6 s 5.7 s 29. s stable 26.3 h stable
lambda 0.0 0.0 2.273e+00 1.155e+00 1.216e-01 2.390e-02 0.0 7.321e-06 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.026085m 0.0 0.0
zp 30.71 ri 0.0 6.74e-11p 1.18e-06p 0.000283p 0.012003p 0.011113p 0.002684p 1.18e-05p 8.20e-09p
sig0.554 cc 0.0 6.74e-11p 1.18e-06p 0.000285p 0.012288p 0.023401p 0.026085p 1.18e-05p 1.18e-05p
rc 0.0 6.74e-11p 1.18e-06p 0.000285p 0.012288p 0.023401o 0.026085m 1.18e-05p 1.18e-05p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.007334n 0.0 0.0
zp 30.26 ri 0.0 6.84e-10p 4.62e-06p 0.000398p 0.005253p 0.001590p 8.89e-05p 7.10e-08p 6.19e-12p
sig0.536 cc 0.0 6.84e-10p 4.62e-06p 0.000403p 0.005655p 0.007245p 0.007334p 7.10e-08p 7.10e-08p
rc 0.0 6.84e-10p 4.62e-06p 0.000403p 0.005655p 0.007245o 0.007334n 7.10e-08p 7.10e-08p
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.052107n 0.0 0.0

zp 30.64 ri 3.16e-12p 2.74e-08p 2.29e-05p 0.001975p 0.019650p 0.025854p 0.004606p 9.86e-05p 2.23e-07p
sig0.643 cc 3.16e-12p 2.74e-08p 2.29e-05p 0.001998p 0.021647p 0.047501p 0.052107p 9.86e-05p 9.88e-05p
rc 3.16e-12p 2.74e-08p 2.29e-05p 0.001998p 0.021647p 0.047501o 0.052107n 9.86e-05p 9.88e-05p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.054946n 0.0 0.0
zp 30.69 ri 0.0 1.23e-08p 1.46e-05p 0.001633p 0.019407p 0.028518p 0.005373p 0.000114p 2.38e-07p
sig0.632 cc 0.0 1.23e-08p 1.46e-05p 0.001648p 0.021055p 0.049574p 0.054946p 0.000114p 0.000114p
rc 0.0 1.23e-08p 1.46e-05p 0.001648p 0.021055p 0.049574p 0.054946n 0.000114p 0.000114p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.028884n 0.0 0.0
zp 30.41 ri 4.21e-12p 3.89e-08p 2.97e-05p 0.002011p 0.014010p 0.011688p 0.001146p 1.12e-05p 9.59e-09p
sig0.621 cc 4.21e-12p 3.90e-08p 2.97e-05p 0.002040p 0.016051p 0.027738p 0.028884p 1.12e-05p 1.12e-05p
rc 4.21e-12p 3.90e-08p 2.97e-05p 0.002040p 0.016051p 0.027738o 0.028884n 1.12e-05p 1.12e-05p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.007856m 0.0 0.0
zp 30.73 ri 0.0 4.17e-11p 4.22e-07p 9.63e-05p 0.003208p 0.003680p 0.000872p 6.16e-06p 5.75e-09p
sig0.569 cc 0.0 4.17e-11p 4.22e-07p 9.67e-05p 0.003305p 0.006985p 0.007856p 6.16e-06p 6.17e-06p
rc 0.0 4.17e-11p 4.22e-07p 9.67e-05p 0.003305p 0.006985o 0.007856m 6.16e-06p 6.17e-06p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.003633n 0.0 0.0
zp 30.93 ri 0.0 2.18e-12p 2.98e-08p 2.02e-05p 0.000785p 0.002262p 0.000567p 1.01e-05p 1.01e-08p
sig0.565 cc 0.0 2.18e-12p 2.98e-08p 2.02e-05p 0.000805p 0.003067p 0.003633p 1.01e-05p 1.01e-05p
rc 0.0 2.19e-12p 2.98e-08p 2.02e-05p 0.000805p 0.003067p 0.003633n 1.01e-05p 1.01e-05p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.001298n 0.0 0.0
zp 30.66 ri 0.0 7.93e-11p 1.93e-07p 3.34e-05p 0.000477p 0.000684p 0.000103p 1.37e-06p 1.35e-09p
sig0.598 cc 0.0 7.93e-11p 1.93e-07p 3.36e-05p 0.000510p 0.001194p 0.001298p 1.37e-06p 1.38e-06p
rc 0.0 7.93e-11p 1.93e-07p 3.36e-05p 0.000510p 0.001194o 0.001298n 1.37e-06p 1.38e-06p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.005232m 0.0 0.0
zp 30.53 ri 0.0 2.01e-11p 2.89e-07p 0.000131p 0.002384p 0.002552p 0.000164p 4.27e-07p 3.54e-11p
sig0.524 cc 0.0 2.01e-11p 2.89e-07p 0.000132p 0.002516p 0.005069p 0.005232p 4.27e-07p 4.27e-07p
rc 0.0 2.01e-11p 2.89e-07p 0.000132p 0.002516p 0.005069o 0.005232m 4.27e-07p 4.27e-07p
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.001348m 0.0 0.0
zp 31.13 ri 0.0 1.83e-12p 1.18e-08p 4.99e-06p 0.000210p 0.000760p 0.000372p 1.64e-05p 7.53e-08p

sig0.611 cc 0.0 1.83e-12p 1.18e-08p 5.00e-06p 0.000215p 0.000975p 0.001348p 1.64e-05p 1.65e-05p
rc 0.0 1.83e-12p 1.18e-08p 5.00e-06p 0.000215p 0.000975p 0.001348m 1.64e-05p 1.65e-05p

ni half lives 80eng2; cu, zn, ga half lives 89wal1.
1

mass number 77 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 28 ni g 29 cu g 30 zn g 31 ga g 32 ge m 32 ge g 33 as g 34 se m 34 se g 35 br m 35 br g 36 kr g
half life 0.103s 0.305s 2.1 s 13.0 s 53. s 11.30h 38.8 h 17.45s stable 4.3 m 57.04h 74.4 m
lambda 6.730e+00 2.273e+00 3.301e-01 5.332e-02 1.308e-02 1.704e-05 4.962e-06 3.972e-02 0.0 2.687e-03 3.376e-06
1.553e-04
z - 1 g 100.0000 100.0000 100.0000 100.0000 88.0000 12.0000 100.0000 0.3000 99.7000 0.0 -99.0000 -80.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 79.0000 0.0 0.0 0.0 -1.0000 -20.0000
z - 0 m 0.0 0.0 0.0 0.0 0.0 21.0000 0.0 0.0 100.0000 0.0 100.0000 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.056774m 0.0 0.0 0.0
zp 31.11 ri 8.63e-08p 9.09e-05p 0.009335p 0.030802p 0.001950p 0.014301p 0.000295p 4.80e-07p 6.55e-08p 1.77e-11p 4.71e-12p
0.0
sig0.554 cc 8.63e-08p 9.10e-05p 0.009425p 0.040228p 0.037350p 0.026972p 0.056773p 0.000171p 0.056774p 1.77e-11p 2.24e-
11p 0.0
rc 8.63e-08p 9.10e-05p 0.009425p 0.040228p 0.037350p 0.026972p 0.056773n 0.000171n 0.056774m 1.77e-11p 2.24e-11p
0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.017887n 0.0 0.0 0.0
zp 30.64 ri 7.19e-07p 0.000258p 0.008193p 0.008295p 0.000136p 0.001000p 3.81e-06p 8.48e-10p 1.16e-10p 0.0 0.0 0.0
sig0.536 cc 7.19e-07p 0.000258p 0.008451p 0.016747p 0.014873p 0.006133p 0.017887p 5.37e-05p 0.017887p 0.0 0.0
0.0
rc 7.19e-07p 0.000258p 0.008451p 0.016747p 0.014873o 0.006133n 0.017887n 5.37e-05n 0.017887m 0.0 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.076151n 0.0 0.0 0.0
zp 31.02 ri 3.40e-06p 0.000688p 0.015293p 0.042883p 0.001153p 0.015324p 0.000803p 3.97e-06p 3.45e-07p 2.00e-09p 3.25e-10p
0.0
sig0.643 cc 3.40e-06p 0.000691p 0.015985p 0.058867p 0.052957p 0.033509p 0.076147p 0.000232p 0.076151p 2.00e-09p 2.32e-
09p 0.0
rc 3.40e-06p 0.000691p 0.015985p 0.058867p 0.052957p 0.033509o 0.076147n 0.000232n 0.076151m 2.00e-09p 2.32e-09p
0.0

u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.083869n 0.0 0.0 0.0
zp 31.08 ri 1.87e-06p 0.000520p 0.014551p 0.047609p 0.001411p 0.018748p 0.001023p 4.91e-06p 4.27e-07p 2.22e-09p 3.61e-10p
0.0
sig0.632 cc 1.87e-06p 0.000522p 0.015073p 0.062682p 0.056571p 0.038150p 0.083864p 0.000257p 0.083869p 2.22e-09p 2.58e-
09p 0.0
rc 1.87e-06p 0.000522p 0.015073p 0.062682p 0.056571p 0.038150p 0.083864n 0.000257n 0.083869m 2.22e-09p 2.58e-09p
0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.059830n 0.0 0.0 0.0
zp 30.79 ri 6.60e-06p 0.001107p 0.017928p 0.033159p 0.000522p 0.006929p 0.000178p 3.58e-07p 3.12e-08p 6.09e-11p 9.91e-12p
0.0
sig0.621 cc 6.60e-06p 0.001114p 0.019042p 0.052201p 0.046458p 0.022950p 0.059830p 0.000180p 0.059830p 6.09e-11p 7.08e-
11p 0.0
rc 6.60e-06p 0.001114p 0.019042p 0.052201p 0.046458p 0.022950o 0.059830n 0.000180n 0.059830m 6.09e-11p 7.08e-11p
0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.021288m 0.0 0.0 0.0
zp 31.11 ri 5.33e-08p 4.33e-05p 0.003419p 0.011682p 0.000720p 0.005281p 0.000142p 3.00e-07p 4.09e-08p 2.01e-11p 5.34e-12p
0.0
sig0.569 cc 5.33e-08p 4.33e-05p 0.003462p 0.015144p 0.014047p 0.010048p 0.021288p 6.42e-05p 0.021288p 2.01e-11p 2.54e-11p
0.0
rc 5.33e-08p 4.33e-05p 0.003462p 0.015144p 0.014047p 0.010048p 0.021288n 6.42e-05n 0.021288m 2.01e-11p 2.54e-11p
0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.008729m 0.0 0.0 0.0
zp 31.31 ri 2.74e-09p 5.75e-06p 0.000646p 0.004837p 0.000370p 0.002714p 0.000156p 4.18e-07p 5.71e-08p 5.86e-11p 1.56e-11p
0.0
sig0.565 cc 2.74e-09p 5.75e-06p 0.000652p 0.005489p 0.005201p 0.004464p 0.008729p 2.66e-05p 0.008729p 5.86e-11p 7.41e-11p
0.0
rc 2.74e-09p 5.75e-06p 0.000652p 0.005489p 0.005201p 0.004464p 0.008729n 2.66e-05o 0.008729m 5.86e-11p 7.41e-11p
0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.002896n 0.0 0.0 0.0
zp 31.04 ri 3.05e-08p 1.43e-05p 0.000513p 0.001726p 7.46e-05p 0.000547p 2.14e-05p 5.03e-08p 6.86e-09p 8.39e-12p 2.23e-12p
0.0

sig0.598 cc 3.05e-08p 1.43e-05p 0.000527p 0.002253p 0.002057p 0.001250p 0.002896p 8.74e-06p 0.002896p 8.39e-12p 1.06e-11p 0.0
rc 3.05e-08p 1.43e-05p 0.000527p 0.002253p 0.002057p 0.001250o 0.002896n 8.74e-06n 0.002896m 8.39e-12p 1.06e-11p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.014451m 0.0 0.0 0.0
zp 30.91 ri 3.18e-08p 5.27e-05p 0.003121p 0.009427p 0.000220p 0.001614p 1.68e-05p 4.63e-09p 6.31e-10p 0.0 0.0 0.0
sig0.524 cc 3.18e-08p 5.28e-05p 0.003174p 0.012601p 0.011309p 0.005501p 0.014451p 4.34e-05p 0.014451p 0.0 0.0 0.0
rc 3.18e-08p 5.28e-05p 0.003174p 0.012601p 0.011309p 0.005501o 0.014451n 4.34e-05n 0.014451m 0.0 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.004942m 0.0 0.0 0.0
zp 31.51 ri 2.07e-09p 2.40e-06p 0.000244p 0.002149p 0.000275p 0.002016p 0.000253p 2.51e-06p 3.42e-07p 1.90e-09p 5.05e-10p 0.0
sig0.611 cc 2.07e-09p 2.40e-06p 0.000246p 0.002395p 0.002383p 0.002804p 0.004939p 1.73e-05p 0.004942p 1.90e-09p 2.41e-09p 0.0
rc 2.07e-09p 2.40e-06p 0.000246p 0.002395p 0.002383p 0.002804p 0.004939n 1.73e-05o 0.004942m 1.90e-09p 2.41e-09p 0.0

ni, cu half lives from 80eng2; zn, ga, ge, as half lives from 89wal1; kr, br, se half lives 90bur1.

1

mass number 78 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 28 ni g 29 cu g 30 zn g 31 ga d 31 ga g 32 ge d 32 ge g 33 as g 34 se g 35 br g 36 kr g
half life 0.132s 0.118s 1.5 s 0.313s 5.09 s 3.0 s 1.45 h 1.512h stable 6.4 m stable
lambda 5.251e+00 5.874e+00 4.621e-01 2.215e+00 1.362e-01 2.310e-01 1.328e-04 1.273e-04 0.0 1.805e-03 0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 100.0000 0.0 100.0000 100.0000 100.0000 -100.0000 0.0
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 1.1460 100.0000 0.0890 100.0000 0.0 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.088791n 0.0 0.0
zp 31.52 ri 2.87e-09p 8.41e-06p 0.003745p 0.0 0.028473p 0.0 0.054134p 0.002381p 1.97e-05p 2.28e-09p 0.0
sig0.554 cc 2.87e-09p 8.41e-06p 0.003753p 0.0 0.032226p 0.0 0.086360p 0.088741p 0.088761p 2.28e-09p 0.0
rc 2.87e-09p 8.41e-06p 0.003753p 9.67e-06o 0.032235p 2.32e-05o 0.086393p 0.088774o 0.088793n 2.28e-09p 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

```
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.046581n      0.0       0.0
zp 31.03 ri 7.83e-08p 8.15e-05p 0.010375p      0.0  0.024024p      0.0  0.011924p 0.000110p 1.25e-07p 1.65e-12p      0.0
sig0.536 cc 7.83e-08p 8.16e-05p 0.010457p      0.0  0.034480p      0.0  0.046404p 0.046514p 0.046514p 1.65e-12p      0.0
        rc 7.83e-08p 8.16e-05p 0.010457p 4.28e-05o 0.034523p 3.21e-05o 0.046479o 0.046589o 0.046589n 1.65e-12p      0.0
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.110345n      0.0       0.0
zp 31.40 ri 3.59e-07p 0.000173p 0.008767p      0.0  0.053103p      0.0  0.043445p 0.004718p 5.94e-05p 7.74e-08p 9.75e-12p
sig0.643 cc 3.59e-07p 0.000173p 0.008940p      0.0  0.062043p      0.0  0.105488p 0.110206p 0.110265p 7.74e-08p 9.75e-12p
        rc 3.59e-07p 0.000173p 0.008940p 4.11e-05o 0.062084p 4.63e-05o 0.105575p 0.110293o 0.110352n 7.74e-08p 9.75e-12p
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.135404n      0.0       0.0
zp 31.47 ri 1.77e-07p 0.000124p 0.008341p      0.0  0.061841p      0.0  0.058066p 0.006863p 8.83e-05p 1.09e-07p 1.20e-11p
sig0.632 cc 1.77e-07p 0.000124p 0.008465p      0.0  0.070306p      0.0  0.128372p 0.135236p 0.135324p 1.09e-07p 1.20e-11p
        rc 1.77e-07p 0.000124p 0.008465p 3.57e-05o 0.070342p 5.13e-05o 0.128459p 0.135323o 0.135411n 1.09e-07p 1.20e-11p
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.109560n      0.0       0.0
zp 31.18 ri 8.45e-07p 0.000366p 0.014461p      0.0  0.061219p      0.0  0.031520p 0.001847p 1.04e-05p 5.02e-09p      0.0
sig0.621 cc 8.45e-07p 0.000366p 0.014827p      0.0  0.076047p      0.0  0.107567p 0.109414p 0.109424p 5.02e-09p      0.0
        rc 8.45e-07p 0.000366p 0.014827p 8.12e-05o 0.076128p 6.81e-05o 0.107716o 0.109563o 0.109573n 5.02e-09p      0.0
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.036494m      0.0       0.0
zp 31.49 ri 3.10e-09p 6.54e-06p 0.001764p      0.0  0.013369p      0.0  0.020219p 0.001107p 9.34e-06p 1.83e-09p      0.0
sig0.569 cc 3.10e-09p 6.54e-06p 0.001771p      0.0  0.015140p      0.0  0.035359p 0.036466p 0.036475p 1.83e-09p      0.0
        rc 3.10e-09p 6.54e-06p 0.001771p 6.31e-06o 0.015146p 1.27e-05o 0.035378p 0.036485o 0.036494m 1.83e-09p      0.0
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.018485m      0.0       0.0
zp 31.69 ri 1.44e-10p 9.45e-07p 0.000318p      0.0  0.006434p      0.0  0.010306p 0.001408p 1.28e-05p 6.27e-09p      0.0
sig0.565 cc 1.44e-10p 9.46e-07p 0.000319p      0.0  0.006753p      0.0  0.017059p 0.018467p 0.018480p 6.27e-09p      0.0
        rc 1.44e-10p 9.46e-07p 0.000319p 1.05e-06o 0.006754p 4.73e-06o 0.017065p 0.018473n 0.018485m 6.27e-09p      0.0
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.004991n      0.0       0.0
zp 31.42 ri 2.53e-09p 3.23e-06p 0.000303p      0.0  0.002442p      0.0  0.002057p 0.000177p 1.27e-06p 6.58e-10p      0.0
sig0.598 cc 2.53e-09p 3.24e-06p 0.000306p      0.0  0.002748p      0.0  0.004805p 0.004982p 0.004983p 6.58e-10p      0.0
        rc 2.53e-09p 3.24e-06p 0.000306p 3.18e-06o 0.002751p 5.16e-06o 0.004814p 0.004991o 0.004992n 6.58e-10p      0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.030397m      0.0       0.0
```

zp 31.29 ri 1.60e-09p 9.93e-06p 0.002023p 0.0 0.017985p 0.0 0.010042p 0.000309p 3.57e-07p 1.27e-11p 0.0
sig0.524 cc 1.60e-09p 9.93e-06p 0.002033p 0.0 0.020018p 0.0 0.030060p 0.030369p 0.030369p 1.27e-11p 0.0
rc 1.60e-09p 9.93e-06p 0.002033p 9.07e-06o 0.020027p 1.97e-05o 0.030088o 0.030398n 0.030398m 1.27e-11p 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.012979m 0.0 0.0
zp 31.90 ri 1.72e-10p 5.23e-07p 0.000145p 0.0 0.003026p 0.0 0.007780p 0.001966p 5.92e-05p 1.29e-07p 2.56e-11p
sig0.611 cc 1.72e-10p 5.23e-07p 0.000146p 0.0 0.003171p 0.0 0.010951p 0.012917p 0.012976p 1.29e-07p 2.56e-11p
rc 1.72e-10p 5.23e-07p 0.000146p 5.77e-07o 0.003172p 2.44e-06o 0.010954p 0.012920n 0.012980m 1.29e-07p 2.56e-11p

ni, cu half lives from 80eng2; zn, ga, ge, as half lives from 89wal1.

1

mass number 79 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 29 cu g 30 zn g 31 ga g 32 ge d 32 ge g 33 as g 34 se m 34 se g 35 br m 35 br g 36 kr g 37 rb g
half life 0.135s 1.0 s 2.85 s 1.66s 19.1s 9.0 m 3.89 m 6.5e4y 4.86 s stable 35.04h 22.9 m
lambda 5.134e+00 6.931e-01 2.432e-01 4.176e-01 3.629e-02 1.284e-03 2.970e-03 3.381e-13 1.426e-01 0.0 5.495e-06
5.045e-04
z - 1 g 100.0000 100.0000 98.8540 0.0 99.9110 100.0000 100.0000 0.0 0.0 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.8300 100.0000 0.0 0.0 100.0000 0.0 100.0000 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.144544n 0.0 0.0
zp 31.92 ri 7.24e-07p 0.000843p 0.025212p 0.0 0.101515p 0.016580p 4.16e-05p 0.000305p 1.42e-07p 3.77e-08p 8.05e-12p
0.0
sig0.554 cc 7.24e-07p 0.000844p 0.026041p 0.0 0.127540p 0.144117p 0.144159p 0.144464p 1.42e-07p 0.144464p 8.05e-12p
0.0
rc 7.24e-07p 0.000844p 0.026046p 8.58e-05o 0.127623p 0.144203o 0.144245o 0.144549o 1.42e-07p 0.144550n 8.05e-12p
0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.075323n 0.0 0.0
zp 31.43 ri 1.03e-05p 0.003728p 0.032425p 0.0 0.037627p 0.001417p 5.79e-07p 4.24e-06p 2.40e-10p 6.37e-11p 0.0 0.0
sig0.536 cc 1.03e-05p 0.003739p 0.036120p 0.0 0.073716p 0.075133p 0.075134p 0.075138p 2.40e-10p 0.075138p 0.0
0.0
rc 1.03e-05p 0.003739p 0.036120p 0.000204o 0.073920p 0.075337o 0.075338o 0.075342o 2.40e-10p 0.075342n 0.0
0.0

pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.159387n 0.0 0.0
zp 31.79 ri 2.95e-05p 0.003554p 0.048445p 0.0 0.085836p 0.020755p 4.31e-05p 0.000573p 1.69e-06p 2.75e-07p 6.18e-10p
0.0
sig0.643 cc 2.95e-05p 0.003584p 0.051988p 0.0 0.137778p 0.158533p 0.158576p 0.159149p 1.69e-06p 0.159151p 6.18e-10p
0.0
rc 2.95e-05p 0.003584p 0.051988p 0.000260o 0.138038p 0.158794o 0.158837o 0.159410o 1.69e-06p 0.159412n 6.18e-10p
0.0
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.206220n 0.0 0.0
zp 31.87 ri 1.83e-05p 0.003100p 0.054515p 0.0 0.115682p 0.031760p 7.08e-05p 0.000940p 2.77e-06p 4.51e-07p 9.38e-10p
0.0
sig0.632 cc 1.83e-05p 0.003117p 0.057584p 0.0 0.173236p 0.204988p 0.205059p 0.205999p 2.77e-06p 0.206003p 9.38e-10p
0.0
rc 1.83e-05p 0.003118p 0.057597p 0.000234o 0.173463p 0.205222o 0.205293o 0.206233n 2.77e-06p 0.206237m 9.38e-10p
0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.169320n 0.0 0.0
zp 31.57 ri 7.08e-05p 0.007015p 0.069498p 0.0 0.081032p 0.011298p 1.13e-05p 0.000150p 1.77e-07p 2.87e-08p 2.14e-11p
0.0
sig0.621 cc 7.08e-05p 0.007086p 0.076502p 0.0 0.157466p 0.168764p 0.168775p 0.168925p 1.77e-07p 0.168926p 2.14e-11p
0.0
rc 7.08e-05p 0.007086p 0.076502p 0.000439o 0.157905p 0.169203o 0.169214o 0.169364o 1.77e-07p 0.169365n 2.14e-11p
0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.067412m 0.0 0.0
zp 31.88 ri 7.84e-07p 0.000550p 0.013750p 0.0 0.045092p 0.007810p 2.00e-05p 0.000147p 9.59e-08p 2.55e-08p 7.65e-12p
0.0
sig0.569 cc 7.84e-07p 0.000550p 0.014294p 0.0 0.059374p 0.067184p 0.067204p 0.067351p 9.59e-08p 0.067351p 7.65e-12p
0.0
rc 7.84e-07p 0.000550p 0.014294p 6.33e-05o 0.059437p 0.067248p 0.067268o 0.067414n 9.59e-08p 0.067414m 7.65e-12p
0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.034403m 0.0 0.0
zp 32.07 ri 8.89e-08p 9.13e-05p 0.005226p 0.0 0.021315p 0.007555p 2.39e-05p 0.000175p 2.38e-07p 6.32e-08p 2.27e-11p
0.0

sig0.565 cc 8.89e-08p 9.14e-05p 0.005316p 0.0 0.026626p 0.034181p 0.034205p 0.034380p 2.38e-07p 0.034381p 2.27e-11p 0.0
rc 8.89e-08p 9.14e-05p 0.005316p 2.33e-05o 0.026649p 0.034205o 0.034228o 0.034404n 2.38e-07p 0.034404m 2.27e-11p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.018966n 0.0 0.0
zp 31.80 ri 1.11e-06p 0.000277p 0.005523p 0.0 0.010831p 0.002262p 5.13e-06p 3.76e-05p 4.81e-08p 1.28e-08p 5.90e-12p 0.0
sig0.598 cc 1.11e-06p 0.000278p 0.005798p 0.0 0.016624p 0.018886p 0.018891p 0.018929p 4.81e-08p 0.018929p 5.90e-12p 0.0
rc 1.11e-06p 0.000278p 0.005798p 4.07e-05o 0.016664p 0.018927o 0.018932o 0.018970o 4.81e-08p 0.018970n 5.90e-12p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.057804m 0.0 0.0
zp 31.66 ri 1.12e-06p 0.000790p 0.021344p 0.0 0.032498p 0.003069p 1.48e-06p 1.09e-05p 1.28e-09p 3.39e-10p 0.0 0.0
sig0.524 cc 1.12e-06p 0.000792p 0.022126p 0.0 0.054604p 0.057673p 0.057674p 0.057685p 1.28e-09p 0.057685p 0.0 0.0
rc 1.12e-06p 0.000792p 0.022126p 0.000125o 0.054729p 0.057798p 0.057799o 0.057810n 1.28e-09p 0.057810m 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.027956m 0.0 0.0
zp 32.28 ri 7.22e-08p 5.03e-05p 0.002696p 0.0 0.015339p 0.009210p 7.80e-05p 0.000572p 3.03e-06p 8.05e-07p 1.94e-09p 0.0
sig0.611 cc 7.22e-08p 5.04e-05p 0.002746p 0.0 0.018082p 0.027292p 0.027370p 0.027942p 3.03e-06p 0.027946p 1.94e-09p 0.0
rc 7.22e-08p 5.04e-05p 0.002746p 1.05e-05o 0.018092p 0.027302p 0.027380o 0.027952n 3.03e-06p 0.027956m 1.94e-09p 0.0

cu half life 80eng2; zn, ga, ge, as, se half lives 89wal1; kr, rb half lives 90bur1.

1

mass number 80 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	28 ni g	29 cu g	30 zn g	31 ga g	32 ge d	32 ge g	33 as g	34 se g	35 br m	35 br g	36 kr g
half life		0.090s	0.55 s	1.68 s	1.23s	29.5 s	16.0 s	stable	4.42 h	17.68m	stable
lambda	0.0	7.702e+00	1.260e+00	4.126e-01	5.635e-01	2.350e-02	4.332e-02	0.0	4.356e-05	6.534e-04	0.0

```
 z - 1 g    100.0000  100.0000  100.0000  100.0000       0.0   99.1700  100.0000  100.0000       0.0       0.0  100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0   11.9000  100.0000       0.0       0.0       0.0  100.0000       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.216816n      0.0       0.0       0.0
zp 32.32 ri      0.0  2.65e-08p 0.000137p 0.010204p       0.0  0.149407p 0.052284p 0.004385p 4.69e-06p 1.32e-06p 1.23e-09p
sig0.554 cc      0.0  2.65e-08p 0.000137p 0.010334p       0.0  0.159707p 0.211950p 0.216331p 4.68e-06p 6.01e-06p 6.01e-06p
         rc      0.0  2.66e-08p 0.000137p 0.010342p 0.000513o 0.160176p 0.212460o 0.216844n 4.69e-06p 6.01e-06p 6.01e-06p
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.128842n      0.0       0.0       0.0
zp 31.82 ri 4.60e-11p 6.72e-07p 0.001062p 0.023531p       0.0  0.093932p 0.008685p 0.000126p 1.85e-08p 5.21e-09p       0.0
sig0.536 cc 4.60e-11p 6.72e-07p 0.001063p 0.024593p       0.0  0.118321p 0.127007p 0.127133p 1.85e-08p 2.37e-08p 2.37e-08p
         rc 4.60e-11p 6.72e-07p 0.001063p 0.024593p 0.001810o 0.120131p 0.128816o 0.128942n 1.85e-08p 2.37e-08p 2.37e-08p
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.221712n      0.0       0.0       0.0
zp 32.19 ri 1.06e-09p 3.19e-06p 0.000949p 0.030430p       0.0  0.119739p 0.064816p 0.004532p 3.04e-05p 5.36e-06p 2.86e-08p
sig0.643 cc 1.06e-09p 3.18e-06p 0.000950p 0.031321p       0.0  0.150996p 0.215686p 0.220209p 3.03e-05p 3.57e-05p 3.57e-05p
         rc 1.06e-09p 3.19e-06p 0.000952p 0.031382p 0.001616o 0.152477p 0.217293o 0.221825n 3.04e-05p 3.57e-05p 3.57e-05p
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.260015n      0.0       0.0       0.0
zp 32.28 ri 2.87e-10p 1.41e-06p 0.000630p 0.027576p       0.0  0.136437p 0.087279p 0.006854p 4.84e-05p 8.54e-06p 4.45e-08p
sig0.632 cc 2.87e-10p 1.41e-06p 0.000630p 0.028159p       0.0  0.164572p 0.251702p 0.258545p 4.83e-05p 5.68e-05p 5.69e-05p
         rc 2.87e-10p 1.41e-06p 0.000631p 0.028207p 0.001570o 0.165981p 0.253260o 0.260114n 4.84e-05p 5.69e-05p 5.70e-05p
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.239040n      0.0       0.0       0.0
zp 31.97 ri 2.62e-09p 8.04e-06p 0.002084p 0.050789p       0.0  0.136620p 0.045360p 0.001647p 4.74e-06p 8.37e-07p 1.59e-09p
sig0.621 cc 2.61e-09p 8.01e-06p 0.002085p 0.052715p       0.0  0.189211p 0.234429p 0.236071p 4.73e-06p 5.56e-06p 5.57e-06p
         rc 2.62e-09p 8.04e-06p 0.002092p 0.052881p 0.003228o 0.192291p 0.237651o 0.239298n 4.74e-06p 5.58e-06p 5.58e-06p
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.111509m      0.0       0.0       0.0
zp 32.26 ri 2.36e-12p 4.96e-08p 0.000125p 0.007496p       0.0  0.074123p 0.027512p 0.001934p 2.81e-06p 7.93e-07p 8.35e-10p
sig0.569 cc 2.36e-12p 4.96e-08p 0.000125p 0.007621p       0.0  0.081681p 0.109193p 0.111127p 2.81e-06p 3.60e-06p 3.60e-06p
         rc 2.36e-12p 4.96e-08p 0.000125p 0.007621p 0.000391o 0.082072p 0.109584o 0.111518m 2.81e-06p 3.60e-06p 3.60e-06p
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.061618m      0.0       0.0       0.0
zp 32.45 ri      0.0  5.20e-09p 1.66e-05p 0.002787p       0.0  0.029958p 0.026819p 0.001964p 7.02e-06p 1.98e-06p 2.14e-09p
```

sig0.565 cc 0.0 5.20e-09p 1.66e-05p 0.002804p 0.0 0.032738p 0.059557p 0.061521p 7.02e-06p 9.00e-06p 9.00e-06p
rc 0.0 5.20e-09p 1.66e-05p 0.002804p 9.84e-05o 0.032837p 0.059656o 0.061620m 7.02e-06p 9.00e-06p 9.00e-06p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.038931n 0.0 0.0 0.0
zp 32.18 ri 1.41e-11p 1.39e-07p 9.43e-05p 0.004809p 0.0 0.022266p 0.010989p 0.000531p 1.60e-06p 4.51e-07p 5.56e-10p
sig0.598 cc 1.41e-11p 1.39e-07p 9.45e-05p 0.004904p 0.0 0.027129p 0.038119p 0.038650p 1.60e-06p 2.05e-06p 2.05e-06p
rc 1.41e-11p 1.39e-07p 9.45e-05p 0.004904p 0.000303o 0.027432p 0.038421o 0.038952n 1.60e-06p 2.05e-06p 2.05e-06p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.098666m 0.0 0.0 0.0
zp 32.04 ri 0.0 6.37e-08p 0.000166p 0.014878p 0.0 0.064613p 0.018120p 0.000253p 9.67e-08p 2.73e-08p 1.82e-12p
sig0.524 cc 0.0 6.37e-08p 0.000166p 0.015044p 0.0 0.079532p 0.097652p 0.097905p 9.67e-08p 1.24e-07p 1.24e-07p
rc 0.0 6.37e-08p 0.000166p 0.015044p 0.000782o 0.080314p 0.098434o 0.098687m 9.67e-08p 1.24e-07p 1.24e-07p
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.047425m 0.0 0.0 0.0
zp 32.67 ri 0.0 4.77e-09p 9.37e-06p 0.001253p 0.0 0.017937p 0.023918p 0.004263p 4.91e-05p 1.38e-05p 9.01e-08p
sig0.611 cc 0.0 4.77e-09p 9.38e-06p 0.001263p 0.0 0.019189p 0.043107p 0.047370p 4.91e-05p 6.29e-05p 6.30e-05p
rc 0.0 4.77e-09p 9.38e-06p 0.001263p 5.58e-05o 0.019245p 0.043163o 0.047426m 4.91e-05p 6.29e-05p 6.30e-05p

ga, cu half lives 80eng2; zn, ga, ge, as half lives 89wal1; br half life 90bur1.

1

mass number 81 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 29 cu g 30 zn g 31 ga g 32 ge d 32 ge g 33 as g 34 se m 34 se g 35 br g 36 kr m 36 kr g 37 rb g
half life 0.074s 0.123s 1.22 s 0.60s 7.6 s 33. s 57.3 m 18.5 m stable 13. s 2.3e5y 4.576h
lambda 9.367e+00 5.635e+00 5.682e-01 1.155e+00 9.120e-02 2.100e-02 2.016e-04 6.245e-04 0.0 5.332e-02 9.556e-14
4.208e-05
z - 1 g 100.0000 100.0000 100.0000 0.0 88.1000 100.0000 0.0 100.0000 100.0000 0.0 -100.0000 -25.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -75.0000
z - 0 m 0.0 0.0 0.0 21.1000 100.0000 0.0 0.0 100.0000 0.0 0.0 100.0000 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.361361n 0.0 0.0 0.0
zp 32.72 ri 9.61e-10p 1.35e-05p 0.004299p 0.0 0.145222p 0.177766p 0.030102p 0.004105p 0.000200p 1.33e-08p 9.77e-08p
1.33e-12p
sig0.554 cc 9.61e-10p 1.35e-05p 0.004311p 0.0 0.149052p 0.326793p 0.030096p 0.360993p 0.361194p 1.33e-08p 1.11e-07p
1.33e-12p

rc 9.61e-10p 1.35e-05p 0.004312p 0.000174o 0.149195p 0.326960p 0.030102p 0.361167o 0.361367n 1.33e-08p 1.11e-07p 1.33e-12p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.208130n 0.0 0.0 0.0
zp 32.22 ri 3.35e-08p 0.000160p 0.015046p 0.0 0.143577p 0.048350p 0.001710p 0.000233p 1.68e-06p 1.24e-11p 9.12e-11p 0.0
sig0.536 cc 3.34e-08p 0.000160p 0.015185p 0.0 0.157046p 0.205329p 0.001708p 0.207269p 0.207271p 1.24e-11p 1.04e-10p 0.0
rc 3.35e-08p 0.000160p 0.015206p 0.000913o 0.157887p 0.206237o 0.001710p 0.208180o 0.208182n 1.24e-11p 1.04e-10p 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.299362n 0.0 0.0 0.0
zp 32.59 ri 2.33e-07p 0.000174p 0.013404p 0.0 0.119929p 0.143192p 0.021191p 0.001843p 0.000442p 6.23e-08p 8.28e-07p 1.75e-10p
sig0.643 cc 2.33e-07p 0.000174p 0.013564p 0.0 0.132021p 0.275109p 0.021169p 0.298119p 0.298561p 6.24e-08p 8.90e-07p 1.75e-10p
rc 2.33e-07p 0.000174p 0.013578p 0.000839o 0.132731p 0.275922p 0.021191p 0.298956o 0.299399n 6.25e-08p 8.90e-07p 1.75e-10p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.472932n 0.0 0.0 0.0
zp 32.71 ri 9.00e-08p 0.000112p 0.013085p 0.0 0.162103p 0.248484p 0.044927p 0.003907p 0.001085p 1.66e-07p 2.20e-06p 4.68e-10p
sig0.632 cc 8.99e-08p 0.000112p 0.013188p 0.0 0.173882p 0.422249p 0.044896p 0.471049p 0.472136p 1.66e-07p 2.37e-06p 4.68e-10p
rc 9.00e-08p 0.000112p 0.013197p 0.000829o 0.174559p 0.423043p 0.044927p 0.471877o 0.472964n 1.66e-07p 2.37e-06p 4.68e-10p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.348600n 0.0 0.0 0.0
zp 32.38 ri 5.98e-07p 0.000423p 0.026706p 0.0 0.173663p 0.136462p 0.011520p 0.001002p 0.000114p 6.34e-09p 8.42e-08p 5.85e-12p
sig0.621 cc 5.97e-07p 0.000423p 0.027076p 0.0 0.197790p 0.334058p 0.011497p 0.346555p 0.346669p 6.33e-09p 9.04e-08p 5.84e-12p
rc 5.98e-07p 0.000424p 0.027130p 0.002045o 0.199609p 0.336071o 0.011520p 0.348593o 0.348707n 6.34e-09p 9.05e-08p 5.85e-12p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.182469m 0.0 0.0 0.0

zp 32.66 ri 2.14e-09p 1.48e-05p 0.003270p 0.0 0.076799p 0.087767p 0.013001p 0.001773p 0.000101p 7.82e-09p 5.74e-08p 1.26e-12p
sig0.569 cc 2.14e-09p 1.48e-05p 0.003285p 0.0 0.079693p 0.167461p 0.013001p 0.182234p 0.182335p 7.83e-09p 6.52e-08p 1.26e-12p
rc 2.14e-09p 1.48e-05p 0.003285p 0.000136o 0.079830p 0.167597o 0.013001p 0.182370n 0.182472m 7.83e-09p 6.52e-08p 1.26e-12p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.095507m 0.0 0.0 0.0
zp 32.84 ri 1.53e-10p 1.58e-06p 0.000826p 0.0 0.025079p 0.057923p 0.010189p 0.001389p 0.000161p 1.48e-08p 1.08e-07p 4.61e-12p
sig0.565 cc 1.53e-10p 1.58e-06p 0.000827p 0.0 0.025807p 0.083731p 0.010189p 0.095309p 0.095470p 1.48e-08p 1.23e-07p 4.61e-12p
rc 1.53e-10p 1.58e-06p 0.000827p 3.77e-05o 0.025845p 0.083768p 0.010189p 0.095347o 0.095508m 1.48e-08p 1.23e-07p 4.61e-12p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.064884n 0.0 0.0 0.0
zp 32.55 ri 1.07e-08p 1.94e-05p 0.002525p 0.0 0.027683p 0.031119p 0.003202p 0.000437p 3.65e-05p 3.21e-09p 2.35e-08p 1.31e-12p
sig0.598 cc 1.07e-08p 1.94e-05p 0.002544p 0.0 0.029924p 0.061043p 0.003202p 0.064682p 0.064719p 3.21e-09p 2.67e-08p 1.31e-12p
rc 1.07e-08p 1.94e-05p 0.002544p 0.000175o 0.030099p 0.061218p 0.003202p 0.064857o 0.064894n 3.21e-09p 2.67e-08p 1.31e-12p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.169427m 0.0 0.0 0.0
zp 32.43 ri 1.99e-09p 2.02e-05p 0.006552p 0.0 0.088043p 0.071897p 0.002998p 0.000409p 6.34e-06p 4.44e-11p 3.25e-10p 0.0
sig0.524 cc 1.99e-09p 2.02e-05p 0.006572p 0.0 0.093834p 0.165730p 0.002998p 0.169137p 0.169143p 4.44e-11p 3.70e-10p 0.0
rc 1.99e-09p 2.02e-05p 0.006572p 0.000288o 0.094122p 0.166019o 0.002998p 0.169425n 0.169432m 4.44e-11p 3.70e-10p 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.085864m 0.0 0.0 0.0
zp 33.05 ri 2.58e-10p 1.30e-06p 0.000468p 0.0 0.015647p 0.049472p 0.017218p 0.002348p 0.000745p 3.22e-07p 2.36e-06p 6.94e-10p
sig0.611 cc 2.58e-10p 1.30e-06p 0.000469p 0.0 0.016060p 0.065532p 0.017218p 0.085098p 0.085846p 3.22e-07p 2.68e-06p 6.94e-10p

rc 2.58e-10p 1.30e-06p 0.000469p 1.88e-05o 0.016079p 0.065551p 0.017218p 0.085116n 0.085865m 3.22e-07p 2.68e-06p 6.94e-10p

cu, zn half lives 80eng2; ga, ge, as, se half lives 89wal1; kr, rb half lives 90bur1.

1

mass number 82 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 28 ni g 29 cu g 30 zn g 31 ga g 32 ge d 32 ge g 33 as m 33 as g 34 se g 35 br m 35 br g 36 kr g
half life 0.127s 0.607s 0.31 s 4.6 s 13.7 s 19. s stable 6.1 m 35.3 h stable
lambda 0.0 0.0 5.458e+00 1.142e+00 2.236e+00 1.507e-01 5.059e-02 3.648e-02 0.0 1.894e-03 5.454e-06 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 78.9000 0.0 100.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 2.4000
z - 0 m 0.0 0.0 0.0 0.0 56.2000 100.0000 0.0240 0.0 0.0 0.0 97.6000 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.650449n 0.0 0.0 0.0
zp 33.13 ri 0.0 1.43e-11p 9.47e-07p 0.000823p 0.0 0.115483p 0.155721p 0.155722p 0.222802p 0.000896p 0.002423p 8.42e-06p
sig0.554 cc 0.0 1.43e-11p 9.47e-07p 0.000824p 0.0 0.116150p 0.155719p 0.271868p 0.650378p 0.000896p 0.003298p 0.003328p
rc 0.0 1.43e-11p 9.47e-07p 0.000824p 6.52e-05o 0.116198p 0.155731p 0.271920p 0.650454n 0.000896p 0.003298p 0.003328p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.307240n 0.0 0.0 0.0
zp 32.62 ri 0.0 7.02e-10p 1.58e-05p 0.004312p 0.0 0.159311p 0.062080p 0.062080p 0.019832p 1.37e-05p 3.69e-05p 1.48e-08p
sig0.536 cc 0.0 7.02e-10p 1.58e-05p 0.004325p 0.0 0.162812p 0.062042p 0.224854p 0.306717p 1.37e-05p 5.02e-05p 5.06e-05p
rc 0.0 7.02e-10p 1.58e-05p 0.004327p 0.000547o 0.163272p 0.062103p 0.225352o 0.307287n 1.37e-05p 5.03e-05p 5.06e-05p
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.398468n 0.0 0.0 0.0
zp 33.00 ri 0.0 1.06e-08p 2.04e-05p 0.003956p 0.0 0.084252p 0.113475p 0.113446p 0.083781p 0.000704p 0.003207p 2.01e-05p
sig0.643 cc 0.0 1.06e-08p 2.05e-05p 0.003977p 0.0 0.087382p 0.113469p 0.200851p 0.398092p 0.000704p 0.003894p 0.003931p

rc 0.0 1.06e-08p 2.05e-05p 0.003977p 0.000405o 0.087795p 0.113484p 0.201241p 0.398506n 0.000704p 0.003894p 0.003931p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.815366n 0.0 0.0 0.0
zp 33.14 ri 0.0 3.50e-09p 1.23e-05p 0.003919p 0.0 0.125203p 0.232181p 0.232164p 0.222395p 0.002317p 0.010555p 7.72e-05p
sig0.632 cc 0.0 3.50e-09p 1.23e-05p 0.003930p 0.0 0.128394p 0.232148p 0.360542p 0.815047p 0.002317p 0.012814p 0.012947p
rc 0.0 3.50e-09p 1.23e-05p 0.003931p 0.000330o 0.128634p 0.232193p 0.360799p 0.815387n 0.002317p 0.012816p 0.012949p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.538472n 0.0 0.0 0.0
zp 32.80 ri 1.13e-12p 2.80e-08p 5.61e-05p 0.009634p 0.0 0.159250p 0.150712p 0.150678p 0.069207p 0.000305p 0.001391p 3.80e-06p
sig0.621 cc 1.13e-12p 2.79e-08p 5.61e-05p 0.009683p 0.0 0.167115p 0.150612p 0.317727p 0.537496p 0.000305p 0.001688p 0.001699p
rc 1.13e-12p 2.80e-08p 5.61e-05p 0.009690p 0.001036o 0.167932p 0.150731p 0.318610p 0.538549m 0.000305p 0.001689p 0.001701p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.273704m 0.0 0.0 0.0
zp 33.07 ri 0.0 3.78e-11p 1.05e-06p 0.000646p 0.0 0.053902p 0.070743p 0.070743p 0.077759p 0.000378p 0.001022p 3.53e-06p
sig0.569 cc 0.0 3.78e-11p 1.05e-06p 0.000647p 0.0 0.054412p 0.070743p 0.125155p 0.273658p 0.000378p 0.001391p 0.001404p
rc 0.0 3.78e-11p 1.05e-06p 0.000647p 4.49e-05o 0.054457p 0.070747p 0.125200p 0.273707m 0.000378p 0.001391p 0.001404p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.155719n 0.0 0.0 0.0
zp 33.22 ri 0.0 3.38e-12p 1.11e-07p 0.000179p 0.0 0.015562p 0.046296p 0.046296p 0.047411p 0.000508p 0.001372p 4.41e-06p
sig0.565 cc 0.0 3.38e-12p 1.11e-07p 0.000179p 0.0 0.015703p 0.046296p 0.061999p 0.155706p 0.000508p 0.001868p 0.001884p
rc 0.0 3.38e-12p 1.11e-07p 0.000179p 1.29e-05o 0.015716p 0.046298p 0.062012p 0.155721n 0.000508p 0.001868p 0.001884p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.099822n 0.0 0.0 0.0

zp 32.93 ri 0.0 4.69e-10p 2.37e-06p 0.000828p 0.0 0.022708p 0.029803p 0.029803p 0.016751p 0.000118p 0.000320p 8.79e-07p
sig0.598 cc 0.0 4.69e-10p 2.37e-06p 0.000830p 0.0 0.023363p 0.029803p 0.053166p 0.099720p 0.000118p 0.000435p 0.000439p
rc 0.0 4.69e-10p 2.37e-06p 0.000830p 0.000109o 0.023472p 0.029807p 0.053276p 0.099833n 0.000118p 0.000435p 0.000439p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.239191m 0.0 0.0 0.0
zp 32.83 ri 0.0 2.61e-11p 1.08e-06p 0.001365p 0.0 0.062680p 0.075911p 0.075911p 0.023503p 4.48e-05p 0.000121p 3.93e-08p
sig0.524 cc 0.0 2.61e-11p 1.08e-06p 0.001367p 0.0 0.063758p 0.075911p 0.139669p 0.239082p 4.48e-05p 0.000165p 0.000166p
rc 0.0 2.61e-11p 1.08e-06p 0.001367p 0.000108o 0.063866p 0.075918p 0.139776p 0.239198m 4.48e-05p 0.000165p 0.000166p
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.119810m 0.0 0.0 0.0
zp 33.44 ri 0.0 6.61e-12p 9.56e-08p 8.89e-05p 0.0 0.007920p 0.028598p 0.028598p 0.054617p 0.001333p 0.003604p 4.87e-05p
sig0.611 cc 0.0 6.61e-12p 9.56e-08p 8.90e-05p 0.0 0.007990p 0.028598p 0.036588p 0.119803p 0.001333p 0.004905p 0.004986p
rc 0.0 6.61e-12p 9.56e-08p 8.90e-05p 6.65e-06o 0.007997p 0.028598p 0.036595p 0.119811m 0.001333p 0.004905p 0.004986p

zn half life estimated by 80eng2; ga, ge, as half lives from 89wal1; br half life 90bur1.

1

mass number 83 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 30 zn g 31 ga g 32 ge g 33 as d 33 as g 34 se m 34 se g 35 br g 36 kr m 36 kr g 37 rb g 38 sr g
half life 0.084s 0.31s 1.9 s 1.2 s 13.4 s 1.17m 22.3m 2.40h 1.83 h stable 86.2 d 32.4 h
lambda 8.252e+00 2.236e+00 3.648e-01 5.776e-01 5.173e-02 9.874e-03 5.180e-04 8.023e-05 1.052e-04 0.0 9.307e-08 5.943e-06
z - 1 g 100.0000 100.0000 43.8000 0.0 99.9760 64.0000 36.0000 100.0000 100.0000 0.0 -23.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 -77.0000 0.0
z - 0 m 0.0 0.0 0.0 5.2060 100.0000 0.0860 0.0 0.0 0.0 100.0000 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.207083n 0.0 0.0
zp 33.54 ri 2.89e-08p 0.000116p 0.042538p 0.0 0.440053p 0.116034p 0.566528p 0.040850p 4.73e-05p 0.000231p 4.43e-08p 0.0
sig0.554 cc 2.89e-08p 0.000116p 0.042582p 0.0 0.482724p 0.424965p 0.740237p 1.206045p 1.206092p 1.206323p 4.43e-08p 0.0
rc 2.89e-08p 0.000116p 0.042589p 0.000562o 0.483194p 0.425278o 0.740478o 1.206606n 1.206654n 1.206885m 4.43e-08p 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.476978n 0.0 0.0
zp 33.02 ri 7.82e-07p 0.000972p 0.097222p 0.0 0.269698p 0.017995p 0.087859p 0.001166p 1.77e-07p 8.64e-07p 1.64e-11p 0.0
sig0.536 cc 7.81e-07p 0.000972p 0.097504p 0.0 0.367483p 0.253157p 0.220022p 0.474345p 0.474345p 0.474346p 1.64e-11p 0.0
rc 7.82e-07p 0.000973p 0.097649p 0.002517o 0.369840p 0.254693o 0.221002o 0.476861n 0.476861n 0.476862m 1.64e-11p 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.507676n 0.0 0.0
zp 33.42 ri 1.43e-06p 0.000719p 0.038109p 0.0 0.240344p 0.022519p 0.182185p 0.023174p 3.36e-05p 0.000272p 4.16e-07p 5.50e-11p
sig0.643 cc 1.43e-06p 0.000720p 0.038411p 0.0 0.278826p 0.200960p 0.282512p 0.506638p 0.506672p 0.506944p 4.16e-07p 5.50e-11p
rc 1.43e-06p 0.000721p 0.038425p 0.000598o 0.279358p 0.201308o 0.282754p 0.507236n 0.507270n 0.507542m 4.16e-07p 5.50e-11p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.174170n 0.0 0.0
zp 33.58 ri 6.45e-07p 0.000586p 0.050872p 0.0 0.476856p 0.061631p 0.498630p 0.083689p 0.000152p 0.001233p 2.22e-06p 3.20e-10p
sig0.632 cc 6.44e-07p 0.000587p 0.051121p 0.0 0.528064p 0.399581p 0.688667p 1.171922p 1.172076p 1.173309p 2.22e-06p 3.20e-10p
rc 6.45e-07p 0.000587p 0.051129p 0.000604o 0.528577p 0.399920o 0.688917p 1.172526o 1.172680n 1.173914m 2.22e-06p 3.20e-10p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.638189n 0.0 0.0
zp 33.21 ri 3.95e-06p 0.001840p 0.078045p 0.0 0.351957p 0.021260p 0.171975p 0.012116p 8.08e-06p 6.53e-05p 3.82e-08p 1.61e-12p

sig0.621 cc 3.95e-06p 0.001843p 0.078791p 0.0 0.430914p 0.297028p 0.327008p 0.636143p 0.636151p 0.636216p 3.82e-08p 1.60e-12p
rc 3.95e-06p 0.001844p 0.078852p 0.001743o 0.432533p 0.298081p 0.327687p 0.637885n 0.637893n 0.637958m 3.82e-08p 1.61e-12p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.378637m 0.0 0.0
zp 33.48 ri 3.31e-08p 7.99e-05p 0.017761p 0.0 0.154585p 0.032920p 0.160722p 0.012181p 1.44e-05p 7.03e-05p 1.90e-08p 0.0
sig0.569 cc 3.31e-08p 7.99e-05p 0.017793p 0.0 0.172412p 0.143258p 0.222764p 0.378200p 0.378215p 0.378285p 1.90e-08p 0.0
rc 3.31e-08p 7.99e-05p 0.017796p 0.000241o 0.172618p 0.143396o 0.222864p 0.378441o 0.378456m 0.378526l 1.90e-08p 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.236201n 0.0 0.0
zp 33.60 ri 4.58e-09p 2.30e-05p 0.005946p 0.0 0.094780p 0.020744p 0.101276p 0.013219p 1.58e-05p 7.74e-05p 3.48e-08p 0.0
sig0.565 cc 4.58e-09p 2.30e-05p 0.005956p 0.0 0.100733p 0.085213p 0.137542p 0.235974p 0.235990p 0.236067p 3.48e-08p 0.0
rc 4.58e-09p 2.30e-05p 0.005956p 7.29e-05o 0.100807p 0.085260p 0.137567p 0.236047o 0.236063n 0.236140m 3.48e-08p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.169786n 0.0 0.0
zp 33.32 ri 1.98e-07p 0.000195p 0.014117p 0.0 0.090263p 0.010349p 0.050526p 0.004125p 3.90e-06p 1.90e-05p 9.06e-09p 0.0
sig0.598 cc 1.98e-07p 0.000195p 0.014202p 0.0 0.104462p 0.077204p 0.088132p 0.169462p 0.169466p 0.169485p 9.06e-09p 0.0
rc 1.98e-07p 0.000195p 0.014202p 0.000243o 0.104704p 0.077359p 0.088220p 0.169704o 0.169708n 0.169727m 9.06e-09p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.388685n 0.0 0.0
zp 33.23 ri 3.81e-08p 0.000192p 0.032077p 0.0 0.239397p 0.019300p 0.094231p 0.002897p 4.64e-07p 2.27e-06p 7.86e-11p 0.0
sig0.524 cc 3.81e-08p 0.000192p 0.032149p 0.0 0.271594p 0.193113p 0.191970p 0.387980p 0.387980p 0.387983p 7.86e-11p 0.0
rc 3.81e-08p 0.000192p 0.032161p 0.000499o 0.272050p 0.193412p 0.192169p 0.388479n 0.388480n 0.388482m 7.86e-11p 0.0

cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.191286m 0.0 0.0
zp 33.84 ri 4.37e-09p 1.18e-05p 0.002719p 0.0 0.051194p 0.018879p 0.092175p 0.025602p 0.000109p 0.000533p 1.26e-06p 2.04e-10p
sig0.611 cc 4.37e-09p 1.18e-05p 0.002725p 0.0 0.053918p 0.053387p 0.111585p 0.190574p 0.190684p 0.191217p 1.26e-06p 2.04e-10p
rc 4.37e-09p 1.18e-05p 0.002725p 3.36e-05o 0.053952p 0.053408p 0.111597p 0.190607o 0.190717n 0.191250l 1.26e-06p 2.04e-10p

as-to-se branching to fit data; zn half life from 80eng2; ga, ge, as, se half lives 89wal1; kr, rb, sr 90bur1.

1

mass number 84 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 30 zn g 31 ga g 32 ge g 33 as d 33 as g 34 se d 34 se g 35 br m 35 br g 36 kr g 37 rb g 38 sr g
half life 0.098s 1.2 s 0.250s 5.5 s 2.03 s 3.3 m 6.0 m 31.8 m stable 32.87d stable
lambda 0.0 7.073e+00 5.776e-01 2.773e+00 1.260e-01 3.415e-01 3.501e-03 1.925e-03 3.633e-04 0.0 2.441e-07 0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 94.7940 0.0 99.8700 0.0 100.0000 100.0000 -97.0000 3.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 16.4540 100.0000 50.0000 100.0000 0.0 0.0 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.951161n 0.0 0.0
zp 33.94 ri 6.15e-10p 6.76e-06p 0.010785p 0.0 0.264887p 0.0 1.430973n 0.131271p 0.061775p 0.005506p 2.36e-06p 1.45e-10p
sig0.554 cc 6.10e-10p 6.70e-06p 0.010700p 0.0 0.272849p 0.0 1.707420p 0.130160p 1.768672p 1.904294p 2.34e-06p 7.03e-08p
rc 6.15e-10p 6.76e-06p 0.010791p 0.000189o 0.275306p 0.058964o 1.764885m 0.131271p 1.826660m 1.963440l 2.36e-06p 7.09e-08p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.911808n 0.0 0.0
zp 33.41 ri 3.12e-08p 0.000115p 0.048238p 0.0 0.320670p 0.0 0.423016p 0.008542p 0.004020p 4.94e-05p 2.36e-09p 0.0
sig0.536 cc 3.07e-08p 0.000113p 0.047544p 0.0 0.360749p 0.0 0.789306p 0.008399p 0.793259p 0.801706p 2.32e-09p 6.95e-11p
rc 3.12e-08p 0.000115p 0.048353p 0.001483o 0.367989p 0.123343o 0.913870p 0.008542p 0.917889o 0.926481n 2.36e-09p 7.07e-11p

pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.653896n 0.0 0.0
zp 33.84 ri 6.35e-08p 8.46e-05p 0.011404p 0.0 0.172616p 0.0 0.329008p 0.070557p 0.019901p 0.002992p 1.07e-05p 3.78e-09p
sig0.643 cc 6.26e-08p 8.34e-05p 0.011316p 0.0 0.180893p 0.0 0.513690p 0.069499p 0.533293p 0.605749p 1.05e-05p 3.20e-07p
rc 6.35e-08p 8.46e-05p 0.011489p 0.000476o 0.183983p 0.053862o 0.566614p 0.070557p 0.586514o 0.660075n 1.07e-05p 3.24e-07p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.480046n 0.0 0.0
zp 34.02 ri 1.83e-08p 4.79e-05p 0.011563p 0.0 0.282936p 0.0 0.799852p 0.238825p 0.067361p 0.013608p 6.17e-05p 2.58e-08p
sig0.632 cc 1.81e-08p 4.73e-05p 0.011462p 0.0 0.290296p 0.0 1.097526p 0.235763p 1.164023p 1.413278p 6.09e-05p 1.85e-06p
rc 1.83e-08p 4.80e-05p 0.011611p 0.000402o 0.294344p 0.079566o 1.173379o 0.238825p 1.240740n 1.493235m 6.17e-05p 1.88e-06p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.047029n 0.0 0.0
zp 33.62 ri 2.32e-07p 0.000297p 0.033181p 0.0 0.366868p 0.0 0.459786p 0.057676p 0.016268p 0.001190p 1.71e-06p 2.03e-10p
sig0.621 cc 2.28e-07p 0.000293p 0.032911p 0.0 0.392255p 0.0 0.859184p 0.056698p 0.875176p 0.933045p 1.68e-06p 5.06e-08p
rc 2.32e-07p 0.000298p 0.033478p 0.001505o 0.400109p 0.137400o 0.996775n 0.057676p 1.013043n 1.071911m 1.71e-06p 5.15e-08p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.611640n 0.0 0.0
zp 33.90 ri 7.39e-10p 5.29e-06p 0.004629p 0.0 0.103639p 0.0 0.414822p 0.044172p 0.020787p 0.001725p 1.13e-06p 8.93e-11p
sig0.569 cc 7.31e-10p 5.23e-06p 0.004587p 0.0 0.106958p 0.0 0.523399p 0.043721p 0.543973p 0.589403p 1.12e-06p 3.37e-08p
rc 7.39e-10p 5.29e-06p 0.004634p 9.51e-05o 0.108127p 0.023831o 0.546640p 0.044172p 0.567426o 0.613325n 1.13e-06p 3.40e-08p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.352964n 0.0 0.0
zp 33.99 ri 1.06e-10p 1.72e-06p 0.001398p 0.0 0.064086p 0.0 0.210483p 0.042363p 0.019936p 0.001317p 1.57e-06p 9.28e-11p

sig0.565 cc 1.04e-10p 1.71e-06p 0.001384p 0.0 0.064702p 0.0 0.276503p 0.041903p 0.296222p 0.339429p 1.55e-06p 4.67e-08p
rc 1.06e-10p 1.72e-06p 0.001400p 3.42e-05o 0.065446p 0.014759o 0.290604p 0.042363p 0.310540o 0.354221n 1.57e-06p 4.72e-08p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.249555n 0.0 0.0
zp 33.72 ri 8.01e-09p 2.29e-05p 0.004638p 0.0 0.076324p 0.0 0.120961p 0.014792p 0.006961p 0.000336p 3.87e-07p 3.02e-11p
sig0.598 cc 7.86e-09p 2.25e-05p 0.004574p 0.0 0.079239p 0.0 0.202015p 0.014517p 0.208846p 0.223693p 3.80e-07p 1.14e-08p
rc 8.01e-09p 2.29e-05p 0.004660p 0.000212o 0.080953p 0.028758o 0.230567p 0.014792p 0.237528o 0.252657n 3.87e-07p 1.16e-08p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.676758n 0.0 0.0
zp 33.64 ri 6.85e-10p 1.45e-05p 0.009577p 0.0 0.243084p 0.0 0.342684p 0.021224p 0.009988p 0.000118p 1.43e-08p 0.0
sig0.524 cc 6.76e-10p 1.43e-05p 0.009470p 0.0 0.249048p 0.0 0.594938p 0.020956p 0.604800p 0.625872p 1.42e-08p 4.25e-10p
rc 6.85e-10p 1.45e-05p 0.009591p 0.000200o 0.252376p 0.056768o 0.651499p 0.021224p 0.661487o 0.682829n 1.43e-08p 4.30e-10p
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.289351n 0.0 0.0
zp 34.24 ri 1.34e-10p 9.81e-07p 0.000644p 0.0 0.030077p 0.0 0.161332p 0.058646p 0.027598p 0.005777p 2.96e-05p 1.41e-08p
sig0.611 cc 1.33e-10p 9.76e-07p 0.000641p 0.0 0.030513p 0.0 0.192507p 0.058311p 0.219947p 0.284031p 2.95e-05p 8.98e-07p
rc 1.34e-10p 9.82e-07p 0.000645p 1.41e-05o 0.030702p 0.005832o 0.197826p 0.058646p 0.225425o 0.289877n 2.96e-05p 9.03e-07p

ga half life from 80eng2; ge, as, se, br half lives from 89wal1; rb half life 90bur1.

1

mass number 85 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	31 ga g	32 ge g	33 as d	33 as g	34 se m	34 se g	35 br g	36 kr m	36 kr g	37 rb g	38 sr g	39 y g
half life	0.087s	0.250s	0.247s	2.03 s	19. s	39. s	2.87m	4.48 h	10.73y	stable	64.84d	5.0 h

lambda 7.967e+00 2.773e+00 2.806e+00 3.415e-01 3.648e-02 1.777e-02 4.025e-03 4.298e-05 2.048e-09 0.0 1.237e-07 3.851e-05
z - 1 g 100.0000 100.0000 0.0 83.5460 0.0 50.0000 100.0000 100.0000 0.0 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 80.0210 0.0 0.0
z - 0 m 0.0 0.0 15.2150 100.0000 8.5030 0.0 0.0 0.0 19.9790 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.172999j 0.0 0.0
zp 34.34 ri 2.69e-07p 0.001151p 0.0 0.116949p 0.700029p 0.701359p 0.664215p 0.007769p 0.037930p 8.58e-05p 1.45e-08p 0.0
sig0.554 cc 2.69e-07p 0.001151p 0.0 0.117835p 0.700877p 0.759795p 2.124627p 2.132391p 0.463934p 2.170380p 1.45e-08p 0.0
rc 2.69e-07p 0.001152p 1.76e-05o 0.117928p 0.702699o 0.760323o 2.127238m 2.135006l 0.464482m 2.173022j 1.45e-08p 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.963893n 0.0 0.0
zp 33.81 ri 7.27e-06p 0.009007p 0.0 0.238956p 0.372376p 0.376427p 0.083569p 0.000162p 0.000791p 2.14e-07p 3.28e-12p 0.0
sig0.536 cc 7.24e-06p 0.008980p 0.0 0.245612p 0.375003p 0.497809p 0.956062p 0.956223p 0.191832p 0.957012p 3.27e-12p 0.0
rc 7.27e-06p 0.009014p 0.000199o 0.246686p 0.380661p 0.499770p 0.964000o 0.964162n 0.193421n 0.964954m 3.29e-12p 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.832589n 0.0 0.0
zp 34.25 ri 8.44e-06p 0.002882p 0.0 0.105252p 0.233262p 0.234744p 0.285155p 0.002490p 0.020147p 0.000204p 1.88e-07p 1.66e-11p
sig0.643 cc 8.42e-06p 0.002885p 0.0 0.107485p 0.234309p 0.288051p 0.807128p 0.809614p 0.181862p 0.829927p 1.87e-07p 1.66e-11p
rc 8.44e-06p 0.002890p 5.78e-05o 0.107724p 0.236264p 0.288606p 0.810025o 0.812515n 0.182479n 0.832866m 1.88e-07p 1.66e-11p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.317989n 0.0 0.0
zp 34.45 ri 3.66e-06p 0.002438p 0.0 0.157062p 0.556628p 0.558047p 1.006020n 0.012535p 0.101413p 0.001401p 1.65e-06p 1.73e-10p
sig0.632 cc 3.65e-06p 0.002440p 0.0 0.159007p 0.557681p 0.637185p 2.200366p 2.212893p 0.543464p 2.315644p 1.65e-06p 1.73e-10p

rc 3.66e-06p 0.002442p 2.99e-05o 0.159132p 0.559481o 0.637613o 2.203114m 2.215649m 0.544077m 2.318464l 1.65e-06p 1.73e-10p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.346181n 0.0 0.0
zp 34.05 ri 2.90e-05p 0.009119p 0.0 0.266967p 0.423906p 0.428014p 0.334767p 0.001607p 0.013003p 6.01e-05p 2.10e-08p 0.0
sig0.621 cc 2.89e-05p 0.009121p 0.0 0.273856p 0.426752p 0.563681p 1.324417p 1.326019p 0.277890p 1.339043p 2.09e-08p 0.0
rc 2.90e-05p 0.009148p 0.000190o 0.274799p 0.432282p 0.565414p 1.332463o 1.334070n 0.279537n 1.347133m 2.10e-08p 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.709602n 0.0 0.0
zp 34.31 ri 2.34e-07p 0.000578p 0.0 0.047170p 0.223811p 0.224366p 0.221475p 0.002562p 0.012510p 3.82e-05p 8.73e-09p 0.0
sig0.569 cc 2.34e-07p 0.000577p 0.0 0.047614p 0.224182p 0.247989p 0.693510p 0.696070p 0.151567p 0.708608p 8.72e-09p 0.0
rc 2.34e-07p 0.000578p 8.97e-06o 0.047662p 0.224927p 0.248197p 0.694599o 0.697161n 0.151795n 0.709709m 8.73e-09p 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.595455p 0.0 0.482672n 0.0 0.0
zp 34.39 ri 7.79e-08p 0.000208p 0.0 0.029343p 0.134626p 0.134938p 0.211784p 0.002220p 0.010837p 5.03e-05p 9.98e-09p 0.0
sig0.565 cc 7.82e-08p 0.000209p 0.0 0.029662p 0.135601p 0.150431p 0.495969p 0.498199p 0.110426p 0.509140p 1.00e-08p 0.0
rc 7.79e-08p 0.000208p 2.37e-06o 0.029519p 0.135222p 0.149697p 0.496703o 0.498922n 0.110517n 0.509810m 9.98e-09p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.359547n 0.0 0.0
zp 34.12 ri 2.23e-06p 0.001285p 0.0 0.056416p 0.112999p 0.113861p 0.098255p 0.000698p 0.003406p 1.36e-05p 3.12e-09p 0.0
sig0.598 cc 2.22e-06p 0.001285p 0.0 0.057363p 0.113609p 0.142290p 0.353935p 0.354631p 0.074250p 0.358043p 3.12e-09p 0.0
rc 2.23e-06p 0.001288p 2.51e-05o 0.057517p 0.114750p 0.142619p 0.355625o 0.356322n 0.074595n 0.359741m 3.12e-09p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.707606n 0.0 0.0

zp 34.05 ri 4.50e-07p 0.001213p 0.0 0.112505p 0.249608p 0.251281p 0.144865p 0.000355p 0.001735p 1.06e-06p 1.62e-11p 0.0
sig0.524 cc 4.49e-07p 0.001210p 0.0 0.113266p 0.250710p 0.307343p 0.702645p 0.703000p 0.142183p 0.704731p 1.61e-11p 0.0
rc 4.50e-07p 0.001213p 1.74e-05o 0.113536p 0.252997p 0.308049p 0.705911o 0.706267n 0.142840n 0.708002m 1.62e-11p 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.409352n 0.0 0.0
zp 34.66 ri 4.64e-08p 8.54e-05p 0.0 0.011592p 0.077888p 0.077888p 0.211576p 0.006024p 0.029412p 0.000531p 7.13e-07p 6.70e-11p
sig0.611 cc 4.64e-08p 8.54e-05p 0.0 0.011663p 0.077883p 0.083714p 0.373186p 0.379209p 0.105172p 0.409151p 7.13e-07p 6.70e-11p
rc 4.64e-08p 8.54e-05p 1.06e-06o 0.011664p 0.078109p 0.083720p 0.373404p 0.379429o 0.105218o 0.409372m 7.13e-07p 6.70e-11p

kr branching to fit data; ga half life from 80eng2; as, se, br, kr half lives from 89wal1.

1

mass number 86 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	30 zn g	31 ga g	32 ge g	33 as g	34 se d	34 se g	35 br m	35 br g	36 kr d	36 kr g	37 rb g	38 sr g
half life		0.247s	0.9 s	0.30 s	15.0 s	4.5 s	55.5 s	55.7 s	stable	18.66d	stable	
lambda	0.0	0.0	2.806e+00	7.702e-01	2.310e+00	4.621e-02	1.540e-01	1.249e-02	1.244e-02	0.0	4.299e-07	0.0
z - 1 g	100.0000	100.0000	100.0000	84.7850	0.0	91.4970	0.0	100.0000	0.0	100.0000	0.0	100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	44.3600	100.0000	0.1880	0.0	2.5400	100.0000	0.0	0.0
u234f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.457578n	0.0	0.0

zp 34.75 ri 0.0 5.82e-09p 0.000116p 0.031313p 0.0 1.482746n 0.758724p 0.759112p 0.0 0.407572p 0.002022p 1.59e-06p
sig0.554 cc 0.0 5.81e-09p 0.000116p 0.031402p 0.0 1.511585p 0.758928p 2.270513p 0.0 3.436895p 0.002021p 0.002023p
rc 0.0 5.82e-09p 0.000116p 0.031411p 0.001793o 1.513278m 0.759579o 2.272391m 0.052568m 3.492109m 0.002022p 0.002024p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.523188n 0.0 0.0

zp 34.21 ri 4.17e-12p 2.29e-07p 0.001308p 0.096330p 0.0 1.102121n 0.145832p 0.146576p 0.0 0.014115p 9.58e-06p 7.05e-10p
sig0.536 cc 4.16e-12p 2.28e-07p 0.001305p 0.097158p 0.0 1.191383p 0.146183p 1.337566p 0.0 1.497823p 9.55e-06p 9.55e-06p
rc 4.17e-12p 2.29e-07p 0.001309p 0.097439p 0.012637o 1.203913m 0.147416p 1.350489m 0.040878n 1.552897l 9.58e-06p 9.58e-06p
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.035660n 0.0 0.0
zp 34.67 ri 4.55e-11p 4.23e-07p 0.000380p 0.034981p 0.0 0.369528p 0.258535p 0.258226p 0.0 0.098027p 0.002240p 5.43e-06p
sig0.643 cc 4.54e-11p 4.22e-07p 0.000379p 0.035241p 0.0 0.402194p 0.258289p 0.660482p 0.0 1.016626p 0.002236p 0.002241p
rc 4.55e-11p 4.23e-07p 0.000380p 0.035303p 0.003882o 0.405711p 0.258958p 0.663937o 0.023293o 1.044215m 0.002240p 0.002245p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.229936n 0.0 0.0
zp 34.87 ri 5.20e-12p 1.08e-07p 0.000197p 0.033379p 0.0 0.586081p 0.622790p 0.622964p 0.0 0.341988p 0.010889p 3.47e-05p
sig0.632 cc 5.20e-12p 1.08e-07p 0.000197p 0.033525p 0.0 0.617328p 0.622711p 1.240038p 0.0 2.204524p 0.010882p 0.010917p
rc 5.20e-12p 1.08e-07p 0.000197p 0.033546p 0.003248o 0.620023o 0.623412o 1.242986n 0.050555m 2.258941m 0.010889p 0.010924p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.715134n 0.0 0.0
zp 34.47 ri 1.31e-10p 1.41e-06p 0.001248p 0.097447p 0.0 0.770642p 0.365601p 0.365957p 0.0 0.081977p 0.000925p 9.18e-07p
sig0.621 cc 1.31e-10p 1.41e-06p 0.001246p 0.098240p 0.0 0.862151p 0.365214p 1.227365p 0.0 1.674334p 0.000923p 0.000924p
rc 1.31e-10p 1.41e-06p 0.001249p 0.098507p 0.014079o 0.874851o 0.366841p 1.240809o 0.053975m 1.743601m 0.000925p 0.000926p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.033992n 0.0 0.0
zp 34.72 ri 0.0 6.01e-09p 5.89e-05p 0.013075p 0.0 0.424041p 0.237359p 0.237076p 0.0 0.109745p 0.000754p 6.84e-07p
sig0.569 cc 0.0 6.00e-09p 5.89e-05p 0.013114p 0.0 0.435949p 0.237318p 0.673266p 0.0 1.020231p 0.000754p 0.000754p

rc 0.0 6.01e-09p 5.89e-05p 0.013125p 0.000968o 0.437018p 0.237703p 0.674094o 0.021247m 1.042789m 0.000754p 0.000755p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.646985n 0.0 0.0
zp 34.79 ri 0.0 1.74e-09p 1.55e-05p 0.006993p 0.0 0.185319p 0.189433p 0.189499p 0.0 0.066779p 0.000807p 5.32e-07p
sig0.565 cc 0.0 1.74e-09p 1.55e-05p 0.007003p 0.0 0.191800p 0.189444p 0.381244p 0.0 0.637440p 0.000807p 0.000808p
rc 0.0 1.74e-09p 1.55e-05p 0.007006p 0.000497o 0.192227p 0.189607p 0.381726p 0.015617m 0.653729m 0.000807p 0.000808p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.499370n 0.0 0.0
zp 34.53 ri 3.74e-12p 9.61e-08p 0.000165p 0.020449p 0.0 0.213222p 0.114831p 0.114326p 0.0 0.025655p 0.000245p 1.70e-07p
sig0.598 cc 3.73e-12p 9.58e-08p 0.000165p 0.020531p 0.0 0.232013p 0.114641p 0.346654p 0.0 0.486879p 0.000244p 0.000244p
rc 3.74e-12p 9.61e-08p 0.000165p 0.020589p 0.002216o 0.234276p 0.115106p 0.348603o 0.013688o 0.503052m 0.000245p 0.000245p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.136156n 0.0 0.0
zp 34.45 ri 0.0 1.05e-08p 0.000115p 0.039761p 0.0 0.566304p 0.244141p 0.244416p 0.0 0.024621p 4.90e-05p 3.07e-09p
sig0.524 cc 0.0 1.05e-08p 0.000114p 0.039814p 0.0 0.602971p 0.244195p 0.847166p 0.0 1.115955p 4.90e-05p 4.90e-05p
rc 0.0 1.05e-08p 0.000115p 0.039858p 0.003047o 0.605820o 0.244800p 0.850236o 0.031584n 1.151241m 4.90e-05p 4.90e-05p
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.558747n 0.0 0.0
zp 35.08 ri 0.0 1.23e-09p 6.95e-06p 0.002591p 0.0 0.096852p 0.157057p 0.157080p 0.0 0.138049p 0.005423p 2.19e-05p
sig0.611 cc 0.0 1.23e-09p 6.95e-06p 0.002596p 0.0 0.099218p 0.157080p 0.256298p 0.0 0.551413p 0.005423p 0.005444p
rc 0.0 1.23e-09p 6.95e-06p 0.002596p 0.000181o 0.099408p 0.157133p 0.256488p 0.009872o 0.561542n 0.005423p 0.005445p

ge half life from 80eng2; as, se, br half lives from 89wal1; rb half life 90bur1.

1

mass number 87 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 32 ge g 33 as g 34 se g 35 br d 35 br g 36 kr d 36 kr g 37 rb g 38 sr m 38 sr g 39 y g 40 zr g
half life 0.134s 0.8 s 5.6 s 1.50s 55.9 s 16.0 s 1.27 h 10.67l 2.81 h stable 80.3 h 1.6 h
lambda 5.173e+00 8.664e-01 1.238e-01 4.621e-01 1.240e-02 4.332e-02 1.516e-04 4.699e-19 6.852e-05 0.0 2.398e-06 1.203e-04
z - 1 g 100.0000 100.0000 55.6400 0.0 99.8120 0.0 97.4600 100.0000 -0.3000 100.0000 0.0 0.0
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -100.0000 -100.0000
z - 0 m 0.0 0.0 0.0 0.9660 100.0000 6.2600 100.0000 0.0 0.0 99.7000 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.968189j 0.0 3.23e-06n 0.0 0.0 0.0
zp 35.14 ri 3.50e-06p 0.004037p 0.452617p 0.0 1.614098n 0.0 0.868015o 0.018156p 6.26e-06p 3.06e-05p 1.67e-09p 0.0
sig0.554 cc 3.44e-06p 0.003972p 0.447099p 0.0 2.033151p 0.0 2.884837p 2.902682p 6.16e-06p 2.902719p 1.64e-09p 0.0
rc 3.50e-06p 0.004041p 0.454865p 0.001485o 2.069593m 0.086738m 2.971778j 2.989934j 6.26e-06l 2.989971j 1.67e-09p 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.753887m 0.0 1.39e-08n 0.0 0.0 0.0
zp 34.61 ri 8.73e-05p 0.028401p 0.826679p 0.0 0.762214p 0.0 0.097320p 0.000297p 1.15e-08p 5.63e-08p 0.0 0.0
sig0.536 cc 8.67e-05p 0.028300p 0.836946p 0.0 1.603901p 0.0 1.659837p 1.660132p 1.15e-08p 1.660132p 0.0 0.0
rc 8.73e-05p 0.028488p 0.842530o 0.006200o 1.609360n 0.125597m 1.791399m 1.791696m 1.15e-08o 1.791696m 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.228020j 0.0 1.41e-06n 0.0 0.0 0.0
zp 35.08 ri 3.76e-05p 0.008715p 0.220339p 0.0 0.691390p 0.0 0.288575p 0.016718p 1.13e-05p 9.16e-05p 6.38e-08p 3.78e-12p
sig0.643 cc 3.70e-05p 0.008619p 0.221788p 0.0 0.907734p 0.0 1.182014p 1.198478p 1.12e-05p 1.198580p 6.28e-08p 3.72e-12p
rc 3.76e-05p 0.008752p 0.225208p 0.000873o 0.917048o 0.047159o 1.229489j 1.246208j 1.14e-05j 1.246311j 6.38e-08p 3.78e-12p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.041122n 0.0 4.56e-06n 0.0 0.0 0.0
zp 35.29 ri 1.60e-05p 0.007305p 0.327270p 0.0 1.658653n 0.0 1.071409n 0.086637p 8.10e-05p 0.000656p 5.90e-07p 4.19e-11p

sig0.632 cc 1.60e-05p 0.007302p 0.330459p 0.0 1.984333p 0.0 3.010624p 3.097029p 8.14e-05p 3.097764p 5.89e-07p 4.18e-11p
rc 1.60e-05p 0.007321p 0.331344p 0.000979o 1.990353m 0.086174m 3.097381l 3.184018l 8.16e-05h 3.184755l 5.90e-07p 4.19e-11p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.512870n 0.0 2.39e-07n 0.0 0.0 0.0
zp 34.89 ri 0.000148p 0.031590p 0.641596p 0.0 1.464529n 0.0 0.394706p 0.012321p 3.78e-06p 3.06e-05p 8.02e-09p 0.0
sig0.621 cc 0.000147p 0.031568p 0.655719p 0.0 2.111664p 0.0 2.463762p 2.476017p 3.77e-06p 2.476051p 7.98e-09p 0.0
rc 0.000148p 0.031738p 0.659255o 0.002436o 2.124981m 0.100935m 2.566647m 2.578968m 3.79e-06i 2.579003m 8.02e-09p 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.848148l 0.0 1.166203m 0.0 1.41e-06n 0.0 0.0 0.0
zp 35.13 ri 2.53e-06p 0.002179p 0.181954p 0.0 0.653038n 0.0 0.322597p 0.008730p 3.78e-06p 1.85e-05p 1.76e-09p 0.0
sig0.569 cc 2.47e-06p 0.002127p 0.178549p 0.0 0.815158p 0.0 1.137943p 1.146517p 3.71e-06p 1.146539p 1.73e-09p 0.0
rc 2.53e-06p 0.002182p 0.183168p 0.000637o 0.836498l 0.038690o 1.176538l 1.185268l 3.78e-06l 1.185290l 1.76e-09p 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.774489l 0.0 0.725859m 0.0 2.04e-06n 0.0 0.0 0.0
zp 35.20 ri 7.41e-07p 0.001120p 0.092288p 0.0 0.521821m 0.0 0.213161p 0.008007p 3.01e-06p 1.47e-05p 1.98e-09p 0.0
sig0.565 cc 7.05e-07p 0.001066p 0.088360p 0.0 0.584600p 0.0 0.811816p 0.820908p 3.42e-06p 0.820928p 2.25e-09p 0.0
rc 7.41e-07p 0.001121p 0.092912p 0.000300o 0.614859l 0.033659o 0.846061l 0.854068l 3.02e-06m 0.854085l 1.98e-09p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.669156n 0.0 4.19e-07n 0.669156n 0.0 0.0
zp 34.95 ri 1.35e-05p 0.004982p 0.143517p 0.0 0.392246p 0.0 0.114247p 0.003191p 1.15e-06p 5.60e-06p 9.82e-10p 0.0
sig0.598 cc 1.34e-05p 0.004969p 0.145530p 0.0 0.537269p 0.0 0.638903p 0.642072p 1.14e-06p 0.642078p 9.75e-10p 0.0
rc 1.35e-05p 0.004996p 0.146296p 0.000619o 0.538887p 0.031848o 0.671294n 0.674485n 1.15e-06l 0.674492m 9.82e-10p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.425179n 0.0 5.78e-08n 1.425179n 0.0 0.0

zp 34.86 ri 4.91e-06p 0.006864p 0.346417p 0.0 0.892584p 0.0 0.151913p 0.001207p 5.39e-08p 2.63e-07p 2.46e-12p 0.0
sig0.524 cc 4.84e-06p 0.006769p 0.345167p 0.0 1.242642p 0.0 1.362594p 1.363774p 5.27e-08p 1.363775p 2.41e-12p
0.0
rc 4.91e-06p 0.006868p 0.350238p 0.001315o 1.243479n 0.075583m 1.439390m 1.440597m 5.39e-08n 1.440597m 2.46e-12p
0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.748814n 0.0 2.60e-05n 0.0 0.0 0.0
zp 35.50 ri 3.61e-07p 0.000408p 0.040427p 0.0 0.347994p 0.0 0.357490p 0.039162p 7.32e-05p 0.000357p 3.54e-07p
2.38e-11p
sig0.611 cc 3.59e-07p 0.000405p 0.040360p 0.0 0.385790p 0.0 0.736550p 0.775429p 7.30e-05p 0.775856p 3.52e-07p
2.36e-11p
rc 3.61e-07p 0.000408p 0.040654p 9.59e-05o 0.388667p 0.014139o 0.750423n 0.789586n 7.35e-05l 0.790016m 3.54e-07p
2.38e-11p

ge half life from 80eng2; as, se, br, kr half lives from 89wal1; sr half life 90bur1.

1

mass number 88 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 32 ge g 33 as g 34 se g 35 br d 35 br g 36 kr d 36 kr g 37 rb g 38 sr g 39 y g 40 zr g
half life 0.129s 0.135s 1.50 s 0.41 s 16.4 s 4.38 s 2.84 h 17.7 m stable 106.6d 85. d
lambda 5.373e+00 5.134e+00 4.621e-01 1.691e+00 4.227e-02 1.583e-01 6.780e-05 6.527e-04 0.0 7.526e-08 9.438e-08
z - 1 g 100.0000 100.0000 100.0000 0.0 99.0340 0.0 93.7400 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 7.7000 100.0000 14.0000 100.0000 0.0 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.962008j 0.0 0.0
zp 35.54 ri 1.04e-07p 0.000324p 0.153401p 0.0 1.231017n 0.0 2.417396n 0.114292p 0.001003p 1.24e-07p 2.14e-12p
sig0.554 cc 1.03e-07p 0.000321p 0.151988p 0.0 1.368270p 0.0 3.716319p 3.829319p 3.830311p 1.22e-07p 2.11e-12p
rc 1.04e-07p 0.000325p 0.153726p 0.002336o 1.385593m 0.134548o 3.850800l 3.965091k 3.966095j 1.24e-07p 2.14e-12p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.598380n 0.0 0.0
zp 35.00 ri 5.81e-06p 0.005484p 0.636307p 0.0 1.355722n 0.0 0.615240p 0.005221p 5.38e-06p 6.43e-11p 0.0
sig0.536 cc 5.79e-06p 0.005470p 0.639514p 0.0 1.986987p 0.0 2.482215p 2.487417p 2.487422p 6.41e-11p 0.0
rc 5.81e-06p 0.005490p 0.641797o 0.015025o 2.006345m 0.242981m 2.738969m 2.744189m 2.744195l 6.43e-11p 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

```
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.397545i      0.0  1.498088n      0.0       0.0
zp 35.50 ri 2.32e-06p 0.001408p 0.089006p       0.0  0.661775p       0.0  0.628067o 0.088526p 0.001392p 2.28e-06p 3.64e-10p
sig0.643 cc 2.27e-06p 0.001380p 0.088447p       0.0  0.735512p       0.0  1.335596p 1.421922p 1.423281p 2.23e-06p 3.55e-10p
        rc 2.32e-06p 0.001411p 0.090416p 0.002028o 0.753346o 0.066484o 1.400738i 1.489264j 1.490658j 2.28e-06p 3.64e-10p
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.734538n      0.0       0.0
zp 35.72 ri 6.59e-07p 0.000839p 0.100545p       0.0  1.274513n       0.0  1.972000n 0.399223p 0.009085p 2.03e-05p 4.11e-09p
sig0.632 cc 6.56e-07p 0.000835p 0.100828p       0.0  1.367865p       0.0  3.263103p 3.660568p 3.669624p 2.02e-05p 4.09e-09p
        rc 6.59e-07p 0.000840p 0.101385p 0.001666o 1.376584m 0.097245o 3.359655l 3.758878m 3.767984l 2.03e-05p 4.11e-09p
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.562729n      0.0       0.0
zp 35.30 ri 8.14e-06p 0.004729p 0.247463p       0.0  1.355322n       0.0  0.883511p 0.068990p 0.000519p 3.38e-07p 1.78e-11p
sig0.621 cc 8.09e-06p 0.004705p 0.250488p       0.0  1.596040p       0.0  2.389173p 2.457695p 2.458211p 3.35e-07p 1.77e-11p
        rc 8.14e-06p 0.004737p 0.252200p 0.007303o 1.612388m 0.190777m 2.585741n 2.654731m 2.655251m 3.38e-07p 1.78e-11p
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.591537n      0.0       0.0
zp 35.53 ri 9.15e-08p 0.000217p 0.065684p       0.0  0.551693p       0.0  0.908837p 0.055763p 0.000527p 1.16e-07p 3.01e-12p
sig0.569 cc 9.09e-08p 0.000216p 0.065476p       0.0  0.613290p       0.0  1.487770p 1.543174p 1.543697p 1.15e-07p 2.99e-12p
        rc 9.15e-08p 0.000217p 0.065901p 0.001087o 0.618045o 0.056884o 1.545077n 1.600840n 1.601367m 1.16e-07p 3.01e-12p
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.352488p      0.0  1.088578n      0.0       0.0
zp 35.61 ri 2.25e-08p 0.000116p 0.030952p       0.0  0.506560p       0.0  0.662494p 0.065585p 0.000476p 1.83e-07p 3.39e-12p
sig0.565 cc 2.22e-08p 0.000115p 0.030713p       0.0  0.531266p       0.0  1.158651p 1.232097p 1.232630p 2.05e-07p 3.80e-12p
        rc 2.25e-08p 0.000116p 0.031068p 0.000350o 0.537678o 0.033118o 1.199632o 1.265217n 1.265693m 1.83e-07p 3.39e-12p
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.868450n      0.0       0.0
zp 35.36 ri 7.23e-07p 0.000789p 0.063313p       0.0  0.443872p       0.0  0.323603p 0.024423p 0.000151p 6.62e-08p 1.94e-12p
sig0.598 cc 7.19e-07p 0.000785p 0.063784p       0.0  0.505218p       0.0  0.799456p 0.823758p 0.823908p 6.59e-08p 1.93e-12p
        rc 7.23e-07p 0.000789p 0.064103p 0.001403o 0.508759p 0.050721o 0.851234o 0.875657o 0.875808n 6.62e-08p 1.94e-12p
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.744100n      0.0       0.0
zp 35.25 ri 1.40e-07p 0.000758p 0.135321p       0.0  1.070149n       0.0  0.529227p 0.014565p 1.47e-05p 4.54e-10p       0.0
sig0.524 cc 1.40e-07p 0.000755p 0.135498p       0.0  1.200442p       0.0  1.659062p 1.673565p 1.673579p 4.52e-10p       0.0
        rc 1.40e-07p 0.000758p 0.136080p 0.002475o 1.207389m 0.125551o 1.786585m 1.801151m 1.801165m 4.54e-10p       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.958482n      0.0       0.0
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zp 35.92 ri 1.06e-08p 3.38e-05p 0.009898p 0.0 0.215898p 0.0 0.576568p 0.152876p 0.004835p 1.11e-05p 2.32e-09p
sig0.611 cc 1.06e-08p 3.37e-05p 0.009895p 0.0 0.224931p 0.0 0.788555p 0.941116p 0.945944p 1.11e-05p 2.31e-09p
rc 1.06e-08p 3.39e-05p 0.009932p 0.000124o 0.225858p 0.014173o 0.802460o 0.955336n 0.960182m 1.11e-05p 2.32e-09p

ge, as half lives from 80eng2; se, br, kr, rb half lives from 89wal1.

1

mass number 89 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 33 as g 34 se g 35 br d 35 br g 36 kr d 36 kr g 37 rb g 38 sr g 39 y m 39 y g 40 zr g 41 nb g
half life 0.121s 0.41 s 0.427s 4.37 s 1.80 s 3.15 m 15.4 m 50.52d 15.7 s stable 78.5 h 2.0 h
lambda 5.728e+00 1.691e+00 1.623e+00 1.586e-01 3.851e-01 3.667e-03 7.502e-04 1.588e-07 4.415e-02 0.0 2.453e-06
9.627e-05
z - 1 g 100.0000 100.0000 0.0 92.3000 0.0 86.0000 100.0000 100.0000 0.0100 99.9900 -0.2000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -99.8000 0.0
z - 0 m 0.0 0.0 9.1320 100.0000 24.6000 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.375854n 0.0 0.0
zp 35.93 ri 2.52e-05p 0.030314p 0.0 0.932725p 0.0 3.834825n 0.645465p 0.013882p 6.17e-06p 1.26e-06p 3.44e-10p 0.0
sig0.554 cc 2.52e-05p 0.030232p 0.0 0.957447p 0.0 4.663581p 5.307033p 5.320866p 0.000538p 5.320873p 3.42e-10p
0.0
rc 2.52e-05p 0.030339p 0.000332o 0.961060o 0.069254o 4.730591m 5.376056m 5.389938m 0.000545m 5.389946l 3.44e-10p
0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.305219n 0.0 0.0
zp 35.40 ri 0.000591p 0.194541p 0.0 1.552022n 0.0 1.636323n 0.057484p 0.000177p 8.38e-09p 1.72e-09p 0.0 0.0
sig0.536 cc 0.000585p 0.193408p 0.0 1.717856p 0.0 3.128594p 3.185570p 3.185746p 0.000319p 3.185746p 0.0 0.0
rc 0.000591p 0.195131p 0.003452o 1.735581m 0.202661o 3.331584l 3.389068l 3.389245l 0.000339l 3.389245l 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.746678i 0.0 1.766755n 0.0 0.0
zp 35.90 ri 0.000170p 0.026172p 0.0 0.450126p 0.0 0.983125n 0.293433p 0.011293p 4.14e-05p 5.11e-06p 1.89e-08p
0.0
sig0.643 cc 0.000168p 0.026095p 0.0 0.470149p 0.0 1.388203p 1.685301p 1.696489p 0.000210p 1.696535p 1.87e-08p
0.0
rc 0.000170p 0.026341p 0.000445o 0.474884p 0.051070o 1.442595m 1.736028k 1.747321i 0.000216m 1.747368i 1.89e-08p
0.0

u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.289270n 0.0 0.0
zp 36.13 ri 6.90e-05p 0.021568p 0.0 0.674383p 0.0 2.433060n 1.147562n 0.065037p 0.000339p 4.19e-05p 2.08e-07p 9.99e-12p
sig0.632 cc 6.88e-05p 0.021558p 0.0 0.691889p 0.0 3.033998p 4.178358p 4.243156p 0.000763p 4.243536p 2.07e-07p 9.95e-12p
rc 6.90e-05p 0.021637p 0.000257o 0.694611o 0.056623o 3.087048m 4.234610l 4.299647l 0.000770o 4.300028l 2.08e-07p 9.99e-12p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.655170j 0.0 0.0 0.0 0.0
zp 35.71 ri 0.000680p 0.094157p 0.0 1.273555n 0.0 1.960470n 0.366450p 0.007485p 1.20e-05p 1.48e-06p 2.00e-09p 0.0
sig0.621 cc 0.000673p 0.093772p 0.0 1.346291p 0.0 3.127313p 3.499697p 3.507098p 0.000363p 3.507112p 1.97e-09p 0.0
rc 0.000680p 0.094838p 0.001605o 1.362696m 0.152801o 3.285189l 3.651640l 3.659125j 0.000378j 3.659138j 2.00e-09p 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.067984n 0.0 0.0
zp 35.92 ri 1.79e-05p 0.014104p 0.0 0.393104p 0.0 1.412513n 0.271598p 0.006466p 4.40e-06p 9.01e-07p 3.77e-10p 0.0
sig0.569 cc 1.78e-05p 0.014063p 0.0 0.404491p 0.0 1.763034p 2.033652p 2.040091p 0.000208p 2.040097p 3.75e-10p 0.0
rc 1.79e-05p 0.014122p 0.000177o 0.406315p 0.034380o 1.796324m 2.067922m 2.074388m 0.000212m 2.074393m 3.77e-10p 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.355588n 0.0 0.0
zp 36.03 ri 4.97e-06p 0.004537p 0.0 0.232321p 0.0 0.852328p 0.275195p 0.006502p 7.25e-06p 1.48e-06p 5.83e-10p 0.0
sig0.565 cc 4.95e-06p 0.004523p 0.0 0.235557p 0.0 1.056779p 1.331086p 1.337561p 0.000141p 1.337570p 5.80e-10p 0.0
rc 4.97e-06p 0.004542p 4.56e-05o 0.236559p 0.020152o 1.075920o 1.351115o 1.357617n 0.000143n 1.357625m 5.83e-10p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.118589n 0.0 0.0
zp 35.78 ri 7.67e-05p 0.018149p 0.0 0.345174p 0.0 0.638962p 0.129021p 0.002323p 2.60e-06p 5.33e-07p 2.88e-10p 0.0
sig0.598 cc 7.61e-05p 0.018085p 0.0 0.359296p 0.0 0.951526p 1.079707p 1.082012p 0.000111p 1.082015p 2.85e-10p 0.0

rc 7.67e-05p 0.018226p 0.000297o 0.362294p 0.042559o 0.993093o 1.122115n 1.124437n 0.000115n 1.124441m 2.88e-10p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.274564n 0.0 0.0
zp 35.66 ri 4.55e-05p 0.032103p 0.0 0.866721p 0.0 1.303394n 0.124628p 0.000502p 5.45e-08p 1.12e-08p 0.0 0.0
sig0.524 cc 4.52e-05p 0.031920p 0.0 0.890171p 0.0 2.076069p 2.199814p 2.200312p 0.000220p 2.200312p 0.0 0.0
rc 4.55e-05p 0.032148p 0.000400o 0.896794o 0.100847o 2.175484m 2.300112m 2.300614m 0.000230m 2.300614l 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.220067n 0.0 0.000000 0.0 0.0
zp 36.34 ri 1.98e-06p 0.001610p 0.0 0.099729p 0.0 0.646575p 0.442937p 0.035929p 0.000204p 4.18e-05p 1.45e-07p 5.93e-12p
sig0.611 cc 1.98e-06p 0.001609p 0.0 0.101025p 0.0 0.734334p 1.176656p 1.212515p 0.000325p 1.212760p 1.45e-07p 5.92e-12p
rc 1.98e-06p 0.001612p 1.56e-05o 0.101232p 0.007050o 0.740685o 1.183622o 1.219551n 0.000326p 1.219797m 1.45e-07p 5.93e-12p

as half life from 80eng2; se, br, kr, rb, sr half lives 89wal1.
1

mass number 90 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 34 se g 35 br d 35 br g 36 kr d 36 kr g 37 rb m 37 rb g 38 sr g 39 y g 40 zr g 41 nb g 42 mo g
half life 0.427s 0.27s 1.9 s 0.60 s 32.3 s 4.3 m 2.6 m 29.1 y 2.67 d stable 14.59h 5.7 h
lambda 1.623e+00 2.567e+00 3.648e-01 1.155e+00 2.146e-02 2.687e-03 4.443e-03 7.553e-10 3.005e-06 0.0 1.320e-05 3.378e-05
z - 1 g 100.0000 0.0 90.8680 0.0 75.4000 11.0000 89.0000 100.0000 100.0000 100.0000 -3.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 97.4000 0.0 0.0 -97.0000 0.0
z - 0 m 0.0 24.4380 100.0000 18.1000 100.0000 0.0 2.6000 0.0 0.0 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.036404n 0.0 0.0
zp 36.33 ri 0.003636p 0.0 0.278164p 0.0 4.183051n 1.245559n 0.255129p 0.129410p 0.000183p 3.86e-08p 0.0 0.0
sig0.554 cc 0.003633p 0.0 0.281274p 0.0 4.396414p 1.728353p 4.212694p 6.025424p 6.025607p 6.025607p 0.0 0.0
rc 0.003636p 5.45e-05o 0.281522p 0.013263o 4.408582m 1.730503m 4.223760m 6.038681l 6.038863l 6.038863l 0.0 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.902547n 0.0 0.0

zp 35.80 ri 0.037806p 0.0 0.788589p 0.0 2.969728n 0.216633p 0.044414p 0.003565p 6.26e-07p 1.15e-11p 0.0 0.0
sig0.536 cc 0.037647p 0.0 0.819751p 0.0 3.591934p 0.611042p 3.256935p 3.855639p 3.855640p 3.855640p 0.0 0.0
rc 0.037806p 0.000883o 0.823826o 0.059928o 3.650821m 0.618224o 3.309718m 3.915433l 3.915434l 3.915434l 0.0
0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.947446i 0.0 2.108060n 0.0 0.0
zp 36.31 ri 0.004877p 0.0 0.203011p 0.0 1.019623n 0.623214p 0.077045p 0.063032p 0.000677p 7.15e-07p 7.30e-11p
0.0
sig0.643 cc 0.004868p 0.0 0.207099p 0.0 1.177447p 0.751700p 1.144371p 1.939439p 1.940088p 1.940088p 6.99e-11p
0.0
rc 0.004877p 0.000158o 0.207600p 0.012401o 1.188555m 0.753955o 1.154462m 1.951846i 1.952523i 1.952523i 7.30e-11p
0.0
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.705319n 0.0 0.0
zp 36.55 ri 0.002810p 0.0 0.227561p 0.0 1.998223n 1.967895n 0.243213p 0.309921p 0.004790p 7.15e-06p 9.57e-10p
0.0
sig0.632 cc 0.002808p 0.0 0.229980p 0.0 2.173309p 2.205754p 2.234669p 4.692795p 4.697582p 4.697589p 9.56e-10p
0.0
rc 0.002810p 6.09e-05o 0.230176p 0.009480o 2.181255m 2.207833m 2.241933m 4.702284l 4.707074l 4.707081l 9.57e-10p
0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.812358n 0.0 0.0
zp 36.12 ri 0.017573p 0.0 0.604621p 0.0 2.241084n 0.908674p 0.112346p 0.052245p 0.000255p 1.06e-07p 3.54e-12p
0.0
sig0.621 cc 0.017525p 0.0 0.619053p 0.0 2.711909p 1.204906p 2.556978p 3.782657p 3.782911p 3.782911p 3.53e-12p
0.0
rc 0.017573p 0.000551o 0.621141o 0.037066o 2.746490m 1.210788o 2.588203m 3.819755l 3.820010l 3.820010l 3.55e-12p
0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.433377n 0.0 0.0
zp 36.32 ri 0.001937p 0.0 0.137957p 0.0 1.585023n 0.564922p 0.115714p 0.056076p 0.000124p 3.44e-08p 0.0 0.0
sig0.569 cc 0.001935p 0.0 0.139586p 0.0 1.691077p 0.750435p 1.640173p 2.427115p 2.427239p 2.427239p 0.0 0.0
rc 0.001937p 3.83e-05o 0.139756p 0.007445o 1.697844m 0.751685o 1.646339m 2.434556l 2.434680l 2.434680l 0.0
0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.715025n 0.0 0.0

zp 36.44 ri 0.000500p 0.0 0.081456p 0.0 0.851949p 0.618568p 0.126691p 0.053165p 0.000237p 5.46e-08p 0.0 0.0
sig0.565 cc 0.000499p 0.0 0.081861p 0.0 0.914152p 0.718791p 0.958910p 1.712145p 1.712382p 1.712382p 0.0 0.0
rc 0.000500p 7.40e-06o 0.081917p 0.003032o 0.916746o 0.719410o 0.961300n 1.715171m 1.715407m 1.715407m 0.0
0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.368274n 0.0 0.0
zp 36.19 ri 0.003251p 0.0 0.169956p 0.0 0.802249p 0.337213p 0.069092p 0.020127p 7.98e-05p 2.22e-08p 0.0 0.0
sig0.598 cc 0.003244p 0.0 0.172548p 0.0 0.933564p 0.439257p 0.911227p 1.359145p 1.359225p 1.359225p 0.0 0.0
rc 0.003251p 9.35e-05o 0.173004p 0.010326o 0.943019o 0.440945p 0.919844n 1.369451n 1.369531n 1.369531m 0.0
0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.663634n 0.0 0.0
zp 36.05 ri 0.004375p 0.0 0.405893p 0.0 1.807249n 0.433781p 0.088886p 0.007540p 3.83e-06p 5.83e-11p 0.0 0.0
sig0.524 cc 0.004366p 0.0 0.408983p 0.0 2.117498p 0.665930p 1.990576p 2.646715p 2.646719p 2.646719p 0.0 0.0
rc 0.004375p 8.09e-05o 0.409949p 0.020844o 2.137194m 0.668872p 2.008379m 2.667401m 2.667405m 2.667405l 0.0
0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.517596n 0.0 0.0
zp 36.76 ri 0.000171p 0.0 0.028502p 0.0 0.501901p 0.674715p 0.138188p 0.177045p 0.003247p 5.85e-06p 6.85e-10p
0.0
sig0.611 cc 0.000170p 0.0 0.028651p 0.0 0.523720p 0.732177p 0.623312p 1.513458p 1.516704p 1.516710p 6.85e-10p
0.0
rc 0.000171p 2.68e-06o 0.028660p 0.000994o 0.524504o 0.732410o 0.624039o 1.514451n 1.517698n 1.517704m 6.85e-10p
0.0

kr-rb branching from 70bal1; se half lives from 80eng2; br, kr, rb, sr, y half lives from 89wal1.

1

mass number 91 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 34 se g 35 br g 36 kr d 36 kr g 37 rb d 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb g 42 mo g
half life 0.27s 0.54 s 0.360s 8.6 s 1.84 s 58.0 s 4.53 s 9.5 h 58.5 d stable long 15.5 m
lambda 2.567e+00 1.284e+00 1.925e+00 8.060e-02 3.767e-01 1.195e-02 1.530e-01 2.027e-05 1.371e-07 0.0 0.0 7.453e-
04
z - 1 g 100.0000 75.5620 0.0 81.9000 0.0 100.0000 0.0 100.0000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

z - 0 m 0.0 0.0 42.7300 100.0000 0.0330 100.0000 0.0100 100.0000 0.0 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.424987j 0.0 0.0
zp 36.73 ri 0.000223p 0.073110p 0.0 2.539666n 0.0 3.187744n 0.0 0.629805p 0.003797p 2.17e-06p 2.68e-11p 0.0
sig0.554 cc 0.000223p 0.073263p 0.0 2.600216p 0.0 5.787524p 0.0 6.417234p 6.421030p 6.421032p 2.68e-11p 0.0
rc 0.000223p 0.073278p 0.003274o 2.602956m 0.000356m 5.791056l 0.000398m 6.421259l 6.425056k 6.425058j 2.68e-11p 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.380410n 0.0 0.0
zp 36.21 ri 0.003613p 0.328363p 0.0 3.044309n 0.0 0.999118n 0.0 0.038985p 3.27e-05p 1.95e-09p 0.0 0.0
sig0.536 cc 0.003605p 0.330351p 0.0 3.317572p 0.0 4.314817p 0.0 4.353714p 4.353746p 4.353746p 0.0 0.0
rc 0.003613p 0.331094p 0.031193o 3.346668m 0.000852m 4.346637l 0.000447m 4.386069l 4.386102l 4.386102l 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.396487i 2.496758i 2.446622i 0.0 0.0
zp 36.73 ri 0.000646p 0.068029p 0.0 0.815134p 0.0 1.292130n 0.0 0.272477p 0.007316p 2.03e-05p 5.55e-09p 0.0
sig0.643 cc 0.000646p 0.068575p 0.0 0.874119p 0.0 2.160595p 0.0 2.435989p 2.443162p 2.443182p 5.46e-09p 0.0
rc 0.000646p 0.068517p 0.006614o 0.877863o 0.000149o 2.170142l 0.000204m 2.442823i 2.450140h 2.450160h 5.55e-09p 0.0
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.002497n 0.0 0.0
zp 36.96 ri 0.000249p 0.052185p 0.0 1.117531n 0.0 2.856832n 0.0 0.944784p 0.036763p 0.000145p 5.24e-08p 1.66e-12p
sig0.632 cc 0.000249p 0.052358p 0.0 1.161249p 0.0 4.017532p 0.0 4.962055p 4.998806p 4.998951p 5.24e-08p 1.66e-12p
rc 0.000249p 0.052374p 0.003595o 1.164020m 0.000147o 4.020999m 0.000304m 4.966087m 5.002850m 5.002994l 5.24e-08p 1.66e-12p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.252930l 0.0 0.0 0.0
zp 36.53 ri 0.002256p 0.203078p 0.0 1.835078n 0.0 1.973784n 0.0 0.252142p 0.003282p 3.78e-06p 3.57e-10p 0.0
sig0.621 cc 0.002252p 0.204413p 0.0 2.005724p 0.0 3.977015p 0.0 4.228795p 4.232071p 4.232075p 3.56e-10p 0.0
rc 0.002256p 0.204783p 0.021461o 2.024256m 0.000377m 3.998417l 0.000391m 4.250950l 4.254233k 4.254236k 3.57e-10p 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.948323n 0.0 0.0
zp 36.72 ri 0.000157p 0.041014p 0.0 1.127832n 0.0 1.489949n 0.0 0.291913p 0.002366p 1.82e-06p 4.20e-11p 0.0

sig0.569 cc 0.000157p 0.041118p 0.0 1.161974p 0.0 2.651569p 0.0 2.943384p 2.945749p 2.945751p 4.20e-11p 0.0
rc 0.000157p 0.041132p 0.002633o 1.164152m 0.000196o 2.654297l 0.000235m 2.946444m 2.948810m 2.948812l 4.20e-11p 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.144357k 2.124222i 2.043683n 0.0 0.0
zp 36.86 ri 3.03e-05p 0.016728p 0.0 0.536307p 0.0 1.299065n 0.0 0.272241p 0.003998p 3.17e-06p 1.26e-10p 0.0
sig0.565 cc 3.02e-05p 0.016716p 0.0 0.549210p 0.0 1.848250p 0.0 2.121317p 2.125336p 2.125340p 1.30e-10p 0.0
rc 3.03e-05p 0.016751p 0.001056o 0.551082o 8.23e-05o 1.850229m 0.000193m 2.122663j 2.126660i 2.126664i 1.26e-10p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.747796n 0.0 0.0
zp 36.60 ri 0.000383p 0.056759p 0.0 0.699260p 0.0 0.880028p 0.0 0.115729p 0.001320p 1.10e-06p 6.21e-11p 0.0
sig0.598 cc 0.000382p 0.056989p 0.0 0.746747p 0.0 1.626139p 0.0 1.741752p 1.743070p 1.743071p 6.20e-11p 0.0
rc 0.000383p 0.057048p 0.004855o 0.750838o 0.000130o 1.630996n 0.000165m 1.746889n 1.748209n 1.748210m 6.21e-11p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.222299n 0.0 0.0
zp 36.45 ri 0.000331p 0.114909p 0.0 1.636436n 0.0 1.412657n 0.0 0.071156p 0.000142p 8.87e-09p 0.0 0.0
sig0.524 cc 0.000331p 0.115051p 0.0 1.731809p 0.0 3.143496p 0.0 3.214584p 3.214726p 3.214726p 0.0 0.0
rc 0.000331p 0.115159p 0.008405o 1.739157m 0.000311o 3.152125l 0.000327m 3.223608l 3.223750l 3.223750l 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.887011n 0.0 0.0
zp 37.18 ri 1.10e-05p 0.005481p 0.0 0.249945p 0.0 1.052051n 0.0 0.551529p 0.028499p 0.000142p 5.14e-08p 1.49e-12p
sig0.611 cc 1.10e-05p 0.005489p 0.0 0.254518p 0.0 1.306525p 0.0 1.858022p 1.886519p 1.886661p 5.14e-08p 1.49e-12p
rc 1.10e-05p 0.005489p 0.000286o 0.254727p 2.86e-05o 1.306806m 9.62e-05o 1.858431m 1.886930m 1.887072m 5.14e-08p 1.49e-12p

y half life from 80eng2; se,br,kr,rb,sr,y half lives from 89wal1.
1

nuclide	34 se g	35 br g	36 kr d	36 kr g	37 rb d	37 rb g	38 sr d	38 sr g	39 y g	40 zr g	41 nb g	42 mo g
half life	0.168s	0.34 s	0.176s	1.84 s	1.29 s	4.48 s	5.86s	2.71 h	3.54 h	stable	2.e7y	stable

```
 lambda      4.126e+00 2.039e+00 3.938e+00 3.767e-01 5.373e-01 1.547e-01 1.183e-01 7.105e-05 5.439e-05       0.0 1.099e-15
0.0
  z - 1 g    100.0000  100.0000       0.0   57.2700       0.0   99.9670       0.0   99.9900  100.0000  100.0000 -100.0000       0.0
  z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
  z - 0 m       0.0       0.0   25.0890  100.0000    2.0100  100.0000    1.3500  100.0000       0.0       0.0       0.0       0.0
  u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.107952j      0.0       0.0
 zp 37.13 ri 8.81e-06p 0.007654p      0.0  1.074200n      0.0  2.895517n      0.0  2.066957n 0.030873p 7.83e-05p 2.66e-09p      0.0
 sig0.554 cc 8.80e-06p 0.007655p      0.0  1.077506p      0.0  3.970756p      0.0  6.040345p 6.071185p 6.071263p 2.66e-09p      0.0
          rc 8.81e-06p 0.007663p 0.000171o 1.078759m 0.004739o 3.978658m 0.034263m 6.079481l 6.110353k 6.110431j 2.66e-09p
0.0
  u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.758718n      0.0       0.0
 zp 36.60 ri 0.000285p 0.072715p      0.0  2.535699n      0.0  1.870774n      0.0  0.282575p 0.000677p 1.85e-07p      0.0       0.0
 sig0.536 cc 0.000285p 0.072936p      0.0  2.576258p      0.0  4.447550p      0.0  4.729588p 4.730264p 4.730264p      0.0       0.0
          rc 0.000285p 0.073000p 0.003109o 2.580615m 0.022896m 4.473434l 0.054445m 4.810007l 4.810684l 4.810684l      0.0
0.0
  pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.777518i 2.937952i 2.846895i      0.0       0.0
 zp 37.14 ri 5.80e-05p 0.015420p      0.0  0.443564p      0.0  1.583148n      0.0  0.764423o 0.050580p 0.000348p 2.48e-07p 1.69e-
11p
 sig0.643 cc 5.78e-05p 0.015435p      0.0  0.451342p      0.0  2.030706p      0.0  2.801741p 2.850252p 2.850594p 2.43e-07p 1.66e-
11p
          rc 5.80e-05p 0.015478p 0.000516o 0.452944p 0.002948o 2.038890m 0.018131m 2.821240i 2.871820h 2.872168h 2.48e-07p
1.69e-11p
  u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.170898n      0.0       0.0
 zp 37.36 ri 1.56e-05p 0.008399p      0.0  0.440797p      0.0  2.588694n      0.0  1.940870n 0.181416p 0.001813p 1.72e-06p 1.45e-
10p
 sig0.632 cc 1.56e-05p 0.008409p      0.0  0.445393p      0.0  3.032912p      0.0  4.974837p 5.156149p 5.157963p 1.72e-06p 1.45e-
10p
          rc 1.56e-05p 0.008414p 0.000220o 0.445835p 0.002326o 3.036709m 0.023031m 5.000307l 5.181722l 5.183537l 1.72e-06p
1.45e-10p
  u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.790397n      0.0       0.0
 zp 36.93 ri 0.000213p 0.050011p      0.0  1.111963n      0.0  2.762480n      0.0  0.837274p 0.027770p 8.54e-05p 2.20e-08p      0.0
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sig0.621 cc 0.000212p 0.050184p 0.0 1.140412p 0.0 3.902432p 0.0 4.739753p 4.767502p 4.767587p 2.20e-08p 0.0
rc 0.000213p 0.050224p 0.001852o 1.142578m 0.008639o 3.913320m 0.040021m 4.790225m 4.817995m 4.818080l 2.20e-08p 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.463270n 0.0 0.0
zp 37.12 ri 8.68e-06p 0.006154p 0.0 0.589394p 0.0 1.750234n 0.0 1.084998n 0.022396p 6.53e-05p 4.25e-09p 0.0
sig0.569 cc 8.67e-06p 0.006158p 0.0 0.592511p 0.0 2.341992p 0.0 3.427746p 3.450124p 3.450190p 4.25e-09p 0.0
rc 8.68e-06p 0.006162p 0.000176o 0.593099o 0.003427o 2.346565m 0.023866m 3.455194l 3.477590l 3.477655l 4.25e-09p 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.917548j 0.0 2.473354n 0.0 0.0
zp 37.27 ri 1.33e-06p 0.002469p 0.0 0.247887p 0.0 1.674831n 0.0 0.960723o 0.040335p 0.000110p 1.51e-08p 0.0
sig0.565 cc 1.32e-06p 0.002460p 0.0 0.248288p 0.0 1.916433p 0.0 2.881136p 2.924913p 2.925032p 1.64e-08p 0.0
rc 1.33e-06p 0.002471p 3.58e-05o 0.249337p 0.000967o 1.925053m 0.013764o 2.899348j 2.939683j 2.939793j 1.51e-08p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.097355n 0.0 0.0
zp 37.02 ri 2.56e-05p 0.011336p 0.0 0.387976p 0.0 1.247475n 0.0 0.429346p 0.014051p 3.57e-05p 6.28e-09p 0.0
sig0.598 cc 2.56e-05p 0.011354p 0.0 0.394319p 0.0 1.641461p 0.0 2.071024p 2.085065p 2.085101p 6.28e-09p 0.0
rc 2.56e-05p 0.011362p 0.000387o 0.394870p 0.002997o 1.645212m 0.018501m 2.092894n 2.106946n 2.106981m 6.28e-09p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.651274n 0.0 0.0
zp 36.84 ri 1.51e-05p 0.019656p 0.0 0.931070p 0.0 2.316946n 0.0 0.369034p 0.002696p 6.61e-07p 4.77e-12p 0.0
sig0.524 cc 1.50e-05p 0.019660p 0.0 0.941966p 0.0 3.258851p 0.0 3.627685p 3.630379p 3.630380p 4.77e-12p 0.0
rc 1.51e-05p 0.019671p 0.000525o 0.942860o 0.007054o 3.266549m 0.039915m 3.675171m 3.677867m 3.677868l 4.77e-12p 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.267461n 0.0 0.0
zp 37.59 ri 4.91e-07p 0.000670p 0.0 0.086218p 0.0 0.875107p 0.0 1.152186n 0.146382p 0.002087p 2.08e-06p 1.84e-10p
sig0.611 cc 4.90e-07p 0.000670p 0.0 0.086553p 0.0 0.961261p 0.0 2.113830p 2.260153p 2.262241p 2.08e-06p 1.83e-10p
rc 4.91e-07p 0.000670p 1.28e-05o 0.086614p 0.000362o 0.962054o 0.007044o 2.121188m 2.267570m 2.269659l 2.08e-06p 1.84e-10p

se half life from 80eng2; br, kr, rb, sr, y half lives from 89wal1.

1

mass number 93 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 35 br g 36 kr g 37 rb d 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb m 41 nb g 42 mo g 43 tc g
half life 0.176s 1.29 s 0.210s 5.85 s 2.76 s 7.4 m 10.2 h 1.5e6y 12. y stable 3.e3 y 2.73 h
lambda 3.938e+00 5.373e-01 3.301e+00 1.185e-01 2.511e-01 1.561e-03 1.888e-05 1.465e-14 1.832e-09 0.0 7.327e-39
7.053e-05
z - 1 g 100.0000 74.9110 0.0 97.9900 0.0 98.6500 100.0000 100.0000 95.0000 5.0000 -15.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -85.0000 0.0
z - 0 m 0.0 0.0 6.1300 100.0000 10.0000 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 6.150530j 0.0 0.0 0.0 0.0 0.0
zp 37.52 ri 0.000681p 0.235236p 0.0 2.304531n 0.0 3.361114m 0.191891p 0.001237p 3.14e-08p 1.53e-07p 2.32e-12p
0.0
sig0.554 cc 0.000676p 0.234174p 0.0 2.519326p 0.0 5.863082p 6.054574p 6.055803p 5.753013p 6.055803p 2.31e-12p
0.0
rc 0.000681p 0.235747p 0.002486o 2.538024m 0.097852o 5.962727k 6.154619j 6.155856j 5.848063j 6.155856i 2.33e-12p
0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.123818n 0.0 0.0 0.0 0.0 0.0
zp 36.99 ri 0.012393p 1.129835n 0.0 2.892625n 0.0 1.039904n 0.010510p 8.49e-06p 2.06e-11p 1.00e-10p 0.0 0.0
sig0.536 cc 0.012366p 1.136615p 0.0 4.005096p 0.0 4.994763p 5.005250p 5.005259p 4.754996p 5.005259p 0.0 0.0
rc 0.012393p 1.139119m 0.024139o 4.032987m 0.270571m 5.289017l 5.299527l 5.299536l 5.034559l 5.299536k 0.0
0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.891054i 0.0 0.0 0.0 0.0 0.0
zp 37.55 ri 0.002055p 0.145103p 0.0 1.196793n 0.0 1.293225n 0.190995p 0.003429p 6.94e-07p 5.61e-06p 1.13e-09p
0.0
sig0.643 cc 0.002034p 0.145098p 0.0 1.327052p 0.0 2.613647p 2.806866p 2.810259p 2.669746p 2.810265p 1.12e-09p
0.0
rc 0.002055p 0.146643p 0.002538o 1.343026m 0.084399o 2.702520l 2.893515i 2.896944i 2.752097i 2.896950i 1.13e-09p
0.0
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.017960k 0.0 0.0 0.0 0.0 0.0

zp 37.76 ri 0.000875p 0.115066p 0.0 1.591087n 0.0 2.680439n 0.583126p 0.014644p 3.96e-06p 3.20e-05p 8.02e-09p
0.0
sig0.632 cc 0.000871p 0.115183p 0.0 1.696996p 0.0 4.359325p 4.945219p 4.959795p 4.711809p 4.959830p 7.99e-09p
0.0
rc 0.000875p 0.115722p 0.001521o 1.706004m 0.081446o 4.444858l 5.027984k 5.042628k 4.790501k 5.042664k 8.02e-09p
0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.028276k 0.0 0.0 0.0 0.0 0.0
zp 37.34 ri 0.007382p 0.424275p 0.0 2.536043n 0.0 1.802744n 0.153403p 0.001270p 1.00e-07p 8.12e-07p 5.33e-11p
0.0
sig0.621 cc 0.007341p 0.427410p 0.0 2.942591p 0.0 4.721147p 4.873696p 4.874959p 4.631211p 4.874959p 5.30e-11p
0.0
rc 0.007382p 0.429805p 0.007339o 2.964547m 0.187388m 4.914657l 5.068060k 5.069330k 4.815864k 5.069331j 5.33e-11p
0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.079187n 0.0 0.0 0.0 0.0 0.0
zp 37.51 ri 0.000702p 0.169955p 0.0 1.598582n 0.0 2.136555n 0.145960p 0.001107p 4.61e-08p 2.25e-07p 5.62e-12p
0.0
sig0.569 cc 0.000699p 0.169811p 0.0 1.759314p 0.0 3.878740p 4.024419p 4.025522p 3.824246p 4.025523p 5.60e-12p
0.0
rc 0.000702p 0.170480p 0.002182o 1.767818m 0.085160o 3.965668l 4.111628l 4.112735l 3.907099l 4.112736l 5.62e-12p
0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.802426n 0.0 0.0 0.0 0.0 0.0
zp 37.69 ri 0.000143p 0.047979p 0.0 0.971931p 0.0 1.546159n 0.211775p 0.001938p 1.61e-07p 7.86e-07p 2.24e-11p
0.0
sig0.565 cc 0.000142p 0.047880p 0.0 1.014845p 0.0 2.551550p 2.763297p 2.765226p 2.626965p 2.765227p 2.23e-11p
0.0
rc 0.000143p 0.048086p 0.000516o 1.019566o 0.053102o 2.605063m 2.816838l 2.818776l 2.677837l 2.818777l 2.24e-11p
0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.537738n 0.0 0.0 0.0 0.0 0.0
zp 37.43 ri 0.001542p 0.147954p 0.0 1.221903n 0.0 1.042861n 0.092763p 0.000685p 6.18e-08p 3.02e-07p 1.29e-11p
0.0
sig0.598 cc 0.001535p 0.148476p 0.0 1.362869p 0.0 2.392887p 2.485256p 2.485938p 2.361641p 2.485938p 1.28e-11p
0.0

rc 0.001542p 0.149109p 0.002431o 1.370445m 0.090710o 2.485514l 2.578277l 2.578962l 2.450014l 2.578962l 1.29e-11p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.259820n 0.0 0.0 0.0 0.0 0.0
zp 37.23 ri 0.002091p 0.349376p 0.0 2.607684n 0.0 1.225797n 0.031559p 2.97e-05p 1.46e-10p 7.11e-10p 0.0 0.0
sig0.524 cc 0.002085p 0.349935p 0.0 2.944462p 0.0 4.137731p 4.169199p 4.169229p 3.960768p 4.169229p 0.0 0.0
rc 0.002091p 0.350942p 0.005093o 2.956665m 0.205898m 4.348445l 4.380004l 4.380033l 4.161032l 4.380033l 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.637047n 0.0 0.0 0.0 0.0 0.0
zp 38.01 ri 5.10e-05p 0.017950p 0.0 0.503974p 0.0 1.576701n 0.528456p 0.019880p 1.02e-05p 4.96e-05p 1.51e-08p 0.0
sig0.611 cc 5.08e-05p 0.017947p 0.0 0.520459p 0.0 2.091654p 2.619778p 2.639613p 2.507642p 2.639672p 1.51e-08p 0.0
rc 5.10e-05p 0.017988p 0.000178o 0.521778o 0.021277o 2.112712m 2.641168l 2.661049l 2.528006l 2.661108l 1.51e-08p 0.0

kr, rb half lives from 80eng2; br, kr, rb, sr, y, zr half lives from 89wal1.

1

mass number 94 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 34 se g 35 br g 36 kr g 37 rb d 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb m 41 nb g 42 mo g
half life 0.111s 0.21 s 0.78 s 2.73 s 0.38 s 1.25 m 18.7 m stable 6.26 m 2.0e4y stable
lambda 0.0 6.245e+00 3.301e+00 8.887e-01 2.539e-01 1.824e+00 9.242e-03 6.178e-04 0.0 1.845e-03 1.099e-12 0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 93.8700 0.0 90.0000 100.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.2000
z - 0 m 0.0 0.0 0.0 7.5050 100.0000 8.6200 100.0000 0.0 0.0 0.0 99.8000 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.412408n 0.0 0.0 0.0
zp 37.92 ri 2.62e-09p 2.70e-05p 0.040524p 0.0 0.940180p 0.0 4.872062n 0.618272p 0.016645p 2.48e-06p 4.22e-06p 3.87e-10p
sig0.554 cc 2.61e-09p 2.70e-05p 0.040494p 0.0 0.976954p 0.0 5.753421p 6.370911p 6.387532p 2.48e-06p 6.69e-06p 6.69e-06p
rc 2.62e-09p 2.70e-05p 0.040551p 0.000279o 0.978524o 0.031025o 5.783759m 6.402031m 6.418676l 2.48e-06p 6.70e-06p 6.70e-06p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.405824n 0.0 0.0 0.0
zp 37.37 ri 3.30e-07p 0.001063p 0.392725p 0.0 2.331473n 0.0 2.830258n 0.073073p 0.000253p 3.90e-09p 6.63e-09p 0.0
sig0.536 cc 3.28e-07p 0.001058p 0.392014p 0.0 2.690201p 0.0 5.262798p 5.335543p 5.335794p 3.88e-09p 1.05e-08p 1.05e-08p
rc 3.30e-07p 0.001063p 0.393788p 0.004592o 2.705713m 0.125339m 5.390739l 5.463812l 5.464065l 3.90e-09p 1.05e-08p 1.05e-08p
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.487454n 0.0 0.0 0.0
zp 37.96 ri 1.32e-07p 0.000233p 0.041165p 0.0 0.804600p 0.0 1.994472n 0.681343p 0.029208p 3.56e-05p 0.000101p 6.42e-08p
sig0.643 cc 1.32e-07p 0.000233p 0.041315p 0.0 0.841931p 0.0 2.754779p 3.435146p 3.464295p 3.56e-05p 0.000137p 0.000137p
rc 1.32e-07p 0.000233p 0.041398p 0.000534o 0.843994o 0.029063o 2.783130m 3.464473m 3.493681l 3.56e-05p 0.000137p 0.000137p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.160992n 0.0 0.0 0.0
zp 38.14 ri 2.21e-08p 7.73e-05p 0.024735p 0.0 0.790921p 0.0 2.925199n 1.403369n 0.081249p 0.000127p 0.000361p 2.72e-07p
sig0.632 cc 2.20e-08p 7.73e-05p 0.024782p 0.0 0.813282p 0.0 3.659508p 5.061556p 5.142704p 0.000127p 0.000487p 0.000487p
rc 2.21e-08p 7.74e-05p 0.024813p 0.000250o 0.814462o 0.022480o 3.680695m 5.084065l 5.165314l 0.000127p 0.000487p 0.000488p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.339297n 0.0 0.0 0.0
zp 37.75 ri 4.41e-07p 0.000781p 0.118936p 0.0 1.759962n 0.0 2.978121n 0.616722p 0.013466p 6.93e-06p 1.97e-05p 4.38e-09p
sig0.621 cc 4.40e-07p 0.000779p 0.119366p 0.0 1.867330p 0.0 4.665239p 5.280511p 5.293938p 6.91e-06p 2.66e-05p 2.66e-05p
rc 4.41e-07p 0.000781p 0.119717p 0.001538o 1.873877m 0.066782o 4.731393l 5.348115l 5.361581l 6.93e-06p 2.66e-05p 2.67e-05p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.735492n 0.0 0.0 0.0
zp 37.91 ri 5.35e-09p 3.94e-05p 0.035553p 0.0 0.817913p 0.0 3.395746n 0.538236p 0.014696p 3.67e-06p 6.25e-06p 8.07e-10p

sig0.569 cc 5.34e-09p 3.94e-05p 0.035538p 0.0 0.850127p 0.0 4.162789p 4.700319p 4.714992p 3.66e-06p 9.89e-06p 9.90e-06p
rc 5.35e-09p 3.94e-05p 0.035592p 0.000279o 0.851603o 0.025737o 4.187925m 4.726161m 4.740857l 3.67e-06p 9.91e-06p 9.92e-06p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.686789n 0.0 0.0 0.0
zp 38.10 ri 3.28e-10p 7.49e-06p 0.008405p 0.0 0.523072p 0.0 2.296602n 0.877548p 0.025111p 1.53e-05p 2.61e-05p 3.42e-09p
sig0.565 cc 3.27e-10p 7.48e-06p 0.008405p 0.0 0.530490p 0.0 2.775186p 3.652094p 3.677181p 1.53e-05p 4.14e-05p 4.14e-05p
rc 3.28e-10p 7.49e-06p 0.008413p 5.10e-05o 0.531020o 0.011735o 2.786255m 3.663802m 3.688913m 1.53e-05p 4.14e-05p 4.14e-05p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.136045n 0.0 0.0 0.0
zp 37.84 ri 3.61e-08p 0.000143p 0.039510p 0.0 0.869401p 0.0 1.857879n 0.426715p 0.008922p 5.22e-06p 8.89e-06p 1.52e-09p
sig0.598 cc 3.61e-08p 0.000143p 0.039561p 0.0 0.904674p 0.0 2.674850p 3.100777p 3.109678p 5.21e-06p 1.41e-05p 1.41e-05p
rc 3.61e-08p 0.000143p 0.039653p 0.000475o 0.907099o 0.033685o 2.707953m 3.134668m 3.143590m 5.22e-06p 1.41e-05p 1.41e-05p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.818485n 0.0 0.0 0.0
zp 37.62 ri 6.81e-09p 0.000135p 0.082948p 0.0 1.980166n 0.0 2.690007n 0.226900p 0.000800p 3.36e-08p 5.73e-08p 0.0
sig0.524 cc 6.79e-09p 0.000134p 0.082824p 0.0 2.052019p 0.0 4.543624p 4.769879p 4.770676p 3.35e-08p 9.06e-08p 9.06e-08p
rc 6.81e-09p 0.000135p 0.083082p 0.000824o 2.058980m 0.075593o 4.618682l 4.845581l 4.846381l 3.36e-08p 9.09e-08p 9.09e-08p
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.356242n 0.0 0.0 0.0
zp 38.42 ri 2.40e-10p 2.80e-06p 0.002904p 0.0 0.210018p 0.0 1.699982n 1.326103n 0.134423p 0.000398p 0.000678p 8.14e-07p
sig0.611 cc 2.39e-10p 2.80e-06p 0.002906p 0.0 0.212645p 0.0 1.892038p 3.217636p 3.351990p 0.000398p 0.001075p 0.001077p
rc 2.40e-10p 2.80e-06p 0.002907p 2.09e-05o 0.212768p 0.004992o 1.896465m 3.222567l 3.356990l 0.000398p 0.001076p 0.001077p

br, kr, rb, sr, y half lives from 89wal1.
1

mass number 95 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 36 kr g 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb m 41 nb g 42 mo g 43 tc m 43 tc g 44 ru g
half life 0.78 s 0.377s 0.204s 25.1s 10.3 m 64.02d 3.61 d 34.97d stable 61. d 20.0 h 1.64 h
lambda 8.887e-01 1.839e+00 3.398e+00 2.762e-02 1.122e-03 1.253e-07 2.222e-06 2.294e-07 0.0 1.315e-07 9.627e-06
1.174e-04
z - 1 g 100.0000 92.4950 0.0 91.3800 100.0000 100.0000 1.0000 99.0000 100.0000 -96.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 14.0000 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0 4.0000 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.334303j 0.0 0.0 0.0
zp 38.32 ri 0.003723p 0.356474p 0.0 4.051099n 1.826328n 0.118840p 3.57e-05p 0.000174p 3.33e-08p 0.0 0.0 0.0
sig0.554 cc 0.003721p 0.359742p 0.0 4.380789p 6.206390p 6.325176p 0.063287p 6.325386p 6.325386p 0.0 0.0 0.0
rc 0.003723p 0.359918p 0.009101o 4.389093m 6.215422l 6.334262l 0.063378l 6.334472k 6.334472j 0.0 0.0 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.594979n 0.0 0.0 0.0
zp 37.76 ri 0.061180p 1.397465n 0.0 3.840131n 0.372429p 0.003632p 1.17e-07p 5.72e-07p 8.94e-12p 0.0 0.0 0.0
sig0.536 cc 0.061006p 1.449924p 0.0 5.170194p 5.541653p 5.545275p 0.055453p 5.545275p 5.545275p 0.0 0.0 0.0
rc 0.061180p 1.454053m 0.065779o 5.234624m 5.607053m 5.610685m 0.056107m 5.610686m 5.610686l 0.0 0.0
0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.694125i 0.0 0.0 3.764393n 0.0 0.0 0.0
zp 38.36 ri 0.007117p 0.330578p 0.0 1.840701n 1.393490n 0.139163p 0.000178p 0.001442p 1.92e-06p 2.43e-11p 1.96e-10p
0.0
sig0.643 cc 0.007107p 0.336687p 0.0 2.149960p 3.542396p 3.681510p 0.036991p 3.683113p 3.683115p 2.40e-11p 1.95e-10p
0.0
rc 0.007117p 0.337161p 0.014595o 2.163393m 3.556883k 3.696046i 0.037139i 3.697667i 3.697669i 2.43e-11p 1.97e-10p
0.0
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.027801j 0.0 0.0 0.0 0.0 0.0 0.0
zp 38.53 ri 0.003332p 0.257709p 0.0 2.168468n 2.302699n 0.309269p 0.000503p 0.004066p 6.50e-06p 9.12e-11p 7.38e-10p
0.0

sig0.632 cc 0.003329p 0.260593p 0.0 2.407819p 4.709576p 5.018766p 0.050690p 5.023332p 5.023338p 9.11e-11p 7.41e-10p 0.0
rc 0.003332p 0.260790p 0.009206o 2.415984m 4.718683l 5.027952j 0.050782j 5.032521j 5.032527j 9.12e-11p 7.41e-10p 0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.260350j 0.0 0.0 0.0 0.0 0.0 0.0
zp 38.15 ri 0.020487p 0.755789p 0.0 2.990787n 1.448413n 0.079387p 4.58e-05p 0.000370p 1.86e-07p 0.0 5.99e-12p 0.0
sig0.621 cc 0.020444p 0.773133p 0.0 3.700380p 5.147463p 5.226686p 0.052313p 5.227101p 5.227101p 0.0 6.01e-12p 0.0
rc 0.020487p 0.774738o 0.034650o 3.733393m 5.181806k 5.261193j 0.052658j 5.261609j 5.261609j 0.0 6.02e-12p 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.422485n 0.0 0.0 0.0
zp 38.30 ri 0.003717p 0.295129p 0.0 2.734157n 1.319051n 0.087421p 3.66e-05p 0.000179p 4.77e-08p 0.0 0.0 0.0
sig0.569 cc 0.003714p 0.298332p 0.0 3.007911p 4.326128p 4.413480p 0.044171p 4.413696p 4.413696p 0.0 0.0 0.0
rc 0.003717p 0.298567p 0.010456o 3.017444m 4.336495l 4.423916l 0.044276l 4.424131l 4.424131l 0.0 0.0 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.735006i 0.0 0.0 4.328983n 0.0 0.0 0.0
zp 38.51 ri 0.000680p 0.135502p 0.0 1.702282n 1.769304n 0.150461p 0.000151p 0.000738p 2.53e-07p 0.0 2.87e-12p 0.0
sig0.565 cc 0.000680p 0.136264p 0.0 1.829798p 3.595162p 3.746497p 0.037605p 3.747321p 3.747322p 0.0 2.68e-12p 0.0
rc 0.000680p 0.136131p 0.004078o 1.830757m 3.600061k 3.750522i 0.037656i 3.751411i 3.751411i 0.0 2.90e-12p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.736669n 0.0 0.0 0.0
zp 38.25 ri 0.006331p 0.384921p 0.0 2.088503n 1.207518n 0.069169p 5.45e-05p 0.000266p 1.05e-07p 0.0 1.88e-12p 0.0
sig0.598 cc 0.006323p 0.390236p 0.0 2.447003p 3.653257p 3.722329p 0.037278p 3.722650p 3.722650p 0.0 1.90e-12p 0.0
rc 0.006331p 0.390777p 0.016823o 2.462418m 3.669936l 3.739105l 0.037446l 3.739425l 3.739426l 0.0 1.90e-12p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.037960n 0.0 0.0 0.0
zp 38.00 ri 0.010980p 0.866790p 0.0 3.354954n 0.843320p 0.010358p 7.52e-07p 3.67e-06p 5.64e-11p 0.0 0.0 0.0
sig0.524 cc 0.010960p 0.875295p 0.0 4.157789p 4.999791p 5.010130p 0.050102p 5.010134p 5.010134p 0.0 0.0 0.0
rc 0.010980p 0.876946o 0.034709o 4.191016m 5.034337m 5.044695m 0.050448m 5.044699m 5.044699l 0.0 0.0 0.0

cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.015504n 0.0 0.0 0.0
zp 38.83 ri 0.000278p 0.057654p 0.0 1.148194n 2.250829n 0.549877p 0.002111p 0.010308p 2.57e-05p 6.38e-10p 3.12e-09p 0.0
sig0.611 cc 0.000278p 0.057903p 0.0 1.201405p 3.452019p 4.001822p 0.042129p 4.014240p 4.014266p 6.38e-10p 3.14e-09p 0.0
rc 0.000278p 0.057911p 0.001367o 1.202481m 3.453310m 4.003187l 0.042143l 4.015606l 4.015632l 6.38e-10p 3.14e-09p 0.0

rb half life from 80eng2; kr, rb, sr, y, zr, nb half lives 89wal; tc half life 90bur1.

1

mass number 96 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 34 se g 35 br g 36 kr g 37 rb g 38 sr d 38 sr g 39 y m 39 y g 40 zr d 40 zr g 41 nb g 42 mo g
half life 0.089s 0.293s 0.199s 0.170s 1.06 s 9.6 s 6.2 s 3.7 s stable 23.4 h stable
lambda 0.0 7.788e+00 2.366e+00 3.483e+00 4.077e+00 6.539e-01 7.220e-02 1.118e-01 1.873e-01 0.0 8.228e-06 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 86.0000 0.0 100.0000 0.0 100.0000 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 26.6000 100.0000 0.0050 100.0000 0.0540 100.0000 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.219325n 0.0 0.0
zp 38.72 ri 0.0 1.45e-08p 0.000262p 0.064744p 0.0 2.819328n 2.436448n 0.240969p 0.0 0.664028p 0.003015p 2.15e-06p
sig0.554 cc 0.0 1.45e-08p 0.000262p 0.064996p 0.0 2.875701p 2.436114p 5.552749p 0.0 6.216679p 0.003015p 0.003017p
rc 0.0 1.45e-08p 0.000262p 0.065006p 0.002574o 2.877807m 2.436498m 5.555274l 0.002310n 6.221611l 0.003015p 0.003018p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.794088n 0.0 0.0
zp 38.14 ri 3.99e-11p 1.72e-06p 0.007812p 0.462038p 0.0 4.358857m 0.875832p 0.086629p 0.0 0.037512p 2.02e-05p 1.18e-09p
sig0.536 cc 3.98e-11p 1.72e-06p 0.007796p 0.468831p 0.0 4.765163p 0.874011p 5.725615p 0.0 5.763045p 2.02e-05p 2.02e-05p
rc 3.99e-11p 1.72e-06p 0.007813p 0.469852p 0.037992o 4.800921m 0.875997o 5.763547l 0.003049n 5.804108l 2.02e-05p 2.02e-05p

pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.008431i 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.124293n 0.008431i 0.0
zp 38.76 ri 7.22e-11p 8.29e-07p 0.000917p 0.103333p 0.0 1.320262n 2.074696n 0.132426p 0.0 0.502178p 0.008424i 3.33e-05p
sig0.643 cc 7.21e-11p 8.28e-07p 0.000916p 0.104062p 0.0 1.409293p 2.070967p 3.612449p 0.0 4.113721p 0.013939p 0.013980p
rc 7.22e-11p 8.29e-07p 0.000918p 0.104250p 0.005881o 1.415798m 2.074729m 3.622954l 0.001633n 4.126765l 0.008424h 0.008457h
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.007623j 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.269958n 0.0 0.0
zp 38.92 ri 7.11e-12p 1.67e-07p 0.000343p 0.065418p 0.0 1.283072n 2.839575m 0.181224p 0.0 0.919470p 0.007638p 0.000117p
sig0.632 cc 7.08e-12p 1.66e-07p 0.000341p 0.065443p 0.0 1.334109p 2.825509p 4.339970p 0.0 5.255004p 0.032574p 0.032691p
rc 7.11e-12p 1.67e-07p 0.000343p 0.065761p 0.002815o 1.342441m 2.839600m 4.363265l 0.001684n 5.284419l 0.007638p 0.007756p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.001373k 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.299377n 0.0 0.0
zp 38.54 ri 1.97e-10p 2.53e-06p 0.002656p 0.244839p 0.0 2.264879n 2.336409n 0.149131p 0.0 0.324509p 0.001372p 5.10e-06p
sig0.621 cc 1.96e-10p 2.52e-06p 0.002654p 0.247125p 0.0 2.479019p 2.332931p 4.960860p 0.0 5.284881p 0.004317p 0.004322p
rc 1.97e-10p 2.53e-06p 0.002658p 0.247497p 0.015880o 2.493607m 2.336476m 4.979213l 0.002420n 5.306142l 0.001372p 0.001377p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.331215n 0.0 0.0
zp 38.70 ri 0.0 3.84e-08p 0.000355p 0.074331p 0.0 2.286631n 2.221239n 0.219684p 0.0 0.536144p 0.003485p 2.98e-06p
sig0.569 cc 0.0 3.84e-08p 0.000355p 0.074669p 0.0 2.351506p 2.220765p 4.791906p 0.0 5.327930p 0.003484p 0.003487p
rc 0.0 3.84e-08p 0.000355p 0.074686p 0.003420o 2.354281m 2.221287m 4.795252l 0.002210n 5.333606l 0.003485p 0.003488p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.009946i 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.728458n 0.0 0.0
zp 38.91 ri 0.0 3.54e-09p 4.54e-05p 0.029085p 0.0 1.069548n 2.670415m 0.264106p 0.0 0.699236p 0.009946p 1.11e-05p

sig0.565 cc 0.0 3.54e-09p 4.54e-05p 0.029118p 0.0 1.094369p 2.669201p 4.027557p 0.0 4.726476p 0.011829p 0.011840p
rc 0.0 3.54e-09p 4.54e-05p 0.029131p 0.000762o 1.095363m 2.670432m 4.029900l 0.001555n 4.730691l 0.009946p 0.009958p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.446037n 0.0 0.0
zp 38.65 ri 8.37e-12p 2.99e-07p 0.000708p 0.119457p 0.0 1.659959n 2.122971n 0.209962p 0.0 0.344612p 0.004463p 4.26e-06p
sig0.598 cc 8.36e-12p 2.98e-07p 0.000708p 0.120112p 0.0 1.764457p 2.122063p 4.096394p 0.0 4.440855p 0.004461p 0.004465p
rc 8.37e-12p 2.99e-07p 0.000708p 0.120164p 0.005852o 1.769152m 2.123013m 4.102127l 0.001951n 4.448691l 0.004463p 0.004467p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.417054n 0.0 0.0
zp 38.39 ri 0.0 9.88e-08p 0.000870p 0.247053p 0.0 2.943651n 1.965260n 0.194367p 0.0 0.090544p 0.000147p 7.45e-09p
sig0.524 cc 0.0 9.87e-08p 0.000869p 0.247746p 0.0 3.158454p 1.963897p 5.316582p 0.0 5.407061p 0.000147p 0.000147p
rc 0.0 9.88e-08p 0.000870p 0.247923p 0.011832o 3.168698m 1.965346m 5.328411l 0.002804n 5.421759l 0.000147p 0.000147p
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.544911n 0.0 0.0
zp 39.24 ri 0.0 2.03e-09p 1.74e-05p 0.009747p 0.0 0.534557p 2.246193n 0.222151p 0.0 1.533093o 0.087502p 0.000527p
sig0.611 cc 0.0 2.03e-09p 1.74e-05p 0.009764p 0.0 0.543043p 2.246147p 3.011336p 0.0 4.544394p 0.087500p 0.088027p
rc 0.0 2.03e-09p 1.74e-05p 0.009765p 0.000287o 0.543242o 2.246201m 3.011594m 0.001049n 4.545736l 0.087502p 0.088029p

br, kr half lives from 80eng2; rb, sr, y half lives from 89wal1.
1

mass number 97 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	36 kr g	37 rb g	38 sr d	38 sr g	39 y g	40 zr d	40 zr g	41 nb m	41 nb g	42 mo g	43 tc g	44 ru g
half life	0.1 s	0.169s	0.110s	0.42 s	3.76 s	2.0 s	16.8 h	58.1 s	1.23 h	stable	2.6e6y	2.9 d

lambda 6.931e+00 4.101e+00 6.301e+00 1.650e+00 1.843e-01 3.466e-01 1.146e-05 1.193e-02 1.565e-04 0.0 8.454e-15 2.766e-06
z - 1 g 100.0000 100.0000 0.0 73.4000 99.9950 0.0 99.9460 94.0000 6.0000 100.0000 -100.0000 -99.9600
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -0.0400
z - 0 m 0.0 0.0 13.3000 100.0000 0.0 0.2280 100.0000 0.0 100.0000 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.038587j 0.0 0.0
zp 39.11 ri 9.19e-06p 0.009668p 0.0 0.993212p 3.277502n 0.0 1.729006n 0.005333p 0.026037p 5.80e-05p 2.39e-09p 0.0
sig0.554 cc 9.19e-06p 0.009677p 0.0 1.000314p 4.277669p 0.0 6.004464p 5.649529p 6.035834p 6.035892p 2.39e-09p 0.0
rc 9.19e-06p 0.009678p 8.38e-05o 1.000400o 4.277851m 0.002772o 6.007319l 5.652213l 6.038690k 6.038748i 2.39e-09p 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.873732n 0.0 0.0
zp 38.52 ri 0.000584p 0.142243p 0.0 3.184055n 2.354446n 0.0 0.228840p 8.90e-05p 0.000434p 8.85e-08p 0.0 0.0
sig0.536 cc 0.000584p 0.142801p 0.0 3.289261p 5.643209p 0.0 5.868972p 5.516922p 5.869495p 5.869495p 0.0 0.0
rc 0.000584p 0.142827p 0.002847o 3.291737m 5.646018l 0.007605m 5.879414l 5.526739l 5.879938l 5.879938l 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.196044i 0.0 0.0 4.376735n 0.0 0.0
zp 39.15 ri 8.10e-05p 0.022028p 0.0 0.647585p 2.359248n 0.0 1.174341n 0.008507p 0.068830p 0.000557p 4.06e-07p 2.84e-11p
sig0.643 cc 8.10e-05p 0.022113p 0.0 0.664106p 3.023817p 0.0 4.197571p 3.954023p 4.273086p 4.273631p 3.97e-07p 2.77e-11p
rc 8.10e-05p 0.022109p 0.000479o 0.664292o 3.023507m 0.002859m 4.199074i 3.955637i 4.276411i 4.276969i 4.06e-07p 2.84e-11p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.892437j 0.0 0.0 0.0 0.0 0.0
zp 39.31 ri 2.21e-05p 0.010560p 0.0 0.494883p 2.616471n 0.0 1.772827n 0.016349p 0.132281p 0.001324p 1.11e-06p 8.30e-11p
sig0.632 cc 2.21e-05p 0.010580p 0.0 0.502624p 3.118640p 0.0 4.890265p 4.613195p 5.038870p 5.040194p 1.11e-06p 8.30e-11p
rc 2.21e-05p 0.010582p 0.000171o 0.502822p 3.119267m 0.002278o 4.892687j 4.615475j 5.041318j 5.042643j 1.11e-06p 8.30e-11p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 5.415066k 0.0 0.0 0.0 0.0 0.0
zp 38.92 ri 0.000259p 0.059442p 0.0 1.292150n 3.144556n 0.0 0.932171p 0.003324p 0.026893p 9.06e-05p 2.28e-08p
0.0
sig0.621 cc 0.000259p 0.059680p 0.0 1.335928p 4.479450p 0.0 5.410228p 5.088937p 5.440435p 5.440525p 2.28e-08p
0.0
rc 0.000259p 0.059701p 0.001206o 1.337176m 4.481665m 0.004220m 5.415637j 5.094022j 5.445854j 5.445944j 2.28e-08p
0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.654319n 0.0 0.0
zp 39.09 ri 1.68e-05p 0.012841p 0.0 0.960266p 3.123131n 0.0 1.528048n 0.005822p 0.028426p 7.77e-05p 5.45e-09p
0.0
sig0.569 cc 1.68e-05p 0.012857p 0.0 0.969714p 4.092679p 0.0 5.618625p 5.287330p 5.652872p 5.652950p 5.45e-09p
0.0
rc 1.68e-05p 0.012857p 0.000143o 0.969847o 4.092929m 0.003017m 5.621784l 5.290299l 5.656032l 5.656110l 5.45e-09p
0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.530331i 0.0 0.0 5.053836n 0.0 0.0
zp 39.32 ri 1.32e-06p 0.002865p 0.0 0.331500p 2.545847n 0.0 1.662003n 0.016049p 0.078355p 0.000297p 4.77e-08p
0.0
sig0.565 cc 1.33e-06p 0.002871p 0.0 0.334140p 2.883977p 0.0 4.547911p 4.289724p 4.634309p 4.634581p 4.36e-08p
0.0
rc 1.32e-06p 0.002866p 3.19e-05o 0.333636p 2.879467m 0.002280o 4.542195i 4.285712i 4.636599i 4.636896i 4.77e-08p
0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.675832n 0.0 0.0
zp 39.05 ri 4.58e-05p 0.021955p 0.0 0.809472p 2.786957n 0.0 1.027277n 0.006144p 0.029998p 9.94e-05p 1.90e-08p
0.0
sig0.598 cc 4.58e-05p 0.021999p 0.0 0.825703p 3.612474p 0.0 4.637865p 4.365737p 4.674005p 4.674104p 1.90e-08p
0.0
rc 4.58e-05p 0.022001p 0.000389o 0.826010o 3.612925m 0.003436m 4.641687l 4.369330l 4.677829l 4.677929l 1.90e-08p
0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.646506n 0.0 0.0
zp 38.77 ri 4.33e-05p 0.044440p 0.0 1.689035n 3.470945n 0.0 0.451920p 0.000445p 0.002175p 5.03e-07p 2.83e-12p
0.0

sig0.524 cc 4.33e-05p 0.044481p 0.0 1.721805p 5.192535p 0.0 5.641661p 5.303607p 5.644281p 5.644282p 2.83e-12p
0.0
rc 4.33e-05p 0.044483p 0.000593o 1.722278m 5.193137m 0.005472m 5.647724m 5.309306m 5.650345l 5.650345l 2.84e-12p
0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.844576n 0.0 0.0
zp 39.64 ri 6.69e-07p 0.001080p 0.0 0.151116p 1.790459n 0.0 2.523636n 0.063423p 0.309652p 0.005771p 6.79e-06p
6.57e-10p
sig0.611 cc 6.68e-07p 0.001080p 0.0 0.151907p 1.942289p 0.0 4.464961p 4.260484p 4.838023p 4.843800p 6.79e-06p
6.57e-10p
rc 6.69e-07p 0.001080p 1.12e-05o 0.151920p 1.942372m 0.001126o 4.466085l 4.261543l 4.839159l 4.844937l 6.79e-06p
6.57e-10p

kr, rb, sr, y, zr, nb half lives from 89wal1; ru half life 90bur1.
1

mass number 98 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 36 kr g 37 rb g 38 sr g 39 y m 39 y g 40 zr d 40 zr g 41 nb m 41 nb g 42 mo g 43 tc g 44 ru g
half life 0.160s 0.107s 0.65 s 2.1 s 0.59 s 1.4 s 30.7 s 51. m 2.9 s stable 1.5e6y stable
lambda 4.332e+00 6.478e+00 1.066e+00 3.301e-01 1.175e+00 4.951e-01 2.258e-02 2.265e-04 2.390e-01 0.0 1.465e-14
0.0
z - 1 g 100.0000 100.0000 86.7000 0.0 100.0000 0.0 99.7720 0.0 100.0000 100.0000 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.1290 0.0 2.0200 100.0000 0.0 0.0 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.762022n 0.0 0.0
zp 39.50 ri 2.29e-07p 0.000630p 0.264204p 0.951186p 0.951208p 0.0 3.437770n 0.031538p 0.111814p 0.001117p 1.22e-07p
1.85e-12p
sig0.554 cc 2.29e-07p 0.000630p 0.264600p 0.950667p 1.215267p 0.0 5.602225p 0.031520p 5.713977p 5.746613p 1.22e-07p
1.22e-07p
rc 2.29e-07p 0.000630p 0.264751p 0.951231o 1.215959o 0.019960o 5.622148l 0.031538p 5.733962l 5.766617l 1.22e-07p
1.22e-07p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.901363n 0.0 0.0
zp 38.90 ri 3.15e-05p 0.021374p 1.826423n 1.490028n 1.490385n 0.0 1.038258n 0.001409p 0.004996p 4.74e-06p 4.04e-11p
0.0

sig0.536 cc 3.15e-05p 0.021399p 1.844476p 1.489976p 3.334452p 0.0 5.856052p 0.001409p 5.861047p 5.862460p 4.04e-11p 4.04e-11p
rc 3.15e-05p 0.021405p 1.844982m 1.490746m 3.335366l 0.075203o 5.931969k 0.001409p 5.936964k 5.938378k 4.04e-11p 4.04e-11p
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.751024n 0.0 0.0
zp 39.54 ri 5.40e-06p 0.003592p 0.248065p 1.002562n 1.002603n 0.0 2.161470n 0.047107p 0.266911p 0.005394p 9.69e-06p 1.70e-09p
sig0.643 cc 5.40e-06p 0.003596p 0.251025p 1.001966p 1.252991p 0.0 4.415134p 0.047077p 4.681906p 4.734374p 9.69e-06p 9.69e-06p
rc 5.40e-06p 0.003598p 0.251184p 1.002644m 1.253787m 0.024935o 4.439978l 0.047107p 4.706888l 4.759390l 9.69e-06p 9.69e-06p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.853908n 0.0 0.0
zp 39.69 ri 1.09e-06p 0.001286p 0.143754p 0.854137p 0.854154p 0.0 2.508254n 0.070942p 0.401967p 0.010047p 2.09e-05p 3.93e-09p
sig0.632 cc 1.09e-06p 0.001286p 0.144807p 0.853783p 0.998590p 0.0 4.359311p 0.070911p 4.761139p 4.842093p 2.09e-05p 2.09e-05p
rc 1.09e-06p 0.001287p 0.144870p 0.854171o 0.999024o 0.015495o 4.374665m 0.070942p 4.776632m 4.857621l 2.09e-05p 2.09e-05p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.209557n 0.0 0.0
zp 39.31 ri 1.52e-05p 0.009049p 0.484746p 1.358309n 1.358399n 0.0 1.835349n 0.021633p 0.122578p 0.001111p 7.41e-07p 4.01e-11p
sig0.621 cc 1.52e-05p 0.009060p 0.492340p 1.357666p 1.850006p 0.0 5.040515p 0.021621p 5.163035p 5.185767p 7.41e-07p 7.41e-07p
rc 1.52e-05p 0.009065p 0.492605p 1.358489m 1.851004m 0.039353o 5.079975l 0.021633p 5.202554l 5.225298l 7.41e-07p 7.41e-07p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.613931n 0.0 0.0
zp 39.48 ri 5.25e-07p 0.001075p 0.281850p 1.040556n 1.040590n 0.0 3.068948n 0.036061p 0.127850p 0.001344p 2.56e-07p 5.70e-12p
sig0.569 cc 5.24e-07p 0.001074p 0.282577p 1.039836p 1.322413p 0.0 5.429977p 0.036035p 5.557738p 5.595117p 2.55e-07p 2.55e-07p
rc 5.25e-07p 0.001075p 0.282782p 1.040624m 1.323372m 0.026920o 5.456847l 0.036061p 5.584697l 5.622102l 2.56e-07p 2.56e-07p

am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.441803n 0.0 0.0
zp 39.71 ri 3.43e-08p 0.000240p 0.085519p 0.914052p 0.914061p 0.0 3.071815n 0.097217p 0.344657p 0.004262p 2.21e-06p 5.57e-11p
sig0.565 cc 3.43e-08p 0.000240p 0.085690p 0.913655p 0.999345p 0.0 4.983554p 0.097174p 5.328080p 5.429513p 2.21e-06p 2.21e-06p
rc 3.43e-08p 0.000240p 0.085728p 0.914069o 0.999788o 0.016003o 4.999396m 0.097217p 5.344053m 5.445532l 2.21e-06p 2.21e-06p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.075476n 0.0 0.0
zp 39.44 ri 2.16e-06p 0.002923p 0.287687p 1.216754n 1.216801n 0.0 2.139746n 0.042532p 0.150786p 0.001464p 7.98e-07p 2.90e-11p
sig0.598 cc 2.16e-06p 0.002923p 0.290039p 1.216029p 1.506067p 0.0 4.860204p 0.042505p 5.010905p 5.054874p 7.98e-07p 7.98e-07p
rc 2.16e-06p 0.002925p 0.290223p 1.216848m 1.507024m 0.032296o 4.892479l 0.042532p 5.043265l 5.087261l 7.98e-07p 7.98e-07p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.670425n 0.0 0.0
zp 39.16 ri 1.13e-06p 0.004454p 0.591228p 1.804706n 1.804802n 0.0 1.409692n 0.006358p 0.022541p 2.14e-05p 4.82e-10p 0.0
sig0.524 cc 1.13e-06p 0.004454p 0.594870p 1.804135p 2.399006p 0.0 5.608831p 0.006355p 5.631364p 5.637741p 4.81e-10p 4.81e-10p
rc 1.13e-06p 0.004455p 0.595090o 1.804899m 2.399892m 0.059411o 5.668422l 0.006358p 5.690963l 5.697342k 4.82e-10p 4.82e-10p
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.204173n 0.0 0.0
zp 40.03 ri 1.99e-08p 8.45e-05p 0.032593p 0.460979p 0.460982p 0.0 3.144897n 0.232440p 0.824062p 0.043299p 0.000131p 3.64e-08p
sig0.611 cc 1.99e-08p 8.45e-05p 0.032658p 0.460864p 0.493522p 0.0 4.098639p 0.232380p 4.922532p 5.198201p 0.000131p 0.000131p
rc 1.99e-08p 8.46e-05p 0.032666p 0.460985p 0.493649p 0.007070o 4.105476m 0.232440p 4.929537m 5.205276l 0.000131p 0.000131p

kr half life from 80eng2; rb, sr, y, zr, nb half lives from 89wal1.

mass number 99 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 38 sr g 39 y g 40 zr d 40 zr g 41 nb m 41 nb g 42 mo g 43 tc m 43 tc g 44 ru g 45 rh g 46 pd g
half life 0.269s 1.47 s 0.80 s 2.2 s 2.6 m 15.0 s 2.748d 6.01 h 2.1e5y stable 15.0 d 21.4m
lambda 2.577e+00 4.715e-01 8.664e-01 3.151e-01 4.443e-03 4.621e-02 2.919e-06 3.204e-05 1.047e-13 0.0 5.348e-07
5.398e-04
z - 1 g 100.0000 99.8710 0.0 97.9800 30.0000 70.0000 100.0000 88.0000 12.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.8420 100.0000 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.075794j 0.0 0.0 0.0 0.0 0.0
zp 39.89 ri 0.034725p 0.953441p 0.0 3.557891n 0.494625p 0.043012p 0.010291p 8.27e-07p 4.04e-06p 1.98e-10p 0.0
0.0
sig0.554 cc 0.034722p 0.988023p 0.0 4.526098p 1.852416p 3.211276p 5.073983p 4.465106p 5.073987p 5.073987p 0.0
0.0
rc 0.034725p 0.988122o 0.001893o 4.527946m 1.853009n 3.212574m 5.075874j 4.466770j 5.075879i 5.075879i 0.0
0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 6.190450n 0.0 0.0 0.0 0.0 0.0
zp 39.28 ri 0.556720p 3.166916n 0.0 2.476130n 0.055177p 0.004798p 0.000125p 8.10e-10p 3.95e-09p 0.0 0.0 0.0
sig0.536 cc 0.556548p 3.721764p 0.0 6.123887p 1.892326p 4.291517p 6.183969p 5.441893p 6.183969p 6.183969p 0.0
0.0
rc 0.556720o 3.722918m 0.013988n 6.137832l 1.896527l 4.301281l 6.197933k 5.454181k 6.197933k 6.197933k 0.0
0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.868615i 0.0 0.0 0.0 0.0 0.0
zp 39.93 ri 0.063836p 1.170657n 0.0 2.740292n 0.808923p 0.070348p 0.035322p 1.70e-05p 0.000138p 6.76e-08p 2.81e-12p
0.0
sig0.643 cc 0.063820p 1.234099p 0.0 3.949929p 1.993773p 2.835280p 4.864366p 4.280659p 4.864521p 4.864521p 2.81e-12p
0.0
rc 0.063836p 1.234411m 0.004452o 3.954219m 1.995189n 2.838301m 4.868812i 4.284571i 4.868966i 4.868966i 2.82e-12p
0.0
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.254293k 0.0 0.0 0.0 0.0 0.0
zp 40.08 ri 0.026478p 0.740630p 0.0 2.422821n 0.943991p 0.082089p 0.052058p 2.99e-05p 0.000242p 1.31e-07p 5.58e-12p
0.0

sig0.632 cc 0.026475p 0.766984p 0.0 3.174496p 1.896263p 2.304226p 4.252540p 3.742265p 4.252812p 4.252812p 5.58e-12p
0.0
rc 0.026478p 0.767074o 0.001907o 3.176308m 1.896883n 2.305505m 4.254446k 3.743942k 4.254717j 4.254718j 5.59e-12p
0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.124974k 0.0 0.0 0.0 0.0 0.0
zp 39.69 ri 0.139778p 1.808575n 0.0 2.709948n 0.451594p 0.039274p 0.009311p 1.75e-06p 1.42e-05p 2.25e-09p 0.0
0.0
sig0.621 cc 0.139737p 1.947606p 0.0 4.618867p 1.837179p 3.272470p 5.118957p 4.504684p 5.118973p 5.118973p 0.0
0.0
rc 0.139778p 1.948173m 0.007185o 4.625952l 1.839379n 3.277440l 5.126131k 4.510997k 5.126146j 5.126146j 0.0
0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 6.111633n 0.0 0.0 0.0 0.0 0.0
zp 39.87 ri 0.052562p 1.280189n 0.0 4.096549n 0.636924p 0.055387p 0.014356p 1.73e-06p 8.43e-06p 6.22e-10p 0.0
0.0
sig0.569 cc 0.052554p 1.332484p 0.0 5.402397p 2.257572p 3.837056p 6.108982p 5.375906p 6.108992p 6.108992p 0.0
0.0
rc 0.052562p 1.332683m 0.003527o 5.405839m 2.258675m 3.839474m 6.112505l 5.379006l 6.112515k 6.112515k 0.0
0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.398576i 0.0 0.0 0.0 0.0 0.0
zp 40.09 ri 0.012878p 0.779357p 0.0 3.341329n 1.144815n 0.099552p 0.034639p 9.44e-06p 4.61e-05p 4.44e-09p 0.0
0.0
sig0.565 cc 0.012876p 0.792130p 0.0 4.117656p 2.380017p 2.981900p 5.396552p 4.748975p 5.396608p 5.396608p 0.0
0.0
rc 0.012878p 0.792218o 0.002104o 4.119648m 2.380710l 2.983306m 5.398654i 4.750825i 5.398710i 5.398710i 0.0
0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.396599n 0.0 0.0 0.0 0.0 0.0
zp 39.82 ri 0.072800p 1.526118n 0.0 3.128515n 0.629592p 0.054752p 0.013605p 3.47e-06p 1.69e-05p 2.09e-09p 0.0
0.0
sig0.598 cc 0.072782p 1.598420p 0.0 4.695169p 2.038041p 3.341357p 5.393000p 4.745843p 5.393020p 5.393020p 0.0
0.0
rc 0.072800p 1.598824m 0.005352o 4.700394m 2.039710m 3.345028l 5.398343l 4.750545l 5.398364k 5.398364k 0.0
0.0

```
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  6.159599n      0.0       0.0       0.0       0.0       0.0
zp 39.54 ri 0.149260p 2.792072n       0.0  3.068583n 0.186698p 0.016236p 0.000547p 7.99e-09p 3.90e-08p       0.0       0.0       0.0
sig0.524 cc 0.149206p 2.940075p       0.0  5.950390p 1.971763p 4.181503p 6.153814p 5.415356p 6.153814p 6.153814p       0.0
0.0
         rc 0.149260p 2.941139m 0.011003n 5.961315l 1.975092m 4.189156l 6.164795k 5.425020k 6.164795k 6.164795k       0.0
0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  5.425706n      0.0       0.0       0.0       0.0       0.0
zp 40.42 ri 0.004589p 0.345427p       0.0  2.688451n 2.006804n 0.174506p 0.212405p 0.000301p 0.001470p 1.29e-06p 6.47e-11p
0.0
sig0.611 cc 0.004589p 0.349995p       0.0  3.031477p 2.916176p 2.296533p 5.425107p 4.774395p 5.426877p 5.426878p 6.47e-11p
0.0
         rc 0.004589p 0.350011p 0.000732o 3.032124m 2.916441m 2.296992m 5.425838l 4.775039l 5.427609k 5.427610k 6.47e-11p
0.0

   nb decay from 71har1;  sr, y, zr, nb, mo, tc half lives 89wal1.
1

     mass number    100            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       36 kr g   37 rb g   38 sr g   39 y  g   40 zr g   41 nb m   41 nb g   42 mo g   43 tc g   44 ru g
half life              0.053s    0.201s    0.73 s     7.1 s     3.0 s     1.5 s    stable     16. s    stable
lambda            0.0 1.308e+01 3.448e+00 9.495e-01 9.763e-02 2.310e-01 4.621e-01       0.0 4.332e-02       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000   99.1580   50.0000   50.0000  100.0000       0.0  100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.136054n      0.0       0.0
zp 40.28 ri 2.27e-11p 7.35e-07p 0.003356p 0.221499p 2.920356n 0.461727p 0.461727p 0.069283p 8.41e-05p 1.52e-08p
sig0.554 cc 2.27e-11p 7.35e-07p 0.003357p 0.224855p 3.143318p 2.033386p 2.033386p 4.136054p 8.41e-05p 8.41e-05p
         rc 2.27e-11p 7.35e-07p 0.003357p 0.224855p 3.143318m 2.033386n 2.033386n 4.136054l 8.41e-05p 8.41e-05p
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.941237n      0.0       0.0
zp 39.66 ri 1.41e-08p 0.000120p 0.112617p 1.548492n 4.052351n 0.119772p 0.119772p 0.002101p 2.31e-07p 2.64e-12p
sig0.536 cc 1.41e-08p 0.000120p 0.112737p 1.661228p 5.699592p 2.969568p 2.969568p 5.941237p 2.31e-07p 2.31e-07p
         rc 1.41e-08p 0.000120p 0.112737p 1.661228m 5.699592l 2.969568l 2.969568l 5.941237k 2.31e-07p 2.31e-07p
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 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.205909n      0.0       0.0
zp 40.32 ri 7.42e-09p 3.03e-05p 0.012138p 0.516529p 2.656452n 0.927383p 0.927383p 0.170446p 0.001797p 1.94e-06p
sig0.643 cc 7.42e-09p 3.03e-05p 0.012168p 0.528697p 3.180697p 2.517731p 2.517731p 5.205909p 0.001797p 0.001799p
         rc 7.42e-09p 3.03e-05p 0.012168p 0.528697o 3.180697m 2.517731n 2.517731n 5.205909l 0.001797p 0.001799p
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.506701n      0.0       0.0
zp 40.46 ri 6.51e-10p 4.96e-06p 0.003386p 0.223140p 1.619592n 0.745040p 0.745040p 0.172405p 0.002169p 2.61e-06p
sig0.632 cc 6.51e-10p 4.96e-06p 0.003391p 0.226531p 1.844216p 1.667148p 1.667148p 3.506701p 0.002169p 0.002171p
         rc 6.51e-10p 4.96e-06p 0.003391p 0.226531p 1.844216m 1.667148n 1.667148n 3.506701l 0.002169p 0.002171p
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.790397n      0.0       0.0
zp 40.07 ri 2.07e-08p 8.15e-05p 0.026947p 0.826290p 2.764292n 0.564229p 0.564229p 0.051514p 0.000223p 8.16e-08p
sig0.621 cc 2.07e-08p 8.15e-05p 0.027028p 0.853318p 3.610425p 2.369442p 2.369442p 4.790397p 0.000223p 0.000223p
         rc 2.07e-08p 8.15e-05p 0.027028p 0.853318o 3.610425m 2.369442m 2.369442m 4.790397l 0.000223p 0.000223p
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.108684n      0.0       0.0
zp 40.26 ri 1.29e-10p 2.73e-06p 0.006844p 0.412080p 4.074612n 0.756185p 0.756185p 0.106302p 0.000198p 4.59e-08p
sig0.569 cc 1.29e-10p 2.73e-06p 0.006847p 0.418927p 4.490012p 3.001191p 3.001191p 6.108684p 0.000198p 0.000198p
         rc 1.29e-10p 2.73e-06p 0.006847p 0.418927p 4.490012m 3.001191m 3.001191m 6.108684l 0.000198p 0.000198p
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.908591n      0.0       0.0
zp 40.47 ri 5.83e-12p 4.12e-07p 0.001398p 0.248458p 2.813261n 1.321758n 1.321758n 0.204061p 0.000990p 2.50e-07p
sig0.565 cc 5.83e-12p 4.12e-07p 0.001399p 0.249856p 3.061014p 2.852265p 2.852265p 5.908591p 0.000990p 0.000991p
         rc 5.83e-12p 4.12e-07p 0.001399p 0.249856p 3.061014m 2.852265l 2.852265l 5.908591k 0.000990p 0.000991p
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.445146n      0.0       0.0
zp 40.21 ri 1.44e-09p 1.55e-05p 0.011354p 0.624203p 3.096030n 0.816979p 0.816979p 0.084937p 0.000355p 1.04e-07p
sig0.598 cc 1.44e-09p 1.55e-05p 0.011370p 0.635572p 3.726251p 2.680105p 2.680105p 5.445146p 0.000355p 0.000355p
         rc 1.44e-09p 1.55e-05p 0.011370p 0.635572o 3.726251m 2.680105m 2.680105m 5.445146l 0.000355p 0.000355p
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.095433n      0.0       0.0
zp 39.92 ri 2.15e-10p 1.22e-05p 0.021050p 1.285765n 3.992966n 0.399535p 0.399535p 0.007573p 2.45e-06p 2.35e-11p
sig0.524 cc 2.15e-10p 1.22e-05p 0.021062p 1.306828p 5.288790p 3.043930p 3.043930p 6.095433p 2.45e-06p 2.45e-06p
         rc 2.15e-10p 1.22e-05p 0.021062p 1.306828m 5.288790m 3.043930m 3.043930m 6.095433l 2.45e-06p 2.45e-06p
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.633692n      0.0       0.0
zp 40.81 ri 5.00e-12p 1.62e-07p 0.000457p 0.086461p 1.711284n 1.542776n 1.542776n 0.750669p 0.015526p 3.17e-05p
sig0.611 cc 5.00e-12p 1.62e-07p 0.000457p 0.086918p 1.797470p 2.441512p 2.441512p 5.633692p 0.015526p 0.015558p
        rc 5.00e-12p 1.62e-07p 0.000457p 0.086918p 1.797470m 2.441512m 2.441512m 5.633692l 0.015526p 0.015558p

  rb, sr, y, zr, nb half lives from 89wal1.
1

    mass number    101            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       38 sr g   39 y  g   40 zr g   41 nb g   42 mo g   43 tc g   44 ru g   45 rh m   45 rh g   46 pd g
half life     0.115s    0.43 s     2.1 s     7.1 s    14.6 m    14.2 m    stable    4.47 d      3.  y      8.3 h
lambda      6.027e+00 1.612e+00 3.301e-01 9.763e-02 7.913e-04 8.136e-04       0.0 1.795e-06 7.327e-09 2.320e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  -90.0000 -100.0000       0.0
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0 -100.0000
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   10.0000       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.394207n      0.0       0.0       0.0
zp 40.66 ri 0.000198p 0.052467p 1.500750n 1.580214n 0.259307p 0.001271p 5.84e-07p 4.79e-12p       0.0       0.0
sig0.554 cc 0.000198p 0.052665p 1.553415p 3.133628p 3.392935p 3.394206p 3.394207p 4.79e-12p 1.46e-12p       0.0
        rc 0.000198p 0.052665p 1.553415m 3.133628l 3.392935l 3.394206l 3.394207l 4.79e-12p 1.46e-12p       0.0
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.804044n      0.0       0.0       0.0
zp 40.05 ri 0.012632p 0.697235p 4.179968n 0.892767p 0.021431p 1.06e-05p 3.69e-10p       0.0       0.0       0.0
sig0.536 cc 0.012632p 0.709866p 4.889835p 5.782602p 5.804033p 5.804044p 5.804044p       0.0       0.0       0.0
        rc 0.012632p 0.709866o 4.889835m 5.782602m 5.804033m 5.804044m 5.804044l       0.0       0.0       0.0
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.397972n      0.0       0.0       0.0
zp 40.71 ri 0.001594p 0.160599p 1.850064n 2.796569n 0.574775p 0.014333p 3.80e-05p 8.84e-09p 1.09e-09p       0.0
sig0.643 cc 0.001594p 0.162192p 2.012256p 4.808825p 5.383600p 5.397934p 5.397972p 8.84e-09p 1.98e-09p       0.0
        rc 0.001594p 0.162192p 2.012256m 4.808825l 5.383600l 5.397934l 5.397972l 8.84e-09p 1.98e-09p       0.0
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.167298n      0.0       0.0       0.0
zp 40.83 ri 0.000360p 0.055741p 0.898091p 1.756586n 0.443568p 0.012914p 3.74e-05p 8.81e-09p 1.09e-09p       0.0
sig0.632 cc 0.000360p 0.056101p 0.954193p 2.710778p 3.154346p 3.167261p 3.167298p 8.81e-09p 1.97e-09p       0.0
        rc 0.000360p 0.056101p 0.954193o 2.710778m 3.154346m 3.167261m 3.167298m 8.81e-09p 1.97e-09p       0.0
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0  4.201578n      0.0       0.0       0.0
zp 40.46 ri 0.003282p 0.250323p 1.945995n 1.802458n 0.197342p 0.002175p 2.11e-06p 1.48e-10p 1.83e-11p       0.0
sig0.621 cc 0.003282p 0.253605p 2.199600p 4.002058p 4.199400p 4.201575p 4.201578p 1.48e-10p 3.31e-11p       0.0
        rc 0.003282p 0.253605p 2.199600m 4.002058l 4.199400l 4.201575l 4.201578l 1.48e-10p 3.31e-11p       0.0
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  6.048102n      0.0       0.0       0.0
zp 40.65 ri 0.000527p 0.112799p 2.580330n 2.878861n 0.472436p 0.003148p 1.97e-06p 3.06e-11p 6.26e-12p       0.0
sig0.569 cc 0.000527p 0.113326p 2.693655p 5.572516p 6.044952p 6.048100p 6.048102p 3.06e-11p 9.32e-12p       0.0
        rc 0.000527p 0.113326p 2.693655m 5.572516l 6.044952l 6.048100l 6.048102l 3.06e-11p 9.32e-12p       0.0
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  6.104194n      0.0       0.0       0.0
zp 40.85 ri 9.37e-05p 0.050251p 1.568710n 3.713101n 0.761137p 0.010893p 8.58e-06p 2.75e-10p 5.63e-11p       0.0
sig0.565 cc 9.37e-05p 0.050345p 1.619055p 5.332156p 6.093293p 6.104186p 6.104194p 2.75e-10p 8.37e-11p       0.0
        rc 9.37e-05p 0.050345p 1.619055m 5.332156m 6.093293l 6.104186l 6.104194l 2.75e-10p 8.37e-11p       0.0
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.924719n      0.0       0.0       0.0
zp 40.59 ri 0.001375p 0.198824p 2.397116n 2.944967n 0.378227p 0.004205p 3.42e-06p 1.56e-10p 3.19e-11p       0.0
sig0.598 cc 0.001375p 0.200199p 2.597315p 5.542282p 5.920510p 5.924715p 5.924719p 1.56e-10p 4.74e-11p       0.0
        rc 0.001375p 0.200199p 2.597315m 5.542282l 5.920510l 5.924715l 5.924719l 1.56e-10p 4.74e-11p       0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  6.055529n      0.0       0.0       0.0
zp 40.31 ri 0.001721p 0.374500p 3.529859n 2.081194n 0.068170p 8.44e-05p 3.22e-09p       0.0       0.0       0.0
sig0.524 cc 0.001721p 0.376221p 3.906080p 5.987274p 6.055444p 6.055529p 6.055529p       0.0       0.0       0.0
        rc 0.001721p 0.376221p 3.906080m 5.987274l 6.055444l 6.055529l 6.055529l       0.0       0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.953334n      0.0       0.0       0.0
zp 41.20 ri 2.98e-05p 0.015632p 0.748187p 3.290381n 1.801090n 0.097504p 0.000510p 1.61e-07p 3.31e-08p 5.96e-12p
sig0.611 cc 2.98e-05p 0.015661p 0.763849p 4.054230p 5.855320p 5.952823p 5.953334p 1.61e-07p 4.92e-08p 5.96e-12p
        rc 2.98e-05p 0.015661p 0.763849o 4.054230m 5.855320l 5.952823l 5.953334l 1.61e-07p 4.92e-08p 5.96e-12p

  sr, y, zr, nb, mo, tc half lives from 89wal1.
1

    mass number    102            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide      38 sr g   39 y  g   40 zr g   41 nb g   42 mo d   42 mo g   43 tc m   43 tc g   44 ru g   45 rh m   45 rh g   46 pd g
half life     0.068s    0.36 s     2.9 s     1.3 s     1.5 s    11.3 m     4.4 m     5.3 s    stable      3. y    207. d    stable
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lambda 1.019e+01 1.925e+00 2.390e-01 5.332e-01 4.621e-01 1.022e-03 2.626e-03 1.308e-01 0.0 7.327e-09 3.876e-08 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 100.0000 100.0000 0.0 100.0000 -100.0000 -84.0000 16.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 95.0000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0140 100.0000 0.0 5.0000 0.0 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.669905n 0.0 0.0 0.0
zp 41.05 ri 7.87e-06p 0.005336p 0.593690p 1.301799n 0.0 0.759960p 0.004507p 0.004507p 1.79e-05p 2.36e-10p 2.36e-10p 0.0
sig0.554 cc 7.87e-06p 0.005343p 0.599032p 1.900825p 0.0 2.660793p 2.665300p 0.137772p 2.669824p 2.36e-10p 2.36e-10p 3.78e-11p
rc 7.87e-06p 0.005344p 0.599034o 1.900833m 0.000160n 2.660953m 2.665459m 0.137780m 2.669984m 2.36e-10p 2.36e-10p 3.78e-11p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.684578n 0.0 0.0 0.0
zp 40.43 ri 0.001153p 0.170392p 3.634119n 1.719657n 0.0 0.158867p 0.000110p 0.000110p 3.40e-08p 0.0 0.0 0.0
sig0.536 cc 0.001153p 0.171544p 3.805663p 5.525320p 0.0 5.684188p 5.684298p 0.284325p 5.684409p 0.0 0.0 0.0
rc 0.001153p 0.171544p 3.805664m 5.525321l 0.000610n 5.684799l 5.684909l 0.284356l 5.685019l 0.0 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.438406n 0.0 0.0 0.0
zp 41.11 ri 0.000135p 0.033413p 0.901213p 3.028060n 0.0 1.392686n 0.041099p 0.041099p 0.000541p 1.80e-07p 1.80e-07p 2.29e-11p
sig0.643 cc 0.000135p 0.033547p 0.934757p 3.962808p 0.0 5.355507p 5.396606p 0.310929p 5.438247p 1.80e-07p 1.80e-07p 2.88e-08p
rc 0.000135p 0.033547p 0.934760o 3.962821m 0.000357n 5.355864l 5.396963l 0.310947m 5.438604l 1.80e-07p 1.80e-07p 2.88e-08p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.969959n 0.0 0.0 0.0
zp 41.20 ri 2.88e-05p 0.010611p 0.388168p 1.629856n 0.0 0.882564p 0.029121p 0.029121p 0.000402p 1.30e-07p 1.30e-07p 1.48e-11p
sig0.632 cc 2.88e-05p 0.010640p 0.398807p 2.028658p 0.0 2.911229p 2.940350p 0.176138p 2.969873p 1.30e-07p 1.30e-07p 2.08e-08p
rc 2.88e-05p 0.010640p 0.398809p 2.028665m 0.000149o 2.911377m 2.940498m 0.176146n 2.970021m 1.30e-07p 1.30e-07p 2.08e-08p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.552878n 0.0 0.0 0.0

zp 40.84 ri 0.000285p 0.053854p 0.976513p 2.006573n 0.0 0.501993p 0.006753p 0.006753p 3.33e-05p 3.43e-09p 3.43e-09p 0.0
sig0.621 cc 0.000285p 0.054138p 1.030650p 3.037221p 0.0 3.539218p 3.545971p 0.184051p 3.552757p 3.43e-09p 3.43e-09p 5.49e-10p
rc 0.000285p 0.054138p 1.030652o 3.037225m 0.000300n 3.539518m 3.546270m 0.184066m 3.553056l 3.43e-09p 3.43e-09p 5.49e-10p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.138975n 0.0 0.0 0.0
zp 41.05 ri 2.78e-05p 0.016047p 1.267989n 3.168141n 0.0 1.658249n 0.014140p 0.014140p 6.73e-05p 1.78e-09p 1.78e-09p 0.0
sig0.569 cc 2.78e-05p 0.016074p 1.284059p 4.452189p 0.0 6.110454p 6.124594p 0.320370p 6.138802p 1.78e-09p 1.78e-09p 2.84e-10p
rc 2.78e-05p 0.016074p 1.284064m 4.452205m 0.000400n 6.110854l 6.124994l 0.320390l 6.139202l 1.78e-09p 1.78e-09p 2.84e-10p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.063432n 0.0 0.0 0.0
zp 41.23 ri 3.92e-06p 0.006473p 0.580378p 3.542072n 0.0 1.858443n 0.037853p 0.037853p 0.000183p 1.12e-08p 1.12e-08p 0.0
sig0.565 cc 3.92e-06p 0.006477p 0.586853p 4.128911p 0.0 5.987371p 6.025224p 0.339114p 6.063259p 1.12e-08p 1.12e-08p 1.79e-09p
rc 3.92e-06p 0.006477p 0.586856o 4.128928m 0.000373n 5.987744l 6.025597l 0.339132m 6.063632l 1.12e-08p 1.12e-08p 1.79e-09p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.994656n 0.0 0.0 0.0
zp 40.98 ri 9.84e-05p 0.039263p 1.217742n 3.577816n 0.0 1.126123n 0.016668p 0.016668p 7.63e-05p 6.02e-09p 6.02e-09p 0.0
sig0.598 cc 9.84e-05p 0.039361p 1.257101p 4.834909p 0.0 5.961043p 5.977711p 0.315554p 5.994455p 6.02e-09p 6.02e-09p 9.63e-10p
rc 9.84e-05p 0.039361p 1.257103m 4.834919m 0.000483n 5.961526l 5.978194l 0.315578l 5.994938l 6.02e-09p 6.02e-09p 9.63e-10p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.145314n 0.0 0.0 0.0
zp 40.69 ri 9.29e-05p 0.072602p 2.150968n 3.553357n 0.0 0.366448p 0.000815p 0.000815p 2.37e-07p 0.0 0.0 0.0
sig0.524 cc 9.29e-05p 0.072695p 2.223662p 5.777018p 0.0 6.143468p 6.144283p 0.308029p 6.145098p 0.0 0.0 0.0
rc 9.29e-05p 0.072695p 2.223663m 5.777020l 0.000644n 6.144112l 6.144927l 0.308062l 6.145743l 0.0 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.973312n 0.0 0.0 0.0
zp 41.59 ri 1.29e-06p 0.001767p 0.227482p 2.309243n 0.0 3.042924n 0.193141p 0.193141p 0.005506p 2.74e-06p 2.74e-06p 4.84e-10p
sig0.611 cc 1.29e-06p 0.001768p 0.229249p 2.538478p 0.0 5.581418p 5.774558p 0.481868p 5.973209p 2.74e-06p 2.74e-06p 4.39e-07p
rc 1.29e-06p 0.001768p 0.229250p 2.538493m 0.000175n 5.581591l 5.774733l 0.481877o 5.973385l 2.74e-06p 2.74e-06p 4.39e-07p

rb, sr, y, zr, nb, mo, tc half lives from 89wal1.
1

mass number 103 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 39 y g 40 zr g 41 nb d 41 nb g 42 mo d 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g 47 ag g
half life 0.260s 1.3 s 2.573s 1.5 s 4.8 s 1.13 m 54. s 39.27d 56.12m stable 16.99d 1.10 h
lambda 2.666e+00 5.332e-01 2.694e-01 4.621e-01 1.444e-01 1.022e-02 1.284e-02 2.043e-07 2.059e-04 0.0 4.722e-07 1.750e-04
z - 1 g 100.0000 100.0000 0.0 100.0000 0.0 99.9860 100.0000 100.0000 99.0000 1.0000 -0.1000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -99.9000 0.0
z - 0 m 0.0 0.0 0.1820 100.0000 0.0410 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.417107j 0.0 0.0
zp 41.44 ri 0.000471p 0.128139p 0.0 1.011027n 0.0 1.221573n 0.055693p 0.000281p 2.88e-08p 3.92e-09p 0.0 0.0
sig0.554 cc 0.000471p 0.128610p 0.0 1.139632p 0.0 2.361051p 2.416743p 2.417024p 2.392854p 2.417024p 0.0 0.0
rc 0.000471p 0.128611p 6.08e-07o 1.139638m 8.72e-05o 2.361138l 2.416831l 2.417112l 2.392941k 2.417112i 0.0 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.947872n 0.0 0.0
zp 40.81 ri 0.031741p 1.673848n 0.0 2.653068n 0.0 0.585206p 0.003360p 1.50e-06p 1.02e-11p 1.39e-12p 0.0 0.0
sig0.536 cc 0.031740p 1.705502p 0.0 4.358667p 0.0 4.943254p 4.946613p 4.946615p 4.897149p 4.946615p 0.0 0.0
rc 0.031741p 1.705589m 0.001147o 4.359805l 0.001181n 4.945582l 4.948942l 4.948943l 4.899454l 4.948943l 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.290227i 0.0 5.320343n 0.0 0.0
zp 41.53 ri 0.004229p 0.285643p 0.0 2.261618n 0.0 2.393308n 0.340240p 0.005715p 9.26e-06p 8.05e-07p 1.72e-09p 0.0
sig0.643 cc 0.004229p 0.289870p 0.0 2.551503p 0.0 4.944496p 5.284681p 5.290396p 5.237502p 5.290406p 1.72e-09p 0.0

rc 0.004229p 0.289872p 0.000120o 2.551610m 0.000529n 4.945089l 5.285329k 5.291045i 5.238144i 5.291055i 1.72e-09p
0.0
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.298177n 0.0 0.0
zp 41.56 ri 0.001284p 0.106395p 0.0 0.955812p 0.0 1.077811n 0.154313p 0.002440p 3.43e-06p 2.98e-07p 5.11e-10p
0.0
sig0.632 cc 0.001284p 0.107676p 0.0 1.063486p 0.0 2.141157p 2.295466p 2.297906p 2.274930p 2.297909p 5.11e-10p
0.0
rc 0.001284p 0.107679p 7.81e-05o 1.063569o 0.000276o 2.141507m 2.295819m 2.298259m 2.275280m 2.298263l 5.11e-10p
0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.213558n 0.0 0.0
zp 41.23 ri 0.008399p 0.373177p 0.0 1.759246n 0.0 1.006224n 0.065990p 0.000420p 2.11e-07p 1.83e-08p 1.01e-11p
0.0
sig0.621 cc 0.008399p 0.381566p 0.0 2.140812p 0.0 3.146748p 3.212736p 3.213156p 3.181024p 3.213156p 1.01e-11p
0.0
rc 0.008399p 0.381576p 0.000186o 2.141009m 0.000492n 3.147425l 3.213414l 3.213834l 3.181696l 3.213834l 1.01e-11p
0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.896647n 0.0 0.0
zp 41.44 ri 0.001622p 0.322101p 0.0 2.530189n 0.0 2.878519n 0.163214p 0.001013p 1.77e-07p 2.42e-08p 3.38e-12p
0.0
sig0.569 cc 0.001622p 0.323717p 0.0 2.853886p 0.0 5.732035p 5.895245p 5.896258p 5.837296p 5.896259p 3.38e-12p
0.0
rc 0.001622p 0.323723p 0.000114o 2.854026m 0.000499n 5.732644l 5.895858l 5.896871l 5.837903l 5.896871l 3.39e-12p
0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.463272i 0.0 6.020306n 0.0 0.0
zp 41.62 ri 0.000546p 0.149591p 0.0 2.514536n 0.0 3.397007n 0.386654p 0.002894p 9.75e-07p 1.33e-07p 2.12e-11p
0.0
sig0.565 cc 0.000546p 0.150085p 0.0 2.663762p 0.0 6.060424p 6.447963p 6.450856p 6.386348p 6.450857p 2.19e-11p
0.0
rc 0.000546p 0.150137p 4.24e-05o 2.664715m 0.000459n 6.061808l 6.448463k 6.451357i 6.386844i 6.451358i 2.12e-11p
0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.904737n 0.0 0.0

```
 zp 41.37 ri 0.005112p 0.421054p       0.0  3.024006n       0.0  2.279251n 0.174092p 0.001101p 4.38e-07p 5.97e-08p 1.49e-11p
0.0
 sig0.598 cc 0.005112p 0.426155p       0.0  3.450139p       0.0  5.728944p 5.903032p 5.904133p 5.845092p 5.904134p 1.49e-11p
0.0
          rc 0.005112p 0.426166p 0.000197o 3.450369m 0.000824n 5.729960l 5.904053l 5.905154l 5.846103l 5.905154l 1.49e-11p
0.0
  np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.816101n      0.0       0.0
 zp 41.08 ri 0.007666p 0.783843p       0.0  3.810842n       0.0  1.194574n 0.018962p 1.07e-05p 1.59e-10p 2.17e-11p       0.0       0.0
 sig0.524 cc 0.007665p 0.791491p       0.0  4.602338p       0.0  5.796280p 5.815242p 5.815253p 5.757100p 5.815253p       0.0       0.0
          rc 0.007666p 0.791508o 0.000338o 4.602689m 0.001228n 5.797846l 5.816808l 5.816819l 5.758651l 5.816819l       0.0       0.0
  cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.943345n      0.0       0.0
 zp 41.98 ri 0.000141p 0.046075p       0.0  1.205144n       0.0  3.542665n 1.110389n 0.038844p 9.52e-05p 1.30e-05p 2.53e-08p
0.0
 sig0.611 cc 0.000141p 0.046216p       0.0  1.251354p       0.0  4.793857p 5.904239p 5.943083p 5.883747p 5.943191p 2.53e-08p
0.0
          rc 0.000141p 0.046216p 1.23e-05o 1.251372m 0.000180o 4.794041m 5.904430l 5.943275l 5.883937l 5.943383l 2.53e-08p
0.0

   y half life from 80eng2; zr, nb, mo, tc, ru, rh half lives 89wal1; pd half life 90bur1.

1

     mass number    104            LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       38 sr g   39 y  g   40 zr g   41 nb d   41 nb g   42 mo d   42 mo g   43 tc g   44 ru g   45 rh m   45 rh g   46  pd g
 half life     0.163s    0.128s     1.2 s    0.493s     4.8 s     2.8 s     60. s    18.2 m    stable    4.35 m     42. s    stable
 lambda       4.252e+00 5.415e+00 5.776e-01 1.406e+00 1.444e-01 2.476e-01 1.155e-02 6.348e-04       0.0 2.656e-03 1.650e-02
0.0
  z - 1 g    100.0000  100.0000  100.0000       0.0   99.8180       0.0   99.9590  100.0000  100.0000       0.0   -0.5000   99.5000
  z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0    0.1800
  z - 0 m       0.0       0.0       0.0    1.0880  100.0000    2.2320  100.0000       0.0       0.0       0.0   99.8200       0.0
  u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.321098n      0.0       0.0       0.0
 zp 41.73 ri      0.0  7.73e-11p 0.000334p       0.0  0.212387p       0.0  1.095308n 0.011294p 3.04e-07p       0.0       0.0       0.0
 sig0.350 cc      0.0  7.73e-11p 0.000334p       0.0  0.212619p       0.0  1.307946p 1.319235p 1.319236p       0.0       0.0       0.0
```

rc 0.0 7.73e-11p 0.000334p 3.13e-07o 0.212721p 0.002274o 1.310215m 1.321509m 1.321509l 0.0 0.0 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.629297n 0.0 0.0 0.0
zp 41.19 ri 1.69e-06p 0.002998p 0.627422p 0.0 2.250997n 0.0 1.711684n 0.025662p 4.94e-05p 8.75e-10p 2.47e-10p 0.0
sig0.536 cc 1.69e-06p 0.002998p 0.630142p 0.0 2.879172p 0.0 4.590786p 4.616437p 4.616486p 8.75e-10p 1.12e-09p 1.12e-09p
rc 1.69e-06p 0.002999p 0.630422o 0.000725o 2.880996m 0.022019o 4.613518l 4.639180l 4.639229l 8.75e-10p 1.12e-09p 1.12e-09p
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.216018n 0.0 0.0 0.0
zp 41.94 ri 2.30e-07p 0.000387p 0.065349p 0.0 1.224170n 0.0 2.922563n 0.957066p 0.039284p 0.000150p 2.64e-05p 7.88e-08p
sig0.643 cc 2.30e-07p 0.000387p 0.065707p 0.0 1.289256p 0.0 4.212148p 5.168904p 5.208171p 0.000150p 0.000176p 0.000175p
rc 2.30e-07p 0.000387p 0.065736p 0.000105o 1.289891m 0.010039o 4.221965m 5.179031m 5.218315l 0.000150p 0.000176p 0.000175p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.081931n 0.0 0.0 0.0
zp 41.79 ri 2.01e-07p 0.000302p 0.042603p 0.0 0.628965p 0.0 1.131951n 0.263307p 0.007009p 1.57e-05p 2.77e-06p 4.43e-09p
sig0.632 cc 2.01e-07p 0.000302p 0.042868p 0.0 0.671264p 0.0 1.803653p 2.066782p 2.073785p 1.57e-05p 1.84e-05p 1.84e-05p
rc 2.01e-07p 0.000302p 0.042906p 0.000205o 0.671998o 0.010265o 1.813938m 2.077245m 2.084255m 1.57e-05p 1.85e-05p 1.84e-05p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.814358n 0.0 0.0 0.0
zp 41.61 ri 7.45e-07p 0.000931p 0.101410p 0.0 1.097741n 0.0 1.389266n 0.211740p 0.003329p 3.97e-06p 7.00e-07p 5.39e-10p
sig0.621 cc 7.44e-07p 0.000931p 0.102241p 0.0 1.198833p 0.0 2.588844p 2.800415p 2.803740p 3.96e-06p 4.66e-06p 4.64e-06p
rc 7.45e-07p 0.000932p 0.102342p 0.000399o 1.200296m 0.015989o 2.605059l 2.816798l 2.820127l 3.97e-06p 4.66e-06p 4.64e-06p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.704804n 0.0 0.0 0.0
zp 41.83 ri 1.50e-08p 8.71e-05p 0.062297p 0.0 1.155517n 0.0 3.956043n 0.513442p 0.011242p 4.68e-06p 1.32e-06p 3.84e-10p

sig0.569 cc 1.50e-08p 8.71e-05p 0.062361p 0.0 1.217349p 0.0 5.173508p 5.686778p 5.698015p 4.68e-06p 5.99e-06p 5.97e-06p
rc 1.50e-08p 8.71e-05p 0.062384p 6.18e-05o 1.217849m 0.008642o 5.182035m 5.695477l 5.706719l 4.68e-06p 5.99e-06p 5.97e-06p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.022669n 0.0 0.0 0.0
zp 42.00 ri 1.65e-09p 2.79e-05p 0.023258p 0.0 1.096133n 0.0 3.754278n 1.119718n 0.024331p 2.33e-05p 6.58e-06p 1.82e-09p
sig0.565 cc 1.65e-09p 2.79e-05p 0.023279p 0.0 1.119063p 0.0 4.873465p 5.992921p 6.017245p 2.33e-05p 2.98e-05p 2.97e-05p
rc 1.65e-09p 2.79e-05p 0.023286p 2.31e-05o 1.119400m 0.006755o 4.879974m 5.999692l 6.024024l 2.33e-05p 2.99e-05p 2.97e-05p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.984665n 0.0 0.0 0.0
zp 41.75 ri 1.58e-07p 0.000491p 0.107489p 0.0 1.901717n 0.0 3.331789n 0.620972p 0.010355p 1.01e-05p 2.84e-06p 1.09e-09p
sig0.598 cc 1.58e-07p 0.000491p 0.107908p 0.0 2.008212p 0.0 5.340811p 5.961445p 5.971794p 1.01e-05p 1.29e-05p 1.28e-05p
rc 1.58e-07p 0.000491p 0.107981p 0.000192o 2.009693m 0.018535o 5.359192l 5.980164l 5.990520l 1.01e-05p 1.29e-05p 1.28e-05p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.696387n 0.0 0.0 0.0
zp 41.47 ri 4.28e-08p 0.000499p 0.185472p 0.0 2.808979n 0.0 2.552943n 0.136781p 0.000291p 1.53e-08p 4.30e-09p 0.0
sig0.524 cc 4.28e-08p 0.000499p 0.185859p 0.0 2.992884p 0.0 5.546402p 5.683108p 5.683399p 1.52e-08p 1.95e-08p 1.95e-08p
rc 4.28e-08p 0.000499p 0.185971p 0.000224o 2.994835m 0.023671n 5.570221l 5.707002l 5.707294l 1.53e-08p 1.95e-08p 1.95e-08p
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.943345n 0.0 0.0 0.0
zp 42.37 ri 7.19e-10p 7.38e-06p 0.006733p 0.0 0.431102p 0.0 3.120740n 2.185204n 0.197545p 0.001091p 0.000308p 9.31e-07p
sig0.611 cc 7.19e-10p 7.38e-06p 0.006740p 0.0 0.437774p 0.0 3.558638p 5.743622p 5.941148p 0.001091p 0.001396p 0.001392p
rc 7.19e-10p 7.38e-06p 0.006741p 7.35e-06o 0.437838p 0.002573o 3.560972m 5.746175l 5.943727l 0.001091p 0.001396p 0.001392p

sr, y half lives from 80eng2; zr, nb, mo, tc half lives 89wal1.
1

mass number 105 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 40 zr g 41 nb g 42 mo d 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g
half life 0.493s 3.0 s 1.0 s 36. s 7.6 m 4.44 h 40. s 35.4 h stable 7.2 m 41.0d 55.5m
lambda 1.406e+00 2.310e-01 6.931e-01 1.925e-02 1.520e-03 4.337e-05 1.733e-02 5.439e-06 0.0 1.605e-03 1.957e-07
2.082e-04
z - 1 g 100.0000 98.9120 0.0 97.7680 100.0000 100.0000 27.0000 73.0000 100.0000 -50.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.9400 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0 50.0000 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.237439j 0.0 0.0 0.0
zp 41.93 ri 2.88e-05p 0.101832p 0.0 1.090695n 0.047066p 4.53e-06p 0.0 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 2.88e-05p 0.101858p 0.0 1.190284p 1.237348p 1.237353p 0.334085p 1.237353p 1.237353p 0.0 0.0 0.0
rc 2.88e-05p 0.101861p 8.75e-05o 1.190370m 1.237436m 1.237440l 0.334109m 1.237440k 1.237440i 0.0 0.0 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.687979n 0.0 0.0 0.0
zp 41.59 ri 0.066639p 0.920618p 0.0 1.624185n 0.097141p 0.000552p 7.13e-09p 5.23e-08p 0.0 0.0 0.0 0.0
sig0.536 cc 0.066630p 0.986402p 0.0 2.588713p 2.685841p 2.686394p 0.725326p 2.686394p 2.686394p 0.0 0.0 0.0
rc 0.066639p 0.986532o 0.002145o 2.590842m 2.687983m 2.688536m 0.725905m 2.688536l 2.688536l 0.0 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.260075i 0.0 4.328291i 4.333165i 0.0 0.0 0.0
zp 42.35 ri 0.009687p 0.440207p 0.0 2.406746n 1.672591n 0.232651p 0.000125p 0.001660p 2.00e-06p 2.06e-10p 1.80e-11p
0.0
sig0.643 cc 0.009580p 0.444819p 0.0 2.815274p 4.579109p 4.751688p 1.283092p 4.753634p 4.753636p 2.33e-10p 1.37e-10p
0.0
rc 0.009687p 0.449788p 0.000950o 2.847445m 4.520036k 4.752687i 1.283350i 4.754472h 4.754474g 2.06e-10p 1.21e-10p
0.0
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.132633k 0.0 0.0 0.0 0.0
zp 42.00 ri 0.018842p 0.441256p 0.0 1.223498n 0.439497p 0.018688p 5.66e-06p 7.52e-05p 3.22e-08p 1.04e-12p 0.0 0.0
sig0.632 cc 0.018839p 0.459834p 0.0 1.673171p 2.112627p 2.131312p 0.575460p 2.131393p 2.131393p 1.04e-12p 0.0
0.0

rc 0.018842p 0.459893p 0.001288o 1.674414m 2.113911n 2.132599m 0.575807n 2.132680k 2.132680k 1.04e-12p 0.0
0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.504468k 0.0 0.0 0.0 0.0
zp 41.85 ri 0.036666p 0.680083p 0.0 1.426718n 0.364746p 0.010044p 1.78e-06p 2.36e-05p 5.37e-09p 0.0 0.0 0.0
sig0.621 cc 0.036658p 0.716192p 0.0 2.127117p 2.491831p 2.501873p 0.675508p 2.501899p 2.501899p 0.0 0.0 0.0
rc 0.036666p 0.716350o 0.002694o 2.129773m 2.494519m 2.504563l 0.676234m 2.504589j 2.504589j 0.0 0.0 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.762442n 0.0 0.0 0.0
zp 42.24 ri 0.005682p 0.381576p 0.0 3.042392n 1.269045n 0.071728p 1.79e-05p 0.000131p 2.76e-08p 0.0 0.0 0.0
sig0.569 cc 0.005682p 0.387180p 0.0 3.420995p 4.689995p 4.761720p 1.285682p 4.761869p 4.761869p 0.0 0.0 0.0
rc 0.005682p 0.387197p 0.000686o 3.421632m 4.690678l 4.762405l 1.285867l 4.762554k 4.762554k 0.0 0.0 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.325656i 5.738419n 0.0 0.0 0.0
zp 42.39 ri 0.002128p 0.300554p 0.0 2.764121n 2.140926n 0.133839p 6.18e-05p 0.000453p 1.06e-07p 0.0 0.0 0.0
sig0.565 cc 0.002128p 0.302717p 0.0 3.060777p 5.201021p 5.334788p 1.440455p 5.335303p 5.335303p 0.0 0.0 0.0
rc 0.002128p 0.302658p 0.000520o 3.060544m 5.201470l 5.335309k 1.440595l 5.335824i 5.335824i 0.0 0.0 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.866303n 0.0 0.0 0.0
zp 42.14 ri 0.017622p 0.812986p 0.0 3.434348n 1.549990n 0.067968p 2.84e-05p 0.000208p 5.75e-08p 0.0 0.0 0.0
sig0.598 cc 0.017620p 0.830328p 0.0 4.246366p 5.796229p 5.864189p 1.583359p 5.864426p 5.864426p 0.0 0.0 0.0
rc 0.017622p 0.830416o 0.002305o 4.248534m 5.798524l 5.866492l 1.583981l 5.866728k 5.866728k 0.0 0.0 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.239868n 0.0 0.0 0.0
zp 41.86 ri 0.020608p 1.040155n 0.0 2.735736n 0.461614p 0.003597p 1.13e-07p 8.32e-07p 7.33e-12p 0.0 0.0 0.0
sig0.524 cc 0.020605p 1.060385p 0.0 3.772665p 4.234222p 4.237818p 1.144211p 4.237819p 4.237819p 0.0 0.0 0.0
rc 0.020608p 1.060540m 0.002699o 3.775303m 4.236916m 4.240513m 1.144939m 4.240514l 4.240514l 0.0 0.0
0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.785421n 0.0 0.0 0.0
zp 42.75 ri 0.000675p 0.114598p 0.0 1.895549n 3.125450n 0.639628p 0.001430p 0.010488p 2.01e-05p 2.10e-09p 2.87e-10p
0.0
sig0.611 cc 0.000675p 0.115265p 0.0 2.008276p 5.133700p 5.773321p 1.560227p 5.785240p 5.785260p 2.10e-09p 1.34e-09p
0.0
rc 0.000675p 0.115266p 0.000180o 2.008423m 5.133873l 5.773501l 1.560276l 5.785420l 5.785440k 2.10e-09p 1.34e-09p
0.0

zr half life from 80eng2; nb, mo, tc, ru, rh half lives 89wal1.
1

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    mass number    106            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       40 zr g   41 nb g   42 mo g   43 tc g   44 ru g   45 rh m   45 rh g   46 pd g   47 ag m   47 ag g   48 cd g
half life     0.907s     1.0 s     8.4 s     36. s    1.020y    2.18 h    29.9 s    stable     8.4 d    24.1 m    stable
lambda       7.642e-01 6.931e-01 8.252e-02 1.925e-02 2.155e-08 8.832e-05 2.318e-02       0.0 9.551e-07 4.794e-04       0.0
 z - 1 g    100.0000  100.0000   99.0600  100.0000  100.0000       0.0  100.0000  100.0000 -100.0000 -100.0000       0.0
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u234f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.429079k      0.0       0.0       0.0
zp 42.13 ri 7.53e-07p 0.009308p 0.382878p 0.036959p 2.04e-05p       0.0       0.0       0.0       0.0       0.0       0.0
sig0.350 cc 7.53e-07p 0.009308p 0.392099p 0.429058p 0.429079p       0.0  0.429079p 0.429079p       0.0       0.0       0.0
         rc 7.53e-07p 0.009308p 0.392099p 0.429058o 0.429079n       0.0  0.429079m 0.429079k       0.0       0.0       0.0
 u237f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.060784n      0.0       0.0       0.0
zp 41.83 ri 0.000169p 0.228022p 1.799804n 0.034932p 1.90e-06p       0.0       0.0       0.0       0.0       0.0       0.0
sig0.350 cc 0.000169p 0.228191p 2.025850p 2.060782p 2.060784p       0.0  2.060784p 2.060784p       0.0       0.0       0.0
         rc 0.000169p 0.228191p 2.025850m 2.060782m 2.060784m       0.0  2.060784m 2.060784l       0.0       0.0       0.0
 pu240h  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0  4.015353i      0.0       0.0  3.764393n      0.0       0.0       0.0
zp 42.76 ri 0.000889p 0.100180p 1.281841n 2.139624n 0.486968p 0.006547p 0.006547p 3.90e-05p 9.38e-09p 2.06e-09p       0.0
sig0.643 cc 0.000889p 0.101056p 1.381787p 3.521313p 4.008107p 0.006768p 4.014875p 4.021683p 9.70e-09p 2.13e-09p       0.0
         rc 0.000889p 0.101068p 1.381959m 3.521583l 4.008551i 0.006547p 4.015098i 4.021683i 9.38e-09p 2.06e-09p       0.0
 u234he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.529381n      0.0       0.0       0.0
zp 42.35 ri 0.002619p 0.134389p 0.772846p 0.568379p 0.051928p 0.000254p 0.000254p 4.69e-07p 3.16e-11p 6.95e-12p       0.0
sig0.632 cc 0.002619p 0.137008p 0.908566p 1.476945p 1.528873p 0.000254p 1.529127p 1.529381p 3.16e-11p 6.95e-12p       0.0
         rc 0.002619p 0.137008p 0.908566o 1.476945n 1.528873n 0.000254p 1.529127n 1.529381m 3.16e-11p 6.95e-12p       0.0
 u236he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.814851n      0.0       0.0       0.0
zp 42.12 ri 0.008091p 0.278453p 1.036539n 0.470290p 0.024054p 5.86e-05p 5.86e-05p 4.87e-08p 1.34e-12p       0.0       0.0
sig0.621 cc 0.008091p 0.286544p 1.320390p 1.790680p 1.814733p 5.86e-05p 1.814792p 1.814851p 1.34e-12p       0.0       0.0
         rc 0.008091p 0.286544p 1.320390m 1.790680n 1.814733n 5.86e-05p 1.814792n 1.814851m 1.34e-12p       0.0       0.0
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 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.240739n      0.0       0.0       0.0
zp 42.65 ri 0.000400p 0.072540p 1.956808n 1.851377n 0.358274p 0.001012p 0.001012p 1.49e-06p 1.73e-11p 6.40e-12p       0.0
sig0.569 cc 0.000400p 0.072940p 2.029062p 3.880439p 4.238713p 0.001012p 4.239726p 4.240739p 1.73e-11p 6.40e-12p       0.0
         rc 0.000400p 0.072940p 2.029062m 3.880439l 4.238713l 0.001012p 4.239726l 4.240739l 1.73e-11p 6.40e-12p       0.0
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  4.792083i      0.0       0.0  5.386060n      0.0       0.0       0.0
zp 42.78 ri 0.000126p 0.055158p 1.423860n 2.842055n 0.486689p 0.003043p 0.003043p 3.89e-06p 8.85e-11p 3.27e-11p       0.0
sig0.565 cc 0.000126p 0.055302p 1.479100p 4.319772p 4.807719p 0.002868p 4.810587p 4.813459p 8.34e-11p 3.09e-11p       0.0
         rc 0.000126p 0.055284p 1.478625m 4.320680l 4.807369i 0.003043p 4.810412i 4.813459i 8.85e-11p 3.27e-11p       0.0
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.624986n      0.0       0.0       0.0
zp 42.52 ri 0.002013p 0.243158p 2.483251n 2.611596n 0.284624p 0.001323p 0.001323p 1.79e-06p 5.90e-11p 2.18e-11p       0.0
sig0.598 cc 0.002013p 0.245171p 2.726117p 5.337713p 5.622337p 0.001323p 5.623661p 5.624986p 5.90e-11p 2.18e-11p       0.0
         rc 0.002013p 0.245171p 2.726117m 5.337713l 5.622337l 0.001323p 5.623661l 5.624986l 5.90e-11p 2.18e-11p       0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.840821n      0.0       0.0       0.0
zp 42.26 ri 0.001548p 0.285542p 2.326133n 1.196713n 0.033548p 1.75e-05p 1.75e-05p 1.12e-09p       0.0       0.0       0.0
sig0.524 cc 0.001548p 0.287090p 2.610524p 3.807238p 3.840786p 1.75e-05p 3.840804p 3.840821p       0.0       0.0       0.0
         rc 0.001548p 0.287090p 2.610524m 3.807238l 3.840786l 1.75e-05p 3.840804l 3.840821l       0.0       0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.483860n      0.0       0.0       0.0
zp 43.14 ri 4.40e-05p 0.019084p 0.823339p 3.047335n 1.524959n 0.034478p 0.034478p 0.000324p 7.41e-08p 2.74e-08p 2.76e-12p
sig0.611 cc 4.40e-05p 0.019128p 0.842287p 3.889622p 5.414581p 0.034478p 5.449058p 5.483860p 7.41e-08p 2.74e-08p 2.76e-
12p
         rc 4.40e-05p 0.019128p 0.842287o 3.889622m 5.414581l 0.034478p 5.449058l 5.483860l 7.41e-08p 2.74e-08p 2.76e-12p

  zr half life from 80eng2; nb, mo, tc, ru, rh half lives 89wal1.
1

    mass number    107            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide      41 nb g   42 mo g   43 tc g   44 ru g   45 rh g   46 pd m   46 pd g   47 ag m   47 ag g   48 cd g   49 in g
half life     0.766s     3.5 s    21.2 s     3.8 m    21.7 m    21.3 s    6.5e6y     44. s    stable     6.5 h     33. m
lambda      9.049e-01 1.980e-01 3.270e-02 3.040e-03 5.324e-04 3.254e-02 3.381e-15 1.575e-02       0.0 2.962e-05 3.501e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000       0.0  100.0000   -0.3400 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  -99.6600       0.0
```

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 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0  100.0000       0.0       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.268439n      0.0       0.0       0.0       0.0
zp 42.33 ri 0.001876p 0.201100p 0.065344p 0.000119p 5.55e-11p      0.0       0.0       0.0       0.0       0.0       0.0
sig0.350 cc 0.001876p 0.202976p 0.268320p 0.268439p 0.268439p      0.0  0.268439p      0.0  0.268439p      0.0       0.0
         rc 0.001876p 0.202976p 0.268320o 0.268439o 0.268439o      0.0  0.268439n      0.0  0.268439n      0.0       0.0
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.122885n      0.0       0.0       0.0       0.0
zp 42.06 ri 0.046759p 0.990983o 0.085122p 2.14e-05p 1.15e-12p      0.0       0.0       0.0       0.0       0.0       0.0
sig0.350 cc 0.046759p 1.037742p 1.122864p 1.122885p 1.122885p      0.0  1.122885p      0.0  1.122885p      0.0       0.0
         rc 0.046759p 1.037742n 1.122864n 1.122885n 1.122885n      0.0  1.122885m      0.0  1.122885m      0.0       0.0
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  3.147594n      0.0       0.0       0.0       0.0
zp 43.15 ri 0.016199p 0.476337p 1.734956n 0.864180p 0.055521p 0.000316p 8.40e-05p 2.68e-07p 2.33e-08p 2.04e-11p      0.0
sig0.643 cc 0.016199p 0.492536p 2.227492p 3.091673p 3.147194p 0.000316p 3.147594p 2.68e-07p 3.147594p 2.04e-11p      0.0
         rc 0.016199p 0.492536p 2.227492m 3.091673m 3.147194m 0.000316p 3.147594m 2.68e-07p 3.147594m 2.04e-11p      0.0
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.233372n      0.0       0.0       0.0       0.0
zp 42.72 ri 0.032840p 0.416449p 0.650570p 0.130538p 0.002968p 5.24e-06p 1.39e-06p 1.23e-09p 1.07e-10p      0.0       0.0
sig0.632 cc 0.032840p 0.449289p 1.099859p 1.230397p 1.233365p 5.24e-06p 1.233372p 1.23e-09p 1.233372p      0.0       0.0
         rc 0.032840p 0.449289p 1.099859o 1.230397n 1.233365n 5.24e-06p 1.233372m 1.23e-09p 1.233372m      0.0       0.0
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.585501n      0.0       0.0       0.0       0.0
zp 42.49 ri 0.085878p 0.713097p 0.703288p 0.082265p 0.000974p 8.02e-07p 2.13e-07p 7.97e-11p 6.93e-12p      0.0       0.0
sig0.621 cc 0.085878p 0.798975p 1.502262p 1.584527p 1.585500p 8.02e-07p 1.585501p 7.97e-11p 1.585501p      0.0       0.0
         rc 0.085878p 0.798975o 1.502262n 1.584527n 1.585500n 8.02e-07p 1.585501m 7.97e-11p 1.585501m      0.0       0.0
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  3.010741n      0.0       0.0       0.0       0.0
zp 43.07 ri 0.007618p 0.539288p 1.669296n 0.777987p 0.016517p 2.44e-05p 1.10e-05p 2.06e-09p 2.80e-10p      0.0       0.0
sig0.569 cc 0.007618p 0.546906p 2.216202p 2.994189p 3.010706p 2.44e-05p 3.010741p 2.06e-09p 3.010741p      0.0       0.0
         rc 0.007618p 0.546906o 2.216202m 2.994189m 3.010706m 2.44e-05p 3.010741m 2.06e-09p 3.010741m      0.0       0.0
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  5.125893n      0.0       0.0       0.0       0.0
zp 43.17 ri 0.007769p 0.588214p 3.083953n 1.397470n 0.048388p 6.77e-05p 3.04e-05p 8.81e-09p 1.20e-09p      0.0       0.0
sig0.565 cc 0.007769p 0.595983p 3.679936p 5.077406p 5.125795p 6.77e-05p 5.125893p 8.81e-09p 5.125893p      0.0       0.0
         rc 0.007769p 0.595983o 3.679936m 5.077406l 5.125795l 6.77e-05p 5.125893l 8.81e-09p 5.125893l      0.0       0.0
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 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  5.245324n      0.0       0.0       0.0       0.0
zp 42.91 ri 0.047393p 1.237560n 3.105606n 0.833972p 0.020754p 2.72e-05p 1.22e-05p 4.54e-09p 6.19e-10p       0.0       0.0
sig0.598 cc 0.047393p 1.284954p 4.390559p 5.224531p 5.245285p 2.72e-05p 5.245324p 4.54e-09p 5.245324p       0.0       0.0
         rc 0.047393p 1.284954m 4.390559m 5.224531m 5.245285m 2.72e-05p 5.245324l 4.54e-09p 5.245324l       0.0       0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.444159n      0.0       0.0       0.0       0.0
zp 42.65 ri 0.001293p 0.827365p 1.597774n 0.017728p 1.38e-07p       0.0       0.0       0.0       0.0       0.0       0.0
sig0.350 cc 0.001293p 0.828657p 2.426431p 2.444159p 2.444159p       0.0  2.444159p       0.0  2.444159p       0.0       0.0
         rc 0.001293p 0.828657o 2.426431m 2.444159m 2.444159m       0.0  2.444159l       0.0  2.444159l       0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  5.134251n      0.0       0.0       0.0       0.0
zp 43.53 ri 0.002219p 0.236828p 2.182486n 2.429070n 0.280332p 0.002288p 0.001028p 2.59e-06p 3.54e-07p 2.14e-10p       0.0
sig0.611 cc 0.002219p 0.239047p 2.421533p 4.850603p 5.130935p 0.002288p 5.134251p 2.59e-06p 5.134254p 2.14e-10p       0.0
         rc 0.002219p 0.239047p 2.421533m 4.850603l 5.130935l 0.002288p 5.134251l 2.59e-06p 5.134254l 2.14e-10p       0.0

  nb half life from 80eng2; mo, tc, ru, rh, pd half lives 89wal1.
1

    mass number    108            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       40 zr g   41 nb g   42 mo g   43 tc d   43 tc g   44 ru d   44 ru g   45 rh m   45 rh g   46 pd g   47 ag g   48 cd g
half life     0.378s    0.242s     1.5 s    1.41 s     5.1 s     1.4 s     4.5 m     5.9 m     17. s    stable    2.41 m    stable
lambda       1.834e+00 2.864e+00 4.621e-01 4.916e-01 1.359e-01 4.951e-01 2.567e-03 1.958e-03 4.077e-02       0.0 4.794e-03
0.0
 z - 1 g    100.0000  100.0000  100.0000       0.0  100.0000       0.0  100.0000       0.0  100.0000  100.0000   -2.3000   97.7000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 z - 0 m       0.0       0.0       0.0    0.1360  100.0000    0.0880  100.0000       0.0       0.0       0.0       0.0       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.185843n      0.0       0.0
zp 42.54 ri 6.87e-10p 0.000202p 0.111736p       0.0  0.073055p       0.0  0.000731p 6.84e-10p 6.84e-10p       0.0       0.0       0.0
sig0.350 cc 6.87e-10p 0.000202p 0.111938p       0.0  0.184993p       0.0  0.185724p 6.84e-10p 0.185724p 0.185724p       0.0       0.0
         rc 6.87e-10p 0.000202p 0.111938p 4.79e-05o 0.185041p 8.96e-05o 0.185862o 6.84e-10p 0.185862o 0.185862n       0.0       0.0
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.495548n      0.0       0.0
zp 42.30 ri 7.97e-08p 0.003716p 0.400691p       0.0  0.090729p       0.0  0.000162p 2.37e-11p 2.37e-11p       0.0       0.0       0.0
sig0.350 cc 7.97e-08p 0.003716p 0.404407p       0.0  0.495136p       0.0  0.495298p 2.37e-11p 0.495298p 0.495298p       0.0       0.0
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rc 7.97e-08p 0.003716p 0.404407p 0.000135o 0.495271o 0.000157o 0.495590o 2.37e-11p 0.495590o 0.495590n 0.0
0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.638334n 0.0 0.0
zp 43.53 ri 3.25e-06p 0.002109p 0.142421p 0.0 1.127633n 0.0 1.193232n 0.084808p 0.084808p 0.002850p 5.00e-06p
8.57e-10p
sig0.643 cc 3.25e-06p 0.002112p 0.144526p 0.0 1.272131p 0.0 2.465406p 0.084805p 2.550210p 2.637865p 5.00e-06p
4.89e-06p
rc 3.25e-06p 0.002112p 0.144533p 7.29e-05o 1.272239m 0.000672o 2.466143l 0.084808p 2.550951l 2.638609l 5.00e-06p
4.89e-06p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.420844n 0.0 0.0
zp 43.08 ri 3.17e-05p 0.008810p 0.246420p 0.0 0.806243p 0.0 0.341378p 0.008660p 0.008660p 9.04e-05p 4.37e-08p
1.86e-12p
sig0.632 cc 3.17e-05p 0.008841p 0.255252p 0.0 1.061491p 0.0 1.402884p 0.008660p 1.411543p 1.420294p 4.37e-08p
4.27e-08p
rc 3.17e-05p 0.008841p 0.255262p 0.000114o 1.061618o 0.000589o 1.403585o 0.008660p 1.412245n 1.420996m 4.37e-08p
4.27e-08p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.376096n 0.0 0.0
zp 42.85 ri 0.000103p 0.020021p 0.371347p 0.0 0.779264p 0.0 0.199178p 0.002742p 0.002742p 1.39e-05p 2.93e-09p
0.0
sig0.621 cc 0.000103p 0.020123p 0.391454p 0.0 1.170732p 0.0 1.369913p 0.002742p 1.372656p 1.375412p 2.93e-09p
2.86e-09p
rc 0.000103p 0.020124p 0.391471p 0.000198o 1.170934o 0.000707o 1.370818n 0.002742p 1.373560n 1.376317m 2.93e-09p
2.86e-09p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.140564n 0.0 0.0
zp 43.48 ri 0.0 1.18e-08p 0.006345p 0.0 0.877042p 0.0 1.253844n 0.001572p 0.001572p 1.08e-08p 0.0 0.0
sig0.350 cc 0.0 1.18e-08p 0.006344p 0.0 0.883372p 0.0 2.137231p 0.001572p 2.138803p 2.140375p 0.0 0.0
rc 0.0 1.18e-08p 0.006345p 5.06e-07o 0.883387o 0.000247o 2.137478m 0.001572p 2.139050m 2.140623l 0.0 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.117019n 0.0 0.0
zp 43.57 ri 1.08e-07p 0.000494p 0.117177p 0.0 1.725293n 0.0 2.065403n 0.103511p 0.103511p 0.001340p 4.57e-07p
7.50e-12p

sig0.565 cc 1.08e-07p 0.000494p 0.117669p 0.0 1.842941p 0.0 3.908370p 0.103509p 4.011879p 4.116728p 4.57e-07p 4.46e-07p
rc 1.08e-07p 0.000494p 0.117671p 1.43e-05o 1.842978m 0.000411o 3.908792l 0.103511p 4.012303l 4.117154l 4.57e-07p 4.46e-07p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.935600n 0.0 0.0
zp 43.31 ri 6.27e-06p 0.005985p 0.423390p 0.0 2.645025n 0.0 1.744500n 0.057712p 0.057712p 0.000625p 2.40e-07p 6.13e-12p
sig0.598 cc 6.27e-06p 0.005991p 0.429370p 0.0 3.074351p 0.0 4.818910p 0.057710p 4.876620p 4.934955p 2.40e-07p 2.35e-07p
rc 6.27e-06p 0.005992p 0.429381p 9.67e-05o 3.074503m 0.001138n 4.820142l 0.057712p 4.877853l 4.936190l 2.40e-07p 2.35e-07p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.656042n 0.0 0.0
zp 42.85 ri 1.65e-11p 9.92e-05p 0.267819p 0.0 1.337108n 0.0 0.050603p 9.20e-07p 9.20e-07p 0.0 0.0 0.0
sig0.350 cc 1.65e-11p 9.92e-05p 0.267912p 0.0 1.605028p 0.0 1.655629p 9.20e-07p 1.655630p 1.655631p 0.0 0.0
rc 1.65e-11p 9.92e-05p 0.267919p 6.85e-05o 1.605095m 0.000708o 1.656406m 9.20e-07p 1.656407m 1.656408l 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.484978n 0.0 0.0
zp 43.93 ri 4.49e-08p 0.000147p 0.044093p 0.0 0.984816p 0.0 2.702607n 0.364766p 0.364766p 0.023590p 5.57e-05p 1.19e-08p
sig0.611 cc 4.49e-08p 0.000147p 0.044239p 0.0 1.029045p 0.0 3.731672p 0.364762p 4.096434p 4.484787p 5.57e-05p 5.44e-05p
rc 4.49e-08p 0.000147p 0.044240p 5.75e-06o 1.029062o 0.000240o 3.731909m 0.364766p 4.096675m 4.485032l 5.57e-05p 5.44e-05p

zr, nb half lives from 80eng2; mo, tc, ru, rh half lives 89wal1.
1

mass number 109 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 41 nb g 42 mo g 43 tc g 44 ru d 44 ru g 45 rh m 45 rh g 46 pd m 46 pd g 47 ag g 48 cd g 49 in g
half life 0.315s 1.41 s 1.4 s 0.83 s 34.5 s 50. s 1.34 m 4.69 m 13.5 h stable 462.9d 4.2 h
lambda 2.200e+00 4.916e-01 4.951e-01 8.351e-01 2.009e-02 1.386e-02 8.621e-03 2.463e-03 1.426e-05 0.0 1.733e-08 4.584e-05
z - 1 g 100.0000 100.0000 99.8640 0.0 99.9120 50.0000 50.0000 0.0 100.0000 100.0000 0.0 -100.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -100.0000 0.0
z - 0 m 0.0 0.0 0.0 0.6210 100.0000 0.0 100.0000 0.0 100.0000 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.122754n 0.0 0.0
zp 42.90 ri 0.000617p 0.034615p 0.066685p 0.0 0.020547p 0.000102p 0.000102p 1.36e-07p 6.12e-08p 4.18e-12p 0.0
0.0
sig0.554 cc 0.000617p 0.035232p 0.101869p 0.0 0.122326p 0.061265p 0.122530p 1.36e-07p 0.122530p 0.122530p 0.0
0.0
rc 0.000617p 0.035232p 0.101869p 0.000279o 0.122605o 0.061404o 0.122809n 1.36e-07p 0.122809n 0.122809m 0.0
0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.178867n 0.0 0.0
zp 42.53 ri 0.000251p 0.098935p 0.078818p 0.0 0.000563p 6.16e-10p 6.16e-10p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.000251p 0.099186p 0.177869p 0.0 0.178276p 0.089138p 0.178276p 0.0 0.178276p 0.178276p 0.0 0.0
rc 0.000251p 0.099186p 0.177869p 0.000701o 0.178977o 0.089489o 0.178977n 0.0 0.178977n 0.178977m 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.298790i 2.248598n 0.0 0.0
zp 43.78 ri 0.000451p 0.053169p 0.709589p 0.0 1.232095n 0.146016p 0.145754p 0.006701p 0.001781p 2.61e-05p 8.04e-09p
0.0
sig0.643 cc 0.000451p 0.053604p 0.762900p 0.0 1.994379p 1.143167p 2.286334p 0.006699p 2.294813p 2.294839p 8.13e-09p
0.0
rc 0.000451p 0.053620p 0.763137o 0.002711o 1.997272m 1.144652m 2.289042k 0.006701p 2.297524i 2.297550i 8.04e-09p
0.0
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.258054n 0.0 0.0
zp 43.45 ri 0.001279p 0.082370p 0.585289p 0.0 0.527368p 0.029878p 0.029878p 0.000580p 0.000154p 8.64e-07p 9.06e-11p
0.0
sig0.632 cc 0.001278p 0.083630p 0.668679p 0.0 1.195616p 0.627680p 1.255360p 0.000580p 1.256094p 1.256095p 9.06e-11p
0.0
rc 0.001279p 0.083648p 0.668823o 0.002712o 1.198315n 0.629036n 1.258072m 0.000580p 1.258807m 1.258807l 9.06e-11p
0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.196605n 0.0 0.0
zp 43.22 ri 0.003283p 0.142512p 0.657532p 0.0 0.368034p 0.011807p 0.011807p 0.000116p 3.08e-05p 7.81e-08p 3.37e-12p
0.0

sig0.621 cc 0.003282p 0.145767p 0.802973p 0.0 1.170462p 0.597035p 1.194070p 0.000116p 1.194217p 1.194217p 3.37e-12p 0.0
rc 0.003283p 0.145795p 0.803129o 0.003554o 1.174010o 0.598812o 1.197623n 0.000116p 1.197770n 1.197770m 3.37e-12p 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.216461n 0.0 0.0
zp 43.70 ri 1.45e-10p 0.000372p 0.279890p 0.0 0.924712p 0.005760p 0.005760p 1.28e-07p 5.74e-08p 0.0 0.0 0.0
sig0.350 cc 1.45e-10p 0.000372p 0.280246p 0.0 1.204728p 0.608123p 1.216247p 1.28e-07p 1.216247p 1.216247p 0.0 0.0
rc 1.45e-10p 0.000372p 0.280262p 0.000252o 1.204980n 0.608250n 1.216499m 1.28e-07p 1.216499m 1.216499m 0.0 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.315502i 3.060490n 0.0 0.0
zp 43.97 ri 1.38e-05p 0.010531p 0.456839p 0.0 1.453038n 0.201072p 0.205295p 0.005549p 0.002493p 1.05e-05p 5.84e-10p 0.0
sig0.565 cc 1.38e-05p 0.010563p 0.468183p 0.0 1.923501p 1.163175p 2.326351p 0.005558p 2.334406p 2.334415p 5.04e-10p 0.0
rc 1.38e-05p 0.010545p 0.467369p 0.000749o 1.920746m 1.161445n 2.327113k 0.005549p 2.335155i 2.335166i 5.84e-10p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.777620n 0.0 0.0
zp 43.74 ri 0.000332p 0.070774p 1.222310n 0.0 2.096217n 0.190727p 0.190729p 0.004280p 0.001923p 7.52e-06p 6.20e-10p 0.0
sig0.598 cc 0.000332p 0.071098p 1.293182p 0.0 3.388433p 1.884927p 3.769855p 0.004279p 3.776056p 3.776064p 6.19e-10p 0.0
rc 0.000332p 0.071106p 1.293319m 0.002218o 3.390616l 1.886035m 3.772072l 0.004280p 3.778274l 3.778282k 6.20e-10p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.896966n 0.0 0.0
zp 43.06 ri 3.90e-06p 0.050373p 0.754559o 0.0 0.091131p 8.07e-06p 8.07e-06p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 3.90e-06p 0.050357p 0.804904p 0.0 0.895291p 0.447653p 0.895307p 0.0 0.895307p 0.895307p 0.0 0.0
rc 3.90e-06p 0.050377p 0.804868o 0.002205o 0.897496n 0.448756n 0.897512m 0.0 0.897512m 0.897512m 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.406186n 0.0 0.0
zp 44.35 ri 5.07e-06p 0.004226p 0.268251p 0.0 1.784240n 0.622735p 0.622737p 0.071289p 0.032028p 0.000725p 4.40e-07p 1.84e-11p

sig0.611 cc 5.07e-06p 0.004231p 0.272470p 0.0 2.056498p 1.650975p 3.301950p 0.071288p 3.405266p 3.405991p 4.40e-07p 1.84e-11p
rc 5.07e-06p 0.004231p 0.272476p 0.000231o 2.056706m 1.651088n 3.302179m 0.071289p 3.405496m 3.406221l 4.40e-07p 1.84e-11p

nb, mo half lives from 80eng2; tc, ru, rh, pd half lives 89wal1.
1

mass number 110 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 40 zr g 41 nb g 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g
half life 0.130s 2.77 s 0.83 s 15. s 29. s 3.1 s stable 252. d 24.6 s stable
lambda 0.0 5.332e+00 2.502e-01 8.351e-01 4.621e-02 2.390e-02 2.236e-01 0.0 3.184e-08 2.818e-02 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 99.3790 0.0 100.0000 100.0000 0.0 -0.3000 99.7000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 98.6000
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.4000 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.103246n 0.0 0.0 0.0
zp 43.42 ri 9.34e-09p 2.00e-05p 0.006599p 0.038281p 0.056714p 0.000950p 0.000950p 1.16e-05p 7.19e-10p 2.66e-10p 0.0
sig0.554 cc 9.34e-09p 2.00e-05p 0.006619p 0.044900p 0.101335p 0.000950p 0.102285p 0.103246p 7.19e-10p 2.76e-10p 9.85e-10p
rc 9.34e-09p 2.00e-05p 0.006619p 0.044900p 0.101335p 0.000950p 0.102285o 0.103246n 7.19e-10p 2.76e-10p 9.85e-10p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.128842n 0.0 0.0 0.0
zp 42.80 ri 1.61e-06p 0.000789p 0.049835p 0.062334p 0.016504p 3.72e-05p 3.72e-05p 3.95e-08p 0.0 0.0 0.0
sig0.536 cc 1.61e-06p 0.000791p 0.050626p 0.112959p 0.128762p 3.72e-05p 0.128800p 0.128837p 0.0 0.0 0.0
rc 1.61e-06p 0.000791p 0.050626p 0.112959p 0.128762o 3.72e-05p 0.128800o 0.128837n 0.0 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000498l 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.949477n 0.000498l 0.0 0.0
zp 43.99 ri 5.60e-08p 0.000106p 0.019980p 0.416457p 1.099601n 0.198930p 0.198930p 0.018178p 0.000498l 1.64e-05p 4.59e-08p
sig0.643 cc 5.60e-08p 0.000106p 0.020090p 0.436637p 1.533765p 0.198973p 1.732738p 1.949893p 7.49e-05p 1.75e-05p 9.13e-05p
rc 5.60e-08p 0.000106p 0.020085p 0.436542p 1.533433m 0.198930p 1.732363m 1.949471m 0.000498k 2.34e-05p 0.000514k
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.420844n 0.0 0.0 0.0
zp 43.82 ri 1.06e-07p 0.000172p 0.026043p 0.410536p 0.786705p 0.097280p 0.097280p 0.005539p 1.29e-05p 2.82e-06p 4.05e-09p
sig0.632 cc 1.06e-07p 0.000172p 0.026216p 0.436752p 1.220744p 0.097280p 1.318025p 1.420844p 1.29e-05p 3.00e-06p 1.57e-05p

rc 1.06e-07p 0.000172p 0.026216p 0.436752p 1.220744o 0.097280p 1.318025n 1.420844m 1.29e-05p 3.00e-06p 1.57e-05p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.296322n 0.0 0.0 0.0
zp 43.59 ri 4.08e-07p 0.000485p 0.050348p 0.521399p 0.633924p 0.046167p 0.046167p 0.001384p 1.52e-06p 3.33e-07p 2.03e-10p
sig0.621 cc 4.08e-07p 0.000485p 0.050833p 0.572232p 1.202603p 0.046167p 1.248770p 1.296322p 1.52e-06p 3.54e-07p 1.85e-06p
rc 4.08e-07p 0.000485p 0.050833p 0.572232o 1.202603n 0.046167p 1.248770n 1.296322m 1.52e-06p 3.54e-07p 1.85e-06p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.608231n 0.0 0.0 0.0
zp 43.95 ri 0.0 0.0 1.02e-05p 0.040634p 0.542860o 0.012488p 0.012488p 3.19e-06p 0.0 0.0 0.0
sig0.350 cc 0.0 0.0 1.02e-05p 0.040644p 0.583252p 0.012488p 0.595740p 0.608231p 0.0 0.0 0.0
rc 0.0 0.0 1.02e-05p 0.040644p 0.583252n 0.012488p 0.595740n 0.608231m 0.0 0.0 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.053922n 0.000761l 0.0 0.0
zp 44.38 ri 6.28e-12p 3.37e-07p 0.000873p 0.119815p 1.073844n 0.405675p 0.405675p 0.049383p 0.000135p 4.99e-05p 3.56e-08p
sig0.565 cc 6.28e-12p 3.37e-07p 0.000873p 0.120688p 1.193782p 0.405675p 1.599458p 2.054516p 0.000135p 5.18e-05p 0.000185p
rc 6.28e-12p 3.37e-07p 0.000873p 0.120688p 1.193782m 0.405675p 1.599458n 2.054515m 0.000135p 5.18e-05p 0.000185p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.816448n 0.0 0.0 0.0
zp 44.18 ri 1.02e-09p 1.02e-05p 0.006871p 0.350356p 1.622153n 0.400291p 0.400291p 0.038695p 0.000109p 4.04e-05p 4.05e-08p
sig0.598 cc 1.02e-09p 1.02e-05p 0.006881p 0.357237p 1.977172p 0.400291p 2.377463p 2.816448p 0.000109p 4.19e-05p 0.000149p
rc 1.02e-09p 1.02e-05p 0.006881p 0.357237p 1.977172m 0.400291p 2.377463m 2.816448m 0.000109p 4.19e-05p 0.000149p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.477711n 0.0 0.0 0.0
zp 43.28 ri 0.0 9.24e-08p 0.006394p 0.348682p 0.124730p 5.53e-05p 5.53e-05p 4.78e-11p 0.0 0.0 0.0
sig0.350 cc 0.0 9.24e-08p 0.006395p 0.355076p 0.477601p 5.53e-05p 0.477656p 0.477711p 0.0 0.0 0.0
rc 0.0 9.24e-08p 0.006395p 0.355076p 0.477601o 5.53e-05p 0.477656o 0.477711n 0.0 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.406188n 0.0 0.0 0.0
zp 44.81 ri 2.13e-12p 6.92e-08p 0.000195p 0.036927p 0.730872p 0.658904o 0.658904p 0.320603p 0.004841p 0.001790p 1.36e-05p
sig0.611 cc 2.13e-12p 6.92e-08p 0.000195p 0.037122p 0.767763p 0.658904p 1.426667p 2.406194p 0.004841p 0.001858p 0.006639p
rc 2.13e-12p 6.92e-08p 0.000195p 0.037122p 0.767763o 0.658904o 1.426667n 2.406179m 0.004841p 0.001858p 0.006639p

nb, mo half lives from 80eng2; tc, ru, rh half lives from 89wal1.
1

mass number 111 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 42 mo g 43 tc g 44 ru g 45 rh g 46 pd m 46 pd g 47 ag m 47 ag g 48 cd m 48 cd g 49 in g 50 sn g
half life 0.466s 1.98 s 1.5 s 11. s 5.5 h 23.4 m 1.08 m 7.47 d 48.7 m stable 2.83 d 35.3 m
lambda 1.487e+00 3.501e-01 4.621e-01 6.301e-02 3.501e-05 4.937e-04 1.070e-02 1.074e-06 2.372e-04 0.0 2.835e-06
3.273e-04
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.4300 99.5700 99.3000 0.7000 0.0 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 21.7000 7.0000 0.0 0.3000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 71.3000 0.0 99.7000 0.0 100.0000 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.058195m 0.0 0.0
zp 43.92 ri 0.000339p 0.010152p 0.040888p 0.006676p 9.62e-05p 4.32e-05p 6.37e-08p 8.68e-09p 2.56e-12p 0.0 0.0 0.0
sig0.554 cc 0.000339p 0.010492p 0.051379p 0.058056p 0.000346p 0.058096p 0.057764p 0.058022p 2.56e-12p 0.058195p 0.0
0.0
rc 0.000339p 0.010492p 0.051379p 0.058056p 0.000346o 0.058096o 0.057764o 0.058022n 2.56e-12p 0.058195m 0.0
0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.069377n 0.0 0.0
zp 43.31 ri 0.005520p 0.034161p 0.028928p 0.000765p 1.22e-06p 5.47e-07p 6.53e-11p 8.90e-12p 0.0 0.0 0.0 0.0
sig0.536 cc 0.005520p 0.039681p 0.068609p 0.069375p 0.000300p 0.069291p 0.068871p 0.069170p 0.0 0.069377p 0.0
0.0
rc 0.005520p 0.039681p 0.068609p 0.069375o 0.000300o 0.069291o 0.068871o 0.069170o 0.0 0.069377n 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.666371i 0.0 1.676410n 0.0 0.0
zp 44.37 ri 0.003045p 0.144582p 0.823566p 0.634919p 0.051168p 0.013602p 0.000702p 6.11e-05p 7.97e-07p 1.30e-07p 1.09e-10p
0.0
sig0.643 cc 0.003045p 0.147628p 0.971193p 1.606112p 0.058074p 1.654214p 1.655939p 1.666677p 7.97e-07p 1.671646p 1.09e-
10p 0.0
rc 0.003045p 0.147628p 0.971193o 1.606112n 0.058074p 1.654214n 1.655939l 1.666677i 7.97e-07p 1.671646i 1.09e-10p
0.0
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.314963j 0.0 1.312182n 0.0 0.0

zp 44.19 ri 0.004938p 0.176637p 0.726361p 0.385364p 0.019656p 0.005225p 0.000154p 1.34e-05p 9.09e-08p 1.48e-08p 5.88e-12p 0.0
sig0.632 cc 0.004938p 0.181575p 0.907936p 1.293300p 0.025218p 1.310944p 1.307394p 1.314427p 9.09e-08p 1.318350p 5.88e-12p 0.0
rc 0.004938p 0.181575p 0.907936o 1.293300o 0.025218p 1.310944o 1.307394m 1.314427j 9.09e-08p 1.318350j 5.88e-12p 0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.083013j 0.0 1.317064n 0.0 0.0
zp 43.96 ri 0.010145p 0.241695p 0.639980p 0.206883p 0.005801p 0.001542p 2.23e-05p 1.94e-06p 5.81e-09p 9.46e-10p 0.0 0.0
sig0.621 cc 0.010145p 0.251840p 0.891821p 1.098703p 0.010525p 1.103025p 1.097610p 1.102777p 5.81e-09p 1.106070p 0.0 0.0
rc 0.010145p 0.251840p 0.891821o 1.098703o 0.010525p 1.103025o 1.097610m 1.102777j 5.81e-09p 1.106070j 0.0 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.305820n 0.0 0.0
zp 44.20 ri 1.76e-07p 0.005443p 0.250947p 0.049395p 2.36e-05p 1.06e-05p 5.74e-12p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 1.76e-07p 0.005444p 0.256391p 0.305786p 0.001338p 0.305436p 0.303588p 0.304909p 0.0 0.305820p 0.0 0.0
rc 1.76e-07p 0.005444p 0.256391p 0.305786o 0.001338o 0.305436o 0.303588o 0.304909o 0.0 0.305820n 0.0 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.993653i 0.0 1.107414n 0.0 0.0
zp 44.75 ri 5.83e-11p 0.000170p 0.237525p 0.747168p 0.011578p 0.005202p 2.68e-07p 3.65e-08p 0.0 0.0 0.0 0.0
sig0.350 cc 5.74e-11p 0.000168p 0.233939p 0.985129p 0.015631p 0.997157p 0.993569p 0.998663p 0.0 1.001643p 0.0 0.0
rc 5.83e-11p 0.000170p 0.237695p 0.984863o 0.015813p 0.997105n 0.993557l 0.998663i 0.0 1.001643i 0.0 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.747796n 0.0 0.0
zp 44.65 ri 0.000277p 0.046770p 0.650668p 0.913408p 0.093097p 0.041826p 0.001538p 0.000210p 1.32e-06p 3.50e-07p 1.08e-10p 0.0
sig0.598 cc 0.000277p 0.047047p 0.697715p 1.611123p 0.100025p 1.717340p 1.728561p 1.742609p 1.32e-06p 1.747796p 1.08e-10p 0.0
rc 0.000277p 0.047047p 0.697715o 1.611123n 0.100025p 1.717340n 1.728561n 1.742609n 1.32e-06p 1.747796m 1.08e-10p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.229225n 0.0 0.0

zp 43.49 ri 0.000555p 0.117936p 0.110308p 0.000425p 6.59e-10p 2.96e-10p 0.0 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.000555p 0.118492p 0.228800p 0.229225p 0.000986p 0.228942p 0.227553p 0.228542p 0.0 0.229225p 0.0
0.0
rc 0.000555p 0.118492p 0.228800o 0.229225o 0.000986o 0.228942o 0.227553o 0.228542n 0.0 0.229225m 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.427738n 0.0 0.0
zp 45.28 ri 3.86e-06p 0.002482p 0.144080p 0.756702p 0.339611p 0.152579p 0.028227p 0.003849p 0.000162p 4.30e-05p 9.59e-
08p 3.62e-12p
sig0.611 cc 3.86e-06p 0.002486p 0.146566p 0.903268p 0.343495p 1.296874p 1.390561p 1.423361p 0.000162p 1.427738p 9.59e-
08p 3.62e-12p
rc 3.86e-06p 0.002486p 0.146566p 0.903268o 0.343495p 1.296874n 1.390561n 1.423361n 0.000162p 1.427738m 9.59e-08p
3.62e-12p

mo, tc half lives from 80eng2; ru, rh, pd, ag half lives 89wal1.
1

mass number 112 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 42 mo g 43 tc g 44 ru g 45 rh g 46 pd g 47 ag g 48 cd g 49 in m 49 in g 50 sn g
half life 0.975s 0.431s 4.5 s 4. s 20.04h 3.13 h stable 20.8 m 14.4 m stable
lambda 7.109e-01 1.608e+00 1.540e-01 1.733e-01 9.608e-06 6.151e-05 0.0 5.554e-04 8.023e-04 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 0.0 -56.0000 44.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.072272n 0.0 0.0 0.0
zp 44.40 ri 2.77e-05p 0.002607p 0.047318p 0.020202p 0.002114p 3.69e-06p 9.70e-10p 0.0 0.0 0.0
sig0.554 cc 2.77e-05p 0.002635p 0.049953p 0.070155p 0.072268p 0.072272p 0.072272p 0.0 0.0 0.0
rc 2.77e-05p 0.002635p 0.049953p 0.070155p 0.072268o 0.072272o 0.072272n 0.0 0.0 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.059466n 0.0 0.0 0.0
zp 43.79 ri 0.000581p 0.011766p 0.043379p 0.003691p 4.88e-05p 8.29e-09p 0.0 0.0 0.0 0.0
sig0.536 cc 0.000581p 0.012347p 0.055726p 0.059417p 0.059466p 0.059466p 0.059466p 0.0 0.0 0.0
rc 0.000581p 0.012347p 0.055726p 0.059417p 0.059466o 0.059466o 0.059466n 0.0 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.565988i 0.0 1.505757n 0.0 0.0 0.0
zp 44.73 ri 0.000413p 0.043513p 0.522740p 0.821328o 0.176214p 0.004490p 1.25e-05p 3.04e-09p 3.76e-10p 0.0

sig0.643 cc 0.000413p 0.043906p 0.566408p 1.388196p 1.564114p 1.568697p 1.568710p 3.10e-09p 3.48e-09p 1.53e-09p
rc 0.000413p 0.043926p 0.566665o 1.387993m 1.564207i 1.568697i 1.568710i 3.04e-09p 3.41e-09p 1.50e-09p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.469665j 0.0 0.0 0.0 0.0 0.0
zp 44.57 ri 0.000777p 0.065912p 0.604958p 0.696207o 0.101811p 0.001647p 2.58e-06p 3.22e-10p 3.98e-11p 0.0
sig0.632 cc 0.000777p 0.066689p 0.671647p 1.367854p 1.469665p 1.471312p 1.471315p 3.22e-10p 3.62e-10p 1.59e-10p
rc 0.000777p 0.066689p 0.671647o 1.367854m 1.469665j 1.471312j 1.471315j 3.22e-10p 3.62e-10p 1.59e-10p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.160371j 0.0 0.0 0.0 0.0 0.0
zp 44.33 ri 0.001823p 0.102331p 0.598965p 0.422582p 0.034671p 0.000280p 1.96e-07p 9.96e-12p 1.23e-12p 0.0
sig0.621 cc 0.001823p 0.104154p 0.703119p 1.125700p 1.160371p 1.160652p 1.160652p 9.96e-12p 1.12e-11p 4.93e-12p
rc 0.001823p 0.104154p 0.703119o 1.125700l 1.160371j 1.160652j 1.160652j 9.96e-12p 1.12e-11p 4.93e-12p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.163104n 0.0 0.0 0.0
zp 44.48 ri 4.77e-05p 0.005330p 0.092322p 0.058108p 0.007271p 2.54e-05p 1.13e-08p 0.0 0.0 0.0
sig0.569 cc 4.77e-05p 0.005377p 0.097699p 0.155807p 0.163079p 0.163104p 0.163104p 0.0 0.0 0.0
rc 4.77e-05p 0.005377p 0.097699p 0.155807p 0.163079o 0.163104o 0.163104n 0.0 0.0 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.749015i 0.0 0.553707n 0.0 0.0 0.0
zp 44.96 ri 0.0 1.06e-05p 0.068909p 0.627706m 0.046952p 3.66e-06p 0.0 0.0 0.0 0.0
sig0.350 cc 0.0 1.05e-05p 0.068512p 0.696901p 0.743577p 0.743581p 0.743581p 0.0 0.0 0.0
rc 0.0 1.06e-05p 0.068919p 0.696625l 0.743577i 0.743581i 0.743581i 0.0 0.0 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.928829n 0.0 0.0 0.0
zp 44.90 ri 2.97e-12p 2.81e-05p 0.115846p 0.772257o 0.040695p 2.29e-06p 0.0 0.0 0.0 0.0
sig0.350 cc 2.97e-12p 2.81e-05p 0.115874p 0.888131p 0.928826p 0.928829p 0.928829p 0.0 0.0 0.0
rc 2.97e-12p 2.81e-05p 0.115874p 0.888131n 0.928826n 0.928829n 0.928829m 0.0 0.0 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.129380n 0.0 0.0 0.0
zp 43.86 ri 0.000626p 0.031573p 0.083060p 0.014012p 0.000109p 2.87e-08p 0.0 0.0 0.0 0.0
sig0.524 cc 0.000626p 0.032199p 0.115259p 0.129271p 0.129380p 0.129380p 0.129380p 0.0 0.0 0.0
rc 0.000626p 0.032199p 0.115259p 0.129271p 0.129380o 0.129380o 0.129380n 0.0 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.738830n 0.0 0.0 0.0
zp 45.68 ri 0.0 1.55e-10p 0.000277p 0.210863p 0.520976p 0.006713p 7.51e-08p 0.0 0.0 0.0
sig0.350 cc 0.0 1.55e-10p 0.000277p 0.211140p 0.732116p 0.738829p 0.738830p 0.0 0.0 0.0

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          rc      0.0  1.55e-10p 0.000277p 0.211140p 0.732116n 0.738829n 0.738830m       0.0        0.0        0.0

   mo, tc half lives from 80eng2; ru, rh, pd, ag half lives 89wal1.
1

     mass number    113            LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       43 tc g   44 ru g   45 rh g   46 pd g   47 ag m   47 ag g   48 cd m   48 cd g   49 in m   49 in g   50 sn g   51 sb g
 half life     0.652s     2.7 s     0.9 s    1.64 m    1.14 m     5.3 h    14.6 y    9.e15y    1.658h    stable    115.1d     6.7 m
 lambda       1.063e+00 2.567e-01 7.702e-01 7.044e-03 1.013e-02 3.633e-05 1.505e-09 2.442e-24 1.161e-04        0.0 6.970e-08
1.724e-03
  z - 1 g    100.0000  100.0000  100.0000  100.0000   10.0000   90.0000    1.3000   98.7000       0.0  100.0000       0.0 -100.0000
  z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0   99.9000 -100.0000       0.0
  z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0    0.1000       0.0  100.0000       0.0       0.0
  u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.058308n 3.78e-11n 0.060221n       0.0       0.0
 zp 44.86 ri 0.000367p 0.018390p 0.032014p 0.008892p 6.91e-05p 9.42e-06p 5.31e-08p 1.41e-08p       0.0  1.04e-12p       0.0       0.0
 sig0.554 cc 0.000367p 0.018757p 0.050771p 0.059663p 0.006035p 0.053706p 0.000698p 0.059044p       0.0  0.059741p       0.0
0.0
          rc 0.000367p 0.018757p 0.050771p 0.059663o 0.006035o 0.053706o 0.000698o 0.059044n       0.0  0.059741m       0.0       0.0
  u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.043723n       0.0  0.043375n       0.0       0.0
 zp 44.25 ri 0.002849p 0.029615p 0.010774p 0.000474p 3.98e-07p 5.43e-08p 2.44e-11p 6.48e-12p       0.0       0.0       0.0       0.0
 sig0.536 cc 0.002849p 0.032464p 0.043238p 0.043712p 0.004372p 0.039341p 0.000511p 0.043201p       0.0  0.043712p       0.0
0.0
          rc 0.002849p 0.032464p 0.043238p 0.043712o 0.004372o 0.039341o 0.000511o 0.043201n       0.0  0.043712m       0.0       0.0
  pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0  1.535872i       0.0  1.355182n 5.12e-09n 1.728760n       0.0       0.0
 zp 45.11 ri 0.010585p 0.285511p 0.958833p 0.436631p 0.023958p 0.002083p 0.000147p 2.40e-05p 1.25e-08p 1.01e-07p 7.25e-12p
0.0
 sig0.643 cc 0.010554p 0.295225p 1.251716p 1.691637p 0.193051p 1.524550p 0.019966p 1.697826p 1.25e-08p 1.717772p 7.23e-
12p      0.0
          rc 0.010585p 0.296096p 1.254929o 1.691559k 0.193114n 1.524487i 0.019966i 1.697826i 1.25e-08l 1.717772i 7.25e-12p
0.0
  u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.302440n 7.79e-09n 1.297418n       0.0       0.0
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zp 44.94 ri 0.014763p 0.302811p 0.742200p 0.235642p 0.008063p 0.000701p 2.83e-05p 4.61e-06p 1.25e-09p 1.01e-08p 0.0
0.0
sig0.632 cc 0.014764p 0.317611p 1.059898p 1.295415p 0.137606p 1.166575p 0.015194p 1.289035p 1.25e-09p 1.304214p 0.0
0.0
rc 0.014763p 0.317574p 1.059774o 1.295416n 0.137605n 1.166576n 0.015194n 1.289035m 1.25e-09p 1.304214m 0.0
0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.076944n 1.40e-10n 1.083017n 0.0 0.0
zp 44.71 ri 0.027287p 0.369231p 0.577359p 0.109157p 0.001996p 0.000174p 3.35e-06p 5.45e-07p 6.36e-11p 5.15e-10p 0.0
0.0
sig0.621 cc 0.027290p 0.396557p 0.973877p 1.083033p 0.110299p 0.974904p 0.012677p 1.072542p 6.36e-11p 1.085207p 0.0
0.0
rc 0.027287p 0.396518p 0.973877o 1.083034n 0.110299n 0.974904n 0.012677n 1.072542m 6.36e-11p 1.085207m 0.0
0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.081097n 1.62e-10n 0.082638n 0.0 0.0
zp 45.14 ri 0.000142p 0.012155p 0.044748p 0.024724p 0.000558p 7.61e-05p 1.31e-06p 3.49e-07p 2.30e-11p 1.12e-10p 0.0
0.0
sig0.569 cc 0.000142p 0.012296p 0.057044p 0.081768p 0.008735p 0.073667p 0.000959p 0.081446p 2.30e-11p 0.082404p 0.0
0.0
rc 0.000142p 0.012296p 0.057044p 0.081768o 0.008735o 0.073667o 0.000959o 0.081446n 2.30e-11p 0.082404m 0.0
0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.277279n 1.85e-09n 0.288730n 0.0 0.0
zp 45.18 ri 2.09e-07p 0.007191p 0.225994p 0.052320p 2.11e-05p 2.88e-06p 4.00e-12p 1.06e-12p 0.0 0.0 0.0 0.0
sig0.350 cc 2.09e-07p 0.007191p 0.233185p 0.285505p 0.028572p 0.256958p 0.003340p 0.282192p 0.0 0.285529p 0.0
0.0
rc 2.09e-07p 0.007191p 0.233185p 0.285505o 0.028572o 0.256958o 0.003340o 0.282192n 0.0 0.285529m 0.0 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.419471n 3.60e-10n 0.419451n 0.0 0.0
zp 45.13 ri 6.38e-07p 0.014834p 0.344728p 0.061829p 1.71e-05p 2.33e-06p 2.15e-12p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 6.38e-07p 0.014836p 0.359554p 0.421392p 0.042156p 0.379255p 0.004930p 0.416486p 0.0 0.421411p 0.0
0.0
rc 6.38e-07p 0.014834p 0.359563p 0.421392o 0.042156o 0.379255o 0.004930o 0.416486n 0.0 0.421411m 0.0 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.069764n 0.0 0.069465n 0.0 0.0

zp 44.43 ri 0.002696p 0.036224p 0.029581p 0.001402p 2.29e-06p 3.13e-07p 1.20e-10p 3.19e-11p 0.0 0.0 0.0 0.0
sig0.524 cc 0.002696p 0.038920p 0.068501p 0.069903p 0.006993p 0.062913p 0.000818p 0.069088p 0.0 0.069905p 0.0
0.0
rc 0.002696p 0.038920p 0.068501p 0.069903o 0.006993o 0.062913o 0.000818o 0.069088n 0.0 0.069905m 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.349446n 1.10e-07n 0.349986n 0.0 0.0
zp 45.90 ri 1.12e-12p 1.09e-05p 0.042638p 0.294021p 0.012974p 0.001769p 6.75e-07p 1.79e-07p 0.0 0.0 0.0 0.0
sig0.350 cc 1.12e-12p 1.09e-05p 0.042697p 0.336654p 0.046654p 0.304760p 0.003963p 0.347456p 0.0 0.351414p 0.0
0.0
rc 1.12e-12p 1.09e-05p 0.042649p 0.336670o 0.046641o 0.304772o 0.003963o 0.347455n 0.0 0.351414m 0.0 0.0

tc half life from 80eng2; ru, rh, pd, ag half lives 89wal1; sn, in half lives 90bur1.

1

mass number 114 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 42 mo g 43 tc g 44 ru g 45 rh g 46 pd g 47 ag g 48 cd g 49 in m 49 in g 50 sn g
half life 0.377s 0.202s 8.14 s 1.8 s 2.48 m 4.6 s stable 49.51d 71.9 s stable
lambda 1.839e+00 3.431e+00 8.515e-02 3.851e-01 4.658e-03 1.507e-01 0.0 1.620e-07 9.640e-03 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 -3.5000 -2.0000 98.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 96.5000 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.058850n 0.0 0.0 0.0
zp 45.30 ri 1.74e-08p 2.56e-05p 0.005915p 0.024910p 0.027339p 0.000657p 2.80e-06p 1.27e-10p 3.58e-11p 0.0
sig0.554 cc 1.74e-08p 2.56e-05p 0.005941p 0.030851p 0.058190p 0.058847p 0.058850p 1.27e-10p 1.58e-10p 1.55e-10p
rc 1.74e-08p 2.56e-05p 0.005941p 0.030851p 0.058190p 0.058847o 0.058850n 1.27e-10p 1.58e-10p 1.55e-10p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.036671n 0.0 0.0 0.0
zp 44.71 ri 9.42e-07p 0.000344p 0.016587p 0.016358p 0.003369p 1.14e-05p 4.51e-09p 0.0 0.0 0.0
sig0.536 cc 9.42e-07p 0.000345p 0.016932p 0.033290p 0.036659p 0.036671p 0.036671p 0.0 0.0 0.0
rc 9.42e-07p 0.000345p 0.016932p 0.033290p 0.036659o 0.036671o 0.036671n 0.0 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.248884n 0.0 0.0 0.0
zp 45.47 ri 2.42e-06p 0.001369p 0.080976p 0.566422p 0.532292p 0.066839p 0.000984p 1.28e-06p 2.26e-07p 2.24e-10p
sig0.643 cc 2.42e-06p 0.001371p 0.082347p 0.648770p 1.181061p 1.247900p 1.248884p 1.28e-06p 1.46e-06p 1.43e-06p

rc 2.42e-06p 0.001371p 0.082347p 0.648770o 1.181061n 1.247900n 1.248884m 1.28e-06p 1.46e-06p 1.43e-06p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.324603n 0.0 0.0 0.0
zp 45.32 ri 5.39e-06p 0.002637p 0.126425p 0.682538p 0.472194p 0.040435p 0.000369p 2.70e-07p 4.76e-08p 2.43e-11p
sig0.632 cc 5.39e-06p 0.002642p 0.129067p 0.811605p 1.283799p 1.324234p 1.324603p 2.70e-07p 3.08e-07p 3.02e-07p
rc 5.39e-06p 0.002642p 0.129067p 0.811605o 1.283799o 1.324234o 1.324603n 2.70e-07p 3.08e-07p 3.02e-07p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.047029n 0.0 0.0 0.0
zp 45.08 ri 1.66e-05p 0.005616p 0.176228p 0.602271p 0.251118p 0.011728p 5.19e-05p 1.66e-08p 2.93e-09p 0.0
sig0.621 cc 1.66e-05p 0.005633p 0.181861p 0.784132p 1.035250p 1.046977p 1.047029p 1.66e-08p 1.89e-08p 1.86e-08p
rc 1.66e-05p 0.005633p 0.181861p 0.784132o 1.035250o 1.046977n 1.047029m 1.66e-08p 1.89e-08p 1.86e-08p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.081552n 0.0 0.0 0.0
zp 45.69 ri 9.33e-10p 3.57e-06p 0.001703p 0.021757p 0.053163p 0.004853p 7.20e-05p 1.99e-08p 5.60e-09p 1.07e-12p
sig0.569 cc 9.33e-10p 3.57e-06p 0.001706p 0.023463p 0.076627p 0.081480p 0.081552p 1.99e-08p 2.48e-08p 2.43e-08p
rc 9.33e-10p 3.57e-06p 0.001706p 0.023463p 0.076627p 0.081480o 0.081552n 1.99e-08p 2.48e-08p 2.43e-08p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.134957n 0.0 0.0 0.0
zp 45.38 ri 0.0 4.80e-09p 0.000772p 0.084199p 0.049889p 9.59e-05p 9.78e-11p 0.0 0.0 0.0
sig0.350 cc 0.0 4.80e-09p 0.000772p 0.084972p 0.134861p 0.134957p 0.134957p 0.0 0.0 0.0
rc 0.0 4.80e-09p 0.000772p 0.084972p 0.134861p 0.134957o 0.134957n 0.0 0.0 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.219608n 0.0 0.0 0.0
zp 45.33 ri 0.0 1.76e-08p 0.001895p 0.148277p 0.069343p 9.27e-05p 6.30e-11p 0.0 0.0 0.0
sig0.350 cc 0.0 1.76e-08p 0.001895p 0.150172p 0.219515p 0.219608p 0.219608p 0.0 0.0 0.0
rc 0.0 1.76e-08p 0.001895p 0.150172p 0.219515o 0.219608o 0.219608n 0.0 0.0 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.073647n 0.0 0.0 0.0
zp 44.94 ri 1.23e-07p 0.000226p 0.014728p 0.048350p 0.010239p 0.000104p 3.59e-08p 0.0 0.0 0.0
sig0.524 cc 1.23e-07p 0.000226p 0.014954p 0.063304p 0.073544p 0.073647p 0.073647p 0.0 0.0 0.0
rc 1.23e-07p 0.000226p 0.014954p 0.063304p 0.073544p 0.073647o 0.073647n 0.0 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.179597n 0.0 0.0 0.0
zp 46.09 ri 0.0 0.0 4.87e-07p 0.007632p 0.151607p 0.020352p 5.11e-06p 0.0 0.0 0.0
sig0.350 cc 0.0 0.0 4.87e-07p 0.007633p 0.159240p 0.179592p 0.179597p 0.0 0.0 0.0
rc 0.0 0.0 4.87e-07p 0.007633p 0.159240p 0.179592o 0.179597n 0.0 0.0 0.0

mo, tc, ru half lives from 80eng2; rh, pd, ag half lives 89wal1.
1

mass number 115 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd m 48 cd g 49 in m 49 in g 50 sn g 51 sb g 52 te g
half life 0.878s 0.99 s 47. s 18.7 s 20. m 44.6 d 2.228d 4.486h 5.e14y stable 32. m 6. m
lambda 7.895e-01 7.001e-01 1.475e-02 3.707e-02 5.776e-04 1.799e-07 3.601e-06 4.292e-05 4.396e-23 0.0 3.610e-04
1.925e-03
z - 1 g 100.0000 100.0000 100.0000 27.0000 73.0000 9.5000 90.5000 100.0000 0.0 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 5.0000 95.0000 0.0100 99.9900 3.7000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 96.3000 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.061872n 0.066407l 0.0 0.0 0.0
zp 45.74 ri 0.000983p 0.017675p 0.045188p 0.002307p 0.002307p 4.50e-05p 1.20e-05p 2.87e-09p 1.40e-08p 0.0 0.0 0.0
sig0.554 cc 0.000983p 0.018658p 0.063846p 0.019545p 0.048914p 0.005669p 0.062847p 0.062847p 0.066190p 0.068516p 0.0
0.0
rc 0.000983p 0.018658p 0.063846p 0.019545p 0.048914p 0.005669o 0.062847n 0.062847m 0.066190k 0.068516k 0.0
0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.037144n 0.040817n 0.0 0.0 0.0
zp 45.16 ri 0.005591p 0.022790p 0.012979p 0.000110p 0.000110p 2.45e-07p 6.50e-08p 1.33e-12p 6.51e-12p 0.0 0.0 0.0
sig0.536 cc 0.005591p 0.028380p 0.041360p 0.011277p 0.030302p 0.003443p 0.038136p 0.038137p 0.040168p 0.041579p 0.0
0.0
rc 0.005591p 0.028380p 0.041360o 0.011277o 0.030302o 0.003443o 0.038136n 0.038137m 0.040168m 0.041579l 0.0
0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.071938i 1.092092i 1.064309n 1.162226g 0.0 0.0 0.0
zp 45.83 ri 0.022818p 0.338420p 0.656068p 0.085117p 0.085117p 0.004739p 0.000771p 2.15e-06p 1.74e-05p 6.76e-09p 0.0
0.0
sig0.643 cc 0.022948p 0.363307p 1.016300p 0.360006p 0.827503p 0.101379p 1.091672p 1.091684p 1.152678p 1.193070p 0.0
0.0
rc 0.022818p 0.361238p 1.017306n 0.359790n 0.827751m 0.101365h 1.091686i 1.091698i 1.152678g 1.193070g 0.0
0.0
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.081028n 0.0 1.183277n 1.293090k 0.0 0.0 0.0

zp 45.69 ri 0.039447p 0.468766p 0.687582p 0.064889p 0.064889p 0.002371p 0.000386p 6.31e-07p 5.11e-06p 1.08e-09p 0.0
0.0
sig0.632 cc 0.039409p 0.507733p 1.195919p 0.387726p 0.937849p 0.110851p 1.217478p 1.217490p 1.283287p 1.328335p 0.0
0.0
rc 0.039447p 0.508213p 1.195794n 0.387753n 0.937819n 0.110851l 1.217478m 1.217489m 1.283287k 1.328335k 0.0
0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.067934o 0.0 0.935085n 1.014904k 0.0 0.0 0.0
zp 45.44 ri 0.066366p 0.493794p 0.438033p 0.022974p 0.022974p 0.000415p 6.76e-05p 4.89e-08p 3.96e-07p 3.35e-11p 0.0
0.0
sig0.621 cc 0.066329p 0.559843p 0.998220p 0.292480p 0.751661p 0.086447p 0.958177p 0.958186p 1.009171p 1.044624p 0.0
0.0
rc 0.066366p 0.560161p 0.998194o 0.292486o 0.751655o 0.086447m 0.958177n 0.958186m 1.009171k 1.044624k 0.0
0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.075299n 0.081097n 0.0 0.0 0.0
zp 46.20 ri 0.000125p 0.007516p 0.054216p 0.010266p 0.010266p 0.000824p 0.000219p 3.28e-07p 1.60e-06p 3.17e-10p 0.0
0.0
sig0.569 cc 0.000125p 0.007642p 0.061857p 0.026968p 0.055422p 0.007438p 0.075995p 0.075996p 0.080623p 0.083435p 0.0
0.0
rc 0.000125p 0.007642p 0.061857p 0.026968p 0.055422p 0.007438o 0.075995n 0.075996m 0.080623m 0.083435m 0.0
0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.009765i 0.151011i 0.147377n 0.110741n 0.0 0.0 0.0
zp 45.56 ri 0.000187p 0.067972p 0.090846p 0.000298p 0.000298p 1.96e-09p 5.21e-10p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.000187p 0.068158p 0.159005p 0.043229p 0.116371p 0.013217p 0.146383p 0.146384p 0.154184p 0.159600p 0.0
0.0
rc 0.000187p 0.068158p 0.159005o 0.043229p 0.116371n 0.013217h 0.146383i 0.146384i 0.154184i 0.159600i 0.0 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.091565n 0.099874n 0.0 0.0 0.0
zp 45.51 ri 0.000193p 0.049325p 0.052230p 0.000121p 0.000121p 5.34e-10p 1.42e-10p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.000193p 0.049518p 0.101748p 0.027593p 0.074397p 0.008447p 0.093543p 0.093544p 0.098530p 0.101991p 0.0
0.0
rc 0.000193p 0.049518p 0.101748p 0.027593p 0.074397p 0.008447o 0.093543n 0.093544m 0.098530m 0.101991m 0.0
0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.063814n 0.069764n 0.0 0.0 0.0
zp 45.40 ri 0.003102p 0.038126p 0.028704p 0.000620p 0.000620p 1.65e-06p 4.38e-07p 1.86e-11p 9.09e-11p 0.0 0.0 0.0
sig0.524 cc 0.003102p 0.041229p 0.069932p 0.019502p 0.051671p 0.005886p 0.065290p 0.065290p 0.068759p 0.071175p 0.0
0.0
rc 0.003102p 0.041229p 0.069932o 0.019502o 0.051671o 0.005886o 0.065290n 0.065290m 0.068759m 0.071175m 0.0
0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.097426n 0.109826n 0.0 0.0 0.0
zp 46.25 ri 3.08e-08p 0.001701p 0.083289p 0.012783p 0.012783p 1.57e-05p 4.17e-06p 1.16e-12p 5.66e-12p 0.0 0.0 0.0
sig0.350 cc 3.08e-08p 0.001701p 0.084989p 0.035730p 0.074825p 0.008911p 0.101665p 0.101665p 0.106814p 0.110575p 0.0
0.0
rc 3.08e-08p 0.001701p 0.084989p 0.035730p 0.074825p 0.008911o 0.101665n 0.101665m 0.106814m 0.110575m 0.0
0.0

ru half life 80eng2; ag-115g branching 80tob1; ag-115m branching to fit data; rh, pd, ag, cd, in half lives 89wal1.

1

mass number 116 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 42 mo g 43 tc g 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g 49 in m 49 in g 50 sn g
half life 0.115s 1.70 s 0.7 s 12.7 s 10.5 s 2.68 m stable 54.2 m 14.2 s stable
lambda 0.0 6.027e+00 4.077e-01 9.902e-01 5.458e-02 6.601e-02 4.311e-03 0.0 2.131e-04 4.881e-02 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 50.0000 50.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 100.0000
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.056785n 0.0 0.0 0.0
zp 46.17 ri 1.20e-12p 2.73e-08p 8.87e-05p 0.004239p 0.041867p 0.005019p 0.005019p 0.000553p 2.40e-07p 2.40e-07p 6.11e-11p
sig0.554 cc 1.20e-12p 2.73e-08p 8.87e-05p 0.004327p 0.046194p 0.028116p 0.028116p 0.056785p 2.40e-07p 2.40e-07p 4.80e-07p
rc 1.20e-12p 2.73e-08p 8.87e-05p 0.004327p 0.046194p 0.028116p 0.028116p 0.056785n 2.40e-07p 2.40e-07p 4.80e-07o
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.034688n 0.0 0.0 0.0
zp 45.59 ri 1.82e-10p 1.23e-06p 0.000919p 0.010282p 0.022393p 0.000542p 0.000542p 7.61e-06p 3.32e-10p 3.32e-10p 0.0
sig0.536 cc 1.82e-10p 1.23e-06p 0.000920p 0.011202p 0.033596p 0.017340p 0.017340p 0.034688p 3.32e-10p 3.32e-10p 6.64e-10p
rc 1.82e-10p 1.23e-06p 0.000920p 0.011202p 0.033596p 0.017340p 0.017340p 0.034688n 3.32e-10p 3.32e-10p 6.64e-10o
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.066121n 0.0 0.0 0.0
zp 46.18 ri 5.60e-09p 1.65e-05p 0.004793p 0.150407p 0.582067p 0.153884p 0.153884p 0.021069p 8.12e-05p 8.12e-05p 1.27e-07p
sig0.643 cc 5.60e-09p 1.65e-05p 0.004810p 0.155217p 0.737284p 0.522526p 0.522526p 1.066121p 8.12e-05p 8.12e-05p 0.000163p
rc 5.60e-09p 1.65e-05p 0.004810p 0.155217p 0.737284o 0.522526o 0.522526o 1.066121m 8.12e-05p 8.12e-05p 0.000163o
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.180225n 0.0 0.0 0.0
zp 46.07 ri 9.54e-09p 2.82e-05p 0.007654p 0.209370p 0.671007p 0.139176p 0.139176p 0.013814p 3.52e-05p 3.52e-05p 3.32e-08p
sig0.632 cc 9.54e-09p 2.82e-05p 0.007682p 0.217052p 0.888060p 0.583205p 0.583205p 1.180225p 3.52e-05p 3.52e-05p 7.04e-05p
rc 9.54e-09p 2.82e-05p 0.007682p 0.217052p 0.888060o 0.583205o 0.583205o 1.180225m 3.52e-05p 3.52e-05p 7.04e-05o
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.266407n 0.0 0.0 0.0
zp 45.80 ri 6.54e-08p 0.000131p 0.022526p 0.373147p 0.704818p 0.080909p 0.080909p 0.003967p 4.44e-06p 4.44e-06p 1.65e-09p
sig0.621 cc 6.54e-08p 0.000131p 0.022657p 0.395804p 1.100622p 0.631220p 0.631220p 1.266407p 4.44e-06p 4.44e-06p 8.88e-06p
rc 6.54e-08p 0.000131p 0.022657p 0.395804p 1.100622n 0.631220n 0.631220n 1.266407m 4.44e-06p 4.44e-06p 8.88e-06o
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.075015n 0.0 0.0 0.0
zp 46.65 ri 0.0 8.89e-10p 7.07e-06p 0.001284p 0.034625p 0.016380p 0.016380p 0.006340p 1.79e-05p 1.79e-05p 2.64e-08p
sig0.569 cc 0.0 8.89e-10p 7.07e-06p 0.001291p 0.035916p 0.034338p 0.034338p 0.075015p 1.79e-05p 1.79e-05p 3.58e-05p
rc 0.0 8.89e-10p 7.07e-06p 0.001291p 0.035916p 0.034338p 0.034338p 0.075015m 1.79e-05p 1.79e-05p 3.58e-05o
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.102696n 0.0 0.0 0.0
zp 45.93 ri 6.16e-11p 8.39e-07p 0.000569p 0.022123p 0.063749p 0.007984p 0.007984p 0.000286p 1.43e-07p 1.43e-07p 1.41e-11p
sig0.565 cc 6.16e-11p 8.39e-07p 0.000570p 0.022693p 0.086442p 0.051205p 0.051205p 0.102696p 1.43e-07p 1.43e-07p 2.85e-07p
rc 6.16e-11p 8.39e-07p 0.000570p 0.022693p 0.086442p 0.051205p 0.051205p 0.102696m 1.43e-07p 1.43e-07p 2.85e-07o
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.099822n 0.0 0.0 0.0
zp 45.66 ri 0.0 3.11e-11p 4.42e-05p 0.031986p 0.066960p 0.000416p 0.000416p 7.43e-09p 0.0 0.0 0.0
sig0.350 cc 0.0 3.11e-11p 4.42e-05p 0.032030p 0.098991p 0.049911p 0.049911p 0.099822p 0.0 0.0 0.0
rc 0.0 3.11e-11p 4.42e-05p 0.032030p 0.098991p 0.049911p 0.049911p 0.099822n 0.0 0.0 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.060794n 0.0 0.0 0.0
zp 45.84 ri 5.85e-12p 2.51e-07p 0.000328p 0.015547p 0.038707p 0.003083p 0.003083p 4.50e-05p 5.51e-09p 5.51e-09p 0.0
sig0.524 cc 5.85e-12p 2.51e-07p 0.000328p 0.015875p 0.054583p 0.030375p 0.030375p 0.060794p 5.51e-09p 5.51e-09p 1.10e-08p
rc 5.85e-12p 2.51e-07p 0.000328p 0.015875p 0.054583p 0.030375p 0.030375p 0.060794m 5.51e-09p 5.51e-09p 1.10e-08o

cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.099776n 0.0 0.0 0.0
zp 46.40 ri 0.0 0.0 2.79e-09p 0.000473p 0.062371p 0.018423p 0.018423p 8.63e-05p 4.64e-11p 4.64e-11p 0.0
sig0.350 cc 0.0 0.0 2.79e-09p 0.000473p 0.062844p 0.049845p 0.049845p 0.099776p 4.64e-11p 4.64e-11p 9.28e-11p
rc 0.0 0.0 2.79e-09p 0.000473p 0.062844p 0.049845p 0.049845p 0.099776n 4.64e-11p 4.64e-11p 9.28e-11o

tc, ru half lives from 80eng2; rh, pd, ag half lives from 89wal1.
1

mass number 117 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd m 48 cd g 49 in m 49 in g 50 sn g 51 sb g 52 te g
half life 0.343s 1.22 s 5. s 5.3 s 1.22 m 3.4 h 2.49 h 1.94 h 44. m stable 2.80 h 64. m
lambda 2.021e+00 5.682e-01 1.386e-01 1.308e-01 9.469e-03 5.663e-05 7.733e-05 9.925e-05 2.626e-04 0.0 6.876e-05
1.805e-04
z - 1 g 100.0000 100.0000 100.0000 50.0000 50.0000 50.0000 50.0000 92.0000 8.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 1.0000 99.0000 53.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 47.0000 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.054787n 0.0 0.0
zp 46.58 ri 5.68e-06p 0.001182p 0.027114p 0.011689p 0.011689p 0.002446p 0.000650p 2.03e-06p 9.93e-06p 4.29e-09p 0.0
0.0
sig0.554 cc 5.68e-06p 0.001187p 0.028301p 0.025839p 0.025839p 0.015366p 0.039409p 0.036412p 0.035489p 0.054787p 0.0
0.0
rc 5.68e-06p 0.001187p 0.028301p 0.025839p 0.025839p 0.015366o 0.039409o 0.036412o 0.035489n 0.054787m 0.0
0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.034780n 0.0 0.0
zp 45.99 ri 0.000107p 0.004925p 0.025097p 0.002280p 0.002280p 7.19e-05p 1.91e-05p 6.29e-09p 3.07e-08p 1.05e-12p 0.0
0.0
sig0.536 cc 0.000107p 0.005032p 0.030129p 0.017344p 0.017344p 0.008744p 0.026036p 0.024040p 0.022038p 0.034780p 0.0
0.0
rc 0.000107p 0.005032p 0.030129p 0.017344p 0.017344p 0.008744o 0.026036o 0.024040o 0.022038n 0.034780m 0.0
0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.257493i 0.602153i 0.0 0.0 0.888024l 0.0 0.0

zp 46.51 ri 0.000766p 0.049472p 0.375838p 0.191373p 0.191282p 0.044842p 0.007300p 9.37e-05p 0.000758p 1.43e-06p 2.33e-10p 0.0
sig0.643 cc 0.000766p 0.050260p 0.426263p 0.404361p 0.404361p 0.247042p 0.613844p 0.567299p 0.561056p 0.861726p 2.30e-10p 0.0
rc 0.000766p 0.050238p 0.426076p 0.404411n 0.404320o 0.247002i 0.613871i 0.567325i 0.561042h 0.861726g 2.33e-10p 0.0
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.193030n 0.0 0.0
zp 46.44 ri 0.001280p 0.080574p 0.560509p 0.247560p 0.247560p 0.047202p 0.007684p 7.25e-05p 0.000587p 7.57e-07p 7.75e-11p 0.0
sig0.632 cc 0.001280p 0.081854p 0.642363p 0.568742p 0.568742p 0.331573p 0.860796p 0.795321p 0.771509p 1.193030p 7.75e-11p 0.0
rc 0.001280p 0.081854p 0.642363o 0.568742o 0.568742o 0.331573o 0.860796n 0.795321n 0.771509m 1.193030l 7.75e-11p 0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.143987n 0.0 0.0
zp 46.17 ri 0.004012p 0.155040p 0.642412p 0.161935p 0.161935p 0.015954p 0.002597p 1.12e-05p 9.09e-05p 4.80e-08p 1.83e-12p 0.0
sig0.621 cc 0.004012p 0.159052p 0.801464p 0.562667p 0.562667p 0.297288p 0.846598p 0.781854p 0.729605p 1.143987p 1.83e-12p 0.0
rc 0.004012p 0.159052p 0.801464o 0.562667o 0.562667o 0.297288n 0.846598n 0.781854n 0.729605m 1.143987l 1.83e-12p 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.075015n 0.0 0.0
zp 47.09 ri 2.22e-07p 0.000170p 0.012730p 0.020701p 0.020701p 0.016004p 0.004254p 7.72e-05p 0.000377p 1.03e-06p 7.22e-11p 0.0
sig0.569 cc 2.22e-07p 0.000170p 0.012901p 0.027151p 0.027151p 0.029580p 0.044981p 0.041755p 0.052884p 0.075015p 7.22e-11p 0.0
rc 2.22e-07p 0.000170p 0.012901p 0.027151p 0.027151p 0.029580p 0.044981o 0.041755o 0.052884n 0.075015m 7.22e-11p 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.092426n 0.0 0.0
zp 46.45 ri 2.49e-05p 0.004185p 0.044983p 0.020135p 0.020135p 0.002330p 0.000619p 2.30e-06p 1.12e-05p 3.21e-09p 0.0 0.0
sig0.565 cc 2.49e-05p 0.004210p 0.049193p 0.044732p 0.044732p 0.024696p 0.067717p 0.062549p 0.059276p 0.092426p 0.0 0.0

rc 2.49e-05p 0.004210p 0.049193p 0.044732p 0.044732p 0.024696o 0.067717o 0.062549o 0.059276n 0.092426m 0.0
0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.099911n 0.0 0.0
zp 45.88 ri 0.001032p 0.025046p 0.058756p 0.007368p 0.007368p 0.000269p 7.15e-05p 1.02e-07p 4.97e-07p 7.20e-11p 0.0
0.0
sig0.598 cc 0.001032p 0.026078p 0.084834p 0.049785p 0.049785p 0.025161p 0.074749p 0.069021p 0.063330p 0.099911p 0.0
0.0
rc 0.001032p 0.026078p 0.084834p 0.049785p 0.049785p 0.025161o 0.074749o 0.069021n 0.063330m 0.099911l 0.0
0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.060855n 0.0 0.0
zp 46.28 ri 2.13e-05p 0.004205p 0.036310p 0.009864p 0.009864p 0.000465p 0.000124p 1.12e-07p 5.46e-07p 2.26e-11p 0.0
0.0
sig0.524 cc 2.13e-05p 0.004227p 0.040537p 0.030133p 0.030133p 0.015531p 0.045323p 0.041852p 0.038673p 0.060855p 0.0
0.0
rc 2.13e-05p 0.004227p 0.040537p 0.030133p 0.030133p 0.015531o 0.045323o 0.041852o 0.038673n 0.060855l 0.0
0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.099842n 0.0 0.0
zp 46.55 ri 2.28e-10p 0.000130p 0.044955p 0.027208p 0.027208p 0.000269p 7.14e-05p 2.09e-10p 1.02e-09p 0.0 0.0 0.0
sig0.350 cc 2.28e-10p 0.000130p 0.045085p 0.049751p 0.049751p 0.025144p 0.074698p 0.068973p 0.063286p 0.099842p 0.0
0.0
rc 2.28e-10p 0.000130p 0.045085p 0.049751p 0.049751p 0.025144p 0.074698o 0.068973o 0.063286n 0.099842m 0.0
0.0

ag-to-cd branching from 80eng2; ru half life from 80eng2; rh, pd, ag, cd, in half lives 89wal1.

1

mass number 118 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g 49 in m 49 in g 50 sn g 51 sb m 51 sb g 52 te g
half life 0.662s 0.316s 2.4 s 2.4 s 4.0 s 50.3 m 4.4 m 5.0 s stable 5.00 h 3.6 m 6.00 d
lambda 1.047e+00 2.194e+00 2.888e-01 2.888e-01 1.733e-01 2.297e-04 2.626e-03 1.386e-01 0.0 3.851e-05 3.209e-03
1.337e-06
z - 1 g 100.0000 100.0000 100.0000 50.0000 50.0000 100.0000 0.0 100.0000 100.0000 -100.0000 -100.0000 -100.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 54.0000 0.0 0.0 100.0000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 46.0000 0.0 0.0 0.0 0.0 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.054787n 0.0 0.0 0.0
zp 47.00 ri 2.48e-07p 0.000144p 0.013905p 0.013409p 0.013409p 0.013778p 3.11e-05p 0.000110p 2.41e-07p 3.42e-12p 2.01e-12p 0.0
sig0.554 cc 2.48e-07p 0.000145p 0.014050p 0.020434p 0.029833p 0.054645p 3.11e-05p 0.054756p 0.054787p 3.42e-12p 2.01e-12p 0.0
rc 2.48e-07p 0.000145p 0.014050p 0.020434p 0.029833p 0.054645o 3.11e-05p 0.054756n 0.054787m 3.42e-12p 2.01e-12p 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.035773n 0.0 0.0 0.0
zp 46.39 ri 9.54e-06p 0.001242p 0.023627p 0.005034p 0.005034p 0.000827p 2.22e-07p 7.86e-07p 1.36e-10p 0.0 0.0 0.0
sig0.536 cc 9.54e-06p 0.001251p 0.024878p 0.017473p 0.025510p 0.035772p 2.22e-07p 0.035773p 0.035773p 0.0 0.0 0.0
rc 9.54e-06p 0.001251p 0.024878p 0.017473p 0.025510o 0.035772n 2.22e-07p 0.035773n 0.035773m 0.0 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.984892n 0.0 0.0 0.0
zp 46.85 ri 0.000127p 0.017559p 0.271687p 0.271207p 0.271207p 0.148082p 0.000751p 0.004255p 1.83e-05p 4.90e-09p 1.72e-09p 0.0
sig0.643 cc 0.000127p 0.017686p 0.289373p 0.415893p 0.607204p 0.979869p 0.000751p 0.984123p 0.984892p 4.90e-09p 1.72e-09p 0.0
rc 0.000127p 0.017686p 0.289373p 0.415893p 0.607204o 0.979869n 0.000751p 0.984123n 0.984892m 4.90e-09p 1.72e-09p 0.0
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.190142n 0.0 0.0 0.0
zp 46.82 ri 0.000144p 0.021773p 0.343219p 0.328853p 0.328853p 0.162658p 0.000695p 0.003936p 1.31e-05p 2.50e-09p 8.79e-10p 0.0
sig0.632 cc 0.000144p 0.021917p 0.365135p 0.511420p 0.746674p 1.185499p 0.000695p 1.189435p 1.190142p 2.50e-09p 8.79e-10p 0.0
rc 0.000144p 0.021917p 0.365135p 0.511420p 0.746674o 1.185499n 0.000695p 1.189435n 1.190142m 2.50e-09p 8.79e-10p 0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.101793n 0.0 0.0 0.0
zp 46.53 ri 0.000581p 0.052311p 0.474383p 0.254350p 0.254350p 0.064973p 0.000127p 0.000719p 9.73e-07p 6.80e-11p 2.39e-11p 0.0

sig0.621 cc 0.000581p 0.052892p 0.527274p 0.517987p 0.756261p 1.100946p 0.000127p 1.101665p 1.101793p 6.80e-11p 2.39e-11p 0.0
rc 0.000581p 0.052892p 0.527274p 0.517987p 0.756261o 1.100946n 0.000127p 1.101665n 1.101793m 6.80e-11p 2.39e-11p 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.074416n 0.0 0.0 0.0
zp 47.51 ri 5.20e-09p 1.16e-05p 0.003325p 0.013267p 0.013267p 0.042098p 0.000534p 0.001893p 2.17e-05p 2.84e-09p 1.67e-09p 0.0
sig0.569 cc 5.20e-09p 1.16e-05p 0.003337p 0.014935p 0.021805p 0.071968p 0.000534p 0.073861p 0.074416p 2.84e-09p 1.67e-09p 0.0
rc 5.20e-09p 1.16e-05p 0.003337p 0.014935p 0.021805p 0.071968p 0.000534p 0.073861o 0.074416n 2.84e-09p 1.67e-09p 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.092426n 0.0 0.0 0.0
zp 46.96 ri 5.93e-07p 0.000440p 0.018556p 0.028792p 0.028792p 0.015544p 6.65e-05p 0.000236p 3.30e-07p 1.12e-11p 6.59e-12p 0.0
sig0.565 cc 5.93e-07p 0.000440p 0.018996p 0.038290p 0.055903p 0.092124p 6.65e-05p 0.092360p 0.092426p 1.12e-11p 6.59e-12p 0.0
rc 5.93e-07p 0.000440p 0.018996p 0.038290p 0.055903p 0.092124o 6.65e-05p 0.092360n 0.092426m 1.12e-11p 6.59e-12p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.094880n 0.0 0.0 0.0
zp 46.38 ri 7.76e-05p 0.006555p 0.048187p 0.018568p 0.018568p 0.002905p 4.15e-06p 1.47e-05p 8.75e-09p 0.0 0.0 0.0
sig0.598 cc 7.76e-05p 0.006632p 0.054820p 0.045978p 0.067128p 0.094861p 4.15e-06p 0.094876p 0.094880p 0.0 0.0 0.0
rc 7.76e-05p 0.006632p 0.054820p 0.045978p 0.067128o 0.094861n 4.15e-06p 0.094876n 0.094880m 0.0 0.0 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.059798n 0.0 0.0 0.0
zp 46.71 ri 7.64e-07p 0.000639p 0.020149p 0.017574p 0.017574p 0.003843p 4.02e-06p 1.43e-05p 2.85e-09p 0.0 0.0 0.0
sig0.524 cc 7.64e-07p 0.000640p 0.020789p 0.027968p 0.040833p 0.059779p 4.02e-06p 0.059794p 0.059798p 0.0 0.0 0.0
rc 7.64e-07p 0.000640p 0.020789p 0.027968p 0.040833o 0.059779n 4.02e-06p 0.059794n 0.059798m 0.0 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.089858n 0.0 0.0 0.0
zp 46.98 ri 2.29e-06p 0.000664p 0.019572p 0.025513p 0.025513p 0.018033p 0.000123p 0.000436p 1.76e-06p 2.30e-10p 1.35e-10p 0.0

sig0.611 cc 2.29e-06p 0.000666p 0.020238p 0.035632p 0.052022p 0.089296p 0.000123p 0.089733p 0.089858p 2.30e-10p 1.35e-10p 0.0
rc 2.29e-06p 0.000666p 0.020238p 0.035632p 0.052022p 0.089296o 0.000123p 0.089733n 0.089858m 2.30e-10p 1.35e-10p 0.0

ru, rh, ag half lives 80eng2; pd, ag, cd, in half lives 89wal1; sb half life 90bur1.

1

mass number 119 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag g 48 cd m 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te g
half life 0.195s 0.465s 1.76 s 2.1s 2.20 m 2.69 m 17.9 m 2.3 m 293. d stable 38.1 h 16. h
lambda 3.555e+00 1.491e+00 3.938e-01 3.301e-01 5.251e-03 4.295e-03 6.454e-04 5.023e-03 2.738e-08 0.0 5.054e-06 1.203e-05
z - 1 g 100.0000 100.0000 100.0000 100.0000 50.0000 50.0000 100.0000 0.0 5.0000 95.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 95.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.0000 0.0 100.0000 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.059768n 0.0 0.0
zp 47.41 ri 5.35e-09p 1.43e-05p 0.003561p 0.025915p 0.014526p 0.014526p 0.000207p 0.001013p 4.44e-06p 1.18e-06p 5.95e-10p 0.0
sig0.554 cc 5.35e-09p 1.43e-05p 0.003575p 0.029489p 0.029271p 0.029271p 0.029479p 0.031758p 0.001592p 0.059768p 5.95e-10p 0.0
rc 5.35e-09p 1.43e-05p 0.003575p 0.029489p 0.029271p 0.029271p 0.029479p 0.031758o 0.001592o 0.059768m 5.95e-10p 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.034744n 0.0 0.0
zp 46.78 ri 4.58e-07p 0.000259p 0.012482p 0.018274p 0.001854p 0.001854p 3.29e-06p 1.61e-05p 6.17e-09p 1.64e-09p 0.0 0.0
sig0.536 cc 4.58e-07p 0.000259p 0.012741p 0.031016p 0.017362p 0.017362p 0.017366p 0.018247p 0.000912p 0.034744p 0.0 0.0
rc 4.58e-07p 0.000259p 0.012741p 0.031016p 0.017362o 0.017362o 0.017366o 0.018247o 0.000912o 0.034744m 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.004251n 0.0 0.0

zp 47.19 ri 1.45e-05p 0.004314p 0.138318p 0.546224p 0.147309p 0.147309p 0.002266p 0.018334p 0.000140p 2.27e-05p 1.30e-07p 9.99e-12p
sig0.643 cc 1.45e-05p 0.004328p 0.142646p 0.688870p 0.491745p 0.491745p 0.494010p 0.534779p 0.026879p 1.004251p 1.30e-07p 9.99e-12p
rc 1.45e-05p 0.004328p 0.142646p 0.688870o 0.491745o 0.491745o 0.494010o 0.534779n 0.026879n 1.004251m 1.30e-07p 9.99e-12p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.170307n 0.0 0.0
zp 47.19 ri 1.22e-05p 0.004384p 0.156800p 0.644788p 0.171043p 0.171043p 0.002430p 0.019658p 0.000128p 2.08e-05p 9.38e-08p 5.22e-12p
sig0.632 cc 1.22e-05p 0.004396p 0.161196p 0.805984p 0.574035p 0.574035p 0.576465p 0.622516p 0.031254p 1.170307p 9.38e-08p 5.22e-12p
rc 1.22e-05p 0.004396p 0.161196p 0.805984o 0.574035o 0.574035o 0.576465o 0.622516n 0.031254n 1.170307m 9.38e-08p 5.22e-12p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.022384n 0.0 0.0
zp 46.89 ri 5.91e-05p 0.012623p 0.256369p 0.585399p 0.081499p 0.081499p 0.000542p 0.004382p 1.18e-05p 1.92e-06p 3.21e-09p 0.0
sig0.621 cc 5.91e-05p 0.012682p 0.269051p 0.854450p 0.508724p 0.508724p 0.509265p 0.538569p 0.026940p 1.022384p 3.21e-09p 0.0
rc 5.91e-05p 0.012682p 0.269051p 0.854450n 0.508724n 0.508724n 0.509265n 0.538569n 0.026940n 1.022384m 3.21e-09p 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.072887n 0.0 0.0
zp 47.92 ri 6.92e-11p 6.20e-07p 0.000488p 0.013603p 0.024585p 0.024585p 0.001598p 0.007804p 0.000177p 4.70e-05p 1.83e-07p 1.30e-11p
sig0.569 cc 6.92e-11p 6.20e-07p 0.000489p 0.014091p 0.031630p 0.031630p 0.033229p 0.041096p 0.002232p 0.072887p 1.83e-07p 1.30e-11p
rc 6.92e-11p 6.20e-07p 0.000489p 0.014091p 0.031630p 0.031630p 0.033229p 0.041096p 0.002232o 0.072887m 1.83e-07p 1.30e-11p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.087292n 0.0 0.0
zp 47.47 ri 6.09e-09p 2.06e-05p 0.003669p 0.041540p 0.019517p 0.019517p 0.000512p 0.002501p 1.16e-05p 3.07e-06p 3.69e-09p 0.0
sig0.565 cc 6.09e-09p 2.07e-05p 0.003689p 0.045230p 0.042132p 0.042132p 0.042644p 0.046765p 0.002350p 0.087292p 3.69e-09p 0.0

rc 6.09e-09p 2.07e-05p 0.003689p 0.045230p 0.042132p 0.042132p 0.042644o 0.046765o 0.002350o 0.087292m 3.69e-09p
0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.089887n 0.0 0.0
zp 46.91 ri 2.45e-06p 0.000812p 0.021207p 0.053218p 0.007145p 0.007145p 6.05e-05p 0.000295p 5.35e-07p 1.42e-07p 8.84e-11p
0.0
sig0.598 cc 2.45e-06p 0.000815p 0.022021p 0.075239p 0.044765p 0.044765p 0.044826p 0.047302p 0.002366p 0.089887p 8.84e-
11p 0.0
rc 2.45e-06p 0.000815p 0.022021p 0.075239p 0.044765p 0.044765o 0.044826o 0.047302o 0.002366o 0.089887m 8.84e-11p
0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.058343n 0.0 0.0
zp 47.13 ri 1.57e-08p 5.59e-05p 0.006731p 0.037722p 0.006790p 0.006790p 4.30e-05p 0.000210p 1.33e-07p 3.55e-08p 3.42e-12p
0.0
sig0.524 cc 1.57e-08p 5.60e-05p 0.006787p 0.044509p 0.029045p 0.029045p 0.029088p 0.030709p 0.001536p 0.058343p 3.42e-
12p 0.0
rc 1.57e-08p 5.60e-05p 0.006787p 0.044509p 0.029045p 0.029045p 0.029088o 0.030709o 0.001536o 0.058343m 3.42e-12p
0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.089858n 0.0 0.0
zp 47.63 ri 1.35e-08p 2.13e-05p 0.002908p 0.033667p 0.023224p 0.023224p 0.001141p 0.005572p 8.01e-05p 2.13e-05p 1.16e-07p
1.10e-11p
sig0.611 cc 1.35e-08p 2.13e-05p 0.002929p 0.036595p 0.041521p 0.041521p 0.042663p 0.049227p 0.002541p 0.089858p 1.16e-
07p 1.10e-11p
rc 1.35e-08p 2.13e-05p 0.002929p 0.036595p 0.041521p 0.041521p 0.042663p 0.049227o 0.002541o 0.089858m 1.16e-07p
1.10e-11p

ru, rh, pd half lives 80eng2; ag, cd, in, sn half lives 89wal1.
1

mass number 120 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	44 ru g	45 rh g	46 pd g	47 ag g	48 cd g	49 in m	49 in g	50 sn g	51 sb m	51 sb g	52 te g
half life	0.350s	0.172s	3.91 s	1.23 s	50.8 s	46. s	3.1 s	stable	5.76 d	16.0 m	stable
lambda	1.980e+00	4.030e+00	1.773e-01	5.635e-01	1.364e-02	1.507e-02	2.236e-01	0.0	1.393e-06	7.220e-04	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	50.0000	50.0000	100.0000	-100.0000	-100.0000	0.0
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	0.0	0.0

z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.064644n 0.0 0.0 0.0
zp 47.84 ri 6.48e-11p 5.19e-07p 0.000609p 0.011265p 0.047749p 0.002458p 0.002458p 0.000105p 2.08e-08p 1.22e-08p 1.48e-12p
sig0.554 cc 6.48e-11p 5.19e-07p 0.000610p 0.011875p 0.059624p 0.032270p 0.032270p 0.064644p 2.08e-08p 1.22e-08p 1.48e-12p
rc 6.48e-11p 5.19e-07p 0.000610p 0.011875p 0.059624p 0.032270p 0.032270p 0.064644n 2.08e-08p 1.22e-08p 1.48e-12p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.034744n 0.0 0.0 0.0
zp 47.18 ri 1.41e-08p 2.41e-05p 0.004880p 0.017032p 0.012625p 9.17e-05p 9.17e-05p 3.42e-07p 4.73e-12p 2.78e-12p 0.0
sig0.536 cc 1.41e-08p 2.41e-05p 0.004904p 0.021935p 0.034560p 0.017372p 0.017372p 0.034744p 4.73e-12p 2.78e-12p 0.0
rc 1.41e-08p 2.41e-05p 0.004904p 0.021935p 0.034560o 0.017372o 0.017372o 0.034744m 4.73e-12p 2.78e-12p 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.065115n 0.0 0.0 0.0
zp 47.54 ri 1.21e-06p 0.000807p 0.055732p 0.450507p 0.486393p 0.035279p 0.035279p 0.001212p 1.61e-06p 5.66e-07p 3.82e-10p
sig0.643 cc 1.21e-06p 0.000808p 0.056547p 0.507104p 0.993433p 0.531999p 0.531999p 1.065212p 1.61e-06p 5.66e-07p 3.82e-10p
rc 1.21e-06p 0.000808p 0.056541p 0.507048p 0.993441o 0.531999o 0.531999o 1.065212m 1.61e-06p 5.66e-07p 3.82e-10p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.150471n 0.0 0.0 0.0
zp 47.57 ri 6.84e-07p 0.000608p 0.051539p 0.473037p 0.544388p 0.039805p 0.039805p 0.001288p 1.49e-06p 5.24e-07p 2.83e-10p
sig0.632 cc 6.84e-07p 0.000609p 0.052147p 0.525184p 1.069572p 0.574591p 0.574591p 1.150471p 1.49e-06p 5.24e-07p 2.83e-10p
rc 6.84e-07p 0.000609p 0.052147p 0.525184p 1.069572n 0.574591n 0.574591n 1.150471m 1.49e-06p 5.24e-07p 2.83e-10p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.052162n 0.0 0.0 0.0
zp 47.25 ri 4.84e-06p 0.002488p 0.115843p 0.570205p 0.340135p 0.011666p 0.011666p 0.000156p 6.62e-08p 2.33e-08p 4.16e-12p
sig0.621 cc 4.84e-06p 0.002493p 0.118336p 0.688541p 1.028675p 0.526003p 0.526003p 1.052162p 6.62e-08p 2.33e-08p 4.16e-12p
rc 4.84e-06p 0.002493p 0.118336p 0.688541o 1.028675o 0.526003o 0.526003o 1.052162m 6.62e-08p 2.33e-08p 4.16e-12p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.074884n 0.0 0.0 0.0
zp 48.34 ri 0.0 1.64e-08p 5.22e-05p 0.003933p 0.047612p 0.010711p 0.010711p 0.001860p 2.75e-06p 1.61e-06p 1.28e-09p
sig0.569 cc 0.0 1.64e-08p 5.22e-05p 0.003986p 0.051598p 0.036510p 0.036510p 0.074884p 2.75e-06p 1.61e-06p 1.28e-09p
rc 0.0 1.64e-08p 5.22e-05p 0.003986p 0.051598p 0.036510p 0.036510p 0.074884m 2.75e-06p 1.61e-06p 1.28e-09p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.087292n 0.0 0.0 0.0

zp 47.97 ri 3.36e-11p 5.16e-07p 0.000394p 0.017109p 0.054425p 0.007531p 0.007531p 0.000301p 2.13e-07p 1.25e-07p 1.88e-11p
sig0.565 cc 3.36e-11p 5.16e-07p 0.000395p 0.017504p 0.071929p 0.043495p 0.043495p 0.087292p 2.13e-07p 1.25e-07p 1.88e-11p
rc 3.36e-11p 5.16e-07p 0.000395p 0.017504p 0.071929p 0.043495p 0.043495p 0.087292m 2.13e-07p 1.25e-07p 1.88e-11p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.084893n 0.0 0.0 0.0
zp 47.44 ri 3.63e-08p 4.90e-05p 0.004825p 0.040814p 0.035938p 0.001621p 0.001621p 2.46e-05p 8.43e-09p 4.95e-09p 0.0
sig0.598 cc 3.63e-08p 4.91e-05p 0.004874p 0.045688p 0.081626p 0.042434p 0.042434p 0.084893p 8.43e-09p 4.95e-09p 0.0
rc 3.63e-08p 4.91e-05p 0.004874p 0.045688p 0.081626o 0.042434o 0.042434o 0.084893m 8.43e-09p 4.95e-09p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.059315n 0.0 0.0 0.0
zp 47.55 ri 1.81e-10p 2.80e-06p 0.001362p 0.026256p 0.029669p 0.001010p 0.001010p 5.63e-06p 3.16e-10p 1.85e-10p 0.0
sig0.524 cc 1.81e-10p 2.80e-06p 0.001364p 0.027620p 0.057289p 0.029655p 0.029655p 0.059315p 3.16e-10p 1.85e-10p 0.0
rc 1.81e-10p 2.80e-06p 0.001364p 0.027620p 0.057289o 0.029655o 0.029655o 0.059315m 3.16e-10p 1.85e-10p 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.084866n 0.0 0.0 0.0
zp 48.28 ri 2.64e-11p 2.14e-07p 0.000155p 0.007999p 0.047367p 0.013662p 0.013662p 0.002008p 7.17e-06p 4.21e-06p 6.01e-09p
sig0.611 cc 2.64e-11p 2.14e-07p 0.000156p 0.008154p 0.055522p 0.041423p 0.041423p 0.084866p 7.17e-06p 4.21e-06p 6.01e-09p
rc 2.64e-11p 2.14e-07p 0.000156p 0.008154p 0.055522p 0.041423p 0.041423p 0.084866m 7.17e-06p 4.21e-06p 6.01e-09p

ru, rh, pd half lives from 80eng2; ag, cd, in half lives 89wal1.
1

mass number 121 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 45 rh g 46 pd g 47 ag g 48 cd d 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te g 53 i g
half life 0.250s 0.644s 0.78 s 1.5 s 13.5 s 3.8 m 23. s 55. y 1.128d stable 17. d 2.12 h
lambda 2.773e+00 1.076e+00 8.887e-01 4.621e-01 5.134e-02 3.040e-03 3.014e-02 3.996e-10 7.112e-06 0.0 4.719e-07
9.082e-05
z - 1 g 100.0000 100.0000 100.0000 0.0 100.0000 18.0000 82.0000 0.0 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.1840 100.0000 0.0 0.0 0.0 0.0 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.069617n 0.0 0.0
zp 48.27 ri 1.62e-08p 5.56e-05p 0.004592p 0.0 0.045751p 0.003091p 0.015094p 0.000762p 0.000268p 1.56e-06p 2.12e-10p
0.0
sig0.554 cc 1.62e-08p 5.56e-05p 0.004648p 0.0 0.050399p 0.012163p 0.056421p 0.000762p 0.068852p 0.069615p 2.12e-10p
0.0

rc 1.62e-08p 5.56e-05p 0.004648p 1.71e-06o 0.050401p 0.012164p 0.056422p 0.000762p 0.068854o 0.069617n 2.12e-10p
0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.036617n 0.0 0.0
zp 47.59 ri 1.49e-06p 0.000900p 0.012438p 0.0 0.021949p 0.000223p 0.001089p 5.52e-06p 1.94e-06p 8.03e-10p 0.0 0.0
sig0.536 cc 1.49e-06p 0.000902p 0.013340p 0.0 0.035289p 0.006575p 0.030026p 5.52e-06p 0.036603p 0.036608p 0.0
0.0
rc 1.49e-06p 0.000902p 0.013340p 9.90e-06o 0.035298p 0.006577p 0.030034p 5.52e-06p 0.036613o 0.036618n 0.0
0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.166554n 0.0 0.0
zp 47.90 ri 0.000111p 0.017140p 0.294890p 0.0 0.650403p 0.021605p 0.174802p 0.006065p 0.001331p 3.03e-05p 1.23e-08p
0.0
sig0.643 cc 0.000111p 0.017251p 0.312132p 0.0 0.962547p 0.194863p 0.964089p 0.006064p 1.160283p 1.166377p 1.23e-08p
0.0
rc 0.000111p 0.017251p 0.312141p 0.000273o 0.962818o 0.194912n 0.964312n 0.006065p 1.160556n 1.166651m 1.23e-08p
0.0
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.338910n 0.0 0.0
zp 47.94 ri 7.58e-05p 0.015155p 0.310855p 0.0 0.761860p 0.026592p 0.215150p 0.007378p 0.001620p 3.38e-05p 1.17e-08p
0.0
sig0.632 cc 7.58e-05p 0.015230p 0.326072p 0.0 1.087954p 0.222422p 1.107265p 0.007378p 1.331307p 1.338719p 1.17e-08p
0.0
rc 7.58e-05p 0.015231p 0.326085p 0.000225o 1.088170o 0.222463n 1.107450n 0.007378p 1.331532n 1.338944m 1.17e-08p
0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.161349n 0.0 0.0
zp 47.62 ri 0.000363p 0.040493p 0.448225p 0.0 0.580208p 0.009926p 0.080313p 0.001191p 0.000261p 2.09e-06p 2.47e-10p
0.0
sig0.621 cc 0.000363p 0.040853p 0.489047p 0.0 1.069296p 0.202399p 0.957130p 0.001191p 1.159790p 1.160983p 2.47e-10p
0.0
rc 0.000363p 0.040856p 0.489081p 0.000442o 1.069732n 0.202478n 0.957493n 0.001191p 1.160232n 1.161425m 2.47e-10p
0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.077829n 0.0 0.0

zp 48.75 ri 3.65e-10p 3.32e-06p 0.000948p 0.0 0.028247p 0.006815p 0.033273p 0.006267p 0.002202p 7.46e-05p 6.27e-08p 1.58e-12p
sig0.569 cc 3.65e-10p 3.32e-06p 0.000951p 0.0 0.029198p 0.012071p 0.057215p 0.006267p 0.071488p 0.077829p 6.27e-08p 1.58e-12p
rc 3.65e-10p 3.32e-06p 0.000951p 2.16e-07o 0.029198p 0.012071p 0.057215p 0.006267p 0.071488o 0.077829n 6.27e-08p 1.58e-12p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.093612n 0.0 0.0
zp 48.48 ri 5.93e-09p 2.07e-05p 0.003789p 0.0 0.044034p 0.007207p 0.035185p 0.002486p 0.000873p 1.68e-05p 4.37e-09p 0.0
sig0.565 cc 5.93e-09p 2.07e-05p 0.003809p 0.0 0.047843p 0.015818p 0.074416p 0.002486p 0.091108p 0.093611p 4.37e-09p 0.0
rc 5.93e-09p 2.07e-05p 0.003809p 7.84e-07o 0.047844p 0.015818p 0.074417p 0.002486p 0.091109o 0.093612n 4.37e-09p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.084849n 0.0 0.0
zp 47.97 ri 1.50e-06p 0.000582p 0.017620p 0.0 0.050613p 0.002648p 0.012927p 0.000333p 0.000117p 1.00e-06p 1.54e-10p 0.0
sig0.598 cc 1.50e-06p 0.000584p 0.018204p 0.0 0.068817p 0.015035p 0.069356p 0.000333p 0.084508p 0.084841p 1.54e-10p 0.0
rc 1.50e-06p 0.000584p 0.018204p 8.15e-06o 0.068825p 0.015036p 0.069363p 0.000333p 0.084516o 0.084850n 1.54e-10p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.061500n 0.0 0.0
zp 47.97 ri 7.76e-08p 0.000158p 0.011357p 0.0 0.040534p 0.001588p 0.007754p 7.70e-05p 2.71e-05p 4.01e-08p 0.0 0.0
sig0.524 cc 7.76e-08p 0.000159p 0.011516p 0.0 0.052049p 0.010957p 0.050434p 7.70e-05p 0.061418p 0.061496p 0.0 0.0
rc 7.76e-08p 0.000159p 0.011516p 5.39e-06o 0.052055p 0.010958p 0.050439p 7.70e-05p 0.061424o 0.061501n 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.082838n 0.0 0.0
zp 48.92 ri 8.69e-10p 3.13e-06p 0.000811p 0.0 0.019954p 0.008079p 0.039444p 0.010471p 0.003679p 0.000396p 1.03e-06p 1.90e-10p
sig0.611 cc 8.69e-10p 3.13e-06p 0.000814p 0.0 0.020768p 0.011817p 0.056474p 0.010471p 0.071970p 0.082838p 1.03e-06p 1.90e-10p

rc 8.69e-10p 3.13e-06p 0.000814p 3.24e-12o 0.020768p 0.011817p 0.056474p 0.010471p 0.071970o 0.082838n 1.03e-06p 1.90e-10p

in branching from 71erd1; rh, pd half lives 80eng2; ag, cd, in, sn half lives 89wal1.

1

mass number 122 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 44 ru g 45 rh g 46 pd g 47 ag g 48 cd d 48 cd g 49 in m 49 in g 50 sn g 51 sb m 51 sb g 52 te g

half life 0.107s 1.41 s 0.56 s 0.39s 5.3 s 10. s 1.5 s stable 4.2 m 2.72 d stable

lambda 0.0 6.478e+00 4.916e-01 1.238e+00 1.777e+00 1.308e-01 6.931e-02 4.621e-01 0.0 2.751e-03 2.949e-06 0.0

z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 99.8160 0.0 100.0000 100.0000 0.0 -3.0000 97.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0

z - 0 m 0.0 0.0 0.0 0.0 0.5450 100.0000 0.0 0.0 0.0 0.0 100.0000 0.0

u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.081551n 0.0 0.0 0.0

zp 48.70 ri 0.0 2.34e-10p 3.98e-06p 0.000925p 0.0 0.038113p 0.017207p 0.017207p 0.008095p 1.98e-05p 1.49e-05p 2.33e-08p

sig0.554 cc 0.0 2.34e-10p 3.98e-06p 0.000929p 0.0 0.039040p 0.017207p 0.056247p 0.081550p 1.98e-05p 3.47e-05p 3.36e-05p

rc 0.0 2.34e-10p 3.98e-06p 0.000929p 8.19e-07o 0.039041p 0.017207p 0.056248p 0.081551n 1.98e-05p 3.47e-05p 3.36e-05o

u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.044534n 0.0 0.0 0.0

zp 48.00 ri 1.78e-12p 4.79e-08p 0.000137p 0.005246p 0.0 0.033895p 0.002563p 0.002563p 0.000130p 2.53e-08p 1.91e-08p 1.60e-12p

sig0.536 cc 1.78e-12p 4.79e-08p 0.000137p 0.005382p 0.0 0.039268p 0.002563p 0.041831p 0.044524p 2.53e-08p 4.44e-08p 4.30e-08p

rc 1.78e-12p 4.79e-08p 0.000137p 0.005382p 1.06e-05o 0.039278p 0.002563p 0.041841o 0.044535n 2.53e-08p 4.44e-08p 4.30e-08p

pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.247706n 0.0 0.0 0.0

zp 48.26 ri 3.13e-09p 1.11e-05p 0.003874p 0.144622p 0.0 0.658150p 0.204006p 0.204014p 0.033062p 0.000213p 9.15e-05p 2.87e-07p

sig0.643 cc 3.13e-09p 1.11e-05p 0.003885p 0.148498p 0.0 0.806417p 0.203994p 1.010411p 1.247475p 0.000213p 0.000305p 0.000296p

rc 3.13e-09p 1.11e-05p 0.003885p 0.148506p 0.000296o 0.806678o 0.204006p 1.010693n 1.247770m 0.000213p 0.000305p 0.000296o
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.219896n 0.0 0.0 0.0
zp 48.31 ri 1.01e-09p 5.34e-06p 0.002554p 0.119705p 0.0 0.632752p 0.214480p 0.214477p 0.035947p 0.000224p 9.60e-05p 2.69e-07p
sig0.632 cc 1.01e-09p 5.34e-06p 0.002559p 0.122258p 0.0 0.754813p 0.214468p 0.969282p 1.219705p 0.000224p 0.000320p 0.000311p
rc 1.01e-09p 5.34e-06p 0.002559p 0.122265p 0.000220o 0.755011o 0.214480p 0.969488o 1.219925m 0.000224p 0.000320p 0.000311o
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.101793n 0.0 0.0 0.0
zp 47.98 ri 1.11e-08p 3.49e-05p 0.009265p 0.231043p 0.0 0.638146p 0.107649p 0.107646p 0.008000p 1.94e-05p 8.33e-06p 8.13e-09p
sig0.621 cc 1.11e-08p 3.49e-05p 0.009299p 0.240314p 0.0 0.878071p 0.107636p 0.985707p 1.101343p 1.94e-05p 2.78e-05p 2.69e-05p
rc 1.11e-08p 3.49e-05p 0.009300p 0.240343p 0.000525o 0.878572o 0.107649p 0.986218n 1.101868m 1.94e-05p 2.78e-05p 2.70e-05o
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.081821n 0.0 0.0 0.0
zp 49.16 ri 0.0 4.01e-12p 1.47e-07p 0.000117p 0.0 0.012518p 0.020538p 0.020538p 0.028092p 0.000367p 0.000277p 2.11e-06p
sig0.569 cc 0.0 4.01e-12p 1.47e-07p 0.000117p 0.0 0.012635p 0.020538p 0.033173p 0.081820p 0.000367p 0.000645p 0.000627p
rc 0.0 4.01e-12p 1.47e-07p 0.000117p 3.57e-11o 0.012635p 0.020538p 0.033173p 0.081821n 0.000367p 0.000645p 0.000627o
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.098812n 0.0 0.0 0.0
zp 48.98 ri 0.0 3.41e-11p 5.41e-07p 0.000425p 0.0 0.018970p 0.030929p 0.030929p 0.017549p 0.000206p 0.000155p 4.18e-07p
sig0.565 cc 0.0 3.41e-11p 5.41e-07p 0.000426p 0.0 0.019395p 0.030929p 0.050324p 0.098812p 0.000206p 0.000361p 0.000350p
rc 0.0 3.41e-11p 5.41e-07p 0.000426p 6.06e-12o 0.019395p 0.030929p 0.050324p 0.098812n 0.000206p 0.000361p 0.000350o
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.094686n 0.0 0.0 0.0

zp 48.50 ri 1.02e-12p 2.41e-08p 3.83e-05p 0.004390p 0.0 0.042766p 0.021511p 0.021511p 0.004473p 2.25e-05p 1.70e-05p 2.53e-08p
sig0.598 cc 1.02e-12p 2.41e-08p 3.83e-05p 0.004428p 0.0 0.047186p 0.021511p 0.068697p 0.094683p 2.25e-05p 3.95e-05p 3.84e-05p
rc 1.02e-12p 2.41e-08p 3.83e-05p 0.004428p 2.81e-06o 0.047189p 0.021511p 0.068700p 0.094686n 2.25e-05p 3.95e-05p 3.84e-05o
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.064383n 0.0 0.0 0.0
zp 48.39 ri 0.0 1.17e-09p 1.03e-05p 0.002921p 0.0 0.034850p 0.012767p 0.012767p 0.001071p 9.91e-07p 7.48e-07p 8.81e-11p
sig0.524 cc 0.0 1.17e-09p 1.03e-05p 0.002931p 0.0 0.037775p 0.012767p 0.050543p 0.064381p 9.91e-07p 1.74e-06p 1.69e-06p
rc 0.0 1.17e-09p 1.03e-05p 0.002931p 2.63e-06o 0.037778p 0.012767p 0.050545p 0.064383n 9.91e-07p 1.74e-06p 1.69e-06p
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.092584n 0.0 0.0 0.0
zp 49.42 ri 0.0 0.0 0.0 1.76e-09p 0.0 0.000409p 0.026198p 0.026198p 0.039777p 5.20e-05p 3.92e-05p 1.35e-10p
sig0.350 cc 0.0 0.0 0.0 1.76e-09p 0.0 0.000409p 0.026198p 0.026607p 0.092584p 5.20e-05p 9.12e-05p 8.85e-05p
rc 0.0 0.0 0.0 1.76e-09p 0.0 0.000409p 0.026198p 0.026607p 0.092584n 5.20e-05p 9.12e-05p 8.85e-05p

ru, rh pd half lives from 80eng2; ag, cd, in half lives 89wal1.
1

mass number 123 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 45 rh g 46 pd g 47 ag g 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te m 52 te g 53 i g
half life 0.134s 0.300s 0.31 s 2.09 s 47. s 6.0 s 40.1 m 129.2d stable 119.7d 1e+13y 13.2 h
lambda 5.173e+00 2.310e+00 2.236e+00 3.316e-01 1.475e-02 1.155e-01 2.881e-04 6.209e-08 0.0 6.702e-08 2.198e-21 1.459e-05
z - 1 g 100.0000 100.0000 100.0000 99.4550 23.0000 77.0000 100.0000 0.0 100.0000 0.0 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 100.0000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.099453n 0.0 0.0 0.0
zp 49.12 ri 2.78e-12p 1.38e-07p 0.000150p 0.015880p 0.009142p 0.044636p 0.007566p 0.021535p 0.000543p 8.19e-07p 2.18e-07p 4.40e-11p

sig0.554 cc 2.78e-12p 1.38e-07p 0.000150p 0.016030p 0.012829p 0.056979p 0.077374p 0.021535p 0.099453p 8.19e-07p 1.04e-06p 4.40e-11p
rc 2.78e-12p 1.38e-07p 0.000150p 0.016030p 0.012829p 0.056979p 0.077374o 0.021535p 0.099453n 8.19e-07p 1.04e-06p 4.40e-11p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.056410n 0.0 0.0 0.0
zp 48.43 ri 1.10e-09p 1.06e-05p 0.001936p 0.033465p 0.003322p 0.016221p 0.000380p 0.001083p 2.50e-06p 2.47e-10p 6.57e-11p 0.0
sig0.536 cc 1.10e-09p 1.06e-05p 0.001947p 0.035401p 0.011465p 0.043480p 0.055325p 0.001083p 0.056410p 2.47e-10p 3.13e-10p 0.0
rc 1.10e-09p 1.06e-05p 0.001947p 0.035401p 0.011465p 0.043480p 0.055325o 0.001083p 0.056410n 2.47e-10p 3.13e-10p 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.369434n 0.0 0.0 0.0
zp 48.63 ri 7.76e-07p 0.000635p 0.053570p 0.522071p 0.074079p 0.599365p 0.021159p 0.096392p 0.002461p 4.68e-06p 7.61e-07p 1.18e-09p
sig0.643 cc 7.76e-07p 0.000636p 0.054206p 0.575982p 0.206555p 1.042871p 1.270585p 0.096392p 1.369443p 4.68e-06p 5.44e-06p 1.18e-09p
rc 7.76e-07p 0.000636p 0.054206p 0.575982o 0.206555o 1.042871n 1.270585n 0.096392p 1.369443m 4.68e-06p 5.44e-06p 1.18e-09p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.299239n 0.0 0.0 0.0
zp 48.68 ri 3.16e-07p 0.000366p 0.039939p 0.464468p 0.073562p 0.595185p 0.022207p 0.101164p 0.002562p 4.48e-06p 7.29e-07p 9.56e-10p
sig0.632 cc 3.16e-07p 0.000366p 0.040305p 0.504553p 0.189609p 0.983691p 1.195508p 0.101164p 1.299239p 4.48e-06p 5.21e-06p 9.56e-10p
rc 3.16e-07p 0.000366p 0.040305p 0.504553p 0.189609p 0.983691o 1.195508n 0.101164p 1.299239m 4.48e-06p 5.21e-06p 9.56e-10p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.171275n 0.0 0.0 0.0
zp 48.36 ri 2.33e-06p 0.001572p 0.094702p 0.591673p 0.048897p 0.395622p 0.007019p 0.031974p 0.000339p 2.20e-07p 3.58e-08p 1.57e-11p
sig0.621 cc 2.33e-06p 0.001574p 0.096276p 0.687424p 0.207005p 0.924939p 1.138962p 0.031974p 1.171275p 2.20e-07p 2.56e-07p 1.57e-11p
rc 2.33e-06p 0.001574p 0.096276p 0.687424o 0.207005o 0.924939o 1.138962n 0.031974p 1.171275m 2.20e-07p 2.56e-07p 1.57e-11p

pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.092797n 0.0 0.0 0.0
zp 49.33 ri 0.0 0.0 6.55e-09p 0.000933p 0.009678p 0.047249p 0.009074p 0.025826p 3.64e-05p 2.58e-11p 6.86e-12p 0.0
sig0.350 cc 0.0 0.0 6.55e-09p 0.000933p 0.009892p 0.047968p 0.066934p 0.025826p 0.092797p 2.58e-11p 3.27e-11p
0.0
rc 0.0 0.0 6.55e-09p 0.000933p 0.009892p 0.047968p 0.066934p 0.025826p 0.092797n 2.58e-11p 3.27e-11p 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.114414n 0.0 0.0 0.0
zp 49.46 ri 0.0 0.0 1.11e-09p 0.000333p 0.010459p 0.051066p 0.013619p 0.038761p 0.000175p 2.64e-10p 7.02e-11p
0.0
sig0.350 cc 0.0 0.0 1.11e-09p 0.000333p 0.010536p 0.051323p 0.075478p 0.038761p 0.114414p 2.64e-10p 3.34e-10p
0.0
rc 0.0 0.0 1.11e-09p 0.000333p 0.010536p 0.051323p 0.075478p 0.038761p 0.114414n 2.64e-10p 3.34e-10p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.099669n 0.0 0.0 0.0
zp 49.03 ri 1.71e-10p 1.13e-06p 0.000515p 0.018068p 0.010105p 0.049334p 0.005446p 0.015500p 0.000701p 1.45e-06p 3.84e-07p
3.31e-10p
sig0.598 cc 1.71e-10p 1.13e-06p 0.000516p 0.018581p 0.014378p 0.063642p 0.083466p 0.015500p 0.099669p 1.45e-06p 1.83e-
06p 3.31e-10p
rc 1.71e-10p 1.13e-06p 0.000516p 0.018581p 0.014378p 0.063642p 0.083466o 0.015500p 0.099669n 1.45e-06p 1.83e-06p
3.31e-10p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.072071n 0.0 0.0 0.0
zp 48.80 ri 1.14e-11p 4.24e-07p 0.000483p 0.020169p 0.007648p 0.037343p 0.001661p 0.004728p 4.09e-05p 6.89e-09p 1.83e-09p
0.0
sig0.524 cc 1.14e-11p 4.24e-07p 0.000483p 0.020650p 0.012398p 0.053243p 0.067302p 0.004728p 0.072071p 6.89e-09p 8.72e-
09p 0.0
rc 1.14e-11p 4.24e-07p 0.000483p 0.020650p 0.012398p 0.053243p 0.067302o 0.004728p 0.072071n 6.89e-09p 8.72e-09p
0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.107203n 0.0 0.0 0.0
zp 49.57 ri 0.0 0.0 1.66e-10p 0.000119p 0.007446p 0.036354p 0.016346p 0.046523p 0.000414p 1.50e-09p 3.98e-10p
0.0
sig0.350 cc 0.0 0.0 1.66e-10p 0.000119p 0.007473p 0.036445p 0.060265p 0.046523p 0.107203p 1.50e-09p 1.90e-09p
0.0
rc 0.0 0.0 1.66e-10p 0.000119p 0.007473p 0.036445p 0.060265p 0.046523p 0.107203n 1.50e-09p 1.90e-09p 0.0

rh, pd half lives from 80eng2; ag, cd, in, sn half lives 89wal1; i, te half lives 90bur1.

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    mass number    124            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       44 ru g   45 rh g   46 pd g   47 ag g   48 cd g   49 in g   50 sn g   51 sb m   51 sb g   52 te g
half life                      0.514s    0.22 s    1.24 s    3.18 s    stable    20.2 m    60.20d    stable
lambda            0.0       0.0 1.349e+00 3.151e+00 5.590e-01 2.180e-01       0.0 5.719e-04 1.333e-07       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0       0.0  100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.119343n      0.0       0.0       0.0
zp 49.43 ri      0.0       0.0       0.0  1.56e-09p 0.000642p 0.051296p 0.067406p 4.84e-05p 4.84e-05p 2.53e-10p
sig0.350 cc      0.0       0.0       0.0  1.56e-09p 0.000642p 0.051937p 0.119343p 4.84e-05p 9.67e-05p 9.67e-05p
         rc      0.0       0.0       0.0  1.56e-09p 0.000642p 0.051937p 0.119343n 4.84e-05p 9.67e-05p 9.67e-05p
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.071255n      0.0       0.0       0.0
zp 48.85 ri      0.0  1.20e-11p 5.86e-07p 0.000337p 0.024774p 0.035386p 0.010758p 2.84e-05p 2.84e-05p 3.56e-08p
sig0.536 cc      0.0  1.20e-11p 5.86e-07p 0.000338p 0.025112p 0.060497p 0.071255p 2.84e-05p 5.67e-05p 5.68e-05p
         rc      0.0  1.20e-11p 5.86e-07p 0.000338p 0.025112p 0.060497p 0.071255n 2.84e-05p 5.67e-05p 5.68e-05p
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.521593n      0.0       0.0       0.0
zp 49.00 ri 1.99e-12p 4.04e-08p 7.80e-05p 0.015089p 0.321321p 0.865599p 0.319524p 0.007458p 0.007458p 7.66e-05p
sig0.643 cc 1.99e-12p 4.04e-08p 7.80e-05p 0.015167p 0.336494p 1.202081p 1.521610p 0.007458p 0.014915p 0.014992p
         rc 1.99e-12p 4.04e-08p 7.80e-05p 0.015167p 0.336488p 1.202087o 1.521611m 0.007458p 0.014915p 0.014992p
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.413387n      0.0       0.0       0.0
zp 49.07 ri      0.0  1.16e-08p 3.42e-05p 0.009274p 0.253703p 0.813087p 0.337289p 0.008369p 0.008369p 8.53e-05p
sig0.632 cc      0.0  1.16e-08p 3.42e-05p 0.009308p 0.263011p 1.076098p 1.413387p 0.008369p 0.016739p 0.016824p
         rc      0.0  1.16e-08p 3.42e-05p 0.009308p 0.263011p 1.076098o 1.413387n 0.008369p 0.016739p 0.016824p
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.290388n      0.0       0.0       0.0
zp 48.73 ri 5.93e-12p 1.23e-07p 0.000208p 0.030158p 0.426787p 0.695852p 0.137384p 0.001431p 0.001431p 5.39e-06p
sig0.621 cc 5.93e-12p 1.23e-07p 0.000208p 0.030366p 0.457153p 1.153004p 1.290388p 0.001431p 0.002861p 0.002867p
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          rc 5.93e-12p 1.23e-07p 0.000208p 0.030366p 0.457153p 1.153004n 1.290388m 0.001431p 0.002861p 0.002867p
  pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  0.109760n      0.0       0.0       0.0
 zp 49.46 ri      0.0       0.0       0.0  8.51e-10p 0.000392p 0.047419p 0.061948p 6.78e-05p 6.78e-05p 3.98e-10p
 sig0.350 cc      0.0       0.0       0.0  8.51e-10p 0.000392p 0.047811p 0.109760p 6.78e-05p 0.000136p 0.000136p
          rc      0.0       0.0       0.0  8.51e-10p 0.000392p 0.047811p 0.109760n 6.78e-05p 0.000136p 0.000136p
  am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  0.124815n      0.0       0.0       0.0
 zp 49.61 ri      0.0       0.0       0.0  9.32e-11p 9.04e-05p 0.046591p 0.078133p 0.000355p 0.000355p 4.37e-09p
 sig0.350 cc      0.0       0.0       0.0  9.32e-11p 9.04e-05p 0.046682p 0.124815p 0.000355p 0.000710p 0.000710p
          rc      0.0       0.0       0.0  9.32e-11p 9.04e-05p 0.046682p 0.124815n 0.000355p 0.000710p 0.000710p
  am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  0.119603n      0.0       0.0       0.0
 zp 49.37 ri      0.0       0.0       0.0  5.12e-09p 0.000753p 0.076091p 0.042760p 3.79e-05p 3.79e-05p 7.05e-11p
 sig0.350 cc      0.0       0.0       0.0  5.12e-09p 0.000753p 0.076843p 0.119603p 3.79e-05p 7.58e-05p 7.58e-05p
          rc      0.0       0.0       0.0  5.12e-09p 0.000753p 0.076843p 0.119603n 3.79e-05p 7.58e-05p 7.58e-05p
  np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  0.082641n      0.0       0.0       0.0
 zp 49.22 ri      0.0       0.0  9.06e-09p 4.40e-05p 0.007120p 0.051656p 0.023821p 0.000295p 0.000295p 5.36e-07p
 sig0.524 cc      0.0       0.0  9.06e-09p 4.41e-05p 0.007164p 0.058820p 0.082641p 0.000295p 0.000589p 0.000590p
          rc      0.0       0.0  9.06e-09p 4.41e-05p 0.007164p 0.058820p 0.082641n 0.000295p 0.000589p 0.000590p
  cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  0.116948n      0.0       0.0       0.0
 zp 49.72 ri      0.0       0.0       0.0  1.19e-11p 2.90e-05p 0.029395p 0.087524p 0.000724p 0.000724p 2.21e-08p
 sig0.350 cc      0.0       0.0       0.0  1.19e-11p 2.90e-05p 0.029424p 0.116948p 0.000724p 0.001449p 0.001449p
          rc      0.0       0.0       0.0  1.19e-11p 2.90e-05p 0.029424p 0.116948n 0.000724p 0.001449p 0.001449p

   pd, sb half lives from 80eng2; ag, cd, in half lives from 89wal1.
1

     mass number    125            LA-UR-94-3106 (ENDF-349)                                percent yields
 nuclide      46 pd g   47 ag g   48 cd g   49 in m   49 in g   50 sn m   50 sn g   51 sb g   52 te m   52 te g   53 i  g   54 xe g
 half life     0.166s    0.334s    0.68 s    12.2 s    2.36 s     9.5 m    9.63 d    2.758y     58. d    stable    60.14d     17. h
 lambda       4.176e+00 2.075e+00 1.019e+00 5.682e-02 2.937e-01 1.216e-03 8.331e-07 7.969e-09 1.383e-07       0.0 1.334e-07
1.133e-05
```

z - 1 g 100.0000 100.0000 100.0000 30.0000 70.0000 50.0000 50.0000 100.0000 22.5000 77.5000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 50.0000 50.0000 100.0000 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.156502m 0.0 0.0
zp 49.60 ri 0.0 1.24e-10p 0.000149p 0.024356p 0.024356p 0.027825p 0.079194p 0.000621p 3.75e-09p 9.98e-10p 0.0 0.0
sig0.350 cc 0.0 1.24e-10p 0.000149p 0.024401p 0.024461p 0.052256p 0.103625p 0.156502p 0.035213p 0.156502p 0.0 0.0
rc 0.0 1.24e-10p 0.000149p 0.024401p 0.024461p 0.052256p 0.103625p 0.156502n 0.035213o 0.156502l 0.0 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.119122n 0.0 0.0
zp 49.27 ri 0.0 2.38e-08p 0.002162p 0.039443p 0.039443p 0.009893p 0.028158p 2.24e-05p 9.99e-12p 2.66e-12p 0.0 0.0
sig0.350 cc 0.0 2.38e-08p 0.002162p 0.040091p 0.040956p 0.050417p 0.068682p 0.119122p 0.026802p 0.119122p 0.0 0.0
rc 0.0 2.38e-08p 0.002162p 0.040091p 0.040956p 0.050417o 0.068682o 0.119122n 0.026802n 0.119122m 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.856150p 1.592600p 0.0 1.694040n 0.0 0.0
zp 49.37 ri 6.62e-06p 0.002975p 0.141271p 0.402352p 0.402352p 0.111668p 0.489173p 0.063286p 0.000656p 0.000107p 9.27e-07p 1.09e-10p
sig0.643 cc 6.54e-06p 0.002946p 0.142529p 0.440302p 0.497314p 0.579141p 0.971438p 1.613109p 0.363583p 1.613847p 8.95e-07p 1.05e-10p
rc 6.62e-06p 0.002982p 0.144253p 0.445627p 0.503329p 0.586146o 0.963651o 1.613083n 0.363600n 1.613847m 9.27e-07p 1.09e-10p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.610590n 0.0 0.0
zp 49.46 ri 2.27e-06p 0.001553p 0.102367p 0.371499p 0.371499p 0.123045p 0.560538p 0.079092p 0.000856p 0.000139p 1.20e-06p 1.29e-10p
sig0.632 cc 2.27e-06p 0.001555p 0.103922p 0.402675p 0.444244p 0.546505p 0.983998p 1.609594p 0.363014p 1.610590p 1.20e-06p 1.29e-10p
rc 2.27e-06p 0.001555p 0.103922p 0.402675p 0.444244p 0.546505o 0.983998n 1.609594m 0.363014m 1.610590l 1.20e-06p 1.29e-10p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.469057n 0.0 0.0

zp 49.11 ri 1.88e-05p 0.006854p 0.230493p 0.419928p 0.419928p 0.067157p 0.305936p 0.018654p 7.64e-05p 1.24e-05p 3.60e-08p 1.17e-12p
sig0.621 cc 1.88e-05p 0.006873p 0.237366p 0.491137p 0.586084p 0.605767p 0.844547p 1.468968p 0.330594p 1.469057p 3.60e-08p 1.17e-12p
rc 1.88e-05p 0.006873p 0.237366p 0.491137p 0.586084p 0.605767o 0.844547o 1.468968n 0.330594n 1.469057m 3.60e-08p 1.17e-12p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.149768n 0.0 0.0
zp 49.59 ri 0.0 1.33e-10p 0.000144p 0.024898p 0.024898p 0.025796p 0.073420p 0.000611p 3.31e-09p 8.80e-10p 0.0 0.0
sig0.350 cc 0.0 1.33e-10p 0.000144p 0.024941p 0.024999p 0.050766p 0.098390p 0.149768p 0.033698p 0.149768p 0.0 0.0
rc 0.0 1.33e-10p 0.000144p 0.024941p 0.024999p 0.050766p 0.098390p 0.149768o 0.033698o 0.149768m 0.0 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.196587l 0.0 0.162270n 0.0 0.0
zp 49.76 ri 0.0 9.21e-12p 2.91e-05p 0.021815p 0.021815p 0.038231p 0.107868p 0.003436p 4.85e-08p 1.29e-08p 0.0 0.0
sig0.350 cc 0.0 9.16e-12p 2.90e-05p 0.021718p 0.021729p 0.059769p 0.130006p 0.193194p 0.043469p 0.193194p 0.0 0.0
rc 0.0 9.21e-12p 2.91e-05p 0.021824p 0.021836p 0.060061p 0.129697o 0.193194l 0.043469l 0.193194k 0.0 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.128893k 0.0 0.149876n 0.0 0.0
zp 49.54 ri 0.0 3.36e-10p 0.000186p 0.029211p 0.029211p 0.018414p 0.052410p 0.000402p 1.21e-09p 3.21e-10p 0.0 0.0
sig0.350 cc 0.0 3.36e-10p 0.000186p 0.029267p 0.029342p 0.047719p 0.081715p 0.129836p 0.029213p 0.129836p 0.0 0.0
rc 0.0 3.36e-10p 0.000186p 0.029267p 0.029342p 0.047719o 0.081715o 0.129836j 0.029213j 0.129836j 0.0 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.126410n 0.0 0.0
zp 49.49 ri 0.0 8.68e-10p 0.000306p 0.032519p 0.032519p 0.015816p 0.045015p 0.000234p 4.16e-10p 1.11e-10p 0.0 0.0
sig0.350 cc 0.0 8.68e-10p 0.000306p 0.032611p 0.032733p 0.048488p 0.077687p 0.126410p 0.028442p 0.126410p 0.0 0.0
rc 0.0 8.68e-10p 0.000306p 0.032611p 0.032733p 0.048488o 0.077687p 0.126410n 0.028442o 0.126410m 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.155931n 0.0 0.0
zp 49.87 ri 0.0 0.0 6.92e-06p 0.010877p 0.010877p 0.033469p 0.095257p 0.005445p 1.98e-07p 5.28e-08p 0.0 0.0

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sig0.350 cc      0.0       0.0  6.92e-06p 0.010879p 0.010881p 0.044349p 0.106137p 0.155931p 0.035085p 0.155931p      0.0       0.0
         rc      0.0       0.0  6.92e-06p 0.010879p 0.010881p 0.044349p 0.106137p 0.155931o 0.035085o 0.155931n      0.0       0.0

  pd, ag half lives from 80eng2;  cd, in, sn, sb, te half lives from 89wal1; i half life 90bur1.

1

    mass number    126            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide      46 pd g   47 ag g   48 cd g   49 in g   50 sn d   50 sn g   51 sb m   51 sb g   52 te g   53 i  g   54 xe g
half life    0.252s    0.140s    0.52 s    1.63 s    3.76 s    1.e5y     19.0 m    12.4 d    stable    13.02d    stable
lambda       2.751e+00 4.951e+00 1.333e+00 4.252e-01 1.843e-01 2.198e-13 6.080e-04 6.470e-07       0.0 6.162e-07       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000       0.0  100.0000  -56.0000   44.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   86.0000       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0    0.6600  100.0000       0.0   14.0000       0.0       0.0       0.0
 u234f   xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  0.259288n 0.253006n      0.0       0.0       0.0       0.0
zp 49.76 ri      0.0  8.56e-12p 4.68e-05p 0.036966p      0.0  0.219418o 0.001580p 0.001144p 9.25e-08p      0.0       0.0
sig0.350 cc      0.0  8.54e-12p 4.68e-05p 0.036949p      0.0  0.256436p 0.258013p 0.037264p 0.259155p      0.0       0.0
         rc      0.0  8.56e-12p 4.68e-05p 0.037013p 0.000100o 0.256531m 0.258111m 0.037280m 0.259256l      0.0       0.0
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.178683n 0.176499n      0.0       0.0       0.0       0.0
zp 49.45 ri      0.0  1.77e-09p 0.000798p 0.074885p      0.0  0.101784p 0.000100p 7.25e-05p 4.96e-10p      0.0       0.0
sig0.350 cc      0.0  1.77e-09p 0.000797p 0.075591p      0.0  0.177467p 0.177567p 0.024932p 0.177640p      0.0       0.0
         rc      0.0  1.77e-09p 0.000798p 0.075683p 0.000242o 0.177709n 0.177809m 0.024966m 0.177882m      0.0       0.0
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  1.939544n 1.661744n 0.363664p      0.0       0.0       0.0
zp 49.75 ri 4.55e-07p 0.000492p 0.054183p 0.678867p      0.0  1.101918n 0.096154p 0.127460p 0.006084p 1.77e-05p 5.08e-09p
sig0.643 cc 4.48e-07p 0.000484p 0.053796p 0.721739p      0.0  1.814822p 1.919615p 0.407657p 2.065167p 1.93e-05p 8.49e-06p
         rc 4.55e-07p 0.000492p 0.054675p 0.733542o 0.001200o 1.836660m 1.932814l 0.398054o 2.066368l 1.77e-05p 7.79e-06p
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  1.869080n 1.753754n      0.0       0.0       0.0       0.0
zp 49.85 ri 1.23e-07p 0.000215p 0.034801p 0.585780p      0.0  1.188955n 0.135116p 0.180487p 0.009568p 2.91e-05p 8.07e-09p
sig0.632 cc 1.23e-07p 0.000215p 0.034962p 0.619839p      0.0  1.811629p 1.946537p 0.451347p 2.134938p 2.90e-05p 1.28e-05p
         rc 1.23e-07p 0.000215p 0.035016p 0.620796o 0.001131o 1.810882m 1.945998l 0.452927o 2.136069l 2.91e-05p 1.28e-05p
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  1.786691n 1.626286n 0.024592k      0.0       0.0       0.0
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zp 49.48 ri 1.24e-06p 0.001122p 0.089721p 0.728807p 0.0 0.703458p 0.030421p 0.040326p 0.000818p 8.32e-07p 6.92e-11p
sig0.621 cc 1.23e-06p 0.001116p 0.090259p 0.814367p 0.0 1.513727p 1.548137p 0.262352p 1.594675p 9.41e-07p 4.14e-07p
rc 1.24e-06p 0.001123p 0.090845p 0.819652o 0.001803o 1.524913n 1.555334m 0.258073h 1.596478m 8.32e-07p 3.66e-07p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.229749n 0.225853n 0.0 0.0 0.0 0.0
zp 49.74 ri 0.0 1.13e-11p 4.71e-05p 0.039978p 0.0 0.187660o 0.001476p 0.001069p 6.56e-08p 0.0 0.0
sig0.350 cc 0.0 1.13e-11p 4.70e-05p 0.039965p 0.0 0.227689p 0.229162p 0.033150p 0.230229p 0.0 0.0
rc 0.0 1.13e-11p 4.71e-05p 0.040025p 0.000133o 0.227818m 0.229293m 0.033170m 0.230362l 0.0 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.244815n 0.266033n 0.0 0.0 0.0 0.0
zp 49.91 ri 0.0 0.0 6.85e-06p 0.030820p 0.0 0.218514n 0.007114p 0.005152p 7.54e-07p 0.0 0.0
sig0.350 cc 0.0 0.0 6.86e-06p 0.030886p 0.0 0.249317p 0.256445p 0.041064p 0.261607p 0.0 0.0
rc 0.0 0.0 6.85e-06p 0.030827p 6.69e-05o 0.249407m 0.256522m 0.041065m 0.261674l 0.0 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.229620n 0.227523n 0.0 0.0 0.0 0.0
zp 49.71 ri 0.0 2.88e-11p 6.06e-05p 0.062688p 0.0 0.165266o 0.001633p 0.001182p 3.70e-08p 0.0 0.0
sig0.350 cc 0.0 2.88e-11p 6.06e-05p 0.062674p 0.0 0.228018p 0.229649p 0.033332p 0.230830p 0.0 0.0
rc 0.0 2.88e-11p 6.06e-05p 0.062749p 0.000158o 0.228172m 0.229805m 0.033355m 0.230988l 0.0 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.184753n 0.182419n 0.0 0.0 0.0 0.0
zp 49.64 ri 0.0 9.46e-11p 0.000108p 0.064491p 0.0 0.118720p 0.000718p 0.000520p 8.94e-09p 0.0 0.0
sig0.350 cc 0.0 9.45e-11p 0.000108p 0.064514p 0.0 0.183321p 0.184038p 0.026285p 0.184557p 0.0 0.0
rc 0.0 9.46e-11p 0.000108p 0.064599p 0.000179o 0.183499n 0.184217m 0.026310m 0.184736m 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.256694n 0.234776n 0.0 0.0 0.0 0.0
zp 50.03 ri 0.0 0.0 1.63e-06p 0.016223p 0.0 0.229957n 0.013162p 0.009531p 3.64e-06p 0.0 0.0
sig0.350 cc 0.0 0.0 1.62e-06p 0.016168p 0.0 0.246261p 0.259377p 0.045811p 0.268879p 0.0 0.0
rc 0.0 0.0 1.63e-06p 0.016225p 2.87e-05o 0.246211m 0.259373m 0.045843n 0.268908l 0.0 0.0

pd, ag half lives from 80eng2; cd, in, sn, sb half lives 89wal1; i half life 90bur1.

nuclide	47 ag g	48 cd g	49 in m	49 in g	50 sn m	50 sn g	51 sb g	52 te m	52 te g	53 i g	54 xe g	55 cs g
half life	0.175s	0.4 s	3.73 s	1.14 s	4.15 m	2.12 h	3.84 d	109. d	9.4 h	stable	36.41d	6.2 h

lambda 3.961e+00 1.733e+00 1.858e-01 6.080e-01 2.784e-03 9.082e-05 2.089e-06 7.360e-08 2.048e-05 0.0 2.203e-07 3.105e-05
z - 1 g 100.0000 100.0000 50.0000 50.0000 49.6700 49.6700 100.0000 16.0000 84.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 100.0000 100.0000 0.0 0.0 2.4000 0.0 0.0
z - 0 m 0.0 0.0 0.1220 0.0 0.0610 0.0 0.0 0.0 97.6000 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.388771k 0.0 0.0
zp 49.94 ri 0.0 7.97e-06p 0.015195p 0.015195p 0.089133p 0.253687p 0.015641p 1.20e-06p 4.22e-07p 0.0 0.0 0.0
sig0.350 cc 0.0 7.97e-06p 0.015199p 0.015199p 0.096683p 0.276436p 0.388760p 0.062203p 0.387268p 0.388761p 0.0 0.0
rc 0.0 7.97e-06p 0.015199p 0.015199p 0.096683p 0.276436p 0.388760n 0.062203o 0.387268l 0.388761j 0.0 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.248171n 0.0 0.0
zp 49.62 ri 1.43e-10p 0.000198p 0.036548p 0.036548p 0.045223p 0.128711p 0.001132p 7.34e-09p 2.58e-09p 0.0 0.0 0.0
sig0.350 cc 1.43e-10p 0.000198p 0.036647p 0.036647p 0.063425p 0.183561p 0.248119p 0.039699p 0.247166p 0.248119p 0.0 0.0
rc 1.43e-10p 0.000198p 0.036647p 0.036647p 0.063425p 0.183561p 0.248119o 0.039699o 0.247166n 0.248119m 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.435146i 1.957018i 0.0 0.0 2.248061n 0.0 0.0
zp 50.07 ri 6.23e-05p 0.014116p 0.174653p 0.174653p 0.194919p 1.115970l 0.300363p 0.023157p 0.005083p 0.000170p 1.03e-07p 5.96e-12p
sig0.643 cc 6.46e-05p 0.014706p 0.188505p 0.188505p 0.295803p 1.203144p 1.975893p 0.337343p 1.993650p 2.001902p 9.42e-08p 5.45e-12p
rc 6.23e-05p 0.014178p 0.181742p 0.181742p 0.285190p 1.387983i 1.973536i 0.338923k 1.993642i 2.001947i 1.03e-07p 5.96e-12p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.197163n 0.0 0.0
zp 50.14 ri 3.25e-05p 0.010391p 0.166147p 0.166147p 0.221647p 1.009727n 0.589723p 0.027988p 0.006144p 0.000205p 1.14e-07p 5.63e-12p
sig0.632 cc 3.25e-05p 0.010424p 0.171359p 0.171359p 0.306761p 1.266200p 2.162684p 0.374018p 2.187840p 2.197021p 1.14e-07p 5.63e-12p
rc 3.25e-05p 0.010424p 0.171359p 0.171359p 0.306761p 1.266200m 2.162684m 0.374018m 2.187840m 2.197021l 1.14e-07p 5.63e-12p

u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.955434n 0.0 0.0
zp 49.86 ri 0.000138p 0.027347p 0.259427p 0.259427p 0.200173p 0.911900p 0.290391p 0.006710p 0.001473p 2.12e-05p 4.59e-09p 0.0
sig0.621 cc 0.000138p 0.027484p 0.273168p 0.273168p 0.335855p 1.320748p 1.946998p 0.318230p 1.947544p 1.955203p 4.59e-09p 0.0
rc 0.000138p 0.027484p 0.273169p 0.273169p 0.335856p 1.320752o 1.946998n 0.318230n 1.947544m 1.955203m 4.59e-09p 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.369428n 0.0 0.0
zp 49.88 ri 1.36e-12p 1.44e-05p 0.020099p 0.020099p 0.082600p 0.235093p 0.011634p 5.49e-07p 1.93e-07p 0.0 0.0 0.0
sig0.350 cc 1.36e-12p 1.44e-05p 0.020107p 0.020107p 0.092587p 0.265186p 0.369408p 0.059106p 0.367990p 0.369408p 0.0 0.0
rc 1.36e-12p 1.44e-05p 0.020107p 0.020107p 0.092587p 0.265186p 0.369408o 0.059106o 0.367990n 0.369408m 0.0 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.380499n 0.0 0.0
zp 50.06 ri 0.0 1.47e-06p 0.010141p 0.010141p 0.083144p 0.236639p 0.040483p 5.68e-06p 2.00e-06p 0.0 0.0 0.0
sig0.350 cc 0.0 1.47e-06p 0.010142p 0.010142p 0.088181p 0.251819p 0.380482p 0.060883p 0.379029p 0.380490p 0.0 0.0
rc 0.0 1.47e-06p 0.010142p 0.010142p 0.088181p 0.251819p 0.380482o 0.060883o 0.379029n 0.380490m 0.0 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.349181n 0.0 0.0
zp 49.88 ri 1.66e-12p 1.34e-05p 0.023904p 0.023904p 0.074868p 0.213087p 0.013540p 4.85e-07p 1.70e-07p 0.0 0.0 0.0
sig0.350 cc 1.66e-12p 1.34e-05p 0.023911p 0.023911p 0.086745p 0.248874p 0.349159p 0.055866p 0.347818p 0.349159p 0.0 0.0
rc 1.66e-12p 1.34e-05p 0.023911p 0.023911p 0.086745p 0.248874p 0.349159o 0.055866o 0.347818n 0.349159m 0.0 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.272267n 0.0 0.0
zp 49.80 ri 7.18e-12p 2.90e-05p 0.027134p 0.027134p 0.055156p 0.156982p 0.005972p 1.10e-07p 3.85e-08p 0.0 0.0 0.0
sig0.350 cc 7.18e-12p 2.90e-05p 0.027149p 0.027149p 0.068641p 0.197616p 0.272228p 0.043557p 0.271183p 0.272229p 0.0 0.0
rc 7.18e-12p 2.90e-05p 0.027149p 0.027149p 0.068641p 0.197616p 0.272228o 0.043557o 0.271183n 0.272229m 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

```
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.373167n      0.0       0.0
 zp 50.19 ri      0.0  2.49e-07p 0.004346p 0.004346p 0.077037p 0.219258p 0.068171p 2.54e-05p 8.91e-06p 7.33e-12p       0.0       0.0
 sig0.350 cc      0.0  2.49e-07p 0.004346p 0.004346p 0.079195p 0.225763p 0.373129p 0.059726p 0.371730p 0.373164p       0.0
0.0
        rc      0.0  2.49e-07p 0.004346p 0.004346p 0.079195p 0.225763p 0.373129o 0.059726o 0.371730n 0.373164m       0.0       0.0

   ag half life from 80eng2; cd, in, sn, sb, te half lives 89wal1.
1

     mass number    128            LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       46 pd g   47 ag g   48 cd g   49 in g   50 sn d   50 sn g   51 sb m   51 sb g   52 te g   53 i  g   54 xe g
 half life              0.094s    0.28 s    0.80 s     2.5 s    59.1 m    10.1 m     9.1 h    stable    25.00m    stable
 lambda            0.0 7.374e+00 2.476e+00 8.664e-01 2.773e-01 1.955e-04 1.144e-03 2.116e-05       0.0 4.621e-04       0.0
  z - 1 g    100.0000  100.0000  100.0000   99.8780       0.0   99.9390   99.8000    0.2000  100.0000   -6.3000   93.7000
  z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
  z - 0 m         0.0       0.0       0.0       0.0    2.9200  100.0000       0.0       0.0       0.0       0.0       0.0
  u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.647484n      0.0       0.0
 zp 50.11 ri      0.0       0.0  1.49e-06p 0.015834p       0.0  0.580757o 0.029399p 0.021289p 2.42e-05p 1.53e-12p       0.0
 sig0.350 cc      0.0       0.0  1.49e-06p 0.015834p       0.0  0.596590p 0.624792p 0.022480p 0.647296p 1.53e-12p 1.44e-12p
        rc      0.0       0.0  1.49e-06p 0.015836p 0.000206o 0.596789n 0.624994n 0.022483p 0.647501m 1.53e-12p 1.44e-12p
  u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.573999n      0.0       0.0
 zp 49.80 ri      0.0  9.48e-12p 6.68e-05p 0.072310p       0.0  0.492790p 0.004644p 0.003363p 3.47e-07p       0.0       0.0
 sig0.350 cc      0.0  9.47e-12p 6.68e-05p 0.072333p       0.0  0.565127p 0.568638p 0.004491p 0.573130p       0.0       0.0
        rc      0.0  9.48e-12p 6.68e-05p 0.072376p 0.000905o 0.566028p 0.569540o 0.004495p 0.574035n       0.0       0.0
  pu240h  xi      0.0       0.0       0.0       0.0       0.0  1.004118i      0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.020281i 2.636567n      0.0       0.0
 zp 50.30 ri 4.55e-09p 1.77e-05p 0.006792p 0.276669p       0.0  1.132770n 0.402742p 1.017096i 0.080785p 0.000815p 8.41e-07p
 sig0.643 cc 5.02e-09p 1.95e-05p 0.007504p 0.312365p       0.0  1.817440p 2.248160p 0.579408p 2.916645p 0.000898p 0.000842p
        rc 4.55e-09p 1.77e-05p 0.006809p 0.283470p 0.001536o 1.417603m 1.817509n 1.019931h 2.918277l 0.000815p 0.000764p
  u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.509217n      0.0       0.0
 zp 50.36 ri 1.27e-09p 7.58e-06p 0.004081p 0.214193p       0.0  1.257708n 0.406010p 0.538217p 0.088147p 0.000881p 8.35e-07p
 sig0.632 cc 1.27e-09p 7.58e-06p 0.004088p 0.218247p       0.0  1.475974p 1.878992p 0.541097p 2.508280p 0.000881p 0.000826p
        rc 1.27e-09p 7.58e-06p 0.004088p 0.218276p 0.001129o 1.476980m 1.880035n 0.541171o 2.509409m 0.000881p 0.000826p
```

```
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.233364n      0.0       0.0
zp 50.14 ri 4.91e-09p 2.30e-05p 0.009038p 0.325774p       0.0  1.264896n 0.257565p 0.341446p 0.032060p 0.000164p 7.17e-08p
sig0.621 cc 4.90e-09p 2.30e-05p 0.009057p 0.334694p       0.0  1.599743p 1.854026p 0.344514p 2.230598p 0.000164p 0.000154p
         rc 4.91e-09p 2.30e-05p 0.009061p 0.334824p 0.003429o 1.602945m 1.857304m 0.344652p 2.234027m 0.000164p 0.000154p
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.658980n      0.0       0.0
zp 50.04 ri      0.0       0.0  3.48e-06p 0.027110p       0.0  0.586881o 0.025423p 0.018410p 1.10e-05p      0.0       0.0
sig0.350 cc      0.0       0.0  3.48e-06p 0.027093p       0.0  0.614011p 0.638187p 0.019624p 0.657822p      0.0       0.0
         rc      0.0       0.0  3.48e-06p 0.027113p 0.001265o 0.615242n 0.639435n 0.019640p 0.659086m      0.0       0.0
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.613675n      0.0       0.0
zp 50.22 ri      0.0       0.0  2.51e-07p 0.011764p       0.0  0.469774p 0.076558p 0.055438p 8.11e-05p 2.34e-11p      0.0
sig0.350 cc      0.0       0.0  2.51e-07p 0.011763p       0.0  0.481536p 0.557127p 0.056399p 0.613607p 2.34e-11p 2.20e-11p
         rc      0.0       0.0  2.51e-07p 0.011764p 7.22e-05o 0.481602p 0.557197o 0.056402p 0.613680n 2.34e-11p 2.20e-11p
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.568114n      0.0       0.0
zp 50.06 ri      0.0       0.0  2.24e-06p 0.030556p       0.0  0.477410p 0.034770p 0.025178p 1.12e-05p      0.0       0.0
sig0.350 cc      0.0       0.0  2.24e-06p 0.030554p       0.0  0.507958p 0.541706p 0.026190p 0.567908p      0.0       0.0
         rc      0.0       0.0  2.24e-06p 0.030558p 0.000217o 0.508166p 0.541919o 0.026194p 0.568125n      0.0       0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.586175n      0.0       0.0
zp 49.97 ri      0.0       0.0  8.18e-06p 0.053739p       0.0  0.495013p 0.021435p 0.015522p 3.34e-06p      0.0       0.0
sig0.350 cc      0.0       0.0  8.18e-06p 0.053730p       0.0  0.548740p 0.569070p 0.016614p 0.585688p      0.0       0.0
         rc      0.0       0.0  8.18e-06p 0.053747p 0.000512o 0.549240p 0.569576o 0.016620p 0.586200n      0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.604233n      0.0       0.0
zp 50.35 ri      0.0       0.0  3.72e-08p 0.004274p       0.0  0.407638p 0.111182p 0.080513p 0.000316p 2.30e-10p      0.0
sig0.350 cc      0.0       0.0  3.72e-08p 0.004273p       0.0  0.411944p 0.522283p 0.081321p 0.603921p 2.30e-10p 2.15e-10p
         rc      0.0       0.0  3.72e-08p 0.004274p 0.000333o 0.412242p 0.522600o 0.081338p 0.604254n 2.30e-10p 2.15e-10p

  ag half life from 80eng2; cd, in, sn, sb half lives from 89wal1.
1

    mass number    129            LA-UR-94-3106 (ENDF-349)                                percent yields
nuclide       48 cd g   49 in m   49 in g   50 sn m   50 sn g   51 sb g   52 te m   52 te g   53 i  g   54 xe g   55 cs g   56 ba g
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half life 0.27 s 1.23 s 0.63s 6.9 m 2.4 m 4.40 h 33.6 d 1.16 h 1.6e7y stable 32.06h 2.1 h
lambda 2.567e+00 5.635e-01 1.100e+00 1.674e-03 4.814e-03 4.376e-05 2.388e-07 1.660e-04 1.374e-15 0.0 6.006e-06 9.169e-05
z - 1 g 100.0000 0.0 100.0000 0.0 97.0800 100.0000 16.6000 83.4000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 100.0000 100.0000 0.0 0.0 36.4000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 1.0400 0.0 0.0 0.0 63.6000 0.0 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.616497j 0.0 0.0 0.0
zp 50.30 ri 2.40e-07p 0.007038p 0.007038p 0.324501p 0.924178p 0.353007p 0.000385p 0.000135p 1.91e-10p 0.0 0.0 0.0
sig0.350 cc 2.40e-07p 0.007037p 0.007037p 0.324663p 0.937908p 1.615556p 0.268567p 1.518318p 1.616077p 1.616077p 0.0 0.0
rc 2.40e-07p 0.007038p 0.007038p 0.324922p 0.938049o 1.615978m 0.268637n 1.518714l 1.616498j 1.616498j 0.0 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.012537n 0.0 0.0 0.0
zp 49.99 ri 1.14e-05p 0.030998p 0.030998p 0.233348p 0.664618p 0.053188p 5.85e-06p 2.05e-06p 0.0 0.0 0.0 0.0
sig0.350 cc 1.14e-05p 0.030993p 0.031004p 0.233476p 0.725600p 1.012255p 0.168040p 0.951096p 1.012263p 1.012263p 0.0 0.0
rc 1.14e-05p 0.030998p 0.031009p 0.233680p 0.725719o 1.012587n 0.168095n 0.951408n 1.012595m 1.012595m 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.478939o 0.0 0.0 3.131555n 0.0 0.0 0.0
zp 50.65 ri 0.001168p 0.051492p 0.051492p 0.188193p 0.858054p 1.404346n 0.247309p 0.052538p 0.006402p 1.48e-05p 3.36e-09p 0.0
sig0.643 cc 0.001187p 0.052317p 0.053504p 0.191371p 0.976058p 2.594292p 0.643415p 2.619555p 2.859433p 2.859447p 2.98e-09p 0.0
rc 0.001168p 0.051492p 0.052660p 0.188504p 0.960668o 2.553519m 0.671193o 2.609052l 2.859768l 2.859783l 3.36e-09p 0.0
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.191354n 0.0 0.0 0.0
zp 50.75 ri 0.000593p 0.038060p 0.038060p 0.185358p 0.844780p 1.711002n 0.299788p 0.065807p 0.008893p 2.13e-05p 4.64e-09p 0.0
sig0.632 cc 0.000593p 0.038059p 0.038652p 0.185434p 0.920337p 2.816735p 0.767357p 2.903002p 3.191212p 3.191234p 4.64e-09p 0.0

rc 0.000593p 0.038060p 0.038653p 0.185522p 0.920365o 2.816888m 0.767391o 2.903153l 3.191376l 3.191397l 4.64e-09p
0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.809575n 0.0 0.0 0.0
zp 50.36 ri 0.003774p 0.113662p 0.113662p 0.255269p 1.164616n 1.067001n 0.076751p 0.016848p 0.000813p 6.14e-07p 3.77e-
11p 0.0
sig0.621 cc 0.003773p 0.113645p 0.117419p 0.255610p 1.392082p 2.714569p 0.527358p 2.616195p 2.808967p 2.808967p 3.77e-
11p 0.0
rc 0.003774p 0.113662p 0.117436p 0.256027p 1.392284m 2.715312l 0.527493m 2.616904l 2.809724k 2.809725k 3.77e-11p
0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.118269n 0.0 0.0 0.0
zp 50.26 ri 0.001186p 0.042119p 0.042119p 0.183450p 0.522692p 0.309152p 0.013636p 0.004791p 4.05e-05p 7.96e-09p 0.0
0.0
sig0.569 cc 0.001186p 0.042111p 0.043298p 0.183615p 0.606740p 1.099458p 0.196144p 1.046486p 1.117923p 1.117923p 0.0
0.0
rc 0.001186p 0.042119p 0.043306p 0.183848p 0.606853o 1.099853o 0.196212n 1.046860n 1.118321m 1.118321m 0.0
0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.018091n 0.0 0.0 0.0
zp 50.40 ri 2.63e-08p 0.002472p 0.002472p 0.159495p 0.454266p 0.398367p 0.000651p 0.000229p 1.05e-09p 0.0 0.0
0.0
sig0.350 cc 2.63e-08p 0.002472p 0.002472p 0.159587p 0.459080p 1.017000p 0.169473p 0.956192p 1.017880p 1.017880p 0.0
0.0
rc 2.63e-08p 0.002472p 0.002472p 0.159720p 0.459138p 1.017225o 0.169511o 0.956403n 1.018105m 1.018105m 0.0
0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.947778n 0.0 0.0 0.0
zp 50.25 ri 2.55e-07p 0.007431p 0.007431p 0.183080p 0.522191p 0.227013p 0.000127p 4.45e-05p 6.20e-11p 0.0 0.0
0.0
sig0.350 cc 2.55e-07p 0.007428p 0.007428p 0.183394p 0.536608p 0.946931p 0.157317p 0.889838p 0.947102p 0.947102p 0.0
0.0
rc 2.55e-07p 0.007431p 0.007432p 0.183868p 0.536837o 0.947718n 0.157448n 0.890578n 0.947889m 0.947889m 0.0
0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.011278n 0.0 0.0 0.0

zp 50.14 ri 1.48e-06p 0.017534p 0.017534p 0.214793p 0.611616p 0.150098p 3.56e-05p 1.25e-05p 6.87e-12p 0.0 0.0 0.0
sig0.350 cc 1.48e-06p 0.017532p 0.017534p 0.214871p 0.646109p 1.011064p 0.167872p 0.950007p 1.011112p 1.011112p 0.0
0.0
rc 1.48e-06p 0.017534p 0.017536p 0.214991p 0.646173o 1.011263n 0.167905n 0.950193n 1.011311m 1.011311m 0.0
0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.011478n 0.0 0.0 0.0
zp 50.72 ri 0.000143p 0.011258p 0.011258p 0.090340p 0.257122p 0.537024p 0.076083p 0.026732p 0.001782p 2.79e-06p 3.06e-
10p 0.0
sig0.611 cc 0.000143p 0.011258p 0.011401p 0.090339p 0.279446p 0.906813p 0.226613p 0.927140p 1.011410p 1.011412p 3.06e-
10p 0.0
rc 0.000143p 0.011258p 0.011401p 0.090420p 0.279448p 0.906893o 0.226627o 0.927215n 1.011490m 1.011492m 3.06e-10p
0.0

cd, in, sn, sb, te, i half lives 89wal1. sb-te branching to fit data; cs half life 90bur1.

1

mass number 130 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 46 pd g 47 ag g 48 cd g 49 in g 50 sn d 50 sn g 51 sb m 51 sb g 52 te g 53 i m 53 i g 54 xe g
half life 0.20 s 0.29 s 0.28 s 3.7 m 6.5 m 38.4 m stable 8.9 m 12.36h stable
lambda 0.0 0.0 3.466e+00 2.390e+00 2.476e+00 3.122e-03 1.777e-03 3.008e-04 0.0 1.298e-03 1.558e-05 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 98.9600 90.0000 10.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 15.0000
z - 0 m 0.0 0.0 0.0 0.0 1.8400 100.0000 0.0 0.0 0.0 0.0 85.0000 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.540131n 0.0 0.0 0.0
zp 50.62 ri 0.0 1.67e-08p 0.000221p 0.040290p 0.0 1.329911n 0.570200p 0.412904p 0.186870p 0.000170p 0.000461p
3.30e-07p
sig0.554 cc 0.0 1.67e-08p 0.000221p 0.040510p 0.0 1.370021p 1.803210p 0.549899p 2.539976p 0.000170p 0.000605p
0.000631p
rc 0.0 1.67e-08p 0.000221p 0.040511p 0.000173o 1.370175m 1.803357m 0.549922p 2.540150m 0.000170p 0.000605p
0.000631p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.029446n 0.0 0.0 0.0
zp 50.19 ri 0.0 0.0 1.59e-06p 0.031927p 0.0 1.760027m 0.136845p 0.099096p 0.000191p 6.30e-12p 1.70e-11p 0.0

sig0.350 cc 0.0 0.0 1.59e-06p 0.031919p 0.0 1.791688p 1.749328p 0.278237p 2.027755p 6.30e-12p 2.24e-11p 2.33e-11p
rc 0.0 0.0 1.59e-06p 0.031928p 0.001964o 1.793587m 1.751074m 0.278455o 2.029719l 6.30e-12p 2.24e-11p 2.33e-11p
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.211127i 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.727406i 3.788171n 0.0 0.211127i 0.0
zp 51.05 ri 2.78e-12p 6.34e-08p 0.000138p 0.029803p 0.0 0.706442p 0.904651p 1.599228i 0.858373p 0.008026p 0.202777h 0.000256p
sig0.643 cc 3.20e-12p 7.30e-08p 0.000158p 0.034469p 0.0 0.847435p 1.804181p 1.465322p 4.257709p 0.009240p 0.049945p 0.051626p
rc 2.78e-12p 6.34e-08p 0.000138p 0.029940p 9.73e-05o 0.736168o 1.567202n 1.672845h 4.098421l 0.008026p 0.209598h 0.211059h
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.421660n 0.0 0.0 0.0
zp 51.15 ri 0.0 1.34e-08p 4.79e-05p 0.015702p 0.0 0.513489p 0.835418p 1.107417n 0.949715p 0.010113p 0.046072p 0.000345p
sig0.632 cc 0.0 1.34e-08p 4.80e-05p 0.015750p 0.0 0.529084p 1.311593p 1.160322p 3.421626p 0.010113p 0.054668p 0.056530p
rc 0.0 1.34e-08p 4.80e-05p 0.015750p 3.61e-05o 0.529112o 1.311619o 1.160328m 3.421662m 0.010113p 0.054668p 0.056530p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.342433n 0.0 0.0 0.0
zp 50.75 ri 1.23e-11p 2.69e-07p 0.000475p 0.072415p 0.0 1.071792n 0.783698p 1.038862n 0.375715p 0.001476p 0.006723p 1.62e-05p
sig0.621 cc 1.23e-11p 2.69e-07p 0.000476p 0.072889p 0.0 1.143967p 1.813257p 1.153237p 3.342201p 0.001476p 0.007977p 0.008215p
rc 1.23e-11p 2.69e-07p 0.000476p 0.072891p 0.000259o 1.144184m 1.813463n 1.153281m 3.342460l 0.001476p 0.007978p 0.008215p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.226553n 0.0 0.0 0.0
zp 50.65 ri 0.0 2.64e-08p 0.000210p 0.038103p 0.0 1.027803n 0.564032p 0.408438p 0.188191p 0.000287p 0.000776p 7.84e-07p
sig0.569 cc 0.0 2.64e-08p 0.000210p 0.038312p 0.0 1.065742p 1.523189p 0.515003p 2.226378p 0.000287p 0.001020p 0.001064p
rc 0.0 2.64e-08p 0.000210p 0.038313p 0.000193o 1.065910m 1.523351n 0.515029p 2.226571m 0.000287p 0.001020p 0.001064p

am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.141496j 0.0 1.881926n 0.0 0.0 0.0
zp 50.78 ri 0.0 5.73e-09p 4.95e-05p 0.021624p 0.0 0.558178p 0.626335n 0.467580p 0.191231p 0.000607p 0.001641p
1.44e-06p
sig0.565 cc 0.0 5.67e-09p 4.90e-05p 0.021451p 0.0 0.573692p 1.155390p 0.520142p 1.864797p 0.000601p 0.002135p
0.002226p
rc 0.0 5.73e-09p 4.95e-05p 0.021673p 9.50e-05o 0.579721o 1.148083j 0.525552p 1.864866m 0.000607p 0.002157p
0.002249p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.735930n 0.0 0.0 0.0
zp 50.52 ri 1.49e-11p 3.72e-07p 0.000621p 0.075067p 0.0 0.766501p 0.467610p 0.338618p 0.087868p 0.000221p 0.000597p
5.52e-07p
sig0.598 cc 1.49e-11p 3.72e-07p 0.000622p 0.075683p 0.0 0.841457p 1.224897p 0.422742p 1.735500p 0.000221p 0.000784p
0.000818p
rc 1.49e-11p 3.72e-07p 0.000622p 0.075689p 0.000465o 0.841868o 1.225291o 0.422805p 1.735964m 0.000221p 0.000784p
0.000818p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.090623n 0.0 0.0 0.0
zp 50.33 ri 0.0 0.0 1.88e-07p 0.019121p 0.0 1.426054n 0.373609p 0.270545p 0.000816p 1.41e-10p 3.82e-10p 0.0
sig0.350 cc 0.0 0.0 1.88e-07p 0.019119p 0.0 1.445035p 1.674107p 0.415024p 2.089947p 1.41e-10p 5.01e-10p 5.23e-
10p
rc 0.0 0.0 1.88e-07p 0.019121p 0.000757o 1.445733m 1.674770n 0.415118p 2.090704m 1.41e-10p 5.01e-10p 5.23e-
10p
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.885474n 0.0 0.0 0.0
zp 51.11 ri 0.0 3.12e-09p 1.91e-05p 0.007679p 0.0 0.308360p 0.619695p 0.448746p 0.501029p 0.005702p 0.015417p
9.19e-05p
sig0.611 cc 0.0 3.12e-09p 1.91e-05p 0.007698p 0.0 0.315984p 0.904079p 0.480342p 1.885448p 0.005702p 0.020263p
0.021210p
rc 0.0 3.12e-09p 1.91e-05p 0.007698p 2.75e-05o 0.316005p 0.904100o 0.480346p 1.885475m 0.005702p 0.020263p
0.021210p

cd, in, sn, sb half lives from 89wal1; i half life 90bur1.
1

nuclide 48 cd g 49 in g 50 sn d 50 sn g 51 sb g 52 te m 52 te g 53 i g 54 xe m 54 xe g 55 cs g 56 ba g
half life 0.106s 0.28 s 0.12s 39. s 23.0 m 1.35 d 25.0 m 8.040d 11.9 d stable 9.69 d 11.7 d
lambda 6.539e+00 2.476e+00 5.776e+00 1.777e-02 5.023e-04 5.943e-06 4.621e-04 9.978e-07 6.742e-07 0.0 8.279e-07
6.857e-07
z - 1 g 100.0000 100.0000 0.0 98.1600 100.0000 7.0000 93.0000 100.0000 1.4000 98.6000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 82.0000 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 5.3600 100.0000 0.0 0.0 18.0000 0.0 0.0 100.0000 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.735866j 0.0 0.0
zp 51.03 ri 1.15e-05p 0.009417p 0.0 0.767300p 2.059899n 0.656057p 0.230506p 0.012797p 1.37e-05p 4.82e-06p 5.92e-10p
0.0
sig0.554 cc 1.15e-05p 0.009428p 0.0 0.776563p 2.836457p 0.854606p 3.022240p 3.735814p 0.052315p 3.735832p 5.92e-10p
0.0
rc 1.15e-05p 0.009428p 3.41e-05o 0.776589o 2.836488m 0.854611o 3.022270m 3.735848k 0.052316l 3.735867j 5.92e-10p
0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.213290n 0.0 0.0
zp 50.44 ri 0.000564p 0.106191p 0.0 1.888025n 1.132085n 0.064568p 0.022686p 0.000154p 1.48e-08p 5.19e-09p 0.0
0.0
sig0.536 cc 0.000564p 0.106741p 0.0 1.992940p 3.124912p 0.283303p 2.979846p 3.212309p 0.044972p 3.212309p 0.0
0.0
rc 0.000564p 0.106755p 0.001147o 1.993963m 3.126048l 0.283391n 2.980921l 3.213456l 0.044988l 3.213456l 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.545542i 0.0 4.466015i 0.0 4.516195n 0.0 0.0
zp 51.46 ri 9.55e-06p 0.005278p 0.0 0.305433p 2.092979n 1.418391j 0.374525p 0.260362p 0.002810p 0.000617p 5.12e-06p
7.44e-10p
sig0.643 cc 9.31e-06p 0.005158p 0.0 0.303010p 2.344630p 1.706541p 2.826263p 4.456980p 0.065128p 4.460314p 4.98e-06p
7.23e-10p
rc 9.55e-06p 0.005288p 2.70e-05o 0.310650p 2.403629m 1.586645h 2.895496l 4.456906i 0.065207j 4.460339i 5.12e-06p
7.44e-10p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.708334n 0.0 0.0
zp 51.57 ri 2.21e-06p 0.001959p 0.0 0.166123p 1.524759n 1.438894n 0.315855p 0.256609p 0.003404p 0.000747p 6.50e-06p
9.13e-10p
sig0.632 cc 2.21e-06p 0.001962p 0.0 0.168052p 1.692810p 1.557389p 2.170497p 3.704166p 0.055262p 3.708323p 6.50e-06p
9.13e-10p

rc 2.21e-06p 0.001962p 1.15e-05o 0.168060p 1.692818m 1.557392m 2.170506m 3.704177l 0.055262l 3.708335l 6.50e-06p 9.13e-10p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.809976n 0.0 0.0
zp 51.16 ri 3.40e-05p 0.014022p 0.0 0.529393p 2.147114n 0.869120p 0.190783p 0.059354p 0.000261p 5.74e-05p 1.46e-07p 5.42e-12p
sig0.621 cc 3.40e-05p 0.014056p 0.0 0.543219p 2.690318p 1.057433p 2.883114p 3.809561p 0.053595p 3.809880p 1.46e-07p 5.42e-12p
rc 3.40e-05p 0.014056p 0.000103o 0.543294o 2.690408m 1.057449o 2.883203m 3.809665l 0.053597l 3.809984l 1.46e-07p 5.42e-12p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.915715n 0.0 0.0
zp 51.06 ri 1.49e-05p 0.010459p 0.0 0.720284p 2.175247n 0.732134p 0.257236p 0.020444p 3.14e-05p 1.10e-05p 2.73e-09p 0.0
sig0.569 cc 1.49e-05p 0.010474p 0.0 0.730578p 2.905817p 0.935537p 3.128041p 3.915625p 0.054850p 3.915668p 2.73e-09p 0.0
rc 1.49e-05p 0.010474p 5.10e-05o 0.730615o 2.905862m 0.935544o 3.128086m 3.915676l 0.054851l 3.915719l 2.73e-09p 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.258867n 0.0 4.179439i 0.0 3.373764n 0.0 0.0
zp 51.20 ri 3.41e-06p 0.005157p 0.0 0.424873p 2.403088n 0.994843n 0.296338p 0.044016p 6.52e-05p 2.29e-05p 9.85e-09p 0.0
sig0.565 cc 3.51e-06p 0.005313p 0.0 0.442616p 2.916530p 1.096867p 3.223464p 4.168208p 0.058429p 4.168308p 1.12e-08p 0.0
rc 3.41e-06p 0.005161p 1.70e-05o 0.429955p 2.833043m 1.193156m 3.145836l 4.168240i 0.058421i 4.168328i 9.85e-09p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.194707n 0.0 0.0
zp 50.94 ri 7.01e-05p 0.025189p 0.0 0.707918p 1.900708n 0.404349p 0.142069p 0.014650p 2.23e-05p 7.84e-06p 4.27e-09p 0.0
sig0.598 cc 7.01e-05p 0.025258p 0.0 0.732762p 2.633434p 0.588678p 2.697121p 3.194486p 0.044745p 3.194516p 4.27e-09p 0.0
rc 7.01e-05p 0.025259p 0.000207o 0.732919o 2.633627m 0.588702p 2.697308m 3.194693l 0.044748l 3.194724l 4.27e-09p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.476190j 0.0 0.0

zp 50.69 ri 5.25e-05p 0.041077p 0.0 1.216872n 2.010398n 0.153424p 0.053906p 0.000922p 9.91e-08p 3.48e-08p 0.0
0.0
sig0.524 cc 5.25e-05p 0.041128p 0.0 1.257303p 3.267650p 0.382154p 3.161606p 3.475895p 0.048663p 3.475895p 0.0
0.0
rc 5.25e-05p 0.041129p 0.000301o 1.257546m 3.267944l 0.382180o 3.161886l 3.476196k 0.048667l 3.476196j 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.455496n 0.0 0.0
zp 51.53 ri 1.23e-06p 0.001493p 0.0 0.159391p 1.468883n 1.209783n 0.425059p 0.188672p 0.001652p 0.000580p 1.98e-06p
1.44e-10p
sig0.611 cc 1.23e-06p 0.001495p 0.0 0.160860p 1.629743p 1.323864p 2.179015p 3.453256p 0.049997p 3.455490p 1.98e-06p
1.44e-10p
rc 1.23e-06p 0.001495p 6.07e-06o 0.160864p 1.629747m 1.323866m 2.179020m 3.453262m 0.049997l 3.455496l 1.98e-06p
1.44e-10p

cd half life from 80eng2; in, sn, sb, te, i, xe half lives from 89wal1.

1

mass number 132 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 48 cd g 49 in g 50 sn g 51 sb m 51 sb g 52 te g 53 i g 54 xe g 55 cs g 56 ba g
half life 0.136s 0.20 s 40. s 2.8 m 4.2 m 3.26 d 2.28 h stable 6.475d stable
lambda 5.097e+00 3.466e+00 1.733e-02 4.126e-03 2.751e-03 2.461e-06 8.445e-05 0.0 1.239e-06 0.0
z - 1 g 100.0000 100.0000 94.6400 50.0000 50.0000 100.0000 100.0000 100.0000 -97.8000 2.2000
z - 1 m 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.2550 0.0 0.0 0.0 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.364303j 0.0 0.0
zp 51.46 ri 2.62e-07p 0.000636p 0.236698p 0.718777p 0.810536p 2.503513n 0.093530p 0.000646p 6.21e-08p 0.0
sig0.554 cc 2.62e-07p 0.000637p 0.237301p 0.837427p 0.929186p 4.270126p 4.363656p 4.364302p 6.21e-08p 1.37e-09p
rc 2.62e-07p 0.000637p 0.237301p 0.837427o 0.929186o 4.270126l 4.363656k 4.364302j 6.21e-08p 1.37e-09p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.755271n 0.0 0.0
zp 50.86 ri 3.59e-05p 0.021369p 1.617290n 1.115001n 1.257342n 0.741340p 0.004033p 2.62e-06p 1.94e-11p 0.0
sig0.536 cc 3.59e-05p 0.021405p 1.637548p 1.933775p 2.076115p 4.751231p 4.755263p 4.755266p 1.94e-11p 0.0
rc 3.59e-05p 0.021405p 1.637548m 1.933775l 2.076115l 4.751231l 4.755263l 4.755266l 1.94e-11p 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.001712p 0.0

xc 0.0 0.0 0.0 0.0 0.0 3.575551i 0.0 5.197140n 0.001712p 0.0
zp 51.87 ri 3.52e-07p 0.000503p 0.072522p 0.714134p 0.456578p 2.432291l 0.883224p 0.029688p 0.001760p 3.53e-07p
sig0.643 cc 3.68e-07p 0.000526p 0.076303p 0.784611p 0.515396p 3.842394p 4.565069p 4.590671p 9.75e-05p 2.18e-06p
rc 3.52e-07p 0.000503p 0.072998p 0.750634o 0.493077p 3.676002i 4.559226l 4.590589k 0.001760o 3.91e-05o
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.160094k 0.0 0.0 0.0 0.0
zp 51.99 ri 8.81e-08p 0.000215p 0.048293p 0.674802p 0.431431p 3.005365m 1.057338n 0.043972p 0.000186p 7.23e-08p
sig0.632 cc 8.81e-08p 0.000215p 0.048497p 0.699050p 0.455679p 4.160094p 5.217432p 5.261586p 0.000186p 4.16e-06p
rc 8.81e-08p 0.000215p 0.048497p 0.699050o 0.455679p 4.160094k 5.217432k 5.261586k 0.000186p 4.16e-06p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.532520l 0.0 0.0 0.0 0.0
zp 51.58 ri 1.66e-06p 0.001927p 0.195386p 1.207205n 0.771820p 2.356284m 0.335787p 0.004917p 6.40e-06p 6.86e-10p
sig0.621 cc 1.66e-06p 0.001928p 0.197211p 1.305811p 0.870425p 4.532520p 4.868306p 4.873230p 6.40e-06p 1.42e-07p
rc 1.66e-06p 0.001928p 0.197211p 1.305811m 0.870425o 4.532520k 4.868306k 4.873230k 6.40e-06p 1.42e-07p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.304196n 0.0 0.0
zp 51.49 ri 4.51e-07p 0.000951p 0.256582p 0.913752p 1.030402n 2.940253n 0.160948p 0.001358p 2.66e-07p 6.11e-12p
sig0.569 cc 4.51e-07p 0.000951p 0.257482p 1.042494p 1.159143p 5.141889p 5.302837p 5.304195p 2.66e-07p 5.86e-09p
rc 4.51e-07p 0.000951p 0.257482p 1.042494o 1.159143m 5.141889l 5.302837l 5.304195l 2.66e-07p 5.86e-09p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.282809o 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.000253i 0.0 4.888555n 0.0 0.0
zp 51.64 ri 5.59e-08p 0.000317p 0.091939p 0.766045p 0.863838p 2.312169m 0.285215p 0.002354p 9.90e-07p 2.01e-11p
sig0.565 cc 5.60e-08p 0.000317p 0.092402p 0.813602p 0.911568p 4.041434p 4.319660p 4.321860p 9.25e-07p 2.04e-08p
rc 5.59e-08p 0.000317p 0.092238p 0.812164o 0.909957o 4.034290i 4.319506j 4.321860j 9.90e-07p 2.18e-08p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.722176n 0.0 0.0
zp 51.38 ri 3.36e-06p 0.003862p 0.326242p 1.127238n 1.271141n 1.848373n 0.144584p 0.000938p 4.35e-07p 1.34e-11p
sig0.598 cc 3.36e-06p 0.003865p 0.329899p 1.292188p 1.436091p 4.576652p 4.721236p 4.722175p 4.35e-07p 9.59e-09p
rc 3.36e-06p 0.003865p 0.329899p 1.292188m 1.436091m 4.576652l 4.721236l 4.722175l 4.35e-07p 9.59e-09p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.147919n 0.0 0.0
zp 51.11 ri 1.69e-06p 0.005612p 0.632657p 1.574077n 1.775023n 1.140908n 0.019928p 1.24e-05p 2.34e-10p 0.0
sig0.524 cc 1.69e-06p 0.005613p 0.637970p 1.893062p 2.094008p 5.127977p 5.147905p 5.147918p 2.34e-10p 5.16e-12p
rc 1.69e-06p 0.005613p 0.637970o 1.893062m 2.094008m 5.127977k 5.147905k 5.147918k 2.34e-10p 5.16e-12p
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.887058n 0.0 0.0

zp 51.98 ri 3.03e-08p 0.000113p 0.038474p 0.454417p 0.512428p 2.958286n 0.890827p 0.032436p 8.68e-05p 2.11e-08p
sig0.611 cc 3.03e-08p 0.000113p 0.038582p 0.473708p 0.531719p 3.963714p 4.854540p 4.887062p 8.68e-05p 1.93e-06p
rc 3.03e-08p 0.000113p 0.038582p 0.473708p 0.531719o 3.963713m 4.854540m 4.887061l 8.68e-05p 1.93e-06p

cd half life from 80eng2; in, sn, sb, te, i half lives 89wal1; cs half life 90bur1.

1

mass number 133 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 49 in g 50 sn g 51 sb d 51 sb g 52 te m 52 te g 53 i g 54 xe m 54 xe g 55 cs g 56 ba g 57 la g
half life 0.18 s 1.44 s 1.04s 2.5 m 55.4 m 12.4 m 20.8 h 2.19 d 5.243d stable 10.74y 4. h
lambda 3.851e+00 4.814e-01 6.665e-01 4.621e-03 2.085e-04 9.316e-04 9.257e-06 3.663e-06 1.530e-06 0.0 2.047e-09
4.814e-05
z - 1 g 100.0000 100.0000 0.0 99.7450 42.0000 58.0000 100.0000 2.8000 97.2000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 87.0000 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 18.3000 100.0000 0.0 13.0000 0.0 0.0 100.0000 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.464206j 0.0 0.0
zp 51.89 ri 4.15e-05p 0.044058p 0.0 1.209540n 3.340898n 1.173824n 0.682147p 0.009662p 0.003395p 6.17e-06p 2.52e-10p
0.0
sig0.554 cc 4.15e-05p 0.044098p 0.0 1.253643p 3.867352p 2.403671p 6.450396p 0.190273p 6.463452p 6.463458p 2.52e-10p
0.0
rc 4.15e-05p 0.044099p 0.000627o 1.254154m 3.867642m 2.404026l 6.451022l 0.190291l 6.464079k 6.464085i 2.52e-10p
0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.469917n 0.0 0.0
zp 51.28 ri 0.002155p 0.485080p 0.0 2.755710n 1.597469n 0.561307p 0.052257p 8.09e-05p 2.84e-05p 4.15e-09p 0.0
0.0
sig0.536 cc 0.002153p 0.486870p 0.0 3.242950p 2.958640p 2.826502p 5.452736p 0.152757p 5.452846p 5.452846p 0.0
0.0
rc 0.002155p 0.487235p 0.018243o 3.259946m 2.966646l 2.837739m 5.470979l 0.153268k 5.471088k 5.471088k 0.0
0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.399362i 0.0 0.0 5.319074n 0.0 0.0
zp 52.29 ri 4.00e-05p 0.014957p 0.0 0.596074p 2.364933n 0.519129p 1.897371m 0.130717p 0.028823p 0.001579p 1.59e-06p
1.55e-10p

sig0.643 cc 3.99e-05p 0.014986p 0.0 0.610631p 2.619559p 1.213437p 5.388356p 0.285038p 5.551971p 5.553586p 1.63e-06p 1.58e-10p
rc 4.00e-05p 0.014997p 0.000310o 0.611343o 2.621697m 1.214529n 5.392776i 0.281715o 5.552316i 5.553896i 1.59e-06p 1.55e-10p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.010725n 0.0 0.0
zp 52.43 ri 8.91e-06p 0.005666p 0.0 0.348699p 1.947463n 0.427491p 2.055631n 0.182898p 0.040148p 0.002619p 2.93e-06p 2.93e-10p
sig0.632 cc 8.91e-06p 0.005675p 0.0 0.354382p 2.096295p 0.905550p 4.784946p 0.316876p 5.007991p 5.010613p 2.94e-06p 2.93e-10p
rc 8.91e-06p 0.005675p 0.000102o 0.354461p 2.096337m 0.905602o 4.785046l 0.316880o 5.008093l 5.010715l 2.94e-06p 2.93e-10p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.390000n 0.0 0.0
zp 52.00 ri 0.000149p 0.041495p 0.0 1.083054n 2.560429n 0.562041p 1.098961n 0.035057p 0.007695p 0.000156p 4.80e-08p 1.18e-12p
sig0.621 cc 0.000149p 0.041642p 0.0 1.124780p 3.032725p 1.608647p 5.346024p 0.184744p 5.388774p 5.388930p 4.80e-08p 1.18e-12p
rc 0.000149p 0.041644p 0.001040o 1.125631m 3.033194m 1.609222m 5.347062l 0.184775m 5.389814k 5.389970k 4.80e-08p 1.18e-12p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.873572n 0.0 0.0
zp 51.94 ri 4.26e-05p 0.035569p 0.0 1.046571n 2.939758n 1.032883n 0.798096p 0.014845p 0.005216p 1.74e-05p 1.32e-09p 0.0
sig0.569 cc 4.26e-05p 0.035610p 0.0 1.082208p 3.394214p 2.101791p 5.852829p 0.178724p 5.872889p 5.872907p 1.32e-09p 0.0
rc 4.26e-05p 0.035611p 0.000621o 1.082713m 3.394498m 2.102141l 5.853450l 0.178742l 5.873511l 5.873528l 1.32e-09p 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 1.356772j 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.839143i 0.0 5.758742i 5.708491n 0.0 0.0
zp 52.09 ri 1.47e-05p 0.016074p 0.0 0.972790n 3.086874n 1.084576n 0.639708j 0.012989p 0.004564p 2.79e-05p 2.23e-09p 0.0
sig0.565 cc 1.27e-05p 0.013852p 0.0 0.851393p 3.015328p 1.819602p 5.780297p 0.189396p 5.817524p 5.817583p 4.78e-09p 0.0
rc 1.47e-05p 0.016089p 0.000220o 0.989058o 3.502279o 2.113526n 5.800217i 0.175395m 5.817769h 5.817797h 2.23e-09p 0.0

am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.620687n 0.0 0.0
zp 51.84 ri 0.000250p 0.069170p 0.0 1.521970n 2.416043n 0.848874p 0.747395p 0.011559p 0.004061p 2.47e-05p 2.67e-09p
0.0
sig0.598 cc 0.000250p 0.069415p 0.0 1.591446p 3.084314p 2.172831p 5.603527p 0.168457p 5.619146p 5.619170p 2.67e-09p
0.0
rc 0.000250p 0.069420p 0.001462o 1.592675m 3.084967m 2.173671n 5.604987l 0.168498l 5.620607l 5.620632l 2.67e-09p
0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.769219n 0.0 0.0
zp 51.53 ri 0.000319p 0.144794p 0.0 2.626694n 2.081425n 0.731314p 0.180402p 0.000348p 0.000122p 3.90e-08p 0.0
0.0
sig0.524 cc 0.000319p 0.145085p 0.0 2.771901p 3.245307p 2.760793p 5.764577p 0.161756p 5.765047p 5.765047p 0.0
0.0
rc 0.000319p 0.145113p 0.004249o 2.775686m 3.247213m 2.763349m 5.768826l 0.161875l 5.769297l 5.769297k 0.0
0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.647267n 0.0 0.0
zp 52.43 ri 4.41e-06p 0.004510p 0.0 0.347812p 2.049066n 0.719941p 2.295269n 0.169209p 0.059452p 0.001953p 1.46e-06p
7.52e-11p
sig0.611 cc 4.41e-06p 0.004514p 0.0 0.352326p 2.197039p 1.209905p 5.416591p 0.320873p 5.645252p 5.647207p 1.46e-06p
7.52e-11p
rc 4.41e-06p 0.004514p 5.11e-05o 0.352365p 2.197060m 1.209931n 5.416642l 0.320875o 5.645303l 5.647258l 1.46e-06p
7.52e-11p

sb-te branching 66str1; in, sn, sb, te, i, xe half lives 89wal1; ba half life 90bur1.

1

mass number 134 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	48 cd g	49 in g	50 sn g	51 sb g	52 te d	52 te g	53 i m	53 i g	54 xe m	54 xe g	55 cs g	56 ba g
half life	0.081s	1.04 s	0.8 s	1.82 s	42. m	3.7 m	52.6 m	0.29 s	stable	2.062y	stable	
lambda	0.0	8.557e+00	6.665e-01	8.664e-01	3.809e-01	2.751e-04	3.122e-03	2.196e-04	2.390e+00	0.0	1.066e-08	0.0
z - 1 g	100.0000	100.0000	100.0000	81.7000	0.0	100.0000	0.0	100.0000	0.0	100.0000	0.0	100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0000	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	17.8700	100.0000	0.0	98.0000	0.0	100.0000	0.0	0.0

u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.749496j 0.0 0.0
zp 52.33 ri 1.69e-11p 6.41e-07p 0.003424p 0.261967p 0.0 3.940217n 0.664269p 0.748772p 0.088964p 0.032904p 0.000172p 3.63e-08p
sig0.554 cc 1.69e-11p 6.41e-07p 0.003422p 0.264605p 0.0 4.205611p 0.663868p 5.604819p 0.102187p 5.739890p 0.000172p 0.000172p
rc 1.69e-11p 6.41e-07p 0.003424p 0.264764p 0.009774o 4.214756m 0.664269o 5.614511l 0.102249p 5.749664j 0.000172p 0.000172p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.784718n 0.0 0.0
zp 51.71 ri 8.94e-09p 9.02e-05p 0.099601p 1.588138n 0.0 4.708390n 0.151622p 0.170959p 0.002420p 0.000895p 4.31e-07p 5.83e-12p
sig0.536 cc 8.90e-09p 8.98e-05p 0.099220p 1.661695p 0.0 6.379583p 0.150905p 6.697640p 0.005426p 6.703957p 4.29e-07p 4.29e-07p
rc 8.94e-09p 9.02e-05p 0.099691p 1.669586m 0.115132o 6.493108m 0.151622p 6.812656l 0.005452p 6.819003l 4.31e-07p 4.31e-07p
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.064964i 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.418723n 0.042504i 0.0
zp 52.70 ri 1.77e-10p 1.76e-06p 0.001694p 0.166955p 0.0 1.881604n 1.702539m 1.088443n 0.460899p 0.101173p 0.064798i 0.000102p
sig0.643 cc 1.78e-10p 1.78e-06p 0.001711p 0.169872p 0.0 2.070402p 1.718025p 4.852476p 0.499451p 5.454021p 0.013839p 0.013874p
rc 1.77e-10p 1.76e-06p 0.001696p 0.168341p 0.005699o 2.055644m 1.702539m 4.812575l 0.494949p 5.408697k 0.064798h 0.064900h
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.517245n 0.0 0.0
zp 52.85 ri 1.62e-11p 3.20e-07p 0.000556p 0.090183p 0.0 1.517223n 1.886845n 1.206309n 0.667712p 0.146571p 0.024793p 7.54e-05p
sig0.632 cc 1.62e-11p 3.20e-07p 0.000557p 0.090625p 0.0 1.608401p 1.886569p 4.663406p 0.705346p 5.515301p 0.024790p 0.024865p
rc 1.62e-11p 3.20e-07p 0.000557p 0.090638p 0.002375o 1.610235m 1.886845m 4.665653l 0.705449o 5.517672k 0.024793p 0.024869p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.839310n 0.0 0.0
zp 52.42 ri 7.65e-10p 7.27e-06p 0.005676p 0.393798p 0.0 2.799861n 1.457323n 0.931618p 0.196329p 0.043097p 0.002399p 2.10e-06p

sig0.621 cc 7.65e-10p 7.26e-06p 0.005678p 0.398116p 0.0 3.200338p 1.456134p 5.558319p 0.225292p 5.826673p 0.002397p 0.002399p
rc 7.65e-10p 7.27e-06p 0.005683p 0.398441p 0.015824o 3.214126m 1.457323m 5.573921l 0.225476p 5.842494l 0.002399p 0.002401p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.602774n 0.0 0.0
zp 52.39 ri 2.96e-11p 9.22e-07p 0.003394p 0.294256p 0.0 4.042642n 0.964566o 1.087645n 0.148322p 0.054859p 0.000550p 1.88e-07p
sig0.569 cc 2.96e-11p 9.22e-07p 0.003394p 0.296892p 0.0 4.340661p 0.964119p 6.372696p 0.167535p 6.595065p 0.000549p 0.000550p
rc 2.96e-11p 9.22e-07p 0.003395p 0.297030p 0.009327o 4.348999m 0.964566o 6.381919l 0.167613p 6.604391l 0.000550p 0.000550p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.139935j 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.921199l 0.0 0.0 0.0 6.389380n 0.0 0.0
zp 52.54 ri 3.27e-12p 2.87e-07p 0.001201p 0.261044p 0.0 3.548611l 1.638865n 2.049158n 0.235983p 0.087281p 0.001919p 5.98e-07p
sig0.565 cc 3.15e-12p 2.76e-07p 0.001155p 0.251994p 0.0 3.667255p 1.786954p 7.433545p 0.293045p 7.821758p 0.002093p 0.002093p
rc 3.27e-12p 2.87e-07p 0.001201p 0.262025p 0.004553o 3.815190k 1.638865m 7.470435k 0.268760p 7.826477k 0.001919p 0.001920p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.232701n 0.0 0.0
zp 52.30 ri 6.24e-10p 8.58e-06p 0.007978p 0.550242p 0.0 3.352713n 1.018308m 1.148115n 0.102157p 0.037784p 0.000739p 2.76e-07p
sig0.598 cc 6.24e-10p 8.57e-06p 0.007978p 0.556204p 0.0 3.911625p 1.017278p 6.055701p 0.122400p 6.215847p 0.000738p 0.000738p
rc 6.24e-10p 8.58e-06p 0.007986p 0.556767o 0.021015o 3.930495m 1.018308m 6.076552l 0.122524p 6.236860k 0.000739p 0.000739p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 8.043211j 0.0 0.0
zp 51.95 ri 1.92e-10p 1.22e-05p 0.023208p 1.560251n 0.0 5.252784n 0.539236p 0.607354p 0.008749p 0.003236p 4.30e-06p 4.60e-11p
sig0.524 cc 1.92e-10p 1.22e-05p 0.023177p 1.576339p 0.0 6.833408p 0.538251p 7.967859p 0.019498p 7.990587p 4.29e-06p 4.29e-06p
rc 1.92e-10p 1.22e-05p 0.023220p 1.579221m 0.054654o 6.886658m 0.539236o 8.022463k 0.019534o 8.045233j 4.30e-06p 4.30e-06p

cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.269256n 0.0 0.0
zp 52.90 ri 1.91e-12p 7.84e-08p 0.000279p 0.066106p 0.0 1.614419n 1.662859m 1.875104n 0.766097p 0.283351p 0.026921p 6.91e-05p
sig0.611 cc 1.91e-12p 7.84e-08p 0.000279p 0.066329p 0.0 1.681062p 1.662735p 5.185542p 0.799294p 6.268166p 0.026919p 0.026988p
rc 1.91e-12p 7.84e-08p 0.000279p 0.066334p 0.001298o 1.682052m 1.662859m 5.186758l 0.799354o 6.269462l 0.026921p 0.026990p

in half life from 80eng2; sn, sb, te, i half lives 89wal1; cs half life 90bur1.

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mass number 135 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	50 sn g	51 sb g	52 te d	52 te g	53 i d	53 i g	54 xe m	54 xe g	55 cs g	56 ba g	57 la g	58 ce g
half life	0.418s	1.71 s	0.82s	19.0 s	19.0 s	6.57 h	15.3 m	9.10 h	2.3e6y	stable	19.5 h	17.7 h
lambda	1.658e+00	4.053e-01	8.453e-01	3.648e-02	3.648e-02	2.931e-05	7.551e-04	2.116e-05	9.556e-15	0.0	9.874e-06	1.088e-05
z - 1 g	100.0000	100.0000	0.0	82.1300	0.0	100.0000	14.7000	85.3000	100.0000	100.0000	-100.0000	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	28.9790	100.0000	1.1400	100.0000	0.0	100.0000	0.0	0.0	0.0	0.0

u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.846738j 0.0 0.0 6.038293n 0.0 0.0 0.0
zp 52.76 ri 0.000152p 0.054545p 0.0 2.060976n 0.0 2.782516l 0.501423p 0.174944p 0.004359p 2.74e-06p 3.71e-11p 0.0
sig0.554 cc 0.000154p 0.055424p 0.0 2.134515p 0.0 4.960721p 1.176416p 5.565031p 5.569011p 5.569013p 3.39e-11p 0.0
rc 0.000152p 0.054697p 0.001715o 2.107614m 0.010994o 4.901124i 1.221888o 5.577491k 5.581850k 5.581853k 3.71e-11p 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.595783n 0.0 0.0 0.0
zp 52.13 ri 0.008979p 0.635305p 0.0 4.727600n 0.0 1.252526n 0.028422p 0.009986p 2.48e-05p 1.13e-09p 0.0 0.0
sig0.536 cc 0.008963p 0.643119p 0.0 5.258039p 0.0 6.509554p 0.985275p 6.547893p 6.547918p 6.547918p 0.0 0.0
rc 0.008979p 0.644283o 0.034956o 5.291706m 0.042273o 6.586505l 0.996639l 6.624914l 6.624938k 6.624938k 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 3.869823i 0.0 5.515873i 4.992673i 0.0 0.0 0.0
zp 53.11 ri 0.000128p 0.031761p 0.0 0.856228p 0.0 2.876236l 1.153890n 0.344975p 0.078188p 0.000515p 3.42e-07p
2.18e-11p
sig0.643 cc 0.000132p 0.032953p 0.0 0.912312p 0.0 3.886729p 1.693135p 5.254760p 5.335502p 5.336034p 3.53e-07p
2.25e-11p
rc 0.000128p 0.031889p 0.001355o 0.883775o 0.003555o 3.763566i 1.707134m 5.262431h 5.340619h 5.341135h 3.42e-07p
2.18e-11p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.458111n 0.0 0.0 0.0
zp 53.28 ri 2.98e-05p 0.013259p 0.0 0.580565p 0.0 2.882009n 1.507163n 0.330846p 0.144339p 0.001199p 9.38e-07p
6.50e-11p
sig0.632 cc 2.98e-05p 0.013287p 0.0 0.591564p 0.0 3.473754p 2.017606p 5.311516p 5.455836p 5.457036p 9.38e-07p
6.50e-11p
rc 2.98e-05p 0.013289p 0.000509o 0.591988o 0.002249o 3.476246m 2.018171m 5.314254l 5.458593l 5.459793l 9.38e-07p
6.50e-11p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.570722n 0.0 0.0 0.0
zp 52.83 ri 0.000477p 0.088073p 0.0 1.559765n 0.0 3.139199n 0.630643p 0.138453p 0.020220p 4.87e-05p 9.78e-09p
0.0
sig0.621 cc 0.000476p 0.088491p 0.0 1.632921p 0.0 4.772121p 1.331826p 5.540809p 5.561016p 5.561064p 9.78e-09p
0.0
rc 0.000477p 0.088550p 0.004534o 1.637025m 0.008037o 4.784261m 1.333929n 5.553356l 5.573576l 5.573625l 9.78e-09p
0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.742621n 0.0 0.0 0.0
zp 52.85 ri 0.000137p 0.052056p 0.0 2.026404n 0.0 3.661443n 0.735180p 0.258333p 0.011557p 1.30e-05p 4.45e-10p
0.0
sig0.569 cc 0.000137p 0.052174p 0.0 2.069005p 0.0 5.730969p 1.577468p 6.724233p 6.735786p 6.735799p 4.44e-10p
0.0
rc 0.000137p 0.052192p 0.001307o 2.070576m 0.008150o 5.740169m 1.578985n 6.733682l 6.745239l 6.745252l 4.45e-10p
0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.201003k 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.326585j 2.221085n 6.320631h 6.854209n 0.0 0.0 0.0
zp 52.99 ri 3.14e-05p 0.025449p 0.0 1.166499n 0.0 3.897381k 1.199929o 0.191980k 0.024480p 2.92e-05p 1.73e-09p
0.0

sig0.565 cc 3.27e-05p 0.026523p 0.0 1.236208p 0.0 5.295495p 1.652054p 6.476058p 6.501010p 6.501040p 1.76e-09p
0.0
rc 3.14e-05p 0.025481p 0.000665o 1.188091m 0.004159o 5.089632i 1.948105m 6.481541h 6.506021h 6.506050h 1.73e-09p
0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.768785n 0.0 0.0 0.0
zp 52.76 ri 0.000521p 0.117079p 0.0 2.120710n 0.0 3.803890n 0.536533p 0.188536p 0.012399p 1.59e-05p 1.38e-09p
0.0
sig0.598 cc 0.000521p 0.117537p 0.0 2.217489p 0.0 6.021515p 1.421483p 6.746272p 6.758664p 6.758680p 1.38e-09p
0.0
rc 0.000521p 0.117600p 0.004167o 2.221462m 0.009346o 6.034698l 1.423633n 6.759767l 6.772166l 6.772182l 1.38e-09p
0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.421258k 6.446435n 0.0 0.0 0.0
zp 52.38 ri 0.001109p 0.304730p 0.0 3.524904n 0.0 2.513064n 0.075725p 0.026606p 0.000161p 7.88e-09p 0.0 0.0
sig0.524 cc 0.001108p 0.305438p 0.0 3.775741p 0.0 6.289362p 1.000162p 6.391559p 6.391719p 6.391719p 0.0 0.0
rc 0.001109p 0.305840p 0.014282o 3.790373m 0.023123o 6.326560l 1.005730l 6.428892k 6.429053j 6.429053j 0.0
0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.762899n 0.0 0.0 0.0
zp 53.37 ri 8.97e-06p 0.007257p 0.0 0.523805p 0.0 3.363578n 1.965002n 0.690410p 0.212889p 0.001699p 1.00e-06p
4.79e-11p
sig0.611 cc 8.97e-06p 0.007265p 0.0 0.529787p 0.0 3.893520p 2.537236p 6.548775p 6.761652p 6.763352p 1.00e-06p
4.79e-11p
rc 8.97e-06p 0.007266p 0.000144o 0.529917o 0.001364o 3.894860m 2.537547m 6.550272l 6.763160l 6.764861l 1.00e-06p
4.79e-11p

xe branching from 74dan1; sn half life from 80eng2; sb, te, i, xe, cs half lives 89wal1.

1

mass number 136 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	48 cd g	49 in g	50 sn g	51 sb g	52 te d	52 te g	53 i m	53 i g	54 xe d	54 xe g	55 cs g	56 ba g
half life		0.717s	0.82 s	0.478s	17.5 s	47. s	1.39 m	24.5 s	stable	13.00d	stable	
lambda	0.0	0.0	9.667e-01	8.453e-01	1.450e+00	3.961e-02	1.475e-02	8.311e-03	2.829e-02	0.0	6.171e-07	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	0.0	71.0210	0.0	98.8600	0.0	100.0000	0.0	100.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 18.0320 100.0000 2.6900 0.0 6.9700 100.0000 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.332623n 0.0 0.0
zp 53.18 ri 0.0 7.51e-11p 5.83e-06p 0.005912p 0.0 0.960127p 1.472197n 1.474469n 0.0 2.393759o 0.041087p
0.000121p
sig0.554 cc 0.0 7.51e-11p 5.83e-06p 0.005916p 0.0 0.964004p 1.473938p 2.426952p 0.0 6.293781p 0.041072p
0.041194p
rc 0.0 7.51e-11p 5.83e-06p 0.005918p 7.20e-05o 0.964402o 1.476785m 2.427877m 0.152477n 6.450899l 0.041087p
0.041209p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.396515n 0.0 0.0
zp 52.55 ri 0.0 3.10e-08p 0.000553p 0.120075p 0.0 3.619000n 1.151891n 1.172798n 0.0 0.306747p 0.000626p 1.44e-
07p
sig0.536 cc 0.0 3.09e-08p 0.000551p 0.120210p 0.0 3.692982p 1.168781p 4.819662p 0.0 6.294130p 0.000624p
0.000624p
rc 0.0 3.10e-08p 0.000553p 0.120627p 0.003490o 3.708161m 1.195570m 4.838686l 0.376893n 6.717895k 0.000626p
0.000626p
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.508120i 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.202422n 0.508120i 0.0
zp 53.52 ri 0.0 1.13e-09p 7.35e-06p 0.004668p 0.0 0.308373p 1.195089n 1.195892n 0.0 2.481487o 0.506071h
0.007030p
sig0.643 cc 0.0 1.16e-09p 7.57e-06p 0.004812p 0.0 0.320783p 1.230683p 1.547809p 0.0 5.332159p 0.355564p
0.361407p
rc 0.0 1.13e-09p 7.36e-06p 0.004676p 6.57e-05o 0.311760p 1.196714m 1.504098m 0.080976n 5.263275l 0.506071h
0.513101h
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.474213j 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.965148n 0.567496n 0.0
zp 53.69 ri 0.0 1.11e-10p 1.48e-06p 0.001753p 0.0 0.196014p 1.164316n 1.164702n 0.0 3.422989o 0.478711j
0.012900p
sig0.632 cc 0.0 1.08e-10p 1.44e-06p 0.001710p 0.0 0.192270p 1.135205p 1.325283p 0.0 5.796784p 0.628562p
0.641914p
rc 0.0 1.11e-10p 1.48e-06p 0.001755p 1.79e-05o 0.197278p 1.165093m 1.359731m 0.060726o 6.008538m 0.478711j
0.491612j
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.115546j 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.869153n 0.131143m 0.0

zp 53.23 ri 0.0 5.42e-09p 3.19e-05p 0.015614p 0.0 0.693636p 1.632861n 1.635223n 0.0 1.870619n 0.116513j 0.000813p
sig0.621 cc 0.0 5.42e-09p 3.19e-05p 0.015623p 0.0 0.703822p 1.632883p 2.328681p 0.0 5.829484p 0.122496p 0.123275p
rc 0.0 5.42e-09p 3.19e-05p 0.015645p 0.000280o 0.705027o 1.637659m 2.332212m 0.151904n 5.992394l 0.116513j 0.117326j
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.232086n 0.0 0.0
zp 53.30 ri 0.0 6.72e-11p 3.74e-06p 0.004506p 0.0 0.711658p 1.657910n 1.659068n 0.0 3.181232n 0.105965p 0.000520p
sig0.569 cc 0.0 6.72e-11p 3.74e-06p 0.004509p 0.0 0.714758p 1.658804p 2.365413p 0.0 7.204939p 0.105948p 0.106467p
rc 0.0 6.72e-11p 3.74e-06p 0.004509p 3.43e-05o 0.714895o 1.660241m 2.365813m 0.106929m 7.314215l 0.105965p 0.106485p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.461069i 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.364862n 0.0 0.0
zp 53.43 ri 0.0 1.22e-11p 7.62e-07p 0.002293p 0.0 0.363221p 1.852232n 1.852891n 0.0 3.160648n 0.452446p 0.000950p
sig0.565 cc 0.0 1.26e-11p 7.86e-07p 0.002365p 0.0 0.376223p 1.910621p 2.282555p 0.0 7.452296p 0.226433p 0.227412p
rc 0.0 1.22e-11p 7.62e-07p 0.002294p 1.63e-05o 0.364866p 1.853579m 2.213598m 0.115156m 7.342981l 0.452446p 0.453396p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.178107n 0.0 0.0
zp 53.22 ri 0.0 1.73e-09p 1.91e-05p 0.014359p 0.0 0.809440p 2.051713n 2.054223n 0.0 2.217253n 0.118083p 0.000506p
sig0.598 cc 0.0 1.73e-09p 1.91e-05p 0.014373p 0.0 0.819422p 2.053502p 2.863582p 0.0 7.133543p 0.118041p 0.118547p
rc 0.0 1.73e-09p 1.91e-05p 0.014378p 0.000196o 0.819847o 2.056801m 2.864724m 0.199873n 7.338651l 0.118083p 0.118590p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.992096n 0.0 0.0
zp 52.79 ri 0.0 1.24e-09p 4.48e-05p 0.049240p 0.0 1.992620n 2.154370n 2.162602n 0.0 0.596730p 0.003696p 7.61e-07p
sig0.524 cc 0.0 1.24e-09p 4.47e-05p 0.049224p 0.0 2.025378p 2.159985p 4.162274p 0.0 6.918258p 0.003691p 0.003692p

rc 0.0 1.24e-09p 4.48e-05p 0.049285p 0.000740o 2.028362m 2.171155m 4.167841l 0.338944n 7.274671k 0.003696p 0.003696p
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.167685n 0.0 0.0
zp 53.84 ri 0.0 4.66e-12p 1.92e-07p 0.000498p 0.0 0.119311p 1.078829n 1.078990n 0.0 4.872466n 1.079191n 0.028150p
sig0.611 cc 0.0 4.67e-12p 1.92e-07p 0.000498p 0.0 0.119664p 1.078969p 1.197268p 0.0 7.148607p 1.079170p 1.107319p
rc 0.0 4.67e-12p 1.92e-07p 0.000499p 3.03e-06o 0.119668p 1.079152m 1.197294m 0.046721o 7.195633m 1.079191m 1.107341m

sn half life from 80eng2; sb, te, i half lives from 89wal1.
1

mass number 137 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 50 sn g 51 sb g 52 te g 53 i d 53 i g 54 xe d 54 xe g 55 cs g 56 ba m 56 ba g 57 la g 58 ce g
half life 0.478s 2.5 s 1.6 s 24.5 s 6.50 s 3.82 m 30.17y 2.552m stable 6.e4y 9.0 h
lambda 0.0 1.450e+00 2.773e-01 4.332e-01 2.829e-02 1.066e-01 3.024e-03 7.285e-10 4.527e-03 0.0 3.663e-13 2.139e-05
z - 1 g 100.0000 100.0000 81.9680 0.0 97.3100 0.0 93.0300 100.0000 94.6000 5.4000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 6.7800 100.0000 5.3800 100.0000 0.0 0.0 100.0000 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.859695j 0.0 0.0
zp 53.59 ri 8.49e-08p 0.000399p 0.170247p 0.0 2.019813n 0.0 3.538926n 0.242999p 0.001422p 0.000500p 3.58e-07p 5.62e-12p
sig0.554 cc 8.48e-08p 0.000399p 0.170273p 0.0 2.182482p 0.0 5.573017p 5.815615p 5.502992p 5.817534p 3.57e-07p 5.61e-12p
rc 8.49e-08p 0.000399p 0.170574p 0.001825o 2.187624m 0.043595o 5.617667m 5.860666l 5.545612k 5.862588i 3.58e-07p 5.62e-12p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.356661n 0.0 0.0
zp 52.96 ri 1.89e-05p 0.019337p 1.607892n 0.0 3.797330n 0.0 1.261366n 0.011594p 6.28e-06p 2.21e-06p 1.09e-10p 0.0
sig0.536 cc 1.89e-05p 0.019325p 1.621141p 0.0 5.375088p 0.0 6.264225p 6.275800p 5.936913p 6.275808p 1.09e-10p 0.0

rc 1.89e-05p 0.019356p 1.623757m 0.030015o 5.407423m 0.163481m 6.455372l 6.466966l 6.117756l 6.466974k 1.09e-10p 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.496123i 0.0 4.957778n 0.0 0.0
zp 53.93 ri 2.22e-07p 0.000364p 0.060111p 0.0 1.102109n 0.0 2.575442n 0.824339p 0.028564p 0.006270p 0.000153p 6.67e-08p
sig0.643 cc 2.21e-07p 0.000364p 0.060300p 0.0 1.159015p 0.0 3.655010p 4.481536p 4.266757p 4.514881p 0.000146p 6.36e-08p
rc 2.22e-07p 0.000364p 0.060409p 0.000744o 1.161637m 0.026180o 3.682293m 4.506632i 4.291838i 4.541620i 0.000153p 6.67e-08p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.963629j 0.0 0.0 0.0 0.0
zp 54.10 ri 3.11e-08p 9.90e-05p 0.028822p 0.0 0.842842p 0.0 2.870578n 1.267122n 0.055135p 0.012103p 0.000368p 1.86e-07p
sig0.632 cc 3.11e-08p 9.89e-05p 0.028872p 0.0 0.870128p 0.0 3.681139p 4.948092p 4.735972p 5.015626p 0.000367p 1.86e-07p
rc 3.11e-08p 9.90e-05p 0.028903p 0.000278o 0.871246o 0.016134o 3.697233m 4.964354j 4.751415j 5.031961i 0.000368p 1.86e-07p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.130284j 0.0 0.0 0.0 0.0
zp 53.63 ri 1.18e-06p 0.001550p 0.177079p 0.0 2.003507n 0.0 2.635147n 0.416620p 0.005689p 0.001249p 1.02e-05p 1.24e-09p
sig0.621 cc 1.18e-06p 0.001545p 0.177683p 0.0 2.169611p 0.0 4.658111p 5.077649p 4.809123p 5.084570p 1.02e-05p 1.24e-09p
rc 1.18e-06p 0.001551p 0.178350p 0.002337o 2.179397m 0.053444o 4.716083l 5.132703j 4.861226j 5.139651i 1.02e-05p 1.24e-09p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.498360n 0.0 0.0 0.0 0.0 6.742621n 0.0 0.0
zp 53.73 ri 3.75e-08p 0.000190p 0.086515p 0.0 1.448899m 0.0 4.510555n 0.532921p 0.005509p 0.001936p 3.49e-06p 1.40e-10p
sig0.569 cc 4.71e-08p 0.000239p 0.108908p 0.0 1.927044p 0.0 5.947504p 6.442280p 6.099545p 6.449241p 3.26e-06p 1.31e-10p
rc 3.75e-08p 0.000190p 0.086671p 0.000896o 1.534135l 0.032203o 5.969964m 6.502884l 6.157238l 6.510333l 3.49e-06p 1.40e-10p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.812769m 0.0 0.0 5.740434i 0.0 7.160436n 0.0 0.0

zp 53.86 ri 8.21e-09p 9.05e-05p 0.049976p 0.0 1.603102l 0.0 3.526474n 0.733597p 0.008409p 0.002955p 9.22e-06p 3.67e-10p
sig0.565 cc 7.64e-09p 8.41e-05p 0.046536p 0.0 1.535975p 0.0 5.044972p 5.805092p 5.499896p 5.816289p 9.08e-06p 3.61e-10p
rc 8.21e-09p 9.05e-05p 0.050051p 0.000358o 1.652164l 0.029611o 5.093094m 5.826691i 5.520459i 5.838065i 9.22e-06p 3.67e-10p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.128189n 0.0 0.0
zp 53.66 ri 4.46e-07p 0.001087p 0.188243p 0.0 2.681742n 0.0 3.836428n 0.581900p 0.005722p 0.002010p 7.58e-06p 5.02e-10p
sig0.598 cc 4.45e-07p 0.001085p 0.188761p 0.0 2.860694p 0.0 6.503811p 7.084751p 6.707884p 7.092475p 7.57e-06p 5.01e-10p
rc 4.46e-07p 0.001087p 0.189134p 0.001827o 2.867615m 0.058847m 6.563017l 7.144917l 6.764813l 7.152656l 7.58e-06p 5.02e-10p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.471112n 0.0 0.0
zp 53.20 ri 9.04e-07p 0.004101p 0.620639p 0.0 4.248277n 0.0 1.847237n 0.043095p 2.71e-05p 9.52e-06p 9.49e-10p 0.0
sig0.524 cc 9.03e-07p 0.004095p 0.623051p 0.0 4.850170p 0.0 6.364765p 6.407794p 6.061800p 6.407830p 9.48e-10p 0.0
rc 9.04e-07p 0.004102p 0.624001o 0.007407o 4.862899m 0.141373m 6.512565l 6.555660l 6.201681l 6.555696l 9.49e-10p 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.980101n 0.0 0.0
zp 54.29 ri 1.93e-09p 1.68e-05p 0.011999p 0.0 0.658572p 0.0 3.829220n 2.350339n 0.125670p 0.044154p 0.001027p 5.34e-07p
sig0.611 cc 1.93e-09p 1.68e-05p 0.012008p 0.0 0.670052p 0.0 4.453439p 6.803176p 6.561432p 6.973971p 0.001027p 5.34e-07p
rc 1.93e-09p 1.68e-05p 0.012012p 5.93e-05o 0.670320o 0.007338o 4.460157m 6.810496l 6.568399l 6.981348l 0.001027p 5.34e-07p

sb half life from 80eng2; te, i, xe, cs, ba half lives 89wal1.
1

mass number 138 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	50 sn g	51 sb g	52 te g	53 i d	53 i g	54 xe d	54 xe g	55 cs m	55 cs g	56 ba g	57 la g	58 ce g
half life	0.173s	1.4 s	0.580s	6.5 s	2.38 s	14.1 m	2.9 m	32.2 m	stable	11.02l	stable	

lambda 0.0 4.007e+00 4.951e-01 1.195e+00 1.066e-01 2.912e-01 8.193e-04 3.984e-03 3.588e-04 0.0 2.099e-19 0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 93.2200 0.0 94.6200 0.0 100.0000 100.0000 -70.0000 30.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 25.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 7.9620 100.0000 9.8100 100.0000 0.0 75.0000 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.581939n 0.0 0.0
zp 54.00 ri 1.06e-09p 1.40e-05p 0.026906p 0.0 0.785055p 0.0 4.990796n 0.388951p 0.388921p 0.026384p 1.36e-05p 1.01e-09p
sig0.554 cc 1.05e-09p 1.40e-05p 0.026888p 0.0 0.809264p 0.0 5.758311p 0.388500p 6.438187p 6.561676p 1.36e-05p 4.07e-06p
rc 1.06e-09p 1.40e-05p 0.026920p 0.000168o 0.810318o 0.025388o 5.782907m 0.388951p 6.463541m 6.587173l 1.36e-05p 4.08e-06p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.217666n 0.0 0.0
zp 53.37 ri 3.71e-07p 0.001195p 0.441518p 0.0 2.621240n 0.0 3.181707n 0.041076p 0.041076p 0.000284p 1.18e-08p 0.0
sig0.536 cc 3.69e-07p 0.001190p 0.440713p 0.0 3.021531p 0.0 6.053593p 0.040890p 6.125152p 6.135657p 1.18e-08p 3.53e-09p
rc 3.71e-07p 0.001195p 0.442713p 0.004785o 3.038722m 0.148271m 6.205217l 0.041076p 6.277100l 6.287653l 1.18e-08p 3.55e-09p
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.227356k 4.733829n 0.0 0.0
zp 54.33 ri 6.39e-09p 2.67e-05p 0.010948p 0.0 0.476160p 0.0 2.495698n 0.890065p 1.417094o 0.167045p 0.001801p 1.99e-06p
sig0.643 cc 7.06e-09p 2.95e-05p 0.012138p 0.0 0.537986p 0.0 3.273503p 0.984412p 4.996223p 5.428473p 0.001992p 0.000600p
rc 6.39e-09p 2.67e-05p 0.010975p 0.000102o 0.486492p 0.013069o 2.969085m 0.890065o 5.053728k 5.444505k 0.001801p 0.000542p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.259272n 0.0 0.0
zp 54.50 ri 6.50e-10p 5.45e-06p 0.004100p 0.0 0.296038p 0.0 2.337483n 1.167568m 1.167465n 0.294265p 0.004057p 5.37e-06p
sig0.632 cc 6.49e-10p 5.45e-06p 0.004103p 0.0 0.299743p 0.0 2.622284p 1.167052p 4.664624p 5.253360p 0.004055p 0.001222p
rc 6.50e-10p 5.46e-06p 0.004105p 3.29e-05o 0.299898p 0.007236o 2.628482m 1.167568m 4.671623l 5.260621l 0.004057p 0.001222p

u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.063388n 0.0 0.0
zp 54.03 ri 3.21e-08p 0.000115p 0.034361p 0.0 0.960856p 0.0 2.943992n 0.553670p 0.553542p 0.046139p 0.000181p 6.00e-08p
sig0.621 cc 3.21e-08p 0.000114p 0.034417p 0.0 0.991448p 0.0 3.885460p 0.552740p 4.852754p 5.037128p 0.000181p 5.42e-05p
rc 3.21e-08p 0.000115p 0.034475p 0.000384o 0.993378o 0.034037o 3.917963m 0.553670o 4.886757l 5.071441l 0.000181p 5.43e-05p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.293113n 0.0 0.0
zp 54.15 ri 4.81e-10p 7.28e-06p 0.013215p 0.0 0.586168p 0.0 4.396646n 0.626197o 0.626156p 0.065629p 8.90e-05p 1.49e-08p
sig0.569 cc 4.80e-10p 7.27e-06p 0.013212p 0.0 0.598070p 0.0 4.963910p 0.625729p 6.058935p 6.281012p 8.90e-05p 2.67e-05p
rc 4.81e-10p 7.28e-06p 0.013222p 7.37e-05o 0.598567o 0.015109o 4.978120m 0.626197o 6.073924l 6.296165l 8.90e-05p 2.67e-05p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.653069n 0.0 0.0
zp 54.28 ri 6.96e-11p 2.75e-06p 0.005281p 0.0 0.545429p 0.0 3.777345n 1.120389m 1.120297n 0.104430p 0.000292p 4.16e-08p
sig0.565 cc 6.95e-11p 2.75e-06p 0.005281p 0.0 0.550056p 0.0 4.299328p 1.119762p 6.258911p 6.643428p 0.000292p 8.76e-05p
rc 6.96e-11p 2.75e-06p 0.005284p 2.96e-05o 0.550384o 0.011950o 4.310069m 1.120389m 6.270658l 6.655390k 0.000292p 8.77e-05p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.599066n 0.0 0.0
zp 54.08 ri 6.85e-09p 5.18e-05p 0.026897p 0.0 1.068472n 0.0 3.929809n 0.776501p 0.776373p 0.058807p 0.000175p 3.62e-08p
sig0.598 cc 6.84e-09p 5.17e-05p 0.026916p 0.0 1.092331p 0.0 4.966473p 0.775555p 6.323694p 6.576440p 0.000175p 5.25e-05p
rc 6.85e-09p 5.18e-05p 0.026949p 0.000217o 1.093810m 0.029360o 4.994132m 0.776501o 6.352881l 6.605936l 0.000175p 5.25e-05p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.157362n 0.0 0.0
zp 53.61 ri 9.60e-09p 0.000183p 0.109062p 0.0 2.525032n 0.0 3.339583n 0.136716p 0.136716p 0.000932p 1.02e-07p 0.0

sig0.524 cc 9.57e-09p 0.000183p 0.108933p 0.0 2.619629p 0.0 5.826324p 0.136324p 6.064892p 6.099903p 1.02e-07p 3.06e-08p
rc 9.60e-09p 0.000183p 0.109245p 0.000883o 2.627754m 0.092602o 5.918566l 0.136716p 6.157818l 6.192929l 1.02e-07p 3.07e-08p
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.437095n 0.0 0.0
zp 54.73 ri 1.45e-11p 3.81e-07p 0.000874p 0.0 0.135574p 0.0 2.227868n 1.690660n 1.690614n 0.688953p 0.011753p 1.96e-05p
sig0.611 cc 1.45e-11p 3.81e-07p 0.000874p 0.0 0.136374p 0.0 2.357348p 1.690463p 5.315659p 6.435330p 0.011752p 0.003545p
rc 1.45e-11p 3.81e-07p 0.000874p 3.89e-06o 0.136393p 0.002111o 2.359033m 1.690660m 5.317642l 6.437489l 0.011753p 0.003545p

sb half life from 80eng2; te, i, xe, cs half lives from 89wal1.
1

mass number 139 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 51 sb g 52 te g 53 i g 54 xe d 54 xe g 55 cs g 56 ba g 57 la g 58 ce m 58 ce g 59 pr g
half life 0.218s 0.580s 2.30 s 0.86 s 39.7 s 9.3 m 1.396h stable 56. s 137.7d 4.41 h
lambda 3.180e+00 1.195e+00 3.014e-01 8.060e-01 1.746e-02 1.242e-03 1.379e-04 0.0 1.238e-02 5.826e-08 4.366e-05
z - 1 g 100.0000 100.0000 92.0380 0.0 90.1900 100.0000 100.0000 100.0000 0.0 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 9.2700 100.0000 0.0 0.0 0.0 0.0 100.0000 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.003526n 0.0 0.0 0.0
zp 54.40 ri 4.11e-07p 0.002115p 0.256850p 0.0 3.615014n 1.989892n 0.161534p 0.000364p 5.48e-08p 1.93e-08p 0.0
sig0.554 cc 4.11e-07p 0.002115p 0.258738p 0.0 3.848826p 5.838357p 5.999855p 6.000219p 5.48e-08p 7.41e-08p 0.0
rc 4.11e-07p 0.002116p 0.258797p 0.003893o 3.852316m 5.842208l 6.003742l 6.004106l 5.48e-08p 7.41e-08p 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.058494n 0.0 0.0 0.0
zp 53.78 ri 5.34e-05p 0.060043p 1.456142n 0.0 4.225598n 0.432602p 0.004492p 9.11e-07p 9.36e-12p 3.29e-12p 0.0
sig0.536 cc 5.33e-05p 0.059992p 1.508829p 0.0 5.589736p 6.021653p 6.026137p 6.026138p 9.34e-12p 1.26e-11p 0.0
rc 5.34e-05p 0.060096p 1.511453m 0.042554o 5.631332m 6.063933m 6.068425m 6.068426l 9.36e-12p 1.27e-11p 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.576411i 4.375691n 0.0 0.0 0.0
zp 54.72 ri 1.27e-06p 0.001281p 0.132021p 0.0 1.552373n 2.394138n 0.502366p 0.012504p 2.78e-05p 6.11e-06p 9.08e-09p

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sig0.643 cc 1.27e-06p 0.001282p 0.133157p       0.0  1.672673p 4.066583p 4.568721p 4.581553p 2.85e-05p 3.48e-05p 9.29e-09p
         rc 1.27e-06p 0.001282p 0.133201p 0.002202o 1.674709m 4.068847l 4.571213i 4.583751i 2.78e-05p 3.40e-05p 9.08e-09p
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.279156n      0.0       0.0       0.0
zp 54.89 ri 2.15e-07p 0.000412p 0.073377p       0.0  1.348036n 2.982189n 0.853103p 0.028405p 7.78e-05p 1.71e-05p 2.90e-08p
sig0.632 cc 2.15e-07p 0.000413p 0.073752p       0.0  1.414755p 4.396805p 5.249852p 5.278349p 7.78e-05p 9.49e-05p 2.90e-08p
         rc 2.15e-07p 0.000413p 0.073757p 0.000887o 1.415444m 4.397633m 5.250736m 5.279236l 7.78e-05p 9.49e-05p 2.90e-08p
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.202656n      0.0       0.0       0.0
zp 54.43 ri 6.02e-06p 0.004821p 0.342518p       0.0  2.491433n 2.168606n 0.222221p 0.002281p 1.68e-06p 3.69e-07p 1.50e-10p
sig0.621 cc 6.02e-06p 0.004825p 0.346823p       0.0  2.805082p 4.973064p 5.195198p 5.197480p 1.68e-06p 2.05e-06p 1.50e-10p
         rc 6.02e-06p 0.004827p 0.346961p 0.006063o 2.810420m 4.979025l 5.201246l 5.203529l 1.68e-06p 2.05e-06p 1.50e-10p
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.723736n      0.0       0.0       0.0
zp 54.56 ri 1.79e-07p 0.000925p 0.153168p       0.0  2.767747n 2.488893n 0.324607p 0.001679p 5.95e-07p 2.09e-07p 1.15e-11p
sig0.569 cc 1.79e-07p 0.000925p 0.153998p       0.0  2.906971p 5.395599p 5.720160p 5.721839p 5.95e-07p 8.04e-07p 1.15e-11p
         rc 1.79e-07p 0.000926p 0.154020p 0.002180o 2.908837m 5.397731l 5.722338l 5.724017l 5.95e-07p 8.05e-07p 1.15e-11p
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  6.767669i 5.951924n      0.0       0.0       0.0
zp 54.68 ri 5.83e-08p 0.000372p 0.121475p       0.0  2.395744n 3.739649n 0.500643p 0.004149p 1.46e-06p 5.12e-07p 4.52e-11p
sig0.565 cc 5.82e-08p 0.000372p 0.121728p       0.0  2.504170p 6.247353p 6.745648p 6.750063p 1.55e-06p 2.09e-06p 4.81e-11p
         rc 5.83e-08p 0.000372p 0.121818p 0.001218o 2.506829m 6.246479l 6.747121i 6.751272i 1.46e-06p 1.97e-06p 4.52e-11p
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.950141n      0.0       0.0       0.0
zp 54.48 ri 1.81e-06p 0.002722p 0.296779p       0.0  2.756222n 2.653804n 0.263217p 0.002209p 9.92e-07p 3.48e-07p 5.44e-11p
sig0.598 cc 1.81e-06p 0.002723p 0.299187p       0.0  3.026880p 5.680048p 5.943179p 5.945389p 9.92e-07p 1.34e-06p 5.43e-11p
         rc 1.81e-06p 0.002724p 0.299286p 0.005508o 3.031656m 5.685460l 5.948677l 5.950888l 9.92e-07p 1.34e-06p 5.44e-11p
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.725954n      0.0       0.0       0.0
zp 54.02 ri 4.57e-06p 0.011090p 0.933743p       0.0  3.827292n 1.016396n 0.013312p 6.09e-06p 6.17e-11p 2.17e-11p       0.0
sig0.524 cc 4.56e-06p 0.011083p 0.942961p       0.0  4.679662p 5.695153p 5.708451p 5.708457p 6.17e-11p 8.33e-11p       0.0
         rc 4.57e-06p 0.011094p 0.943954o 0.021677o 4.700321m 5.716718l 5.730030l 5.730036l 6.17e-11p 8.34e-11p       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.775614n      0.0       0.0       0.0
zp 55.13 ri 7.87e-09p 4.88e-05p 0.021474p       0.0  0.868982p 3.275020n 1.540854n 0.070843p 0.000230p 8.10e-05p 9.91e-08p
sig0.611 cc 7.87e-09p 4.88e-05p 0.021518p       0.0  0.888447p 4.163434p 5.704264p 5.775417p 0.000230p 0.000312p 9.91e-08p
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rc 7.87e-09p 4.88e-05p 0.021518p 0.000211o 0.888600o 4.163620m 5.704474l 5.775629l 0.000230p 0.000312p 9.91e-08p

sb half life from 80eng2; i, xe, cs, ba half lives from 89wal1; cehalf life 90bur1.

1

mass number 140 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 52 te g 53 i g 54 xe d 54 xe g 55 cs d 55 cs g 56 ba d 56 ba g 57 la g 58 ce g 59 pr g 60 nd g
half life 0.894s 0.86 s 0.46s 13.6 s 1.72 s 1.06 m 24.9 s 12.75d 1.678d stable 3.39 m 3.37 d
lambda 7.753e-01 8.060e-01 1.507e+00 5.097e-02 4.030e-01 1.090e-02 2.784e-02 6.292e-07 4.781e-06 0.0 3.408e-03 2.381e-06
z - 1 g 100.0000 100.0000 0.0 90.7300 0.0 100.0000 0.0 100.0000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 21.3000 100.0000 0.0350 100.0000 0.0470 100.0000 0.0 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.782472h 0.0 0.0 0.0 0.0
zp 54.80 ri 0.000133p 0.041864p 0.0 2.281528n 0.0 2.648768n 0.0 0.810437p 0.004659p 4.27e-06p 5.11e-11p 0.0
sig0.554 cc 0.000133p 0.041990p 0.0 2.319704p 0.0 4.968134p 0.0 5.778838p 5.783497p 5.783501p 5.10e-11p 0.0
rc 0.000133p 0.041997p 0.001377o 2.321009m 0.000295o 4.970073l 0.001999o 5.782509h 5.787168h 5.787173h 5.11e-11p 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.635494n 0.0 0.0
zp 54.19 ri 0.006544p 0.452515p 0.0 4.907345n 0.0 1.235684n 0.0 0.056018p 3.56e-05p 2.45e-09p 0.0 0.0
sig0.536 cc 0.006537p 0.458581p 0.0 5.325057p 0.0 6.559636p 0.0 6.615596p 6.615632p 6.615632p 0.0 0.0
rc 0.006544p 0.459059p 0.021366o 5.345215m 0.000992n 6.581891l 0.002483o 6.640392l 6.640427l 6.640427l 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.783567i 0.0 4.094683n 0.0 0.0
zp 55.11 ri 9.53e-05p 0.023658p 0.0 0.637873p 0.0 2.143936n 0.0 0.985806o 0.062001p 0.000408p 2.71e-07p 1.73e-11p
sig0.643 cc 9.54e-05p 0.023773p 0.0 0.660206p 0.0 2.806014p 0.0 3.792942p 3.851190p 3.851574p 2.55e-07p 1.62e-11p
rc 9.53e-05p 0.023753p 0.000679o 0.660103o 7.30e-05o 2.804113m 0.000834o 3.790752i 3.852754i 3.853162i 2.71e-07p 1.73e-11p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.826098j 0.0 0.0 0.0 0.0

zp 55.28 ri 2.14e-05p 0.009546p 0.0 0.418032p 0.0 2.075337n 0.0 1.323168n 0.103920p 0.000863p 6.75e-07p 4.68e-11p
sig0.632 cc 2.14e-05p 0.009567p 0.0 0.426761p 0.0 2.501997p 0.0 3.825224p 3.929137p 3.930001p 6.75e-07p 4.68e-11p
rc 2.14e-05p 0.009567p 0.000221o 0.426933p 3.99e-05o 2.502310m 0.000672o 3.826149j 3.930069j 3.930933j 6.75e-07p 4.68e-11p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.103010j 0.0 0.0 0.0 0.0
zp 54.83 ri 0.000352p 0.065047p 0.0 1.152310n 0.0 2.319805n 0.0 0.567845p 0.014934p 3.60e-05p 7.22e-09p 0.0
sig0.621 cc 0.000352p 0.065380p 0.0 1.212064p 0.0 3.531378p 0.0 4.099303p 4.114232p 4.114268p 7.22e-09p 0.0
rc 0.000352p 0.065399p 0.002373o 1.214020m 0.000172o 3.533997m 0.001280o 4.103123j 4.118056j 4.118092j 7.22e-09p 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.613857n 0.0 0.0
zp 54.96 ri 5.28e-05p 0.023462p 0.0 1.450029n 0.0 2.905161n 0.0 1.219679n 0.016279p 2.98e-05p 1.20e-09p 0.0
sig0.569 cc 5.28e-05p 0.023514p 0.0 1.471460p 0.0 4.376552p 0.0 5.596204p 5.612482p 5.612512p 1.20e-09p 0.0
rc 5.28e-05p 0.023515p 0.000469o 1.471833m 0.000123o 4.377117m 0.001216o 5.598012l 5.614290l 5.614320l 1.20e-09p 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.020071n 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.837096i 4.958942h 4.961863h 0.0 0.0
zp 55.07 ri 1.28e-05p 0.013128p 0.0 0.751312p 0.0 3.064792n 0.0 1.091523n 0.020392n 4.40e-05p 3.31e-09p 0.0
sig0.565 cc 1.28e-05p 0.013132p 0.0 0.762822p 0.0 3.825668p 0.0 4.911335p 4.939943p 4.939986p 3.26e-09p 0.0
rc 1.28e-05p 0.013140p 0.000238o 0.763472o 6.97e-05o 3.828334m 0.001149o 4.921006h 4.941398g 4.941442g 3.31e-09p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.480919n 0.0 0.0
zp 54.87 ri 0.000198p 0.059219p 0.0 1.401699n 0.0 3.216417n 0.0 0.788526p 0.017762p 3.04e-05p 3.56e-09p 0.0
sig0.598 cc 0.000198p 0.059410p 0.0 1.455952p 0.0 4.672111p 0.0 5.460554p 5.478314p 5.478344p 3.56e-09p 0.0
rc 0.000198p 0.059417p 0.001594o 1.457202m 0.000170o 4.673788m 0.001508o 5.463822m 5.481585l 5.481615l 3.56e-09p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.784782n 0.0 0.0
zp 54.42 ri 0.000742p 0.233102p 0.0 3.038269n 0.0 2.416099n 0.0 0.111050p 0.000200p 1.12e-08p 0.0 0.0
sig0.524 cc 0.000742p 0.233750p 0.0 3.251172p 0.0 5.666588p 0.0 5.777594p 5.777794p 5.777794p 0.0 0.0
rc 0.000742p 0.233844p 0.006328o 3.256765m 0.000471n 5.673335l 0.002096o 5.786481l 5.786680l 5.786680l 0.0 0.0

cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.370827n 0.0 0.0
zp 55.53 ri 1.94e-06p 0.002273p 0.0 0.252478p 0.0 2.235491n 0.0 2.589657n 0.287141p 0.003535p 3.02e-06p 2.28e-10p
sig0.611 cc 1.94e-06p 0.002275p 0.0 0.254551p 0.0 2.490019p 0.0 5.079693p 5.366831p 5.370369p 3.02e-06p 2.28e-10p
rc 1.94e-06p 0.002275p 3.66e-05o 0.254578p 1.69e-05o 2.490086m 0.000537o 5.080281l 5.367422l 5.370960l 3.02e-06p 2.28e-10p

te half life from 80eng2; i, xe, cs, ba, la half lives from 89wal1.

1

mass number 141 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 53 i g 54 xe d 54 xe g 55 cs d 55 cs g 56 ba d 56 ba g 57 la g 58 ce g 59 pr g 60 nd g 61 pm g
half life 0.45s 0.20 s 1.72 s 1.22s 24.9 s 1.69 s 18.3 m 3.90 h 32.50d stable 2.46 h 20.9 m
lambda 1.540e+00 3.466e+00 4.030e-01 5.682e-01 2.784e-02 4.101e-01 6.313e-04 4.937e-05 2.468e-07 0.0 7.827e-05 5.527e-04
z - 1 g 100.0000 0.0 78.7000 0.0 99.9650 0.0 99.9530 100.0000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 13.8610 100.0000 0.4040 100.0000 0.0950 100.0000 0.0 0.0 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.505562j 0.0 0.0
zp 55.19 ri 0.006467p 0.0 0.839014p 0.0 3.409170n 0.0 2.201898n 0.050110p 0.000118p 6.27e-09p 0.0 0.0
sig0.554 cc 0.006466p 0.0 0.844077p 0.0 4.252984p 0.0 6.452880p 6.502987p 6.503106p 6.503106p 0.0 0.0
rc 0.006467p 4.35e-05o 0.844146o 0.000720o 4.253741m 0.001768o 6.455408l 6.505518l 6.505636k 6.505636j 0.0 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.571029n 0.0 0.0
zp 54.59 ri 0.100310p 0.0 2.753164n 0.0 2.444508n 0.0 0.290543p 0.000831p 1.78e-07p 0.0 0.0 0.0
sig0.536 cc 0.100285p 0.0 2.831902p 0.0 5.275686p 0.0 5.563692p 5.564523p 5.564524p 5.564524p 0.0 0.0
rc 0.100310p 0.001483o 2.833591m 0.005204m 5.282310l 0.003889o 5.574260l 5.575091l 5.575091l 5.575091l 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.582848i 3.763495n 0.0 0.0
zp 55.51 ri 0.003189p 0.0 0.206028p 0.0 1.565225n 0.0 1.592416n 0.217628p 0.003491p 6.00e-06p 9.80e-10p 0.0

sig0.643 cc 0.003189p 0.0 0.208590p 0.0 1.774087p 0.0 3.365700p 3.582898p 3.586390p 3.586396p 9.56e-10p 0.0
rc 0.003189p 4.84e-05o 0.208586p 0.000224o 1.773961m 0.000972o 3.366516l 3.584144k 3.587634i 3.587640i 9.80e-10p
0.0
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.680803k 0.0 0.0 0.0
zp 55.68 ri 0.001036p 0.0 0.113133p 0.0 1.315688n 0.0 1.894313n 0.349448p 0.007258p 1.48e-05p 2.71e-09p 0.0
sig0.632 cc 0.001036p 0.0 0.113948p 0.0 1.429575p 0.0 3.323221p 3.672686p 3.679943p 3.679958p 2.71e-09p 0.0
rc 0.001036p 1.43e-05o 0.113962p 0.000114o 1.429724m 0.000755o 3.324121l 3.673569l 3.680826j 3.680841j 2.71e-09p
0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.054739k 0.0 0.0 0.0
zp 55.22 ri 0.011142p 0.0 0.483569p 0.0 2.231220n 0.0 1.249613n 0.080133p 0.000497p 2.65e-07p 1.14e-11p 0.0
sig0.621 cc 0.011141p 0.0 0.492352p 0.0 2.723373p 0.0 3.971725p 4.051851p 4.052348p 4.052349p 1.14e-11p 0.0
rc 0.011142p 0.000184o 0.492521p 0.000604o 2.724173m 0.001702o 3.974208l 4.054341k 4.054838j 4.054839j 1.14e-11p
0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.784764n 0.0 0.0
zp 55.36 ri 0.002204p 0.0 0.349337p 0.0 2.236435n 0.0 2.100174n 0.096621p 0.000477p 7.49e-08p 0.0 0.0
sig0.569 cc 0.002204p 0.0 0.351061p 0.0 2.587369p 0.0 4.686346p 4.782962p 4.783439p 4.783439p 0.0 0.0
rc 0.002204p 1.96e-05o 0.351091p 0.000345o 2.587748m 0.001359o 4.688064l 4.784685l 4.785162l 4.785162l 0.0 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.713198i 4.934759n 0.0 0.0
zp 55.47 ri 0.001116p 0.0 0.198300p 0.0 2.245310n 0.0 2.110398n 0.163026p 0.000791p 2.04e-07p 2.47e-12p 0.0
sig0.565 cc 0.001116p 0.0 0.199207p 0.0 2.444794p 0.0 4.553803p 4.716693p 4.717484p 4.717484p 2.41e-12p 0.0
rc 0.001116p 1.07e-05o 0.199189p 0.000173o 2.444602m 0.001342o 4.555193l 4.718219k 4.719010i 4.719010i 2.47e-12p
0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.951795n 0.0 0.0
zp 55.27 ri 0.007482p 0.0 0.478356p 0.0 2.724322n 0.0 1.643728n 0.098781p 0.000482p 1.67e-07p 3.81e-12p 0.0
sig0.598 cc 0.007482p 0.0 0.484249p 0.0 3.208399p 0.0 4.850623p 4.949398p 4.949880p 4.949880p 3.81e-12p 0.0
rc 0.007482p 0.000101o 0.484345p 0.000527o 3.209024m 0.001922o 4.853166l 4.951947l 4.952429l 4.952430l 3.81e-12p
0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.931772n 0.0 0.0
zp 54.82 ri 0.029710p 0.0 1.321347n 0.0 3.113632n 0.0 0.468407p 0.003202p 7.32e-07p 4.93e-12p 0.0 0.0
sig0.524 cc 0.029707p 0.0 1.344690p 0.0 4.457927p 0.0 4.924203p 4.927404p 4.927405p 4.927405p 0.0 0.0

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        rc 0.029710p 0.000394o 1.345124m 0.001929o 4.460214m 0.003824o 4.930348m 4.933550m 4.933550m 4.933550l       0.0
0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.768584n      0.0       0.0
zp 55.92 ri 0.000172p      0.0  0.048226p      0.0  1.095051n      0.0  2.825159n 0.776558p 0.023558p 5.64e-05p 1.13e-08p      0.0
sig0.611 cc 0.000172p      0.0  0.048360p      0.0  1.143388p      0.0  3.968027p 4.744575p 4.768133p 4.768189p 1.13e-08p      0.0
        rc 0.000172p 1.27e-06o 0.048362p 3.06e-05o 1.143427m 0.000425n 3.968473m 4.745031m 4.768589m 4.768646l 1.13e-08p
0.0

  i, xe, cs, ba, la, ce half lives from 89wal1.
1

    mass number    142            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       52 te g   53 i  g   54 xe g   55 cs d   55 cs g   56 ba d   56 ba g   57 la g   58 ce g   59 pr g   60 nd g
half life     0.590s     0.2 s    1.22 s    0.96 s     1.8 s    1.78 s    10.7 m    1.54 h    5.e16y    19.16h    stable
lambda      1.175e+00 3.466e+00 5.682e-01 7.220e-01 3.851e-01 3.894e-01 1.080e-03 1.250e-04 4.396e-25 1.005e-05       0.0
 z - 1 g    100.0000  100.0000   86.1390       0.0   99.5960       0.0   99.9050  100.0000  100.0000       0.0  100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0    3.0560  100.0000    1.6000  100.0000       0.0       0.0       0.0       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.990619j      0.0       0.0
zp 55.60 ri 8.34e-08p 0.000314p 0.177872p      0.0  1.683134n      0.0  3.902440n 0.213156p 0.002240p 3.34e-07p 6.97e-12p
sig0.554 cc 8.34e-08p 0.000314p 0.177982p      0.0  1.859076p      0.0  5.761326p 5.974389p 5.976627p 3.33e-07p 3.33e-07p
        rc 8.34e-08p 0.000314p 0.178142p 0.000642o 1.861198m 0.013715o 5.775585l 5.988741k 5.990981j 3.34e-07p 3.34e-07p
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.431753n      0.0       0.0
zp 55.01 ri 1.10e-05p 0.010689p 1.278922n      0.0  2.803638n      0.0  1.317410n 0.011422p 1.22e-05p 1.50e-10p      0.0
sig0.536 cc 1.10e-05p 0.010693p 1.287333p      0.0  4.085602p      0.0  5.400112p 5.411527p 5.411539p 1.50e-10p 1.50e-10p
        rc 1.10e-05p 0.010700p 1.288138m 0.007635o 4.094207m 0.037683m 5.445410l 5.456832l 5.456844l 1.50e-10p 1.50e-10p
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.899747j 3.467559n      0.0       0.0
zp 55.91 ri 2.23e-07p 0.000349p 0.055079p      0.0  0.967888p      0.0  2.176678n 0.670687p 0.024314p 0.000102p 4.25e-08p
sig0.643 cc 2.23e-07p 0.000349p 0.055332p      0.0  1.022239p      0.0  3.197446p 3.867948p 3.893745p 0.000108p 0.000108p
        rc 2.23e-07p 0.000349p 0.055379p 0.000232o 1.023276o 0.005177o 3.204159m 3.874846j 3.899159j 0.000102p 0.000102p
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.324733n      0.0       0.0
```

zp 56.07 ri 3.50e-08p 0.000103p 0.028039p 0.0 0.766995p 0.0 2.457391n 1.019687n 0.050607p 0.000258p 1.22e-07p
sig0.632 cc 3.49e-08p 0.000103p 0.028122p 0.0 0.794872p 0.0 3.251823p 4.271343p 4.321940p 0.000258p 0.000258p
rc 3.50e-08p 0.000103p 0.028128p 9.69e-05o 0.795107o 0.003393o 3.255136m 4.274822l 4.325430l 0.000258p 0.000258p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.257623n 0.0 0.0
zp 55.62 ri 1.04e-06p 0.001330p 0.148366p 0.0 1.642037n 0.0 2.123886n 0.330599p 0.005320p 7.65e-06p 9.06e-10p
sig0.621 cc 1.04e-06p 0.001330p 0.149422p 0.0 1.790115p 0.0 3.913297p 4.243733p 4.249050p 7.64e-06p 7.64e-06p
rc 1.04e-06p 0.001331p 0.149512p 0.000850o 1.791795m 0.012594o 3.926572l 4.257171l 4.262492l 7.65e-06p 7.65e-06p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.873572n 0.0 0.0
zp 55.77 ri 2.92e-08p 0.000142p 0.085174p 0.0 1.345662n 0.0 3.985491n 0.445199p 0.008253p 3.69e-06p 1.97e-10p
sig0.569 cc 2.92e-08p 0.000142p 0.085271p 0.0 1.430249p 0.0 5.414868p 5.859948p 5.868198p 3.69e-06p 3.69e-06p
rc 2.92e-08p 0.000142p 0.085297p 0.000220o 1.430834m 0.006851o 5.421816m 5.867015m 5.875268l 3.69e-06p 3.69e-06p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.447141n 0.0 0.0
zp 55.86 ri 7.02e-09p 7.73e-05p 0.042712p 0.0 1.370187n 0.0 3.322564n 0.698662p 0.010283p 8.34e-06p 3.32e-10p
sig0.565 cc 7.02e-09p 7.73e-05p 0.042768p 0.0 1.412483p 0.0 4.734157p 5.432679p 5.442960p 8.34e-06p 8.34e-06p
rc 7.02e-09p 7.73e-05p 0.042779p 0.000106o 1.412898m 0.005468o 4.739588m 5.438250m 5.448533l 8.34e-06p 8.34e-06p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.241316n 0.0 0.0
zp 55.67 ri 2.92e-07p 0.000730p 0.129705p 0.0 1.892801n 0.0 2.775527n 0.429867p 0.005857p 5.90e-06p 4.02e-10p
sig0.598 cc 2.92e-07p 0.000729p 0.130259p 0.0 2.021648p 0.0 4.796422p 5.226085p 5.231939p 5.90e-06p 5.90e-06p
rc 2.92e-07p 0.000730p 0.130334p 0.000645o 2.023253m 0.013739o 4.810596l 5.240463m 5.246320l 5.90e-06p 5.90e-06p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.755368n 0.0 0.0
zp 55.23 ri 5.65e-07p 0.002844p 0.475094p 0.0 3.547312n 0.0 1.679698n 0.042915p 4.04e-05p 1.16e-09p 0.0
sig0.524 cc 5.65e-07p 0.002843p 0.477344p 0.0 4.021814p 0.0 5.698823p 5.741720p 5.741760p 1.16e-09p 1.16e-09p
rc 5.65e-07p 0.002845p 0.477544p 0.002026o 4.024953m 0.027964m 5.728791l 5.771706l 5.771746l 1.16e-09p 1.16e-09p
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.380700n 0.0 0.0
zp 56.33 ri 9.92e-10p 9.18e-06p 0.007565p 0.0 0.439512p 0.0 2.909326n 1.869204n 0.154144p 0.000988p 5.93e-07p
sig0.611 cc 9.92e-10p 9.18e-06p 0.007572p 0.0 0.447016p 0.0 3.356112p 5.225175p 5.379304p 0.000988p 0.000989p
rc 9.92e-10p 9.18e-06p 0.007573p 1.89e-05o 0.447073p 0.001646o 3.357621m 5.226824l 5.380968l 0.000988p 0.000989p

te half life from 80eng2; i, xe, cs, ba, la half lives 89wal1.

mass number 143 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	54 xe g	55 cs d	55 cs g	56 ba d	56 ba g	57 la g	58 ce g	59 pr g	60 nd g	61 pm g	62 sm m	62 sm g
half life	0.30 s	1.1 s	1.78 s	1.001s	14.3 s	14.1 m	1.38 d	13.57d	stable	265. d	64. s	8.83 m
lambda	2.310e+00	6.301e-01	3.894e-01	6.925e-01	4.847e-02	8.193e-04	5.813e-06	5.912e-07	0.0	3.027e-08	1.083e-02	1.308e-03
z - 1 g	100.0000	0.0	96.9440	0.0	98.4000	100.0000	100.0000	100.0000	100.0000	-100.0000	0.0	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	4.6120	100.0000	3.1300	100.0000	0.0	0.0	0.0	0.0	0.0	0.0	100.0000
u234f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.141989j	0.0	0.0	0.0
zp 56.02 ri	0.021003p	0.0	0.836753p	0.0	4.349067n	0.918511p	0.025601p	1.81e-05p	1.11e-09p	0.0	0.0	0.0
sig0.554 cc	0.020998p	0.0	0.856915p	0.0	5.192685p	6.110988p	6.136583p	6.136601p	6.136601p	0.0	0.0	0.0
rc	0.021003p	7.43e-05o	0.857189o	0.005398o	5.197939m	6.116450m	6.142051m	6.142069l	6.142069j	0.0	0.0	0.0
u237f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.805013n	0.0	0.0	0.0
zp 55.42 ri	0.249849p	0.0	2.111127n	0.0	2.382431n	0.087335p	0.000288p	1.75e-08p	0.0	0.0	0.0	0.0
sig0.536 cc	0.249578p	0.0	2.351336p	0.0	4.698253p	4.785493p	4.785781p	4.785781p	4.785781p	0.0	0.0	0.0
rc	0.249849p	0.001868o	2.355208m	0.029297o	4.729252l	4.816588l	4.816875l	4.816875l	4.816875l	0.0	0.0	0.0
pu240h xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	3.101120i	0.0	3.121192n	0.0	0.0	0.0
zp 56.31 ri	0.007593p	0.0	0.316127p	0.0	1.592387n	1.090483n	0.098132p	0.001015p	1.07e-06p	1.09e-10p	0.0	0.0
sig0.643 cc	0.007591p	0.0	0.323434p	0.0	1.910981p	3.001205p	3.099317p	3.100329p	3.100330p	1.09e-10p	0.0	0.0
rc	0.007593p	3.24e-05o	0.323520p	0.002340o	1.913071m	3.003554k	3.101685i	3.102700i	3.102701i	1.09e-10p	0.0	0.0
u234he xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	3.283664j	0.0	0.0	0.0	0.0	0.0
zp 56.46 ri	0.003171p	0.0	0.209000p	0.0	1.516577n	1.395569n	0.161468p	0.002031p	2.45e-06p	2.63e-10p	0.0	0.0
sig0.632 cc	0.003171p	0.0	0.212043p	0.0	1.725388p	3.120839p	3.282295p	3.284327p	3.284329p	2.63e-10p	0.0	0.0
rc	0.003171p	1.25e-05o	0.212087p	0.001382o	1.726652m	3.122221l	3.283688j	3.285720j	3.285722j	2.63e-10p	0.0	0.0
u236he xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	3.938889j	0.0	0.0	0.0	0.0	0.0
zp 56.02 ri	0.027807p	0.0	0.759975p	0.0	2.283953n	0.838639p	0.034183p	0.000131p	4.23e-08p	1.10e-12p	0.0	0.0
sig0.621 cc	0.027788p	0.0	0.786458p	0.0	3.058159p	3.896964p	3.931124p	3.931255p	3.931255p	1.10e-12p	0.0	0.0
rc	0.027807p	0.000165o	0.787097o	0.007710o	3.066167m	3.904805l	3.938989j	3.939119j	3.939119j	1.10e-12p	0.0	0.0
pu238f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.535037n	0.0	0.0	0.0

```
zp 56.19 ri 0.007207p      0.0  0.421159p      0.0  2.962135n 1.095242n 0.054178p 9.73e-05p 1.55e-08p      0.0       0.0       0.0
sig0.569 cc 0.007206p      0.0  0.428080p      0.0  3.383598p 4.478683p 4.532852p 4.532949p 4.532949p      0.0       0.0       0.0
        rc 0.007207p 2.25e-05o 0.428168p 0.002481o 3.385934m 4.481176l 4.535354l 4.535451l 4.535451l      0.0       0.0       0.0
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.859168i      0.0  5.156320n      0.0       0.0       0.0
zp 56.26 ri 0.003467p      0.0  0.338388p      0.0  2.228380n 1.265868n 0.055571p 0.000171p 2.30e-08p      0.0       0.0       0.0
sig0.565 cc 0.003474p      0.0  0.342368p      0.0  2.569930p 3.830443p 3.886115p 3.886262p 3.886262p      0.0       0.0       0.0
        rc 0.003467p 1.07e-05o 0.341760p 0.002188o 2.566860m 3.832727k 3.888299i 3.888470i 3.888470i      0.0       0.0       0.0
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.201382n      0.0       0.0       0.0
zp 56.08 ri 0.021097p      0.0  0.838124p      0.0  3.087043n 1.218067n 0.046127p 0.000137p 2.84e-08p      0.0       0.0       0.0
sig0.598 cc 0.021090p      0.0  0.858314p      0.0  3.932225p 5.149969p 5.196080p 5.196217p 5.196218p      0.0       0.0       0.0
        rc 0.021097p 8.22e-05o 0.858659o 0.006296o 3.938259m 5.156326l 5.202453l 5.202590l 5.202590l      0.0       0.0       0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.372903n      0.0       0.0       0.0
zp 55.64 ri 0.066299p      0.0  1.683131n      0.0  2.423433n 0.216054p 0.000814p 9.93e-08p      0.0       0.0       0.0       0.0
sig0.524 cc 0.066236p      0.0  1.745859p      0.0  4.143088p 4.358960p 4.359773p 4.359773p 4.359773p      0.0       0.0       0.0
        rc 0.066299p 0.000323o 1.747727m 0.019921o 4.163118l 4.379172l 4.379986l 4.379986l 4.379986l      0.0       0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.966041n      0.0       0.0       0.0
zp 56.74 ri 0.000618p      0.0  0.102287p      0.0  1.653093n 2.667674n 0.533955p 0.009712p 1.60e-05p 1.85e-09p      0.0       0.0
sig0.611 cc 0.000618p      0.0  0.102883p      0.0  1.754407p 4.422023p 4.955962p 4.965674p 4.965690p 1.85e-09p      0.0       0.0
        rc 0.000618p 1.26e-06o 0.102887p 0.000391o 1.754724m 4.422398l 4.956353l 4.966066l 4.966082l 1.85e-09p      0.0       0.0

  xe, cs, ba, la, ce, pr half lives from 89wal1.
1

    mass number    144            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide      54 xe g   55 cs g   56 ba d   56 ba g   57 la g   58 ce g   59 pr m   59 pr g   60 nd g   61 pm g   62 sm g
half life      1.2 s    1.01 s    0.59 s    11.4 s    40.7 s    284.6d     7.2 m    17.28m    15.32l    363. d    stable
lambda      5.776e-01 6.863e-01 1.175e+00 6.080e-02 1.703e-02 2.819e-08 1.605e-03 6.685e-04 1.052e-23 2.210e-08       0.0
 z - 1 g    100.0000   95.3880       0.0   96.8700  100.0000  100.0000    0.5000   99.5000  100.0000 -100.0000       0.0
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0    0.0500       0.0       0.0
 z - 0 m       0.0       0.0   13.5900  100.0000       0.0       0.0       0.0   99.9500       0.0       0.0       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.443735j      0.0       0.0
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zp 56.44 ri 0.001611p 0.170939p 0.0 3.453184n 1.629540n 0.190276p 0.000341p 3.37e-05p 1.12e-07p 0.0 0.0
sig0.554 cc 0.001610p 0.172437p 0.0 3.620590p 5.249838p 5.440078p 0.027541p 5.440439p 5.440453p 0.0 0.0
rc 0.001611p 0.172475p 0.003340o 3.623601m 5.253141l 5.443417l 0.027558l 5.443778k 5.443792j 0.0 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.844806n 0.0 0.0
zp 55.82 ri 0.040496p 0.897401p 0.0 3.572475n 0.331182p 0.004812p 8.22e-07p 8.13e-08p 1.77e-11p 0.0 0.0
sig0.536 cc 0.040413p 0.934121p 0.0 4.479905p 4.810462p 4.815264p 0.024077p 4.815253p 4.815265p 0.0 0.0
rc 0.040496p 0.936029o 0.037373o 4.516579m 4.847762m 4.852574m 0.024264m 4.852562m 4.852575l 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.659537i 0.0 0.0 2.820113n 0.0 0.0
zp 56.73 ri 0.000703p 0.074095p 0.0 0.889527p 1.400533n 0.299221p 0.007549p 0.000482p 2.23e-05p 6.11e-09p 0.0
sig0.643 cc 0.000703p 0.074756p 0.0 0.962444p 2.362274p 2.661932p 0.020647p 2.669728p 2.669760p 5.94e-09p 0.0
rc 0.000703p 0.074766p 0.001892o 0.963845o 2.364378l 2.663598i 0.020867o 2.671618i 2.671651i 6.11e-09p 0.0
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.683112k 0.0 0.0 0.0 0.0 0.0
zp 56.85 ri 0.000271p 0.043880p 0.0 0.738296p 1.504970n 0.396159p 0.011340p 0.000724p 3.67e-05p 1.02e-08p 0.0
sig0.632 cc 0.000271p 0.044131p 0.0 0.781240p 2.286044p 2.682184p 0.024749p 2.694234p 2.694283p 1.02e-08p 0.0
rc 0.000271p 0.044138p 0.000941o 0.781994o 2.286964m 2.683124j 0.024756o 2.695175j 2.695224j 1.02e-08p 0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.485145j 0.0 0.0 0.0 0.0 0.0
zp 56.41 ri 0.003584p 0.242911p 0.0 1.690676n 1.411432n 0.138357p 0.001273p 8.13e-05p 1.16e-06p 8.07e-11p 0.0
sig0.621 cc 0.003582p 0.246161p 0.0 1.929823p 3.340787p 3.479092p 0.018668p 3.480436p 3.480447p 8.07e-11p 0.0
rc 0.003584p 0.246330p 0.006216o 1.935513m 3.346945l 3.485302j 0.018700k 3.486647j 3.486658j 8.07e-11p 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.925704n 0.0 0.0
zp 56.61 ri 0.000487p 0.078810p 0.0 1.913601n 1.645104n 0.287543p 0.001321p 0.000131p 9.51e-07p 1.34e-11p 0.0
sig0.569 cc 0.000487p 0.079264p 0.0 1.990596p 3.635536p 3.923042p 0.020936p 3.924483p 3.924495p 1.34e-11p 0.0
rc 0.000487p 0.079274p 0.001381o 1.991775m 3.636880l 3.924423l 0.020943l 3.925865l 3.925876l 1.34e-11p 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.393906i 0.0 0.0 4.108942n 0.0 0.0
zp 56.65 ri 0.000233p 0.069672p 0.0 1.268026n 1.849726n 0.225604p 0.001858p 0.000184p 8.85e-07p 1.86e-11p 0.0
sig0.565 cc 0.000233p 0.069978p 0.0 1.337810p 3.183740p 3.411251p 0.018740p 3.413092p 3.413102p 1.68e-11p 0.0
rc 0.000233p 0.069894p 0.001389o 1.337121m 3.186846l 3.412450i 0.018921k 3.414483i 3.414493i 1.86e-11p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.153119n 0.0 0.0
zp 56.49 ri 0.001783p 0.199454p 0.0 1.896374n 1.867001n 0.189604p 0.001486p 0.000147p 1.02e-06p 4.24e-11p 0.0

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sig0.598 cc 0.001783p 0.201082p      0.0  2.091793p 3.958304p 4.147840p 0.022225p 4.149461p 4.149473p 4.24e-11p      0.0
        rc 0.001783p 0.201155p 0.004210o 2.095442m 3.962443l 4.152047l 0.022246l 4.153669l 4.153681l 4.24e-11p      0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.137590n      0.0       0.0
zp 56.04 ri 0.007012p 0.629775p      0.0  2.730594n 0.766827p 0.010711p 4.78e-06p 4.72e-07p 7.72e-11p      0.0       0.0
sig0.524 cc 0.007004p 0.635775p      0.0  3.347850p 4.113996p 4.124696p 0.020628p 4.124690p 4.124701p      0.0       0.0
        rc 0.007012p 0.636464o 0.015860o 3.362997m 4.129823m 4.140534m 0.020707m 4.140529m 4.140539l      0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.949138n      0.0       0.0
zp 57.16 ri 2.73e-05p 0.012453p      0.0  0.563552p 2.179967n 1.139163n 0.049117p 0.004858p 0.000266p 8.79e-08p 2.52e-12p
sig0.611 cc 2.73e-05p 0.012478p      0.0  0.575678p 2.755624p 3.894770p 0.068591p 3.948710p 3.949011p 8.79e-08p 2.52e-12p
        rc 2.73e-05p 0.012479p 0.000136o 0.575776o 2.755743m 3.894905l 0.068592p 3.948846l 3.949147l 8.79e-08p 2.52e-12p

  xe, cs, ba, la, ce, pr, half lives from 89wal1.
1

    mass number    145            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide      54 xe g   55 cs g   56 ba d   56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g
half life      0.9 s    0.59 s    0.340s     4.0 s     24. s    3.00 m    5.98 h    stable    17.7 y    340. d
lambda      7.702e-01 1.175e+00 2.039e+00 1.733e-01 2.888e-02 3.851e-03 3.220e-05       0.0 1.242e-09 2.360e-08
 z - 1 g    100.0000  100.0000       0.0   86.4100  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0   13.3000  100.0000       0.0       0.0       0.0       0.0       0.0       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.989054n      0.0       0.0
zp 56.86 ri 5.03e-05p 0.024528p      0.0  1.228877n 2.139324n 0.594181p 0.005245p 4.49e-06p 8.37e-11p      0.0
sig0.554 cc 5.03e-05p 0.024578p      0.0  1.250158p 3.389451p 3.983621p 3.988865p 3.988870p 8.37e-11p      0.0
        rc 5.03e-05p 0.024578p 0.000203o 1.250317m 3.389642m 3.983823m 3.989068l 3.989072l 8.37e-11p      0.0
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.631117n      0.0       0.0
zp 56.21 ri 0.002993p 0.272018p      0.0  2.527828n 0.827898p 0.032295p 2.71e-05p 1.61e-09p      0.0       0.0
sig0.536 cc 0.002992p 0.274855p      0.0  2.765895p 3.593402p 3.625679p 3.625706p 3.625706p      0.0       0.0
        rc 0.002993p 0.275011p 0.006375o 2.771840m 3.599738m 3.632033m 3.632060m 3.632060l      0.0       0.0
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.709362k 2.457562n      0.0       0.0
zp 57.15 ri 5.10e-05p 0.013866p      0.0  0.407675p 1.485080n 0.734534p 0.047525p 0.000326p 2.38e-07p 1.66e-11p
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sig0.643 cc 5.09e-05p 0.013890p 0.0 0.418939p 1.901123p 2.639397p 2.686829p 2.687171p 2.49e-07p 1.74e-11p
rc 5.10e-05p 0.013917p 0.000183o 0.419884p 1.904964m 2.639498l 2.687024k 2.687350k 2.38e-07p 1.66e-11p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.340613n 0.0 0.0
zp 57.24 ri 1.71e-05p 0.006910p 0.0 0.276518p 1.262385n 0.741820p 0.053409p 0.000404p 2.87e-07p 1.81e-11p
sig0.632 cc 1.71e-05p 0.006927p 0.0 0.282531p 1.544902p 2.286709p 2.340118p 2.340522p 2.87e-07p 1.81e-11p
rc 1.71e-05p 0.006927p 9.58e-05o 0.282599p 1.544984m 2.286804m 2.340214m 2.340618m 2.87e-07p 1.81e-11p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.550998n 0.0 0.0
zp 56.80 ri 0.000265p 0.045477p 0.0 0.753088p 1.422920n 0.326694p 0.008010p 1.79e-05p 3.34e-09p 0.0
sig0.621 cc 0.000265p 0.045736p 0.0 0.792781p 2.215575p 2.542230p 2.550239p 2.550257p 3.34e-09p 0.0
rc 0.000265p 0.045742p 0.000806o 0.793420o 2.216340m 2.543035m 2.551045m 2.551063m 3.34e-09p 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.236458n 0.0 0.0
zp 57.03 ri 1.58e-05p 0.010149p 0.0 0.643817p 1.805864n 0.763339p 0.014540p 2.77e-05p 1.62e-09p 0.0
sig0.569 cc 1.58e-05p 0.010165p 0.0 0.652624p 2.458474p 3.221804p 3.236344p 3.236372p 1.62e-09p 0.0
rc 1.58e-05p 0.010165p 9.23e-05o 0.652693o 2.458557m 3.221896m 3.236436m 3.236464l 1.62e-09p 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.447816n 0.0 0.0
zp 57.05 ri 1.05e-05p 0.010209p 0.0 0.552651p 2.144578n 0.723579p 0.018047p 2.57e-05p 1.82e-09p 0.0
sig0.565 cc 1.05e-05p 0.010219p 0.0 0.561512p 2.706069p 3.429639p 3.447685p 3.447711p 1.82e-09p 0.0
rc 1.05e-05p 0.010219p 0.000112o 0.561593o 2.706171m 3.429750m 3.447797m 3.447823l 1.82e-09p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.414343n 0.0 0.0
zp 56.91 ri 9.30e-05p 0.030885p 0.0 0.806346p 2.023814n 0.543478p 0.013525p 2.57e-05p 3.36e-09p 0.0
sig0.598 cc 9.30e-05p 0.030976p 0.0 0.833213p 2.856956p 3.400407p 3.413931p 3.413956p 3.36e-09p 0.0
rc 9.30e-05p 0.030978p 0.000418o 0.833532o 2.857346m 3.400824m 3.414349m 3.414374l 3.36e-09p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.264970n 0.0 0.0
zp 56.45 ri 0.000335p 0.116370p 0.0 1.659329n 1.430906n 0.072060p 0.000143p 8.98e-09p 0.0 0.0
sig0.524 cc 0.000335p 0.116680p 0.0 1.760428p 3.191099p 3.263143p 3.263287p 3.263287p 0.0 0.0
rc 0.000335p 0.116705p 0.001942o 1.762115m 3.193021l 3.265081l 3.265225l 3.265225l 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.297530n 0.0 0.0
zp 57.59 ri 7.02e-07p 0.000997p 0.0 0.123309p 1.302912n 1.649505n 0.217947p 0.002985p 3.09e-06p 2.63e-10p
sig0.611 cc 7.02e-07p 0.000997p 0.0 0.124174p 1.427085p 3.076588p 3.294535p 3.297523p 3.09e-06p 2.63e-10p

rc 7.02e-07p 0.000997p 7.48e-06o 0.124179p 1.427091m 3.076595l 3.294542l 3.297530l 3.09e-06p 2.63e-10p

xe, cs, ba, la, ce, pr half lives from 89wal1; pm, sm half lives 90bur1.

1

mass number 146 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 54 xe g 55 cs g 56 ba g 57 la g 58 ce g 59 pr g 60 nd g 61 pm g 62 sm g
half life 0.563s 0.322s 2.20 s 6.3 s 13.5 m 24.2 m stable 5.53 y 1.0e8y
lambda 1.231e+00 2.153e+00 3.151e-01 1.100e-01 8.557e-04 4.774e-04 0.0 3.975e-09 2.198e-16
z - 1 g 100.0000 100.0000 86.7000 100.0000 100.0000 100.0000 100.0000 -65.0000 35.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.071571n 0.0 0.0
zp 57.28 ri 1.10e-06p 0.001522p 0.331626p 1.324493n 1.382584n 0.031423p 0.000126p 6.87e-09p 0.0
sig0.554 cc 1.10e-06p 0.001523p 0.332946p 1.657439p 3.040023p 3.071445p 3.071571p 6.87e-09p 2.41e-09p
rc 1.10e-06p 0.001523p 0.332946p 1.657439m 3.040023l 3.071445l 3.071571l 6.87e-09p 2.41e-09p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.123756n 0.0 0.0
zp 56.60 ri 0.000187p 0.047747p 1.665701n 1.230399n 0.185651p 0.000444p 1.21e-07p 0.0 0.0
sig0.536 cc 0.000187p 0.047934p 1.707260p 2.937660p 3.123311p 3.123755p 3.123755p 0.0 0.0
rc 0.000187p 0.047934p 1.707260m 2.937660l 3.123311l 3.123755l 3.123755l 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.130230n 0.0 0.0
zp 57.57 ri 1.93e-06p 0.001374p 0.101364p 0.871951p 0.998765p 0.154149p 0.002828p 5.45e-06p 1.02e-09p
sig0.643 cc 1.93e-06p 0.001375p 0.102557p 0.974509p 1.973275p 2.127422p 2.130254p 5.45e-06p 1.91e-06p
rc 1.93e-06p 0.001375p 0.102557p 0.974508o 1.973273n 2.127422n 2.130254m 5.45e-06p 1.91e-06p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.914146n 0.0 0.0
zp 57.63 ri 7.02e-07p 0.000720p 0.070059p 0.731454p 0.951154p 0.157921p 0.002928p 5.29e-06p 8.60e-10p
sig0.632 cc 7.02e-07p 0.000720p 0.070683p 0.802137p 1.753291p 1.911212p 1.914144p 5.29e-06p 1.85e-06p
rc 7.02e-07p 0.000720p 0.070683p 0.802137o 1.753291n 1.911212n 1.914144m 5.29e-06p 1.85e-06p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.995138n 0.0 0.0
zp 57.20 ri 1.33e-05p 0.006049p 0.250645p 1.107711n 0.594849p 0.036461p 0.000216p 1.09e-07p 4.48e-12p

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sig0.621 cc 1.33e-05p 0.006063p 0.255902p 1.363613p 1.958462p 1.994922p 1.995138p 1.09e-07p 3.83e-08p
         rc 1.33e-05p 0.006063p 0.255902p 1.363613m 1.958462m 1.994922m 1.995138m 1.09e-07p 3.83e-08p
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.766972n      0.0       0.0
zp 57.44 ri 3.81e-07p 0.000694p 0.162429p 1.082010n 1.451624n 0.069796p 0.000511p 8.62e-08p 1.70e-12p
sig0.569 cc 3.81e-07p 0.000694p 0.163031p 1.245041p 2.696665p 2.766461p 2.766972p 8.62e-08p 3.02e-08p
         rc 3.81e-07p 0.000694p 0.163031p 1.245041m 2.696665l 2.766461l 2.766972l 8.62e-08p 3.02e-08p
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.917383n      0.0       0.0
zp 57.44 ri 2.71e-07p 0.000841p 0.137082p 1.435419n 1.254282n 0.089472p 0.000398p 9.19e-08p 1.01e-12p
sig0.565 cc 2.71e-07p 0.000841p 0.137812p 1.573230p 2.827512p 2.916985p 2.917383p 9.19e-08p 3.22e-08p
         rc 2.71e-07p 0.000841p 0.137812p 1.573230m 2.827512l 2.916985l 2.917383l 9.19e-08p 3.22e-08p
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.895203n      0.0       0.0
zp 57.33 ri 3.12e-06p 0.003142p 0.233798p 1.529973n 1.055055n 0.073232p 0.000418p 1.69e-07p 4.56e-12p
sig0.598 cc 3.12e-06p 0.003145p 0.236524p 1.766498p 2.821553p 2.894785p 2.895203p 1.69e-07p 5.93e-08p
         rc 3.12e-06p 0.003145p 0.236524p 1.766498m 2.821553l 2.894785l 2.895203l 1.69e-07p 5.93e-08p
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.853172n      0.0       0.0
zp 56.85 ri 1.08e-05p 0.014588p 0.713350p 1.825611n 0.299296p 0.002257p 5.73e-07p 4.29e-12p       0.0
sig0.524 cc 1.08e-05p 0.014599p 0.726007p 2.551618p 2.850915p 2.853172p 2.853172p 4.29e-12p 1.50e-12p
         rc 1.08e-05p 0.014599p 0.726007o 2.551618m 2.850915m 2.853172m 2.853172l 4.29e-12p 1.50e-12p
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.794015n      0.0       0.0
zp 58.00 ri 1.43e-08p 5.62e-05p 0.020093p 0.529368p 1.691914n 0.532217p 0.020319p 5.72e-05p 1.47e-08p
sig0.611 cc 1.43e-08p 5.62e-05p 0.020141p 0.549509p 2.241423p 2.773640p 2.793996p 5.72e-05p 2.00e-05p
         rc 1.43e-08p 5.62e-05p 0.020141p 0.549509o 2.241423m 2.773640m 2.793996l 5.72e-05p 2.00e-05p

  xe half life from 80eng2; cs, ba, la, ce, pr half lives 89wal1.
1

    mass number    147            LA-UR-94-3106 (ENDF-349)                                percent yields
nuclide       56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g
half life     0.892s    4.02 s     56. s    13.4 m    10.98d    2.623y    11.03l    24.3 d    38.0 h
lambda       7.771e-01 1.724e-01 1.238e-02 8.621e-04 7.306e-07 8.380e-09 2.051e-19 3.301e-07 5.067e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
```

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.017734j 0.0 0.0
zp 57.69 ri 0.036607p 0.572697p 1.291677n 0.115524p 0.001230p 3.12e-07p 6.75e-12p 0.0 0.0
sig0.554 cc 0.036607p 0.609304p 1.900980p 2.016504p 2.017734p 2.017734p 2.017734p 0.0 0.0
rc 0.036607p 0.609304o 1.900980m 2.016504m 2.017734m 2.017734l 2.017734j 0.0 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.616394n 0.0 0.0
zp 57.00 ri 0.566042p 1.491453n 0.553160p 0.005732p 4.79e-06p 7.06e-11p 0.0 0.0 0.0
sig0.536 cc 0.566042p 2.057495p 2.610655p 2.616387p 2.616392p 2.616392p 2.616392p 0.0 0.0
rc 0.566042o 2.057495m 2.610655m 2.616387m 2.616392m 2.616392m 2.616392l 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.786406i 0.0 1.766334n 0.0 0.0
zp 57.99 ri 0.018280p 0.381032p 1.006066n 0.363843p 0.016632p 8.30e-05p 4.17e-08p 2.00e-12p 0.0
sig0.643 cc 0.018278p 0.399273p 1.405241p 1.769223p 1.785853p 1.785936p 1.785936p 2.01e-12p 0.0
rc 0.018280p 0.399312p 1.405378m 1.769221k 1.785853i 1.785936i 1.785936i 2.00e-12p 0.0
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.282319h 0.0 0.0 0.0 0.0
zp 58.02 ri 0.010351p 0.253382p 0.732322p 0.274083p 0.012181p 5.52e-05p 2.31e-08p 0.0 0.0
sig0.632 cc 0.010351p 0.263733p 0.996055p 1.270138p 1.282319p 1.282374p 1.282374p 0.0 0.0
rc 0.010351p 0.263733p 0.996055n 1.270138j 1.282319h 1.282374h 1.282374h 0.0 0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.732620h 0.0 0.0 0.0 0.0
zp 57.59 ri 0.067135p 0.695239p 0.845281o 0.123120p 0.001846p 2.46e-06p 2.71e-10p 0.0 0.0
sig0.621 cc 0.067135p 0.762373p 1.607655p 1.730774p 1.732620p 1.732623p 1.732623p 0.0 0.0
rc 0.067135p 0.762373o 1.607655m 1.730774j 1.732620h 1.732623h 1.732623h 0.0 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.236537n 0.0 0.0
zp 57.85 ri 0.021102p 0.487030p 1.484965n 0.238753p 0.004685p 3.13e-06p 1.80e-10p 0.0 0.0
sig0.569 cc 0.021102p 0.508132p 1.993097p 2.231849p 2.236534p 2.236537p 2.236537p 0.0 0.0
rc 0.021102p 0.508132p 1.993097m 2.231849m 2.236534m 2.236537m 2.236537m 0.0 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.145110i 0.0 2.296174n 0.0 0.0
zp 57.83 ri 0.019464p 0.575411p 1.297227n 0.253796p 0.003420p 2.63e-06p 9.54e-11p 0.0 0.0
sig0.565 cc 0.019476p 0.595264p 1.892954p 2.145895p 2.149318p 2.149320p 2.149320p 0.0 0.0

rc 0.019464p 0.594874o 1.892101m 2.145897k 2.149318i 2.149320i 2.149320i 0.0 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.336129n 0.0 0.0
zp 57.74 ri 0.043770p 0.755943p 1.296659n 0.235917p 0.003836p 4.65e-06p 3.83e-10p 0.0 0.0
sig0.598 cc 0.043770p 0.799713p 2.096372p 2.332289p 2.336125p 2.336129p 2.336129p 0.0 0.0
rc 0.043770p 0.799713o 2.096372m 2.332289m 2.336125m 2.336129m 2.336129l 0.0 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.392061n 0.0 0.0
zp 57.25 ri 0.184255p 1.458052n 0.729902p 0.019832p 2.00e-05p 6.19e-10p 0.0 0.0 0.0
sig0.524 cc 0.184255p 1.642307p 2.372209p 2.392041p 2.392061p 2.392061p 2.392061p 0.0 0.0
rc 0.184255p 1.642307m 2.372209m 2.392041m 2.392061m 2.392061m 2.392061m 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.180079n 0.0 0.0
zp 58.42 ri 0.001841p 0.138578p 1.078636n 0.875100p 0.085213p 0.000710p 5.16e-07p 2.60e-11p 0.0
sig0.611 cc 0.001841p 0.140419p 1.219054p 2.094155p 2.179368p 2.180078p 2.180079p 2.60e-11p 0.0
rc 0.001841p 0.140419p 1.219054m 2.094155n 2.179368n 2.180078n 2.180079m 2.60e-11p 0.0

cs, ba, la, ce, pr, nd, pm half lives from 89wal1.
1

mass number 148 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 54 xe g 55 cs g 56 ba g 57 la d 57 la g 58 ce d 58 ce g 59 pr g 60 nd g 61 pm m 61 pm g 62 sm g
half life 0.15 s 0.64 s 0.695s 1.1 s 2.41 s 56. s 2.27 m stable 41.3 d 5.37 d 8.e15y
lambda 0.0 4.621e+00 1.083e+00 9.973e-01 6.301e-01 2.876e-01 1.238e-02 5.089e-03 0.0 1.943e-07 1.494e-06 2.747e-24
z - 1 g 100.0000 100.0000 100.0000 0.0 100.0000 0.0 100.0000 100.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 95.4000
z - 0 m 0.0 0.0 0.0 0.5750 100.0000 1.0600 100.0000 0.0 0.0 0.0 4.6000 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.434427n 0.0 0.0 0.0
zp 58.09 ri 7.92e-11p 1.40e-06p 0.003544p 0.0 0.134143p 0.0 1.076412n 0.210775p 0.009251p 4.59e-06p 1.70e-06p 6.22e-10p
sig0.554 cc 7.92e-11p 1.40e-06p 0.003545p 0.0 0.137679p 0.0 1.214115p 1.424877p 1.434127p 4.59e-06p 1.91e-06p 6.29e-06p
rc 7.92e-11p 1.40e-06p 0.003546p 1.23e-06o 0.137690p 0.000352o 1.214454m 1.425229m 1.434481m 4.59e-06p 1.91e-06p 6.29e-06p

u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.856319n 0.0 0.0 0.0
zp 57.41 ri 7.07e-08p 0.000260p 0.109284p 0.0 0.727318p 0.0 0.987959p 0.028458p 0.000112p 3.90e-09p 1.44e-09p
0.0
sig0.536 cc 7.06e-08p 0.000260p 0.109512p 0.0 0.836633p 0.0 1.824830p 1.853279p 1.853391p 3.90e-09p 1.62e-09p
5.34e-09p
rc 7.07e-08p 0.000260p 0.109544p 6.90e-05o 0.836931o 0.003502o 1.828392n 1.856850n 1.856962m 3.90e-09p 1.62e-09p
5.34e-09p
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.511449n 0.0 0.0 0.0
zp 58.41 ri 9.07e-10p 4.57e-06p 0.002253p 0.0 0.116781p 0.0 0.721963p 0.602522p 0.066805p 0.000706p 0.000155p
1.15e-06p
sig0.643 cc 9.07e-10p 4.57e-06p 0.002257p 0.0 0.119031p 0.0 0.841026p 1.443528p 1.510329p 0.000706p 0.000187p
0.000862p
rc 9.07e-10p 4.57e-06p 0.002257p 1.10e-06o 0.119039p 0.000275o 0.841277o 1.443800n 1.510605m 0.000706p 0.000187p
0.000862p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.047686n 0.0 0.0 0.0
zp 58.41 ri 3.22e-10p 2.17e-06p 0.001316p 0.0 0.077371p 0.0 0.505032p 0.419718p 0.043630p 0.000401p 8.81e-05p
5.23e-07p
sig0.632 cc 3.22e-10p 2.17e-06p 0.001318p 0.0 0.078686p 0.0 0.583736p 1.003441p 1.047069p 0.000401p 0.000107p
0.000490p
rc 3.22e-10p 2.17e-06p 0.001318p 5.21e-07o 0.078690p 0.000136o 0.583858o 1.003576o 1.047206n 0.000401p 0.000107p
0.000490p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.270536n 0.0 0.0 0.0
zp 57.99 ri 1.16e-08p 3.75e-05p 0.010220p 0.0 0.260764p 0.0 0.735671p 0.253513p 0.009640p 2.81e-05p 6.17e-06p 1.03e-
08p
sig0.621 cc 1.16e-08p 3.76e-05p 0.010256p 0.0 0.270982p 0.0 1.006710p 1.260208p 1.269846p 2.81e-05p 7.47e-06p
3.43e-05p
rc 1.16e-08p 3.76e-05p 0.010258p 6.11e-06o 0.271028p 0.000723o 1.007422o 1.260936n 1.270575m 2.81e-05p 7.47e-06p
3.43e-05p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.757279n 0.0 0.0 0.0
zp 58.26 ri 3.72e-11p 7.84e-07p 0.001967p 0.0 0.118459p 0.0 1.171211n 0.434749p 0.030558p 4.16e-05p 1.54e-05p 1.32e-
08p

sig0.569 cc 3.72e-11p 7.84e-07p 0.001968p 0.0 0.120420p 0.0 1.291660p 1.726389p 1.756945p 4.16e-05p 1.73e-05p 5.69e-05p
rc 3.72e-11p 7.84e-07p 0.001968p 8.01e-07o 0.120428p 0.000317o 1.291956m 1.726705n 1.757263m 4.16e-05p 1.73e-05p 5.70e-05p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.902493n 0.0 0.0 0.0
zp 58.23 ri 3.62e-11p 1.23e-06p 0.002031p 0.0 0.182087p 0.0 1.111172n 0.583063p 0.023752p 4.19e-05p 1.55e-05p 7.03e-09p
sig0.565 cc 3.62e-11p 1.23e-06p 0.002032p 0.0 0.184107p 0.0 1.295320p 1.878355p 1.902105p 4.19e-05p 1.74e-05p 5.74e-05p
rc 3.62e-11p 1.23e-06p 0.002032p 7.64e-07o 0.184119p 0.000387o 1.295679m 1.878742m 1.902494m 4.19e-05p 1.74e-05p 5.74e-05p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.865625n 0.0 0.0 0.0
zp 58.14 ri 1.03e-09p 9.18e-06p 0.005586p 0.0 0.257726p 0.0 1.088754n 0.491367p 0.021547p 5.47e-05p 2.02e-05p 1.82e-08p
sig0.598 cc 1.03e-09p 9.18e-06p 0.005595p 0.0 0.263297p 0.0 1.352113p 1.843444p 1.864989p 5.47e-05p 2.28e-05p 7.50e-05p
rc 1.03e-09p 9.18e-06p 0.005596p 2.66e-06o 0.263324p 0.000646o 1.352724m 1.844091n 1.865637m 5.47e-05p 2.28e-05p 7.50e-05p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.769736n 0.0 0.0 0.0
zp 57.64 ri 1.91e-09p 4.04e-05p 0.026673p 0.0 0.677198p 0.0 0.976122p 0.086932p 0.000328p 2.91e-08p 1.08e-08p 0.0
sig0.524 cc 1.91e-09p 4.04e-05p 0.026706p 0.0 0.703717p 0.0 1.680059p 1.766967p 1.767294p 2.91e-08p 1.21e-08p 3.99e-08p
rc 1.91e-09p 4.04e-05p 0.026714p 1.81e-05o 0.703930o 0.002937o 1.682989n 1.769921n 1.770249m 2.91e-08p 1.21e-08p 3.99e-08p
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.806912n 0.0 0.0 0.0
zp 58.83 ri 1.26e-12p 4.31e-08p 0.000128p 0.0 0.025476p 0.0 0.528279p 0.994535p 0.252901p 0.004006p 0.001482p 1.18e-05p
sig0.611 cc 1.26e-12p 4.31e-08p 0.000128p 0.0 0.025602p 0.0 0.553864p 1.548430p 1.801319p 0.004006p 0.001666p 0.005499p
rc 1.26e-12p 4.31e-08p 0.000128p 2.93e-08o 0.025604p 3.22e-05o 0.553915o 1.548449n 1.801351m 0.004006p 0.001666p 0.005500p

cs, ba, la, ce, pr half lives 89wal1.
1

mass number 149 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	56 ba g	57 la d	57 la g	58 ce d	58 ce g	59 pr g	60 nd g	61 pm g	62 sm g	63 eu g	64 gd g
half life	0.36 s	0.962s	1.10 s	0.608s	5.2 s	2.3 m	1.72 h	2.212d	1.e16y	93. d	9.3 d
lambda	1.925e+00	7.205e-01	6.301e-01	1.140e+00	1.333e-01	5.023e-03	1.119e-04	3.627e-06	2.198e-24	8.626e-08	8.626e-07
z - 1 g	100.0000	0.0	99.4250	0.0	98.9400	100.0000	100.0000	100.0000	100.0000	-100.0000	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	10.9280	100.0000	0.3990	100.0000	0.0	0.0	0.0	0.0	0.0	0.0
u234f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.035806k	0.0	0.0
zp 58.48 ri	0.000214p	0.0	0.032999p	0.0	0.576415p	0.387273p	0.039134p	0.000112p	2.94e-08p	0.0	0.0
sig0.554 cc	0.000214p	0.0	0.033211p	0.0	0.609275p	0.996547p	1.035681p	1.035793p	1.035793p	0.0	0.0
rc	0.000214p	8.52e-07o	0.033212p	1.25e-05o	0.609287o	0.996560o	1.035694n	1.035806m	1.035806k	0.0	0.0
u237f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.442499n	0.0	0.0
zp 57.81 ri	0.011997p	0.0	0.318360p	0.0	1.002808n	0.111318p	0.001270p	2.84e-07p	4.38e-12p	0.0	0.0
sig0.536 cc	0.011997p	0.0	0.330297p	0.0	1.329602p	1.440914p	1.442183p	1.442184p	1.442184p	0.0	0.0
rc	0.011997p	9.87e-05o	0.330387p	0.000268o	1.329961m	1.441280m	1.442550m	1.442550m	1.442550l	0.0	0.0
pu240h xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	1.453690i	1.293283i	1.359007j	0.0	0.0
zp 58.84 ri	0.000191p	0.0	0.025739p	0.0	0.389907p	0.731834o	0.213938p	0.006333p	2.25e-05p	7.98e-09p	0.0
sig0.643 cc	0.000188p	0.0	0.025520p	0.0	0.409012p	1.160078p	1.361022p	1.367669p	1.367693p	8.40e-09p	0.0
rc	0.000191p	1.04e-06o	0.025930p	1.33e-05o	0.415575p	1.147409n	1.361347i	1.367680h	1.367703h	7.98e-09p	0.0
u234he xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.622681n	0.0	0.0
zp 58.79 ri	9.07e-05p	0.0	0.012781p	0.0	0.188711p	0.340108p	0.079010p	0.002103p	5.55e-06p	1.33e-09p	0.0
sig0.632 cc	9.07e-05p	0.0	0.012871p	0.0	0.201448p	0.541555p	0.620565p	0.622668p	0.622673p	1.33e-09p	0.0
rc	9.07e-05p	5.90e-07o	0.012872p	7.59e-06o	0.201455p	0.541563p	0.620573o	0.622676o	0.622681n	1.33e-09p	0.0
u236he xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.880694n	0.0	0.0
zp 58.38 ri	0.001063p	0.0	0.067139p	0.0	0.438135p	0.343259p	0.031480p	0.000287p	2.28e-07p	1.47e-11p	0.0
sig0.621 cc	0.001063p	0.0	0.068195p	0.0	0.505615p	0.848869p	0.880348p	0.880635p	0.880635p	1.47e-11p	0.0
rc	0.001063p	8.80e-06o	0.068205p	5.29e-05o	0.505670p	0.848930o	0.880410o	0.880696o	0.880697n	1.47e-11p	0.0
pu238f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.597527n      0.0       0.0
zp 58.65 ri 0.000139p      0.0  0.029800p      0.0  0.681690p 0.760561p 0.124812p 0.000832p 5.20e-07p 9.73e-12p      0.0
sig0.569 cc 0.000139p      0.0  0.029938p      0.0  0.711313p 1.471873p 1.596684p 1.597516p 1.597516p 9.73e-12p      0.0
        rc 0.000139p 4.86e-07o 0.029939p 1.03e-05o 0.711322o 1.471883n 1.596695n 1.597527n 1.597527m 9.74e-12p      0.0
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.571066i 1.550924n      0.0       0.0
zp 58.62 ri 0.000133p      0.0  0.036420p      0.0  0.612188p 0.827064o 0.094383p 0.000705p 2.77e-07p 5.30e-12p      0.0
sig0.565 cc 0.000133p      0.0  0.036545p      0.0  0.648245p 1.475433p 1.569800p 1.570504p 1.570505p 5.34e-12p      0.0
        rc 0.000133p 5.77e-07o 0.036552p 1.81e-05o 0.648371o 1.475435m 1.569818k 1.570523i 1.570523i 5.31e-12p      0.0
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.556351n      0.0       0.0
zp 58.55 ri 0.000463p      0.0  0.060460p      0.0  0.662868p 0.745153p 0.087142p 0.000875p 6.40e-07p 3.14e-11p      0.0
sig0.598 cc 0.000463p      0.0  0.060920p      0.0  0.723148p 1.468296p 1.555438p 1.556313p 1.556313p 3.14e-11p      0.0
        rc 0.000463p 2.75e-06o 0.060923p 3.71e-05o 0.723183o 1.468335n 1.555478n 1.556353n 1.556353m 3.14e-11p      0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.750289n      0.0       0.0
zp 58.03 ri 0.003150p      0.0  0.273893p      0.0  1.156418n 0.315381p 0.004265p 2.02e-06p 2.87e-11p      0.0       0.0
sig0.524 cc 0.003150p      0.0  0.277022p      0.0  1.430512p 1.745886p 1.750151p 1.750153p 1.750153p      0.0       0.0
        rc 0.003150p 1.26e-05o 0.277037p 0.000145o 1.430663m 1.746044n 1.750309m 1.750311m 1.750311m      0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.492667n      0.0       0.0
zp 59.25 ri 5.09e-06p      0.0  0.003035p      0.0  0.163842p 0.804978p 0.490819p 0.029842p 0.000177p 7.67e-08p 2.68e-12p
sig0.611 cc 5.09e-06p      0.0  0.003040p      0.0  0.166850p 0.971828p 1.462647p 1.492489p 1.492666p 7.67e-08p 2.68e-12p
        rc 5.09e-06p 1.60e-08o 0.003040p 9.54e-07o 0.166851p 0.971829o 1.462648o 1.492490n 1.492667m 7.67e-08p 2.68e-12p

  ba, la, ce, pr, nd, pm half lives from 89wal1.
1

    mass number    150            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       54 xe g   55 cs g   56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g
half life              0.124s    0.962s    0.608s     4.4 s     6.2 s    stable    2.68 h    stable
lambda            0.0 5.590e+00 7.205e-01 1.140e+00 1.575e-01 1.118e-01       0.0 7.184e-05       0.0
 z - 1 g    100.0000  100.0000  100.0000   89.0720   99.6010  100.0000  100.0000       0.0  100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.636497n      0.0       0.0
zp 58.88 ri       0.0  2.60e-10p 7.79e-06p 0.003134p 0.214233p 0.304368p 0.114768p 0.000833p 9.78e-07p
sig0.554 cc       0.0  2.60e-10p 7.79e-06p 0.003141p 0.217361p 0.521729p 0.636497p 0.000833p 0.000834p
        rc      0.0  2.60e-10p 7.79e-06p 0.003141p 0.217362p 0.521729p 0.636497n 0.000833p 0.000834p
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.042318n      0.0       0.0
zp 58.21 ri 2.88e-12p 1.58e-07p 0.000903p 0.066489p 0.763166p 0.202380p 0.009742p 6.61e-06p 4.86e-10p
sig0.536 cc 2.88e-12p 1.58e-07p 0.000903p 0.067293p 0.830189p 1.032571p 1.042313p 6.61e-06p 6.61e-06p
        rc 2.88e-12p 1.58e-07p 0.000903p 0.067294p 0.830191o 1.032571n 1.042313m 6.61e-06p 6.61e-06p
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.040765n      0.0       0.0
zp 59.26 ri       0.0  2.68e-09p 9.50e-06p 0.003319p 0.123909p 0.563963p 0.349579p 0.028327p 0.000261p
sig0.643 cc       0.0  2.68e-09p 9.50e-06p 0.003327p 0.127224p 0.691186p 1.040765p 0.028327p 0.028588p
        rc      0.0  2.68e-09p 9.50e-06p 0.003327p 0.127224p 0.691186o 1.040765n 0.028327p 0.028588p
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.474424n      0.0       0.0
zp 59.18 ri       0.0  1.40e-09p 5.40e-06p 0.001897p 0.066360p 0.267253p 0.138917p 0.008776p 5.78e-05p
sig0.632 cc       0.0  1.40e-09p 5.40e-06p 0.001902p 0.068254p 0.335507p 0.474424p 0.008776p 0.008833p
        rc      0.0  1.40e-09p 5.40e-06p 0.001902p 0.068254p 0.335507p 0.474424n 0.008776p 0.008833p
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.682785n      0.0       0.0
zp 58.78 ri 1.79e-12p 4.22e-08p 8.05e-05p 0.013176p 0.208640p 0.377854p 0.083096p 0.001945p 4.14e-06p
sig0.621 cc 1.79e-12p 4.22e-08p 8.05e-05p 0.013247p 0.221834p 0.599689p 0.682785p 0.001945p 0.001949p
        rc 1.79e-12p 4.22e-08p 8.05e-05p 0.013247p 0.221834p 0.599689o 0.682785n 0.001945p 0.001949p
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.977857n      0.0       0.0
zp 59.05 ri       0.0  1.69e-10p 4.45e-06p 0.002568p 0.202918p 0.507002p 0.265375p 0.004526p 1.08e-05p
sig0.569 cc       0.0  1.69e-10p 4.45e-06p 0.002572p 0.205480p 0.712482p 0.977857p 0.004526p 0.004537p
        rc      0.0  1.69e-10p 4.45e-06p 0.002572p 0.205480p 0.712482o 0.977857n 0.004526p 0.004537p
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.234050m      0.0       0.0
zp 59.01 ri       0.0  3.04e-10p 5.28e-06p 0.004543p 0.220101p 0.773136p 0.236284p 0.005278p 6.68e-06p
sig0.565 cc       0.0  3.04e-10p 5.28e-06p 0.004547p 0.224630p 0.997766p 1.234050p 0.005278p 0.005285p
        rc      0.0  3.04e-10p 5.28e-06p 0.004547p 0.224630p 0.997766o 1.234050m 0.005278p 0.005285p
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.227123n      0.0       0.0
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zp 58.95 ri       0.0  4.73e-09p 2.52e-05p 0.009285p 0.267464p 0.734415p 0.215973p 0.005936p 1.25e-05p
sig0.598 cc       0.0  4.73e-09p 2.52e-05p 0.009307p 0.276734p 1.011149p 1.227123p 0.005936p 0.005948p
         rc       0.0  4.73e-09p 2.52e-05p 0.009307p 0.276734p 1.011149n 1.227123m 0.005936p 0.005948p
 np238f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.903287n      0.0       0.0
zp 58.42 ri       0.0  1.18e-08p 0.000116p 0.036299p 0.473448p 0.376288p 0.017293p 3.11e-05p 1.75e-09p
sig0.524 cc       0.0  1.18e-08p 0.000116p 0.036402p 0.509705p 0.885993p 0.903287p 3.11e-05p 3.11e-05p
         rc       0.0  1.18e-08p 0.000116p 0.036402p 0.509705p 0.885993o 0.903287n 3.11e-05p 3.11e-05p
 cm242f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  1.140246n      0.0       0.0
zp 59.66 ri       0.0  5.69e-12p 1.46e-07p 0.000239p 0.036571p 0.435859p 0.667577p 0.099150p 0.001676p
sig0.611 cc       0.0  5.70e-12p 1.46e-07p 0.000239p 0.036809p 0.472668p 1.140246p 0.099150p 0.100826p
         rc       0.0  5.70e-12p 1.46e-07p 0.000239p 0.036809p 0.472668p 1.140246n 0.099150p 0.100826p

  cs, ba, la half lives from 80eng2; ce, pr half lives from 89wal1.
1

    mass number    151            LA-UR-94-3106 (ENDF-349)                                percent yields
nuclide       57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g
half life     0.719s     1.0 s    22.4 s    12.4 m    1.183d     90. y    stable    120. d    17.6 h
lambda      9.640e-01 6.931e-01 3.094e-02 9.316e-04 6.782e-06 2.442e-10       0.0 6.685e-08 1.094e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u234f   xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0       0.0  0.318111l      0.0       0.0
zp 59.28 ri 0.000180p 0.030455p 0.156776p 0.126969p 0.003719p 1.16e-05p 8.13e-10p      0.0       0.0
sig0.554 cc 0.000180p 0.030635p 0.187411p 0.314380p 0.318099p 0.318111p 0.318111p      0.0       0.0
         rc 0.000180p 0.030635p 0.187411p 0.314380o 0.318099o 0.318111n 0.318111l      0.0       0.0
 u237f   xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0       0.0  0.771930n      0.0       0.0
zp 58.61 ri 0.012699p 0.369645p 0.345935p 0.043516p 0.000133p 3.03e-08p      0.0       0.0       0.0
sig0.536 cc 0.012699p 0.382344p 0.728280p 0.771796p 0.771929p 0.771929p 0.771929p      0.0       0.0
         rc 0.012699p 0.382344p 0.728280p 0.771796o 0.771929o 0.771929o 0.771929n      0.0       0.0
 pu240h  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0  0.809097j      0.0  0.824173n      0.0       0.0
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zp 59.68 ri 0.000284p 0.026781p 0.289724p 0.413087p 0.079781p 0.001879p 4.66e-06p 1.13e-09p       0.0
sig0.643 cc 0.000284p 0.027080p 0.316964p 0.729847p 0.809671p 0.811536p 0.811540p 1.12e-09p       0.0
        rc 0.000284p 0.027065p 0.316789p 0.729876m 0.809657j 0.811536j 0.811540j 1.13e-09p       0.0
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.336050n      0.0       0.0
zp 59.56 ri 0.000188p 0.015558p 0.139770p 0.157612p 0.022565p 0.000357p 5.45e-07p 7.48e-11p       0.0
sig0.632 cc 0.000188p 0.015746p 0.155516p 0.313128p 0.335693p 0.336050p 0.336050p 7.48e-11p       0.0
        rc 0.000188p 0.015746p 0.155516p 0.313128p 0.335693o 0.336050o 0.336050n 7.48e-11p       0.0
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.484876n      0.0       0.0
zp 59.17 ri 0.001701p 0.065713p 0.272285p 0.137271p 0.007863p 4.33e-05p 2.04e-08p       0.0       0.0
sig0.621 cc 0.001701p 0.067414p 0.339699p 0.476970p 0.484833p 0.484876p 0.484876p       0.0       0.0
        rc 0.001701p 0.067414p 0.339699p 0.476970o 0.484833o 0.484876o 0.484876n       0.0       0.0
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.908011n      0.0       0.0
zp 59.44 ri 0.000250p 0.049599p 0.389614p 0.443260p 0.025132p 0.000156p 3.11e-08p       0.0       0.0
sig0.569 cc 0.000250p 0.049848p 0.439462p 0.882722p 0.907855p 0.908010p 0.908011p       0.0       0.0
        rc 0.000250p 0.049848p 0.439462p 0.882722p 0.907855o 0.908010o 0.908011n       0.0       0.0
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.945661i      0.0  0.966810n      0.0       0.0
zp 59.41 ri 0.000331p 0.049570p 0.480150p 0.390491p 0.025711p 0.000106p 2.24e-08p       0.0       0.0
sig0.565 cc 0.000332p 0.049920p 0.530245p 0.920534p 0.946254p 0.946359p 0.946359p       0.0       0.0
        rc 0.000331p 0.049902p 0.530051p 0.920542k 0.946253i 0.946359i 0.946359i       0.0       0.0
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.966791n      0.0       0.0
zp 59.36 ri 0.000886p 0.071141p 0.499177p 0.367976p 0.027442p 0.000169p 7.44e-08p 2.17e-12p       0.0
sig0.598 cc 0.000886p 0.072027p 0.571203p 0.939180p 0.966622p 0.966791p 0.966791p 2.17e-12p       0.0
        rc 0.000886p 0.072027p 0.571203p 0.939180o 0.966622o 0.966791o 0.966791n 2.18e-12p       0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.894592n      0.0       0.0
zp 58.81 ri 0.005682p 0.244877p 0.561434p 0.082057p 0.000543p 1.20e-07p       0.0       0.0       0.0
sig0.524 cc 0.005682p 0.250559p 0.811993p 0.894049p 0.894592p 0.894592p 0.894592p       0.0       0.0
        rc 0.005682p 0.250559p 0.811993o 0.894049n 0.894592n 0.894592n 0.894592m       0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.932917n      0.0       0.0
zp 60.07 ri 1.17e-05p 0.004776p 0.154631p 0.553344p 0.210994p 0.009129p 3.19e-05p 9.41e-09p       0.0
```

sig0.611 cc 1.17e-05p 0.004787p 0.159418p 0.712763p 0.923756p 0.932885p 0.932917p 9.41e-09p 0.0
rc 1.17e-05p 0.004787p 0.159418p 0.712763o 0.923756o 0.932885n 0.932917m 9.41e-09p 0.0

la half life from 80eng2; ce, pr, nd, pm, sm half lives 89wal1.
1

mass number 152 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 56 ba g 57 la g 58 ce g 59 pr g 60 nd g 61 pm m 61 pm g 62 sm g 63 eu m 63 eu g 64 gd g
half life 0.420s 0.285s 3.1 s 3.2 s 11.4 m 7.5 m 4.1 m stable 9.3 h 13. y 14.04l
lambda 1.650e+00 2.432e+00 2.236e-01 2.166e-01 1.013e-03 1.540e-03 2.818e-03 0.0 2.070e-05 1.691e-09 2.005e-22
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 0.0 100.0000 100.0000 -23.0000 -72.0000 28.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 77.0000
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.248632n 0.0 0.0 0.0
zp 59.68 ri 1.47e-09p 7.09e-06p 0.005119p 0.060434p 0.171340p 0.005789p 0.005789p 0.000154p 1.47e-08p 1.47e-08p 0.0
sig0.554 cc 1.47e-09p 7.10e-06p 0.005126p 0.065560p 0.236900p 0.005789p 0.242689p 0.248632p 1.47e-08p 1.47e-08p 1.55e-08p
rc 1.47e-09p 7.10e-06p 0.005126p 0.065560p 0.236900p 0.005789p 0.242689o 0.248632n 1.47e-08p 1.47e-08p 1.55e-08p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.524516n 0.0 0.0 0.0
zp 58.99 ri 1.27e-06p 0.001160p 0.130465p 0.271117p 0.120788p 0.000492p 0.000492p 9.81e-07p 5.66e-12p 5.66e-12p 0.0
sig0.536 cc 1.27e-06p 0.001161p 0.131625p 0.402743p 0.523531p 0.000492p 0.524023p 0.524515p 5.66e-12p 5.66e-12p 5.95e-12p
rc 1.27e-06p 0.001161p 0.131625p 0.402743p 0.523531o 0.000492p 0.524023o 0.524515n 5.66e-12p 5.66e-12p 5.95e-12p
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.653029n 0.0 0.0 0.0
zp 60.09 ri 7.74e-09p 1.85e-05p 0.004378p 0.113107p 0.365035p 0.080662p 0.080662p 0.009125p 2.87e-05p 2.87e-05p 3.64e-08p
sig0.643 cc 7.74e-09p 1.85e-05p 0.004397p 0.117503p 0.482539p 0.080662p 0.563201p 0.653029p 2.87e-05p 2.87e-05p 3.02e-05p
rc 7.74e-09p 1.85e-05p 0.004397p 0.117503p 0.482539p 0.080662p 0.563201o 0.653015n 2.87e-05p 2.87e-05p 3.02e-05p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.237212n 0.0 0.0 0.0
zp 59.95 ri 5.69e-09p 1.26e-05p 0.002576p 0.054019p 0.135153p 0.021889p 0.021889p 0.001666p 3.20e-06p 3.20e-06p 2.26e-09p
sig0.632 cc 5.69e-09p 1.26e-05p 0.002589p 0.056608p 0.191761p 0.021889p 0.213650p 0.237209p 3.20e-06p 3.20e-06p 3.37e-06p
rc 5.69e-09p 1.26e-05p 0.002589p 0.056608p 0.191761p 0.021889p 0.213650o 0.237208n 3.20e-06p 3.20e-06p 3.37e-06p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.356236n 0.0 0.0 0.0

zp 59.56 ri 1.43e-07p 0.000158p 0.015292p 0.148184p 0.169199p 0.011540p 0.011540p 0.000322p 2.00e-07p 2.00e-07p 4.07e-11p
sig0.621 cc 1.43e-07p 0.000158p 0.015451p 0.163634p 0.332833p 0.011540p 0.344373p 0.356235p 2.00e-07p 2.00e-07p 2.10e-07p
rc 1.43e-07p 0.000158p 0.015451p 0.163634p 0.332833p 0.011540p 0.344373o 0.356235n 2.00e-07p 2.00e-07p 2.10e-07p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.678513n 0.0 0.0 0.0
zp 59.82 ri 1.99e-09p 1.12e-05p 0.007778p 0.140451p 0.469590p 0.029709p 0.029709p 0.001265p 3.28e-07p 3.28e-07p 4.07e-11p
sig0.569 cc 1.99e-09p 1.12e-05p 0.007789p 0.148240p 0.617830p 0.029709p 0.647539p 0.678513p 3.28e-07p 3.28e-07p 3.44e-07p
rc 1.99e-09p 1.12e-05p 0.007789p 0.148240p 0.617830p 0.029709p 0.647539o 0.678513n 3.28e-07p 3.28e-07p 3.44e-07p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.811300n 0.0 0.0 0.0
zp 59.80 ri 1.99e-09p 1.83e-05p 0.008472p 0.230865p 0.483493p 0.043682p 0.043682p 0.001086p 3.69e-07p 3.69e-07p 2.44e-11p
sig0.565 cc 1.99e-09p 1.83e-05p 0.008490p 0.239355p 0.722848p 0.043682p 0.766530p 0.811299p 3.69e-07p 3.69e-07p 3.87e-07p
rc 1.99e-09p 1.83e-05p 0.008490p 0.239355p 0.722848p 0.043682p 0.766530o 0.811299n 3.69e-07p 3.69e-07p 3.87e-07p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.797353n 0.0 0.0 0.0
zp 59.76 ri 1.92e-08p 6.13e-05p 0.013762p 0.249444p 0.447388p 0.042619p 0.042619p 0.001457p 9.32e-07p 9.32e-07p 1.62e-10p
sig0.598 cc 1.92e-08p 6.13e-05p 0.013823p 0.263267p 0.710656p 0.042619p 0.753275p 0.797353p 9.32e-07p 9.32e-07p 9.79e-07p
rc 1.92e-08p 6.13e-05p 0.013823p 0.263267p 0.710656p 0.042619p 0.753275o 0.797352n 9.32e-07p 9.32e-07p 9.79e-07p
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.643832n 0.0 0.0 0.0
zp 59.19 ri 9.51e-08p 0.000417p 0.061023p 0.406049p 0.172459p 0.001941p 0.001941p 3.19e-06p 3.99e-11p 3.99e-11p 0.0
sig0.524 cc 9.51e-08p 0.000417p 0.061439p 0.467488p 0.639947p 0.001941p 0.641888p 0.643832p 3.99e-11p 3.99e-11p 4.19e-11p
rc 9.51e-08p 0.000417p 0.061439p 0.467488p 0.639947o 0.001941p 0.641888o 0.643832n 3.99e-11p 3.99e-11p 4.19e-11p
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.750418n 0.0 0.0 0.0
zp 60.47 ri 3.10e-11p 4.13e-07p 0.000487p 0.039800p 0.360959p 0.156619p 0.156619p 0.035577p 0.000161p 0.000161p 2.77e-07p
sig0.611 cc 3.10e-11p 4.14e-07p 0.000488p 0.040288p 0.401247p 0.156619p 0.557866p 0.750295p 0.000161p 0.000161p 0.000169p
rc 3.10e-11p 4.14e-07p 0.000488p 0.040288p 0.401247p 0.156619p 0.557866o 0.750216n 0.000161p 0.000161p 0.000169p

ba, la half lives from 80eng2; ce, pr, nd, pm half lives 89wal1.

mass number 153 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	57 la g	58 ce g	59 pr g	60 nd g	61 pm g	62 sm g	63 eu g	64 gd g	65 tb g
half life	0.326s	1.47 s	4.3 s	28.9 s	5.4 m	1.929d	stable	241.6d	2.34 d
lambda	2.126e+00	4.715e-01	1.612e-01	2.398e-02	2.139e-03	4.159e-06	0.0	3.321e-08	3.428e-06
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	-100.0000	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
u234f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.148761l	0.0	0.0

zp 60.06 ri 2.27e-07p 0.000407p 0.018199p 0.104868p 0.024520p 0.000766p 6.12e-07p 4.27e-11p 0.0
sig0.554 cc 2.27e-07p 0.000407p 0.018606p 0.123474p 0.147994p 0.148761p 0.148761p 4.27e-11p 0.0
rc 2.27e-07p 0.000407p 0.018606p 0.123474p 0.147994o 0.148761n 0.148761l 4.27e-11p 0.0

u237f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.346379n	0.0	0.0

zp 59.37 ri 7.31e-05p 0.021877p 0.160377p 0.159012p 0.005024p 1.41e-05p 7.24e-10p 0.0 0.0
sig0.536 cc 7.31e-05p 0.021950p 0.182327p 0.341340p 0.346364p 0.346378p 0.346378p 0.0 0.0
rc 7.31e-05p 0.021950p 0.182328p 0.341340o 0.346364o 0.346378o 0.346378n 0.0 0.0

pu240h xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.582087i	0.501799n	0.0	0.0

zp 60.50 ri 8.99e-07p 0.000545p 0.034452p 0.256374p 0.254385p 0.034158p 0.000500p 8.19e-07p 1.31e-10p
sig0.643 cc 8.97e-07p 0.000545p 0.034918p 0.290711p 0.545797p 0.579878p 0.580414p 8.78e-07p 1.40e-10p
rc 8.99e-07p 0.000546p 0.034997p 0.291371p 0.545756l 0.579914i 0.580414i 8.19e-07p 1.31e-10p

u234he xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.181883k	0.0	0.0	0.0

zp 60.35 ri 5.92e-07p 0.000311p 0.015974p 0.091864p 0.067560p 0.006172p 6.03e-05p 5.58e-08p 4.59e-12p
sig0.632 cc 5.92e-07p 0.000312p 0.016286p 0.108150p 0.175711p 0.181883p 0.181944p 5.58e-08p 4.59e-12p
rc 5.92e-07p 0.000312p 0.016286p 0.108150p 0.175711m 0.181883k 0.181944k 5.58e-08p 4.59e-12p

u236he xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.279666k	0.0	0.0	0.0

zp 59.95 ri 1.08e-05p 0.002678p 0.062365p 0.161674p 0.051163p 0.001775p 5.73e-06p 1.56e-09p 0.0
sig0.621 cc 1.08e-05p 0.002689p 0.065055p 0.226729p 0.277892p 0.279666p 0.279672p 1.56e-09p 0.0
rc 1.08e-05p 0.002689p 0.065055p 0.226729o 0.277892m 0.279666k 0.279672k 1.56e-09p 0.0

pu238f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.468972n	0.0	0.0

zp 60.20 ri 3.94e-07p 0.000703p 0.042248p 0.304739p 0.115407p 0.005863p 1.08e-05p 1.78e-09p 0.0
sig0.569 cc 3.94e-07p 0.000704p 0.042952p 0.347691p 0.463098p 0.468962p 0.468972p 1.78e-09p 0.0

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        rc 3.94e-07p 0.000704p 0.042952p 0.347691p 0.463098o 0.468962o 0.468972n 1.78e-09p       0.0
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.630441i 0.584114n      0.0       0.0
zp 60.19 ri 5.79e-07p 0.000850p 0.068102p 0.375343p 0.178360p 0.006533p 1.35e-05p 1.47e-09p       0.0
sig0.565 cc 5.79e-07p 0.000850p 0.068891p 0.444109p 0.622661p 0.629189p 0.629203p 1.52e-09p       0.0
        rc 5.79e-07p 0.000851p 0.068953p 0.444296p 0.622656k 0.629189i 0.629203i 1.47e-09p       0.0
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.588048n      0.0       0.0
zp 60.16 ri 2.48e-06p 0.001590p 0.077100p 0.340995p 0.160925p 0.007409p 2.72e-05p 6.98e-09p       0.0
sig0.598 cc 2.48e-06p 0.001592p 0.078692p 0.419687p 0.580612p 0.588021p 0.588048p 6.98e-09p       0.0
        rc 2.48e-06p 0.001592p 0.078692p 0.419687p 0.580612o 0.588021o 0.588048n 6.98e-09p       0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.432424n      0.0       0.0
zp 59.57 ri 1.74e-05p 0.009063p 0.185726p 0.221551p 0.016018p 4.78e-05p 4.56e-09p       0.0       0.0
sig0.524 cc 1.74e-05p 0.009081p 0.194807p 0.416358p 0.432377p 0.432424p 0.432424p       0.0       0.0
        rc 1.74e-05p 0.009081p 0.194807p 0.416358p 0.432377o 0.432424o 0.432424n       0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.545759n      0.0       0.0
zp 60.87 ri 9.15e-09p 2.89e-05p 0.006623p 0.144878p 0.309578p 0.082594p 0.002053p 4.69e-06p 7.62e-10p
sig0.611 cc 9.15e-09p 2.89e-05p 0.006652p 0.151529p 0.461107p 0.543701p 0.545759p 4.69e-06p 7.62e-10p
        rc 9.15e-09p 2.89e-05p 0.006652p 0.151529p 0.461107p 0.543701o 0.545759n 4.69e-06p 7.62e-10p

  la, ce half lives from 80eng2; pr, nd, pm, sm half lives 89wal1; gd half life 90bur1.

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    mass number    154            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm m   61 pm g   62 sm g   63 eu g   64 gd g
half life              0.149s    2.02 s     2.3 s    25.9 s     2.7 m     1.7 m    stable     8.8 y    stable
lambda            0.0 4.652e+00 3.431e-01 3.014e-01 2.676e-02 4.279e-03 6.796e-03       0.0 2.498e-09       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000       0.0  100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.080557n      0.0       0.0
zp 60.45 ri       0.0  2.87e-09p 2.23e-05p 0.002440p 0.050654p 0.012250p 0.012250p 0.002940p 5.97e-06p 1.83e-09p
```

sig0.554 cc 0.0 2.87e-09p 2.23e-05p 0.002462p 0.053116p 0.012250p 0.065366p 0.080557p 5.97e-06p 5.97e-06p
rc 0.0 2.87e-09p 2.23e-05p 0.002462p 0.053116p 0.012250p 0.065366p 0.080557n 5.97e-06p 5.97e-06p
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.188034n 0.0 0.0
zp 59.74 ri 1.75e-10p 1.96e-06p 0.002381p 0.041512p 0.134100p 0.004963p 0.004963p 0.000112p 1.61e-08p 0.0
sig0.536 cc 1.75e-10p 1.96e-06p 0.002383p 0.043894p 0.177995p 0.004963p 0.182958p 0.188033p 1.61e-08p 1.61e-08p
rc 1.75e-10p 1.96e-06p 0.002383p 0.043895p 0.177995p 0.004963p 0.182958o 0.188033n 1.61e-08p 1.61e-08p
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.397940n 0.0 0.0
zp 60.90 ri 1.56e-12p 2.49e-08p 3.81e-05p 0.005885p 0.101251p 0.111664p 0.111664p 0.067438p 0.002539p 1.04e-05p
sig0.643 cc 1.56e-12p 2.49e-08p 3.82e-05p 0.005923p 0.107174p 0.111664p 0.218838p 0.397940p 0.002539p 0.002550p
rc 1.56e-12p 2.49e-08p 3.82e-05p 0.005923p 0.107174p 0.111664p 0.218838p 0.397940n 0.002539p 0.002550p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.088954n 0.0 0.0
zp 60.74 ri 0.0 1.32e-08p 1.76e-05p 0.002207p 0.029224p 0.023778p 0.023778p 0.009951p 0.000237p 5.55e-07p
sig0.632 cc 0.0 1.32e-08p 1.76e-05p 0.002224p 0.031448p 0.023778p 0.055226p 0.088954p 0.000237p 0.000237p
rc 0.0 1.32e-08p 1.76e-05p 0.002224p 0.031448p 0.023778p 0.055226p 0.088954n 0.000237p 0.000237p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.141505n 0.0 0.0
zp 60.35 ri 3.83e-11p 3.05e-07p 0.000200p 0.011779p 0.072005p 0.026488p 0.026488p 0.004545p 3.85e-05p 2.84e-08p
sig0.621 cc 3.83e-11p 3.05e-07p 0.000200p 0.011979p 0.083984p 0.026488p 0.110472p 0.141505p 3.85e-05p 3.86e-05p
rc 3.83e-11p 3.05e-07p 0.000200p 0.011979p 0.083984p 0.026488p 0.110472p 0.141505n 3.85e-05p 3.86e-05p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.319300n 0.0 0.0
zp 60.58 ri 0.0 7.50e-09p 4.85e-05p 0.007203p 0.161740p 0.064683p 0.064683p 0.020942p 9.72e-05p 5.83e-08p
sig0.569 cc 0.0 7.50e-09p 4.85e-05p 0.007251p 0.168992p 0.064683p 0.233675p 0.319300p 9.72e-05p 9.72e-05p
rc 0.0 7.50e-09p 4.85e-05p 0.007251p 0.168992p 0.064683p 0.233675o 0.319300n 9.72e-05p 9.72e-05p
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.426452n 0.0 0.0
zp 60.58 ri 0.0 1.01e-08p 4.78e-05p 0.011660p 0.176285p 0.108109p 0.108109p 0.022241p 0.000148p 5.21e-08p
sig0.565 cc 0.0 1.01e-08p 4.78e-05p 0.011708p 0.187993p 0.108109p 0.296102p 0.426452p 0.000148p 0.000148p
rc 0.0 1.01e-08p 4.78e-05p 0.011708p 0.187993p 0.108109p 0.296102o 0.426452n 0.000148p 0.000148p
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.418611n 0.0 0.0
zp 60.54 ri 2.84e-12p 7.51e-08p 0.000133p 0.016858p 0.180501p 0.099225p 0.099225p 0.022669p 0.000222p 1.58e-07p
sig0.598 cc 2.84e-12p 7.51e-08p 0.000133p 0.016990p 0.197492p 0.099225p 0.296717p 0.418611p 0.000222p 0.000222p

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        rc 2.84e-12p 7.51e-08p 0.000133p 0.016990p 0.197492p 0.099225p 0.296717o 0.418611n 0.000222p 0.000222p
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.288283n      0.0       0.0
zp 59.96 ri 6.08e-12p 3.99e-07p 0.000788p 0.054688p 0.189815p 0.021266p 0.021266p 0.000459p 1.71e-07p 1.89e-12p
sig0.524 cc 6.08e-12p 3.99e-07p 0.000788p 0.055476p 0.245291p 0.021266p 0.266558p 0.288283p 1.71e-07p 1.71e-07p
        rc 6.08e-12p 3.99e-07p 0.000788p 0.055476p 0.245291p 0.021266p 0.266558o 0.288283n 1.71e-07p 1.71e-07p
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.399573n      0.0       0.0
zp 61.26 ri      0.0  1.45e-10p 1.32e-06p 0.000774p 0.044528p 0.107455p 0.107455p 0.139361p 0.008331p 5.27e-05p
sig0.611 cc      0.0  1.45e-10p 1.32e-06p 0.000775p 0.045303p 0.107455p 0.152758p 0.399573p 0.008331p 0.008384p
        rc      0.0  1.45e-10p 1.32e-06p 0.000775p 0.045303p 0.107455p 0.152758p 0.399573n 0.008331p 0.008384p

  la, ce half lives 80eng2; pr, nd, pm half lives 89wal1; eu half life 90bur1.

1

    mass number    155            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g
half life     0.528s    1.12 s     8.9 s     48. s    22.2 m    4.71 y    stable     5.3 d     9.6 h
lambda      1.313e+00 6.189e-01 7.788e-02 1.444e-02 5.204e-04 4.667e-09       0.0 1.514e-06 2.006e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.050721n      0.0       0.0
zp 60.83 ri 8.11e-07p 0.000361p 0.016612p 0.026806p 0.006886p 5.57e-05p 4.34e-08p       0.0       0.0
sig0.554 cc 8.11e-07p 0.000362p 0.016973p 0.043780p 0.050665p 0.050721p 0.050721p       0.0       0.0
        rc 8.11e-07p 0.000362p 0.016973p 0.043780p 0.050665o 0.050721o 0.050721n       0.0       0.0
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.118758n      0.0       0.0
zp 60.12 ri 0.000170p 0.011647p 0.084519p 0.021775p 0.000647p 4.04e-07p 1.78e-11p       0.0       0.0
sig0.536 cc 0.000170p 0.011817p 0.096336p 0.118111p 0.118758p 0.118758p 0.118758p       0.0       0.0
        rc 0.000170p 0.011817p 0.096336p 0.118111p 0.118758o 0.118758o 0.118758n       0.0       0.0
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.279000i 0.294054n      0.0       0.0
zp 61.30 ri 1.87e-06p 0.000717p 0.029204p 0.144192p 0.096762p 0.008527p 8.83e-05p 9.12e-08p 9.08e-12p
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sig0.643 cc 1.87e-06p 0.000719p 0.029923p 0.174117p 0.270879p 0.279407p 0.279493p 8.88e-08p 8.85e-12p
         rc 1.87e-06p 0.000719p 0.029923p 0.174115p 0.270877k 0.279405i 0.279493i 9.12e-08p 9.08e-12p
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.064245n      0.0       0.0
zp 61.14 ri 9.49e-07p 0.000304p 0.009712p 0.035989p 0.017236p 0.000998p 5.99e-06p 3.34e-09p       0.0
sig0.632 cc 9.49e-07p 0.000305p 0.010017p 0.046006p 0.063241p 0.064239p 0.064245p 3.34e-09p       0.0
         rc 9.49e-07p 0.000305p 0.010017p 0.046006p 0.063241o 0.064239o 0.064245n 3.34e-09p       0.0
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.092028n      0.0       0.0
zp 60.74 ri 1.39e-05p 0.002066p 0.029902p 0.049787p 0.010044p 0.000214p 4.13e-07p 6.63e-11p       0.0
sig0.621 cc 1.39e-05p 0.002080p 0.031981p 0.081769p 0.091813p 0.092027p 0.092028p 6.63e-11p       0.0
         rc 1.39e-05p 0.002080p 0.031981p 0.081769p 0.091813o 0.092027o 0.092028n 6.63e-11p       0.0
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.239475n      0.0       0.0
zp 60.97 ri 1.90e-06p 0.001025p 0.055215p 0.133669p 0.048774p 0.000789p 1.26e-06p 6.18e-11p       0.0
sig0.569 cc 1.90e-06p 0.001027p 0.056242p 0.189911p 0.238685p 0.239474p 0.239475p 6.18e-11p       0.0
         rc 1.90e-06p 0.001027p 0.056242p 0.189911p 0.238685o 0.239474o 0.239475n 6.18e-11p       0.0
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.400549i 0.312199n      0.0       0.0
zp 60.98 ri 2.18e-06p 0.001714p 0.076418p 0.248197p 0.070691p 0.001453p 1.50e-06p 8.58e-11p       0.0
sig0.565 cc 2.17e-06p 0.001712p 0.077942p 0.326508p 0.397025p 0.398475p 0.398477p 9.62e-11p       0.0
         rc 2.18e-06p 0.001716p 0.078134p 0.326331n 0.397022k 0.398475i 0.398477i 8.58e-11p       0.0
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.308974n      0.0       0.0
zp 60.93 ri 7.29e-06p 0.002550p 0.069928p 0.183554p 0.051584p 0.001349p 2.71e-06p 3.73e-10p       0.0
sig0.598 cc 7.29e-06p 0.002557p 0.072485p 0.256039p 0.307623p 0.308972p 0.308974p 3.73e-10p       0.0
         rc 7.29e-06p 0.002557p 0.072485p 0.256039p 0.307623o 0.308972o 0.308974n 3.73e-10p       0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.201798n      0.0       0.0
zp 60.34 ri 4.63e-05p 0.011137p 0.114638p 0.073336p 0.002636p 3.61e-06p 1.54e-10p       0.0       0.0
sig0.524 cc 4.63e-05p 0.011184p 0.125822p 0.199158p 0.201794p 0.201798p 0.201798p       0.0       0.0
         rc 4.63e-05p 0.011184p 0.125822p 0.199158o 0.201794o 0.201798o 0.201798n       0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.292371n      0.0       0.0
zp 61.64 ri 4.03e-08p 6.52e-05p 0.009119p 0.108038p 0.152289p 0.022512p 0.000348p 4.10e-07p 3.96e-11p
sig0.611 cc 4.03e-08p 6.52e-05p 0.009184p 0.117221p 0.269510p 0.292022p 0.292371p 4.10e-07p 3.96e-11p
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        rc 4.03e-08p 6.52e-05p 0.009184p 0.117221p 0.269510p 0.292022o 0.292371n 4.10e-07p 3.96e-11p

  ce, pr half lives from 80eng2; nd, pm, sm, eu half lives 89wal1.
1

    mass number    156            LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb m   65 tb g   66 dy g
half life     0.596s    0.379s     5.5 s    26.7 s     9.4 h    15.2 d    stable     5.0 h     5.1 d    2.e14y
lambda      1.163e+00 1.829e+00 1.260e-01 2.596e-02 2.048e-05 5.278e-07       0.0 3.851e-05 1.573e-06 1.099e-22
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  -50.0000 -100.0000       0.0
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   50.0000       0.0
 u234f   xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0       0.0  0.020885n      0.0       0.0       0.0
zp 61.21 ri 1.45e-08p 1.62e-05p 0.002865p 0.009516p 0.008332p 0.000156p 5.04e-07p 1.99e-12p 2.01e-11p       0.0
sig0.554 cc 1.45e-08p 1.62e-05p 0.002881p 0.012397p 0.020729p 0.020885p 0.020885p 1.99e-12p 2.11e-11p       0.0
         rc 1.45e-08p 1.62e-05p 0.002881p 0.012397p 0.020729p 0.020885o 0.020885n 1.99e-12p 2.11e-11p       0.0
 u237f   xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0       0.0  0.057400n      0.0       0.0       0.0
zp 60.49 ri 7.64e-06p 0.001369p 0.034695p 0.019212p 0.002113p 3.56e-06p 6.71e-10p       0.0       0.0       0.0
sig0.536 cc 7.64e-06p 0.001377p 0.036071p 0.055283p 0.057396p 0.057400p 0.057400p       0.0       0.0       0.0
         rc 7.64e-06p 0.001377p 0.036071p 0.055283p 0.057396o 0.057400o 0.057400n       0.0       0.0       0.0
 pu240h  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  0.225810i 0.217781n      0.0       0.0       0.0
zp 61.68 ri 8.63e-08p 7.92e-05p 0.007470p 0.080807p 0.114973p 0.022252p 0.000510p 7.58e-08p 1.19e-06p 3.08e-10p
sig0.643 cc 8.62e-08p 7.93e-05p 0.007544p 0.088305p 0.203333p 0.225571p 0.226092p 7.72e-08p 1.25e-06p 3.13e-10p
         rc 8.63e-08p 7.93e-05p 0.007549p 0.088356p 0.203329m 0.225581i 0.226092i 7.58e-08p 1.23e-06p 3.08e-10p
 u234he  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  0.047076j      0.0       0.0       0.0       0.0
zp 61.53 ri 3.85e-08p 3.11e-05p 0.002405p 0.020260p 0.021493p 0.002887p 4.26e-05p 3.64e-09p 5.70e-08p 7.73e-12p
sig0.632 cc 3.85e-08p 3.11e-05p 0.002436p 0.022695p 0.044188p 0.047076p 0.047118p 3.64e-09p 5.88e-08p 7.73e-12p
         rc 3.85e-08p 3.11e-05p 0.002436p 0.022695p 0.044188m 0.047076j 0.047118j 3.64e-09p 5.88e-08p 7.73e-12p
 u236he  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  0.070475j      0.0       0.0       0.0       0.0
zp 61.14 ri 7.27e-07p 0.000285p 0.010288p 0.039972p 0.018917p 0.001012p 5.18e-06p 1.36e-10p 2.13e-09p       0.0
sig0.621 cc 7.27e-07p 0.000286p 0.010574p 0.050546p 0.069463p 0.070475p 0.070480p 1.36e-10p 2.20e-09p       0.0
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        rc 7.27e-07p 0.000286p 0.010574p 0.050546p 0.069463l 0.070475j 0.070480j 1.36e-10p 2.20e-09p      0.0
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.159650n      0.0       0.0       0.0
zp 61.35 ri 5.15e-08p 7.18e-05p 0.013044p 0.069040p 0.074641p 0.002836p 1.61e-05p 1.87e-10p 1.89e-09p      0.0
sig0.569 cc 5.15e-08p 7.18e-05p 0.013116p 0.082156p 0.156798p 0.159634p 0.159650p 1.87e-10p 1.98e-09p      0.0
        rc 5.15e-08p 7.18e-05p 0.013116p 0.082156p 0.156798p 0.159634o 0.159650n 1.87e-10p 1.98e-09p      0.0
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.263859i 0.211490n      0.0       0.0       0.0
zp 61.37 ri 4.74e-08p 0.000119p 0.015890p 0.138781p 0.101589p 0.006066p 1.99e-05p 3.34e-10p 3.38e-09p      0.0
sig0.565 cc 4.73e-08p 0.000119p 0.015963p 0.154344p 0.256394p 0.262442p 0.262464p 3.70e-10p 3.92e-09p      0.0
        rc 4.74e-08p 0.000119p 0.016009p 0.154790p 0.256378k 0.262444i 0.262464i 3.34e-10p 3.54e-09p      0.0
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.219272n      0.0       0.0       0.0
zp 61.31 ri 2.78e-07p 0.000266p 0.018812p 0.117523p 0.077515p 0.005128p 2.78e-05p 9.61e-10p 9.72e-09p      0.0
sig0.598 cc 2.78e-07p 0.000266p 0.019078p 0.136601p 0.214116p 0.219244p 0.219272p 9.61e-10p 1.02e-08p      0.0
        rc 2.78e-07p 0.000266p 0.019078p 0.136601p 0.214116o 0.219244o 0.219272n 9.61e-10p 1.02e-08p      0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.124923n      0.0       0.0       0.0
zp 60.72 ri 1.47e-06p 0.001269p 0.041280p 0.073999p 0.008331p 4.09e-05p 6.60e-09p      0.0       0.0       0.0
sig0.524 cc 1.47e-06p 0.001271p 0.042551p 0.116550p 0.124882p 0.124923p 0.124923p      0.0       0.0       0.0
        rc 1.47e-06p 0.001271p 0.042551p 0.116550p 0.124882p 0.124923o 0.124923n      0.0       0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.204659n      0.0       0.0       0.0
zp 62.02 ri 8.64e-10p 3.57e-06p 0.001343p 0.037102p 0.123874p 0.040703p 0.001629p 4.34e-07p 4.39e-06p 1.30e-09p
sig0.611 cc 8.64e-10p 3.57e-06p 0.001347p 0.038449p 0.162323p 0.203026p 0.204660p 4.34e-07p 4.60e-06p 1.30e-09p
        rc 8.64e-10p 3.57e-06p 0.001347p 0.038449p 0.162323p 0.203026o 0.204660n 4.34e-07p 4.60e-06p 1.30e-09p

  ce, pr half lives from 80eng2; nd, pm, sm, eu half lives 89wal1.
1

    mass number    157            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g
half life     0.214s    0.380s    2.48 s    10.9 s    8.0 m     15.13h    stable    160. y    8.1 h
lambda       3.239e+00 1.824e+00 2.795e-01 6.359e-02 1.444e-03 1.273e-05       0.0 1.374e-10 2.377e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.010940n      0.0       0.0
zp 61.59 ri 1.55e-10p 7.30e-07p 0.000311p 0.003693p 0.006487p 0.000444p 3.51e-06p 6.54e-10p       0.0
sig0.554 cc 1.55e-10p 7.30e-07p 0.000312p 0.004005p 0.010492p 0.010936p 0.010940p 6.54e-10p       0.0
         rc 1.55e-10p 7.30e-07p 0.000312p 0.004005p 0.010492p 0.010936o 0.010940n 6.54e-10p       0.0
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.042555n      0.0       0.0
zp 60.87 ri 2.64e-07p 0.000200p 0.012657p 0.023531p 0.006124p 4.24e-05p 2.30e-08p       0.0       0.0
sig0.536 cc 2.64e-07p 0.000200p 0.012857p 0.036388p 0.042513p 0.042555p 0.042555p       0.0       0.0
         rc 2.64e-07p 0.000200p 0.012857p 0.036388p 0.042513o 0.042555o 0.042555n       0.0       0.0
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.158569i 0.156561n      0.0       0.0
zp 62.05 ri 2.72e-09p 5.89e-06p 0.001277p 0.030267p 0.090136p 0.036776p 0.001887p 1.09e-05p 6.27e-09p
sig0.643 cc 2.71e-09p 5.89e-06p 0.001283p 0.031546p 0.121668p 0.158438p 0.160359p 1.10e-05p 6.35e-09p
         rc 2.72e-09p 5.90e-06p 0.001283p 0.031550p 0.121686o 0.158462i 0.160359i 1.09e-05p 6.27e-09p
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.032617n      0.0       0.0
zp 61.93 ri 9.34e-10p 1.97e-06p 0.000385p 0.007720p 0.018538p 0.005761p 0.000210p 7.70e-07p 2.59e-10p
sig0.632 cc 9.34e-10p 1.97e-06p 0.000387p 0.008107p 0.026645p 0.032406p 0.032617p 7.70e-07p 2.59e-10p
         rc 9.34e-10p 1.97e-06p 0.000387p 0.008107p 0.026645p 0.032406o 0.032617n 7.70e-07p 2.59e-10p
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.049477n      0.0       0.0
zp 61.55 ri 2.16e-08p 2.33e-05p 0.002197p 0.020823p 0.023284p 0.003107p 4.24e-05p 5.13e-08p 5.09e-12p
sig0.621 cc 2.16e-08p 2.33e-05p 0.002220p 0.023044p 0.046327p 0.049435p 0.049477p 5.13e-08p 5.09e-12p
         rc 2.16e-08p 2.33e-05p 0.002220p 0.023044p 0.046327p 0.049435o 0.049477n 5.13e-08p 5.09e-12p
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.099781n      0.0       0.0
zp 61.73 ri 7.14e-10p 3.62e-06p 0.001647p 0.027588p 0.062942p 0.007496p 0.000105p 4.95e-08p 1.99e-12p
sig0.569 cc 7.14e-10p 3.63e-06p 0.001651p 0.029238p 0.092180p 0.099676p 0.099781p 4.95e-08p 1.99e-12p
         rc 7.14e-10p 3.63e-06p 0.001651p 0.029238p 0.092180p 0.099676o 0.099781n 4.95e-08p 1.99e-12p
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.145618n      0.0       0.0
zp 61.77 ri 4.91e-10p 4.12e-06p 0.001748p 0.043915p 0.085473p 0.014314p 0.000164p 1.02e-07p 3.07e-12p
sig0.565 cc 4.91e-10p 4.12e-06p 0.001752p 0.045667p 0.131140p 0.145454p 0.145618p 1.02e-07p 3.07e-12p
         rc 4.91e-10p 4.12e-06p 0.001752p 0.045667p 0.131140p 0.145454o 0.145618n 1.02e-07p 3.07e-12p
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 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.149504n      0.0       0.0
zp 61.68 ri 7.60e-09p 1.95e-05p 0.003560p 0.053224p 0.079873p 0.012650p 0.000177p 1.83e-07p 1.28e-11p
sig0.598 cc 7.60e-09p 1.95e-05p 0.003580p 0.056804p 0.136677p 0.149327p 0.149504p 1.83e-07p 1.28e-11p
         rc 7.60e-09p 1.95e-05p 0.003580p 0.056804p 0.136677p 0.149327o 0.149504n 1.83e-07p 1.28e-11p
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.077836n      0.0       0.0
zp 61.10 ri 2.82e-08p 9.04e-05p 0.009867p 0.050771p 0.016823p 0.000285p 1.72e-07p 3.12e-12p       0.0
sig0.524 cc 2.82e-08p 9.04e-05p 0.009958p 0.060728p 0.077552p 0.077836p 0.077836p 3.12e-12p       0.0
         rc 2.82e-08p 9.04e-05p 0.009958p 0.060728p 0.077552p 0.077836o 0.077836n 3.12e-12p       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.136440n      0.0       0.0
zp 62.41 ri 1.06e-11p 1.25e-07p 0.000122p 0.008949p 0.068104p 0.054079p 0.005147p 4.19e-05p 2.97e-08p
sig0.611 cc 1.06e-11p 1.25e-07p 0.000122p 0.009071p 0.077175p 0.131255p 0.136444p 4.19e-05p 2.97e-08p
         rc 1.06e-11p 1.25e-07p 0.000122p 0.009071p 0.077175p 0.131255o 0.136444n 4.19e-05p 2.97e-08p

  ce, pr, nd half lives from 80eng2; pm, sm, eu half lives 89wal1.
1

    mass number    158            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb m   65 tb g   66 dy g
half life              0.169s    2.69 s     4.8 s     5.5 m    45.9 m    stable    10.9 s    150. y    stable
lambda            0.0 4.101e+00 2.577e-01 1.444e-01 2.100e-03 2.517e-04       0.0 6.359e-02 1.465e-10       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  -84.0000   16.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.006365n      0.0       0.0       0.0
zp 61.97 ri 1.44e-12p 1.74e-08p 3.04e-05p 0.000815p 0.004805p 0.000692p 2.15e-05p 9.11e-10p 9.21e-09p       0.0
sig0.554 cc 1.44e-12p 1.74e-08p 3.05e-05p 0.000845p 0.005651p 0.006343p 0.006365p 9.11e-10p 1.01e-08p 1.62e-09p
         rc 1.44e-12p 1.74e-08p 3.05e-05p 0.000845p 0.005651p 0.006343o 0.006365n 9.11e-10p 1.01e-08p 1.62e-09p
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.014845n      0.0       0.0       0.0
zp 61.25 ri 2.99e-09p 6.46e-06p 0.001633p 0.006920p 0.006174p 0.000111p 2.59e-07p       0.0  6.56e-12p       0.0
sig0.536 cc 2.99e-09p 6.46e-06p 0.001639p 0.008559p 0.014734p 0.014844p 0.014845p       0.0  7.21e-12p 1.15e-12p
         rc 2.99e-09p 6.46e-06p 0.001639p 0.008559p 0.014734p 0.014844o 0.014845n       0.0  7.21e-12p 1.15e-12p
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 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.110199n      0.0       0.0       0.0
zp 62.43 ri 5.44e-11p 2.88e-07p 0.000148p 0.008040p 0.051796p 0.044970p 0.005197p 4.20e-06p 6.58e-05p 9.76e-08p
sig0.643 cc 5.44e-11p 2.88e-07p 0.000149p 0.008189p 0.059985p 0.104955p 0.110211p 4.20e-06p 7.00e-05p 1.13e-05p
         rc 5.44e-11p 2.88e-07p 0.000149p 0.008189p 0.059985p 0.104955o 0.110211n 4.20e-06p 7.00e-05p 1.13e-05p
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.019768n      0.0       0.0       0.0
zp 62.32 ri 1.48e-11p 8.04e-08p 3.94e-05p 0.001887p 0.010187p 0.007047p 0.000603p 3.30e-07p 5.17e-06p 4.74e-09p
sig0.632 cc 1.48e-11p 8.04e-08p 3.94e-05p 0.001926p 0.012113p 0.019160p 0.019768p 3.30e-07p 5.50e-06p 8.85e-07p
         rc 1.48e-11p 8.04e-08p 3.94e-05p 0.001926p 0.012113p 0.019160o 0.019768n 3.30e-07p 5.50e-06p 8.85e-07p
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.027707n      0.0       0.0       0.0
zp 61.95 ri 3.68e-10p 1.07e-06p 0.000265p 0.006179p 0.016017p 0.005069p 0.000176p 3.40e-08p 5.33e-07p 1.54e-10p
sig0.621 cc 3.68e-10p 1.07e-06p 0.000266p 0.006445p 0.022462p 0.027531p 0.027707p 3.40e-08p 5.67e-07p 9.09e-08p
         rc 3.68e-10p 1.07e-06p 0.000266p 0.006445p 0.022462p 0.027531o 0.027707n 3.40e-08p 5.67e-07p 9.09e-08p
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.079721p      0.0       0.0       0.0
zp 62.11 ri 9.58e-12p 1.29e-07p 0.000208p 0.008251p 0.056095p 0.014485p 0.000682p 7.41e-08p 7.49e-07p 1.22e-10p
sig0.569 cc 9.58e-12p 1.29e-07p 0.000208p 0.008459p 0.064554p 0.079039p 0.079721p 7.41e-08p 8.23e-07p 1.32e-07p
         rc 9.58e-12p 1.29e-07p 0.000208p 0.008459p 0.064554p 0.079039p 0.079721o 7.41e-08p 8.23e-07p 1.32e-07p
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.096732n      0.0       0.0       0.0
zp 62.17 ri 3.75e-12p 1.06e-07p 0.000147p 0.011100p 0.058198p 0.026372p 0.000913p 1.67e-07p 1.68e-06p 1.89e-10p
sig0.565 cc 3.75e-12p 1.06e-07p 0.000147p 0.011247p 0.069445p 0.095817p 0.096732p 1.67e-07p 1.85e-06p 2.96e-07p
         rc 3.75e-12p 1.06e-07p 0.000147p 0.011247p 0.069445p 0.095817o 0.096732n 1.67e-07p 1.85e-06p 2.96e-07p
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.095682n      0.0       0.0       0.0
zp 62.06 ri 1.21e-10p 8.67e-07p 0.000427p 0.016153p 0.056880p 0.021446p 0.000773p 1.96e-07p 1.99e-06p 4.28e-10p
sig0.598 cc 1.21e-10p 8.68e-07p 0.000428p 0.016581p 0.073461p 0.094908p 0.095683p 1.96e-07p 2.18e-06p 3.50e-07p
         rc 1.21e-10p 8.68e-07p 0.000428p 0.016581p 0.073461p 0.094908o 0.095683n 1.96e-07p 2.18e-06p 3.50e-07p
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.043242n      0.0       0.0       0.0
zp 61.48 ri 2.91e-10p 3.52e-06p 0.001351p 0.021085p 0.019714p 0.001087p 2.40e-06p 1.50e-11p 1.52e-10p       0.0
sig0.524 cc 2.91e-10p 3.52e-06p 0.001354p 0.022439p 0.042153p 0.043240p 0.043242p 1.50e-11p 1.67e-10p 2.67e-11p
         rc 2.91e-10p 3.52e-06p 0.001354p 0.022439p 0.042153p 0.043240o 0.043242n 1.50e-11p 1.67e-10p 2.67e-11p
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.088686n      0.0       0.0       0.0
zp 62.79 ri       0.0  3.05e-09p 8.18e-06p 0.001472p 0.027817p 0.048036p 0.011181p 1.98e-05p 0.000201p 4.28e-07p
sig0.611 cc       0.0  3.05e-09p 8.18e-06p 0.001481p 0.029298p 0.077333p 0.088698p 1.98e-05p 0.000220p 3.57e-05p
        rc       0.0  3.05e-09p 8.18e-06p 0.001481p 0.029298p 0.077333p 0.088699n 1.98e-05p 0.000220p 3.57e-05p

  pr, nd half lives from 80eng2; pm, sm, eu half lives from 89wal1.
1

    mass number    159            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g
half life     0.181s    0.642s     3.0 s    11.3 s    18.1 m    18.6 h    stable    144.4d     8.3 s     33. m
lambda      3.830e+00 1.080e+00 2.310e-01 6.134e-02 6.383e-04 1.035e-05       0.0 5.556e-08 8.351e-02 3.501e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000       0.0 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.002089n      0.0       0.0       0.0
zp 62.35 ri 2.29e-10p 1.01e-06p 0.000106p 0.001304p 0.000633p 4.48e-05p 8.66e-08p 1.51e-11p       0.0       0.0
sig0.554 cc 2.29e-10p 1.01e-06p 0.000107p 0.001411p 0.002044p 0.002088p 0.002089p 1.51e-11p       0.0       0.0
        rc 2.29e-10p 1.01e-06p 0.000107p 0.001411p 0.002044p 0.002088o 0.002089n 1.51e-11p       0.0       0.0
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.006829n      0.0       0.0       0.0
zp 61.62 ri 2.19e-07p 0.000146p 0.002202p 0.004204p 0.000274p 1.71e-06p 2.04e-10p       0.0       0.0       0.0
sig0.536 cc 2.19e-07p 0.000146p 0.002349p 0.006553p 0.006827p 0.006829p 0.006829p       0.0       0.0       0.0
        rc 2.19e-07p 0.000146p 0.002349p 0.006553p 0.006827p 0.006829o 0.006829n       0.0       0.0       0.0
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.068692l 0.075763n      0.0       0.0       0.0
zp 62.81 ri 9.31e-09p 1.16e-05p 0.001457p 0.020713p 0.038189p 0.009616p 0.000313p 1.04e-06p 2.41e-11p 3.20e-10p
sig0.643 cc 9.31e-09p 1.16e-05p 0.001469p 0.022186p 0.060383p 0.070001p 0.070300p 9.95e-07p 2.30e-11p 3.28e-10p
        rc 9.31e-09p 1.16e-05p 0.001468p 0.022181p 0.060370o 0.069986l 0.070300l 1.04e-06p 2.41e-11p 3.44e-10p
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.011610k      0.0       0.0       0.0       0.0
zp 62.72 ri 2.03e-09p 2.59e-06p 0.000310p 0.003929p 0.006137p 0.001231p 2.80e-05p 6.26e-08p       0.0  1.18e-11p
sig0.632 cc 2.03e-09p 2.59e-06p 0.000312p 0.004241p 0.010378p 0.011610p 0.011638p 6.26e-08p       0.0  1.27e-11p
        rc 2.03e-09p 2.59e-06p 0.000312p 0.004241p 0.010378n 0.011610k 0.011638k 6.26e-08p       0.0  1.27e-11p
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

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        xc      0.0       0.0       0.0       0.0       0.0  0.016298k      0.0       0.0       0.0       0.0
zp 62.36 ri 3.25e-08p 2.19e-05p 0.001318p 0.008232p 0.006184p 0.000542p 4.71e-06p 3.56e-09p      0.0       0.0
sig0.621 cc 3.25e-08p 2.19e-05p 0.001339p 0.009571p 0.015755p 0.016298p 0.016302p 3.56e-09p      0.0       0.0
        rc 3.25e-08p 2.19e-05p 0.001339p 0.009571p 0.015755m 0.016298k 0.016302k 3.56e-09p      0.0       0.0
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.035921n      0.0       0.0       0.0
zp 62.50 ri 1.99e-09p 8.62e-06p 0.001203p 0.018601p 0.014484p 0.001619p 7.06e-06p 2.83e-09p      0.0       0.0
sig0.569 cc 1.99e-09p 8.62e-06p 0.001211p 0.019812p 0.034296p 0.035914p 0.035921p 2.83e-09p      0.0       0.0
        rc 1.99e-09p 8.62e-06p 0.001211p 0.019812p 0.034296p 0.035914o 0.035921n 2.83e-09p      0.0       0.0
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.079963i 0.057404n      0.0       0.0       0.0
zp 62.56 ri 2.30e-09p 1.02e-05p 0.002352p 0.033730p 0.039413p 0.003849p 2.08e-05p 6.88e-09p      0.0       0.0
sig0.565 cc 2.30e-09p 1.02e-05p 0.002362p 0.036090p 0.075502p 0.079351p 0.079375p 8.01e-09p      0.0       0.0
        rc 2.30e-09p 1.02e-05p 0.002362p 0.036092p 0.075505l 0.079354i 0.079375i 6.88e-09p      0.0       0.0
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.057808n      0.0       0.0       0.0
zp 62.44 ri 2.47e-08p 3.34e-05p 0.003285p 0.027792p 0.024472p 0.002208p 1.67e-05p 9.11e-09p      0.0       0.0
sig0.598 cc 2.47e-08p 3.34e-05p 0.003319p 0.031111p 0.055584p 0.057791p 0.057808p 9.12e-09p      0.0       0.0
        rc 2.47e-08p 3.34e-05p 0.003319p 0.031111p 0.055584p 0.057791o 0.057808n 9.12e-09p      0.0       0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.025945n      0.0       0.0       0.0
zp 61.86 ri 8.97e-08p 0.000125p 0.006332p 0.016656p 0.002810p 2.19e-05p 5.75e-09p      0.0       0.0       0.0
sig0.524 cc 8.97e-08p 0.000126p 0.006457p 0.023114p 0.025924p 0.025945p 0.025945p      0.0       0.0       0.0
        rc 8.97e-08p 0.000126p 0.006457p 0.023114p 0.025924p 0.025945o 0.025945n      0.0       0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.053601n      0.0       0.0       0.0
zp 63.18 ri 4.41e-11p 3.12e-07p 0.000156p 0.007100p 0.029873p 0.015660p 0.000809p 4.03e-06p 1.75e-10p 1.28e-09p
sig0.611 cc 4.41e-11p 3.12e-07p 0.000156p 0.007256p 0.037128p 0.052788p 0.053602p 4.03e-06p 1.75e-10p 1.46e-09p
        rc 4.41e-11p 3.12e-07p 0.000156p 0.007256p 0.037128p 0.052788o 0.053602n 4.03e-06p 1.75e-10p 1.46e-09p

  pr, nd, pm half lives from 80eng2; sm, eu, gd half lives 89wal1; dy half life 90bur1.

1

    mass number    160            LA-UR-94-3106 (ENDF-349)                                percent yields
nuclide      58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g
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half life                    0.789s    0.729s     9.6 s     38. s    stable    72.3 d    stable
lambda          0.0       0.0 8.785e-01 9.508e-01 7.220e-02 1.824e-02       0.0 1.110e-07       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u234f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.001094n      0.0       0.0
zp 62.73 ri     0.0  2.29e-12p 4.28e-08p 1.09e-05p 0.000488p 0.000475p 0.000121p 5.65e-07p 4.17e-10p
sig0.554 cc     0.0  2.29e-12p 4.28e-08p 1.09e-05p 0.000498p 0.000973p 0.001094p 5.65e-07p 5.66e-07p
         rc     0.0  2.29e-12p 4.28e-08p 1.09e-05p 0.000498p 0.000973o 0.001094n 5.65e-07p 5.66e-07p
 u237f   xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.002730m      0.0       0.0
zp 62.00 ri     0.0  2.94e-09p 8.39e-06p 0.000322p 0.002078p 0.000314p 7.98e-06p 2.72e-09p       0.0
sig0.536 cc     0.0  2.94e-09p 8.39e-06p 0.000330p 0.002408p 0.002722p 0.002730p 2.72e-09p 2.72e-09p
         rc     0.0  2.94e-09p 8.39e-06p 0.000330p 0.002408p 0.002722o 0.002730m 2.72e-09p 2.72e-09p
 pu240h  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000153l      0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.052038n 0.000153l      0.0
zp 63.19 ri     0.0  2.55e-10p 7.66e-07p 0.000228p 0.007319p 0.028905p 0.015590p 0.000153l 4.90e-06p
sig0.643 cc     0.0  2.50e-10p 7.53e-07p 0.000225p 0.007415p 0.035808p 0.051122p 0.001071p 0.001079p
         rc     0.0  2.55e-10p 7.66e-07p 0.000229p 0.007548p 0.036453p 0.052044n 0.000153k 0.000158k
 u234he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.006919n      0.0       0.0
zp 63.12 ri     0.0  3.57e-11p 1.19e-07p 3.64e-05p 0.001112p 0.003953p 0.001817p 0.000101p 5.77e-07p
sig0.632 cc     0.0  3.57e-11p 1.19e-07p 3.65e-05p 0.001148p 0.005102p 0.006919p 0.000101p 0.000101p
         rc     0.0  3.57e-11p 1.19e-07p 3.65e-05p 0.001148p 0.005102p 0.006919n 0.000101p 0.000101p
 u236he  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.009895n      0.0       0.0
zp 62.76 ri     0.0  7.28e-10p 1.32e-06p 0.000206p 0.003123p 0.005423p 0.001142p 2.55e-05p 5.17e-08p
sig0.621 cc     0.0  7.28e-10p 1.32e-06p 0.000208p 0.003330p 0.008753p 0.009895p 2.55e-05p 2.56e-05p
         rc     0.0  7.28e-10p 1.32e-06p 0.000208p 0.003330p 0.008753p 0.009895n 2.55e-05p 2.56e-05p
 pu238f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.019956n      0.0       0.0
zp 62.88 ri     0.0  2.22e-11p 3.52e-07p 0.000124p 0.006166p 0.010164p 0.003502p 3.75e-05p 5.44e-08p
sig0.569 cc     0.0  2.22e-11p 3.52e-07p 0.000124p 0.006290p 0.016454p 0.019956p 3.75e-05p 3.76e-05p
         rc     0.0  2.22e-11p 3.52e-07p 0.000124p 0.006290p 0.016454p 0.019956n 3.75e-05p 3.76e-05p
 am241f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001061i      0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.062408n      0.0       0.0
zp 62.96 ri       0.0  2.67e-11p 3.99e-07p 0.000296p 0.012482p 0.038734p 0.010456p 0.001053p 2.22e-07p
sig0.565 cc       0.0  2.71e-11p 4.04e-07p 0.000300p 0.012953p 0.052217p 0.062815p 0.000206p 0.000206p
        rc      0.0  2.67e-11p 3.99e-07p 0.000296p 0.012778p 0.051512p 0.061968n 0.001053p 0.001054o
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.034884n      0.0       0.0
zp 62.82 ri       0.0  4.77e-10p 1.79e-06p 0.000469p 0.009834p 0.020169p 0.004410p 8.77e-05p 1.31e-07p
sig0.598 cc       0.0  4.77e-10p 1.79e-06p 0.000471p 0.010305p 0.030474p 0.034884p 8.77e-05p 8.78e-05p
        rc      0.0  4.77e-10p 1.79e-06p 0.000471p 0.010305p 0.030474p 0.034884n 8.77e-05p 8.78e-05p
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.013453n      0.0       0.0
zp 62.23 ri       0.0  1.32e-09p 6.65e-06p 0.001112p 0.008301p 0.003934p 0.000100p 9.46e-08p 2.72e-12p
sig0.524 cc       0.0  1.32e-09p 6.65e-06p 0.001118p 0.009419p 0.013353p 0.013453p 9.46e-08p 9.46e-08p
        rc      0.0  1.32e-09p 6.65e-06p 0.001118p 0.009419p 0.013353o 0.013453n 9.46e-08p 9.46e-08p
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.032161n      0.0       0.0
zp 63.56 ri       0.0       0.0  9.58e-09p 1.21e-05p 0.001449p 0.013733p 0.016967p 0.002013p 2.67e-05p
sig0.611 cc       0.0       0.0  9.59e-09p 1.21e-05p 0.001461p 0.015194p 0.032161p 0.002013p 0.002040p
        rc      0.0       0.0  9.59e-09p 1.21e-05p 0.001461p 0.015194p 0.032161n 0.002013p 0.002040p

  nd, pm half lives from 80eng2; sm, eu half lives from 89wal1.
1

    mass number    161            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g
half life     0.311s    0.790s    4.78 s     27. s    3.66 m    6.91 d    stable     6.8 s     2.5 h     3.1 h
lambda      2.229e+00 8.774e-01 1.450e-01 2.567e-02 3.156e-03 1.161e-06       0.0 1.019e-01 7.702e-05 6.211e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000  -73.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  -27.0000
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000438m      0.0       0.0       0.0
zp 63.11 ri 6.67e-10p 7.01e-07p 7.21e-05p 0.000238p 0.000125p 2.28e-06p 4.21e-09p       0.0       0.0       0.0
sig0.554 cc 6.67e-10p 7.02e-07p 7.28e-05p 0.000311p 0.000436p 0.000438p 0.000438p       0.0       0.0       0.0
        rc 6.67e-10p 7.02e-07p 7.28e-05p 0.000311p 0.000436o 0.000438n 0.000438m       0.0       0.0       0.0
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.001042m 0.0 0.0 0.0
zp 62.37 ri 2.97e-07p 4.47e-05p 0.000652p 0.000325p 2.04e-05p 2.88e-08p 2.94e-12p 0.0 0.0 0.0
sig0.536 cc 2.97e-07p 4.50e-05p 0.000697p 0.001022p 0.001042p 0.001042p 0.001042p 0.0 0.0 0.0
rc 2.97e-07p 4.50e-05p 0.000697p 0.001022p 0.001042o 0.001042n 0.001042m 0.0 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.034725i 0.035126n 0.0 0.0 0.0
zp 63.57 ri 3.15e-08p 2.24e-05p 0.001655p 0.014235p 0.016305p 0.002517p 4.64e-05p 6.25e-09p 8.31e-08p 1.68e-11p
sig0.643 cc 3.15e-08p 2.25e-05p 0.001677p 0.015912p 0.032218p 0.034734p 0.034781p 6.23e-09p 8.89e-08p 1.67e-11p
rc 3.15e-08p 2.25e-05p 0.001677p 0.015912p 0.032218m 0.034734i 0.034781i 6.26e-09p 8.94e-08p 1.68e-11p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.004547l 0.0 0.0 0.0 0.0
zp 63.53 ri 3.72e-09p 3.00e-06p 0.000232p 0.001957p 0.002076p 0.000279p 4.12e-06p 4.10e-10p 5.45e-09p 0.0
sig0.632 cc 3.72e-09p 3.01e-06p 0.000235p 0.002192p 0.004268p 0.004547p 0.004551p 4.10e-10p 5.86e-09p 0.0
rc 3.72e-09p 3.01e-06p 0.000235p 0.002192p 0.004268m 0.004547k 0.004551k 4.10e-10p 5.86e-09p 0.0
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.006468j 0.0 0.0 0.0 0.0
zp 63.16 ri 5.78e-08p 2.38e-05p 0.000899p 0.003645p 0.001799p 0.000101p 5.41e-07p 1.74e-11p 2.31e-10p 0.0
sig0.621 cc 5.78e-08p 2.39e-05p 0.000923p 0.004568p 0.006368p 0.006468p 0.006469p 1.74e-11p 2.48e-10p 0.0
rc 5.78e-08p 2.39e-05p 0.000923p 0.004568p 0.006368l 0.006468j 0.006469j 1.74e-11p 2.48e-10p 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.010234m 0.0 0.0 0.0
zp 63.26 ri 6.93e-09p 8.74e-06p 0.001047p 0.005202p 0.003841p 0.000136p 5.03e-07p 7.04e-12p 5.16e-11p 0.0
sig0.569 cc 6.93e-09p 8.74e-06p 0.001055p 0.006257p 0.010098p 0.010234p 0.010234p 7.04e-12p 5.86e-11p 0.0
rc 6.93e-09p 8.74e-06p 0.001055p 0.006257p 0.010098o 0.010234n 0.010234m 7.04e-12p 5.86e-11p 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.037665i 0.0 0.0 0.0 0.0
zp 63.34 ri 8.96e-09p 2.06e-05p 0.002521p 0.020383p 0.013976p 0.000765p 2.55e-06p 5.22e-11p 3.83e-10p 0.0
sig0.565 cc 8.96e-09p 2.06e-05p 0.002542p 0.022925p 0.036901p 0.037665p 0.037668p 5.22e-11p 4.35e-10p 0.0
rc 8.96e-09p 2.06e-05p 0.002542p 0.022925p 0.036901k 0.037665i 0.037668i 5.22e-11p 4.35e-10p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.019934n 0.0 0.0 0.0
zp 63.20 ri 6.14e-08p 4.38e-05p 0.002346p 0.011374p 0.005870p 0.000298p 1.21e-06p 4.16e-11p 3.05e-10p 0.0
sig0.598 cc 6.14e-08p 4.38e-05p 0.002390p 0.013765p 0.019635p 0.019933p 0.019934p 4.16e-11p 3.47e-10p 0.0
rc 6.14e-08p 4.38e-05p 0.002390p 0.013765p 0.019635p 0.019933o 0.019934n 4.16e-11p 3.47e-10p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.007001m 0.0 0.0 0.0

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zp 62.61 ri 2.05e-07p 0.000122p 0.002822p 0.003751p 0.000306p 1.04e-06p 1.14e-10p      0.0       0.0       0.0
sig0.524 cc 2.05e-07p 0.000122p 0.002944p 0.006695p 0.007000p 0.007001p 0.007001p      0.0       0.0       0.0
        rc 2.05e-07p 0.000122p 0.002944p 0.006695p 0.007000o 0.007001n 0.007001m      0.0       0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.018517n      0.0       0.0       0.0
zp 63.94 ri 1.66e-10p 5.81e-07p 0.000172p 0.004083p 0.011002p 0.003159p 0.000101p 3.04e-08p 2.23e-07p 5.34e-11p
sig0.611 cc 1.66e-10p 5.81e-07p 0.000172p 0.004255p 0.015257p 0.018416p 0.018517p 3.04e-08p 2.53e-07p 5.34e-11p
        rc 1.66e-10p 5.81e-07p 0.000172p 0.004255p 0.015257p 0.018416o 0.018517n 3.04e-08p 2.53e-07p 5.34e-11p

  nd, pm, sm half lives from 80eng2; eu, gd, tb half lives 89wal1.
1

    mass number    162            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb m   65 tb g   66 dy g   67 ho m   67 ho g   68 er g
half life              0.324s    5.26 s     11. s     8.4 m    2.23 h     7.6 m    stable     66. m     13. m    stable
lambda            0.0 2.139e+00 1.318e-01 6.301e-02 1.375e-03 8.634e-05 1.520e-03       0.0 1.750e-04 8.887e-04       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000    2.0000   98.0000  100.0000  -37.0000 -100.0000       0.0
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   63.0000       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000159n      0.0       0.0       0.0
zp 63.49 ri 7.03e-12p 1.87e-08p 7.62e-06p 5.34e-05p 9.42e-05p 1.91e-06p 1.91e-06p 2.89e-08p 2.22e-12p      0.0       0.0
sig0.554 cc 7.03e-12p 1.87e-08p 7.64e-06p 6.10e-05p 0.000155p 5.02e-06p 0.000154p 0.000159p 2.22e-12p 2.22e-12p      0.0
        rc 7.03e-12p 1.87e-08p 7.64e-06p 6.10e-05p 0.000155p 5.02e-06p 0.000154o 0.000159n 2.22e-12p 2.22e-12p      0.0
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000297n      0.0       0.0       0.0
zp 62.75 ri 5.55e-09p 2.31e-06p 0.000125p 0.000137p 3.17e-05p 6.10e-08p 6.10e-08p 5.49e-11p      0.0       0.0       0.0
sig0.536 cc 5.55e-09p 2.31e-06p 0.000128p 0.000265p 0.000297p 6.00e-06p 0.000291p 0.000297p      0.0       0.0       0.0
        rc 5.55e-09p 2.31e-06p 0.000128p 0.000265p 0.000297o 6.00e-06o 0.000291o 0.000297n      0.0       0.0       0.0
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.023468n      0.0       0.0       0.0
zp 63.95 ri 9.52e-10p 1.64e-06p 0.000283p 0.005410p 0.013186p 0.002202p 0.002202p 0.000185p 6.94e-07p 1.52e-07p 3.88e-10p
sig0.643 cc 9.52e-10p 1.64e-06p 0.000284p 0.005695p 0.018881p 0.002579p 0.020705p 0.023470p 6.94e-07p 5.90e-07p 3.88e-10p
        rc 9.52e-10p 1.64e-06p 0.000284p 0.005695p 0.018881p 0.002579p 0.020705o 0.023470n 6.94e-07p 5.90e-07p 3.88e-10p
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.002767n      0.0       0.0       0.0
```

zp 63.94 ri 7.25e-11p 1.57e-07p 3.13e-05p 0.000643p 0.001575p 0.000250p 0.000250p 1.86e-05p 5.73e-08p 1.26e-08p 2.41e-11p
sig0.632 cc 7.25e-11p 1.57e-07p 3.15e-05p 0.000674p 0.002249p 0.000295p 0.002454p 0.002767p 5.73e-08p 4.87e-08p 2.41e-11p
rc 7.25e-11p 1.57e-07p 3.15e-05p 0.000674p 0.002249p 0.000295p 0.002454o 0.002767n 5.73e-08p 4.87e-08p 2.41e-11p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.003859n 0.0 0.0 0.0
zp 63.55 ri 1.69e-09p 1.81e-06p 0.000171p 0.001624p 0.001816p 0.000121p 0.000121p 3.31e-06p 3.28e-09p 7.20e-10p 0.0
sig0.621 cc 1.69e-09p 1.82e-06p 0.000173p 0.001797p 0.003614p 0.000193p 0.003662p 0.003859p 3.28e-09p 2.79e-09p 0.0
rc 1.69e-09p 1.82e-06p 0.000173p 0.001797p 0.003614p 0.000193p 0.003662o 0.003859n 3.28e-09p 2.79e-09p 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.003744m 0.0 0.0 0.0
zp 63.64 ri 7.15e-11p 2.35e-07p 9.74e-05p 0.001091p 0.002363p 9.50e-05p 9.50e-05p 2.45e-06p 5.46e-10p 2.02e-10p 0.0
sig0.569 cc 7.15e-11p 2.35e-07p 9.76e-05p 0.001188p 0.003552p 0.000166p 0.003576p 0.003744p 5.46e-10p 5.46e-10p 0.0
rc 7.15e-11p 2.35e-07p 9.76e-05p 0.001188p 0.003552p 0.000166p 0.003576o 0.003744m 5.46e-10p 5.46e-10p 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.008741m 0.0 0.0 0.0
zp 63.73 ri 4.49e-11p 3.33e-07p 0.000126p 0.002838p 0.005011p 0.000379p 0.000379p 7.74e-06p 3.11e-09p 1.15e-09p 0.0
sig0.565 cc 4.49e-11p 3.33e-07p 0.000126p 0.002964p 0.007975p 0.000539p 0.008195p 0.008741p 3.11e-09p 3.11e-09p 0.0
rc 4.49e-11p 3.33e-07p 0.000126p 0.002964p 0.007975p 0.000539p 0.008195o 0.008741m 3.11e-09p 3.11e-09p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.008480m 0.0 0.0 0.0
zp 63.58 ri 1.07e-09p 2.10e-06p 0.000295p 0.003476p 0.004177p 0.000262p 0.000262p 5.68e-06p 3.29e-09p 1.22e-09p 0.0
sig0.598 cc 1.07e-09p 2.10e-06p 0.000297p 0.003774p 0.007950p 0.000421p 0.008053p 0.008480p 3.29e-09p 3.29e-09p 0.0
rc 1.07e-09p 2.10e-06p 0.000297p 0.003774p 0.007950p 0.000421p 0.008053o 0.008480m 3.29e-09p 3.29e-09p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.002917m 0.0 0.0 0.0
zp 62.99 ri 3.05e-09p 6.67e-06p 0.000510p 0.001925p 0.000469p 2.79e-06p 2.79e-06p 2.30e-09p 0.0 0.0 0.0
sig0.524 cc 3.05e-09p 6.68e-06p 0.000517p 0.002442p 0.002912p 6.10e-05p 0.002856p 0.002917p 0.0 0.0 0.0
rc 3.05e-09p 6.68e-06p 0.000517p 0.002442p 0.002912o 6.10e-05o 0.002856n 0.002917m 0.0 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.007365m 0.0 0.0 0.0
zp 64.33 ri 1.36e-12p 1.26e-08p 1.04e-05p 0.000602p 0.003983p 0.001279p 0.001279p 0.000211p 9.88e-07p 3.65e-07p 8.12e-10p
sig0.611 cc 1.36e-12p 1.26e-08p 1.04e-05p 0.000612p 0.004595p 0.001371p 0.005782p 0.007365p 9.88e-07p 9.87e-07p 8.12e-10p
rc 1.36e-12p 1.26e-08p 1.04e-05p 0.000612p 0.004595p 0.001371p 0.005782o 0.007365m 9.88e-07p 9.87e-07p 8.12e-10p

pm, sm half lives from 80eng2; eu, gd, tb half lives from 89wal1.

mass number 163 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	60 nd g	61 pm g	62 sm g	63 eu g	64 gd g	65 tb g	66 dy g	67 ho m	67 ho g	68 er g
half life		1.27 s	7.60 s	1.13 m	19.5 m	stable	1.07 s	33. y	75. m	
lambda	0.0	0.0	5.458e-01	9.120e-02	1.022e-02	5.924e-04	0.0	6.478e-01	6.660e-10	1.540e-04
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	0.0	-100.0000	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0
u234f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	4.97e-05n	0.0	0.0	0.0
zp 63.87 ri	0.0	3.76e-10p	3.76e-07p	9.74e-06p	3.46e-05p	4.96e-06p	8.95e-08p	4.78e-12p	3.50e-11p	0.0
sig0.554 cc	0.0	3.76e-10p	3.76e-07p	1.01e-05p	4.47e-05p	4.96e-05p	4.97e-05p	4.78e-12p	3.98e-11p	0.0
rc	0.0	3.76e-10p	3.76e-07p	1.01e-05p	4.47e-05p	4.96e-05o	4.97e-05n	4.78e-12p	3.98e-11p	0.0
u237f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	5.15e-05n	0.0	0.0	0.0
zp 63.12 ri	3.33e-11p	5.76e-08p	7.85e-06p	2.87e-05p	1.47e-05p	2.19e-07p	2.72e-10p	0.0	0.0	0.0
sig0.536 cc	3.33e-11p	5.76e-08p	7.91e-06p	3.66e-05p	5.12e-05p	5.15e-05p	5.15e-05p	0.0	0.0	0.0
rc	3.33e-11p	5.76e-08p	7.91e-06p	3.66e-05p	5.12e-05o	5.15e-05o	5.15e-05n	0.0	0.0	0.0
pu240h xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.016326n	0.0	0.0	0.0
zp 64.33 ri	2.11e-11p	8.83e-08p	3.62e-05p	0.001575p	0.008269p	0.005889p	0.000553p	4.17e-07p	5.54e-06p	6.60e-09p
sig0.643 cc	2.11e-11p	8.83e-08p	3.63e-05p	0.001612p	0.009880p	0.015769p	0.016327p	4.17e-07p	5.96e-06p	6.60e-09p
rc	2.11e-11p	8.83e-08p	3.63e-05p	0.001612p	0.009880p	0.015769o	0.016327n	4.17e-07p	5.96e-06p	6.60e-09p
u234he xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.001680n	0.0	0.0	0.0
zp 64.35 ri	0.0	5.47e-09p	2.87e-06p	0.000148p	0.000848p	0.000624p	5.70e-05p	3.90e-08p	5.18e-07p	5.15e-10p
sig0.632 cc	0.0	5.47e-09p	2.88e-06p	0.000150p	0.000999p	0.001623p	0.001680p	3.90e-08p	5.57e-07p	5.15e-10p
rc	0.0	5.47e-09p	2.88e-06p	0.000150p	0.000999p	0.001623o	0.001680n	3.90e-08p	5.57e-07p	5.15e-10p
u236he xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.002276n	0.0	0.0	0.0
zp 63.93 ri	3.64e-11p	1.01e-07p	2.37e-05p	0.000528p	0.001313p	0.000398p	1.32e-05p	2.84e-09p	3.77e-08p	1.05e-11p
sig0.621 cc	3.64e-11p	1.01e-07p	2.38e-05p	0.000552p	0.001865p	0.002263p	0.002276p	2.84e-09p	4.05e-08p	1.05e-11p
rc	3.64e-11p	1.01e-07p	2.38e-05p	0.000552p	0.001865p	0.002263o	0.002276n	2.84e-09p	4.05e-08p	1.05e-11p
pu238f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.001796n	0.0	0.0	0.0
zp 64.03 ri	0.0	6.31e-09p	6.84e-06p	0.000257p	0.001217p	0.000305p	9.80e-06p	1.33e-09p	9.74e-09p	1.09e-12p

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sig0.569 cc       0.0  6.31e-09p 6.85e-06p 0.000264p 0.001481p 0.001786p 0.001796p 1.33e-09p 1.11e-08p 1.09e-12p
         rc       0.0  6.31e-09p 6.85e-06p 0.000264p 0.001481p 0.001786o 0.001796n 1.33e-09p 1.11e-08p 1.09e-12p
 am241f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.002571m      0.0       0.0       0.0
zp 64.12 ri       0.0  4.34e-09p 5.18e-06p 0.000341p 0.001575p 0.000631p 1.91e-05p 4.01e-09p 2.94e-08p 2.93e-12p
sig0.565 cc       0.0  4.34e-09p 5.18e-06p 0.000346p 0.001921p 0.002552p 0.002571p 4.01e-09p 3.34e-08p 2.93e-12p
         rc       0.0  4.34e-09p 5.18e-06p 0.000346p 0.001921p 0.002552o 0.002571m 4.01e-09p 3.34e-08p 2.93e-12p
 am243f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.003242m      0.0       0.0       0.0
zp 63.95 ri 1.24e-11p 6.62e-08p 2.44e-05p 0.000703p 0.001931p 0.000568p 1.56e-05p 3.96e-09p 2.90e-08p 4.80e-12p
sig0.598 cc 1.24e-11p 6.62e-08p 2.45e-05p 0.000728p 0.002659p 0.003227p 0.003242p 3.96e-09p 3.30e-08p 4.80e-12p
         rc 1.24e-11p 6.62e-08p 2.45e-05p 0.000728p 0.002659p 0.003227n 0.003242m 3.96e-09p 3.30e-08p 4.80e-12p
 np238f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.000942n      0.0       0.0       0.0
zp 63.37 ri 2.12e-11p 1.74e-07p 4.63e-05p 0.000520p 0.000361p 1.42e-05p 2.16e-08p       0.0       0.0       0.0
sig0.524 cc 2.12e-11p 1.74e-07p 4.64e-05p 0.000567p 0.000927p 0.000942p 0.000942p       0.0  1.02e-12p       0.0
         rc 2.12e-11p 1.74e-07p 4.64e-05p 0.000567p 0.000927p 0.000942o 0.000942n       0.0  1.02e-12p       0.0
 cm242f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.002455m      0.0       0.0       0.0
zp 64.71 ri       0.0  1.76e-10p 3.70e-07p 5.68e-05p 0.000856p 0.001295p 0.000243p 4.92e-07p 3.61e-06p 6.25e-09p
sig0.611 cc       0.0  1.76e-10p 3.70e-07p 5.72e-05p 0.000913p 0.002209p 0.002455p 4.92e-07p 4.11e-06p 6.25e-09p
         rc       0.0  1.76e-10p 3.70e-07p 5.72e-05p 0.000913p 0.002209o 0.002455m 4.92e-07p 4.11e-06p 6.25e-09p

  sm, eu half lives from 80eng2; gd, tb half lives from 89wal1.
1

    mass number    164            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g
half life                     1.39 s    1.58 s     45. s     3.0 m    stable     37. m     24. m    stable
lambda            0.0       0.0 4.987e-01 4.387e-01 1.540e-02 3.851e-03       0.0 3.122e-04 4.814e-04       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  -47.0000   53.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 u234f   xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  2.88e-05n      0.0       0.0       0.0
zp 64.26 ri       0.0  6.15e-12p 2.64e-08p 1.64e-06p 2.06e-05p 6.18e-06p 4.39e-07p 3.66e-10p 1.35e-10p       0.0
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sig0.554 cc 0.0 6.15e-12p 2.64e-08p 1.67e-06p 2.22e-05p 2.84e-05p 2.88e-05p 3.66e-10p 5.01e-10p 2.66e-10p
rc 0.0 6.15e-12p 2.64e-08p 1.67e-06p 2.22e-05p 2.84e-05o 2.88e-05n 3.66e-10p 5.01e-10p 2.66e-10o
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.77e-05n 0.0 0.0 0.0
zp 63.50 ri 0.0 1.98e-09p 1.11e-06p 9.55e-06p 1.64e-05p 6.15e-07p 3.23e-09p 0.0 0.0 0.0
sig0.536 cc 0.0 1.98e-09p 1.11e-06p 1.07e-05p 2.71e-05p 2.77e-05p 2.77e-05p 0.0 0.0 0.0
rc 0.0 1.98e-09p 1.11e-06p 1.07e-05p 2.71e-05p 2.77e-05o 2.77e-05n 0.0 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.010204n 0.0 0.0 0.0
zp 64.71 ri 0.0 3.06e-09p 3.02e-06p 0.000304p 0.003503p 0.005295p 0.001088p 2.23e-05p 4.88e-06p 7.20e-08p
sig0.643 cc 0.0 3.06e-09p 3.02e-06p 0.000307p 0.003810p 0.009104p 0.010205p 2.23e-05p 2.71e-05p 1.45e-05p
rc 0.0 3.06e-09p 3.02e-06p 0.000307p 0.003810p 0.009104p 0.010205n 2.23e-05p 2.71e-05p 1.45e-05p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000988n 0.0 0.0 0.0
zp 64.76 ri 0.0 1.24e-10p 1.73e-07p 2.27e-05p 0.000315p 0.000533p 0.000116p 2.37e-06p 5.21e-07p 7.11e-09p
sig0.632 cc 0.0 1.24e-10p 1.73e-07p 2.29e-05p 0.000338p 0.000871p 0.000988p 2.37e-06p 2.89e-06p 1.54e-06p
rc 0.0 1.24e-10p 1.73e-07p 2.29e-05p 0.000338p 0.000871p 0.000988n 2.37e-06p 2.89e-06p 1.54e-06p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.001385n 0.0 0.0 0.0
zp 64.31 ri 0.0 4.05e-09p 2.41e-06p 0.000129p 0.000725p 0.000490p 3.85e-05p 2.43e-07p 5.34e-08p 1.98e-10p
sig0.621 cc 0.0 4.05e-09p 2.42e-06p 0.000132p 0.000856p 0.001347p 0.001385p 2.43e-07p 2.96e-07p 1.57e-07p
rc 0.0 4.05e-09p 2.42e-06p 0.000132p 0.000856p 0.001347o 0.001385n 2.43e-07p 2.96e-07p 1.57e-07p
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000698n 0.0 0.0 0.0
zp 64.41 ri 0.0 8.13e-11p 3.17e-07p 2.91e-05p 0.000421p 0.000224p 2.34e-05p 4.89e-08p 1.81e-08p 2.43e-11p
sig0.569 cc 0.0 8.13e-11p 3.18e-07p 2.94e-05p 0.000451p 0.000675p 0.000698p 4.89e-08p 6.70e-08p 3.55e-08p
rc 0.0 8.13e-11p 3.18e-07p 2.94e-05p 0.000451p 0.000675o 0.000698n 4.89e-08p 6.70e-08p 3.55e-08o
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.001040n 0.0 0.0 0.0
zp 64.50 ri 0.0 5.42e-11p 2.01e-07p 3.90e-05p 0.000478p 0.000483p 4.03e-05p 1.56e-07p 5.76e-08p 5.90e-11p
sig0.565 cc 0.0 5.42e-11p 2.01e-07p 3.92e-05p 0.000517p 0.001000p 0.001040p 1.56e-07p 2.13e-07p 1.13e-07p
rc 0.0 5.42e-11p 2.01e-07p 3.92e-05p 0.000517p 0.001000o 0.001040n 1.56e-07p 2.13e-07p 1.13e-07o
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.001395n 0.0 0.0 0.0
zp 64.33 ri 0.0 1.50e-09p 1.51e-06p 0.000113p 0.000737p 0.000508p 3.53e-05p 1.47e-07p 5.44e-08p 8.17e-11p
sig0.598 cc 0.0 1.50e-09p 1.52e-06p 0.000114p 0.000852p 0.001360p 0.001395p 1.47e-07p 2.01e-07p 1.07e-07p

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        rc      0.0  1.50e-09p 1.52e-06p 0.000114p 0.000852p 0.001360o 0.001395n 1.47e-07p 2.01e-07p 1.07e-07o
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000279n      0.0       0.0       0.0
zp 63.75 ri      0.0  2.53e-09p 2.43e-06p 8.67e-05p 0.000169p 2.07e-05p 1.12e-07p 1.47e-11p 5.44e-12p       0.0
sig0.524 cc      0.0  2.53e-09p 2.43e-06p 8.91e-05p 0.000258p 0.000279p 0.000279p 1.47e-11p 2.01e-11p 1.07e-11p
        rc      0.0  2.53e-09p 2.43e-06p 8.91e-05p 0.000258p 0.000279o 0.000279n 1.47e-11p 2.01e-11p 1.07e-11o
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001072n      0.0       0.0       0.0
zp 65.10 ri      0.0  1.95e-12p 1.16e-08p 4.56e-06p 0.000179p 0.000606p 0.000278p 8.35e-06p 3.09e-06p 4.86e-08p
sig0.611 cc      0.0  1.95e-12p 1.16e-08p 4.57e-06p 0.000183p 0.000789p 0.001072p 8.35e-06p 1.14e-05p 6.11e-06p
        rc      0.0  1.95e-12p 1.16e-08p 4.57e-06p 0.000183p 0.000789p 0.001072n 8.35e-06p 1.14e-05p 6.11e-06o

  sm, eu half lives from 80eng2; gd, tb half lives from 89wal1.
1

    mass number    165            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy m   66 dy g   67 ho g   68 er g   69 tm g
half life              0.454s    1.35 s    0.705m     2.1 m    1.26 m    2.33 h    stable    10.36h    30.06h
lambda           0.0 1.527e+00 5.134e-01 1.639e-02 5.501e-03 9.169e-03 8.264e-05       0.0 1.859e-05 6.405e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000   50.0000   50.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0    2.5000       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0   97.5000       0.0       0.0       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.46e-06n      0.0       0.0
zp 64.63 ri      0.0  6.86e-10p 1.66e-07p 4.37e-06p 4.27e-06p 7.77e-08p 5.70e-07p 2.90e-09p 1.22e-12p       0.0
sig0.554 cc      0.0  6.86e-10p 1.67e-07p 4.54e-06p 8.81e-06p 4.48e-06p 9.35e-06p 9.46e-06p 1.22e-12p       0.0
        rc      0.0  6.86e-10p 1.67e-07p 4.54e-06p 8.81e-06p 4.48e-06o 9.35e-06n 9.46e-06m 1.22e-12p       0.0
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.93e-06n      0.0       0.0
zp 63.87 ri 3.97e-11p 5.98e-08p 1.90e-06p 7.03e-06p 9.21e-07p 1.52e-09p 1.12e-08p 3.46e-12p       0.0       0.0
sig0.536 cc 3.97e-11p 5.99e-08p 1.96e-06p 8.99e-06p 9.91e-06p 4.96e-06p 9.80e-06p 9.93e-06p       0.0       0.0
        rc 3.97e-11p 5.99e-08p 1.96e-06p 8.99e-06p 9.91e-06p 4.96e-06o 9.80e-06n 9.93e-06m       0.0       0.0
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.006938n      0.0       0.0
zp 65.09 ri 8.23e-11p 1.96e-07p 4.65e-05p 0.001202p 0.003879p 0.000120p 0.001594p 9.70e-05p 6.10e-07p 3.87e-10p
sig0.643 cc 8.23e-11p 1.96e-07p 4.67e-05p 0.001248p 0.005127p 0.002683p 0.006774p 0.006939p 6.11e-07p 3.87e-10p
```

rc 8.23e-11p 1.96e-07p 4.67e-05p 0.001248p 0.005127p 0.002683p 0.006774o 0.006939n 6.11e-07p 3.87e-10p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000583n 0.0 0.0
zp 65.17 ri 1.85e-12p 6.99e-09p 2.40e-06p 8.20e-05p 0.000324p 1.15e-05p 0.000153p 1.02e-05p 6.56e-08p 3.94e-11p
sig0.632 cc 1.85e-12p 6.99e-09p 2.41e-06p 8.45e-05p 0.000408p 0.000216p 0.000568p 0.000583p 6.56e-08p 3.94e-11p
rc 1.85e-12p 6.99e-09p 2.41e-06p 8.45e-05p 0.000408p 0.000216p 0.000568o 0.000583n 6.56e-08p 3.94e-11p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000754n 0.0 0.0
zp 64.69 ri 1.02e-10p 1.55e-07p 2.04e-05p 0.000264p 0.000396p 5.02e-06p 6.67e-05p 1.36e-06p 2.32e-09p 0.0
sig0.621 cc 1.02e-10p 1.55e-07p 2.06e-05p 0.000285p 0.000681p 0.000346p 0.000744p 0.000754p 2.32e-09p 0.0
rc 1.02e-10p 1.55e-07p 2.06e-05p 0.000285p 0.000681p 0.000346p 0.000744n 0.000754m 2.32e-09p 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000300n 0.0 0.0
zp 64.79 ri 0.0 9.53e-09p 3.05e-06p 0.000101p 0.000158p 4.43e-06p 3.25e-05p 3.64e-07p 3.43e-10p 0.0
sig0.569 cc 0.0 9.53e-09p 3.06e-06p 0.000104p 0.000262p 0.000136p 0.000296p 0.000300p 3.43e-10p 0.0
rc 0.0 9.53e-09p 3.06e-06p 0.000104p 0.000262p 0.000136p 0.000296n 0.000300m 3.43e-10p 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000617n 0.0 0.0
zp 64.88 ri 0.0 7.49e-09p 4.39e-06p 0.000149p 0.000379p 1.00e-05p 7.37e-05p 1.30e-06p 1.12e-09p 0.0
sig0.565 cc 0.0 7.49e-09p 4.40e-06p 0.000153p 0.000532p 0.000276p 0.000609p 0.000617p 1.12e-09p 0.0
rc 0.0 7.49e-09p 4.40e-06p 0.000153p 0.000532p 0.000276p 0.000609n 0.000617m 1.12e-09p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000599n 0.0 0.0
zp 64.71 ri 2.31e-11p 6.42e-08p 1.27e-05p 0.000203p 0.000326p 6.65e-06p 4.87e-05p 8.35e-07p 9.35e-10p 0.0
sig0.598 cc 2.31e-11p 6.42e-08p 1.27e-05p 0.000216p 0.000542p 0.000278p 0.000591p 0.000599p 9.35e-10p 0.0
rc 2.31e-11p 6.42e-08p 1.27e-05p 0.000216p 0.000542p 0.000278p 0.000591n 0.000599m 9.35e-10p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 8.17e-05n 0.0 0.0
zp 64.12 ri 2.43e-11p 8.35e-08p 9.73e-06p 5.30e-05p 1.86e-05p 4.01e-08p 2.94e-07p 2.16e-10p 0.0 0.0
sig0.524 cc 2.43e-11p 8.35e-08p 9.81e-06p 6.28e-05p 8.13e-05p 4.07e-05p 8.07e-05p 8.17e-05p 0.0 0.0
rc 2.43e-11p 8.35e-08p 9.81e-06p 6.28e-05p 8.13e-05p 4.07e-05o 8.07e-05n 8.17e-05m 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000526n 0.0 0.0
zp 65.48 ri 0.0 2.84e-10p 3.04e-07p 2.87e-05p 0.000236p 2.84e-05p 0.000208p 2.43e-05p 2.55e-07p 1.99e-10p
sig0.611 cc 0.0 2.84e-10p 3.05e-07p 2.90e-05p 0.000265p 0.000161p 0.000498p 0.000526p 2.55e-07p 1.99e-10p
rc 0.0 2.84e-10p 3.05e-07p 2.90e-05p 0.000265p 0.000161p 0.000498o 0.000526n 2.55e-07p 1.99e-10p

sm, eu, gd half lives from 80eng2; tb, dy half lives from 89wal1.
1

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    mass number    166            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g   69 tm g   70 yb g
half life                                   3.400d    1.2e3y    1.117d    stable    7.70 h    56.7 h
lambda            0.0       0.0       0.0       0.0 2.360e-06 1.832e-11 7.182e-06       0.0 2.501e-05 3.396e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.49e-06n      0.0       0.0
zp 65.02 ri 9.50e-12p 5.87e-09p 5.99e-07p 1.22e-06p 6.58e-07p 5.23e-09p 1.93e-09p 1.29e-11p       0.0       0.0
sig0.554 cc 9.50e-12p 5.88e-09p 6.05e-07p 1.82e-06p 2.48e-06p 5.23e-09p 2.48e-06p 2.49e-06p       0.0       0.0
         rc 9.50e-12p 5.88e-09p 6.05e-07p 1.82e-06p 2.48e-06o 5.23e-09p 2.48e-06o 2.49e-06n       0.0       0.0
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.94e-06n      0.0       0.0
zp 64.25 ri 3.99e-09p 3.33e-07p 4.27e-06p 1.26e-06p 6.84e-08p 3.86e-11p 1.43e-11p       0.0       0.0       0.0
sig0.536 cc 3.99e-09p 3.37e-07p 4.61e-06p 5.87e-06p 5.94e-06p 3.86e-11p 5.94e-06p 5.94e-06p       0.0       0.0
         rc 3.99e-09p 3.37e-07p 4.61e-06p 5.87e-06p 5.94e-06o 3.86e-11p 5.94e-06o 5.94e-06n       0.0       0.0
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.004490n      0.0       0.0
zp 65.47 ri 8.70e-09p 4.92e-06p 0.000291p 0.002036p 0.001914p 0.000197p 4.33e-05p 3.54e-06p 5.41e-09p       0.0
sig0.643 cc 8.70e-09p 4.93e-06p 0.000296p 0.002332p 0.004246p 0.000197p 0.004289p 0.004490p 5.41e-09p       0.0
         rc 8.70e-09p 4.93e-06p 0.000296p 0.002332p 0.004246p 0.000197p 0.004289o 0.004490n 5.41e-09p       0.0
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000257n      0.0       0.0
zp 65.57 ri 1.53e-10p 1.36e-07p 1.15e-05p 0.000106p 0.000122p 1.46e-05p 3.20e-06p 2.88e-07p 4.50e-10p       0.0
sig0.632 cc 1.53e-10p 1.36e-07p 1.16e-05p 0.000117p 0.000239p 1.46e-05p 0.000242p 0.000257p 4.50e-10p       0.0
         rc 1.53e-10p 1.36e-07p 1.16e-05p 0.000117p 0.000239p 1.46e-05p 0.000242o 0.000257n 4.50e-10p       0.0
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  0.000415k      0.0       0.0       0.0       0.0       0.0
zp 65.07 ri 7.13e-09p 2.36e-06p 7.23e-05p 0.000242p 9.87e-05p 3.69e-06p 8.11e-07p 1.95e-08p 7.14e-12p       0.0
sig0.621 cc 7.13e-09p 2.36e-06p 7.46e-05p 0.000316p 0.000415p 3.69e-06p 0.000416p 0.000420p 7.14e-12p       0.0
         rc 7.13e-09p 2.36e-06p 7.46e-05p 0.000316p 0.000415j 3.69e-06p 0.000416j 0.000420j 7.14e-12p       0.0
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 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000130n      0.0       0.0
zp 65.17 ri 2.12e-10p 1.74e-07p 1.91e-05p 6.43e-05p 4.51e-05p 7.75e-07p 2.87e-07p 3.58e-09p      0.0       0.0
sig0.569 cc 2.12e-10p 1.74e-07p 1.93e-05p 8.36e-05p 0.000129p 7.75e-07p 0.000129p 0.000130p      0.0       0.0
         rc 2.12e-10p 1.74e-07p 1.93e-05p 8.36e-05p 0.000129o 7.75e-07p 0.000129o 0.000130n      0.0       0.0
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000239n      0.0       0.0
zp 65.26 ri 1.18e-10p 2.14e-07p 2.08e-05p 0.000137p 7.75e-05p 2.50e-06p 9.24e-07p 9.03e-09p 1.21e-12p      0.0
sig0.565 cc 1.18e-10p 2.14e-07p 2.11e-05p 0.000158p 0.000236p 2.50e-06p 0.000237p 0.000239p 1.21e-12p      0.0
         rc 1.18e-10p 2.14e-07p 2.11e-05p 0.000158p 0.000236p 2.50e-06p 0.000237o 0.000239n 1.21e-12p      0.0
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000299n      0.0       0.0
zp 65.09 ri 2.16e-09p 1.15e-06p 4.69e-05p 0.000177p 7.13e-05p 2.02e-06p 7.47e-07p 8.45e-09p 1.80e-12p      0.0
sig0.598 cc 2.16e-09p 1.15e-06p 4.81e-05p 0.000225p 0.000296p 2.02e-06p 0.000297p 0.000299p 1.80e-12p      0.0
         rc 2.16e-09p 1.15e-06p 4.81e-05p 0.000225p 0.000296o 2.02e-06p 0.000297o 0.000299n 1.80e-12p      0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.69e-05n      0.0       0.0
zp 64.50 ri 1.88e-09p 7.71e-07p 1.28e-05p 1.26e-05p 7.39e-07p 1.27e-09p 4.70e-10p      0.0       0.0       0.0
sig0.524 cc 1.88e-09p 7.73e-07p 1.36e-05p 2.62e-05p 2.69e-05p 1.27e-09p 2.69e-05p 2.69e-05p      0.0       0.0
         rc 1.88e-09p 7.73e-07p 1.36e-05p 2.62e-05p 2.69e-05o 1.27e-09p 2.69e-05o 2.69e-05n      0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000214n      0.0       0.0
zp 65.86 ri 4.14e-12p 1.13e-08p 2.85e-06p 5.40e-05p 0.000127p 2.15e-05p 7.95e-06p 8.06e-07p 1.59e-09p      0.0
sig0.611 cc 4.14e-12p 1.13e-08p 2.86e-06p 5.68e-05p 0.000184p 2.15e-05p 0.000192p 0.000214p 1.59e-09p      0.0
         rc 4.14e-12p 1.13e-08p 2.86e-06p 5.68e-05p 0.000184p 2.15e-05p 0.000192o 0.000214n 1.59e-09p      0.0

  dy, ho half lives from 89wal1.
1

    mass number    167            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide      62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho g   68 er m   68 er g   69 tm g   70 yb g
half life                                   6.2 m     3.1 h    2.28 s    stable    9.24 d    17.5 m
lambda          0.0       0.0       0.0       0.0 1.863e-03 6.211e-05 3.040e-01       0.0 8.682e-07 6.601e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000   10.0000   90.0000   -2.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  -98.0000       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
```

u234f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.97e-07n 0.0 0.0
zp 65.40 ri 0.0 1.53e-10p 3.69e-08p 2.62e-07p 2.86e-07p 1.17e-08p 6.27e-12p 4.60e-11p 0.0 0.0
sig0.554 cc 0.0 1.53e-10p 3.71e-08p 2.99e-07p 5.85e-07p 5.97e-07p 5.97e-08p 5.97e-07p 0.0 0.0
rc 0.0 1.53e-10p 3.71e-08p 2.99e-07p 5.85e-07p 5.97e-07o 5.97e-08o 5.97e-07n 0.0 0.0
u237f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.38e-06n 0.0 0.0
zp 64.63 ri 1.03e-10p 3.58e-08p 1.10e-06p 1.09e-06p 1.45e-07p 4.71e-10p 0.0 0.0 0.0 0.0
sig0.536 cc 1.03e-10p 3.59e-08p 1.14e-06p 2.23e-06p 2.37e-06p 2.38e-06p 2.38e-07p 2.38e-06p 0.0 0.0
rc 1.03e-10p 3.59e-08p 1.14e-06p 2.23e-06p 2.37e-06o 2.38e-06o 2.38e-07o 2.38e-06n 0.0 0.0
pu240h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.002857n 0.0 0.0
zp 65.85 ri 2.71e-10p 3.69e-07p 5.09e-05p 0.000788p 0.001574p 0.000430p 1.02e-06p 1.35e-05p 5.31e-08p 1.92e-11p
sig0.643 cc 2.71e-10p 3.70e-07p 5.13e-05p 0.000839p 0.002413p 0.002843p 0.000285p 0.002857p 5.31e-08p 1.92e-11p
rc 2.71e-10p 3.70e-07p 5.13e-05p 0.000839p 0.002413p 0.002843o 0.000285o 0.002857n 5.31e-08p 1.92e-11p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000208n 0.0 0.0
zp 65.95 ri 4.98e-12p 1.10e-08p 2.25e-06p 4.73e-05p 0.000118p 3.83e-05p 1.02e-07p 1.36e-06p 5.61e-09p 1.98e-12p
sig0.632 cc 4.98e-12p 1.10e-08p 2.27e-06p 4.95e-05p 0.000168p 0.000206p 2.07e-05p 0.000208p 5.61e-09p 1.98e-12p
rc 4.98e-12p 1.10e-08p 2.27e-06p 4.95e-05p 0.000168p 0.000206o 2.07e-05o 0.000208n 5.61e-09p 1.98e-12p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000257n 0.0 0.0
zp 65.44 ri 2.74e-10p 2.24e-07p 1.63e-05p 0.000121p 0.000108p 1.13e-05p 8.31e-09p 1.10e-07p 1.09e-10p 0.0
sig0.621 cc 2.74e-10p 2.25e-07p 1.65e-05p 0.000138p 0.000246p 0.000257p 2.57e-05p 0.000257p 1.09e-10p 0.0
rc 2.74e-10p 2.25e-07p 1.65e-05p 0.000138p 0.000246p 0.000257o 2.57e-05o 0.000257n 1.09e-10p 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.49e-05n 0.0 0.0
zp 65.56 ri 1.80e-12p 5.50e-09p 1.54e-06p 1.65e-05p 2.50e-05p 1.93e-06p 2.02e-09p 1.48e-08p 4.78e-12p 0.0
sig0.569 cc 1.80e-12p 5.50e-09p 1.54e-06p 1.80e-05p 4.30e-05p 4.49e-05p 4.49e-06p 4.49e-05p 4.78e-12p 0.0
rc 1.80e-12p 5.50e-09p 1.54e-06p 1.80e-05p 4.30e-05p 4.49e-05o 4.49e-06o 4.49e-05n 4.78e-12p 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000104n 0.0 0.0
zp 65.64 ri 1.35e-12p 7.63e-09p 2.22e-06p 3.93e-05p 5.57e-05p 6.70e-06p 6.35e-09p 4.66e-08p 2.23e-11p 0.0
sig0.565 cc 1.35e-12p 7.63e-09p 2.22e-06p 4.15e-05p 9.73e-05p 0.000104p 1.04e-05p 0.000104p 2.23e-11p 0.0
rc 1.35e-12p 7.63e-09p 2.22e-06p 4.15e-05p 9.73e-05p 0.000104o 1.04e-05o 0.000104n 2.23e-11p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

```
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.97e-05n      0.0       0.0
zp 65.47 ri 3.29e-11p 4.82e-08p 5.12e-06p 4.65e-05p 4.37e-05p 4.24e-06p 4.16e-09p 3.05e-08p 2.05e-11p       0.0
sig0.598 cc 3.29e-11p 4.82e-08p 5.17e-06p 5.16e-05p 9.54e-05p 9.96e-05p 9.97e-06p 9.97e-05p 2.05e-11p       0.0
        rc 3.29e-11p 4.82e-08p 5.17e-06p 5.16e-05p 9.54e-05p 9.96e-05o 9.97e-06o 9.97e-05n 2.05e-11p       0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.15e-05n      0.0       0.0
zp 64.88 ri 3.33e-11p 4.99e-08p 2.68e-06p 7.46e-06p 1.33e-06p 1.11e-08p      0.0  2.75e-12p      0.0       0.0
sig0.524 cc 3.33e-11p 4.99e-08p 2.73e-06p 1.02e-05p 1.15e-05p 1.15e-05p 1.15e-06p 1.15e-05p      0.0       0.0
        rc 3.33e-11p 4.99e-08p 2.73e-06p 1.02e-05p 1.15e-05p 1.15e-05o 1.15e-06o 1.15e-05n      0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  7.80e-05n      0.0       0.0
zp 66.25 ri      0.0  2.54e-10p 1.64e-07p 8.18e-06p 4.35e-05p 2.45e-05p 1.94e-07p 1.42e-06p 8.83e-09p 4.15e-12p
sig0.611 cc      0.0  2.54e-10p 1.64e-07p 8.34e-06p 5.19e-05p 7.63e-05p 7.84e-06p 7.80e-05p 8.83e-09p 4.15e-12p
        rc      0.0  2.54e-10p 1.64e-07p 8.34e-06p 5.19e-05p 7.63e-05o 7.84e-06o 7.80e-05n 8.83e-09p 4.15e-12p

  dy, ho half lives from 89wal1; er, tm half life 90bur1.
1

    mass number    168            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb g
half life                                          8.5 m     3.0 m    stable    93.1 d    stable
lambda           0.0       0.0       0.0       0.0 1.359e-03 3.851e-03       0.0 8.617e-08       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000       0.0
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.69e-07n      0.0       0.0
zp 65.78 ri      0.0  3.49e-12p 3.42e-09p 5.33e-08p 1.94e-07p 1.71e-08p 3.06e-10p      0.0       0.0
sig0.554 cc      0.0  3.49e-12p 3.42e-09p 5.68e-08p 2.51e-07p 2.68e-07p 2.69e-07p      0.0       0.0
        rc      0.0  3.50e-12p 3.42e-09p 5.68e-08p 2.51e-07p 2.68e-07o 2.69e-07n      0.0       0.0
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.09e-06n      0.0       0.0
zp 65.00 ri 2.41e-12p 2.27e-09p 2.64e-07p 5.63e-07p 2.58e-07p 2.16e-09p 2.23e-12p      0.0       0.0
sig0.536 cc 2.41e-12p 2.27e-09p 2.66e-07p 8.29e-07p 1.09e-06p 1.09e-06p 1.09e-06p      0.0       0.0
        rc 2.41e-12p 2.27e-09p 2.66e-07p 8.29e-07p 1.09e-06o 1.09e-06o 1.09e-06n      0.0       0.0
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.001837n 0.0 0.0
zp 66.23 ri 6.08e-12p 2.01e-08p 6.56e-06p 0.000229p 0.000983p 0.000574p 4.37e-05p 3.76e-07p 3.31e-10p
sig0.643 cc 6.08e-12p 2.01e-08p 6.58e-06p 0.000236p 0.001219p 0.001793p 0.001837p 3.76e-07p 3.31e-10p
rc 6.08e-12p 2.01e-08p 6.58e-06p 0.000236p 0.001219p 0.001793o 0.001837n 3.76e-07p 3.31e-10p
u234he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000119n 0.0 0.0
zp 66.34 ri 0.0 4.16e-10p 2.13e-07p 1.07e-05p 6.03e-05p 4.35e-05p 3.89e-06p 3.71e-08p 3.35e-11p
sig0.632 cc 0.0 4.16e-10p 2.14e-07p 1.09e-05p 7.12e-05p 0.000115p 0.000119p 3.71e-08p 3.35e-11p
rc 0.0 4.16e-10p 2.14e-07p 1.09e-05p 7.12e-05p 0.000115o 0.000119n 3.71e-08p 3.35e-11p
u236he xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000148n 0.0 0.0
zp 65.82 ri 6.42e-12p 1.35e-08p 2.44e-06p 4.23e-05p 8.33e-05p 2.00e-05p 5.12e-07p 1.20e-09p 0.0
sig0.621 cc 6.42e-12p 1.35e-08p 2.45e-06p 4.47e-05p 0.000128p 0.000148p 0.000148p 1.20e-09p 0.0
rc 6.42e-12p 1.35e-08p 2.45e-06p 4.47e-05p 0.000128p 0.000148o 0.000148n 1.20e-09p 0.0
pu238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 6.98e-06n 0.0 0.0
zp 65.94 ri 0.0 4.52e-11p 4.44e-08p 1.11e-06p 4.96e-06p 8.45e-07p 2.51e-08p 1.85e-11p 0.0
sig0.569 cc 0.0 4.52e-11p 4.45e-08p 1.15e-06p 6.11e-06p 6.96e-06p 6.98e-06p 1.85e-11p 0.0
rc 0.0 4.52e-11p 4.45e-08p 1.15e-06p 6.11e-06p 6.96e-06o 6.98e-06n 1.85e-11p 0.0
am241f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.16e-05n 0.0 0.0
zp 66.03 ri 0.0 1.50e-10p 1.37e-07p 7.02e-06p 2.59e-05p 8.32e-06p 1.97e-07p 2.64e-10p 0.0
sig0.565 cc 0.0 1.50e-10p 1.37e-07p 7.16e-06p 3.31e-05p 4.14e-05p 4.16e-05p 2.64e-10p 0.0
rc 0.0 1.50e-10p 1.37e-07p 7.16e-06p 3.31e-05p 4.14e-05o 4.16e-05n 2.64e-10p 0.0
am243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.58e-05n 0.0 0.0
zp 65.85 ri 0.0 2.32e-09p 6.58e-07p 1.48e-05p 3.25e-05p 7.62e-06p 1.63e-07p 2.65e-10p 0.0
sig0.598 cc 0.0 2.32e-09p 6.60e-07p 1.55e-05p 4.80e-05p 5.57e-05p 5.58e-05p 2.65e-10p 0.0
rc 0.0 2.32e-09p 6.60e-07p 1.55e-05p 4.80e-05p 5.57e-05o 5.58e-05n 2.65e-10p 0.0
np238f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.13e-06n 0.0 0.0
zp 65.26 ri 0.0 1.66e-09p 3.07e-07p 2.50e-06p 1.29e-06p 3.61e-08p 3.76e-11p 0.0 0.0
sig0.524 cc 0.0 1.66e-09p 3.09e-07p 2.81e-06p 4.10e-06p 4.13e-06p 4.13e-06p 0.0 0.0
rc 0.0 1.66e-09p 3.09e-07p 2.81e-06p 4.10e-06p 4.13e-06o 4.13e-06n 0.0 0.0
cm242f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.44e-05n 0.0 0.0

```
zp 66.63 ri       0.0  3.47e-12p 6.16e-09p 7.46e-07p 9.74e-06p 1.19e-05p 1.94e-06p 2.60e-08p 3.36e-11p
sig0.611 cc       0.0  3.47e-12p 6.16e-09p 7.52e-07p 1.05e-05p 2.24e-05p 2.44e-05p 2.60e-08p 3.36e-11p
        rc       0.0  3.47e-12p 6.16e-09p 7.52e-07p 1.05e-05p 2.24e-05o 2.44e-05n 2.60e-08p 3.36e-11p

  dy, ho half lives from 89wal1.
1

    mass number    169            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       63 eu g   64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb m   70 yb g   71 lu m   71 lu g
half life                                   4.7 m    9.40 d    stable     46. s    32.02d     2.7 m    1.42 d
lambda            0.0       0.0       0.0       0.0 2.458e-03 8.535e-07       0.0 1.507e-02 2.505e-07 4.279e-03 5.650e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000       0.0 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0  100.0000
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc       0.0       0.0       0.0       0.0       0.0       0.0  9.45e-08n      0.0       0.0       0.0       0.0
zp 66.16 ri       0.0  1.46e-10p 8.73e-09p 6.52e-08p 1.96e-08p 8.16e-10p       0.0       0.0       0.0       0.0       0.0
sig0.554 cc       0.0  1.46e-10p 8.87e-09p 7.40e-08p 9.37e-08p 9.45e-08p 9.45e-08p       0.0       0.0       0.0       0.0
        rc       0.0  1.46e-10p 8.87e-09p 7.40e-08p 9.37e-08p 9.45e-08o 9.45e-08n       0.0       0.0       0.0       0.0
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc       0.0       0.0       0.0       0.0       0.0       0.0  4.16e-07n      0.0       0.0       0.0       0.0
zp 65.38 ri 8.16e-11p 2.52e-08p 1.90e-07p 1.94e-07p 6.30e-09p 1.82e-11p       0.0       0.0       0.0       0.0       0.0
sig0.536 cc 8.16e-11p 2.53e-08p 2.16e-07p 4.09e-07p 4.16e-07p 4.16e-07p 4.16e-07p       0.0       0.0       0.0       0.0
        rc 8.16e-11p 2.53e-08p 2.16e-07p 4.09e-07p 4.16e-07o 4.16e-07o 4.16e-07n       0.0       0.0       0.0       0.0
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc       0.0       0.0       0.0       0.0       0.0  0.001154i 0.001104n       0.0       0.0       0.0       0.0
zp 66.60 ri 8.28e-10p 6.32e-07p 4.99e-05p 0.000456p 0.000555p 9.11e-05p 1.74e-06p 2.52e-10p 3.35e-09p       0.0       0.0
sig0.643 cc 8.28e-10p 6.33e-07p 5.05e-05p 0.000507p 0.001062p 0.001153p 0.001154p 2.58e-10p 3.68e-09p       0.0       0.0
        rc 8.28e-10p 6.33e-07p 5.05e-05p 0.000507p 0.001062m 0.001153i 0.001154i 2.52e-10p 3.60e-09p       0.0       0.0
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc       0.0       0.0       0.0       0.0       0.0       0.0  7.91e-05n      0.0       0.0       0.0       0.0
zp 66.72 ri 1.38e-11p 1.76e-08p 2.10e-06p 2.67e-05p 4.17e-05p 8.37e-06p 1.90e-07p 2.98e-11p 3.95e-10p       0.0       0.0
sig0.632 cc 1.38e-11p 1.76e-08p 2.12e-06p 2.88e-05p 7.05e-05p 7.89e-05p 7.91e-05p 2.98e-11p 4.25e-10p       0.0       0.0
        rc 1.38e-11p 1.76e-08p 2.12e-06p 2.88e-05p 7.05e-05p 7.89e-05o 7.91e-05n 2.98e-11p 4.25e-10p       0.0       0.0
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc       0.0       0.0       0.0       0.0       0.0  0.000119m      0.0       0.0       0.0       0.0       0.0
```

```
zp 66.20 ri 7.95e-10p 3.61e-07p 1.50e-05p 6.61e-05p 3.55e-05p 2.18e-06p 1.29e-08p      0.0  6.07e-12p      0.0       0.0
sig0.621 cc 7.95e-10p 3.62e-07p 1.53e-05p 8.15e-05p 0.000117p 0.000119p 0.000119p      0.0  6.53e-12p      0.0       0.0
         rc 7.95e-10p 3.62e-07p 1.53e-05p 8.15e-05p 0.000117o 0.000119m 0.000119m      0.0  6.53e-12p      0.0       0.0
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  3.99e-06n      0.0       0.0       0.0       0.0
zp 66.32 ri 1.17e-12p 2.96e-09p 2.49e-07p 2.43e-06p 1.23e-06p 8.57e-08p 2.24e-10p      0.0       0.0       0.0       0.0
sig0.569 cc 1.17e-12p 2.96e-09p 2.52e-07p 2.68e-06p 3.91e-06p 3.99e-06p 3.99e-06p      0.0       0.0       0.0       0.0
         rc 1.17e-12p 2.96e-09p 2.52e-07p 2.68e-06p 3.91e-06p 3.99e-06o 3.99e-06n      0.0       0.0       0.0       0.0
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.46e-05n      0.0       0.0       0.0       0.0
zp 66.41 ri 1.80e-12p 5.10e-09p 7.63e-07p 7.39e-06p 6.01e-06p 3.96e-07p 1.62e-09p      0.0       0.0       0.0       0.0
sig0.565 cc 1.80e-12p 5.10e-09p 7.68e-07p 8.16e-06p 1.42e-05p 1.46e-05p 1.46e-05p      0.0       0.0       0.0       0.0
         rc 1.80e-12p 5.10e-09p 7.68e-07p 8.16e-06p 1.42e-05p 1.46e-05o 1.46e-05n      0.0       0.0       0.0       0.0
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.39e-05n      0.0       0.0       0.0       0.0
zp 66.22 ri 6.28e-11p 4.73e-08p 2.66e-06p 1.35e-05p 7.30e-06p 3.89e-07p 1.67e-09p      0.0       0.0       0.0       0.0
sig0.598 cc 6.28e-11p 4.73e-08p 2.71e-06p 1.62e-05p 2.35e-05p 2.39e-05p 2.39e-05p      0.0       0.0       0.0       0.0
         rc 6.28e-11p 4.73e-08p 2.71e-06p 1.62e-05p 2.35e-05p 2.39e-05o 2.39e-05n      0.0       0.0       0.0       0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.25e-06n      0.0       0.0       0.0       0.0
zp 65.64 ri 2.86e-11p 1.88e-08p 4.79e-07p 6.90e-07p 6.14e-08p 2.31e-10p      0.0       0.0       0.0       0.0       0.0
sig0.524 cc 2.86e-11p 1.89e-08p 4.97e-07p 1.19e-06p 1.25e-06p 1.25e-06p 1.25e-06p      0.0       0.0       0.0       0.0
         rc 2.86e-11p 1.89e-08p 4.97e-07p 1.19e-06p 1.25e-06p 1.25e-06o 1.25e-06n      0.0       0.0       0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.46e-05n      0.0       0.0       0.0       0.0
zp 67.02 ri      0.0  2.74e-10p 9.15e-08p 2.85e-06p 8.44e-06p 3.13e-06p 1.11e-07p 4.44e-11p 3.26e-10p      0.0       0.0
sig0.611 cc      0.0  2.74e-10p 9.18e-08p 2.94e-06p 1.14e-05p 1.45e-05p 1.46e-05p 4.44e-11p 3.70e-10p      0.0       0.0
         rc      0.0  2.74e-10p 9.18e-08p 2.94e-06p 1.14e-05p 1.45e-05o 1.46e-05n 4.44e-11p 3.70e-10p      0.0       0.0

  ho, er half lives from 89wal1; yb half life 90bur1.
1

    mass number    170            LA-UR-94-3106 (ENDF-349)                                percent yields
nuclide       62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g   69 tm g   70 yb g
half life                                                   43. s     2.8 m    stable    128.6d    stable
lambda            0.0       0.0       0.0       0.0       0.0 1.612e-02 4.126e-03       0.0 6.238e-08       0.0
```

```
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000   -0.2000   99.8000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.49e-08n      0.0       0.0
zp 66.54 ri      0.0       0.0  3.77e-12p 5.40e-10p 1.43e-08p 4.33e-09p 4.33e-09p 1.33e-09p 3.53e-12p       0.0
sig0.554 cc      0.0       0.0  3.77e-12p 5.44e-10p 1.49e-08p 4.33e-09p 1.92e-08p 2.49e-08p 3.53e-12p 3.53e-12p
         rc      0.0       0.0  3.77e-12p 5.44e-10p 1.49e-08p 4.33e-09p 1.92e-08p 2.49e-08n 3.53e-12p 3.53e-12p
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  8.41e-08n      0.0       0.0
zp 65.75 ri      0.0       0.0  1.01e-09p 1.82e-08p 6.03e-08p 2.29e-09p 2.29e-09p 5.35e-11p       0.0       0.0
sig0.536 cc      0.0       0.0  1.01e-09p 1.92e-08p 7.95e-08p 2.29e-09p 8.18e-08p 8.41e-08p       0.0       0.0
         rc      0.0       0.0  1.01e-09p 1.92e-08p 7.95e-08p 2.29e-09p 8.18e-08o 8.41e-08n       0.0       0.0
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000735n      0.0       0.0
zp 66.98 ri      0.0  2.32e-11p 4.27e-08p 7.90e-06p 0.000161p 0.000209p 0.000209p 0.000148p 6.62e-06p 3.25e-08p
sig0.643 cc      0.0  2.32e-11p 4.28e-08p 7.95e-06p 0.000169p 0.000209p 0.000378p 0.000735p 6.62e-06p 6.64e-06p
         rc      0.0  2.32e-11p 4.28e-08p 7.95e-06p 0.000169p 0.000209p 0.000378p 0.000735n 6.62e-06p 6.64e-06p
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.85e-05n      0.0       0.0
zp 67.10 ri      0.0       0.0  7.61e-10p 2.22e-07p 6.48e-06p 1.10e-05p 1.10e-05p 9.75e-06p 5.17e-07p 2.83e-09p
sig0.632 cc      0.0       0.0  7.61e-10p 2.22e-07p 6.70e-06p 1.10e-05p 1.77e-05p 3.85e-05p 5.17e-07p 5.19e-07p
         rc      0.0       0.0  7.61e-10p 2.22e-07p 6.70e-06p 1.10e-05p 1.77e-05p 3.85e-05n 5.17e-07p 5.19e-07p
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.45e-05n      0.0       0.0
zp 66.57 ri      0.0  1.65e-11p 1.87e-08p 1.85e-06p 1.83e-05p 1.07e-05p 1.07e-05p 2.98e-06p 4.26e-08p 5.41e-11p
sig0.621 cc      0.0  1.65e-11p 1.87e-08p 1.87e-06p 2.02e-05p 1.07e-05p 3.09e-05p 4.45e-05p 4.26e-08p 4.26e-08p
         rc      0.0  1.65e-11p 1.87e-08p 1.87e-06p 2.02e-05p 1.07e-05p 3.09e-05p 4.45e-05n 4.26e-08p 4.26e-08p
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.70e-06n      0.0       0.0
zp 66.70 ri      0.0       0.0  1.13e-10p 2.36e-08p 7.27e-07p 3.88e-07p 3.88e-07p 1.70e-07p 1.11e-09p       0.0
sig0.569 cc      0.0       0.0  1.13e-10p 2.37e-08p 7.51e-07p 3.88e-07p 1.14e-06p 1.70e-06p 1.11e-09p 1.11e-09p
         rc      0.0       0.0  1.13e-10p 2.37e-08p 7.51e-07p 3.88e-07p 1.14e-06p 1.70e-06n 1.11e-09p 1.11e-09p
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  8.32e-06n      0.0       0.0
zp 66.79 ri      0.0       0.0  2.03e-10p 9.12e-08p 2.42e-06p 2.47e-06p 2.47e-06p 8.71e-07p 1.05e-08p 6.93e-12p
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sig0.565 cc      0.0       0.0  2.03e-10p 9.14e-08p 2.51e-06p 2.47e-06p 4.98e-06p 8.32e-06p 1.05e-08p 1.05e-08p
         rc      0.0       0.0  2.03e-10p 9.14e-08p 2.51e-06p 2.47e-06p 4.98e-06p 8.32e-06n 1.05e-08p 1.05e-08p
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.30e-05n      0.0       0.0
zp 66.60 ri      0.0  1.36e-12p 2.83e-09p 4.19e-07p 5.18e-06p 3.25e-06p 3.25e-06p 8.55e-07p 9.75e-09p 8.15e-12p
sig0.598 cc      0.0  1.36e-12p 2.83e-09p 4.22e-07p 5.60e-06p 3.25e-06p 8.85e-06p 1.30e-05p 9.75e-09p 9.74e-09p
         rc      0.0  1.36e-12p 2.83e-09p 4.22e-07p 5.60e-06p 3.25e-06p 8.85e-06p 1.30e-05n 9.75e-09p 9.74e-09p
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.08e-07n      0.0       0.0
zp 66.01 ri      0.0       0.0  6.24e-10p 5.09e-08p 2.03e-07p 2.62e-08p 2.62e-08p 6.64e-10p      0.0       0.0
sig0.524 cc      0.0       0.0  6.24e-10p 5.15e-08p 2.54e-07p 2.62e-08p 2.81e-07p 3.08e-07p      0.0       0.0
         rc      0.0       0.0  6.24e-10p 5.15e-08p 2.54e-07p 2.62e-08p 2.81e-07o 3.08e-07n      0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.75e-06n      0.0       0.0
zp 67.40 ri      0.0       0.0  1.07e-11p 9.00e-09p 7.28e-07p 2.40e-06p 2.40e-06p 4.21e-06p 3.47e-07p 3.11e-09p
sig0.611 cc      0.0       0.0  1.07e-11p 9.01e-09p 7.37e-07p 2.40e-06p 3.14e-06p 9.75e-06p 3.47e-07p 3.50e-07p
         rc      0.0       0.0  1.07e-11p 9.01e-09p 7.37e-07p 2.40e-06p 3.14e-06p 9.75e-06n 3.47e-07p 3.50e-07p

  ho half life from 89wal1; tm half life 90bur1.
1

    mass number    171            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide      64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb g   71 lu m   71 lu g   72 hf g
half life                                   7.52 h    1.92 y    stable     78. s    8.24 d    12.2 h
lambda          0.0       0.0       0.0       0.0 2.560e-05 1.145e-08       0.0 8.887e-03 9.736e-07 1.578e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  7.96e-09n      0.0       0.0       0.0
zp 66.92 ri      0.0  3.61e-11p 2.15e-09p 4.35e-09p 1.41e-09p 1.48e-11p      0.0       0.0       0.0       0.0
sig0.554 cc      0.0  3.62e-11p 2.18e-09p 6.53e-09p 7.94e-09p 7.96e-09p 7.96e-09p      0.0       0.0       0.0
         rc      0.0  3.62e-11p 2.18e-09p 6.53e-09p 7.94e-09o 7.96e-09o 7.96e-09n      0.0       0.0       0.0
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.28e-08n      0.0       0.0       0.0
zp 66.13 ri 3.06e-11p 2.17e-09p 1.62e-08p 4.28e-09p 1.31e-10p      0.0       0.0       0.0       0.0       0.0
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sig0.536 cc 3.06e-11p 2.20e-09p 1.84e-08p 2.26e-08p 2.28e-08p 2.28e-08p 2.28e-08p      0.0       0.0       0.0
         rc 3.06e-11p 2.20e-09p 1.84e-08p 2.26e-08p 2.28e-08o 2.28e-08o 2.28e-08n      0.0       0.0       0.0
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000531n      0.0       0.0       0.0
zp 67.36 ri 2.31e-09p 1.02e-06p 4.72e-05p 0.000263p 0.000199p 1.99e-05p 2.29e-07p 1.36e-10p 1.36e-10p      0.0
sig0.643 cc 2.31e-09p 1.02e-06p 4.82e-05p 0.000312p 0.000511p 0.000530p 0.000531p 1.36e-10p 2.72e-10p      0.0
         rc 2.31e-09p 1.02e-06p 4.82e-05p 0.000312p 0.000511p 0.000530o 0.000531n 1.36e-10p 2.72e-10p      0.0
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.08e-05n      0.0       0.0       0.0
zp 67.48 ri 2.51e-11p 1.80e-08p 1.24e-06p 9.39e-06p 9.00e-06p 1.09e-06p 1.43e-08p 9.04e-12p 9.04e-12p      0.0
sig0.632 cc 2.51e-11p 1.80e-08p 1.26e-06p 1.07e-05p 1.97e-05p 2.07e-05p 2.08e-05p 9.04e-12p 1.81e-11p      0.0
         rc 2.51e-11p 1.80e-08p 1.26e-06p 1.07e-05p 1.97e-05p 2.07e-05o 2.08e-05n 9.04e-12p 1.81e-11p      0.0
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.47e-05n      0.0       0.0       0.0
zp 66.95 ri 9.59e-10p 2.37e-07p 5.52e-06p 1.43e-05p 4.53e-06p 1.57e-07p 5.07e-10p      0.0       0.0       0.0
sig0.621 cc 9.59e-10p 2.38e-07p 5.75e-06p 2.01e-05p 2.46e-05p 2.47e-05p 2.47e-05p      0.0       0.0       0.0
         rc 9.59e-10p 2.38e-07p 5.75e-06p 2.01e-05p 2.46e-05o 2.47e-05o 2.47e-05n      0.0       0.0       0.0
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  6.98e-07n      0.0       0.0       0.0
zp 67.08 ri 2.25e-12p 1.67e-09p 1.22e-07p 3.86e-07p 1.85e-07p 4.03e-09p 8.87e-12p      0.0       0.0       0.0
sig0.569 cc 2.25e-12p 1.68e-09p 1.23e-07p 5.10e-07p 6.94e-07p 6.98e-07p 6.98e-07p      0.0       0.0       0.0
         rc 2.25e-12p 1.68e-09p 1.23e-07p 5.10e-07p 6.94e-07o 6.98e-07o 6.98e-07n      0.0       0.0       0.0
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  4.89e-06n      0.0       0.0       0.0
zp 67.17 ri 5.36e-12p 7.41e-09p 5.61e-07p 2.94e-06p 1.33e-06p 4.61e-08p 9.36e-11p      0.0       0.0       0.0
sig0.565 cc 5.36e-12p 7.41e-09p 5.68e-07p 3.51e-06p 4.84e-06p 4.89e-06p 4.89e-06p      0.0       0.0       0.0
         rc 5.36e-12p 7.41e-09p 5.68e-07p 3.51e-06p 4.84e-06p 4.89e-06o 4.89e-06n      0.0       0.0       0.0
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  3.49e-06n      0.0       0.0       0.0
zp 66.98 ri 5.73e-11p 2.28e-08p 7.09e-07p 2.08e-06p 6.55e-07p 1.94e-08p 4.44e-11p      0.0       0.0       0.0
sig0.598 cc 5.73e-11p 2.29e-08p 7.32e-07p 2.81e-06p 3.47e-06p 3.49e-06p 3.49e-06p      0.0       0.0       0.0
         rc 5.73e-11p 2.29e-08p 7.32e-07p 2.81e-06p 3.47e-06o 3.49e-06o 3.49e-06n      0.0       0.0       0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  6.73e-08n      0.0       0.0       0.0
zp 66.39 ri 1.07e-11p 3.05e-09p 3.64e-08p 2.67e-08p 1.12e-09p 1.82e-12p      0.0       0.0       0.0       0.0
sig0.524 cc 1.07e-11p 3.06e-09p 3.95e-08p 6.61e-08p 6.73e-08p 6.73e-08p 6.73e-08p      0.0       0.0       0.0
```

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        rc 1.07e-11p 3.06e-09p 3.95e-08p 6.61e-08p 6.73e-08o 6.73e-08o 6.73e-08n      0.0       0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  4.48e-06n      0.0       0.0       0.0
zp 67.78 ri      0.0  4.11e-10p 8.15e-08p 1.33e-06p 2.54e-06p 5.13e-07p 1.11e-08p 9.36e-12p 9.36e-12p      0.0
sig0.611 cc      0.0  4.12e-10p 8.19e-08p 1.42e-06p 3.96e-06p 4.47e-06p 4.48e-06p 9.36e-12p 1.87e-11p      0.0
        rc      0.0  4.12e-10p 8.19e-08p 1.42e-06p 3.96e-06p 4.47e-06o 4.48e-06n 9.36e-12p 1.87e-11p      0.0

  er, tm half lives from 89wal1.
1

    mass number    172            LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb g   71 lu m   71 lu g   72 hf g
half life                                   2.05 d    2.65 d    stable      4. m    6.70 d    1.87 y
lambda           0.0       0.0       0.0       0.0 3.913e-06 3.027e-06       0.0 2.888e-03 1.197e-06 1.175e-08
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 u234f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.19e-09n      0.0       0.0       0.0
zp 67.30 ri      0.0       0.0  1.20e-10p 5.05e-10p 5.54e-10p 1.33e-11p      0.0       0.0       0.0       0.0
sig0.554 cc      0.0       0.0  1.20e-10p 6.26e-10p 1.18e-09p 1.19e-09p 1.19e-09p      0.0       0.0       0.0
        rc      0.0       0.0  1.20e-10p 6.26e-10p 1.18e-09p 1.19e-09o 1.19e-09n      0.0       0.0       0.0
 u237f   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  6.93e-09n      0.0       0.0       0.0
zp 66.50 ri      0.0  1.59e-10p 4.14e-09p 2.36e-09p 2.67e-10p      0.0       0.0       0.0       0.0       0.0
sig0.536 cc      0.0  1.60e-10p 4.30e-09p 6.66e-09p 6.93e-09p 6.93e-09p 6.93e-09p      0.0       0.0       0.0
        rc      0.0  1.60e-10p 4.30e-09p 6.66e-09p 6.93e-09o 6.93e-09o 6.93e-09n      0.0       0.0       0.0
 pu240h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000367n      0.0       0.0       0.0
zp 67.74 ri 8.64e-11p 9.12e-08p 9.83e-06p 0.000121p 0.000193p 4.23e-05p 1.13e-06p 1.60e-09p 1.60e-09p      0.0
sig0.643 cc 8.64e-11p 9.13e-08p 9.92e-06p 0.000131p 0.000324p 0.000366p 0.000367p 1.60e-09p 3.20e-09p      0.0
        rc 8.64e-11p 9.13e-08p 9.92e-06p 0.000131p 0.000324p 0.000366o 0.000367n 1.60e-09p 3.20e-09p      0.0
 u234he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.68e-05n      0.0       0.0       0.0
zp 67.86 ri      0.0  1.58e-09p 2.63e-07p 4.52e-06p 9.41e-06p 2.53e-06p 7.87e-08p 1.23e-10p 1.23e-10p      0.0
sig0.632 cc      0.0  1.59e-09p 2.64e-07p 4.79e-06p 1.42e-05p 1.67e-05p 1.68e-05p 1.23e-10p 2.45e-10p      0.0
```

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        rc      0.0  1.59e-09p 2.64e-07p 4.79e-06p 1.42e-05p 1.67e-05o 1.68e-05n 1.23e-10p 2.45e-10p      0.0
 u236he  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  1.34e-05o      0.0       0.0       0.0       0.0       0.0
zp 67.33 ri 3.47e-11p 2.17e-08p 1.22e-06p 7.13e-06p 5.03e-06p 4.13e-07p 3.34e-09p 1.17e-12p 1.17e-12p      0.0
sig0.621 cc 3.47e-11p 2.17e-08p 1.24e-06p 8.38e-06p 1.34e-05p 1.38e-05p 1.38e-05p 1.17e-12p 2.34e-12p      0.0
        rc 3.47e-11p 2.17e-08p 1.24e-06p 8.38e-06p 1.34e-05o 1.38e-05n 1.38e-05n 1.17e-12p 2.34e-12p      0.0
 pu238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.79e-07n      0.0       0.0       0.0
zp 67.47 ri      0.0  7.78e-11p 1.98e-08p 1.43e-07p 2.06e-07p 1.07e-08p 8.52e-11p      0.0       0.0       0.0
sig0.569 cc      0.0  7.78e-11p 1.99e-08p 1.63e-07p 3.68e-07p 3.79e-07p 3.79e-07p      0.0       0.0       0.0
        rc      0.0  7.78e-11p 1.99e-08p 1.63e-07p 3.68e-07p 3.79e-07o 3.79e-07n      0.0       0.0       0.0
 am241f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.98e-06n      0.0       0.0       0.0
zp 67.55 ri      0.0  2.72e-10p 6.09e-08p 8.51e-07p 9.71e-07p 9.24e-08p 5.64e-10p      0.0       0.0       0.0
sig0.565 cc      0.0  2.72e-10p 6.12e-08p 9.12e-07p 1.88e-06p 1.98e-06p 1.98e-06p      0.0       0.0       0.0
        rc      0.0  2.72e-10p 6.12e-08p 9.12e-07p 1.88e-06p 1.98e-06o 1.98e-06n      0.0       0.0       0.0
 am243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.79e-06n      0.0       0.0       0.0
zp 67.36 ri 1.51e-12p 1.64e-09p 1.32e-07p 9.26e-07p 6.83e-07p 5.09e-08p 3.14e-10p      0.0       0.0       0.0
sig0.598 cc 1.51e-12p 1.65e-09p 1.34e-07p 1.06e-06p 1.74e-06p 1.79e-06p 1.79e-06p      0.0       0.0       0.0
        rc 1.51e-12p 1.65e-09p 1.34e-07p 1.06e-06p 1.74e-06p 1.79e-06o 1.79e-06n      0.0       0.0       0.0
 np238f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.77e-09n      0.0       0.0       0.0
zp 66.77 ri      0.0  4.53e-11p 1.72e-09p 3.54e-09p 4.60e-10p 2.67e-12p      0.0       0.0       0.0       0.0
sig0.524 cc      0.0  4.53e-11p 1.77e-09p 5.30e-09p 5.76e-09p 5.77e-09p 5.77e-09p      0.0       0.0       0.0
        rc      0.0  4.53e-11p 1.77e-09p 5.30e-09p 5.76e-09p 5.77e-09o 5.77e-09n      0.0       0.0       0.0
 cm242f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.73e-06n      0.0       0.0       0.0
zp 68.17 ri      0.0  1.59e-11p 8.75e-09p 3.45e-07p 1.60e-06p 7.30e-07p 4.15e-08p 8.95e-11p 8.95e-11p      0.0
sig0.611 cc      0.0  1.59e-11p 8.76e-09p 3.54e-07p 1.96e-06p 2.69e-06p 2.73e-06p 8.95e-11p 1.79e-10p      0.0
        rc      0.0  1.59e-11p 8.76e-09p 3.54e-07p 1.96e-06p 2.69e-06o 2.73e-06n 8.95e-11p 1.79e-10p      0.0

  er, tm half lives from 89wal1.
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type          value   err.     value                nuclide     material       value       no.   treatment
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66		u234f	es	cu	0.0000039	30.0	0.0000038	0.0000000	0		0.0000000	75mee1	0
66		u237f	es	cu	0.0000004	30.0	0.0000005	0.0000000	0		0.0000000	75mee1	0
66		pu240h	es	cu	0.0000619	30.0	0.0000006	0.0000000	0		0.0100000	77net1	0
66	ni g	pu240h	rc	cu	0.0000613	44.0	0.0000006	44.0000000%	0		0.0100000	77net1	0
66	ni g	u234he	rc	cu	0.0004439	11.6	0.0000046	0.0000005	147	nd g	u234he	0.0132000	72net1	0
66	ni g	u236he	rc	cu	0.0001846	10.7	0.0000019	0.0000002	147	nd g	u236he	0.0179000	72net1	0
66		pu238f	es	cu	0.0000012	30.0	0.0000012	0.0000000	0		0.0000000	75mee1	0
66		am241f	es	cu	0.0000009	30.0	0.0000009	0.0000000	0		0.0000000	75mee1	0
66		am243f	es	cu	0.0000005	30.0	0.0000005	0.0000000	0		0.0000000	75mee1	0
66		np238f	es	cu	0.0000001	30.0	0.0000001	0.0000000	0		0.0000000	75mee1	0
66		cm242f	es	cu	0.0000010	30.0	0.0000010	0.0000000	0		0.0000000	75mee1	0
67		u234f	es	cu	0.0000093	30.0	0.0000090	0.0000000	0		0.0000000	75mee1	0
67		u237f	es	cu	0.0000014	30.0	0.0000014	0.0000000	0		0.0000000	75mee1	0
67		pu240h	es	cu	0.0001320	30.0	0.0000013	0.0000000	0		0.0100000	77net1	0
67	cu g	pu240h	rc	cu	0.0001330	35.0	0.0000013	35.0000000%	0		0.0100000	77net1	0
67	cu g	u234he	rc	cu	0.0010518	10.9	0.0000109	0.0000011	147	nd g	u234he	0.0132000	72net1	0
67	cu g	u236he	rc	cu	0.0004060	10.3	0.0000042	0.0000004	147	nd g	u236he	0.0179000	72net1	0
67		pu238f	es	cu	0.0000020	30.0	0.0000020	0.0000000	0		0.0000000	75mee1	0
67		am241f	es	cu	0.0000019	30.0	0.0000018	0.0000000	0		0.0000000	75mee1	0
67		am243f	es	cu	0.0000009	30.0	0.0000009	0.0000000	0		0.0000000	75mee1	0
67		np238f	es	cu	0.0000005	30.0	0.0000005	0.0000000	0		0.0000000	75mee1	0
67		cm242f	es	cu	0.0000030	30.0	0.0000030	0.0000000	0		0.0000000	75mee1	0
68		u234f	es	cu	0.0000268	30.0	0.0000260	0.0000000	0		0.0000000	75mee1	0
68		u237f	es	cu	0.0000020	30.0	0.0000020	0.0000000	0		0.0000000	75mee1	0
68		pu240h	es	cu	0.0002452	30.0	0.0000024	0.0000000	0		0.0100000	77net1	0
68		u234he	es	cu	0.0014718	30.0	0.0015000	0.0000000	0		0.0000000	75mee1	0
68		u236he	es	cu	0.0007868	30.0	0.0007900	0.0000000	0		0.0000000	75mee1	0
68		pu238f	es	cu	0.0000061	30.0	0.0000060	0.0000000	0		0.0000000	75mee1	0
68		am241f	es	cu	0.0000057	30.0	0.0000055	0.0000000	0		0.0000000	75mee1	0
68		am243f	es	cu	0.0000022	30.0	0.0000022	0.0000000	0		0.0000000	75mee1	0
68		np238f	es	cu	0.0000023	30.0	0.0000023	0.0000000	0		0.0000000	75mee1	0
68		cm242f	es	cu	0.0000040	30.0	0.0000040	0.0000000	0		0.0000000	75mee1	0
69		u234f	es	cu	0.0000619	30.0	0.0000600	0.0000000	0		0.0000000	75mee1	0
69		u237f	es	cu	0.0000059	30.0	0.0000060	0.0000000	0		0.0000000	75mee1	0
69		pu240h	es	cu	0.0005006	30.0	0.0000049	0.0000000	0		0.0100000	77net1	0

69		u234he	es	cu	0.0020605	30.0	0.0021000	0.0000000	0			0.0000000	75mee1	0
69		u236he	es	cu	0.0010956	30.0	0.0011000	0.0000000	0			0.0000000	75mee1	0
69		pu238f	es	cu	0.0000204	30.0	0.0000200	0.0000000	0			0.0000000	75mee1	0
69		am241f	es	cu	0.0000093	30.0	0.0000090	0.0000000	0			0.0000000	75mee1	0
69		am243f	es	cu	0.0000050	30.0	0.0000050	0.0000000	0			0.0000000	75mee1	0
69		np238f	es	cu	0.0000070	30.0	0.0000070	0.0000000	0			0.0000000	75mee1	0
69		cm242f	es	cu	0.0000060	30.0	0.0000060	0.0000000	0			0.0000000	75mee1	0
70		u234f	es	cu	0.0002065	30.0	0.0002000	0.0000000	0			0.0000000	75mee1	0
70		u237f	es	cu	0.0000119	30.0	0.0000120	0.0000000	0			0.0000000	75mee1	0
70		pu240h	es	cu	0.0010013	30.0	0.0000098	0.0000000	0			0.0100000	77net1	0
70		u234he	es	cu	0.0034342	30.0	0.0035000	0.0000000	0			0.0000000	75mee1	0
70		u236he	es	cu	0.0019943	30.0	0.0020000	0.0000000	0			0.0000000	75mee1	0
70		pu238f	es	cu	0.0000714	30.0	0.0000700	0.0000000	0			0.0000000	75mee1	0
70		am241f	es	cu	0.0000208	30.0	0.0000200	0.0000000	0			0.0000000	75mee1	0
70		am243f	es	cu	0.0000160	30.0	0.0000160	0.0000000	0			0.0000000	75mee1	0
70		np238f	es	cu	0.0000159	30.0	0.0000160	0.0000000	0			0.0000000	75mee1	0
70		cm242f	es	cu	0.0000150	30.0	0.0000150	0.0000000	0			0.0000000	75mee1	0
71		u234f	es	cu	0.0005162	30.0	0.0005000	0.0000000	0			0.0000000	75mee1	0
71		u237f	es	cu	0.0000278	30.0	0.0000280	0.0000000	0			0.0000000	75mee1	0
71		pu240h	es	cu	0.0021456	30.0	0.0000210	0.0000000	0			0.0100000	77net1	0
71		u234he	es	cu	0.0052984	30.0	0.0054000	0.0000000	0			0.0000000	75mee1	0
71		u236he	es	cu	0.0030876	30.0	0.0031000	0.0000000	0			0.0000000	75mee1	0
71		pu238f	es	cu	0.0001835	30.0	0.0001800	0.0000000	0			0.0000000	75mee1	0
71		am241f	es	cu	0.0000332	30.0	0.0000320	0.0000000	0			0.0000000	75mee1	0
71		am243f	es	cu	0.0000250	30.0	0.0000250	0.0000000	0			0.0000000	75mee1	0
71		np238f	es	cu	0.0000438	30.0	0.0000440	0.0000000	0			0.0000000	75mee1	0
71		cm242f	es	cu	0.0000259	30.0	0.0000260	0.0000000	0			0.0000000	75mee1	0
72		u234f	es	cu	0.0000409	30.0	0.0000400	0.0000000	0			0.0000000	72sid1	0
72		u234f	es	cu	0.0012275	30.0	0.0012000	0.0000000	0			0.0000000	75mee1	0
72		u237f	cm	cu	0.0000000	0.0	0.0000100	0.0000000	0			0.0000000	72sid1	0
72		u237f	es	cu	0.0000496	30.0	0.0000500	0.0000000	0			0.0000000	75mee1	0
72		pu240h	es	cu	0.0045345	30.0	0.0000450	0.0000000	0			0.0100000	77net1	0
72	zn g	pu240h	rc	cu	0.0045043	10.0	0.0000447	10.0000000%	0			0.0100000	77net1	0
72	zn g	u234he	rc	cu	0.0102490	6.9	0.0001060	0.0000060	147	nd g	u234he	0.0132000	72net1	0
72	zn g	u236he	rc	cu	0.0046608	6.4	0.0000482	0.0000015	147	nd g	u236he	0.0179000	72net1	0
72		pu238f	es	cu	0.0004281	30.0	0.0004200	0.0000000	0			0.0000000	75mee1	0

72		am241f	es	cu	0.0001350	30.0	0.0001300	0.0000000	0			0.0000000	75mee1	0
72		am243f	es	cu	0.0000499	30.0	0.0000500	0.0000000	0			0.0000000	75mee1	0
72		np238f	es	cu	0.0001592	30.0	0.0001600	0.0000000	0			0.0000000	75mee1	0
72		cm242f	es	cu	0.0000639	30.0	0.0000640	0.0000000	0			0.0000000	75mee1	0
72	zn g	u8d14.	rc	cu	0.0000000	0.0	0.0260000	0.0050000	0	m barn		4.3000000	57sug1	0
72	zn g	t2a20.	rc	re	0.0000000	0.0	270.0000000	10.0000000%	99 mo g	u235t		0.0000000	62hic1	7
72	zn g	t2a20.	rc	re	0.0000000	0.0	220.0000000	10.0000000%	99 mo g	u235t		0.0000000	62hic1	7
72	zn g	t2a22.	rc	re	0.0000000	0.0	270.0000000	10.0000000%	99 mo g	u235t		0.0000000	62hic1	7
72	zn g	t2a24.	rc	re	0.0000000	0.0	440.0000000	10.0000000%	99 mo g	u235t		0.0000000	62hic1	7
72	zn g	t2a26.	rc	re	0.0000000	0.0	430.0000000	10.0000000%	99 mo g	u235t		0.0000000	62hic1	7
72	zn g	t2a27.	rc	re	0.0000000	0.0	470.0000000	10.0000000%	99 mo g	u235t		0.0000000	62hic1	7
72	zn g	t2a30.	rc	re	0.0000000	0.0	740.0000000	10.0000000%	99 mo g	u235t		0.0000000	62hic1	7
72	zn g	t2a30.	rc	re	0.0000000	0.0	610.0000000	10.0000000%	99 mo g	u235t		0.0000000	62hic1	7
72	zn g	t2a32.	rc	re	0.0000000	0.0	650.0000000	10.0000000%	99 mo g	u235t		0.0000000	62hic1	7
72	zn g	t2a34.	rc	re	0.0000000	0.0	840.0000000	10.0000000%	99 mo g	u235t		0.0000000	62hic1	7
72	zn g	t2a34.	rc	re	0.0000000	0.0	1020.0000000	10.0000000%	99 mo g	u235t		0.0000000	62hic1	7
72	zn g	t2a36.	rc	re	0.0000000	0.0	940.0000000	10.0000000%	99 mo g	u235t		0.0000000	62hic1	7
72	zn g	t2a37.	rc	re	0.0000000	0.0	1040.0000000	10.0000000%	99 mo g	u235t		0.0000000	62hic1	7
72	zn g	t2a38.	rc	re	0.0000000	0.0	1300.0000000	10.0000000%	99 mo g	u235t		0.0000000	62hic1	7
72	zn g	p9nesm	rc	re	0.0000000	0.0	0.7000000	1.0000000%	99 mo g	pu239t		0.0000000	69ton1	7
72	zn g	p9necd	rc	re	0.0000000	0.0	1.0000000	0.0800000	72 zn g	pu239t		1.1250000	66fri1	0
73		u234f	es	cu	0.0001023	30.0	0.0001000	0.0000000	0			0.0000000	72sid1	0
73		u234f	es	cu	0.0020459	30.0	0.0020000	0.0000000	0			0.0000000	75mee1	0
73		u237f	cm	cu	0.0000000	0.0	0.0000300	0.0000000	0			0.0000000	72sid1	0
73		u237f	es	cu	0.0002981	30.0	0.0003000	0.0000000	0			0.0000000	75mee1	0
73		pu240h	es	cu	0.0090345	30.0	0.0000900	0.0000000	0			0.0100000	77net1	0
73	ga g	pu240h	rc	cu	0.0083720	5.8	0.0000834	5.8000000%	0			0.0100000	77net1	0
73		u234he	es	cu	0.0148005	30.0	0.0150000	0.0000000	0			0.0000000	75mee1	0
73		u236he	es	cu	0.0081768	30.0	0.0082000	0.0000000	0			0.0000000	75mee1	0
73		pu238f	es	cu	0.0000101	30.0	0.0000100	0.0000000	0			0.0000000	72sid1	0
73		pu238f	es	cu	0.0009123	30.0	0.0009000	0.0000000	0			0.0000000	75mee1	0
73		am241f	es	cu	0.0003492	30.0	0.0003400	0.0000000	0			0.0000000	75mee1	0
73		am243f	es	cu	0.0001198	30.0	0.0001200	0.0000000	0			0.0000000	75mee1	0
73		np238f	es	cu	0.0000299	30.0	0.0000300	0.0000000	0			0.0000000	72sid1	0
73		np238f	es	cu	0.0005686	30.0	0.0005700	0.0000000	0			0.0000000	75mee1	0
73		cm242f	es	cu	0.0001997	30.0	0.0002000	0.0000000	0			0.0000000	75mee1	0

74	u234f	es	cu	0.0021482	30.0	0.0021000	0.0000000	0		0.0000000	72sid1	0	
74	u234f	es	cu	0.0061377	30.0	0.0060000	0.0000000	0		0.0000000	75mee1	0	
74	u237f	cm	cu	0.0000000	0.0	0.0006000	0.0000000	0		0.0000000	72sid1	0	
74	u237f	es	cu	0.0009911	30.0	0.0010000	0.0000000	0		0.0000000	75mee1	0	
74	pu240h	es	cu	0.0163474	30.0	0.0001600	0.0000000	0		0.0100000	77net1	0	
74	u234he	es	cu	0.0225673	30.0	0.0230000	0.0000000	0		0.0000000	75mee1	0	
74	u236he	es	cu	0.0139440	30.0	0.0140000	0.0000000	0		0.0000000	75mee1	0	
74	pu238f	es	cu	0.0001014	30.0	0.0001000	0.0000000	0		0.0000000	72sid1	0	
74	pu238f	es	cu	0.0024329	30.0	0.0024000	0.0000000	0		0.0000000	75mee1	0	
74	am241f	es	cu	0.0006852	30.0	0.0006600	0.0000000	0		0.0000000	75mee1	0	
74	am243f	es	cu	0.0002795	30.0	0.0002800	0.0000000	0		0.0000000	75mee1	0	
74	np238f	es	cu	0.0000997	30.0	0.0001000	0.0000000	0		0.0000000	72sid1	0	
74	np238f	es	cu	0.0011960	30.0	0.0012000	0.0000000	0		0.0000000	75mee1	0	

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0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

74	cm242f	es	cu	0.0003991	30.0	0.0004000	0.0000000	0		0.0000000	75mee1	0	
74	t2n3.0	sp	cu	0.0000000	0.0	0.0160000	0.0000000	0		0.0000000	68ser1	0	
74	t2n1.6	sp	cu	0.0000000	0.0	0.0170000	0.0000000	0		0.0000000	68ser1	0	
74	t2n1.7	sp	cu	0.0000000	0.0	0.0150000	0.0000000	0		0.0000000	68ser1	0	
74	t2n2.0	sp	cu	0.0000000	0.0	0.0180000	0.0000000	0		0.0000000	68ser1	0	
74	t2n2.5	sp	cu	0.0000000	0.0	0.0160000	0.0000000	0		0.0000000	68ser1	0	
74	t2n5.8	sp	cu	0.0000000	0.0	0.0230000	0.0000000	0		0.0000000	68ser1	0	
75	u234f	es	cu	0.0132984	30.0	0.0130000	0.0000000	0		0.0000000	72sid1	0	
75	u234f	es	cu	0.0102295	30.0	0.0100000	0.0000000	0		0.0000000	75mee1	0	
75	u237f	cm	cu	0.0000000	0.0	0.0070000	0.0000000	0		0.0000000	72sid1	0	
75	u237f	es	cu	0.0031715	30.0	0.0032000	0.0000000	0		0.0000000	75mee1	0	
75	pu240h	es	cu	0.0326948	30.0	0.0003200	0.0000000	0		0.0100000	77net1	0	
75	u234he	es	cu	0.0343415	30.0	0.0350000	0.0000000	0		0.0000000	75mee1	0	
75	u236he	es	cu	0.0199200	30.0	0.0200000	0.0000000	0		0.0000000	75mee1	0	
75	pu238f	es	cu	0.0003041	30.0	0.0003000	0.0000000	0		0.0000000	72sid1	0	
75	pu238f	es	cu	0.0045617	30.0	0.0045000	0.0000000	0		0.0000000	75mee1	0	
75	am241f	cm	cu	x3 0.0000000	0.0	0.0000700	0.0000000	0		0.0000000	72sid1	0	
75	am241f	es	cu	0.0013496	30.0	0.0013000	0.0000000	0		0.0000000	75mee1	0	
75	am243f	es	cu	0.0006988	30.0	0.0007000	0.0000000	0		0.0000000	75mee1	0	

75	np238f	es	cu		0.0002990	30.0	0.0003000	0.0000000	0	0.0000000	72sid1	0
75	np238f	es	cu		0.0054815	30.0	0.0055000	0.0000000	0	0.0000000	75mee1	0
75	cm242f	es	cu		0.0008980	30.0	0.0009000	0.0000000	0	0.0000000	75mee1	0
75	t2n3.0	sp	cu		0.0000000	0.0	0.0450000	0.0000000	0	0.0000000	68ser1	0
75	t2n1.6	sp	cu		0.0000000	0.0	0.0340000	0.0000000	0	0.0000000	68ser1	0
75	t2n1.7	sp	cu		0.0000000	0.0	0.0320000	0.0000000	0	0.0000000	68ser1	0
75	t2n2.0	sp	cu		0.0000000	0.0	0.0360000	0.0000000	0	0.0000000	68ser1	0
75	t2n2.5	sp	cu		0.0000000	0.0	0.0260000	0.0000000	0	0.0000000	68ser1	0
75	t2n5.8	sp	cu		0.0000000	0.0	0.0350000	0.0000000	0	0.0000000	68ser1	0
76	u234f	es	cu		0.0255738	30.0	0.0250000	0.0000000	0	0.0000000	72sid1	0
76	u234f	es	cu		0.0265968	30.0	0.0260000	0.0000000	0	0.0000000	75mee1	0
76	u237f	cm	cu		0.0000000	0.0	0.0110000	0.0000000	0	0.0000000	72sid1	0
76	u237f	es	cu		0.0073341	30.0	0.0074000	0.0000000	0	0.0000000	75mee1	0
76	pu240h	es	cu		0.0521073	30.0	0.0005100	0.0000000	0	0.0100000	77net1	0
76	u234he	es	cu		0.0549465	30.0	0.0560000	0.0000000	0	0.0000000	75mee1	0
76	u236he	es	cu		0.0288840	30.0	0.0290000	0.0000000	0	0.0000000	75mee1	0
76	pu238f	es	cu		0.0010137	30.0	0.0010000	0.0000000	0	0.0000000	72sid1	0
76	pu238f	es	cu		0.0146989	30.0	0.0145000	0.0000000	0	0.0000000	75mee1	0
76	am241f	cm	cu	x3	0.0000000	0.0	0.0002000	0.0000000	0	0.0000000	72sid1	0
76	am241f	es	cu		0.0036334	30.0	0.0035000	0.0000000	0	0.0000000	75mee1	0
76	am243f	cm	cu		0.0000000	0.0	0.0001000	0.0000000	0	0.0000000	72sid1	0
76	am243f	es	cu		0.0012977	30.0	0.0013000	0.0000000	0	0.0000000	75mee1	0
76	np238f	es	cu		0.0009966	30.0	0.0010000	0.0000000	0	0.0000000	72sid1	0
76	np238f	es	cu		0.0094680	30.0	0.0095000	0.0000000	0	0.0000000	75mee1	0
76	cm242f	es	cu		0.0000998	30.0	0.0001000	0.0000000	0	0.0000000	72sid1	0
76	cm242f	es	cu		0.0025959	30.0	0.0026000	0.0000000	0	0.0000000	75mee1	0
76	t2n3.0	sp	cu		0.0000000	0.0	0.0600000	0.0000000	0	0.0000000	68ser1	0
76	t2n1.6	sp	cu		0.0000000	0.0	0.0880000	0.0000000	0	0.0000000	68ser1	0
76	t2n1.7	sp	cu		0.0000000	0.0	0.0560000	0.0000000	0	0.0000000	68ser1	0
76	t2n2.0	sp	cu		0.0000000	0.0	0.0530000	0.0000000	0	0.0000000	68ser1	0
76	t2n2.5	sp	cu		0.0000000	0.0	0.0490000	0.0000000	0	0.0000000	68ser1	0
76	t2n5.8	sp	cu		0.0000000	0.0	0.0640000	0.0000000	0	0.0000000	68ser1	0
77	u234f	es	cu		0.0593312	30.0	0.0580000	0.0000000	0	0.0000000	72sid1	0
77	u234f	es	cu		0.0542165	30.0	0.0530000	0.0000000	0	0.0000000	75mee1	0
77	u237f	cm	cu		0.0000000	0.0	0.0240000	0.0000000	0	0.0000000	72sid1	0
77	u237f	es	cu		0.0178867	30.0	0.0180000	0.0000000	0	0.0000000	75mee1	0

77		pu240h	es	cu	0.0761515	30.0	0.0007500	0.0000000	0			0.0100000	77net1	0
77		u234he	es	cu	0.0838693	30.0	0.0850000	0.0000000	0			0.0000000	75mee1	0
77		u236he	es	cu	0.0598302	30.0	0.0600000	0.0000000	0			0.0000000	75mee1	0
77		pu238f	es	cu	0.0152058	30.0	0.0150000	0.0000000	0			0.0000000	72sid1	0
77		pu238f	es	cu	0.0273704	30.0	0.0270000	0.0000000	0			0.0000000	75mee1	0
77		am241f	es	cu	0.0082157	30.0	0.0080000	0.0000000	0			0.0000000	72sid1	0
77		am241f	es	cu	0.0092426	30.0	0.0090000	0.0000000	0			0.0000000	75mee1	0
77		am243f	cm	cu	0.0000000	0.0	0.0003000	0.0000000	0			0.0000000	72sid1	0
77		am243f	es	cu	0.0028963	30.0	0.0029000	0.0000000	0			0.0000000	75mee1	0
77		np238f	es	cu	0.0109629	30.0	0.0110000	0.0000000	0			0.0000000	72sid1	0
77		np238f	es	cu	0.0179393	30.0	0.0180000	0.0000000	0			0.0000000	75mee1	0
77		cm242f	es	cu	0.0040935	30.0	0.0041000	0.0000000	0			0.0000000	72sid1	0
77		cm242f	es	cu	0.0057908	30.0	0.0058000	0.0000000	0			0.0000000	75mee1	0
77		t2n11.	rc	cu	0.0000000	0.0	0.0520000	0.0000000	0			0.0000000	53tur1	0
77		t2n3.0	sp	cu	0.0000000	0.0	0.0850000	0.0000000	0			0.0000000	68ser1	0
77		t2n1.6	sp	cu	0.0000000	0.0	0.1590000	0.0000000	0			0.0000000	68ser1	0
77		t2n1.7	sp	cu	0.0000000	0.0	0.0720000	0.0000000	0			0.0000000	68ser1	0
77		t2n2.0	sp	cu	0.0000000	0.0	0.0810000	0.0000000	0			0.0000000	68ser1	0
77		t2n2.5	sp	cu	0.0000000	0.0	0.1000000	0.0000000	0			0.0000000	68ser1	0
77		t2n5.8	sp	cu	0.0000000	0.0	0.1230000	0.0000000	0			0.0000000	68ser1	0
77	as g	u8d05.	rc	cu	0.0000000	0.0	0.4000000	0.0000000	0	u	barn	35.0000000	57sug1	0
77	as g	u8d10.	rc	cu	0.0000000	0.0	0.0170000	0.0000000	0	m	barn	0.8600000	57sug1	0
77	as g	u8d14.	rc	cu	0.0000000	0.0	0.1600000	0.0400000	0	m	barn	4.3000000	57sug1	0
77	as g	u8n1.5	rc	cu	0.0000000	0.0	1.0000000	0.0000000	140	ba	g	u8n1.5	2300.0000000	67bor1	0
77	as g	u8n5.0	rc	cu	0.0000000	0.0	1.0000000	0.0000000	140	ba	g	u8n5.0	400.0000000	67bor1	0
77	as g	u8n3.0	rc	re	0.0000000	0.0	0.0013500	0.0000000	99	mo	g	u8n3.0	1.0000000	68bor2	0
77	as g	u8n1.5	rc	re	0.0000000	0.0	0.0004280	0.0000000	99	mo	g	u8n1.5	1.0000000	68bor2	0
77	as g	u8n2.0	rc	re	0.0000000	0.0	0.0005640	0.0000000	99	mo	g	u8n2.0	1.0000000	68bor2	0
77	as g	u8n3.9	rc	re	0.0000000	0.0	0.0029300	0.0000000	99	mo	g	u8n3.9	1.0000000	68bor2	0
77	as g	u8n4.8	rc	re	0.0000000	0.0	0.0023300	0.0000000	99	mo	g	u8n4.8	1.0000000	68bor2	0
77	as g	u8n13.	rc	re	0.0000000	0.0	0.0045600	0.0000000	99	mo	g	u8n13.	1.0000000	68bor2	0
77	as g	u8n16.	rc	re	0.0000000	0.0	0.0062700	0.0000000	99	mo	g	u8n16.	1.0000000	68bor2	0
77	as g	u8n18.	rc	re	0.0000000	0.0	0.0055500	0.0000000	99	mo	g	u8n18.	1.0000000	68bor2	0
77	as g	p9npfr	rc	cu	0.0000000	0.0	0.0300000	0.0040000	0			0.0000000	71cun1	0
77	as g	t2n3.0	rc	cu	0.0000000	0.0	0.0100000	0.0050000	0			0.0000000	71swi3	0
77	as g	p9npfr	rc	cu	0.0000000	0.0	0.0304000	0.0029000	99	mo	g	pu239f	5.9800000	72cun1	0

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 77 as g   p9necd   rc    cu        0.0000000  0.0   1.0000000  0.0400000    77 as g      pu239t      1.0300000   73ton1      0
 77 as g   p9necd   rc    re        0.0000000  0.0   1.6550000  0.0790000    99 mo g      u235t       0.0000000   64cro1      7
 77 as g   t2n11.   rc    cu        0.0000000  0.0   0.0220000  0.0000000    0                        0.0000000   53tur1      0
 77 as g   t2n1.3   rc    re        0.0000000  0.0   0.0020000 10.0000000%   89 sr g      t2n1.3      1.0000000   76lis1      0
 77 as g   t2n1.5   rc    re        0.0000000  0.0   0.0018000 10.0000000%   89 sr g      t2n1.5      1.0000000   76lis1      0
 77 as g   t2n1.6   rc    re        0.0000000  0.0   0.0008800 10.0000000%   89 sr g      t2n1.6      1.0000000   76lis1      0
 77 as g   t2n2.0   rc    re        0.0000000  0.0   0.0014000 30.0000000%   89 sr g      t2n2.0      1.0000000   76lis1      0
 77 as g   t2n1.7   rc    re        0.0000000  0.0   0.0010000 10.0000000%   89 sr g      t2n1.7      1.0000000   76lis1      0
 77 as g   t2n3.0   rc    re        0.0000000  0.0   0.0018000 10.0000000%   89 sr g      t2n3.0      1.0000000   76lis1      0
 77 as g   t2n3.9   rc    re        0.0000000  0.0   0.0040000 10.0000000%   89 sr g      t2n3.9      1.0000000   76lis1      0
 77 as g   t2n4.8   rc    re        0.0000000  0.0   0.0051000 10.0000000%   89 sr g      t2n4.8      1.0000000   76lis1      0
 77 as g   t2n13.   rc    re        0.0000000  0.0   0.0075000 10.0000000%   89 sr g      t2n13.      1.0000000   76lis1      0
 77 as g   t2n6.4   rc    cu        0.0000000  0.0   0.0390000  0.0060000    0                        0.0000000   80gle1      0
 77 as g   t2n7.6   rc    cu        0.0000000  0.0   0.0290000  0.0040000    0                        0.0000000   80gle1      0
 77 ge g   t2nlid   rc    cu        0.0000000  0.0   2.7000000  0.0000000    89 sr g      th232f      0.0000000   53tur1      7
 77 ge g   l4n41.   rc    re    lt  0.0000000  0.0  11.6000000  0.0000000    0            mubarn   1824.0000000   70hen1     20
 77 ge g   p9nesm   rc    cu        0.0000000  0.0   1.0000000  0.0400000    77 ge g      pu239t      1.0800000   73ton1      0
 78        u234f    es    cu        0.0887915 30.0   0.0860000  0.0000000    0                        0.0000000   72sid1      0
 78        u237f    cm    cu        0.0000000  0.0   0.0350000  0.0000000    0                        0.0000000   72sid1      0
 78        u237f    es    cu        0.0465815 30.0   0.0470000  0.0000000    0                        0.0000000   75mee1      0
 78        pu240h   es    cu        0.1103449 30.0   0.0010800  0.0000000    0                        0.0100000   77net1      0
 78        u234he   es    cu        0.1354038 30.0   0.1380000  0.0000000    0                        0.0000000   75mee1      0
 78        u236he   es    cu        0.1095599 30.0   0.1100000  0.0000000    0                        0.0000000   75mee1      0
 78        pu238f   es    cu        0.0324390 30.0   0.0320000  0.0000000    0                        0.0000000   72sid1      0
 78        pu238f   es    cu        0.0405487 30.0   0.0400000  0.0000000    0                        0.0000000   75mee1      0
 78        am241f   es    cu        0.0164314 30.0   0.0160000  0.0000000    0                        0.0000000   72sid1      0
 78        am241f   es    cu        0.0205392 30.0   0.0200000  0.0000000    0                        0.0000000   75mee1      0
 78        am243f   cm    cu        0.0000000  0.0   0.0100000  0.0000000    0                        0.0000000   72sid1      0
 78        am243f   es    cu        0.0049911 30.0   0.0050000  0.0000000    0                        0.0000000   75mee1      0
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0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                 nuclide     material       value       no.   treatment

 78        np238f   es    cu        0.0259123 30.0   0.0260000  0.0000000    0                        0.0000000   72sid1      0
 78        np238f   es    cu        0.0348820 30.0   0.0350000  0.0000000    0                        0.0000000   75mee1      0
 78        cm242f   es    cu        0.0129794 30.0   0.0130000  0.0000000    0                        0.0000000   72sid1      0
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78		cm242f	es	cu	0.0129794	30.0	0.0130000	0.0000000	0			0.0000000	75mee1	0
78		t2n3.0	sp	cu	0.0000000	0.0	0.1410000	0.0000000	0			0.0000000	68ser1	0
78		t2n1.6	sp	cu	0.0000000	0.0	0.2440000	0.0000000	0			0.0000000	68ser1	0
78		t2n1.7	sp	cu	0.0000000	0.0	0.1190000	0.0000000	0			0.0000000	68ser1	0
78		t2n2.0	sp	cu	0.0000000	0.0	0.1560000	0.0000000	0			0.0000000	68ser1	0
78		t2n2.5	sp	cu	0.0000000	0.0	0.1650000	0.0000000	0			0.0000000	68ser1	0
78		t2n5.8	sp	cu	0.0000000	0.0	0.1960000	0.0000000	0			0.0000000	68ser1	0
78	as g	t2n3.0	rc	cu	0.0000000	0.0	0.0360000	0.0040000	0			0.0000000	71swi3	0
78	as g	p9necd	rc	re	0.0000000	0.0	1.8000000	0.0900000	99	mo g	u235t	0.0000000	64cro1	7
78	as g	t2n6.4	rc	cu	0.0000000	0.0	0.0650000	0.0100000	0			0.0000000	80gle1	0
78	as g	t2n7.6	rc	cu	0.0000000	0.0	0.0780000	0.0120000	0			0.0000000	80gle1	0
79		u234f	es	cu	0.1445443	30.0	0.1400000	0.0000000	0			0.0000000	72sid1	0
79		u237f	es	cu	0.0753233	30.0	0.0760000	0.0000000	0			0.0000000	72sid1	0
79		pu240h	es	cu	0.1593871	30.0	0.0015600	0.0000000	0			0.0100000	77net1	0
79		u234he	es	cu	0.2062197	30.0	0.2090000	0.0000000	0			0.0000000	75mee1	0
79		u236he	es	cu	0.1693198	30.0	0.1700000	0.0000000	0			0.0000000	75mee1	0
79		pu238f	es	cu	0.0638642	30.0	0.0630000	0.0000000	0			0.0000000	72sid1	0
79		pu238f	es	cu	0.0709602	30.0	0.0700000	0.0000000	0			0.0000000	75mee1	0
79		am241f	es	cu	0.0328627	30.0	0.0320000	0.0000000	0			0.0000000	72sid1	0
79		am241f	es	cu	0.0359436	30.0	0.0350000	0.0000000	0			0.0000000	75mee1	0
79		am243f	es	cu	0.0189662	30.0	0.0190000	0.0000000	0			0.0000000	72sid1	0
79		np238f	es	cu	0.0558112	30.0	0.0560000	0.0000000	0			0.0000000	72sid1	0
79		np238f	es	cu	0.0597977	30.0	0.0600000	0.0000000	0			0.0000000	75mee1	0
79		cm242f	es	cu	0.0249605	30.0	0.0250000	0.0000000	0			0.0000000	72sid1	0
79		cm242f	es	cu	0.0309510	30.0	0.0310000	0.0000000	0			0.0000000	75mee1	0
79		t2n3.0	sp	cu	0.0000000	0.0	0.2510000	0.0000000	0			0.0000000	68ser1	0
79		t2n1.6	sp	cu	0.0000000	0.0	0.3720000	0.0000000	0			0.0000000	68ser1	0
79		t2n1.7	sp	cu	0.0000000	0.0	0.2000000	0.0000000	0			0.0000000	68ser1	0
79		t2n2.0	sp	cu	0.0000000	0.0	0.2790000	0.0000000	0			0.0000000	68ser1	0
79		t2n2.5	sp	cu	0.0000000	0.0	0.2580000	0.0000000	0			0.0000000	68ser1	0
79		t2n5.8	sp	cu	0.0000000	0.0	0.3050000	0.0000000	0			0.0000000	68ser1	0
79		n7n0.8	sp	cu	0.0000000	0.0	0.0870000	0.0000000	0			0.0000000	70kuz1	0
79		n7n1.1	sp	cu	0.0000000	0.0	0.0480000	0.0000000	0			0.0000000	70kuz1	0
79		n7n1.4	sp	cu	0.0000000	0.0	0.0550000	0.0000000	0			0.0000000	70kuz1	0
79		n7n1.7	sp	cu	0.0000000	0.0	0.0590000	0.0000000	0			0.0000000	70kuz1	0
79		n7n2.2	sp	cu	0.0000000	0.0	0.0580000	0.0000000	0			0.0000000	70kuz1	0

79	as g	t2n3.0	rc	cu	0.0000000	0.0	0.0750000	0.0080000	0	0.0000000	71swi3	0
80		u234f	es	cu	0.2168164	30.0	0.2100000	0.0000000	0	0.0000000	72sid1	0
80		u237f	es	cu	0.1288424	30.0	0.1300000	0.0000000	0	0.0000000	72sid1	0
80		pu240h	es	cu	0.2217116	30.0	0.0021700	0.0000000	0	0.0100000	77net1	0
80		u234he	es	cu	0.2600146	30.0	0.2650000	0.0000000	0	0.0000000	75mee1	0
80		u236he	es	cu	0.2390397	30.0	0.2400000	0.0000000	0	0.0000000	75mee1	0
80		pu238f	es	cu	0.1013718	30.0	0.1000000	0.0000000	0	0.0000000	72sid1	0
80		pu238f	es	cu	0.1216461	30.0	0.1200000	0.0000000	0	0.0000000	75mee1	0
80		am241f	es	cu	0.0616176	30.0	0.0600000	0.0000000	0	0.0000000	72sid1	0
80		am241f	es	cu	0.0616176	30.0	0.0600000	0.0000000	0	0.0000000	75mee1	0
80		am243f	es	cu	0.0389305	30.0	0.0390000	0.0000000	0	0.0000000	72sid1	0
80		np238f	es	cu	0.0976696	30.0	0.0980000	0.0000000	0	0.0000000	72sid1	0
80		np238f	es	cu	0.0996628	30.0	0.1000000	0.0000000	0	0.0000000	75mee1	0
80		cm242f	es	cu	0.0489225	30.0	0.0490000	0.0000000	0	0.0000000	72sid1	0
80		cm242f	es	cu	0.0459272	30.0	0.0460000	0.0000000	0	0.0000000	75mee1	0
80		t2n3.0	sp	cu	0.0000000	0.0	0.4020000	0.0000000	0	0.0000000	68ser1	0
80		t2n1.6	sp	cu	0.0000000	0.0	0.5810000	0.0000000	0	0.0000000	68ser1	0
80		t2n1.7	sp	cu	0.0000000	0.0	0.3360000	0.0000000	0	0.0000000	68ser1	0
80		t2n2.0	sp	cu	0.0000000	0.0	0.4420000	0.0000000	0	0.0000000	68ser1	0
80		t2n2.5	sp	cu	0.0000000	0.0	0.4030000	0.0000000	0	0.0000000	68ser1	0
80		t2n5.8	sp	cu	0.0000000	0.0	0.4480000	0.0000000	0	0.0000000	68ser1	0
80		n7n0.8	sp	cu	0.0000000	0.0	0.0940000	0.0000000	0	0.0000000	70kuz1	0
80		n7n1.1	sp	cu	0.0000000	0.0	0.0780000	0.0000000	0	0.0000000	70kuz1	0
80		n7n1.4	sp	cu	0.0000000	0.0	0.0830000	0.0000000	0	0.0000000	70kuz1	0
80		n7n1.7	sp	cu	0.0000000	0.0	0.0970000	0.0000000	0	0.0000000	70kuz1	0
80		n7n2.2	sp	cu	0.0000000	0.0	0.0860000	0.0000000	0	0.0000000	70kuz1	0
81		u234f	es	cu	0.3613607	30.0	0.3500000	0.0000000	0	0.0000000	72sid1	0
81		u237f	es	cu	0.2081301	30.0	0.2100000	0.0000000	0	0.0000000	72sid1	0
81		pu240h	es	cu	0.2993617	30.0	0.0029300	0.0000000	0	0.0100000	77net1	0
81		u234he	es	cu	0.4729322	30.0	0.4820000	0.0000000	0	0.0000000	75mee1	0
81		u236he	es	cu	0.3485996	30.0	0.3500000	0.0000000	0	0.0000000	75mee1	0
81		pu238f	es	cu	0.1824692	30.0	0.1800000	0.0000000	0	0.0000000	72sid1	0
81		pu238f	es	cu	0.1824692	30.0	0.1800000	0.0000000	0	0.0000000	75mee1	0
81		am241f	es	cu	0.1026961	30.0	0.1000000	0.0000000	0	0.0000000	72sid1	0
81		am241f	es	cu	0.0883186	30.0	0.0860000	0.0000000	0	0.0000000	75mee1	0
81		am243f	es	cu	0.0648842	30.0	0.0650000	0.0000000	0	0.0000000	72sid1	0

81		np238f	es	cu		0.1694268	30.0	0.1700000	0.0000000	0			0.0000000	72sid1	0
81		np238f	es	cu		0.1694268	30.0	0.1700000	0.0000000	0			0.0000000	75mee1	0
81		cm242f	es	cu		0.0818703	30.0	0.0820000	0.0000000	0			0.0000000	72sid1	0
81		cm242f	es	cu		0.0898576	30.0	0.0900000	0.0000000	0			0.0000000	75mee1	0
81		t2n3.0	sp	cu		0.0000000	0.0	0.6580000	0.0000000	0			0.0000000	68ser1	0
81		t2n1.6	sp	cu		0.0000000	0.0	0.8290000	0.0000000	0			0.0000000	68ser1	0
81		t2n1.7	sp	cu		0.0000000	0.0	0.5540000	0.0000000	0			0.0000000	68ser1	0
81		t2n2.0	sp	cu		0.0000000	0.0	0.6430000	0.0000000	0			0.0000000	68ser1	0
81		t2n2.5	sp	cu		0.0000000	0.0	0.6300000	0.0000000	0			0.0000000	68ser1	0
81		t2n5.8	sp	cu		0.0000000	0.0	0.6270000	0.0000000	0			0.0000000	68ser1	0
81		n7n0.8	sp	cu		0.0000000	0.0	0.1270000	0.0000000	0			0.0000000	70kuz1	0
81		n7n1.1	sp	cu		0.0000000	0.0	0.1180000	0.0000000	0			0.0000000	70kuz1	0
81		n7n1.4	sp	cu		0.0000000	0.0	0.1210000	0.0000000	0			0.0000000	70kuz1	0
81		n7n1.7	sp	cu		0.0000000	0.0	0.1490000	0.0000000	0			0.0000000	70kuz1	0
81		n7n2.2	sp	cu		0.0000000	0.0	0.1280000	0.0000000	0			0.0000000	70kuz1	0
81	se g	u5p20.	rc	re		0.0000000	0.0	1.7500000	0.0000000	81	se m	u5p20.	1.0000000	61val1	0
81	se g	t2n3.0	rc	cu		0.0000000	0.0	0.5000000	0.0500000	0			0.0000000	71swi3	0
81	se m	u5p20	rc	re		0.0000000	0.0	0.0340000	0.0060000	99	mo g	u5p20	1.0000000	62cro1	0
82		u234f	es	cu		0.6504492	30.0	0.6300000	0.0000000	0			0.0000000	72sid1	0
82		u237f	es	cu		0.3072396	30.0	0.3100000	0.0000000	0			0.0000000	72sid1	0
82		pu240h	es	cu		0.3984678	30.0	0.0039000	0.0000000	0			0.0100000	77net1	0
82		u234he	es	cu		0.8153665	30.0	0.8310000	0.0000000	0			0.0000000	75mee1	0
82		u236he	es	cu		0.5384722	30.0	0.5400000	0.0000000	0			0.0000000	75mee1	0
82		pu238f	es	cu		0.2635666	30.0	0.2600000	0.0000000	0			0.0000000	72sid1	0
82		pu238f	es	cu		0.2838409	30.0	0.2800000	0.0000000	0			0.0000000	75mee1	0
82		am241f	es	cu		0.1557192	30.0	0.1500000	0.0000000	0			0.0000000	72sid1	0
82		am243f	es	cu		0.0998219	30.0	0.1000000	0.0000000	0			0.0000000	72sid1	0
82		np238f	es	cu		0.2591234	30.0	0.2600000	0.0000000	0			0.0000000	72sid1	0
82		np238f	es	cu		0.2192582	30.0	0.2200000	0.0000000	0			0.0000000	75mee1	0
82		cm242f	es	cu		0.1198102	30.0	0.1200000	0.0000000	0			0.0000000	72sid1	0
82		cm242f	es	cu		0.1198102	30.0	0.1200000	0.0000000	0			0.0000000	75mee1	0
82	br g	t2d14.	rc	cu		0.0000000	0.0	0.0011000	0.0003000	89	sr g	t2d14.	1.0000000	57ale1	0
82	br g	u8d 5.	rc	cu	lt	0.0000000	0.0	0.0007000	0.0000000	140	ba g	u8d10.	1.0000000	57ale1	0
82	br g	u8d14.	rc	cu		0.0000000	0.0	0.0010000	0.0001000	140	ba g	u8d14.	1.0000000	57ale1	0
82	br g	u3d14.	rc	fi		0.0000000	0.0	0.0690000	0.0000000	82		u3d14.	1.0000000	62cor1	0
82	br g	u3a25.	rc	fi		0.0000000	0.0	0.0400000	0.0000000	82		u3a25.	1.0000000	62cor1	0

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 82 br g   t2p9.5   rc    in        0.0000000  0.0   0.0025700  0.0005000    0          m barn      0.2100000   68fre1      0
 82 br g   t2p11.   rc    in        0.0000000  0.0   0.0053200  0.0011000    0          m barn      0.7500000   68fre1      0
 82 br g   t2d12.   rc    in        0.0000000  0.0   0.0007500  0.0000000    0          m barn      0.6600000   68fre1      0
 82        t2n3.0   sp    cu        0.0000000  0.0   0.9780000  0.0000000    0                      0.0000000   68ser1      0
 82        t2n1.6   sp    cu        0.0000000  0.0   1.1460000  0.0000000    0                      0.0000000   68ser1      0
 82        t2n1.7   sp    cu        0.0000000  0.0   0.8130000  0.0000000    0                      0.0000000   68ser1      0
 82        t2n2.0   sp    cu        0.0000000  0.0   0.9530000  0.0000000    0                      0.0000000   68ser1      0
 82        t2n2.5   sp    cu        0.0000000  0.0   0.9240000  0.0000000    0                      0.0000000   68ser1      0
 82        t2n5.8   sp    cu        0.0000000  0.0   0.8750000  0.0000000    0                      0.0000000   68ser1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type        value   err.    value                nuclide     material      value       no.   treatment

 82        n7n0.8   sp    cu        0.0000000  0.0   0.1800000  0.0000000    0                      0.0000000   70kuz1      0
 82        n7n1.1   sp    cu        0.0000000  0.0   0.1800000  0.0000000    0                      0.0000000   70kuz1      0
 82        n7n1.4   sp    cu        0.0000000  0.0   0.1820000  0.0000000    0                      0.0000000   70kuz1      0
 82        n7n1.7   sp    cu        0.0000000  0.0   0.2190000  0.0000000    0                      0.0000000   70kuz1      0
 82        n7n2.2   sp    cu        0.0000000  0.0   0.1990000  0.0000000    0                      0.0000000   70kuz1      0
 83        u234f    es    cu        1.2070834 30.0   1.1800000  0.0000000    0                      0.0000000   72sid1      0
 83        u237f    es    cu        0.4769777 30.0   0.4800000  0.0000000    0                      0.0000000   72sid1      0
 83        pu240h   es    cu        0.5076764 30.0   0.0050000  0.0000000    0                      0.0100000   77net1      0
 83        u234he   es    cu        1.1741697 30.0   1.1900000  0.0000000    0                      0.0000000   75mee1      0
 83        u236he   es    cu        0.6381893 30.0   0.6400000  0.0000000    0                      0.0000000   75mee1      0
 83        pu238f   es    cu        0.3937829 30.0   0.3900000  0.0000000    0                      0.0000000   72sid1      0
 83        pu238f   es    cu        0.3634919 30.0   0.3600000  0.0000000    0                      0.0000000   75mee1      0
 83        am241f   es    cu        0.2362010 30.0   0.2300000  0.0000000    0                      0.0000000   72sid1      0
 83        am243f   es    cu        0.1697859 30.0   0.1700000  0.0000000    0                      0.0000000   72sid1      0
 83        np238f   es    cu        0.3886851 30.0   0.3900000  0.0000000    0                      0.0000000   72sid1      0
 83        cm242f   es    cu        0.1997763 30.0   0.2000000  0.0000000    0                      0.0000000   72sid1      0
 83        cm242f   es    cu        0.1827953 30.0   0.1830000  0.0000000    0                      0.0000000   75mee1      0
 83 rb g   u8p730   ms    in        0.0000000  0.0   0.2260000  0.0050000   86 rb g     u8p730      1.0000000   59chu1      0
 83 kr g   t2a44.   ms    re        0.0000000  0.0   0.7780000  0.0000000   84 kr g     t2a44.      1.0000000   68mch2      0
 83        t2n3.0   sp    cu        0.0000000  0.0   1.3350000  0.0000000    0                      0.0000000   68ser1      0
 83        t2n1.6   sp    cu        0.0000000  0.0   1.6060000  0.0000000    0                      0.0000000   68ser1      0
 83        t2n1.7   sp    cu        0.0000000  0.0   1.1270000  0.0000000    0                      0.0000000   68ser1      0
 83        t2n2.0   sp    cu        0.0000000  0.0   1.3870000  0.0000000    0                      0.0000000   68ser1      0
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83		t2n2.5	sp	cu	0.0000000	0.0	1.2710000	0.0000000	0			0.0000000	68ser1	0
83		t2n5.8	sp	cu	0.0000000	0.0	1.2540000	0.0000000	0			0.0000000	68ser1	0
83		n7n0.8	sp	cu	0.0000000	0.0	0.2880000	0.0000000	0			0.0000000	70kuz1	0
83		n7n1.1	sp	cu	0.0000000	0.0	0.2840000	0.0000000	0			0.0000000	70kuz1	0
83		n7n1.7	sp	cu	0.0000000	0.0	0.3100000	0.0000000	0			0.0000000	70kuz1	0
83		n7n2.2	sp	cu	0.0000000	0.0	0.2970000	0.0000000	0			0.0000000	70kuz1	0
83	br g	t2nlid	rc	cu	0.0000000	0.0	1.4000000	0.0000000	89	sr g	th232f	0.0000000	53tur1	7
83	br g	t2d14.	rc	cu	0.0000000	0.0	0.3400000	0.0200000	89	sr g	t2d14.	1.0000000	57ale1	0
83	br g	u8d 5.	rc	cu	0.0000000	0.0	0.1100000	0.0100000	140	ba g	u8d10.	1.0000000	57ale1	0
83	br g	u8d14.	rc	cu	0.0000000	0.0	0.1900000	0.0100000	140	ba g	u8d14.	1.0000000	57ale1	0
83	br g	u8d05.	rc	cu	0.0000000	0.0	9.0000000	0.0000000	0	u barn		35.0000000	57sug1	0
83	br g	u8d10.	rc	cu	0.0000000	0.0	0.1900000	0.0400000	0	m barn		0.8600000	57sug1	0
83	br g	u8d14.	rc	cu	0.0000000	0.0	2.2000000	0.1000000	0	m barn		4.3000000	57sug1	0
83	br g	u5p20	rc	re	0.0000000	0.0	0.2100000	0.0200000	99	mo g	u5p20	1.0000000	62cro1	0
83	br g	t2p9.5	rc	cu	0.0000000	0.0	0.3310000	0.0450000	0	m barn		0.2100000	68fre1	0
83	br g	t2p11.	rc	cu	0.0000000	0.0	1.2100000	0.2400000	0	m barn		0.7500000	68fre1	0
83	br g	t2d12.	rc	cu	0.0000000	0.0	1.0600000	0.0000000	0	m barn		0.6600000	68fre1	0
83	br g	t2n3.0	rc	cu	0.0000000	0.0	1.9700000	0.0200000	99	mo g	t2n3.0	2.7800000	68lyl1	0
83	br g	u8n2.0	rc	cu	0.0000000	0.0	0.2600000	0.0000000	0			0.0000000	75fly4	0
83	br g	u8n8.0	rc	cu	0.0000000	0.0	0.6200000	0.0000000	0			0.0000000	75fly4	0
83	br g	t2n11.	rc	cu	0.0000000	0.0	2.7400000	0.0000000	0			0.0000000	53tur1	0
83	br g	u8n1.5	rc	cu	0.0000000	0.0	0.2800000	0.0300000	0			0.0000000	78nag1	0
83	br g	u8n2.0	rc	cu	0.0000000	0.0	0.2800000	0.0300000	0			0.0000000	78nag1	0
83	br g	u8n5.5	rc	cu	0.0000000	0.0	0.3900000	0.0400000	0			0.0000000	78nag1	0
83	se g	u5p20	rc	re	0.0000000	0.0	0.1230000	0.0200000	99	mo g	u5p20	1.0000000	62cro1	0
83	se m	t2n2.0	rc	cu	0.0000000	0.0	0.9300000	0.2100000	0			0.0000000	80gle1	0
83	se m	t2n3.0	rc	cu	0.0000000	0.0	1.1200000	0.2000000	0			0.0000000	80gle1	0
83	se m	t2n4.0	rc	cu	0.0000000	0.0	0.9100000	0.1500000	0			0.0000000	80gle1	0
83	se m	t2n6.4	rc	cu	0.0000000	0.0	1.2500000	0.2700000	0			0.0000000	80gle1	0
83	se m	t2n6.9	rc	cu	0.0000000	0.0	1.4400000	0.2600000	0			0.0000000	80gle1	0
83	se m	t2n7.6	rc	cu	0.0000000	0.0	1.3800000	0.2200000	0			0.0000000	80gle1	0
83	se m	t2n8.0	rc	cu	0.0000000	0.0	1.8500000	0.2800000	0			0.0000000	80gle1	0
83	as g	p9necd	rc	re	0.0000000	0.0	0.6220000	0.0460000	99	mo g	u235t	0.0000000	64cro1	7
84		u234f	es	cu	1.9511607	30.0	1.9200000	0.0000000	0			0.0000000	72sid1	0
84		u237f	es	cu	0.9118079	30.0	0.9200000	0.0000000	0			0.0000000	72sid1	0
84		pu240h	es	cu	0.6538958	30.0	0.0064000	0.0000000	0			0.0100000	77net1	0

84		u234he	es	cu	1.4800459	30.0	1.5000000	0.0000000	0			0.0000000	75mee1	0
84		u236he	es	cu	1.0470293	30.0	1.0500000	0.0000000	0			0.0000000	75mee1	0
84		pu238f	es	cu	0.6116398	30.0	0.6000000	0.0000000	0			0.0000000	72sid1	0
84		am241f	es	cu	0.3529636	30.0	0.3400000	0.0000000	0			0.0000000	72sid1	0
84		am243f	es	cu	0.2495547	30.0	0.2500000	0.0000000	0			0.0000000	72sid1	0
84		np238f	es	cu	0.6767576	30.0	0.6800000	0.0000000	0			0.0000000	72sid1	0
84		cm242f	es	cu	0.2893513	30.0	0.2900000	0.0000000	0			0.0000000	72sid1	0
84	rb g	u8p730	ms	in	0.0000000	0.0	0.4730000	0.0050000	86	rb g	u8p730	1.0000000	59chu1	0
84	rb g	u38a46	ms	fi	lt 0.0000000	0.0	0.0001100	0.0000000	84		u38a46	1.0000000	59chu1	0
84	rb g	u35a46	ms	fi	0.0000000	0.0	0.0015700	0.0000400	84		u35a46	1.0000000	59chu1	0
84	rb g	u8p28g	rc	re	0.0000000	0.0	6.8800000	0.3300000	136	cs g	u8p28g	2.6400000	71fra1	0
84	rb g	t2p28g	rc	re	0.0000000	0.0	6.5500000	0.3703000	136	cs g	t2p28g	1.1300000	71fra1	0
84		t2n3.0	sp	cu	0.0000000	0.0	1.8810000	0.0000000	0			0.0000000	68ser1	0
84		t2n1.6	sp	cu	0.0000000	0.0	2.1480000	0.0000000	0			0.0000000	68ser1	0
84		t2n1.7	sp	cu	0.0000000	0.0	5.4340000	0.0000000	0			0.0000000	68ser1	0
84		t2n2.0	sp	cu	0.0000000	0.0	1.9400000	0.0000000	0			0.0000000	68ser1	0
84		t2n2.5	sp	cu	0.0000000	0.0	1.7860000	0.0000000	0			0.0000000	68ser1	0
84		t2n5.8	sp	cu	0.0000000	0.0	1.7520000	0.0000000	0			0.0000000	68ser1	0
84		n7n0.8	sp	cu	0.0000000	0.0	0.4250000	0.0000000	0			0.0000000	70kuz1	0
84		n7n1.1	sp	cu	0.0000000	0.0	0.4090000	0.0000000	0			0.0000000	70kuz1	0
84		n7n1.4	sp	cu	0.0000000	0.0	0.4000000	0.0000000	0			0.0000000	70kuz1	0
84		n7n1.7	sp	cu	0.0000000	0.0	0.4230000	0.0000000	0			0.0000000	70kuz1	0
84		n7n2.2	sp	cu	0.0000000	0.0	0.4200000	0.0000000	0			0.0000000	70kuz1	0
84	br g	t2d14.	rc	cu	0.0000000	0.0	0.4000000	0.0000000	89	sr g	t2d14.	1.0000000	57ale1	0
84	br g	u8d 5.	rc	cu	0.0000000	0.0	0.7000000	0.0100000	140	ba g	u8d10.	1.0000000	57ale1	0
84	br g	u8d14.	rc	cu	0.0000000	0.0	0.2300000	0.0100000	140	ba g	u8d14.	1.0000000	57ale1	0
84	br g	u5p20	rc	re	0.0000000	0.0	0.4300000	0.0400000	99	mo g	u5p20	1.0000000	62cro1	0
84	br g	t2p11.	rc	cu	0.0000000	0.0	1.3900000	0.2800000	0		m barn	0.7500000	68fre1	0
84	br g	t2d12.	rc	cu	0.0000000	0.0	1.4600000	0.0000000	0		m barn	0.6600000	68fre1	0
84	br g	t2n3.0	rc	cu	0.0000000	0.0	2.9900000	0.0600000	99	mo g	t2n3.0	2.7800000	68lyl1	0
84	br g	t2n2.0	rc	cu	0.0000000	0.0	4.5400000	0.4800000	0			0.0000000	80gle1	0
84	br g	t2n3.0	rc	cu	0.0000000	0.0	4.0500000	0.5200000	0			0.0000000	80gle1	0
84	br g	t2n4.0	rc	cu	0.0000000	0.0	4.3500000	0.4700000	0			0.0000000	80gle1	0
84	br g	t2n5.9	rc	cu	0.0000000	0.0	4.0200000	0.7600000	0			0.0000000	80gle1	0
84	br g	t2n6.4	rc	cu	0.0000000	0.0	5.3400000	0.6500000	0			0.0000000	80gle1	0
84	br g	t2n6.9	rc	cu	0.0000000	0.0	5.5000000	0.7100000	0			0.0000000	80gle1	0

84 br g t2n7.6 rc cu 0.0000000 0.0 5.0500000 0.6000000 0 0.0000000 80gle1 0
84 br g t2n8.0 rc cu 0.0000000 0.0 5.4700000 0.5300000 0 0.0000000 80gle1 0
85 u234f rc cu 2.1626891 6.4 2.2000000 0.0900000 140 ba g u234f 5.9300000 77bla1 0
85 u234f es cu 2.3993131 30.0 2.3800000 0.0000000 0 0.0000000 72sid1 0
85 u237f es cu 0.9638925 30.0 0.9700000 0.0000000 0 0.0000000 72sid1 0
85 pu240h es cu 0.8325893 30.0 0.0082000 0.0000000 0 0.0100000 77net1 0
85 u234he es cu 2.3179889 30.0 2.3400000 0.0000000 0 0.0000000 75mee1 0
85 u236he es cu 1.3461805 30.0 1.3500000 0.0000000 0 0.0000000 75mee1 0
85 pu238f es cu 0.7096023 30.0 0.7000000 0.0000000 0 0.0000000 72sid1 0
85 am241f es cu 0.4826716 30.0 0.4700000 0.0000000 0 0.0000000 72sid1 0
85 kr m am241f rc cu 0.5954550 49.8 0.8700000 0.1800000 88 kr g am241f 1.8000000 83gud1 0
85 am243f es cu 0.3595466 30.0 0.3600000 0.0000000 0 0.0000000 72sid1 0
85 np238f es cu 0.7076062 30.0 0.7100000 0.0000000 0 0.0000000 72sid1 0
85 cm242f es cu 0.4093515 30.0 0.4100000 0.0000000 0 0.0000000 72sid1 0
85 kr m u8n1.7 rc cu 0.0000000 0.0 0.7410000 94.5000000% 0 0.0000000 88afa1 0
85 kr m u8n2.2 rc cu 0.0000000 0.0 0.8657000 13.9000000% 0 0.0000000 88afa1 0
85 kr m u8n3.7 rc cu 0.0000000 0.0 0.8344000 9.6000000% 0 0.0000000 88afa1 0
85 kr m u8n4.8 rc cu 0.0000000 0.0 1.0330000 9.7000000% 0 0.0000000 88afa1 0
85 kr m u8n6.0 rc cu 0.0000000 0.0 1.1060000 12.7000000% 0 0.0000000 88afa1 0
85 t2n3.0 sp cu 0.0000000 0.0 2.4710000 0.0000000 0 0.0000000 68ser1 0
85 t2n1.6 sp cu 0.0000000 0.0 2.8050000 0.0000000 0 0.0000000 68ser1 0
85 t2n1.7 sp cu 0.0000000 0.0 4.8300000 0.0000000 0 0.0000000 68ser1 0
85 t2n2.0 sp cu 0.0000000 0.0 2.6000000 0.0000000 0 0.0000000 68ser1 0
85 t2n2.5 sp cu 0.0000000 0.0 2.4540000 0.0000000 0 0.0000000 68ser1 0
85 t2n5.8 sp cu 0.0000000 0.0 2.3140000 0.0000000 0 0.0000000 68ser1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

85 n7n0.8 sp cu 0.0000000 0.0 0.5770000 0.0000000 0 0.0000000 70kuz1 0
85 n7n1.1 sp cu 0.0000000 0.0 0.5670000 0.0000000 0 0.0000000 70kuz1 0
85 n7n1.4 sp cu 0.0000000 0.0 0.5870000 0.0000000 0 0.0000000 70kuz1 0
85 n7n1.7 sp cu 0.0000000 0.0 0.5950000 0.0000000 0 0.0000000 70kuz1 0
85 n7n2.2 sp cu 0.0000000 0.0 0.5800000 0.0000000 0 0.0000000 70kuz1 0
85 kr g t2a44. ms re 0.0000000 0.0 0.3090000 0.0000000 84 kr g t2a44. 1.0000000 68mch2 0
85 kr m u8n2.0 rc cu 0.0000000 0.0 0.7500000 0.0000000 0 0.0000000 75fly4 0

85	kr m	u8n8.0	rc	cu		0.0000000	0.0	0.8000000	0.0000000	0			0.0000000	75fly4	0
85	kr m	u8n1.5	rc	cu		0.0000000	0.0	0.7900000	0.0500000	0			0.0000000	78nag1	0
85	kr m	u8n2.0	rc	cu		0.0000000	0.0	0.7700000	0.0300000	0			0.0000000	78nag1	0
85	kr m	u8n3.9	rc	cu		0.0000000	0.0	0.8800000	0.0400000	0			0.0000000	78nag1	0
85	kr m	u8n5.5	rc	cu		0.0000000	0.0	1.0300000	0.0600000	0			0.0000000	78nag1	0
85	kr m	u8n6.9	rc	cu		0.0000000	0.0	0.8300000	0.0500000	0			0.0000000	78nag1	0
85	kr m	u8n7.7	rc	cu		0.0000000	0.0	0.7400000	0.0400000	0			0.0000000	78nag1	0
85	kr m	t2n2.0	rc	cu		0.0000000	0.0	5.1300000	0.2100000	0			0.0000000	80gle1	0
85	kr m	t2n3.0	rc	cu		0.0000000	0.0	4.3800000	0.1700000	0			0.0000000	80gle1	0
85	kr m	t2n4.0	rc	cu		0.0000000	0.0	4.1700000	0.1600000	0			0.0000000	80gle1	0
85	kr m	t2n5.9	rc	cu		0.0000000	0.0	4.0000000	0.2000000	0			0.0000000	80gle1	0
85	kr m	t2n6.4	rc	cu		0.0000000	0.0	5.7000000	0.2200000	0			0.0000000	80gle1	0
85	kr m	t2n6.9	rc	cu		0.0000000	0.0	6.8200000	0.3300000	0			0.0000000	80gle1	0
85	kr m	t2n7.6	rc	cu		0.0000000	0.0	6.0100000	0.2600000	0			0.0000000	80gle1	0
85	kr m	t2n8.0	rc	cu		0.0000000	0.0	5.8100000	0.2000000	0			0.0000000	80gle1	0
86		u234f	es	cu		3.4575779	30.0	3.3800000	0.0000000	0			0.0000000	72sid1	0
86		u237f	es	cu		1.5231881	30.0	1.5300000	0.0000000	0			0.0000000	72sid1	0
86		pu240h	es	cu		1.0356599	30.0	0.0102000	0.0000000	0			0.0100000	77net1	0
86		u234he	es	cu		2.2299358	30.0	2.2600000	0.0000000	0			0.0000000	75mee1	0
86		u236he	es	cu		1.7151337	30.0	1.7200000	0.0000000	0			0.0000000	75mee1	0
86		pu238f	es	cu		1.0339920	30.0	1.0200000	0.0000000	0			0.0000000	72sid1	0
86		am241f	cm	cu		0.0000000	0.0	0.0070000	0.0000000	0			0.0100000	80sig1	0
86		am241f	es	cu		0.6469853	30.0	0.6300000	0.0000000	0			0.0000000	72sid1	0
86		am243f	es	cu		0.4993703	30.0	0.5000000	0.0000000	0			0.0000000	72sid1	0
86		np238f	es	cu		1.1361564	30.0	1.1400000	0.0000000	0			0.0000000	72sid1	0
86		cm242f	es	cu		0.5587474	30.0	0.5600000	0.0000000	0			0.0000000	72sid1	0
86	rb g	t2d14.	rc	cu		0.0000000	0.0	0.0001250	0.0001250	89	sr g	t2d14.	1.0000000	57ale1	0
86	rb g	u8d14.	rc	cu	lt	0.0000000	0.0	0.0001120	0.0000200	140	ba g	u8d14.	1.0000000	57ale1	0
86	rb g	u38a46	ms	fi		0.0000000	0.0	0.0024300	0.0000500	86		u38a46	1.0000000	59chu1	0
86	rb g	u35a46	ms	fi		0.0000000	0.0	0.0231000	0.0008000	86		u35a46	1.0000000	59chu1	0
86	rb g	u3d14.	rc	fi		0.0000000	0.0	0.0200000	0.0000000	86		u3d14.	1.0000000	62cor1	0
86	rb g	u3a25.	rc	fi		0.0000000	0.0	0.0100000	0.0000000	86		u3a25.	1.0000000	62cor1	0
86	rb g	t2p9.5	rc	in		0.0000000	0.0	0.0013900	0.0000000	0		m barn	0.2100000	68fre1	0
86	rb g	t2p11.	rc	in		0.0000000	0.0	0.0781000	0.0000000	0		m barn	0.7500000	68fre1	0
86	rb g	t2d12.	rc	in		0.0000000	0.0	0.0031700	0.0000000	0		m barn	0.6600000	68fre1	0
86	rb g	u8p28g	rc	re		0.0000000	0.0	7.2700000	0.3433000	136	cs g	u8p28g	2.6400000	71fra1	0

86	rb	g	t2p28g	rc	re		0.0000000	0.0	6.7500000	0.3703000	136	cs	g	t2p28g	1.1300000	71fra1	0
86	kr	g	t2a44.	ms	re		0.0000000	0.0	1.4140000	0.0000000	84	kr	g	t2a44.	1.0000000	68mch2	0
86			t2n3.0	sp	cu		0.0000000	0.0	3.1310000	0.0000000	0				0.0000000	68ser1	0
86			t2n1.6	sp	cu		0.0000000	0.0	3.6270000	0.0000000	0				0.0000000	68ser1	0
86			t2n1.7	sp	cu		0.0000000	0.0	3.1200000	0.0000000	0				0.0000000	68ser1	0
86			t2n2.0	sp	cu		0.0000000	0.0	3.4390000	0.0000000	0				0.0000000	68ser1	0
86			t2n2.5	sp	cu		0.0000000	0.0	3.2730000	0.0000000	0				0.0000000	68ser1	0
86			t2n5.8	sp	cu		0.0000000	0.0	2.9860000	0.0000000	0				0.0000000	68ser1	0
86			n7n0.8	sp	cu		0.0000000	0.0	0.7870000	0.0000000	0				0.0000000	70kuz1	0
86			n7n1.1	sp	cu		0.0000000	0.0	0.7730000	0.0000000	0				0.0000000	70kuz1	0
86			n7n1.4	sp	cu		0.0000000	0.0	0.8010000	0.0000000	0				0.0000000	70kuz1	0
86			n7n1.7	sp	cu		0.0000000	0.0	0.7930000	0.0000000	0				0.0000000	70kuz1	0
86			n7n2.2	sp	cu		0.0000000	0.0	0.8210000	0.0000000	0				0.0000000	70kuz1	0
87	sr	m	u234f	es	cu		0.0000032	30.0	0.0000032	0.0000000	0				0.0000000	75mee1	0
87	kr	g	u234f	rc	cu	nr	2.9097998	6.4	2.9600000	0.1300000	140	ba	g	u234f	5.9300000	77bla1	0
87	kr	g	u234f	es	cu		3.8106738	30.0	3.7800000	0.0000000	0				0.0000000	72sid1	0
87	kr	g	u234f	es	cu		3.4074279	30.0	3.3800000	0.0000000	0				0.0000000	75mee1	0
87	sr	m	u237f	es	cu		0.0000000	30.0	0.0000000	0.0000000	0				0.0000000	75mee1	0
87	kr	g	u237f	es	cu		1.9874072	30.0	2.0000000	0.0000000	0				0.0000000	72sid1	0
87	kr	g	u237f	es	cu		1.5203665	30.0	1.5300000	0.0000000	0				0.0000000	75mee1	0
87	sr	m	pu240h	es	cu		0.0000014	30.0	0.0000014	0.0000000	0				0.0000000	75mee1	0
87	kr	g	pu240h	es	cu		1.2467308	30.0	0.0124000	0.0000000	0				0.0100000	77net1	0
87	kr	g	pu240h	rc	cu		1.2266222	8.2	0.0122000	8.2000000%	0				0.0100000	77net1	0
87	sr	m	u234he	es	cu		0.0000046	30.0	0.0000046	0.0000000	0				0.0000000	75mee1	0
87	kr	g	u234he	es	cu		3.0411222	30.0	3.0700000	0.0000000	0				0.0000000	75mee1	0
87	sr	m	u236he	es	cu		0.0000002	30.0	0.0000002	0.0000000	0				0.0000000	75mee1	0
87	kr	g	u236he	es	cu		2.5128703	30.0	2.5200000	0.0000000	0				0.0000000	75mee1	0
87	sr	m	pu238f	es	cu		0.0000014	30.0	0.0000014	0.0000000	0				0.0000000	75mee1	0
87	kr	g	pu238f	es	cu		1.3025128	30.0	1.2900000	0.0000000	0				0.0000000	72sid1	0
87	kr	g	pu238f	es	cu		1.0298938	30.0	1.0200000	0.0000000	0				0.0000000	75mee1	0
87	br	g	pu238f	rc	cu		0.8481478	15.5	0.8400000	0.1300000	0				0.0000000	81wal1	0
87			am241f	cm	cu		0.0000000	0.0	0.0089000	0.0000000	0				0.0100000	80sig1	0
87	sr	m	am241f	es	cu		0.0000020	30.0	0.0000020	0.0000000	0				0.0000000	75mee1	0
87	kr	g	am241f	es	cu		0.8458232	30.0	0.8300000	0.0000000	0				0.0000000	72sid1	0
87	kr	g	am241f	es	cu		0.6420104	30.0	0.6300000	0.0000000	0				0.0000000	75mee1	0
87	kr	g	am241f	rc	cu		0.6180431	51.8	0.9100000	0.2300000	88	kr	g	am241f	1.8000000	83gud1	0

87	br	g	am241f	rc	cu	0.7744888	11.8	0.7600000	0.0900000	0	0.0000000	81wal1	0
87			am243f	es	cu	0.6691561	30.0	0.6700000	0.0000000	0	0.0000000	72sid1	0
87	sr	m	am243f	es	cu	0.0000004	30.0	0.0000004	0.0000000	0	0.0000000	75mee1	0
87	kr	g	am243f	es	cu	0.6691561	30.0	0.6700000	0.0000000	0	0.0000000	75mee1	0
87			np238f	es	cu	1.4251786	30.0	1.4300000	0.0000000	0	0.0000000	72sid1	0
87	sr	m	np238f	es	cu	0.0000001	30.0	0.0000001	0.0000000	0	0.0000000	75mee1	0
87	kr	g	np238f	es	cu	1.4251786	30.0	1.4300000	0.0000000	0	0.0000000	75mee1	0
87	sr	m	cm242f	es	cu	0.0000260	30.0	0.0000260	0.0000000	0	0.0000000	75mee1	0
87	kr	g	cm242f	es	cu	0.7488137	30.0	0.7500000	0.0000000	0	0.0000000	72sid1	0
87	kr	g	u8n1.7	rc	cu	0.0000000	0.0	1.2000000	12.5000000%	0	0.0000000	88afa1	0
87	kr	g	u8n2.2	rc	cu	0.0000000	0.0	1.0600000	12.3000000%	0	0.0000000	88afa1	0
87	kr	g	u8n3.7	rc	cu	0.0000000	0.0	1.3900000	11.5000000%	0	0.0000000	88afa1	0
87	kr	g	u8n4.8	rc	cu	0.0000000	0.0	1.5200000	10.5000000%	0	0.0000000	88afa1	0
87	kr	g	u8n6.0	rc	cu	0.0000000	0.0	1.5400000	13.0000000%	0	0.0000000	88afa1	0
87			t2n3.0	sp	cu	0.0000000	0.0	3.9730000	0.0000000	0	0.0000000	68ser1	0
87			t2n1.6	sp	cu	0.0000000	0.0	4.5960000	0.0000000	0	0.0000000	68ser1	0
87			t2n1.7	sp	cu	0.0000000	0.0	4.0830000	0.0000000	0	0.0000000	68ser1	0
87			t2n2.0	sp	cu	0.0000000	0.0	4.3570000	0.0000000	0	0.0000000	68ser1	0
87			t2n2.5	sp	cu	0.0000000	0.0	4.2470000	0.0000000	0	0.0000000	68ser1	0
87			t2n5.8	sp	cu	0.0000000	0.0	3.7440000	0.0000000	0	0.0000000	68ser1	0
87			n7n0.8	sp	cu	0.0000000	0.0	1.0390000	0.0000000	0	0.0000000	70kuz1	0
87			n7n1.1	sp	cu	0.0000000	0.0	1.0200000	0.0000000	0	0.0000000	70kuz1	0
87			n7n1.4	sp	cu	0.0000000	0.0	1.0120000	0.0000000	0	0.0000000	70kuz1	0
87			n7n1.7	sp	cu	0.0000000	0.0	1.0430000	0.0000000	0	0.0000000	70kuz1	0
87			n7n2.2	sp	cu	0.0000000	0.0	1.1170000	0.0000000	0	0.0000000	70kuz1	0
87	kr	g	u8n2.0	rc	cu	0.0000000	0.0	1.5300000	0.0000000	0	0.0000000	75fly4	0
87	kr	g	u8n8.0	rc	cu	0.0000000	0.0	2.0000000	0.0000000	0	0.0000000	75fly4	0
87	kr	g	u8n1.5	rc	cu	0.0000000	0.0	1.6000000	0.1000000	0	0.0000000	78nag1	0
87	kr	g	u8n2.0	rc	cu	0.0000000	0.0	1.5700000	0.0700000	0	0.0000000	78nag1	0
87	kr	g	u8n3.9	rc	cu	0.0000000	0.0	1.7800000	0.0800000	0	0.0000000	78nag1	0
87	kr	g	u8n5.5	rc	cu	0.0000000	0.0	1.9000000	0.1100000	0	0.0000000	78nag1	0
87	kr	g	u8n6.9	rc	cu	0.0000000	0.0	1.4700000	0.1100000	0	0.0000000	78nag1	0
87	kr	g	u8n7.7	rc	cu	0.0000000	0.0	1.8200000	0.0900000	0	0.0000000	78nag1	0
87	kr	g	t2n2.0	rc	cu	0.0000000	0.0	7.3700000	0.3400000	0	0.0000000	80gle1	0
87	kr	g	t2n3.0	rc	cu	0.0000000	0.0	6.8500000	0.3300000	0	0.0000000	80gle1	0
87	kr	g	t2n4.0	rc	cu	0.0000000	0.0	6.2100000	0.3000000	0	0.0000000	80gle1	0

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 87 kr g   t2n5.9   rc    cu        0.0000000  0.0   5.2800000  0.3000000     0                    0.0000000   80gle1      0
 87 kr g   t2n6.4   rc    cu        0.0000000  0.0   6.8000000  0.3100000     0                    0.0000000   80gle1      0
 87 kr g   t2n6.9   rc    cu        0.0000000  0.0   7.6100000  0.3900000     0                    0.0000000   80gle1      0
 87 kr g   t2n7.6   rc    cu        0.0000000  0.0   7.1000000  0.3500000     0                    0.0000000   80gle1      0
 87 kr g   t2n8.0   rc    cu        0.0000000  0.0   7.4400000  0.3000000     0                    0.0000000   80gle1      0
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0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type        value   err.     value                nuclide     material       value      no.   treatment

 87 kr g   p9v0.3   rc    re        0.0000000  0.0   0.8990000  0.0300000    87 kr g      pu239t      1.0000000   73van1      0
 88        u234f    rc    cu        3.9321620  6.4   4.0000000  0.0700000   140 ba g      u234f       5.9300000   77bla1      0
 88        u234f    es    cu        4.6171656 30.0   4.5800000  0.0000000     0                    0.0000000   72sid1      0
 88        u237f    es    cu        2.5983797 30.0   2.6100000  0.0000000     0                    0.0000000   72sid1      0
 88        pu240h   es    cu        1.4980878 30.0   0.0149000  0.0000000     0                    0.0100000   77net1      0
 88 kr g   pu240h   cm    cu        0.0000000  0.0   0.0139000  4.9000000%    0                    0.0100000   79pri1      0
 88 kr g   pu240h   rc    cu        1.3975450  5.0   0.0139000  4.9000000%    0                    0.0100000   77net1      0
 88        u234he   es    cu        3.7345377 30.0   3.7700000  0.0000000     0                    0.0000000   75mee1      0
 88        u236he   es    cu        2.5627288 30.0   2.5700000  0.0000000     0                    0.0000000   75mee1      0
 88        pu238f   es    cu        1.5915366 30.0   1.5700000  0.0000000     0                    0.0000000   72sid1      0
 88        am241f   cm    cu        0.0000000  0.0   0.0113000  0.0000000     0                    0.0100000   80sig1      0
 88        am241f   es    cu        1.0885784 30.0   1.0600000  0.0000000     0                    0.0000000   72sid1      0
 88 kr g   am241f   rc    cu    rp  1.3524876 54.3   1.8000000  0.0000000  no. relative values =    2            83gud1
 88        am243f   es    cu        0.8684504 30.0   0.8700000  0.0000000     0                    0.0000000   72sid1      0
 88        np238f   es    cu        1.7440997 30.0   1.7500000  0.0000000     0                    0.0000000   72sid1      0
 88        cm242f   es    cu        0.9584816 30.0   0.9600000  0.0000000     0                    0.0000000   72sid1      0
 88 kr g   u8n1.7   rc    cu        0.0000000  0.0   1.6000000 10.6000000%    0                    0.0000000   88afa1      0
 88 kr g   u8n2.2   rc    cu        0.0000000  0.0   1.4800000 14.9000000%    0                    0.0000000   88afa1      0
 88 kr g   u8n3.7   rc    cu        0.0000000  0.0   1.7700000 10.7000000%    0                    0.0000000   88afa1      0
 88 kr g   u8n4.8   rc    cu        0.0000000  0.0   2.0000000 10.5000000%    0                    0.0000000   88afa1      0
 88 kr g   u8n6.0   rc    cu        0.0000000  0.0   2.0400000 11.3000000%    0                    0.0000000   88afa1      0
 88        t2n3.0   sp    cu        0.0000000  0.0   4.7020000  0.0000000     0                    0.0000000   68ser1      0
 88        t2n1.6   sp    cu        0.0000000  0.0   5.2550000  0.0000000     0                    0.0000000   68ser1      0
 88        t2n1.7   sp    cu        0.0000000  0.0   4.9440000  0.0000000     0                    0.0000000   68ser1      0
 88        t2n2.0   sp    cu        0.0000000  0.0   5.2360000  0.0000000     0                    0.0000000   68ser1      0
 88        t2n2.5   sp    cu        0.0000000  0.0   5.0700000  0.0000000     0                    0.0000000   68ser1      0
 88        t2n5.8   sp    cu        0.0000000  0.0   4.4950000  0.0000000     0                    0.0000000   68ser1      0
```

88		n7n0.8	sp	cu	0.0000000	0.0	1.3960000	0.0000000	0			0.0000000	70kuz1	0
88		n7n1.1	sp	cu	0.0000000	0.0	1.3440000	0.0000000	0			0.0000000	70kuz1	0
88		n7n1.4	sp	cu	0.0000000	0.0	1.3440000	0.0000000	0			0.0000000	70kuz1	0
88		n7n1.7	sp	cu	0.0000000	0.0	1.4020000	0.0000000	0			0.0000000	70kuz1	0
88		n7n2.2	sp	cu	0.0000000	0.0	1.4440000	0.0000000	0			0.0000000	70kuz1	0
88	kr g	u8n2.0	rc	cu	0.0000000	0.0	1.7900000	0.0000000	0			0.0000000	75fly4	0
88	kr g	u8n8.0	rc	cu	0.0000000	0.0	2.2800000	0.0000000	0			0.0000000	75fly4	0
88	kr g	u8n1.5	rc	cu	0.0000000	0.0	1.7100000	0.1300000	0			0.0000000	78nag1	0
88	kr g	u8n2.0	rc	cu	0.0000000	0.0	1.9500000	0.0900000	0			0.0000000	78nag1	0
88	kr g	u8n3.9	rc	cu	0.0000000	0.0	2.0900000	0.1500000	0			0.0000000	78nag1	0
88	kr g	u8n5.5	rc	cu	0.0000000	0.0	2.0500000	0.1500000	0			0.0000000	78nag1	0
88	kr g	u8n6.9	rc	cu	0.0000000	0.0	1.9600000	0.1500000	0			0.0000000	78nag1	0
88	kr g	u8n7.7	rc	cu	0.0000000	0.0	2.3200000	0.1500000	0			0.0000000	78nag1	0
88	kr g	t2n2.0	rc	cu	0.0000000	0.0	6.9300000	0.2900000	0			0.0000000	80gle1	0
88	kr g	t2n3.0	rc	cu	0.0000000	0.0	6.6400000	0.2700000	0			0.0000000	80gle1	0
88	kr g	t2n4.0	rc	cu	0.0000000	0.0	6.1600000	0.2500000	0			0.0000000	80gle1	0
88	kr g	t2n5.9	rc	cu	0.0000000	0.0	5.7100000	0.2700000	0			0.0000000	80gle1	0
88	kr g	t2n6.4	rc	cu	0.0000000	0.0	6.4600000	0.2500000	0			0.0000000	80gle1	0
88	kr g	t2n6.9	rc	cu	0.0000000	0.0	7.5500000	0.3400000	0			0.0000000	80gle1	0
88	kr g	t2n7.6	rc	cu	0.0000000	0.0	7.0300000	0.3000000	0			0.0000000	80gle1	0
88	kr g	t2n8.0	rc	cu	0.0000000	0.0	6.7100000	0.2500000	0			0.0000000	80gle1	0
88	kr g	p9v0.3	rc	re	0.0000000	0.0	0.9730000	0.0380000	88	kr g	pu239t	1.0000000	73van1	0
89		u234f	es	cu	5.3758543	30.0	5.2900000	0.0000000	0			0.0000000	72sid1	0
89		u237f	es	cu	3.3052186	30.0	3.3200000	0.0000000	0			0.0000000	72sid1	0
89		pu240h	es	cu	1.7667552	30.0	0.0176000	0.0000000	0			0.0100000	77net1	0
89	sr g	pu240h	rc	cu	1.7466785	5.0	0.0174000	3.0000000%	0			0.0100000	77net1	0
89		u234he	es	cu	4.2892701	30.0	4.3300000	0.0000000	0			0.0000000	75mee1	0
89	sr g	u236he	rc	cu	3.6551699	6.4	0.0378000	0.0019000	147	nd g	u236he	0.0179000	72net1	0
89		pu238f	es	cu	2.0679839	30.0	2.0400000	0.0000000	0			0.0000000	72sid1	0
89		am241f	cm	cu	0.0000000	0.0	0.0140000	0.0000000	0			0.0100000	80sig1	0
89		am241f	es	cu	1.3555882	30.0	1.3200000	0.0000000	0			0.0000000	72sid1	0
89	sr g	am241f	cm	cu	0.0000000	0.0	1.0000000	0.0000000	0			0.0000000	69gun2	0
89		am243f	es	cu	1.1185894	30.0	1.1200000	0.0000000	0			0.0000000	72sid1	0
89		np238f	es	cu	2.2745643	30.0	2.2800000	0.0000000	0			0.0000000	72sid1	0
89		cm242f	es	cu	1.2180703	30.0	1.2200000	0.0000000	0			0.0000000	72sid1	0
89	sr g	cm242f	es	cu	1.2200672	30.0	1.2220000	0.0000000	0			0.0000000	75mee1	0

89	sr g	u5naal	rc	re	0.0000000	0.0	0.8250000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
89	rb g	u8n1.7	rc	cu	0.0000000	0.0	2.8700000	12.5000000%	0		0.0000000	88afa1	0
89	rb g	u8n1.7	rc	cu	0.0000000	0.0	3.2600000	11.0000000%	0		0.0000000	88afa1	0
89	rb g	u8n2.2	rc	cu	0.0000000	0.0	3.0200000	12.9000000%	0		0.0000000	88afa1	0
89	rb g	u8n2.2	rc	cu	0.0000000	0.0	3.0300000	14.2000000%	0		0.0000000	88afa1	0
89	rb g	u8n3.7	rc	cu	0.0000000	0.0	2.9300000	13.7000000%	0		0.0000000	88afa1	0
89	rb g	u8n3.7	rc	cu	0.0000000	0.0	2.9500000	15.2000000%	0		0.0000000	88afa1	0
89	rb g	u8n4.8	rc	cu	0.0000000	0.0	3.6600000	13.7000000%	0		0.0000000	88afa1	0
89	rb g	u8n6.0	rc	cu	0.0000000	0.0	3.1500000	12.4000000%	0		0.0000000	88afa1	0
89		t2n3.0	sp	cu	0.0000000	0.0	5.5530000	0.0000000	0		0.0000000	68ser1	0
89		t2n1.6	sp	cu	0.0000000	0.0	5.8980000	0.0000000	0		0.0000000	68ser1	0
89		t2n1.7	sp	cu	0.0000000	0.0	5.5900000	0.0000000	0		0.0000000	68ser1	0
89		t2n2.0	sp	cu	0.0000000	0.0	6.0020000	0.0000000	0		0.0000000	68ser1	0
89		t2n2.5	sp	cu	0.0000000	0.0	5.7330000	0.0000000	0		0.0000000	68ser1	0
89		t2n5.8	sp	cu	0.0000000	0.0	5.1140000	0.0000000	0		0.0000000	68ser1	0
89		n7n0.8	sp	cu	0.0000000	0.0	1.7750000	0.0000000	0		0.0000000	70kuz1	0
89		n7n1.1	sp	cu	0.0000000	0.0	1.7270000	0.0000000	0		0.0000000	70kuz1	0
89		n7n1.4	sp	cu	0.0000000	0.0	1.7430000	0.0000000	0		0.0000000	70kuz1	0
89		n7n1.7	sp	cu	0.0000000	0.0	1.7570000	0.0000000	0		0.0000000	70kuz1	0
89		n7n2.2	sp	cu	0.0000000	0.0	1.7640000	0.0000000	0		0.0000000	70kuz1	0
89	sr g	n7ndf	rc	re	0.0000000	0.0	0.2700000	0.0000000	99 mo g	u235t	0.0000000	56for1	7
89	sr g	u8d 5.	rc	cu	0.0000000	0.0	0.5700000	0.0400000	140 ba g	u8d10.	1.0000000	57ale1	0
89	sr g	u8d14.	rc	cu	0.0000000	0.0	0.6100000	0.0700000	140 ba g	u8d14.	1.0000000	57ale1	0
89	sr g	u8d05.	rc	cu	0.0000000	0.0	94.0000000	4.0000000	0	u barn	35.0000000	57sug1	0
89	sr g	u8d10.	rc	cu	0.0000000	0.0	1.7600000	0.0600000	0	m barn	0.8600000	57sug1	0
89	sr g	u8d14.	rc	cu	0.0000000	0.0	9.3000000	0.4000000	0	m barn	4.3000000	57sug1	0
89	sr g	u5ndcu	rc	re	0.0000000	0.0	0.8100000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
89	sr g	u8ndcu	rc	re	0.0000000	0.0	0.5200000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
89	sr g	u8naal	rc	re	0.0000000	0.0	0.5400000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
89	sr g	u8nabe	rc	re	0.0000000	0.0	0.5400000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
89	sr g	u8ndli	rc	re	0.0000000	0.0	0.5650000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
89	sr g	u5v8.9	rc	re	0.0000000	0.0	0.9600000	0.0400000	99 mo g	u235t	0.0000000	62gle1	7
89	sr g	t2a19.	rc	re	0.0000000	0.0	0.8100000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
89	sr g	t2a20.	rc	re	0.0000000	0.0	0.8300000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
89	sr g	t2a20.	rc	re	0.0000000	0.0	0.9300000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
89	sr g	t2a22.	rc	re	0.0000000	0.0	0.8700000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7

89 sr g	t2a24.	rc	re	0.0000000	0.0	0.8600000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7		
89 sr g	t2a26.	rc	re	0.0000000	0.0	0.9500000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7		
89 sr g	t2a27.	rc	re	0.0000000	0.0	0.8300000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7		
89 sr g	t2a30.	rc	re	0.0000000	0.0	0.8900000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7		
89 sr g	t2a30.	rc	re	0.0000000	0.0	0.9800000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7		
89 sr g	t2a32.	rc	re	0.0000000	0.0	0.8300000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7		
89 sr g	t2a34.	rc	re	0.0000000	0.0	0.8700000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7		
89 sr g	t2a34.	rc	re	0.0000000	0.0	0.9400000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7		
89 sr g	t2a36.	rc	re	0.0000000	0.0	0.8100000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7		
89 sr g	t2a37.	rc	re	0.0000000	0.0	0.8800000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7		
89 sr g	t2a38.	rc	re	0.0000000	0.0	0.8400000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7		
89 sr g	u5npbe	rc	re	0.0000000	0.0	0.8400000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7		
89 sr g	u5nabe	rc	re	0.0000000	0.0	0.8300000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7		
89 sr g	u5ndbe	rc	re	0.0000000	0.0	0.8400000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7		
89 sr g	u5ndli	rc	re	0.0000000	0.0	0.8900000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7		
89 sr g	p9necd	rc	re	0.0000000	0.0	1.0260000	0.0180000	99 mo g	pu239t	0.0000000	64cro1	7		
89 sr g	u8n2.0	rc	cu	0.0000000	0.0	2.4800000	0.0000000	0		0.0000000	75fly4	0		
89 sr g	u8n8.0	rc	cu	0.0000000	0.0	2.4900000	0.0000000	0		0.0000000	75fly4	0		
89 sr g	t2n11.	rc	cu	0.0000000	0.0	6.7000000	0.0000000	0		0.0000000	53tur1	0		
89 rb g	u8n8.0	rc	cu	0.0000000	0.0	2.6400000	0.0000000	0		0.0000000	75fly4	0		
89 rb g	u8n1.5	rc	cu	0.0000000	0.0	2.3400000	0.3100000	0		0.0000000	78nag1	0		
1														
0measured nuclide	fissile material	meas. tech.	meas. type	note value	updated err.	pct. value	published	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment	
89 rb g	u8n2.0	rc	cu	0.0000000	0.0	2.2600000	0.3000000	0		0.0000000	78nag1	0		
89 rb g	u8n3.9	rc	cu	0.0000000	0.0	2.5700000	0.2900000	0		0.0000000	78nag1	0		
89 rb g	u8n5.5	rc	cu	0.0000000	0.0	2.8600000	0.3700000	0		0.0000000	78nag1	0		
89 rb g	u8n7.7	rc	cu	0.0000000	0.0	2.6800000	0.3300000	0		0.0000000	78nag1	0		
89 rb g	t2n2.0	rc	cu	0.0000000	0.0	7.7000000	0.6400000	0		0.0000000	80gle1	0		
89 rb g	t2n3.0	rc	cu	0.0000000	0.0	7.5600000	0.6700000	0		0.0000000	80gle1	0		
89 rb g	t2n4.0	rc	cu	0.0000000	0.0	7.1800000	0.5800000	0		0.0000000	80gle1	0		
89 rb g	t2n5.9	rc	cu	0.0000000	0.0	7.4900000	1.0000000	0		0.0000000	80gle1	0		
89 rb g	t2n6.4	rc	cu	0.0000000	0.0	7.9700000	0.7100000	0		0.0000000	80gle1	0		
89 rb g	t2n6.9	rc	cu	0.0000000	0.0	6.9800000	0.6600000	0		0.0000000	80gle1	0		
89 rb g	t2n7.6	rc	cu	0.0000000	0.0	7.0700000	0.6400000	0		0.0000000	80gle1	0		

89	rb	g	t2n8.0	rc	cu	0.0000000	0.0	7.7600000	0.8400000	0			0.0000000	80gle1	0
90			u234f	es	cu	6.0364035	30.0	5.9400000	0.0000000	0			0.0000000	72sid1	0
90			u237f	es	cu	3.9025473	30.0	3.9200000	0.0000000	0			0.0000000	72sid1	0
90			pu240h	es	cu	2.1080602	30.0	0.0210000	0.0000000	0			0.0100000	77net1	0
90	sr	g	pu240h	rc	cu	1.9474461	5.0	0.0194000	3.0000000%	0			0.0100000	77net1	0
90			u234he	es	cu	4.7053193	30.0	4.7500000	0.0000000	0			0.0000000	75mee1	0
90			u236he	es	cu	3.8123578	30.0	3.8200000	0.0000000	0			0.0000000	75mee1	0
90			pu238f	es	cu	2.4333765	30.0	2.4100000	0.0000000	0			0.0000000	72sid1	0
90			am241f	cm	cu	0.0000000	0.0	0.0172000	0.0000000	0			0.0100000	80sig1	0
90			am241f	es	cu	1.7150245	30.0	1.6700000	0.0000000	0			0.0000000	72sid1	0
90			am243f	es	cu	1.3682745	30.0	1.3700000	0.0000000	0			0.0000000	72sid1	0
90			np238f	es	cu	2.6636345	30.0	2.6700000	0.0000000	0			0.0000000	72sid1	0
90			cm242f	es	cu	1.5175958	30.0	1.5200000	0.0000000	0			0.0000000	72sid1	0
90	y	g	t2a31.	rc	fi	0.0000000	0.0	0.0003900	20.0000000%	90		t2a31.	1.0000000	65net1	0
90	y	g	t2a26.	rc	fi	0.0000000	0.0	0.0001200	20.0000000%	90		t2a26.	1.0000000	65net1	0
90	y	g	t2a20.	rc	fi	0.0000000	0.0	0.0002100	20.0000000%	90		t2a20.	1.0000000	65net1	0
90	y	g	t2a39.	rc	fi	0.0000000	0.0	0.0019000	20.0000000%	90		t2a39.	1.0000000	65net1	0
90	y	g	t2a30.	rc	fi	0.0000000	0.0	0.0004800	20.0000000%	90		t2a30.	1.0000000	65net1	0
90	y	g	t2a30.	rc	fi	0.0000000	0.0	0.0005100	20.0000000%	90		t2a30.	1.0000000	65net1	0
90	y	g	t2a38.	rc	fi	0.0000000	0.0	0.0018000	20.0000000%	90		t2a38.	1.0000000	65net1	0
90	y	g	t2a20.	rc	fi	0.0000000	0.0	0.0002000	20.0000000%	90		t2a20.	1.0000000	65net1	0
90	y	g	t2a39.	rc	fi	0.0000000	0.0	0.0014100	20.0000000%	90		t2a39.	1.0000000	65net1	0
90	y	g	t2a33.	rc	fi	0.0000000	0.0	0.0004900	20.0000000%	90		t2a33.	1.0000000	65net1	0
90	y	g	t2a22.	rc	fi	0.0000000	0.0	0.0002500	20.0000000%	90		t2a22.	1.0000000	65net1	0
90	y	g	t2a38.	rc	fi	0.0000000	0.0	0.0013800	20.0000000%	90		t2a38.	1.0000000	65net1	0
90	y	g	t2a31.	rc	fi	0.0000000	0.0	0.0006400	20.0000000%	90		t2a31.	1.0000000	65net1	0
90	y	g	t2a21.	rc	fi	0.0000000	0.0	0.0001800	20.0000000%	90		t2a21.	1.0000000	65net1	0
90	y	g	t2a36.	rc	fi	0.0000000	0.0	0.0009500	20.0000000%	90		t2a36.	1.0000000	65net1	0
90	y	g	t2a28.	rc	fi	0.0000000	0.0	0.0005100	20.0000000%	90		t2a28.	1.0000000	65net1	0
90	y	g	t2a22.	rc	fi	0.0000000	0.0	0.0003100	20.0000000%	90		t2a22.	1.0000000	65net1	0
90	y	g	t2p9.5	rc	in	0.0000000	0.0	0.0211000	0.0040000	0	m	barn	0.2100000	68fre1	0
90	y	g	t2p11.	rc	in	0.0000000	0.0	0.0716000	0.0000000	0	m	barn	0.7500000	68fre1	0
90	y	g	t2d12.	rc	in	0.0000000	0.0	0.0201000	0.0000000	0	m	barn	0.6600000	68fre1	0
90			t2n3.0	sp	cu	0.0000000	0.0	6.0590000	0.0000000	0			0.0000000	68ser1	0
90			t2n1.6	sp	cu	0.0000000	0.0	6.4400000	0.0000000	0			0.0000000	68ser1	0
90			t2n1.7	sp	cu	0.0000000	0.0	6.0450000	0.0000000	0			0.0000000	68ser1	0

90		t2n2.0	sp	cu		0.0000000	0.0	6.5250000	0.0000000	0			0.0000000	68ser1	0
90		t2n2.5	sp	cu		0.0000000	0.0	6.2750000	0.0000000	0			0.0000000	68ser1	0
90		t2n5.8	sp	cu		0.0000000	0.0	5.5930000	0.0000000	0			0.0000000	68ser1	0
90		n7n0.8	sp	cu		0.0000000	0.0	2.1970000	0.0000000	0			0.0000000	70kuz1	0
90		n7n1.1	sp	cu		0.0000000	0.0	2.2250000	0.0000000	0			0.0000000	70kuz1	0
90		n7n1.4	sp	cu		0.0000000	0.0	2.1990000	0.0000000	0			0.0000000	70kuz1	0
90		n7n1.7	sp	cu		0.0000000	0.0	2.1870000	0.0000000	0			0.0000000	70kuz1	0
90		n7n2.2	sp	cu		0.0000000	0.0	2.1920000	0.0000000	0			0.0000000	70kuz1	0
90	sr g	t2a44.	ms	re		0.0000000	0.0	1.2400000	0.0000000	88	sr g	t2a44.	1.0000000	68mch2	0
91		u234f	rc	cu		6.4389152	6.4	6.5500000	0.0600000	140	ba g	u234f	5.9300000	77bla1	0
91		u234f	es	cu		6.1192566	30.0	6.0700000	0.0000000	0			0.0000000	72sid1	0
91		u237f	es	cu		4.3804102	30.0	4.4000000	0.0000000	0			0.0000000	72sid1	0
91		pu240h	es	cu		2.4466222	30.0	0.0244000	0.0000000	0			0.0100000	77net1	0
91		pu240h	rc	cu		2.4466222	5.0	0.0244000	0.0005000	0			0.0100000	77net1	0
91	y g	pu240h	rc	cu		2.4967579	5.0	0.0249000	3.0000000%	0			0.0100000	77net1	0
91	sr g	pu240h	rc	cu		2.3964865	5.0	0.0239000	3.0000000%	0			0.0100000	77net1	0
91		u234he	es	cu		5.0024974	30.0	5.0500000	0.0000000	0			0.0000000	75mee1	0
91	y g	u236he	rc	cu		4.2529305	12.0	0.0440000	0.0050000	147	nd g	u236he	0.0179000	72net1	0
91		pu238f	es	cu		2.9483235	30.0	2.9200000	0.0000000	0			0.0000000	72sid1	0
91		am241f	cm	cu		0.0000000	0.0	0.0208000	0.0000000	0			0.0100000	80sig1	0
91		am241f	es	cu		2.0436826	30.0	2.0300000	0.0000000	0			0.0000000	72sid1	0
91	y g	am241f	rc	cu		2.1242218	5.0	0.0211000	3.0000000%	0			0.0100000	80sig1	0
91	sr g	am241f	cm	cu		0.0000000	0.0	1.5300000	0.0000000	0			0.0000000	69gun2	0
91	sr g	am241f	rc	cu		2.1443566	9.9	2.1300000	0.2100000	0			0.0000000	83gud1	0
91		am243f	es	cu		1.7477959	30.0	1.7500000	0.0000000	0			0.0000000	72sid1	0
91		np238f	es	cu		3.2222994	30.0	3.2300000	0.0000000	0			0.0000000	72sid1	0
91		cm242f	es	cu		1.8870106	30.0	1.8900000	0.0000000	0			0.0000000	72sid1	0
91	y m	u8n1.7	rc	cu	x6	0.0000000	0.0	3.8200000	10.2000000%	0			0.0000000	88afa1	0
91	y m	u8n3.7	rc	cu	x6	0.0000000	0.0	4.9000000	10.1000000%	0			0.0000000	88afa1	0
91	sr g	p9v0.3	rc	cu		0.0000000	0.0	2.4000000	0.2000000	0			0.0000000	78kai2	0
91	sr g	u8n1.7	rc	cu		0.0000000	0.0	3.6300000	10.2000000%	0			0.0000000	88afa1	0
91	sr g	u8n1.7	rc	cu		0.0000000	0.0	3.9200000	10.2000000%	0			0.0000000	88afa1	0
91	sr g	u8n2.2	rc	cu		0.0000000	0.0	3.5700000	11.5000000%	0			0.0000000	88afa1	0
91	sr g	u8n2.2	rc	cu		0.0000000	0.0	4.3200000	11.1000000%	0			0.0000000	88afa1	0
91	sr g	u8n3.7	rc	cu		0.0000000	0.0	3.3600000	11.9000000%	0			0.0000000	88afa1	0
91	sr g	u8n3.7	rc	cu		0.0000000	0.0	4.0400000	10.2000000%	0			0.0000000	88afa1	0

91	sr	g	u8n4.8	rc	cu	0.0000000	0.0	3.6200000	10.5000000%	0			0.0000000	88afa1	0
91	sr	g	u8n6.0	rc	cu	0.0000000	0.0	3.5000000	11.7000000%	0			0.0000000	88afa1	0
91	sr	g	u8n6.0	rc	cu	0.0000000	0.0	3.7600000	10.9000000%	0			0.0000000	88afa1	0
91			t2n3.0	sp	cu	0.0000000	0.0	6.5410000	0.0000000	0			0.0000000	68ser1	0
91			t2n1.6	sp	cu	0.0000000	0.0	6.7340000	0.0000000	0			0.0000000	68ser1	0
91			t2n1.7	sp	cu	0.0000000	0.0	6.5290000	0.0000000	0			0.0000000	68ser1	0
91			t2n2.0	sp	cu	0.0000000	0.0	6.9740000	0.0000000	0			0.0000000	68ser1	0
91			t2n2.5	sp	cu	0.0000000	0.0	6.9010000	0.0000000	0			0.0000000	68ser1	0
91			t2n5.8	sp	cu	0.0000000	0.0	6.0460000	0.0000000	0			0.0000000	68ser1	0
91			n7n0.8	sp	cu	0.0000000	0.0	2.7000000	0.0000000	0			0.0000000	70kuz1	0
91			n7n1.1	sp	cu	0.0000000	0.0	2.7700000	0.0000000	0			0.0000000	70kuz1	0
91			n7n1.4	sp	cu	0.0000000	0.0	2.6800000	0.0000000	0			0.0000000	70kuz1	0
91			n7n1.7	sp	cu	0.0000000	0.0	2.6740000	0.0000000	0			0.0000000	70kuz1	0
91			n7n2.2	sp	cu	0.0000000	0.0	2.6800000	0.0000000	0			0.0000000	70kuz1	0
91	y	g	u8d05.	rc	cu	0.0000000	0.0	143.0000000	7.0000000	0	u barn		35.0000000	57sug1	0
91	y	g	u8d10.	rc	cu	0.0000000	0.0	2.3000000	0.1000000	0	m barn		0.8600000	57sug1	0
91	y	g	u8d14.	rc	cu	0.0000000	0.0	12.2000000	0.8000000	0	m barn		4.3000000	57sug1	0
91	y	g	u8ndcu	rc	re	0.0000000	0.0	0.7600000	0.0000000	99 mo g	u235t		0.0000000	61lev1	7
91	y	g	u8naal	rc	re	0.0000000	0.0	0.7700000	0.0000000	99 mo g	u235t		0.0000000	61lev1	7
91	y	g	u8nabe	rc	re	0.0000000	0.0	0.7400000	0.0000000	99 mo g	u235t		0.0000000	61lev1	7
91	y	g	u8ndbe	rc	re	0.0000000	0.0	0.7600000	0.0000000	99 mo g	u235t		0.0000000	61lev1	7
91	y	g	u8ndli	rc	re	0.0000000	0.0	0.7400000	0.0000000	99 mo g	u235t		0.0000000	61lev1	7
91	y	g	t2a19.	rc	re	0.0000000	0.0	1.0400000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7
91	y	g	t2a20.	rc	re	0.0000000	0.0	1.0300000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7
91	y	g	t2a20.	rc	re	0.0000000	0.0	0.8700000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7
91	y	g	t2a22.	rc	re	0.0000000	0.0	1.0700000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7
91	y	g	t2a24.	rc	re	0.0000000	0.0	1.0800000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7
91	y	g	t2a26.	rc	re	0.0000000	0.0	1.1200000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7
91	y	g	t2a27.	rc	re	0.0000000	0.0	1.0100000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7
91	y	g	t2a30.	rc	re	0.0000000	0.0	1.0500000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7
91	y	g	t2a30.	rc	re	0.0000000	0.0	1.0700000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7
91	y	g	t2a32.	rc	re	0.0000000	0.0	1.0300000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7
91	y	g	t2a34.	rc	re	0.0000000	0.0	1.0600000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7
91	y	g	t2a34.	rc	re	0.0000000	0.0	1.0800000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7
91	y	g	t2a36.	rc	re	0.0000000	0.0	1.0100000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7
91	y	g	t2a37.	rc	re	0.0000000	0.0	1.0200000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7

91 y g t2a38. rc re 0.0000000 0.0 1.0600000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
1
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nuclide material tech. type value err. value nuclide material value no. treatment

91 y g t2p9.5 rc in 0.0000000 0.0 0.1390000 0.0030000 0 m barn 0.2100000 68fre1 0
91 y g t2p11. rc in 0.0000000 0.0 0.2750000 0.0550000 0 m barn 0.7500000 68fre1 0
91 y g t2d12. rc in 0.0000000 0.0 0.3080000 0.0330000 0 m barn 0.6600000 68fre1 0
91 y g t2n3.0 rc cu 0.0000000 0.0 6.9000000 0.7000000 0 0.0000000 71swi3 0
91 y g u5npbe rc re 0.0000000 0.0 1.0500000 0.0000000 99 mo g u235t 0.0000000 61lev1 7
91 y g u5naal rc re 0.0000000 0.0 1.0100000 0.0000000 99 mo g u235t 0.0000000 61lev1 7
91 y g u5nabe rc re 0.0000000 0.0 1.0200000 0.0000000 99 mo g u235t 0.0000000 61lev1 7
91 y g u5ndbe rc re 0.0000000 0.0 1.0600000 0.0000000 99 mo g u235t 0.0000000 61lev1 7
91 y g u5ndli rc re 0.0000000 0.0 1.0900000 0.0000000 99 mo g u235t 0.0000000 61lev1 7
91 y g u8n2.0 rc cu 0.0000000 0.0 4.4800000 0.0000000 0 0.0000000 75fly4 0
91 y g u8n8.0 rc cu 0.0000000 0.0 3.7000000 0.0000000 0 0.0000000 75fly4 0
91 y g u8n1.5 rc cu 0.0000000 0.0 3.9300000 0.2200000 0 0.0000000 78nag1 0
91 y g u8n2.0 rc cu 0.0000000 0.0 3.9400000 0.2100000 0 0.0000000 78nag1 0
91 y g u8n3.9 rc cu 0.0000000 0.0 3.9600000 0.2800000 0 0.0000000 78nag1 0
91 y g u8n5.5 rc cu 0.0000000 0.0 3.6300000 0.2100000 0 0.0000000 78nag1 0
91 y g u8n6.9 rc cu 0.0000000 0.0 3.9900000 0.2300000 0 0.0000000 78nag1 0
91 y g u8n7.7 rc cu 0.0000000 0.0 4.0400000 0.2300000 0 0.0000000 78nag1 0
91 y g t2n2.0 rc cu 0.0000000 0.0 7.8200000 0.2400000 0 0.0000000 80gle1 0
91 sr g t2nlid rc cu 0.0000000 0.0 0.9300000 0.0000000 89 sr g th232f 0.0000000 53tur1 7
91 sr g u8n3. rc cu 0.0000000 0.0 3.5000000 0.0500000 99 mo g u8n3. 6.3200000 70lyl1 0
91 sr g u5n2.0 rc cu 0.0000000 0.0 1.1000000 0.0500000 140 ba g u5n2.0 1.0000000 73man1 0
91 sr g u5n4.0 rc cu 0.0000000 0.0 1.0500000 0.0600000 140 ba g u5n4.0 1.0000000 73man1 0
91 sr g u5n6.0 rc cu 0.0000000 0.0 1.0400000 0.0800000 140 ba g u5n6.0 1.0000000 73man1 0
91 sr g u5n9.0 rc cu 0.0000000 0.0 1.0600000 0.0600000 140 ba g u5n9.0 1.0000000 73man1 0
91 sr g u8n4.0 rc cu 0.0000000 0.0 0.6600000 0.0300000 140 ba g u8n4.0 1.0000000 73man1 0
91 sr g u8n6.0 rc cu 0.0000000 0.0 0.6400000 0.0300000 140 ba g u8n6.0 1.0000000 73man1 0
91 sr g u8n9.0 rc cu 0.0000000 0.0 0.6500000 0.0300000 140 ba g u8n9.0 1.0000000 73man1 0
91 sr g u8n2.0 rc cu 0.0000000 0.0 3.9700000 0.0000000 0 0.0000000 75fly4 0
91 sr g u8n8.0 rc cu 0.0000000 0.0 4.4000000 0.0000000 0 0.0000000 75fly4 0
91 sr g t2n11. rc cu 0.0000000 0.0 5.6000000 0.0000000 0 0.0000000 53tur1 0
91 sr g u5n1.0 rc re 0.0000000 0.0 1.0300000 0.0700000 140 ba g u5n1.0 1.0000000 73man1 0

91	sr	g	t2n3.0	rc	cu	0.0000000	0.0	7.7100000	0.2300000	0			0.0000000	80gle1	0
91	sr	g	t2n4.0	rc	cu	0.0000000	0.0	7.3000000	0.2100000	0			0.0000000	80gle1	0
91	sr	g	t2n5.9	rc	cu	0.0000000	0.0	6.6300000	0.2100000	0			0.0000000	80gle1	0
91	sr	g	t2n6.4	rc	cu	0.0000000	0.0	6.9300000	0.1600000	0			0.0000000	80gle1	0
91	sr	g	t2n6.9	rc	cu	0.0000000	0.0	7.2800000	0.2300000	0			0.0000000	80gle1	0
91	sr	g	t2n7.6	rc	cu	0.0000000	0.0	7.1500000	0.2100000	0			0.0000000	80gle1	0
91	sr	g	t2n8.0	rc	cu	0.0000000	0.0	7.1500000	0.2000000	0			0.0000000	80gle1	0
91	sr	g	t2n3.0	rc	cu	0.0000000	0.0	6.4000000	0.2000000	99	mo	g	th232h	3.1000000	64bro1	0
92			u234f	rc	cu	6.1046814	6.4	6.2100000	0.1200000	140	ba	g	u234f	5.9300000	77bla1	0
92			u234f	es	cu	6.1797435	30.0	6.1300000	0.0000000	0			0.0000000	72sid1	0
92			u237f	es	cu	4.7587184	30.0	4.7800000	0.0000000	0			0.0000000	72sid1	0
92			pu240h	es	cu	2.8176264	30.0	0.0281000	0.0000000	0			0.0100000	77net1	0
92			pu240h	rc	cu	2.8477078	5.0	0.0284000	0.0006000	0			0.0100000	77net1	0
92	y	g	pu240h	rc	cu	2.9379521	5.0	0.0293000	4.0000000%	0			0.0100000	77net1	0
92	sr	g	pu240h	rc	cu	2.7775178	5.0	0.0277000	3.0000000%	0			0.0100000	77net1	0
92			u234he	es	cu	5.1708983	30.0	5.2200000	0.0000000	0			0.0000000	75mee1	0
92			u236he	es	cu	4.7903972	30.0	4.8000000	0.0000000	0			0.0000000	75mee1	0
92			pu238f	es	cu	3.4632704	30.0	3.4300000	0.0000000	0			0.0000000	72sid1	0
92			am241f	cm	cu	0.0000000	0.0	0.0244000	0.0000000	0			0.0100000	80sig1	0
92			am241f	es	cu	2.4733536	30.0	2.4500000	0.0000000	0			0.0000000	72sid1	0
92	sr	g	am241f	cm	cu	0.0000000	0.0	2.3000000	0.0000000	0			0.0000000	69gun2	0
92	sr	g	am241f	rc	cu	2.9175477	6.2	2.8900000	0.1800000	0			0.0000000	83gud1	0
92			am243f	es	cu	2.0973551	30.0	2.1000000	0.0000000	0			0.0000000	72sid1	0
92			np238f	es	cu	3.6512742	30.0	3.6600000	0.0000000	0			0.0000000	72sid1	0
92			cm242f	es	cu	2.2674612	30.0	2.2700000	0.0000000	0			0.0000000	72sid1	0
92	sr	g	u8n1.7	rc	cu	0.0000000	0.0	4.3800000	9.1000000%	0			0.0000000	88afa1	0
92	sr	g	u8n2.2	rc	cu	0.0000000	0.0	4.4500000	10.6000000%	0			0.0000000	88afa1	0
92	sr	g	u8n3.7	rc	cu	0.0000000	0.0	4.9000000	10.4000000%	0			0.0000000	88afa1	0
92	sr	g	u8n4.8	rc	cu	0.0000000	0.0	3.4800000	10.9000000%	0			0.0000000	88afa1	0
92	sr	g	u8n6.0	rc	cu	0.0000000	0.0	3.7400000	10.2000000%	0			0.0000000	88afa1	0
92			t2n3.0	sp	cu	0.0000000	0.0	7.0200000	0.0000000	0			0.0000000	68ser1	0
92			t2n1.6	sp	cu	0.0000000	0.0	6.9360000	0.0000000	0			0.0000000	68ser1	0
92			t2n1.7	sp	cu	0.0000000	0.0	6.6690000	0.0000000	0			0.0000000	68ser1	0
92			t2n2.0	sp	cu	0.0000000	0.0	7.1240000	0.0000000	0			0.0000000	68ser1	0
92			t2n2.5	sp	cu	0.0000000	0.0	7.0950000	0.0000000	0			0.0000000	68ser1	0
92			t2n5.8	sp	cu	0.0000000	0.0	6.3540000	0.0000000	0			0.0000000	68ser1	0

92		n7n0.8	sp	cu	0.0000000	0.0	3.3550000	0.0000000	0		0.0000000	70kuz1	0
92		n7n1.1	sp	cu	0.0000000	0.0	3.3920000	0.0000000	0		0.0000000	70kuz1	0
92		n7n1.4	sp	cu	0.0000000	0.0	3.2250000	0.0000000	0		0.0000000	70kuz1	0
92		n7n1.7	sp	cu	0.0000000	0.0	3.3110000	0.0000000	0		0.0000000	70kuz1	0
92		n7n2.2	sp	cu	0.0000000	0.0	3.2820000	0.0000000	0		0.0000000	70kuz1	0
92	sr g	l4n65.	rc	re	0.0000000	0.0	1.4500000	0.0000000	0	mubarn	47000.0000000	70hen1	20
92	sr g	l4n65.	rc	re	0.0000000	0.0	1.0500000	0.0000000	0	mubarn	47000.0000000	70hen1	20
92	sr g	l4n41.	rc	re	0.0000000	0.0	45.1000000	0.0000000	0	mubarn	1824.0000000	70hen1	20
92	sr g	l4n41.	rc	re	0.0000000	0.0	31.8000000	0.0000000	0	mubarn	1824.0000000	70hen1	20
92	sr g	l4n37.	rc	re	0.0000000	0.0	1.3300000	0.0000000	0	mubarn	320.0000000	70hen1	20
92	sr g	l4n37.	rc	re	0.0000000	0.0	3.3100000	0.0000000	0	mubarn	320.0000000	70hen1	20
92	sr g	l4n25.	rc	re	0.0000000	0.0	0.2400000	0.1500000	0	mubarn	18.0000000	70hen1	20
92	sr g	l4n25.	rc	re	0.0000000	0.0	0.3100000	0.1500000	0	mubarn	18.0000000	70hen1	20
92	sr g	u5n1.0	rc	re	0.0000000	0.0	0.9800000	0.0600000	140	ba g	u5n1.0	1.0000000	73man1	0
92	sr g	u5n2.0	rc	cu	0.0000000	0.0	0.9500000	0.1100000	140	ba g	u5n2.0	1.0000000	73man1	0
92	sr g	u5n4.0	rc	cu	0.0000000	0.0	1.1500000	0.1000000	140	ba g	u5n4.0	1.0000000	73man1	0
92	sr g	u5n6.0	rc	cu	0.0000000	0.0	1.0900000	0.0900000	140	ba g	u5n6.0	1.0000000	73man1	0
92	sr g	u5n9.0	rc	cu	0.0000000	0.0	1.0800000	0.0700000	140	ba g	u5n9.0	1.0000000	73man1	0
92	sr g	u8n4.0	rc	cu	0.0000000	0.0	0.8400000	0.0900000	140	ba g	u8n4.0	1.0000000	73man1	0
92	sr g	u8n6.0	rc	cu	0.0000000	0.0	0.8000000	0.0900000	140	ba g	u8n6.0	1.0000000	73man1	0
92	sr g	u8n9.0	rc	cu	0.0000000	0.0	0.8100000	0.1300000	140	ba g	u8n9.0	1.0000000	73man1	0
92	sr g	u8n8.0	rc	cu	0.0000000	0.0	4.8300000	0.0000000	0		0.0000000	75fly4	0
92	sr g	u8n1.5	rc	cu	0.0000000	0.0	4.1800000	0.2400000	0		0.0000000	78nag1	0
92	sr g	u8n2.0	rc	cu	0.0000000	0.0	4.1000000	0.2300000	0		0.0000000	78nag1	0
92	sr g	u8n3.9	rc	cu	0.0000000	0.0	4.2400000	0.2500000	0		0.0000000	78nag1	0
92	sr g	u8n5.5	rc	cu	0.0000000	0.0	3.9600000	0.2500000	0		0.0000000	78nag1	0
92	sr g	u8n6.9	rc	cu	0.0000000	0.0	3.6800000	0.2300000	0		0.0000000	78nag1	0
92	sr g	u8n7.7	rc	cu	0.0000000	0.0	4.2300000	0.2700000	0		0.0000000	78nag1	0
92	sr g	t2n2.0	rc	cu	0.0000000	0.0	7.2400000	0.8700000	0		0.0000000	80gle1	0
92	sr g	t2n3.0	rc	cu	0.0000000	0.0	7.2300000	0.8800000	0		0.0000000	80gle1	0
92	sr g	t2n4.0	rc	cu	0.0000000	0.0	6.9300000	0.8600000	0		0.0000000	80gle1	0
92	sr g	t2n5.9	rc	cu	0.0000000	0.0	6.5600000	0.8100000	0		0.0000000	80gle1	0
92	sr g	t2n6.4	rc	cu	0.0000000	0.0	6.2600000	0.7600000	0		0.0000000	80gle1	0
92	sr g	t2n6.9	rc	cu	0.0000000	0.0	6.4600000	0.8100000	0		0.0000000	80gle1	0
92	sr g	t2n7.6	rc	cu	0.0000000	0.0	6.4500000	0.7800000	0		0.0000000	80gle1	0
92	sr g	t2n8.0	rc	cu	0.0000000	0.0	6.6200000	0.8100000	0		0.0000000	80gle1	0

92	sr	g	t2n3.0	rc	cu	0.0000000	0.0	6.6000000	0.2800000	99	mo	g	th232h	3.1000000	64bro1	0
93	y	g	u234f	rc	cu	6.1393250	6.4	6.2600000	0.1000000	140	ba	g	u234f	5.9300000	77bla1	0
93	y	g	u234f	es	cu	6.3964937	30.0	6.3600000	0.0000000	0				0.0000000	72sid1	0
93	y	g	u237f	es	cu	5.1238183	30.0	5.1400000	0.0000000	0				0.0000000	72sid1	0
93			pu240h	cm	cu	0.0000000	0.0	0.0311000	0.0000000	0				0.0100000	77net1	0
93	y	g	pu240h	rc	cu	2.8910540	5.0	0.0288000	3.0000000%	0				0.0100000	77net1	0
93	y	g	u234he	rc	cu	5.0179601	10.4	0.0520000	0.0050000	147	nd	g	u234he	0.0132000	72net1	0
93	y	g	u236he	rc	cu	5.0282760	10.4	0.0520000	0.0050000	147	nd	g	u236he	0.0179000	72net1	0
93	y	g	pu238f	es	cu	4.0791872	30.0	4.0400000	0.0000000	0				0.0000000	72sid1	0
93			am241f	cm	cu	0.0000000	0.0	0.0284000	0.0000000	0				0.0100000	80sig1	0
93	y	g	am241f	cm	cu	0.0000000	0.0	3.0000000	0.0000000	0				0.0000000	69gun2	0
93	y	g	am241f	es	cu	2.8024264	30.0	2.7500000	0.0000000	0				0.0000000	72sid1	0
93	y	g	am243f	es	cu	2.5377379	30.0	2.5400000	0.0000000	0				0.0000000	72sid1	0
93	y	g	np238f	es	cu	4.2598199	30.0	4.2700000	0.0000000	0				0.0000000	72sid1	0
93	y	g	cm242f	es	cu	2.6370473	30.0	2.6400000	0.0000000	0				0.0000000	72sid1	0
93	y	g	u8n1.7	rc	cu	0.0000000	0.0	5.1600000	10.5000000%	0				0.0000000	88afa1	0
93	y	g	u8n2.2	rc	cu	0.0000000	0.0	4.5500000	10.3000000%	0				0.0000000	88afa1	0

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0	measured nuclide	fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
93	y	g	u8n3.7	rc	cu	0.0000000	0.0	5.2300000	10.9000000%	0			0.0000000	88afa1	0
93	y	g	u8n4.8	rc	cu	0.0000000	0.0	4.1100000	10.5000000%	0			0.0000000	88afa1	0
93	y	g	u8n6.0	rc	cu	0.0000000	0.0	4.2800000	11.0000000%	0			0.0000000	88afa1	0
93			t2n3.0	sp	cu	0.0000000	0.0	6.7830000	0.0000000	0			0.0000000	68ser1	0
93			t2n1.6	sp	cu	0.0000000	0.0	6.8080000	0.0000000	0			0.0000000	68ser1	0
93			t2n1.7	sp	cu	0.0000000	0.0	6.5090000	0.0000000	0			0.0000000	68ser1	0
93			t2n2.0	sp	cu	0.0000000	0.0	7.0870000	0.0000000	0			0.0000000	68ser1	0
93			t2n2.5	sp	cu	0.0000000	0.0	6.9500000	0.0000000	0			0.0000000	68ser1	0
93			t2n5.8	sp	cu	0.0000000	0.0	6.5590000	0.0000000	0			0.0000000	68ser1	0
93			n7n0.8	sp	cu	0.0000000	0.0	3.8770000	0.0000000	0			0.0000000	70kuz1	0
93			n7n1.1	sp	cu	0.0000000	0.0	3.8620000	0.0000000	0			0.0000000	70kuz1	0
93			n7n1.4	sp	cu	0.0000000	0.0	0.2770000	0.0000000	0			0.0000000	70kuz1	0
93			n7n1.4	sp	cu	0.0000000	0.0	3.7970000	0.0000000	0			0.0000000	70kuz1	0
93			n7n1.7	sp	cu	0.0000000	0.0	3.8950000	0.0000000	0			0.0000000	70kuz1	0
93			n7n2.2	sp	cu	0.0000000	0.0	3.8400000	0.0000000	0			0.0000000	70kuz1	0

93	y	g	u8d05.	rc	cu	0.0000000	0.0	180.0000000	0.0000000	0		u barn	35.0000000	57sug1	0
93	y	g	u8d10.	rc	cu	0.0000000	0.0	2.9000000	0.0000000	0		m barn	0.8600000	57sug1	0
93	y	g	u8d14.	rc	cu	0.0000000	0.0	16.4000000	0.8000000	0		m barn	4.3000000	57sug1	0
93	y	g	t2p9.5	rc	cu	0.0000000	0.0	0.9650000	0.1140000	0		m barn	0.2100000	68fre1	0
93	y	g	t2p11.	rc	cu	0.0000000	0.0	3.5900000	0.7200000	0		m barn	0.7500000	68fre1	0
93	y	g	t2d12.	rc	cu	0.0000000	0.0	5.7000000	1.1400000	0		m barn	0.6600000	68fre1	0
93	y	g	l4n41.	rc	re	0.0000000	0.0	61.1000000	1.0000000	0		mubarn	1824.0000000	70hen1	20
93	y	g	l4n37.	rc	re	0.0000000	0.0	7.2100000	0.0000000	0		mubarn	320.0000000	70hen1	20
93	y	g	l4n25.	rc	re	0.0000000	0.0	1.0000000	0.0000000	0		mubarn	18.0000000	70hen1	20
93	y	g	u8n3.	rc	cu	0.0000000	0.0	4.7700000	0.0500000	99	mo g	u8n3.	6.3200000	70lyl1	0
93	y	g	t2n3.0	rc	cu	0.0000000	0.0	7.3500000	0.0700000	0			0.0000000	71swi3	0
93	y	g	u5n2.0	rc	cu	0.0000000	0.0	1.1100000	0.0500000	140	ba g	u5n2.0	1.0000000	73man1	0
93	y	g	u5n4.0	rc	cu	0.0000000	0.0	1.1200000	0.0600000	140	ba g	u5n4.0	1.0000000	73man1	0
93	y	g	u5n6.0	rc	cu	0.0000000	0.0	1.0700000	0.0600000	140	ba g	u5n6.0	1.0000000	73man1	0
93	y	g	u5n9.0	rc	cu	0.0000000	0.0	1.0400000	0.0400000	140	ba g	u5n9.0	1.0000000	73man1	0
93	y	g	u8n4.0	rc	cu	0.0000000	0.0	0.8400000	0.0400000	140	ba g	u8n4.0	1.0000000	73man1	0
93	y	g	u8n6.0	rc	cu	0.0000000	0.0	0.7800000	0.0400000	140	ba g	u8n6.0	1.0000000	73man1	0
93	y	g	u8n9.0	rc	cu	0.0000000	0.0	0.7800000	0.0400000	140	ba g	u8n9.0	1.0000000	73man1	0
93	y	g	u8n2.0	rc	cu	0.0000000	0.0	4.5800000	0.0000000	0			0.0000000	75fly4	0
93	y	g	u8n8.0	rc	cu	0.0000000	0.0	5.3300000	0.0000000	0			0.0000000	75fly4	0
93	y	g	u8n1.5	rc	cu	0.0000000	0.0	4.3600000	0.3100000	0			0.0000000	78nag1	0
93	y	g	u8n2.0	rc	cu	0.0000000	0.0	4.8000000	0.3100000	0			0.0000000	78nag1	0
93	y	g	u8n3.9	rc	cu	0.0000000	0.0	4.9100000	0.3200000	0			0.0000000	78nag1	0
93	y	g	u8n5.5	rc	cu	0.0000000	0.0	4.9300000	0.3400000	0			0.0000000	78nag1	0
93	y	g	u8n7.7	rc	cu	0.0000000	0.0	5.0500000	0.3400000	0			0.0000000	78nag1	0
93	y	g	t2n2.0	rc	cu	0.0000000	0.0	5.6100000	0.3800000	0			0.0000000	80gle1	0
93	y	g	t2n3.0	rc	cu	0.0000000	0.0	6.0900000	0.4300000	0			0.0000000	80gle1	0
93	y	g	t2n4.0	rc	cu	0.0000000	0.0	5.6800000	0.3800000	0			0.0000000	80gle1	0
93	y	g	t2n5.9	rc	cu	0.0000000	0.0	4.8500000	0.4900000	0			0.0000000	80gle1	0
93	y	g	t2n6.4	rc	cu	0.0000000	0.0	4.7100000	0.3700000	0			0.0000000	80gle1	0
93	y	g	t2n6.9	rc	cu	0.0000000	0.0	5.2100000	0.4400000	0			0.0000000	80gle1	0
93	y	g	t2n7.6	rc	cu	0.0000000	0.0	5.2600000	0.3800000	0			0.0000000	80gle1	0
93	y	g	t2n8.0	rc	cu	0.0000000	0.0	5.0100000	0.3900000	0			0.0000000	80gle1	0
93	sr	g	l4n65.	rc	re	0.0000000	0.0	2.0500000	0.0000000	0		mubarn	47000.0000000	70hen1	20
94			u234f	es	cu	6.4124084	30.0	6.3100000	0.0000000	0			0.0000000	72sid1	0
94			u237f	es	cu	5.4058245	30.0	5.4300000	0.0000000	0			0.0000000	72sid1	0

94		pu240h	es	cu		3.4874536	30.0	0.0345000	0.0000000	0		0.0100000	77net1	0
94		u234he	es	cu		5.1609924	30.0	5.2100000	0.0000000	0		0.0000000	75mee1	0
94		u236he	es	cu		5.3392969	30.0	5.3500000	0.0000000	0		0.0000000	75mee1	0
94		pu238f	es	cu		4.7354921	30.0	4.6900000	0.0000000	0		0.0000000	72sid1	0
94		am241f	cm	cu		0.0000000	0.0	0.0327000	0.0000000	0		0.0100000	80sig1	0
94		am241f	es	cu		3.6867892	30.0	3.5900000	0.0000000	0		0.0000000	72sid1	0
94	y g	am241f	rc	cu	x1	0.0000000	0.0	2.7100000	0.2800000	0		0.0000000	83gud1	0
94		am243f	es	cu		3.1360452	30.0	3.1400000	0.0000000	0		0.0000000	72sid1	0
94		np238f	es	cu		4.8184848	30.0	4.8300000	0.0000000	0		0.0000000	72sid1	0
94		cm242f	es	cu		3.3562421	30.0	3.3600000	0.0000000	0		0.0000000	72sid1	0
94	y g	u8n1.7	rc	cu		0.0000000	0.0	4.3700000	12.1000000%	0		0.0000000	88afa1	0
94	y g	u8n2.2	rc	cu		0.0000000	0.0	4.3700000	12.1000000%	0		0.0000000	88afa1	0
94	y g	u8n3.7	rc	cu		0.0000000	0.0	4.5700000	12.2000000%	0		0.0000000	88afa1	0
94	y g	u8n4.8	rc	cu		0.0000000	0.0	4.7700000	10.9000000%	0		0.0000000	88afa1	0
94	y g	u8n6.0	rc	cu		0.0000000	0.0	4.9200000	10.2000000%	0		0.0000000	88afa1	0
94	zr g	t2n6.4	rc	cu		0.0000000	0.0	4.7500000	0.9300000	0		0.0000000	80gle1	0
94		t2n3.0	sp	cu		0.0000000	0.0	6.5520000	0.0000000	0		0.0000000	68ser1	0
94		t2n1.6	sp	cu		0.0000000	0.0	6.3890000	0.0000000	0		0.0000000	68ser1	0
94		t2n1.7	sp	cu		0.0000000	0.0	6.5070000	0.0000000	0		0.0000000	68ser1	0
94		t2n2.0	sp	cu		0.0000000	0.0	6.8530000	0.0000000	0		0.0000000	68ser1	0
94		t2n2.5	sp	cu		0.0000000	0.0	6.8520000	0.0000000	0		0.0000000	68ser1	0
94		t2n5.8	sp	cu		0.0000000	0.0	6.6450000	0.0000000	0		0.0000000	68ser1	0
94		n7n0.8	sp	cu		0.0000000	0.0	4.5300000	0.0000000	0		0.0000000	70kuz1	0
94		n7n1.1	sp	cu		0.0000000	0.0	4.3120000	0.0000000	0		0.0000000	70kuz1	0
94		n7n1.4	sp	cu		0.0000000	0.0	4.3670000	0.0000000	0		0.0000000	70kuz1	0
94		n7n1.7	sp	cu		0.0000000	0.0	4.3330000	0.0000000	0		0.0000000	70kuz1	0
94		n7n2.2	sp	cu		0.0000000	0.0	4.3260000	0.0000000	0		0.0000000	70kuz1	0
94	y g	u8n8.0	rc	cu		0.0000000	0.0	5.0100000	0.0000000	0		0.0000000	75fly4	0
94	y g	u8n1.5	rc	cu		0.0000000	0.0	4.4500000	0.3300000	0		0.0000000	78nag1	0
94	y g	u8n2.0	rc	cu		0.0000000	0.0	4.4000000	0.3000000	0		0.0000000	78nag1	0
94	y g	u8n3.9	rc	cu		0.0000000	0.0	5.1300000	0.3900000	0		0.0000000	78nag1	0
94	y g	u8n5.5	rc	cu		0.0000000	0.0	5.1100000	0.3700000	0		0.0000000	78nag1	0
94	y g	u8n7.7	rc	cu		0.0000000	0.0	4.5100000	0.3800000	0		0.0000000	78nag1	0
94	y g	t2n2.0	rc	cu		0.0000000	0.0	5.7900000	0.3600000	0		0.0000000	80gle1	0
94	y g	t2n3.0	rc	cu		0.0000000	0.0	6.0700000	0.6700000	0		0.0000000	80gle1	0
94	y g	t2n4.0	rc	cu		0.0000000	0.0	6.2000000	0.3500000	0		0.0000000	80gle1	0

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 94 y  g   t2n5.9   rc    cu        0.0000000  0.0   4.4800000  1.2300000     0                    0.0000000   80gle1      0
 94 y  g   t2n6.9   rc    cu        0.0000000  0.0   4.7900000  1.1600000     0                    0.0000000   80gle1      0
 94 y  g   t2n7.6   rc    cu        0.0000000  0.0   5.5800000  0.6600000     0                    0.0000000   80gle1      0
 94 y  g   t2n8.0   rc    cu        0.0000000  0.0   5.1900000  0.3900000     0                    0.0000000   80gle1      0
 95        u234f    rc    cu        6.3307807  6.4   6.4400000  0.0900000   140 ba g      u234f       5.9300000   77bla1      0
 95        u234f    es    cu        6.4116099 30.0   6.3600000  0.0000000     0                    0.0000000   72sid1      0
 95        u237f    es    cu        5.5949785 30.0   5.6200000  0.0000000     0                    0.0000000   72sid1      0
 95        pu240h   es    cu        3.7643933 30.0   0.0375000  0.0000000     0                    0.0100000   77net1      0
 95 zr g   pu240h   rc    cu        3.6941246  5.0   0.0368000  3.0000000%    0                    0.0100000   77net1      0
 95 zr g   u234he   rc    cu        5.0278012  6.4   0.0520000  0.0020000   147 nd g      u234he      0.0132000   72net1      0
 95 zr g   u236he   rc    cu        5.2603503  6.4   0.0544000  0.0022000   147 nd g      u236he      0.0179000   72net1      0
 95        pu238f   es    cu        4.4224852 30.0   4.3800000  0.0000000     0                    0.0000000   72sid1      0
 95        am241f   cm    cu        0.0000000  0.0   0.0370000  0.0000000     0                    0.0100000   80sig1      0
 95        am241f   es    cu        4.3289828 30.0   4.3000000  0.0000000     0                    0.0000000   72sid1      0
 95 zr g   am241f   cm    cu        0.0000000  0.0   3.3000000  0.0000000     0                    0.0000000   69gun2      0
 95 zr g   am241f   rc    cu        3.7350061  5.0   0.0371000  3.0000000%    0                    0.0100000   80sig1      0
 95        am243f   es    cu        3.7366692 30.0   3.7400000  0.0000000     0                    0.0000000   72sid1      0
 95        np238f   es    cu        5.0379603 30.0   5.0500000  0.0000000     0                    0.0000000   72sid1      0
 95        cm242f   es    cu        4.0155039 30.0   4.0200000  0.0000000     0                    0.0000000   72sid1      0
 95 zr g   u8n1.7   rc    cu        0.0000000  0.0   5.3700000 10.6000000%    0                    0.0000000   88afa1      0
 95 zr g   u8n2.2   rc    cu        0.0000000  0.0   5.3300000 10.7000000%    0                    0.0000000   88afa1      0
 95 zr g   u8n3.7   rc    cu        0.0000000  0.0   5.7500000 11.0000000%    0                    0.0000000   88afa1      0
 95 zr g   u8n6.0   rc    cu        0.0000000  0.0   5.3900000 10.2000000%    0                    0.0000000   88afa1      0
 95        t2n3.0   sp    cu        0.0000000  0.0   6.4280000  0.0000000     0                    0.0000000   68ser1      0
 95        t2n1.6   sp    cu        0.0000000  0.0   6.0910000  0.0000000     0                    0.0000000   68ser1      0
 95        t2n1.7   sp    cu        0.0000000  0.0   6.0790000  0.0000000     0                    0.0000000   68ser1      0
 95        t2n2.0   sp    cu        0.0000000  0.0   6.3840000  0.0000000     0                    0.0000000   68ser1      0
 95        t2n2.5   sp    cu        0.0000000  0.0   6.3740000  0.0000000     0                    0.0000000   68ser1      0
 95        t2n5.8   sp    cu        0.0000000  0.0   6.4240000  0.0000000     0                    0.0000000   68ser1      0
 95        n7n0.8   sp    cu        0.0000000  0.0   5.0610000  0.0000000     0                    0.0000000   70kuz1      0
 95        n7n1.1   sp    cu        0.0000000  0.0   4.9210000  0.0000000     0                    0.0000000   70kuz1      0
 95        n7n1.4   sp    cu        0.0000000  0.0   4.8690000  0.0000000     0                    0.0000000   70kuz1      0
 95        n7n1.7   sp    cu        0.0000000  0.0   4.8580000  0.0000000     0                    0.0000000   70kuz1      0
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0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type        value   err.     value                nuclide     material       value       no.   treatment
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95	n7n2.2	sp	cu	0.0000000	0.0	4.8800000	0.0000000	0			0.0000000	70kuz1	0	
95 nb g	t2p9.5	rc	in	0.0000000	0.0	0.1400000	0.0280000	0	m barn		0.2100000	68fre1	0	
95 nb g	t2p11.	rc	in	0.0000000	0.0	0.4170000	0.0830000	0	m barn		0.7500000	68fre1	0	
95 nb g	t2d12.	rc	in	0.0000000	0.0	0.1880000	0.0000000	0	m barn		0.6600000	68fre1	0	
95 nb m	u5p10.	rc	in	0.0000000	0.0	0.0400000	0.0200000	95 nb g	u5p10.		96.0000000	68rud1	14	
95 zr g	u8d05.	rc	cu	0.0000000	0.0	205.0000000	15.0000000	0	u barn		35.0000000	57sug1	0	
95 zr g	u8d10.	rc	cu	0.0000000	0.0	3.5000000	0.2000000	0	m barn		0.8600000	57sug1	0	
95 zr g	u8d14.	rc	cu	0.0000000	0.0	16.8000000	0.7000000	0	m barn		4.3000000	57sug1	0	
95 zr g	t2a18.	rc	re	0.0000000	0.0	1.0600000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7	
95 zr g	t2a20.	rc	re	0.0000000	0.0	1.0000000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7	
95 zr g	t2a20.	rc	re	0.0000000	0.0	1.1000000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7	
95 zr g	t2a24.	rc	re	0.0000000	0.0	1.0300000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7	
95 zr g	t2a24.	rc	re	0.0000000	0.0	1.0500000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7	
95 zr g	t2a29.	rc	re	0.0000000	0.0	1.0000000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7	
95 zr g	t2a30.	rc	re	0.0000000	0.0	1.0100000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7	
95 zr g	t2a34.	rc	re	0.0000000	0.0	0.9900000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7	
95 zr g	t2a38.	rc	re	0.0000000	0.0	1.0000000	5.0000000%	99 mo g	u235t		0.0000000	62hic1	7	
95 zr g	u5v370	rc	cu	0.0000000	0.0	1.0980000	0.0000000	140 ba g	u5v370		1.0000000	72lar1	0	
95 zr g	u5k446	rc	cu	0.0000000	0.0	1.1300000	0.0070000	140 ba g	u5k446		1.0000000	72lar1	0	
95 zr g	u5k442	rc	cu	0.0000000	0.0	1.1520000	0.0070000	140 ba g	u5k442		1.0000000	72lar1	0	
95 zr g	u5k315	rc	cu	0.0000000	0.0	1.1140000	0.0070000	140 ba g	u5k315		1.0000000	72lar1	0	
95 zr g	u5k293	rc	cu	0.0000000	0.0	1.1230000	0.0070000	140 ba g	u5k293		1.0000000	72lar1	0	
95 zr g	u5k132	rc	cu	0.0000000	0.0	1.1130000	0.0070000	140 ba g	u5k132		1.0000000	72lar1	0	
95 zr g	u5n2.0	rc	cu	0.0000000	0.0	1.1600000	0.0400000	140 ba g	u5n2.0		1.0000000	73man1	0	
95 zr g	u5n4.0	rc	cu	0.0000000	0.0	1.2000000	0.0600000	140 ba g	u5n4.0		1.0000000	73man1	0	
95 zr g	u5n6.0	rc	cu	0.0000000	0.0	1.1300000	0.0600000	140 ba g	u5n6.0		1.0000000	73man1	0	
95 zr g	u5n9.0	rc	cu	0.0000000	0.0	1.1400000	0.0500000	140 ba g	u5n9.0		1.0000000	73man1	0	
95 zr g	u8n4.0	rc	cu	0.0000000	0.0	1.0000000	0.0400000	140 ba g	u8n4.0		1.0000000	73man1	0	
95 zr g	u8n6.0	rc	cu	0.0000000	0.0	0.9500000	0.0300000	140 ba g	u8n6.0		1.0000000	73man1	0	
95 zr g	u8n9.0	rc	cu	0.0000000	0.0	0.9700000	0.0300000	140 ba g	u8n9.0		1.0000000	73man1	0	
95 zr g	p9necd	rc	re	0.0000000	0.0	1.0250000	0.0520000	99 mo g	pu239t		0.0000000	64cro1	7	
95 zr g	u8n2.0	rc	cu	0.0000000	0.0	5.1100000	0.0000000	0			0.0000000	75fly4	0	
95 zr g	u8n8.0	rc	cu	0.0000000	0.0	5.9600000	0.0000000	0			0.0000000	75fly4	0	
95 zr g	u8n8.0	rc	cu	0.0000000	0.0	5.9100000	0.0000000	0			0.0000000	75fly4	0	
95 zr g	u8n1.5	rc	cu	0.0000000	0.0	5.3100000	0.2100000	0			0.0000000	78nag1	0	

95	zr g	u8n2.0	rc	cu	0.0000000	0.0	5.1400000	0.1900000	0			0.0000000	78nag1	0
95	zr g	u8n3.9	rc	cu	0.0000000	0.0	5.3400000	0.1900000	0			0.0000000	78nag1	0
95	zr g	u8n5.5	rc	cu	0.0000000	0.0	5.5900000	0.1900000	0			0.0000000	78nag1	0
95	zr g	u8n6.9	rc	cu	0.0000000	0.0	5.5800000	0.1800000	0			0.0000000	78nag1	0
95	zr g	u8n7.7	rc	cu	0.0000000	0.0	5.3600000	0.1900000	0			0.0000000	78nag1	0
96		u234f	es	cu	6.2193248	30.0	6.1200000	0.0000000	0			0.0000000	72sid1	0
96		u237f	es	cu	5.7940881	30.0	5.8200000	0.0000000	0			0.0000000	72sid1	0
96	nb g	pu240h	rc	cu	0.0084305	5.0	0.0000834	3.0000000%	0			0.0100000	77net1	0
96	nb g	pu240h	rc	in	0.0084305	5.0	0.0000834	0.0000025	0			0.0100000	77net1	0
96		pu240h	es	cu	4.1242929	30.0	0.0408000	0.0000000	0			0.0100000	77net1	0
96	nb g	u234he	rc	fi	0.0000117	64.3	0.0015400	0.0001000	96	nb g	u234he	1.0000000	72net1	0
96	nb g	u234he	rc	in	0.0076985	6.4	0.0000800	0.0000030	147	nd g	u234he	0.0132000	72net1	0
96		u234he	es	cu	5.2699577	30.0	5.3200000	0.0000000	0			0.0000000	75mee1	0
96	nb g	u236he	rc	fi	0.0000004	65.0	0.0002700	0.0000300	96	nb g	u236he	1.0000000	72net1	0
96	nb g	u236he	rc	in	0.0014007	9.2	0.0000145	0.0000012	147	nd g	u236he	0.0179000	72net1	0
96		u236he	es	cu	5.2993769	30.0	5.3100000	0.0000000	0			0.0000000	75mee1	0
96		pu238f	es	cu	5.3312150	30.0	5.2800000	0.0000000	0			0.0000000	72sid1	0
96	nb g	am241f	rc	in	0.0099461	5.0	0.0000976	4.9000000%	0			0.0100000	80sig1	0
96		am241f	cm	cu	0.0000000	0.0	0.0408000	0.0000000	0			0.0100000	80sig1	0
96		am241f	es	cu	4.7284577	30.0	4.6400000	0.0000000	0			0.0000000	72sid1	0
96		am243f	es	cu	4.4460368	30.0	4.4500000	0.0000000	0			0.0000000	72sid1	0
96		np238f	es	cu	5.4170544	30.0	5.4300000	0.0000000	0			0.0000000	72sid1	0
96		cm242f	es	cu	4.5449111	30.0	4.5500000	0.0000000	0			0.0000000	72sid1	0
96	nb g	t2n38.	rc	in	0.0000000	0.0	35.8000000	10.0000000%	99	mo g	u235t	0.0000000	65net1	7
96	nb g	t2n26.	rc	in	0.0000000	0.0	26.1000000	10.0000000%	99	mo g	u235t	0.0000000	65net1	7
96	nb g	t2n11.	rc	in	0.0000000	0.0	11.0000000	10.0000000%	99	mo g	u235t	0.0000000	65net1	7
96	nb g	t2n31.	rc	in	0.0000000	0.0	30.6000000	10.0000000%	99	mo g	u235t	0.0000000	65net1	7
96	nb g	t2n17.	rc	in	0.0000000	0.0	17.3000000	10.0000000%	99	mo g	u235t	0.0000000	65net1	7
96	nb g	t2n8.3	rc	in	0.0000000	0.0	8.3000000	10.0000000%	99	mo g	u235t	0.0000000	65net1	7
96	nb g	t2n38.	rc	in	0.0000000	0.0	37.9000000	10.0000000%	99	mo g	u235t	0.0000000	65net1	7
96	nb g	t2n23.	rc	in	0.0000000	0.0	23.4000000	10.0000000%	99	mo g	u235t	0.0000000	65net1	7
96	nb g	t2n12.	rc	in	0.0000000	0.0	12.5000000	10.0000000%	99	mo g	u235t	0.0000000	65net1	7
96	nb g	t2n8.1	rc	in	0.0000000	0.0	8.1200000	10.0000000%	99	mo g	u235t	0.0000000	65net1	7
96	nb g	t2p9.5	rc	in	0.0000000	0.0	0.2210000	0.0440000	0		m barn	0.2100000	68fre1	0
96	nb g	t2p11.	rc	in	0.0000000	0.0	0.0627000	0.0031000	0		m barn	0.7500000	68fre1	0
96	nb g	t2d12.	rc	in	0.0000000	0.0	0.0049200	0.0031000	0		m barn	0.6600000	68fre1	0

96		t2n3.0	sp	cu	0.0000000	0.0	6.0030000	0.0000000	0			0.0000000	68ser1	0
96		t2n1.6	sp	cu	0.0000000	0.0	5.6170000	0.0000000	0			0.0000000	68ser1	0
96		t2n1.7	sp	cu	0.0000000	0.0	5.5230000	0.0000000	0			0.0000000	68ser1	0
96		t2n2.0	sp	cu	0.0000000	0.0	5.8850000	0.0000000	0			0.0000000	68ser1	0
96		t2n2.5	sp	cu	0.0000000	0.0	5.6060000	0.0000000	0			0.0000000	68ser1	0
96		t2n5.8	sp	cu	0.0000000	0.0	6.0660000	0.0000000	0			0.0000000	68ser1	0
96		n7n0.8	sp	cu	0.0000000	0.0	5.4980000	0.0000000	0			0.0000000	70kuz1	0
96		n7n1.1	sp	cu	0.0000000	0.0	5.3160000	0.0000000	0			0.0000000	70kuz1	0
96		n7n1.4	sp	cu	0.0000000	0.0	5.3640000	0.0000000	0			0.0000000	70kuz1	0
96		n7n1.7	sp	cu	0.0000000	0.0	5.3830000	0.0000000	0			0.0000000	70kuz1	0
96		n7n2.2	sp	cu	0.0000000	0.0	5.3050000	0.0000000	0			0.0000000	70kuz1	0
97		u234f	rc	cu	6.0314455	6.4	6.1500000	0.1200000	140	ba g	u234f	5.9300000	77bla1	0
97		u234f	es	cu	6.1953461	30.0	6.1600000	0.0000000	0			0.0000000	72sid1	0
97		u237f	es	cu	5.8737319	30.0	5.9000000	0.0000000	0			0.0000000	72sid1	0
97		pu240h	es	cu	4.3767346	30.0	0.0436000	0.0000000	0			0.0100000	77net1	0
97	zr g	pu240h	rc	cu	4.1960437	5.0	0.0418000	3.0000000%	0			0.0100000	77net1	0
97	zr g	u234he	rc	cu	4.8924374	7.2	0.0506000	0.0030000	147	nd g	u234he	0.0132000	72net1	0
97	zr g	u236he	rc	cu	5.4150665	8.2	0.0560000	0.0040000	147	nd g	u236he	0.0179000	72net1	0
97		pu238f	es	cu	5.6543190	30.0	5.6000000	0.0000000	0			0.0000000	72sid1	0
97		am241f	cm	cu	0.0000000	0.0	0.0450000	0.0000000	0			0.0100000	80sig1	0
97		am241f	es	cu	5.0538358	30.0	5.0200000	0.0000000	0			0.0000000	72sid1	0
97	zr g	am241f	cm	cu	0.0000000	0.0	3.5500000	0.0000000	0			0.0000000	69gun2	0
97	zr g	am241f	rc	cu	4.5303309	5.0	0.0450000	3.0000000%	0			0.0100000	80sig1	0
97	zr g	am241f	rc	cu	x4	0.0000000	0.0	5.4700000	0.2700000	0		0.0000000	83gud1	0
97		am243f	es	cu	4.6758320	30.0	4.6800000	0.0000000	0			0.0000000	72sid1	0
97		np238f	es	cu	5.6465061	30.0	5.6600000	0.0000000	0			0.0000000	72sid1	0
97		cm242f	es	cu	4.8445756	30.0	4.8500000	0.0000000	0			0.0000000	72sid1	0
97	nb g	u8n1.7	rc	cu	0.0000000	0.0	5.4800000	11.5000000%	0			0.0000000	88afa1	0
97	nb g	u8n3.7	rc	cu	0.0000000	0.0	5.9300000	10.3000000%	0			0.0000000	88afa1	0
97	nb g	u8n6.0	rc	cu	0.0000000	0.0	5.6800000	10.2000000%	0			0.0000000	88afa1	0
97	nb m	u8n1.7	rc	cu	0.0000000	0.0	5.2200000	10.9000000%	0			0.0000000	88afa1	0
97	nb m	u8n3.7	rc	cu	0.0000000	0.0	5.4600000	10.3000000%	0			0.0000000	88afa1	0
97	nb m	u8n6.0	rc	cu	0.0000000	0.0	5.1200000	10.2000000%	0			0.0000000	88afa1	0
97		t2n3.0	sp	cu	0.0000000	0.0	5.6180000	0.0000000	0			0.0000000	68ser1	0
97		t2n1.6	sp	cu	0.0000000	0.0	5.2180000	0.0000000	0			0.0000000	68ser1	0
97		t2n1.7	sp	cu	0.0000000	0.0	5.1210000	0.0000000	0			0.0000000	68ser1	0

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 97        t2n2.0   sp    cu        0.0000000  0.0   5.3880000  0.0000000     0                    0.0000000   68ser1      0
 97        t2n2.5   sp    cu        0.0000000  0.0   5.4650000  0.0000000     0                    0.0000000   68ser1      0
 97        t2n5.8   sp    cu        0.0000000  0.0   5.6060000  0.0000000     0                    0.0000000   68ser1      0
 97        n7n0.8   sp    cu        0.0000000  0.0   5.7790000  0.0000000     0                    0.0000000   70kuz1      0
 97        n7n1.1   sp    cu        0.0000000  0.0   5.6710000  0.0000000     0                    0.0000000   70kuz1      0
 97        n7n1.4   sp    cu        0.0000000  0.0   5.7420000  0.0000000     0                    0.0000000   70kuz1      0
 97        n7n1.7   sp    cu        0.0000000  0.0   5.7820000  0.0000000     0                    0.0000000   70kuz1      0
 97        n7n2.2   sp    cu        0.0000000  0.0   5.6790000  0.0000000     0                    0.0000000   70kuz1      0
 97 nb g   t2p9.5   rc    in        0.0000000  0.0   0.6430000  0.0060000     0          m barn     0.2100000   68fre1      0
 97 nb g   t2p11.   rc    in        0.0000000  0.0   0.1860000  0.0220000     0          m barn     0.7500000   68fre1      0
 97 nb g   t2d12.   rc    in        0.0000000  0.0   0.1000000  0.0000000     0          m barn     0.6600000   68fre1      0
 97 nb g   t2n11.   rc    cu        0.0000000  0.0   4.9500000  0.0000000     0                    0.0000000   53tur1      0
 97 zr g   t2nlid   rc    cu        0.0000000  0.0   1.0000000  0.0000000    89 sr g     th232f      0.0000000   53tur1      7
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type        value   err.    value                 nuclide     material      value      no.   treatment

 97 zr g   n7ndf    rc    re        0.0000000  0.0   1.0400000  0.0000000    99 mo g     u235t       0.0000000   56for1      7
 97 zr g   u8d05.   rc    cu        0.0000000  0.0 233.0000000 16.0000000     0          u barn     35.0000000   57sug1      0
 97 zr g   u8d10.   rc    cu        0.0000000  0.0   5.2000000  0.2000000     0          m barn      0.8600000   57sug1      0
 97 zr g   u8d14.   rc    cu        0.0000000  0.0  24.1000000  0.2000000     0          m barn      4.3000000   57sug1      0
 97 zr g   u5k125   rc    re        0.0000000  0.0   1.0800000  0.0500000    99 mo g     u235t       1.0000000   61cun1      0
 97 zr g   t2a18.   rc    re        0.0000000  0.0   1.0000000  5.0000000%   99 mo g     u235t       0.0000000   62hic1      7
 97 zr g   t2a20.   rc    re        0.0000000  0.0   1.0000000  5.0000000%   99 mo g     u235t       0.0000000   62hic1      7
 97 zr g   t2a20.   rc    re        0.0000000  0.0   1.0700000  5.0000000%   99 mo g     u235t       0.0000000   62hic1      7
 97 zr g   t2a24.   rc    re        0.0000000  0.0   1.0100000  5.0000000%   99 mo g     u235t       0.0000000   62hic1      7
 97 zr g   t2a24.   rc    re        0.0000000  0.0   1.0400000  5.0000000%   99 mo g     u235t       0.0000000   62hic1      7
 97 zr g   t2a29.   rc    re        0.0000000  0.0   1.0000000  5.0000000%   99 mo g     u235t       0.0000000   62hic1      7
 97 zr g   t2a30.   rc    re        0.0000000  0.0   1.0000000  5.0000000%   99 mo g     u235t       0.0000000   62hic1      7
 97 zr g   t2a34.   rc    re        0.0000000  0.0   1.0000000  5.0000000%   99 mo g     u235t       0.0000000   62hic1      7
 97 zr g   t2a38.   rc    re        0.0000000  0.0   0.9800000  5.0000000%   99 mo g     u235t       0.0000000   62hic1      7
 97 zr g   t2n3.0   rc    cu        0.0000000  0.0   4.9600000  0.0000000    99 mo g     t2n3.0      2.7800000   68lyl1      0
 97 zr g   l4n65.   rc    re        0.0000000  0.0   0.8150000  0.0000000     0          mubarn  47000.0000000   70hen1     20
 97 zr g   l4n41.   rc    re        0.0000000  0.0  87.0000000  0.0000000     0          mubarn   1824.0000000   70hen1     20
 97 zr g   l4n37.   rc    re        0.0000000  0.0  16.2000000  0.0000000     0          mubarn    320.0000000   70hen1     20
 97 zr g   l4n25.   rc    re        0.0000000  0.0   1.1000000  0.0000000     0          mubarn     18.0000000   70hen1     20
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97	zr g	p9npfr	rc	cu	0.0000000	0.0	5.6000000	0.0000000	0			0.0000000	71cun1	0
97	zr g	p9npfr	rc	cu	0.0000000	0.0	5.5200000	0.3100000	99	mo g	pu239f	5.9800000	72cun1	0
97	zr g	u5n1.0	rc	re	0.0000000	0.0	1.1300000	0.0400000	140	ba g	u5n1.0	1.0000000	73man1	0
97	zr g	u5n2.0	rc	cu	0.0000000	0.0	1.1900000	0.0500000	140	ba g	u5n2.0	1.0000000	73man1	0
97	zr g	u5n4.0	rc	cu	0.0000000	0.0	1.2400000	0.0700000	140	ba g	u5n4.0	1.0000000	73man1	0
97	zr g	u5n6.0	rc	cu	0.0000000	0.0	1.2200000	0.0600000	140	ba g	u5n6.0	1.0000000	73man1	0
97	zr g	u5n9.0	rc	cu	0.0000000	0.0	1.2200000	0.0700000	140	ba g	u5n9.0	1.0000000	73man1	0
97	zr g	u8n4.0	rc	cu	0.0000000	0.0	1.1400000	0.0700000	140	ba g	u8n4.0	1.0000000	73man1	0
97	zr g	u8n6.0	rc	cu	0.0000000	0.0	1.0900000	0.0500000	140	ba g	u8n6.0	1.0000000	73man1	0
97	zr g	u8n9.0	rc	cu	0.0000000	0.0	1.0800000	0.0600000	140	ba g	u8n9.0	1.0000000	73man1	0
97	zr g	p9necd	rc	re	0.0000000	0.0	1.0520000	0.0380000	99	mo g	pu239t	0.0000000	64cro1	7
97	zr g	u8n2.0	rc	cu	0.0000000	0.0	5.7900000	0.0000000	0			0.0000000	75fly4	0
97	zr g	u8n8.0	rc	cu	0.0000000	0.0	6.2800000	0.0000000	0			0.0000000	75fly4	0
97	zr g	u5necd	rc	cu	0.0000000	0.0	5.8950000	1.4000000%	0			0.0000000	76for1	0
97	zr g	u5necd	rc	cu	0.0000000	0.0	6.0840000	2.7000000%	0			0.0000000	57bay2	0
97	zr g	u5necd	rc	cu	0.0000000	0.0	6.2080000	3.5000000%	0			0.0000000	57bay2	0
97	zr g	u8n1.5	rc	cu	0.0000000	0.0	5.3600000	0.1600000	0			0.0000000	78nag1	0
97	zr g	u8n2.0	rc	cu	0.0000000	0.0	5.5800000	0.1500000	0			0.0000000	78nag1	0
97	zr g	u8n3.9	rc	cu	0.0000000	0.0	5.6200000	0.1500000	0			0.0000000	78nag1	0
97	zr g	u8n5.5	rc	cu	0.0000000	0.0	5.4400000	0.1500000	0			0.0000000	78nag1	0
97	zr g	u8n6.9	rc	cu	0.0000000	0.0	5.4300000	0.4100000	0			0.0000000	78nag1	0
97	zr g	u8n7.7	rc	cu	0.0000000	0.0	5.6200000	0.1600000	0			0.0000000	78nag1	0
97	zr g	t2n2.0	rc	cu	0.0000000	0.0	4.5000000	0.1200000	0			0.0000000	80gle1	0
97	zr g	t2n3.0	rc	cu	0.0000000	0.0	4.8700000	0.1500000	0			0.0000000	80gle1	0
97	zr g	t2n4.0	rc	cu	0.0000000	0.0	4.8500000	0.1300000	0			0.0000000	80gle1	0
97	zr g	t2n5.9	rc	cu	0.0000000	0.0	4.8000000	0.1300000	0			0.0000000	80gle1	0
97	zr g	t2n6.4	rc	cu	0.0000000	0.0	3.3800000	0.1100000	0			0.0000000	80gle1	0
97	zr g	t2n6.9	rc	cu	0.0000000	0.0	3.5000000	0.1000000	0			0.0000000	80gle1	0
97	zr g	t2n7.6	rc	cu	0.0000000	0.0	3.6200000	0.1300000	0			0.0000000	80gle1	0
97	zr g	t2n8.0	rc	cu	0.0000000	0.0	3.5900000	0.1000000	0			0.0000000	80gle1	0
97	zr g	p9v0.3	rc	re	0.0000000	0.0	1.0000000	0.0120000	97	zr g	pu239t	1.0000000	73van1	0
98		u234f	es	cu	5.7620215	30.0	5.6700000	0.0000000	0			0.0000000	72sid1	0
98		u237f	es	cu	5.9013627	30.0	5.9200000	0.0000000	0			0.0000000	72sid1	0
98		pu240h	es	cu	4.7510237	30.0	0.0470000	0.0000000	0			0.0100000	77net1	0
98		u234he	es	cu	4.8539084	30.0	4.9000000	0.0000000	0			0.0000000	75mee1	0
98		u236he	es	cu	5.2095569	30.0	5.2200000	0.0000000	0			0.0000000	75mee1	0

98		pu238f	es	cu		5.6139310	30.0	5.5600000	0.0000000	0		0.0000000	72sid1	0
98		am241f	cm	cu		0.0000000	0.0	0.0490000	0.0000000	0		0.0100000	80sig1	0
98		am241f	es	cu		5.4418026	30.0	5.3400000	0.0000000	0		0.0000000	72sid1	0
98		am243f	es	cu		5.0754758	30.0	5.0800000	0.0000000	0		0.0000000	72sid1	0
98		np238f	es	cu		5.6704246	30.0	5.6800000	0.0000000	0		0.0000000	72sid1	0
98		cm242f	es	cu		5.2041730	30.0	5.2100000	0.0000000	0		0.0000000	72sid1	0
98	nb m	u8n2.2	rc	cu		0.0000000	0.0	5.5400000	10.5000000%	0		0.0000000	88afa1	0
98		t2n3.0	sp	cu		0.0000000	0.0	5.0700000	0.0000000	0		0.0000000	68ser1	0
98		t2n1.6	sp	cu		0.0000000	0.0	4.6490000	0.0000000	0		0.0000000	68ser1	0
98		t2n1.7	sp	cu		0.0000000	0.0	4.5710000	0.0000000	0		0.0000000	68ser1	0
98		t2n2.0	sp	cu		0.0000000	0.0	4.7970000	0.0000000	0		0.0000000	68ser1	0
98		t2n2.5	sp	cu		0.0000000	0.0	4.9530000	0.0000000	0		0.0000000	68ser1	0
98		t2n5.8	sp	cu		0.0000000	0.0	5.1650000	0.0000000	0		0.0000000	68ser1	0
98		n7n0.8	sp	cu		0.0000000	0.0	5.9850000	0.0000000	0		0.0000000	70kuz1	0
98		n7n1.1	sp	cu		0.0000000	0.0	6.0870000	0.0000000	0		0.0000000	70kuz1	0
98		n7n1.4	sp	cu		0.0000000	0.0	6.1830000	0.0000000	0		0.0000000	70kuz1	0
98		n7n1.7	sp	cu		0.0000000	0.0	6.1250000	0.0000000	0		0.0000000	70kuz1	0
98		n7n2.2	sp	cu		0.0000000	0.0	6.0490000	0.0000000	0		0.0000000	70kuz1	0
99	mo g	u234f	rc	cu		5.0605299	6.4	5.1600000	0.1100000	140	ba g	u234f	5.9300000	77bla1	0
99	mo g	u234f	es	cu		5.4108705	30.0	5.3800000	0.0000000	0		0.0000000	72sid1	0
99	mo g	u237f	es	cu		6.1904497	30.0	6.2100000	0.0000000	0		0.0000000	72sid1	0
99		pu240h	cm	cu		0.0000000	0.0	0.0494000	0.0000000	0		0.0100000	77net1	0
99	mo g	pu240h	rc	cu		4.8686153	5.0	0.0485000	3.0000000%	0		0.0100000	77net1	0
99	mo g	u234he	rc	cu		4.2542934	9.9	0.0440000	0.0040000	147	nd g	u234he	0.0132000	72net1	0
99	mo g	u236he	rc	cu		5.1249736	10.2	0.0530000	0.0050000	147	nd g	u236he	0.0179000	72net1	0
99	mo g	pu238f	es	cu		6.1116329	30.0	6.0700000	0.0000000	0		0.0000000	72sid1	0
99		am241f	cm	cu	x3	0.0000000	0.0	0.0536000	0.0000000	0		0.0100000	80sig1	0
99	mo g	am241f	rc	cu		5.3961274	5.0	0.0536000	3.0000000%	0		0.0100000	80sig1	0
99	mo g	am241f	cm	cu	x3	0.0000000	0.0	6.5700000	0.0000000	0		0.0000000	69gun2	0
99	mo g	am241f	es	cu		5.4867340	30.0	5.4500000	0.0000000	0		0.0000000	72sid1	0
99	mo g	am243f	es	cu		5.3965994	30.0	5.4000000	0.0000000	0		0.0000000	72sid1	0
99	mo g	np238f	es	cu		6.1595986	30.0	6.1700000	0.0000000	0		0.0000000	72sid1	0
99	mo g	cm242f	es	cu		5.4257057	30.0	5.4300000	0.0000000	0		0.0000000	72sid1	0
99	y m	u8n2.2	rc	cu	x6	0.0000000	0.0	3.3400000	12.0000000%	0		0.0000000	88afa1	0
99		t2n3.0	sp	cu		0.0000000	0.0	4.4020000	0.0000000	0		0.0000000	68ser1	0
99		t2n1.6	sp	cu		0.0000000	0.0	3.8630000	0.0000000	0		0.0000000	68ser1	0

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 99       t2n1.7   sp    cu        0.0000000  0.0   3.9010000  0.0000000     0                    0.0000000   68ser1      0
 99       t2n2.0   sp    cu        0.0000000  0.0   3.9580000  0.0000000     0                    0.0000000   68ser1      0
 99       t2n2.5   sp    cu        0.0000000  0.0   4.2550000  0.0000000     0                    0.0000000   68ser1      0
 99       t2n5.8   sp    cu        0.0000000  0.0   4.5980000  0.0000000     0                    0.0000000   68ser1      0
 99       n7n0.8   sp    cu        0.0000000  0.0   6.1070000  0.0000000     0                    0.0000000   70kuz1      0
 99       n7n1.1   sp    cu        0.0000000  0.0   6.2750000  0.0000000     0                    0.0000000   70kuz1      0
 99       n7n1.4   sp    cu        0.0000000  0.0   6.3640000  0.0000000     0                    0.0000000   70kuz1      0
 99       n7n1.7   sp    cu        0.0000000  0.0   6.2330000  0.0000000     0                    0.0000000   70kuz1      0
 99       n7n2.2   sp    cu        0.0000000  0.0   6.2290000  0.0000000     0                    0.0000000   70kuz1      0
 99 mo g   u5n4.8   rc    cu        0.0000000  0.0   5.4500000  0.1600000     0                    0.0000000   53ter1      0
 99 mo g   u8n4.8   rc    cu        0.0000000  0.0   6.4500000  0.1600000     0                    0.0000000   53ter1      0
 99 mo g   t2nlid   rc    cu        0.0000000  0.0   1.0000000  0.0000000    89 sr g      th232f      0.0000000   53tur1      7
 99 mo g   u8g13.   rc    cu        0.0000000  0.0   6.8000000  1.0000000   140 ba g      u8g13.      5.7700000   54wil1      0
 99 mo g   u8d15.   rc    re        0.0000000  0.0   1.2700000  0.0200000   140 ba g      u8d15.      1.0000000   54wil1      0
 99 mo g   u5d15.   rc    re        0.0000000  0.0   1.4200000  0.0900000   140 ba g      u5d15.      1.0000000   54wil1      0
 99 mo g   t2n3.0   rc    cu        0.0000000  0.0   3.1000000  0.1100000     0                    0.0000000   64bro1      0
 99 mo g   u5n.03   rc    re        0.0000000  0.0  38.8000000  7.7000000   111 ag g      u5n.03      1.0000000   66cun1      0
 99 mo g   u5n.03   rc    re        0.0000000  0.0 170.0000000 63.0000000   113 ag g      u5n.03      1.0000000   66cun1      0
 99 mo g   u5n.06   rc    re        0.0000000  0.0  38.5000000  2.0000000   111 ag g      u5n.06      1.0000000   66cun1      0
 99 mo g   u5n.06   rc    re        0.0000000  0.0 131.0000000 35.0000000   113 ag g      u5n.06      1.0000000   66cun1      0
 99 mo g   u5n.12   rc    re        0.0000000  0.0  26.1000000  3.1000000   111 ag g      u5n.12      1.0000000   66cun1      0
 99 mo g   u5n.12   rc    re        0.0000000  0.0 113.0000000 14.0000000   113 ag g      u5n.12      1.0000000   66cun1      0
 99 mo g   u5n.20   rc    re        0.0000000  0.0  29.4000000  3.5000000   111 ag g      u5n.20      1.0000000   66cun1      0
 99 mo g   u5n.20   rc    re        0.0000000  0.0 104.0000000 13.0000000   113 ag g      u5n.20      1.0000000   66cun1      0
 99 mo g   u5n.30   rc    re        0.0000000  0.0  21.4000000  2.6000000   111 ag g      u5n.30      1.0000000   66cun1      0
 99 mo g   u5n.30   rc    re        0.0000000  0.0  90.0000000 11.0000000   113 ag g      u5n.30      1.0000000   66cun1      0
 99 mo g   u5n.50   rc    re        0.0000000  0.0  20.1000000  2.4000000   111 ag g      u5n.50      1.0000000   66cun1      0
 99 mo g   u5n.50   rc    re        0.0000000  0.0  85.0000000 10.0000000   113 ag g      u5n.50      1.0000000   66cun1      0
 99 mo g   u5n1.0   rc    re        0.0000000  0.0  23.2000000  2.8000000   111 ag g      u5n1.0      1.0000000   66cun1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.    value                 nuclide     material      value      no.   treatment

 99 mo g   u5n1.0   rc    re        0.0000000  0.0  71.0000000  9.0000000   113 ag g      u5n1.0      1.0000000   66cun1      0
 99 mo g   u5n6.0   rc    re        0.0000000  0.0  16.7000000  2.0000000   113 ag g      u5n6.0      1.0000000   66cun1      0
 99 mo g   u5n6.0   rc    re        0.0000000  0.0   4.2700000  0.5100000   111 ag g      u5n6.0      1.0000000   66cun1      0
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99	mo	g	l4n65.	rc	re	0.0000000	0.0	2.1800000	0.0000000	0		mubarn	47000.0000000	70hen1	20
99	mo	g	l4n41.	rc	re	0.0000000	0.0	92.0000000	5.0000000	0		mubarn	1824.0000000	70hen1	20
99	mo	g	l4n37.	rc	re	0.0000000	0.0	7.1000000	0.3000000	0		mubarn	320.0000000	70hen1	20
99	mo	g	l4n25.	rc	re	0.0000000	0.0	0.3400000	0.1500000	0		mubarn	18.0000000	70hen1	20
99	mo	g	t2n3.0	rc	cu	0.0000000	0.0	3.0000000	0.0500000	0			0.0000000	71swi3	0
99	mo	g	u5n.13	rc	cu	0.0000000	0.0	5.7000000	0.3900000	0			0.0000000	73cun2	0
99	mo	g	u5n.30	rc	cu	0.0000000	0.0	5.5500000	0.3700000	0			0.0000000	73cun2	0
99	mo	g	u5n.70	rc	cu	0.0000000	0.0	5.6000000	0.3200000	0			0.0000000	73cun2	0
99	mo	g	u5n.90	rc	cu	0.0000000	0.0	5.7800000	0.3200000	0			0.0000000	73cun2	0
99	mo	g	u5n1.3	rc	cu	0.0000000	0.0	5.5500000	0.3300000	0			0.0000000	73cun2	0
99	mo	g	u5n1.7	rc	cu	0.0000000	0.0	5.5500000	0.3700000	0			0.0000000	73cun2	0
99	mo	g	u5n1.0	rc	re	0.0000000	0.0	1.1100000	0.0300000	140	ba	g	u5n1.0	1.0000000	73man1	0
99	mo	g	u5n2.0	rc	cu	0.0000000	0.0	1.1900000	0.0400000	140	ba	g	u5n2.0	1.0000000	73man1	0
99	mo	g	u5n4.0	rc	cu	0.0000000	0.0	1.2100000	0.0600000	140	ba	g	u5n4.0	1.0000000	73man1	0
99	mo	g	u5n6.0	rc	cu	0.0000000	0.0	1.1800000	0.0500000	140	ba	g	u5n6.0	1.0000000	73man1	0
99	mo	g	u5n9.0	rc	cu	0.0000000	0.0	1.1800000	0.0500000	140	ba	g	u5n9.0	1.0000000	73man1	0
99	mo	g	u8n4.0	rc	cu	0.0000000	0.0	1.1600000	0.0400000	140	ba	g	u8n4.0	1.0000000	73man1	0
99	mo	g	u8n6.0	rc	cu	0.0000000	0.0	1.0800000	0.0400000	140	ba	g	u8n6.0	1.0000000	73man1	0
99	mo	g	u8n9.0	rc	cu	0.0000000	0.0	1.0300000	0.0500000	140	ba	g	u8n9.0	1.0000000	73man1	0
99	mo	g	u8n2.0	rc	cu	0.0000000	0.0	6.6200000	0.0000000	0			0.0000000	75fly4	0
99	mo	g	u8n2.0	rc	cu	0.0000000	0.0	7.6000000	0.0000000	0			0.0000000	75fly4	0
99	mo	g	u8n8.0	rc	cu	0.0000000	0.0	6.8200000	0.0000000	0			0.0000000	75fly4	0
99	mo	g	u8n8.0	rc	cu	0.0000000	0.0	7.6800000	0.0000000	0			0.0000000	75fly4	0
99	mo	g	t2n11.	rc	cu	0.0000000	0.0	3.1000000	0.0000000	0			0.0000000	53tur1	0
99	mo	g	t2n1.3	rc	re	0.0000000	0.0	0.3400000	10.0000000%	89	sr	g	t2n1.3	1.0000000	76lis1	0
99	mo	g	t2n1.4	rc	re	0.0000000	0.0	0.3400000	10.0000000%	89	sr	g	t2n1.4	1.0000000	76lis1	0
99	mo	g	t2n1.5	rc	re	0.0000000	0.0	0.3600000	10.0000000%	89	sr	g	t2n1.5	1.0000000	76lis1	0
99	mo	g	t2n1.6	rc	re	0.0000000	0.0	0.3600000	10.0000000%	89	sr	g	t2n1.6	1.0000000	76lis1	0
99	mo	g	t2n2.0	rc	re	0.0000000	0.0	0.3800000	30.0000000%	89	sr	g	t2n2.0	1.0000000	76lis1	0
99	mo	g	t2n1.7	rc	re	0.0000000	0.0	0.3400000	10.0000000%	89	sr	g	t2n1.7	1.0000000	76lis1	0
99	mo	g	t2n3.0	rc	re	0.0000000	0.0	0.3700000	10.0000000%	89	sr	g	t2n3.0	1.0000000	76lis1	0
99	mo	g	t2n3.9	rc	re	0.0000000	0.0	0.3400000	10.0000000%	89	sr	g	t2n3.9	1.0000000	76lis1	0
99	mo	g	t2n13.	rc	re	0.0000000	0.0	0.3500000	10.0000000%	89	sr	g	t2n13.	1.0000000	76lis1	0
99	mo	g	u8n1.5	rc	cu	0.0000000	0.0	6.2900000	0.3000000	0			0.0000000	78nag1	0
99	mo	g	u8n2.0	rc	cu	0.0000000	0.0	6.1200000	0.2000000	0			0.0000000	78nag1	0
99	mo	g	u8n3.9	rc	cu	0.0000000	0.0	6.0000000	0.2200000	0			0.0000000	78nag1	0

99	mo	g	u8n5.5	rc	cu	0.0000000	0.0	5.4600000	0.3200000	0		0.0000000	78nag1	0
99	mo	g	u8n6.9	rc	cu	0.0000000	0.0	6.0600000	0.2700000	0		0.0000000	78nag1	0
99	mo	g	u8n7.7	rc	cu	0.0000000	0.0	5.9600000	0.2500000	0		0.0000000	78nag1	0
99	mo	g	t2n2.0	rc	cu	0.0000000	0.0	2.8700000	0.1700000	0		0.0000000	80gle1	0
99	mo	g	t2n3.0	rc	cu	0.0000000	0.0	3.1500000	0.1600000	0		0.0000000	80gle1	0
99	mo	g	t2n4.0	rc	cu	0.0000000	0.0	3.4100000	0.1500000	0		0.0000000	80gle1	0
99	mo	g	t2n5.9	rc	cu	0.0000000	0.0	3.7900000	0.2300000	0		0.0000000	80gle1	0
99	mo	g	t2n6.4	rc	cu	0.0000000	0.0	2.6000000	0.1300000	0		0.0000000	80gle1	0
99	mo	g	t2n6.9	rc	cu	0.0000000	0.0	2.0900000	0.1600000	0		0.0000000	80gle1	0
99	mo	g	t2n7.6	rc	cu	0.0000000	0.0	2.2100000	0.1300000	0		0.0000000	80gle1	0
99	mo	g	t2n8.0	rc	cu	0.0000000	0.0	2.2500000	0.2300000	0		0.0000000	80gle1	0
99	mo	g	u5n.13	rc	cu	0.0000000	0.0	5.7000000	0.2400000	0		0.0000000	74cun1	0
99	mo	g	u5n.30	rc	cu	0.0000000	0.0	5.5500000	0.2000000	0		0.0000000	74cun1	0
99	mo	g	u5n.70	rc	cu	0.0000000	0.0	5.6000000	0.0900000	0		0.0000000	74cun1	0
99	mo	g	u5n.90	rc	cu	0.0000000	0.0	5.7800000	0.0500000	0		0.0000000	74cun1	0
99	mo	g	u5n1.3	rc	cu	0.0000000	0.0	5.5500000	0.1300000	0		0.0000000	74cun1	0
99	mo	g	u5n1.7	rc	cu	0.0000000	0.0	5.5500000	0.2400000	0		0.0000000	74cun1	0
99	mo	g	p9n.70	rc	cu	0.0000000	0.0	5.6500000	0.3200000	0		0.0000000	77cun1	0
99	mo	g	p9n.90	rc	cu	0.0000000	0.0	5.5800000	0.4000000	0		0.0000000	77cun1	0
99	mo	g	p9n1.3	rc	cu	0.0000000	0.0	5.3600000	0.2800000	0		0.0000000	77cun1	0
99	mo	g	p9n1.7	rc	cu	0.0000000	0.0	5.6100000	0.1300000	0		0.0000000	77cun1	0
99	mo	g	p9n.13	rc	cu	0.0000000	0.0	5.2400000	0.0900000	0		0.0000000	77cun1	0
99	mo	g	p9n.30	rc	cu	0.0000000	0.0	5.4200000	0.2900000	0		0.0000000	77cun1	0
99	nb	g	t2p9.5	rc	cu	0.0000000	0.0	0.4850000	0.1000000	0	m barn	0.2100000	68fre1	0
99	nb	g	t2p11.	rc	cu	0.0000000	0.0	1.9900000	0.3500000	0	m barn	0.7500000	68fre1	0
99	nb	g	t2d12.	rc	cu	0.0000000	0.0	2.2000000	0.4400000	0	m barn	0.6600000	68fre1	0
100			u234f	es	cu	4.1360543	30.0	4.0700000	0.0000000	0		0.0000000	72sid1	0
100			u237f	es	cu	5.9412368	30.0	5.9600000	0.0000000	0		0.0000000	72sid1	0
100			pu240h	es	cu	5.2059090	30.0	0.0515000	0.0000000	0		0.0100000	77net1	0
100			u234he	es	cu	3.5067012	30.0	3.5400000	0.0000000	0		0.0000000	75mee1	0
100			u236he	es	cu	4.7903972	30.0	4.8000000	0.0000000	0		0.0000000	75mee1	0
100			pu238f	es	cu	6.1086839	30.0	6.0500000	0.0000000	0		0.0000000	72sid1	0
100			am241f	cm	cu	0.0000000	0.0	0.0570000	0.0000000	0		0.0100000	80sig1	0
100			am241f	es	cu	5.9085907	30.0	5.8300000	0.0000000	0		0.0000000	72sid1	0
100			am243f	es	cu	5.4451462	30.0	5.4500000	0.0000000	0		0.0000000	72sid1	0
100			np238f	es	cu	6.0954332	30.0	6.1100000	0.0000000	0		0.0000000	72sid1	0

100		cm242f	es	cu	5.6336920	30.0	5.6400000	0.0000000	0		0.0000000	72sid1	0
100	pd g	u8p12g	rc	re	x6	0.0000000	0.0	0.9000000	20.0000000%	0	m barn	0.0000000	70pan1	0
100		t2n3.0	sp	cu	0.0000000	0.0	3.7640000	0.0000000	0		0.0000000	68ser1	0
100		t2n1.6	sp	cu	0.0000000	0.0	3.1630000	0.0000000	0		0.0000000	68ser1	0
100		t2n1.7	sp	cu	0.0000000	0.0	3.2310000	0.0000000	0		0.0000000	68ser1	0
100		t2n2.0	sp	cu	0.0000000	0.0	3.2090000	0.0000000	0		0.0000000	68ser1	0
100		t2n2.5	sp	cu	0.0000000	0.0	3.6360000	0.0000000	0		0.0000000	68ser1	0
100		t2n5.8	sp	cu	0.0000000	0.0	3.9130000	0.0000000	0		0.0000000	68ser1	0
100		n7n0.8	sp	cu	0.0000000	0.0	6.3230000	0.0000000	0		0.0000000	70kuz1	0
100		n7n1.1	sp	cu	0.0000000	0.0	6.3480000	0.0000000	0		0.0000000	70kuz1	0
100		n7n1.4	sp	cu	0.0000000	0.0	6.3890000	0.0000000	0		0.0000000	70kuz1	0
100		n7n1.7	sp	cu	0.0000000	0.0	6.3690000	0.0000000	0		0.0000000	70kuz1	0
100		n7n2.2	sp	cu	0.0000000	0.0	6.3200000	0.0000000	0		0.0000000	70kuz1	0
101		u234f	es	cu	3.3942067	30.0	3.3400000	0.0000000	0		0.0000000	72sid1	0
101		u237f	es	cu	5.8040436	30.0	5.8300000	0.0000000	0		0.0000000	72sid1	0
101		pu240h	es	cu	5.3979716	30.0	0.0534000	0.0000000	0		0.0100000	77net1	0
101		u234he	es	cu	3.1672982	30.0	3.2100000	0.0000000	0		0.0000000	75mee1	0
101		u236he	es	cu	4.2015775	30.0	4.2100000	0.0000000	0		0.0000000	75mee1	0
101		pu238f	es	cu	6.0481019	30.0	5.9900000	0.0000000	0		0.0000000	72sid1	0
101		am241f	cm	cu	0.0000000	0.0	0.0600000	0.0000000	0		0.0100000	80sig1	0
101		am241f	es	cu	6.1041943	30.0	5.9900000	0.0000000	0		0.0000000	72sid1	0
101		am243f	es	cu	5.9247187	30.0	5.9300000	0.0000000	0		0.0000000	72sid1	0
101		np238f	es	cu	6.0555286	30.0	6.0700000	0.0000000	0		0.0000000	72sid1	0
101		cm242f	es	cu	5.9533341	30.0	5.9600000	0.0000000	0		0.0000000	72sid1	0
101	tc g	u8n1.7	rc	cu	0.0000000	0.0	7.8300000	11.9000000%	0		0.0000000	88afa1	0
101	tc g	u8n2.2	rc	cu	0.0000000	0.0	6.9900000	11.0000000%	0		0.0000000	88afa1	0
101	tc g	u8n3.7	rc	cu	0.0000000	0.0	7.4900000	10.6000000%	0		0.0000000	88afa1	0
101	tc g	u8n4.8	rc	cu	0.0000000	0.0	6.5600000	10.4000000%	0		0.0000000	88afa1	0
101	tc g	u8n6.0	rc	cu	0.0000000	0.0	6.3000000	11.8000000%	0		0.0000000	88afa1	0
101	pd g	u8p12g	rc	re	0.0000000	0.0	2.6000000	20.0000000%	0	m barn	0.0000000	70pan1	0
101		t2n3.0	sp	cu	0.0000000	0.0	3.0350000	0.0000000	0		0.0000000	68ser1	0
101		t2n1.6	sp	cu	0.0000000	0.0	2.5940000	0.0000000	0		0.0000000	68ser1	0
101		t2n1.7	sp	cu	0.0000000	0.0	2.5170000	0.0000000	0		0.0000000	68ser1	0
101		t2n2.0	sp	cu	0.0000000	0.0	2.5640000	0.0000000	0		0.0000000	68ser1	0
101		t2n2.5	sp	cu	0.0000000	0.0	2.9810000	0.0000000	0		0.0000000	68ser1	0
101		t2n5.8	sp	cu	0.0000000	0.0	3.2870000	0.0000000	0		0.0000000	68ser1	0

101		n7n0.8	sp	cu	0.0000000	0.0	6.3800000	0.0000000	0				0.0000000	70kuz1	0	
101		n7n1.1	sp	cu	0.0000000	0.0	6.3420000	0.0000000	0				0.0000000	70kuz1	0	
101		n7n1.4	sp	cu	0.0000000	0.0	6.4320000	0.0000000	0				0.0000000	70kuz1	0	
101		n7n1.7	sp	cu	0.0000000	0.0	6.2930000	0.0000000	0				0.0000000	70kuz1	0	
101		n7n2.2	sp	cu	0.0000000	0.0	6.1840000	0.0000000	0				0.0000000	70kuz1	0	
101	tc g	u8n1.5	rc	cu	0.0000000	0.0	6.4100000	0.5600000	0				0.0000000	78nag1	0	
101	tc g	u8n2.0	rc	cu	0.0000000	0.0	6.4500000	0.4900000	0				0.0000000	78nag1	0	
101	tc g	u8n3.9	rc	cu	0.0000000	0.0	7.0800000	0.5100000	0				0.0000000	78nag1	0	
101	tc g	u8n5.5	rc	cu	0.0000000	0.0	6.5300000	0.5500000	0				0.0000000	78nag1	0	

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0measured nuclide	fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
101	tc g	u8n7.7	rc	cu	0.0000000	0.0	6.7900000	0.4600000	0				0.0000000	78nag1	0
101	tc g	t2n2.0	rc	cu	0.0000000	0.0	0.8200000	0.1500000	0				0.0000000	80gle1	0
101	tc g	t2n3.0	rc	cu	0.0000000	0.0	1.0800000	0.1200000	0				0.0000000	80gle1	0
101	tc g	t2n4.0	rc	cu	0.0000000	0.0	1.2500000	0.1100000	0				0.0000000	80gle1	0
101	tc g	t2n5.9	rc	cu	0.0000000	0.0	1.7700000	0.2200000	0				0.0000000	80gle1	0
101	tc g	t2n6.4	rc	cu	0.0000000	0.0	1.2200000	0.1500000	0				0.0000000	80gle1	0
101	tc g	t2n6.9	rc	cu	0.0000000	0.0	0.7800000	0.3200000	0				0.0000000	80gle1	0
101	tc g	t2n7.6	rc	cu	0.0000000	0.0	1.0000000	0.1200000	0				0.0000000	80gle1	0
101	tc g	t2n8.0	rc	cu	0.0000000	0.0	1.0800000	0.1500000	0				0.0000000	80gle1	0
101	mo g	u8g13.	rc	cu	0.0000000	0.0	6.5000000	1.0000000	140	ba g	u8g13.		5.7700000	54wil1	0
101	mo g	u8d15.	rc	re	0.0000000	0.0	1.3000000	0.0400000	140	ba g	u8d15.		1.0000000	54wil1	0
101	mo g	u5d15.	rc	re	0.0000000	0.0	1.2700000	0.1200000	140	ba g	u5d15.		1.0000000	54wil1	0
101	mo g	u8n8.0	rc	cu	0.0000000	0.0	7.3400000	0.0000000	0				0.0000000	75fly4	0
102		u234f	es	cu	2.6699049	30.0	2.6100000	0.0000000	0				0.0000000	72sid1	0
102		u237f	es	cu	5.6845778	30.0	5.7100000	0.0000000	0				0.0000000	72sid1	0
102		pu240h	es	cu	5.4384059	30.0	0.0538000	0.0000000	0				0.0100000	77net1	0
102		u234he	es	cu	2.9699588	30.0	3.0100000	0.0000000	0				0.0000000	75mee1	0
102		u236he	es	cu	3.5528779	30.0	3.5600000	0.0000000	0				0.0000000	75mee1	0
102		pu238f	es	cu	6.1389749	30.0	6.0800000	0.0000000	0				0.0000000	72sid1	0
102		am241f	cm	cu	0.0000000	0.0	0.0618000	0.0000000	0				0.0100000	80sig1	0
102		am241f	es	cu	6.0634317	30.0	5.9500000	0.0000000	0				0.0000000	72sid1	0
102		am243f	es	cu	5.9946564	30.0	6.0000000	0.0000000	0				0.0000000	72sid1	0
102		np238f	es	cu	6.1453140	30.0	6.1600000	0.0000000	0				0.0000000	72sid1	0

102		cm242f	es	cu	5.9733118	30.0	5.9800000	0.0000000	0			0.0000000	72sid1	0
102	ru g	u5necd	ms	cu	0.0000000	0.0	0.9200000	0.0180000	101	ru g	u5necd	1.0000000	78shi1	0
102	ru g	p9necd	ms	cu	0.0000000	0.0	1.0640000	0.0080000	101	ru g	p9necd	1.0000000	78shi1	0
102		t2n3.0	sp	cu	0.0000000	0.0	2.3470000	0.0000000	0			0.0000000	68ser1	0
102		t2n1.6	sp	cu	0.0000000	0.0	1.9750000	0.0000000	0			0.0000000	68ser1	0
102		t2n1.7	sp	cu	0.0000000	0.0	1.8950000	0.0000000	0			0.0000000	68ser1	0
102		t2n2.0	sp	cu	0.0000000	0.0	1.9890000	0.0000000	0			0.0000000	68ser1	0
102		t2n2.5	sp	cu	0.0000000	0.0	2.2230000	0.0000000	0			0.0000000	68ser1	0
102		t2n5.8	sp	cu	0.0000000	0.0	2.6350000	0.0000000	0			0.0000000	68ser1	0
102		n7n0.8	sp	cu	0.0000000	0.0	6.1480000	0.0000000	0			0.0000000	70kuz1	0
102		n7n1.1	sp	cu	0.0000000	0.0	6.1950000	0.0000000	0			0.0000000	70kuz1	0
102		n7n1.4	sp	cu	0.0000000	0.0	6.2480000	0.0000000	0			0.0000000	70kuz1	0
102		n7n1.7	sp	cu	0.0000000	0.0	6.0040000	0.0000000	0			0.0000000	70kuz1	0
102		n7n2.2	sp	cu	0.0000000	0.0	5.9580000	0.0000000	0			0.0000000	70kuz1	0
102	mo g	u8g13.	rc	cu	0.0000000	0.0	5.0000000	0.8000000	140	ba g	u8g13.	5.7700000	54wil1	0
102	mo g	u8d15.	rc	re	0.0000000	0.0	1.0600000	0.0300000	140	ba g	u8d15.	1.0000000	54wil1	0
102	mo g	u5d15.	rc	re	0.0000000	0.0	0.8600000	0.0500000	140	ba g	u5d15.	1.0000000	54wil1	0
103		u234f	rc	cu	2.4419999	6.4	2.4900000	0.0400000	140	ba g	u234f	5.9300000	77bla1	0
103		u234f	es	cu	1.8706727	30.0	1.8600000	0.0000000	0			0.0000000	72sid1	0
103		u237f	es	cu	4.9478725	30.0	4.9700000	0.0000000	0			0.0000000	72sid1	0
103		pu240h	es	cu	5.3203425	30.0	0.0530000	0.0000000	0			0.0100000	77net1	0
103	ru g	pu240h	rc	cu	5.2902274	5.0	0.0527000	3.0000000%	0			0.0100000	77net1	0
103		u234he	es	cu	2.2981770	30.0	2.3200000	0.0000000	0			0.0000000	75mee1	0
103		u236he	es	cu	3.2135581	30.0	3.2200000	0.0000000	0			0.0000000	75mee1	0
103		pu238f	es	cu	5.8966469	30.0	5.8400000	0.0000000	0			0.0000000	72sid1	0
103		am241f	cm	cu	0.0000000	0.0	0.0633000	0.0000000	0			0.0100000	80sig1	0
103		am241f	es	cu	6.0203063	30.0	5.9800000	0.0000000	0			0.0000000	72sid1	0
103	ru g	am241f	cm	cu	0.0000000	0.0	7.7000000	0.0000000	0			0.0000000	69gun2	0
103	ru g	am241f	rc	cu	6.4632720	5.0	0.0642000	3.0000000%	0			0.0100000	80sig1	0
103		am243f	es	cu	5.9047366	30.0	5.9100000	0.0000000	0			0.0000000	72sid1	0
103		np238f	es	cu	5.8161008	30.0	5.8300000	0.0000000	0			0.0000000	72sid1	0
103		cm242f	es	cu	5.9433453	30.0	5.9500000	0.0000000	0			0.0000000	72sid1	0
103	ru g	u8n1.7	rc	cu	0.0000000	0.0	6.6800000	10.5000000%	0			0.0000000	88afa1	0
103	ru g	u8n2.2	rc	cu	0.0000000	0.0	6.4800000	10.3000000%	0			0.0000000	88afa1	0
103	ru g	u8n3.7	rc	cu	0.0000000	0.0	6.2700000	10.2000000%	0			0.0000000	88afa1	0
103	ru g	u8n4.8	rc	cu	0.0000000	0.0	5.8200000	10.7000000%	0			0.0000000	88afa1	0

103	ru g	u8n6.0	rc	cu	0.0000000	0.0	5.9600000	10.4000000%	0			0.0000000	88afa1	0
103	ag g	u8p12g	rc	re	0.0000000	0.0	1.9000000	20.0000000%	0	m barn		0.0000000	70pan1	0
103	pd g	u8p12g	rc	re	0.0000000	0.0	5.1000000	20.0000000%	0	m barn		0.0000000	70pan1	0
103		t2n3.0	sp	cu	0.0000000	0.0	1.6290000	0.0000000	0			0.0000000	68ser1	0
103		t2n1.6	sp	cu	0.0000000	0.0	1.3720000	0.0000000	0			0.0000000	68ser1	0
103		t2n1.7	sp	cu	0.0000000	0.0	1.3340000	0.0000000	0			0.0000000	68ser1	0
103		t2n2.0	sp	cu	0.0000000	0.0	1.3970000	0.0000000	0			0.0000000	68ser1	0
103		t2n2.5	sp	cu	0.0000000	0.0	1.5240000	0.0000000	0			0.0000000	68ser1	0
103		t2n5.8	sp	cu	0.0000000	0.0	1.9300000	0.0000000	0			0.0000000	68ser1	0
103		n7n0.8	sp	cu	0.0000000	0.0	6.1650000	0.0000000	0			0.0000000	70kuz1	0
103		n7n1.1	sp	cu	0.0000000	0.0	6.0830000	0.0000000	0			0.0000000	70kuz1	0
103		n7n1.4	sp	cu	0.0000000	0.0	6.1020000	0.0000000	0			0.0000000	70kuz1	0
103		n7n1.7	sp	cu	0.0000000	0.0	5.9460000	0.0000000	0			0.0000000	70kuz1	0
103		n7n2.2	sp	cu	0.0000000	0.0	5.8890000	0.0000000	0			0.0000000	70kuz1	0
103	ru g	t2nlid	rc	cu	0.0000000	0.0	2.5000000	0.0000000	89	sr g	th232f	0.0000000	53tur1	7
103	ru g	u8g13.	rc	cu	0.0000000	0.0	1.4000000	0.0000000	140	ba g	u8g13.	5.7700000	54wil1	0
103	ru g	u8d15.	rc	re	0.0000000	0.0	0.2200000	0.0000000	140	ba g	u8d15.	1.0000000	54wil1	0
103	ru g	u5d15.	rc	re	0.0000000	0.0	0.4400000	0.0000000	140	ba g	u5d15.	1.0000000	54wil1	0
103	ru g	u8d05.	rc	cu	0.0000000	0.0	141.0000000	2.0000000	0	u barn		35.0000000	57sug1	0
103	ru g	u8d10.	rc	cu	0.0000000	0.0	2.6000000	0.0000000	0	m barn		0.8600000	57sug1	0
103	ru g	u8d14.	rc	cu	0.0000000	0.0	13.0000000	2.0000000	0	m barn		4.3000000	57sug1	0
103	ru g	u3necd	rc	cu	0.0000000	0.0	1.4000000	6.0000000%	140	ba g	u3necd	5.4000000	65bal1	0
103	ru g	u5k446	rc	cu	0.0000000	0.0	0.5820000	0.0020000	140	ba g	u5k446	1.0000000	72lar1	0
103	ru g	u5k442	rc	cu	0.0000000	0.0	0.5840000	0.0020000	140	ba g	u5k442	1.0000000	72lar1	0
103	ru g	u5k315	rc	cu	0.0000000	0.0	0.5800000	0.0020000	140	ba g	u5k315	1.0000000	72lar1	0
103	ru g	u5k293	rc	cu	0.0000000	0.0	0.5680000	0.0020000	140	ba g	u5k293	1.0000000	72lar1	0
103	ru g	u5k132	rc	cu	0.0000000	0.0	0.5760000	0.0020000	140	ba g	u5k132	1.0000000	72lar1	0
103	ru g	u5v370	rc	cu	0.0000000	0.0	0.5420000	0.0000000	140	ba g	u5v370	1.0000000	72lar1	0
103	ru g	u5n1.0	rc	re	0.0000000	0.0	0.6400000	0.0300000	140	ba g	u5n1.0	1.0000000	73man1	0
103	ru g	u5n2.0	rc	cu	0.0000000	0.0	0.6700000	0.0200000	140	ba g	u5n2.0	1.0000000	73man1	0
103	ru g	u5n4.0	rc	cu	0.0000000	0.0	0.7500000	0.0500000	140	ba g	u5n4.0	1.0000000	73man1	0
103	ru g	u5n6.0	rc	cu	0.0000000	0.0	0.7400000	0.0500000	140	ba g	u5n6.0	1.0000000	73man1	0
103	ru g	u5n9.0	rc	cu	0.0000000	0.0	0.6700000	0.0300000	140	ba g	u5n9.0	1.0000000	73man1	0
103	ru g	u8n4.0	rc	cu	0.0000000	0.0	0.9800000	0.0600000	140	ba g	u8n4.0	1.0000000	73man1	0
103	ru g	u8n6.0	rc	cu	0.0000000	0.0	0.9100000	0.0400000	140	ba g	u8n6.0	1.0000000	73man1	0
103	ru g	u8n9.0	rc	cu	0.0000000	0.0	0.9400000	0.0400000	140	ba g	u8n9.0	1.0000000	73man1	0

103 ru g u5necd rc cu 0.0000000 0.0 2.9700000 6.0000000% 140 ba g u235t 6.3500000 65bal1 0
103 ru g u8n2.0 rc cu 0.0000000 0.0 6.8500000 0.0000000 0 0.0000000 75fly4 0
103 ru g u8n2.0 rc cu 0.0000000 0.0 4.7600000 0.0000000 0 0.0000000 75fly4 0
103 ru g u8n8.0 rc cu 0.0000000 0.0 6.4500000 0.0000000 0 0.0000000 75fly4 0
103 ru g u8n8.0 rc cu 0.0000000 0.0 5.1200000 0.0000000 0 0.0000000 75fly4 0
103 ru g t2n11. rc cu 0.0000000 0.0 0.5100000 0.0000000 0 0.0000000 53tur1 0
103 ru g u8n1.5 rc cu 0.0000000 0.0 6.9600000 0.3100000 0 0.0000000 78nag1 0
103 ru g u8n2.0 rc cu 0.0000000 0.0 7.0300000 0.2200000 0 0.0000000 78nag1 0
103 ru g u8n3.9 rc cu 0.0000000 0.0 6.1200000 0.1800000 0 0.0000000 78nag1 0
103 ru g u8n5.5 rc cu 0.0000000 0.0 6.0000000 0.2600000 0 0.0000000 78nag1 0
103 ru g u8n6.9 rc cu 0.0000000 0.0 5.9800000 0.2900000 0 0.0000000 78nag1 0
103 ru g u8n7.7 rc cu 0.0000000 0.0 6.2200000 0.2700000 0 0.0000000 78nag1 0
103 ru g t2n3.0 rc cu le 0.0000000 0.0 0.1500000 0.0000000 0 0.0000000 80gle1 0
103 ru g t2n4.0 rc cu 0.0000000 0.0 0.1500000 0.0400000 0 0.0000000 80gle1 0
103 ru g t2n5.9 rc cu 0.0000000 0.0 0.6700000 0.1000000 0 0.0000000 80gle1 0
103 ru g t2n6.4 rc cu 0.0000000 0.0 0.1600000 0.0400000 0 0.0000000 80gle1 0
104 u234f es cu 1.3210984 30.0 1.3000000 0.0000000 0 0.0000000 72sid1 0
104 u237f es cu 4.6292972 30.0 4.6500000 0.0000000 0 0.0000000 72sid1 0
104 pu240h es cu 5.2160175 30.0 0.0516000 0.0000000 0 0.0100000 77net1 0
104 u234he es cu 2.0819312 30.0 2.1100000 0.0000000 0 0.0000000 75mee1 0
104 u236he es cu 2.8143584 30.0 2.8200000 0.0000000 0 0.0000000 75mee1 0
104 pu238f es cu 5.7048039 30.0 5.6500000 0.0000000 0 0.0000000 72sid1 0
104 am241f cm cu 0.0000000 0.0 0.0624000 0.0000000 0 0.0100000 80sig1 0
104 am241f es cu 6.0226692 30.0 5.9100000 0.0000000 0 0.0000000 72sid1 0
104 tc g am241f rc cu x4 0.0000000 0.0 5.3500000 0.8300000 0 0.0000000 83gud1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

104 am243f es cu 5.9846653 30.0 5.9900000 0.0000000 0 0.0000000 72sid1 0
104 np238f es cu 5.6963868 30.0 5.7100000 0.0000000 0 0.0000000 72sid1 0
104 cm242f es cu 5.9433453 30.0 5.9500000 0.0000000 0 0.0000000 72sid1 0
104 tc g u8n1.7 rc cu 0.0000000 0.0 4.8200000 10.8000000% 0 0.0000000 88afa1 0
104 tc g u8n2.2 rc cu 0.0000000 0.0 4.7300000 11.4000000% 0 0.0000000 88afa1 0
104 tc g u8n3.7 rc cu 0.0000000 0.0 4.1300000 10.9000000% 0 0.0000000 88afa1 0
104 tc g u8n4.8 rc cu 0.0000000 0.0 5.0000000 10.6000000% 0 0.0000000 88afa1 0

104	tc	g	u8n6.0	rc	cu	0.0000000	0.0	3.8700000	11.9000000%	0			0.0000000	88afa1	0		
104	ru	g	u5necd	ms	cu	0.0000000	0.0	0.6280000	0.0160000	101	ru	g	u5necd	1.0000000	78shi1	0	
104	ru	g	p9necd	ms	cu	0.0000000	0.0	1.0100000	0.0050000	101	ru	g	p9necd	1.0000000	78shi1	0	
104			t2n3.0	sp	cu	0.0000000	0.0	1.1550000	0.0000000	0			0.0000000	68ser1	0		
104			t2n1.6	sp	cu	0.0000000	0.0	1.0410000	0.0000000	0			0.0000000	68ser1	0		
104			t2n1.7	sp	cu	0.0000000	0.0	0.9670000	0.0000000	0			0.0000000	68ser1	0		
104			t2n2.0	sp	cu	0.0000000	0.0	0.9920000	0.0000000	0			0.0000000	68ser1	0		
104			t2n2.5	sp	cu	0.0000000	0.0	1.1090000	0.0000000	0			0.0000000	68ser1	0		
104			t2n5.8	sp	cu	0.0000000	0.0	1.4840000	0.0000000	0			0.0000000	68ser1	0		
104			n7n0.8	sp	cu	0.0000000	0.0	5.4970000	0.0000000	0			0.0000000	70kuz1	0		
104			n7n1.1	sp	cu	0.0000000	0.0	5.2260000	0.0000000	0			0.0000000	70kuz1	0		
104			n7n1.4	sp	cu	0.0000000	0.0	5.2400000	0.0000000	0			0.0000000	70kuz1	0		
104			n7n1.7	sp	cu	0.0000000	0.0	5.2030000	0.0000000	0			0.0000000	70kuz1	0		
104			n7n2.2	sp	cu	0.0000000	0.0	5.1660000	0.0000000	0			0.0000000	70kuz1	0		
104	tc	g	u8n1.5	rc	cu	0.0000000	0.0	5.1700000	0.3300000	0			0.0000000	78nag1	0		
104	tc	g	u8n2.0	rc	cu	0.0000000	0.0	4.8800000	0.3100000	0			0.0000000	78nag1	0		
104	tc	g	u8n3.9	rc	cu	0.0000000	0.0	4.7400000	0.2900000	0			0.0000000	78nag1	0		
104	tc	g	u8n5.5	rc	cu	0.0000000	0.0	4.4900000	0.2900000	0			0.0000000	78nag1	0		
104	tc	g	u8n7.7	rc	cu	0.0000000	0.0	4.4400000	0.3100000	0			0.0000000	78nag1	0		
105			u234f	rc	cu	1.2553252	6.4	1.2800000	0.0600000	140	ba	g	u234f	5.9300000	77bla1	0	
105			u234f	es	cu	0.8448199	30.0	0.8400000	0.0000000	0			0.0000000	72sid1	0		
105			u237f	es	cu	2.6879790	30.0	2.7000000	0.0000000	0			0.0000000	72sid1	0		
105			pu240h	es	cu	4.5086360	30.0	0.0450000	0.0000000	0			0.0100000	77net1	0		
105			pu240h	rc	cu	4.3282905	5.0	0.0432000	0.0013000	0			0.0100000	77net1	0		
105	rh	g	pu240h	rc	cu	4.3282905	5.0	0.0432000	3.0000000%	0			0.0100000	77net1	0		
105	ru	g	pu240h	rc	cu	5.2600753	5.0	0.0525000	3.0000000%	0			0.0100000	77net1	0		
105	rh	g	u234he	rc	cu	2.1326330	9.1	0.0221000	0.0018000	147	nd	g	u234he	0.0132000	72net1	0	
105	rh	g	u236he	rc	cu	2.5044682	9.0	0.0259000	0.0021000	147	nd	g	u236he	0.0179000	72net1	0	
105			pu238f	es	cu	4.7624421	30.0	4.7300000	0.0000000	0			0.0000000	72sid1	0		
105			am241f	cm	cu	0.0000000	0.0	0.0566000	0.0000000	0			0.0100000	80sig1	0		
105			am241f	es	cu	5.7384191	30.0	5.7000000	0.0000000	0			0.0000000	72sid1	0		
105	rh	g	am241f	rc	cu	5.3256556	5.0	0.0529000	3.0000000%	0			0.0100000	80sig1	0		
105	ru	g	am241f	cm	cu	0.0000000	0.0	6.6000000	0.0000000	0			0.0000000	69gun2	0		
105			am243f	es	cu	5.8663034	30.0	5.8700000	0.0000000	0			0.0000000	72sid1	0		
105			np238f	es	cu	4.2398676	30.0	4.2500000	0.0000000	0			0.0000000	72sid1	0		
105			cm242f	es	cu	5.7854210	30.0	5.7900000	0.0000000	0			0.0000000	72sid1	0		

105	ru g	u8n1.7	rc	cu	0.0000000	0.0	3.6500000	11.2000000%	0			0.0000000	88afa1	0
105	ru g	u8n1.7	rc	cu	0.0000000	0.0	4.3700000	9.4000000%	0			0.0000000	88afa1	0
105	ru g	u8n2.2	rc	cu	0.0000000	0.0	3.3200000	11.4000000%	0			0.0000000	88afa1	0
105	ru g	u8n2.2	rc	cu	0.0000000	0.0	4.4500000	10.6000000%	0			0.0000000	88afa1	0
105	ru g	u8n3.7	rc	cu	0.0000000	0.0	3.3300000	11.1000000%	0			0.0000000	88afa1	0
105	ru g	u8n3.7	rc	cu	0.0000000	0.0	3.5800000	10.9000000%	0			0.0000000	88afa1	0
105	ru g	u8n4.8	rc	cu	0.0000000	0.0	3.7100000	10.8000000%	0			0.0000000	88afa1	0
105	ru g	u8n6.0	rc	cu	0.0000000	0.0	4.5200000	10.4000000%	0			0.0000000	88afa1	0
105	ag g	u8p12g	rc	re	0.0000000	0.0	5.3000000	20.0000000%	0		m barn	0.0000000	70pan1	0
105	pd g	u5necd	ms	cu	0.0000000	0.0	0.2350000	0.0060000	101	ru g	u5necd	1.0000000	78shi1	0
105	pd g	p9necd	ms	cu	0.0000000	0.0	0.9000000	0.0500000	101	ru g	p9necd	1.0000000	78shi1	0
105		t2n3.0	sp	cu	0.0000000	0.0	0.7380000	0.0000000	0			0.0000000	68ser1	0
105		t2n1.6	sp	cu	0.0000000	0.0	0.6670000	0.0000000	0			0.0000000	68ser1	0
105		t2n1.7	sp	cu	0.0000000	0.0	0.5620000	0.0000000	0			0.0000000	68ser1	0
105		t2n2.0	sp	cu	0.0000000	0.0	0.5590000	0.0000000	0			0.0000000	68ser1	0
105		t2n2.5	sp	cu	0.0000000	0.0	0.6360000	0.0000000	0			0.0000000	68ser1	0
105		t2n5.8	sp	cu	0.0000000	0.0	0.9130000	0.0000000	0			0.0000000	68ser1	0
105		n7n0.8	sp	cu	0.0000000	0.0	4.8600000	0.0000000	0			0.0000000	70kuz1	0
105		n7n1.1	sp	cu	0.0000000	0.0	4.7070000	0.0000000	0			0.0000000	70kuz1	0
105		n7n1.4	sp	cu	0.0000000	0.0	4.6880000	0.0000000	0			0.0000000	70kuz1	0
105		n7n1.7	sp	cu	0.0000000	0.0	4.6730000	0.0000000	0			0.0000000	70kuz1	0
105		n7n2.2	sp	cu	0.0000000	0.0	4.7200000	0.0000000	0			0.0000000	70kuz1	0
105	rh g	u5n2.0	rc	cu	0.0000000	0.0	0.2100000	0.0100000	140	ba g	u5n2.0	1.0000000	73man1	0
105	rh g	u5n4.0	rc	cu	0.0000000	0.0	0.2600000	0.0200000	140	ba g	u5n4.0	1.0000000	73man1	0
105	rh g	u5n6.0	rc	cu	0.0000000	0.0	0.2900000	0.0200000	140	ba g	u5n6.0	1.0000000	73man1	0
105	rh g	u5n9.0	rc	cu	0.0000000	0.0	0.2300000	0.0100000	140	ba g	u5n9.0	1.0000000	73man1	0
105	rh g	u8n4.0	rc	cu	0.0000000	0.0	0.7500000	0.0500000	140	ba g	u8n4.0	1.0000000	73man1	0
105	rh g	u8n6.0	rc	cu	0.0000000	0.0	0.7000000	0.0300000	140	ba g	u8n6.0	1.0000000	73man1	0
105	rh g	u8n9.0	rc	cu	0.0000000	0.0	0.7200000	0.0300000	140	ba g	u8n9.0	1.0000000	73man1	0
105	rh g	p9v0.3	rc	re	0.0000000	0.0	0.9920000	0.0140000	105	rh g	pu239t	1.0000000	73van1	0
105	ru g	u8g13.	rc	cu	0.0000000	0.0	3.1500000	0.3000000	140	ba g	u8g13.	5.7700000	54wil1	0
105	ru g	u8d15.	rc	re	0.0000000	0.0	1.1600000	0.0600000	140	ba g	u8d15.	1.0000000	54wil1	0
105	ru g	u5d15.	rc	re	0.0000000	0.0	0.9000000	0.0400000	140	ba g	u5d15.	1.0000000	54wil1	0
105	ru g	u8d05.	rc	cu	0.0000000	0.0	134.0000000	3.0000000	0		u barn	35.0000000	57sug1	0
105	ru g	u8d10.	rc	cu	0.0000000	0.0	2.6000000	0.0000000	0		m barn	0.8600000	57sug1	0
105	ru g	u8d14.	rc	cu	0.0000000	0.0	15.7000000	1.5000000	0		m barn	4.3000000	57sug1	0

105 ru g l4n41. rc re 0.0000000 0.0 17.4000000 0.0000000 0 mubarn 1824.0000000 70hen1 20
105 ru g u8n2.0 rc cu 0.0000000 0.0 4.4400000 0.0000000 0 0.0000000 75fly4 0
105 ru g u8n2.0 rc cu 0.0000000 0.0 4.5100000 0.0000000 0 0.0000000 75fly4 0
105 ru g u8n8.0 rc cu 0.0000000 0.0 3.9600000 0.0000000 0 0.0000000 75fly4 0
105 ru g u8n1.5 rc cu 0.0000000 0.0 4.6800000 0.2600000 0 0.0000000 78nag1 0
105 ru g u8n2.0 rc cu 0.0000000 0.0 4.5200000 0.2400000 0 0.0000000 78nag1 0
105 ru g u8n3.9 rc cu 0.0000000 0.0 4.4000000 0.2700000 0 0.0000000 78nag1 0
105 ru g u8n5.5 rc cu 0.0000000 0.0 3.8700000 0.3100000 0 0.0000000 78nag1 0
105 ru g u8n6.9 rc cu 0.0000000 0.0 3.8800000 0.2100000 0 0.0000000 78nag1 0
105 ru g u8n7.7 rc cu 0.0000000 0.0 3.7500000 0.2100000 0 0.0000000 78nag1 0
105 ru g t2n3.0 rc cu le 0.0000000 0.0 0.1100000 0.0000000 0 0.0000000 80gle1 0
105 ru g t2n4.0 rc cu 0.0000000 0.0 0.0370000 0.0040000 0 0.0000000 80gle1 0
105 ru g t2n5.9 rc cu 0.0000000 0.0 0.2400000 0.0500000 0 0.0000000 80gle1 0
105 ru g t2n6.4 rc cu 0.0000000 0.0 0.1300000 0.0200000 0 0.0000000 80gle1 0
105 ru g t2n6.9 rc cu 0.0000000 0.0 0.1800000 0.0300000 0 0.0000000 80gle1 0
106 u234f rc cu 0.4339800 9.9 0.4400000 0.0400000 140 ba g u234f 5.9300000 77bla1 0
106 u234f es cu 0.3843609 30.0 0.3800000 0.0000000 0 0.0000000 72sid1 0
106 u237f es cu 2.0607839 30.0 2.0700000 0.0000000 0 0.0000000 72sid1 0
106 pu240h es cu 3.7643933 30.0 0.0375000 0.0000000 0 0.0100000 77net1 0
106 ru g pu240h rc cu 4.0153528 5.0 0.0400000 3.0000000% 0 0.0100000 77net1 0
106 u234he es cu 1.5293808 30.0 1.5500000 0.0000000 0 0.0000000 75mee1 0
106 u236he es cu 1.8148508 30.0 1.8200000 0.0000000 0 0.0000000 75mee1 0
106 pu238f es cu 4.2407392 30.0 4.2000000 0.0000000 0 0.0000000 72sid1 0
106 am241f cm cu 0.0000000 0.0 0.0506000 0.0000000 0 0.0100000 80sig1 0
106 am241f es cu 5.3860600 30.0 5.3500000 0.0000000 0 0.0000000 72sid1 0
106 ru g am241f rc cu 4.7920833 5.0 0.0476000 4.2000000% 0 0.0100000 80sig1 0
106 am243f es cu 5.6249859 30.0 5.6300000 0.0000000 0 0.0000000 72sid1 0
106 np238f es cu 3.8408213 30.0 3.8500000 0.0000000 0 0.0000000 72sid1 0
106 cm242f es cu 5.4838598 30.0 5.4900000 0.0000000 0 0.0000000 72sid1 0
106 t2n3.0 sp cu 0.0000000 0.0 0.4720000 0.0000000 0 0.0000000 68ser1 0
106 t2n1.6 sp cu 0.0000000 0.0 0.4210000 0.0000000 0 0.0000000 68ser1 0
106 t2n1.7 sp cu 0.0000000 0.0 0.3130000 0.0000000 0 0.0000000 68ser1 0
106 t2n2.0 sp cu 0.0000000 0.0 0.3330000 0.0000000 0 0.0000000 68ser1 0
106 t2n2.5 sp cu 0.0000000 0.0 0.3660000 0.0000000 0 0.0000000 68ser1 0
106 t2n5.8 sp cu 0.0000000 0.0 0.5930000 0.0000000 0 0.0000000 68ser1 0
106 n7n0.8 sp cu 0.0000000 0.0 3.9720000 0.0000000 0 0.0000000 70kuz1 0

106 n7n1.1 sp cu 0.0000000 0.0 4.0060000 0.0000000 0 0.0000000 70kuz1 0
106 n7n1.4 sp cu 0.0000000 0.0 3.9070000 0.0000000 0 0.0000000 70kuz1 0
106 n7n1.7 sp cu 0.0000000 0.0 3.9670000 0.0000000 0 0.0000000 70kuz1 0
106 n7n2.2 sp cu 0.0000000 0.0 3.9990000 0.0000000 0 0.0000000 70kuz1 0
106 ru g t2nlid rc cu 0.0000000 0.0 9.0000000 0.0000000 89 sr g th232f 0.0000000 53tur1 7
1
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nuclide material tech. type value err. value nuclide material value no. treatment

106 ru g u8d15. rc re 0.0000000 0.0 0.3100000 0.0000000 140 ba g u8d15. 1.0000000 54wil1 0
106 ru g u8d05. rc cu lt 0.0000000 0.0 120.0000000 20.0000000 0 u barn 35.0000000 57sug1 0
106 ru g u8d10. rc cu lt 0.0000000 0.0 2.4000000 0.0000000 0 m barn 0.8600000 57sug1 0
106 ru g u8d14. rc cu lt 0.0000000 0.0 14.0000000 0.7000000 0 m barn 4.3000000 57sug1 0
106 ru g u3necd rc cu 0.0000000 0.0 0.1540000 6.0000000% 140 ba g u3necd 5.4000000 65bal1 0
106 ru g u8n2.0 rc cu 0.0000000 0.0 3.5200000 0.0000000 0 0.0000000 75fly4 0
106 ru g u8n8.0 rc cu 0.0000000 0.0 3.1100000 0.0000000 0 0.0000000 75fly4 0
106 ru g t2n11. rc cu 0.0000000 0.0 0.5300000 0.0000000 0 0.0000000 53tur1 0
106 ru g u5d15. rc re 0.0000000 0.0 0.6000000 0.0000000 140 ba g u5d15. 1.0000000 54wil1 0
106 ru g u8n2.0 rc cu 0.0000000 0.0 2.8800000 0.2900000 0 0.0000000 78nag1 0
106 ru g u8n3.9 rc cu 0.0000000 0.0 2.8100000 0.3000000 0 0.0000000 78nag1 0
106 ru g u8n5.5 rc cu 0.0000000 0.0 3.0500000 0.3100000 0 0.0000000 78nag1 0
106 ru g u8n7.7 rc cu 0.0000000 0.0 3.0200000 0.3000000 0 0.0000000 78nag1 0
106 ru g u5necd ms cu 0.0000000 0.0 0.1580000 0.0070000 101 ru g u5necd 1.0000000 78shi1 0
106 ru g p9necd ms cu 0.0000000 0.0 0.6410000 0.0100000 101 ru g p9necd 1.0000000 78shi1 0
107 pd g u234f es cu 0.2684394 30.0 0.2600000 0.0000000 0 0.0000000 72sid1 0
107 pd g u237f es cu 1.1228851 30.0 1.1300000 0.0000000 0 0.0000000 72sid1 0
107 pd g pu240h es cu 3.1475939 30.0 0.0310000 0.0000000 0 0.0100000 77net1 0
107 pd g u234he es cu 1.2333716 30.0 1.2500000 0.0000000 0 0.0000000 75mee1 0
107 pd g u236he es cu 1.5855015 30.0 1.5900000 0.0000000 0 0.0000000 75mee1 0
107 pd g pu238f es cu 3.0107413 30.0 2.9700000 0.0000000 0 0.0000000 72sid1 0
107 am241f cm cu 0.0000000 0.0 0.0437000 0.0000000 0 0.0100000 80sig1 0
107 pd g am241f es cu 5.1258927 30.0 5.0300000 0.0000000 0 0.0000000 72sid1 0
107 pd g am243f es cu 5.2453244 30.0 5.2500000 0.0000000 0 0.0000000 72sid1 0
107 pd g np238f es cu 2.4441590 30.0 2.4500000 0.0000000 0 0.0000000 72sid1 0
107 pd g cm242f es cu 5.1342513 30.0 5.1400000 0.0000000 0 0.0000000 72sid1 0
107 rh g u8n1.7 rc cu 0.0000000 0.0 0.6700000 31.3000000% 0 0.0000000 88afa1 0

107	rh	g	u8n2.2	rc	cu	0.0000000	0.0	0.8200000	28.1000000%	0			0.0000000	88afa1	0
107	rh	g	u8n3.7	rc	cu	0.0000000	0.0	0.8100000	22.2000000%	0			0.0000000	88afa1	0
107	rh	g	u8n4.8	rc	cu	0.0000000	0.0	0.9200000	21.7000000%	0			0.0000000	88afa1	0
107	rh	g	u8n6.0	rc	cu	0.0000000	0.0	1.1700000	12.8000000%	0			0.0000000	88afa1	0
107	in	g	u8p12g	rc	re	0.0000000	0.0	1.3000000	20.0000000%	0	m	barn	0.0000000	70pan1	0
107	cd	g	u8p12g	rc	re	0.0000000	0.0	5.3000000	20.0000000%	0	m	barn	0.0000000	70pan1	0
107			t2n3.0	sp	cu	0.0000000	0.0	0.2620000	0.0000000	0			0.0000000	68ser1	0
107			t2n1.6	sp	cu	0.0000000	0.0	0.2330000	0.0000000	0			0.0000000	68ser1	0
107			t2n1.7	sp	cu	0.0000000	0.0	0.1750000	0.0000000	0			0.0000000	68ser1	0
107			t2n2.0	sp	cu	0.0000000	0.0	0.1770000	0.0000000	0			0.0000000	68ser1	0
107			t2n2.5	sp	cu	0.0000000	0.0	0.1930000	0.0000000	0			0.0000000	68ser1	0
107			t2n5.8	sp	cu	0.0000000	0.0	0.3990000	0.0000000	0			0.0000000	68ser1	0
107			n7n0.8	sp	cu	0.0000000	0.0	3.0850000	0.0000000	0			0.0000000	70kuz1	0
107			n7n1.1	sp	cu	0.0000000	0.0	3.1380000	0.0000000	0			0.0000000	70kuz1	0
107			n7n1.4	sp	cu	0.0000000	0.0	3.0560000	0.0000000	0			0.0000000	70kuz1	0
107			n7n1.7	sp	cu	0.0000000	0.0	3.1610000	0.0000000	0			0.0000000	70kuz1	0
107			n7n2.2	sp	cu	0.0000000	0.0	3.1890000	0.0000000	0			0.0000000	70kuz1	0
107	pd	g	u5necd	ms	cu	0.0000000	0.0	0.0550000	0.0040000	101	ru	g	u5necd	1.0000000	78shi1	0
107	pd	g	p9necd	ms	cu	0.0000000	0.0	0.4200000	0.1000000	101	ru	g	p9necd	1.0000000	78shi1	0
107	rh	g	u8n3.	rc	cu	0.0000000	0.0	1.3600000	0.1300000	99	mo	g	u8n3.	6.3200000	70lyl1	0
107	rh	g	u8n8.0	rc	cu	0.0000000	0.0	2.3600000	0.0000000	0			0.0000000	75fly4	0
107	rh	g	u8n1.5	rc	cu	0.0000000	0.0	0.5400000	0.4700000	0			0.0000000	78nag1	0
107	rh	g	u8n2.0	rc	cu	0.0000000	0.0	1.0500000	0.2700000	0			0.0000000	78nag1	0
107	rh	g	u8n3.9	rc	cu	0.0000000	0.0	1.0500000	0.2200000	0			0.0000000	78nag1	0
107	rh	g	u8n5.5	rc	cu	0.0000000	0.0	1.4000000	0.5900000	0			0.0000000	78nag1	0
107	rh	g	u8n7.7	rc	cu	0.0000000	0.0	0.7100000	0.1800000	0			0.0000000	78nag1	0
107	rh	g	p9v0.3	rc	re	0.0000000	0.0	0.9350000	0.0370000	107	rh	g	pu239t	1.0000000	73van1	0
108			u234f	es	cu	0.1858426	30.0	0.1800000	0.0000000	0			0.0000000	72sid1	0
108			u237f	es	cu	0.4955478	30.0	0.5000000	0.0000000	0			0.0000000	72sid1	0
108			pu240h	es	cu	2.6383344	30.0	0.0261000	0.0000000	0			0.0100000	77net1	0
108			u234he	es	cu	1.4208441	30.0	1.4400000	0.0000000	0			0.0000000	75mee1	0
108			u236he	es	cu	1.3760956	30.0	1.3800000	0.0000000	0			0.0000000	75mee1	0
108			pu238f	es	cu	2.1405636	30.0	2.1200000	0.0000000	0			0.0000000	72sid1	0
108			am241f	cm	cu	0.0000000	0.0	0.0346000	0.0000000	0			0.0100000	80sig1	0
108			am241f	es	cu	4.1170192	30.0	4.0400000	0.0000000	0			0.0000000	72sid1	0
108			am243f	es	cu	4.9356004	30.0	4.9400000	0.0000000	0			0.0000000	72sid1	0

108 np238f es cu 1.6560424 30.0 1.6600000 0.0000000 0 0.0000000 72sid1 0
108 cm242f es cu 4.4849782 30.0 4.4900000 0.0000000 0 0.0000000 72sid1 0
108 pd g u5necd ms cu 0.0000000 0.0 0.0400000 0.0020000 101 ru g u5necd 1.0000000 78shi1 0
108 pd g p9necd ms cu 0.0000000 0.0 0.2300000 0.0900000 101 ru g p9necd 1.0000000 78shi1 0
108 t2n3.0 sp cu 0.0000000 0.0 0.1338000 0.0000000 0 0.0000000 68ser1 0
108 t2n1.6 sp cu 0.0000000 0.0 0.1370000 0.0000000 0 0.0000000 68ser1 0
108 t2n1.7 sp cu 0.0000000 0.0 0.0950000 0.0000000 0 0.0000000 68ser1 0
108 t2n2.0 sp cu 0.0000000 0.0 0.0880000 0.0000000 0 0.0000000 68ser1 0
108 t2n2.5 sp cu 0.0000000 0.0 0.0960000 0.0000000 0 0.0000000 68ser1 0
108 t2n5.8 sp cu 0.0000000 0.0 0.2710000 0.0000000 0 0.0000000 68ser1 0
108 n7n0.8 sp cu 0.0000000 0.0 2.2040000 0.0000000 0 0.0000000 70kuz1 0
108 n7n1.1 sp cu 0.0000000 0.0 2.2870000 0.0000000 0 0.0000000 70kuz1 0
108 n7n1.4 sp cu 0.0000000 0.0 2.2480000 0.0000000 0 0.0000000 70kuz1 0
108 n7n1.7 sp cu 0.0000000 0.0 2.3430000 0.0000000 0 0.0000000 70kuz1 0
108 n7n2.2 sp cu 0.0000000 0.0 2.4000000 0.0000000 0 0.0000000 70kuz1 0
109 u234f es cu 0.1227542 30.0 0.1200000 0.0000000 0 0.0000000 72sid1 0
109 u237f es cu 0.1788667 30.0 0.1800000 0.0000000 0 0.0000000 72sid1 0
109 pu240h es cu 2.2485976 30.0 0.0224000 0.0000000 0 0.0100000 77net1 0
109 pd g pu240h rc cu 2.2987895 5.0 0.0229000 3.0000000% 0 0.0100000 77net1 0
109 u234he es cu 1.2580538 30.0 1.2700000 0.0000000 0 0.0000000 75mee1 0
109 u236he es cu 1.1966049 30.0 1.2000000 0.0000000 0 0.0000000 75mee1 0
109 pu238f es cu 1.2164611 30.0 1.2000000 0.0000000 0 0.0000000 72sid1 0
109 am241f cm cu 0.0000000 0.0 0.0234000 0.0000000 0 0.0100000 80sig1 0
109 am241f es cu 3.0604902 30.0 3.0400000 0.0000000 0 0.0000000 72sid1 0
109 pd g am241f rc cu 2.3155024 5.0 0.0230000 3.0000000% 0 0.0100000 80sig1 0
109 am243f es cu 3.7776195 30.0 3.7800000 0.0000000 0 0.0000000 72sid1 0
109 np238f es cu 0.8969655 30.0 0.9000000 0.0000000 0 0.0000000 72sid1 0
109 cm242f es cu 3.4061861 30.0 3.4100000 0.0000000 0 0.0000000 72sid1 0
109 in g u8p18g rc re 0.0000000 0.0 2.9100000 0.0000000 0 m barn 0.0000000 70hag1 0
109 t2n3.0 sp cu 0.0000000 0.0 0.0740000 0.0000000 0 0.0000000 68ser1 0
109 t2n1.6 sp cu 0.0000000 0.0 0.0920000 0.0000000 0 0.0000000 68ser1 0
109 t2n1.7 sp cu 0.0000000 0.0 0.0600000 0.0000000 0 0.0000000 68ser1 0
109 t2n2.0 sp cu 0.0000000 0.0 0.0470000 0.0000000 0 0.0000000 68ser1 0
109 t2n2.5 sp cu 0.0000000 0.0 0.0490000 0.0000000 0 0.0000000 68ser1 0
109 t2n5.8 sp cu 0.0000000 0.0 0.2040000 0.0000000 0 0.0000000 68ser1 0
109 n7n0.8 sp cu 0.0000000 0.0 1.4650000 0.0000000 0 0.0000000 70kuz1 0

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 109        n7n1.1   sp    cu        0.0000000  0.0   1.6230000  0.0000000     0                    0.0000000   70kuz1      0
 109        n7n1.4   sp    cu        0.0000000  0.0   1.6190000  0.0000000     0                    0.0000000   70kuz1      0
 109        n7n1.7   sp    cu        0.0000000  0.0   1.6360000  0.0000000     0                    0.0000000   70kuz1      0
 109        n7n2.2   sp    cu        0.0000000  0.0   1.7500000  0.0000000     0                    0.0000000   70kuz1      0
 109 pd g   u5ndcu   rc    re         0.0000000  0.0  14.9000000  0.0000000    99 mo g      u235t       0.0000000   61lev1      7
 109 pd g   u8ndcu   rc    re         0.0000000  0.0  21.4000000  0.0000000    99 mo g      u235t       0.0000000   61lev1      7
 109 pd g   u8naal   rc    re         0.0000000  0.0  21.2500000  0.0000000    99 mo g      u235t       0.0000000   61lev1      7
 109 pd g   u8ndbe   rc    re         0.0000000  0.0  27.2000000  0.0000000    99 mo g      u235t       0.0000000   61lev1      7
 109 pd g   u8ndli   rc    re         0.0000000  0.0  29.2000000  0.0000000    99 mo g      u235t       0.0000000   61lev1      7
 109 pd g   u5v8.9   rc    re         0.0000000  0.0   0.7700000  0.0300000    99 mo g      u235t       0.0000000   62gle1      7
 109 pd g   t2a18.   rc    re         0.0000000  0.0  38.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 109 pd g   t2a19.   rc    re         0.0000000  0.0  42.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 109 pd g   t2a20.   rc    re         0.0000000  0.0  40.0000000 10.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 109 pd g   t2a20.   rc    re         0.0000000  0.0  41.0000000 10.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 109 pd g   t2a20.   rc    re         0.0000000  0.0  58.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 109 pd g   t2a24.   rc    re         0.0000000  0.0  69.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 109 pd g   t2a24.   rc    re         0.0000000  0.0  86.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 109 pd g   t2a26.   rc    re         0.0000000  0.0  93.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 109 pd g   t2a29.   rc    re         0.0000000  0.0 123.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 109 pd g   t2a30.   rc    re         0.0000000  0.0 103.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 109 pd g   t2a30.   rc    re         0.0000000  0.0 115.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                 nuclide     material      value      no.   treatment

 109 pd g   t2a34.   rc    re         0.0000000  0.0 123.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 109 pd g   t2a34.   rc    re         0.0000000  0.0 135.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 109 pd g   t2a37.   rc    re         0.0000000  0.0 147.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 109 pd g   t2a38.   rc    re         0.0000000  0.0 140.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 109 pd g   l4n65.   rc    re         0.0000000  0.0   2.1000000  0.0000000     0           mubarn  47000.0000000   70hen1     20
 109 pd g   l4n41.   rc    re         0.0000000  0.0 113.0000000  0.0000000     0           mubarn   1824.0000000   70hen1     20
 109 pd g   l4n37.   rc    re         0.0000000  0.0  15.4000000  0.0000000     0           mubarn    320.0000000   70hen1     20
 109 pd g   l4n25.   rc    re         0.0000000  0.0   0.0820000  0.0150000     0           mubarn     18.0000000   70hen1     20
 109 pd g   u8p12g   rc    re         0.0000000  0.0  22.9000000 10.0000000%    0           m barn      0.0000000   70pan1      0
 109 pd g   p9ndf    rc    cu         0.0000000  0.0   1.4800000  0.0000000    99 mo g      u235t       0.0240000   56for1      7
 109 pd g   u5ndf    rc    cu         0.0000000  0.0   0.1150000  0.0000000    99 mo g      u235t       0.0240000   56for1      7
```

109	pd	g	u5npbe	rc	re	0.0000000	0.0	4.1000000	0.0000000	99	mo	g	u235t	0.0000000	61lev1	7
109	pd	g	u5naal	rc	re	0.0000000	0.0	14.0500000	0.0000000	99	mo	g	u235t	0.0000000	61lev1	7
109	pd	g	u5ndbe	rc	re	0.0000000	0.0	21.4000000	0.0000000	99	mo	g	u235t	0.0000000	61lev1	7
109	pd	g	u5ndli	rc	re	0.0000000	0.0	25.3000000	0.0000000	99	mo	g	u235t	0.0000000	61lev1	7
109	pd	g	u8n2.0	rc	cu	0.0000000	0.0	0.0620000	0.0000000	0				0.0000000	75fly4	0
109	pd	g	u8n8.0	rc	cu	0.0000000	0.0	0.3200000	0.0000000	0				0.0000000	75fly4	0
109	pd	g	u5necd	rc	cu	0.0000000	0.0	0.0293000	0.0000000	0				0.0000000	57bay2	0
109	pd	g	u5necd	rc	cu	0.0000000	0.0	0.0299000	0.0000000	0				0.0000000	57bay2	0
109	pd	g	u8n1.5	rc	cu	0.0000000	0.0	0.0750000	0.0080000	0				0.0000000	78nag1	0
109	pd	g	u8n2.0	rc	cu	0.0000000	0.0	0.0750000	0.0080000	0				0.0000000	78nag1	0
109	pd	g	u8n3.9	rc	cu	0.0000000	0.0	0.1180000	0.0120000	0				0.0000000	78nag1	0
109	pd	g	u8n6.9	rc	cu	0.0000000	0.0	0.3600000	0.0400000	0				0.0000000	78nag1	0
109	pd	g	u8n7.7	rc	cu	0.0000000	0.0	0.3200000	0.0300000	0				0.0000000	78nag1	0
109	pd	g	t2n3.0	rc	cu	0.0000000	0.0	0.0160000	0.0070000	0				0.0000000	80gle1	0
109	pd	g	t2n4.0	rc	cu	0.0000000	0.0	0.0360000	0.0050000	0				0.0000000	80gle1	0
109	pd	g	t2n5.9	rc	cu	0.0000000	0.0	0.1900000	0.0300000	0				0.0000000	80gle1	0
109	pd	g	t2n6.4	rc	cu	0.0000000	0.0	0.1400000	0.0300000	0				0.0000000	80gle1	0
109	pd	g	t2n6.9	rc	cu	0.0000000	0.0	0.1300000	0.0200000	0				0.0000000	80gle1	0
109	pd	g	t2n7.6	rc	cu	0.0000000	0.0	0.1800000	0.0400000	0				0.0000000	80gle1	0
109	pd	g	t2n8.0	rc	cu	0.0000000	0.0	0.1800000	0.0400000	0				0.0000000	80gle1	0
110			u234f	es	cu	0.1032459	30.0	0.1000000	0.0000000	0				0.0000000	72sid1	0
110			u237f	es	cu	0.1288424	30.0	0.1300000	0.0000000	0				0.0000000	72sid1	0
110	ag	m	pu240h	rc	cu	le	0.0004975	15.0	0.0000049	0.0000000	0			0.0100000	77net1	0
110	ag	m	pu240h	rc	in	le	0.0004975	15.0	0.0000049	0.0000000	0			0.0100000	77net1	0
110			pu240h	es	cu		1.9494775	30.0	0.0192000	0.0000000	0			0.0100000	77net1	0
110			u234he	es	cu		1.4208441	30.0	1.4400000	0.0000000	0			0.0000000	75mee1	0
110			u236he	es	cu		1.2963220	30.0	1.3000000	0.0000000	0			0.0000000	75mee1	0
110			pu238f	es	cu		0.6082306	30.0	0.6000000	0.0000000	0			0.0000000	72sid1	0
110	ag	m	am241f	rc	cu		0.0007610	15.7	0.0007410	15.7000000%	0			0.0000000	86dic2	0
110			am241f	cm	cu		0.0000000	0.0	0.0149000	0.0000000	0			0.0100000	80sig1	0
110			am241f	es	cu		2.0539216	30.0	2.0000000	0.0000000	0			0.0000000	72sid1	0
110			am243f	es	cu		2.8164482	30.0	2.8200000	0.0000000	0			0.0000000	72sid1	0
110			np238f	es	cu		0.4777113	30.0	0.4800000	0.0000000	0			0.0000000	72sid1	0
110			cm242f	es	cu		2.4061881	30.0	2.4100000	0.0000000	0			0.0000000	72sid1	0
110	pd	g	u5necd	ms	cu		0.0000000	0.0	0.0135000	0.0010000	101	ru	g	u5necd	1.0000000	78shi1	0
110	pd	g	p9necd	ms	cu		0.0000000	0.0	0.0800000	0.0400000	101	ru	g	p9necd	1.0000000	78shi1	0

110	t2n3.0	sp	cu	0.0000000	0.0	0.0560000	0.0000000	0				0.0000000	68ser1	0	
110	t2n1.6	sp	cu	0.0000000	0.0	0.0650000	0.0000000	0				0.0000000	68ser1	0	
110	t2n1.7	sp	cu	0.0000000	0.0	0.0360000	0.0000000	0				0.0000000	68ser1	0	
110	t2n2.0	sp	cu	0.0000000	0.0	0.0234000	0.0000000	0				0.0000000	68ser1	0	
110	t2n2.5	sp	cu	0.0000000	0.0	0.0200000	0.0000000	0				0.0000000	68ser1	0	
110	t2n5.8	sp	cu	0.0000000	0.0	0.1800000	0.0000000	0				0.0000000	68ser1	0	
110	n7n0.8	sp	cu	0.0000000	0.0	0.9530000	0.0000000	0				0.0000000	70kuz1	0	
110	n7n1.1	sp	cu	0.0000000	0.0	1.1300000	0.0000000	0				0.0000000	70kuz1	0	
110	n7n1.4	sp	cu	0.0000000	0.0	1.1230000	0.0000000	0				0.0000000	70kuz1	0	
110	n7n1.7	sp	cu	0.0000000	0.0	1.1270000	0.0000000	0				0.0000000	70kuz1	0	
110	n7n2.2	sp	cu	0.0000000	0.0	1.2330000	0.0000000	0				0.0000000	70kuz1	0	
111	u234f	rc	cu	0.0399003	25.3	0.0400000	0.0100000	140	ba g	u234f		5.9300000	77bla1	0	
111	u234f	es	cu	0.0838821	30.0	0.0820000	0.0000000	0				0.0000000	72sid1	0	
111	u237f	es	cu	0.0693767	30.0	0.0700000	0.0000000	0				0.0000000	72sid1	0	
111	pu240h	es	cu	1.6764098	30.0	0.0167000	0.0000000	0				0.0100000	77net1	0	
111	ag g	pu240h	rc	cu	1.6663714	5.0	0.0166000	3.0000000%	0			0.0100000	77net1	0	
111	pd m	pu240h	cm	cu	x1	0.0000000	0.0	0.0004800	8.6000000%	0		0.0100000	79pri1	0	
111	pd m	pu240h	rc	cu	x1	0.0000000	0.0	0.0004800	8.6000000%	99	mo g	pu240h	0.0100000	77net1	0
111	u234he	es	cu	1.3121818	31.0	1.0000000	0.0000000	111	ag g	u234he		0.9970000	75mee1	0	
111	ag g	u234he	rc	cu	1.3149634	6.4	0.0136000	0.0005000	147	nd g	u234he	0.0132000	72net1	0	
111	u236he	es	cu	1.3170639	31.0	1.0000000	0.0000000	111	ag g	u234he		0.9970000	75mee1	0	
111	ag g	u236he	rc	cu	1.0830133	6.4	0.0112000	0.0005000	147	nd g	u236he	0.0179000	72net1	0	
111	pu238f	es	cu	0.3058199	30.0	0.3000000	0.0000000	0				0.0000000	72sid1	0	
111	am241f	cm	cu	0.0000000	0.0	0.0098000	0.0000000	0				0.0100000	80sig1	0	
111	am241f	es	cu	1.1074142	30.0	1.1000000	0.0000000	0				0.0000000	72sid1	0	
111	ag g	am241f	cm	cu	0.0000000	0.0	0.5500000	0.0000000	0			0.0000000	69gun2	0	
111	ag g	am241f	rc	cu	0.9936526	5.0	0.0098700	3.0000000%	0			0.0100000	80sig1	0	
111	am243f	es	cu	1.7477959	30.0	1.7500000	0.0000000	0				0.0000000	72sid1	0	
111	np238f	es	cu	0.2292245	30.0	0.2300000	0.0000000	0				0.0000000	72sid1	0	
111	cm242f	es	cu	1.4277382	30.0	1.4300000	0.0000000	0				0.0000000	72sid1	0	
111	ag g	p9v0.3	rc	cu	0.0000000	0.0	0.2800000	0.0400000	0			0.0000000	78kai2	0	
111	ag g	u5necd	rc	re	su	0.0000000	0.0	0.8470000	6.9000000%	99	mo g	u235t	0.0000000	62fal1	7
111	ag g	u5v.06	rc	re	su	0.0000000	0.0	1.2360000	14.0000000%	99	mo g	u235t	0.0000000	62fal1	7
111	ag g	u5v.10	rc	re	su	0.0000000	0.0	1.2560000	7.4000000%	99	mo g	u235t	0.0000000	62fal1	7
111	ag g	u5v.25	rc	re	su	0.0000000	0.0	1.3700000	3.0000000%	99	mo g	u235t	0.0000000	62fal1	7
111	ag g	u5v.28	rc	re	su	0.0000000	0.0	1.3400000	3.5000000%	99	mo g	u235t	0.0000000	62fal1	7

111	ag g	u5v.33	rc	re	su	0.0000000	0.0	1.4120000	3.1000000%	99 mo g	u235t	0.0000000	62fal1	7
111	ag g	u5v.50	rc	re	su	0.0000000	0.0	1.1890000	3.9000000%	99 mo g	u235t	0.0000000	62fal1	7
111	sn g	u8p12g	rc	re		0.0000000	0.0	2.4500000	20.0000000%	0	m barn	0.0000000	70pan1	0
111	sn g	u8p18g	rc	re		0.0000000	0.0	1.2000000	0.0000000	0	m barn	0.0000000	70hag1	0
111	in g	u8p570	rc	re		0.0000000	0.0	1.6400000	0.0700000	0	m barn	0.0000000	70hag1	0
111	in g	u8p12g	rc	re		0.0000000	0.0	5.8400000	10.0000000%	0	m barn	0.0000000	70pan1	0
111	in g	u8p18g	rc	re		0.0000000	0.0	5.6700000	0.1500000	0	m barn	0.0000000	70hag1	0
111	cd g	u3necd	ms	re		0.0000000	0.0	1.5000000	0.0900000	116 cd g	u3necd	1.0000000	75lae1	0
111	cd g	u5necd	ms	re		0.0000000	0.0	1.5000000	0.2100000	116 cd g	u5necd	1.0000000	75lae1	0
111		t2n3.0	sp	cu		0.0000000	0.0	0.0400000	0.0000000	0		0.0000000	68ser1	0
111		t2n1.6	sp	cu		0.0000000	0.0	0.0320000	0.0000000	0		0.0000000	68ser1	0
111		t2n1.7	sp	cu		0.0000000	0.0	0.0190000	0.0000000	0		0.0000000	68ser1	0
111		t2n2.0	sp	cu		0.0000000	0.0	0.0097000	0.0000000	0		0.0000000	68ser1	0
111		t2n2.5	sp	cu		0.0000000	0.0	0.0100000	0.0000000	0		0.0000000	68ser1	0
111		t2n5.8	sp	cu		0.0000000	0.0	0.1710000	0.0000000	0		0.0000000	68ser1	0
111		n7n0.8	sp	cu		0.0000000	0.0	0.5190000	0.0000000	0		0.0000000	70kuz1	0
111		n7n1.1	sp	cu		0.0000000	0.0	0.6800000	0.0000000	0		0.0000000	70kuz1	0
111		n7n1.4	sp	cu		0.0000000	0.0	0.6750000	0.0000000	0		0.0000000	70kuz1	0
111		n7n1.7	sp	cu		0.0000000	0.0	0.7100000	0.0000000	0		0.0000000	70kuz1	0
111		n7n2.2	sp	cu		0.0000000	0.0	0.7570000	0.0000000	0		0.0000000	70kuz1	0
111	ag g	t2nlid	rc	cu		0.0000000	0.0	13.1000000	0.0000000	89 sr g	th232f	0.0000000	53tur1	7
111	ag g	n7ndf	rc	re		0.0000000	0.0	5.3000000	0.0000000	99 mo g	u235t	0.0000000	56for1	7
111	ag g	u5n5	rc	cu		0.0000000	0.0	0.1100000	0.0000000	99 mo g	u235t	0.0143000	56for1	6
111	ag g	u5n8.1	rc	cu		0.0000000	0.0	0.3000000	0.0000000	99 mo g	u235t	0.0143000	56for1	6
111	ag g	t2d14.	rc	cu		0.0000000	0.0	0.3100000	0.0000000	89 sr g	t2d14.	1.0000000	57ale1	0
111	ag g	u8d 5.	rc	cu		0.0000000	0.0	0.0400000	0.0000000	140 ba g	u8d10.	1.0000000	57ale1	0
111	ag g	u8d14.	rc	cu		0.0000000	0.0	0.3700000	0.0200000	140 ba g	u8d14.	1.0000000	57ale1	0
111	ag g	u5v1.1	rc	cu		0.0000000	0.0	0.0200000	0.0000000	89 sr g	u5v1.1	4.8000000	57nas1	0
111	ag g	u5v3.1	rc	cu		0.0000000	0.0	0.0190000	0.0000000	89 sr g	u5v3.1	4.8000000	57nas1	0
111	ag g	u5v9.5	rc	cu		0.0000000	0.0	0.0180000	0.0000000	89 sr g	u5v9.5	4.8000000	57nas1	0
111	ag g	u3v2.3	rc	re		0.0000000	0.0	0.8340000	0.0410000	99 mo g	u233t	1.0000000	59reg1	7
111	ag g	u3v4.7	rc	re		0.0000000	0.0	1.0470000	0.0240000	99 mo g	u233t	1.0000000	59reg1	7
111	ag g	u3necd	rc	re		0.0000000	0.0	0.9200000	0.0200000	99 mo g	u233t	1.0000000	59reg1	7
111	ag g	u5ndcu	rc	re		0.0000000	0.0	15.5000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
111	ag g	u8ndcu	rc	re		0.0000000	0.0	18.8000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
111	ag g	u8naal	rc	re		0.0000000	0.0	21.1000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7

111 ag g u8nabe rc re 0.0000000 0.0 30.0000000 0.0000000 99 mo g u235t 0.0000000 61lev1 7
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

111 ag g u8ndbe rc re 0.0000000 0.0 29.3000000 0.0000000 99 mo g u235t 0.0000000 61lev1 7
111 ag g u8ndli rc re 0.0000000 0.0 34.2000000 0.0000000 99 mo g u235t 0.0000000 61lev1 7
111 ag g u3v2.3 rc re 0.0000000 0.0 0.8330000 0.0370000 99 mo g u235t 0.0000000 62bur1 7
111 ag g u3v4.7 rc re 0.0000000 0.0 1.0450000 0.0250000 99 mo g u235t 0.0000000 62bur1 7
111 ag g u3necd rc re 0.0000000 0.0 0.9190000 0.1900000 99 mo g u235t 0.0000000 62bur1 7
111 ag g u5v8.9 rc re 0.0000000 0.0 0.7700000 0.0300000 99 mo g u235t 0.0000000 62gle1 7
111 ag g t2a18. rc re 0.0000000 0.0 56.0000000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
111 ag g t2a19. rc re 0.0000000 0.0 66.0000000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
111 ag g t2a20. rc re 0.0000000 0.0 76.0000000 10.0000000% 99 mo g u235t 0.0000000 62hic1 7
111 ag g t2a20. rc re 0.0000000 0.0 76.0000000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
111 ag g t2a20. rc re 0.0000000 0.0 86.0000000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
111 ag g t2a22. rc re 0.0000000 0.0 88.0000000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
111 ag g t2a24. rc re 0.0000000 0.0 114.0000000 10.0000000% 99 mo g u235t 0.0000000 62hic1 7
111 ag g t2a24. rc re 0.0000000 0.0 124.0000000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
111 ag g t2a26. rc re 0.0000000 0.0 135.0000000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
111 ag g t2a27. rc re 0.0000000 0.0 149.0000000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
111 ag g t2a29. rc re 0.0000000 0.0 164.0000000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
111 ag g t2a30. rc re 0.0000000 0.0 176.0000000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
111 ag g t2a30. rc re 0.0000000 0.0 182.0000000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
111 ag g t2a32. rc re 0.0000000 0.0 188.0000000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
111 ag g t2a34. rc re 0.0000000 0.0 231.0000000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
111 ag g t2a34. rc re 0.0000000 0.0 223.0000000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
111 ag g t2a36. rc re 0.0000000 0.0 230.0000000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
111 ag g t2a37. rc re 0.0000000 0.0 235.0000000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
111 ag g t2a38. rc re 0.0000000 0.0 260.0000000 10.0000000% 99 mo g u235t 0.0000000 62hic1 7
111 ag g u5n2-3 rc cu 0.0000000 0.0 0.7650000 0.0440000 99 mo g u235t 0.0000000 63fal1 7
111 ag g u5n.04 rc cu 0.0000000 0.0 0.8800000 0.0470000 99 mo g u235t 0.0000000 63fal1 7
111 ag g u5n.06 rc cu 0.0000000 0.0 0.7830000 0.0210000 99 mo g u235t 0.0000000 63fal1 7
111 ag g u5n.10 rc cu 0.0000000 0.0 0.7960000 0.0590000 99 mo g u235t 0.0000000 63fal1 7
111 ag g u5n.25 rc cu 0.0000000 0.0 0.7300000 0.0220000 99 mo g u235t 0.0000000 63fal1 7
111 ag g u5n.28 rc cu 0.0000000 0.0 0.7460000 0.0260000 99 mo g u235t 0.0000000 63fal1 7

111	ag g	u5n.33	rc	cu	0.0000000	0.0	0.7080000	0.0220000	99	mo g	u235t	0.0000000	63fal1	7
111	ag g	u5n.50	rc	cu	0.0000000	0.0	0.8410000	0.0330000	99	mo g	u235t	0.0000000	63fal1	7
111	ag g	u5n.70	rc	cu	0.0000000	0.0	0.7520000	0.0740000	99	mo g	u235t	0.0000000	63fal1	7
111	ag g	u5nesm	rc	cu	0.0000000	0.0	1.1810000	0.0810000	99	mo g	u235t	0.0000000	63fal1	7
111	ag g	u5n4-3	rc	cu	0.0000000	0.0	0.8750000	0.0420000	99	mo g	u235t	0.0000000	63fal1	7
111	ag g	u8n3.0	rc	re	0.0000000	0.0	0.0077000	0.0000000	99	mo g	u8n3.0	1.0000000	68bor2	0
111	ag g	u8n1.5	rc	re	0.0000000	0.0	0.0033900	0.0000000	99	mo g	u8n1.5	1.0000000	68bor2	0
111	ag g	u8n2.0	rc	re	0.0000000	0.0	0.0048800	0.0000000	99	mo g	u8n2.0	1.0000000	68bor2	0
111	ag g	u8n4.8	rc	re	0.0000000	0.0	0.0194000	0.0000000	99	mo g	u8n4.8	1.0000000	68bor2	0
111	ag g	u8n13.	rc	re	0.0000000	0.0	0.1330000	0.0000000	99	mo g	u8n13.	1.0000000	68bor2	0
111	ag g	u8n16.	rc	re	0.0000000	0.0	0.1720000	0.0000000	99	mo g	u8n16.	1.0000000	68bor2	0
111	ag g	u8n18.	rc	re	0.0000000	0.0	0.1410000	0.0000000	99	mo g	u8n18.	1.0000000	68bor2	0
111	ag g	t2p9.5	rc	cu	0.0000000	0.0	0.1660000	0.0230000	0		m barn	0.2100000	68fre1	0
111	ag g	t2p11.	rc	cu	0.0000000	0.0	0.2750000	0.0550000	0		m barn	0.7500000	68fre1	0
111	ag g	t2d12.	rc	cu	0.0000000	0.0	0.7590000	0.0000000	0		m barn	0.6600000	68fre1	0
111	ag g	l4n65.	rc	re	0.0000000	0.0	2.9900000	0.0000000	0		mubarn	47000.0000000	70hen1	20
111	ag g	l4n65.	rc	re	0.0000000	0.0	0.2100000	0.0000000	0		mubarn	47000.0000000	70hen1	20
111	ag g	l4n41.	rc	re	0.0000000	0.0	65.0000000	0.0000000	0		mubarn	1824.0000000	70hen1	20
111	ag g	l4n41.	rc	re	0.0000000	0.0	47.5000000	0.0000000	0		mubarn	1824.0000000	70hen1	20
111	ag g	l4n37.	rc	re	0.0000000	0.0	9.0500000	0.0000000	0		mubarn	320.0000000	70hen1	20
111	ag g	l4n37.	rc	re	0.0000000	0.0	2.4800000	0.0000000	0		mubarn	320.0000000	70hen1	20
111	ag g	l4n25.	rc	re	0.0000000	0.0	0.0750000	0.0150000	0		mubarn	18.0000000	70hen1	20
111	ag g	l4n25.	rc	re	0.0000000	0.0	0.0550000	0.0150000	0		mubarn	18.0000000	70hen1	20
111	ag g	u8p12g	rc	re	0.0000000	0.0	24.3000000	10.0000000%	0		m barn	0.0000000	70pan1	0
111	ag g	p9npfr	rc	cu	0.0000000	0.0	0.7400000	0.0400000	0			0.0000000	71cun1	0
111	ag g	p9npfr	rc	cu	0.0000000	0.0	0.7330000	0.0060000	99	mo g	pu239f	5.9800000	72cun1	0
111	ag g	u5n.13	rc	cu	0.0000000	0.0	0.0150000	0.0020000	0			0.0000000	73cun2	0
111	ag g	u5n.30	rc	cu	0.0000000	0.0	0.0180000	0.0040000	0			0.0000000	73cun2	0
111	ag g	u5n.70	rc	cu	0.0000000	0.0	0.0240000	0.0030000	0			0.0000000	73cun2	0
111	ag g	u5n.90	rc	cu	0.0000000	0.0	0.0350000	0.0050000	0			0.0000000	73cun2	0
111	ag g	u5n1.3	rc	cu	0.0000000	0.0	0.0440000	0.0020000	0			0.0000000	73cun2	0
111	ag g	u5n1.7	rc	cu	0.0000000	0.0	0.0530000	0.0040000	0			0.0000000	73cun2	0
111	ag g	p9ndf	rc	cu	0.0000000	0.0	0.2370000	0.0000000	99	mo g	u235t	0.0143000	56for1	7
111	ag g	u5ndf	rc	cu	0.0000000	0.0	0.0530000	0.0000000	99	mo g	u235t	0.0143000	56for1	7
111	ag g	u3v1.8	rc	re	0.0000000	0.0	0.8220000	0.0260000	99	mo g	u233t	1.0000000	59reg1	7
111	ag g	u5npbe	rc	re	0.0000000	0.0	4.1200000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7

111	ag	g	u5naal	rc	re		0.0000000	0.0	18.5000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
111	ag	g	u5nabe	rc	re		0.0000000	0.0	26.1000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
111	ag	g	u5ndbe	rc	re		0.0000000	0.0	26.5000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
111	ag	g	u5ndli	rc	re		0.0000000	0.0	34.2000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
111	ag	g	u3v1.8	rc	re		0.0000000	0.0	0.8220000	0.0250000	99 mo g	u235t	0.0000000	62bur1	7
111	ag	g	p9necd	rc	re		0.0000000	0.0	0.9300000	0.0400000	99 mo g	pu239t	0.0000000	64cro1	7
111	ag	g	u5n.13	rc	cu		0.0000000	0.0	0.0150000	0.0010000	0		0.0000000	74cun1	0
111	ag	g	u5n.30	rc	cu		0.0000000	0.0	0.0180000	0.0040000	0		0.0000000	74cun1	0
111	ag	g	u5n.70	rc	cu		0.0000000	0.0	0.0240000	0.0020000	0		0.0000000	74cun1	0
111	ag	g	u5n.90	rc	cu		0.0000000	0.0	0.0350000	0.0050000	0		0.0000000	74cun1	0
111	ag	g	u5n1.3	rc	cu		0.0000000	0.0	0.0440000	0.0010000	0		0.0000000	74cun1	0
111	ag	g	u5n1.7	rc	cu		0.0000000	0.0	0.0530000	0.0030000	0		0.0000000	74cun1	0
111	ag	g	u8n2.0	rc	cu		0.0000000	0.0	0.0290000	0.0000000	0		0.0000000	75fly4	0
111	ag	g	u8n8.0	rc	cu		0.0000000	0.0	0.2400000	0.0000000	0		0.0000000	75fly4	0
111	ag	g	p9n.13	rc	cu		0.0000000	0.0	0.2900000	0.0100000	0		0.0000000	77cun1	0
111	ag	g	p9n.30	rc	cu		0.0000000	0.0	0.2800000	0.0400000	0		0.0000000	77cun1	0
111	ag	g	p9n.70	rc	cu		0.0000000	0.0	0.3200000	0.0100000	0		0.0000000	77cun1	0
111	ag	g	p9n.90	rc	cu		0.0000000	0.0	0.3300000	0.0200000	0		0.0000000	77cun1	0
111	ag	g	p9n1.3	rc	cu		0.0000000	0.0	0.3600000	0.0200000	0		0.0000000	77cun1	0
111	ag	g	p9n1.7	rc	cu		0.0000000	0.0	0.3800000	0.0100000	0		0.0000000	77cun1	0
111	ag	g	t2n11.	rc	cu		0.0000000	0.0	0.6300000	0.0000000	0		0.0000000	53tur1	0
111	ag	g	u5necd	rc	cu		0.0000000	0.0	0.0183200	2.9000000%	0		0.0000000	76for1	0
111	ag	g	u5necd	rc	cu		0.0000000	0.0	0.0168000	0.0000000	0		0.0000000	57bay2	0
111	ag	g	u5necd	rc	cu		0.0000000	0.0	0.0174000	0.0000000	0		0.0000000	57bay2	0
111	ag	g	u8n2.0	rc	cu		0.0000000	0.0	0.0310000	0.0030000	0		0.0000000	78nag1	0
111	ag	g	u8n3.9	rc	cu		0.0000000	0.0	0.1040000	0.0130000	0		0.0000000	78nag1	0
111	ag	g	u8n5.5	rc	cu		0.0000000	0.0	0.1670000	0.0170000	0		0.0000000	78nag1	0
111	ag	g	u8n6.9	rc	cu		0.0000000	0.0	0.2500000	0.0300000	0		0.0000000	78nag1	0
111	ag	g	u8n7.7	rc	cu		0.0000000	0.0	0.2600000	0.0300000	0		0.0000000	78nag1	0
111	ag	g	t2n2.0	rc	cu	le	0.0000000	0.0	0.0040000	0.0000000	0		0.0000000	80gle1	0
111	ag	g	t2n3.0	rc	cu		0.0000000	0.0	0.0270000	0.0030000	0		0.0000000	80gle1	0
111	ag	g	t2n4.0	rc	cu		0.0000000	0.0	0.0760000	0.0080000	0		0.0000000	80gle1	0
111	ag	g	t2n5.9	rc	cu		0.0000000	0.0	0.2900000	0.0300000	0		0.0000000	80gle1	0
111	ag	g	t2n6.4	rc	cu		0.0000000	0.0	0.2000000	0.0300000	0		0.0000000	80gle1	0
111	ag	g	t2n6.9	rc	cu		0.0000000	0.0	0.1700000	0.0200000	0		0.0000000	80gle1	0
111	ag	g	t2n7.6	rc	cu		0.0000000	0.0	0.2200000	0.0300000	0		0.0000000	80gle1	0

111 ag g t2n8.0 rc cu 0.0000000 0.0 0.2800000 0.0300000 0 0.0000000 80gle1 0
111 ag g p9v0.3 rc re 0.0000000 0.0 0.7710000 0.0250000 111 ag g pu239t 1.0000000 73van1 0
111 ag g u5n6.0 rc cu 0.0000000 0.0 0.2407000 7.4000000% 0 0.0000000 78cha1 0
111 ag g u5n7.1 rc cu 0.0000000 0.0 0.2179000 7.5000000% 0 0.0000000 78cha1 0
111 ag g u5n8.1 rc cu 0.0000000 0.0 0.2266000 8.1000000% 0 0.0000000 78cha1 0
111 ag g u5n9.1 rc cu 0.0000000 0.0 0.3064000 8.8000000% 0 0.0000000 78cha1 0
111 ag g u8n6.0 rc cu 0.0000000 0.0 0.1933000 7.4000000% 0 0.0000000 78cha1 0
111 ag g u8n7.1 rc cu 0.0000000 0.0 0.1731000 7.4000000% 0 0.0000000 78cha1 0
111 ag g u8n8.1 rc cu 0.0000000 0.0 0.1945000 8.6000000% 0 0.0000000 78cha1 0
111 ag g u8n9.1 rc cu 0.0000000 0.0 0.2687000 9.9000000% 0 0.0000000 78cha1 0
111 pd g u8p12g rc re 0.0000000 0.0 11.3000000 10.0000000% 0 m barn 0.0000000 70pan1 0
111 pd m u8p12g rc in 0.0000000 0.0 5.6000000 20.0000000% 0 m barn 0.0000000 70pan1 0
112 u234f es cu 0.0722721 30.0 0.0700000 0.0000000 0 0.0000000 72sid1 0
112 u237f es cu 0.0594657 30.0 0.0600000 0.0000000 0 0.0000000 72sid1 0
112 pu240h es cu 1.5057573 30.0 0.0150000 0.0000000 0 0.0100000 77net1 0
112 pd g pu240h rc cu 1.5659876 5.0 0.0156000 3.0000000% 0 0.0100000 77net1 0
112 pd g u234he rc cu 1.4696650 7.7 0.0152000 0.0010000 147 nd g u234he 0.0132000 72net1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

112 pd g u236he rc cu 1.1603714 6.4 0.0120000 0.0006000 147 nd g u236he 0.0179000 72net1 0
112 pu238f es cu 0.1631039 30.0 0.1600000 0.0000000 0 0.0000000 72sid1 0
112 am241f cm cu 0.0000000 0.0 0.0062000 0.0000000 0 0.0100000 80sig1 0
112 am241f es cu 0.5537071 30.0 0.5500000 0.0000000 0 0.0000000 72sid1 0
112 pd g am241f rc cu 0.7490147 5.0 0.0074400 4.5000000% 0 0.0100000 80sig1 0
112 am243f es cu 0.9288287 30.0 0.9300000 0.0000000 0 0.0000000 72sid1 0
112 np238f es cu 0.1293801 30.0 0.1300000 0.0000000 0 0.0000000 72sid1 0
112 cm242f es cu 0.7388295 30.0 0.7400000 0.0000000 0 0.0000000 72sid1 0
112 ag g p9v0.3 rc cu 0.0000000 0.0 0.1300000 0.0200000 0 0.0000000 78kai2 0
112 cd g u3necd ms re 0.0000000 0.0 1.1000000 0.0900000 116 cd g u3necd 1.0000000 75lae1 0
112 cd g u5necd ms re 0.0000000 0.0 1.0000000 0.1600000 116 cd g u5necd 1.0000000 75lae1 0
112 t2n3.0 sp cu 0.0000000 0.0 0.0350000 0.0000000 0 0.0000000 68ser1 0
112 t2n1.6 sp cu 0.0000000 0.0 0.0220000 0.0000000 0 0.0000000 68ser1 0
112 t2n1.7 sp cu 0.0000000 0.0 0.0061000 0.0000000 0 0.0000000 68ser1 0
112 t2n2.0 sp cu 0.0000000 0.0 0.0070000 0.0000000 0 0.0000000 68ser1 0

112		t2n2.5	sp	cu	0.0000000	0.0	0.0080000	0.0000000	0			0.0000000	68ser1	0
112		t2n5.8	sp	cu	0.0000000	0.0	0.1600000	0.0000000	0			0.0000000	68ser1	0
112		n7n0.8	sp	cu	0.0000000	0.0	0.2580000	0.0000000	0			0.0000000	70kuz1	0
112		n7n1.1	sp	cu	0.0000000	0.0	0.4000000	0.0000000	0			0.0000000	70kuz1	0
112		n7n1.4	sp	cu	0.0000000	0.0	0.4190000	0.0000000	0			0.0000000	70kuz1	0
112		n7n1.7	sp	cu	0.0000000	0.0	0.4320000	0.0000000	0			0.0000000	70kuz1	0
112		n7n2.2	sp	cu	0.0000000	0.0	0.4670000	0.0000000	0			0.0000000	70kuz1	0
112	ag g	t2d14.	rc	cu	0.0000000	0.0	0.3100000	0.0000000	89	sr g	t2d14.	1.0000000	57ale1	0
112	ag g	u8d 5.	rc	cu	0.0000000	0.0	0.0440000	0.0000000	140	ba g	u8d10.	1.0000000	57ale1	0
112	ag g	u8d14.	rc	cu	0.0000000	0.0	0.3500000	0.0300000	140	ba g	u8d14.	1.0000000	57ale1	0
112	ag g	u3d14.	rc	fi	ca 0.0000000	0.0	0.0130000	0.0000000	112		u3d14.	1.0000000	62cor1	0
112	ag g	u3a25.	rc	fi	0.0000000	0.0	0.0900000	0.0000000	112		u3a25.	1.0000000	62cor1	0
112	ag g	t2p9.5	rc	in	0.0000000	0.0	0.1560000	0.0030000	0		m barn	0.2100000	68fre1	0
112	ag g	t2p11.	rc	in	0.0000000	0.0	0.1040000	0.0210000	0		m barn	0.7500000	68fre1	0
112	ag g	t2d12.	rc	in	0.0000000	0.0	0.1120000	0.0000000	0		m barn	0.6600000	68fre1	0
112	ag g	u8p12g	rc	in	0.0000000	0.0	9.3500000	10.0000000%	0		m barn	0.0000000	70pan1	0
112	pd g	u5ndcu	rc	re	0.0000000	0.0	23.4000000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
112	pd g	u8ndcu	rc	re	0.0000000	0.0	26.0000000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
112	pd g	u8naal	rc	re	0.0000000	0.0	28.8500000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
112	pd g	u8ndbe	rc	re	0.0000000	0.0	36.1000000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
112	pd g	u8ndli	rc	re	0.0000000	0.0	41.6000000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
112	pd g	u5v8.9	rc	re	0.0000000	0.0	0.7700000	0.0300000	99	mo g	u235t	0.0000000	62gle1	7
112	pd g	t2a18.	rc	re	0.0000000	0.0	71.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
112	pd g	t2a19.	rc	re	0.0000000	0.0	86.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
112	pd g	t2a20.	rc	re	0.0000000	0.0	94.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
112	pd g	t2a20.	rc	re	0.0000000	0.0	114.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
112	pd g	t2a20.	rc	re	0.0000000	0.0	101.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
112	pd g	t2a24.	rc	re	0.0000000	0.0	149.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
112	pd g	t2a24.	rc	re	0.0000000	0.0	161.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
112	pd g	t2a26.	rc	re	0.0000000	0.0	174.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
112	pd g	t2a29.	rc	re	0.0000000	0.0	221.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
112	pd g	t2a30.	rc	re	0.0000000	0.0	213.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
112	pd g	t2a30.	rc	re	0.0000000	0.0	226.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
112	pd g	t2a34.	rc	re	0.0000000	0.0	270.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
112	pd g	t2a34.	rc	re	0.0000000	0.0	268.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
112	pd g	t2a37.	rc	re	0.0000000	0.0	301.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7

112	pd g	t2a38.	rc	re	0.0000000	0.0	317.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
112	pd g	l4n65.	rc	re	0.0000000	0.0	0.6960000	0.0000000	0	mubarn	47000.0000000	70hen1	20
112	pd g	l4n41.	rc	re	0.0000000	0.0	44.6000000	0.0000000	0	mubarn	1824.0000000	70hen1	20
112	pd g	l4n37.	rc	re	0.0000000	0.0	3.2200000	0.0000000	0	mubarn	320.0000000	70hen1	20
112	pd g	l4n25.	rc	re	0.0000000	0.0	0.0300000	0.0150000	0	mubarn	18.0000000	70hen1	20
112	pd g	u8p12g	rc	re	0.0000000	0.0	13.8000000	10.0000000%	0	m barn	0.0000000	70pan1	0
112	pd g	u5n1.0	rc	re	0.0000000	0.0	0.0140000	0.0010000	140 ba g	u5n1.0	1.0000000	73man1	0
112	pd g	u5n2.0	rc	cu	0.0000000	0.0	0.0090000	0.0020000	140 ba g	u5n2.0	1.0000000	73man1	0
112	pd g	u5n4.0	rc	cu	0.0000000	0.0	0.0340000	0.0050000	140 ba g	u5n4.0	1.0000000	73man1	0
112	pd g	u5n6.0	rc	cu	0.0000000	0.0	0.0560000	0.0020000	140 ba g	u5n6.0	1.0000000	73man1	0
112	pd g	u5n9.0	rc	cu	0.0000000	0.0	0.0380000	0.0040000	140 ba g	u5n9.0	1.0000000	73man1	0
112	pd g	u8n4.0	rc	cu	0.0000000	0.0	0.0140000	0.0020000	140 ba g	u8n4.0	1.0000000	73man1	0
112	pd g	u8n6.0	rc	cu	0.0000000	0.0	0.0230000	0.0010000	140 ba g	u8n6.0	1.0000000	73man1	0
112	pd g	u8n9.0	rc	cu	0.0000000	0.0	0.0260000	0.0030000	140 ba g	u8n9.0	1.0000000	73man1	0
112	pd g	p9ndf	rc	cu	0.0000000	0.0	0.1270000	0.0000000	99 mo g	u235t	0.0127000	56for1	7
112	pd g	u5ndf	rc	cu	0.0000000	0.0	0.0200000	0.0000000	99 mo g	u235t	0.0127000	56for1	7
112	pd g	u5npbe	rc	re	0.0000000	0.0	5.2100000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
112	pd g	u5naal	rc	re	0.0000000	0.0	25.4000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
112	pd g	u5ndbe	rc	re	0.0000000	0.0	34.1000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
112	pd g	u5ndli	rc	re	0.0000000	0.0	44.6000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
112	pd g	u8n2.0	rc	cu	0.0000000	0.0	0.0270000	0.0000000	0		0.0000000	75fly4	0
112	pd g	u8n8.0	rc	cu	0.0000000	0.0	0.2000000	0.0000000	0		0.0000000	75fly4	0
112	pd g	p9nesm	rc	re	0.0000000	0.0	0.7600000	1.0000000%	99 mo g	pu239t	0.0000000	69ton1	7
112	pd g	u5necd	rc	cu	0.0000000	0.0	0.0109400	1.3000000%	0		0.0000000	76for1	0
112	pd g	u5necd	rc	cu	0.0000000	0.0	0.0084000	0.0000000	0		0.0000000	57bay2	0
112	pd g	u5necd	rc	cu	0.0000000	0.0	0.0085000	0.0000000	0		0.0000000	57bay2	0
112	pd g	u8n1.5	rc	cu	0.0000000	0.0	0.0280000	0.0060000	0		0.0000000	78nag1	0
112	pd g	u8n2.0	rc	cu	0.0000000	0.0	0.0260000	0.0030000	0		0.0000000	78nag1	0
112	pd g	u8n3.9	rc	cu	0.0000000	0.0	0.0570000	0.0170000	0		0.0000000	78nag1	0
112	pd g	u8n6.9	rc	cu	0.0000000	0.0	0.2000000	0.0400000	0		0.0000000	78nag1	0
112	pd g	u8n7.7	rc	cu	0.0000000	0.0	0.2000000	0.0400000	0		0.0000000	78nag1	0
112	pd g	t2n3.0	rc	cu	0.0000000	0.0	0.0280000	0.0040000	0		0.0000000	80gle1	0
112	pd g	t2n4.0	rc	cu	0.0000000	0.0	0.0970000	0.0110000	0		0.0000000	80gle1	0
112	pd g	t2n5.9	rc	cu	0.0000000	0.0	0.3000000	0.0400000	0		0.0000000	80gle1	0
112	pd g	t2n6.4	rc	cu	0.0000000	0.0	0.2400000	0.0400000	0		0.0000000	80gle1	0
112	pd g	t2n6.9	rc	cu	0.0000000	0.0	0.1800000	0.0300000	0		0.0000000	80gle1	0

112	pd	g	t2n7.6	rc	cu	0.0000000	0.0	0.2600000	0.0400000	0		0.0000000	80gle1	0
112	pd	g	t2n8.0	rc	cu	0.0000000	0.0	0.2800000	0.0500000	0		0.0000000	80gle1	0
112	pd	g	u5n6.0	rc	cu	0.0000000	0.0	0.2199000	7.4000000%	0		0.0000000	78cha1	0
112	pd	g	u5n7.1	rc	cu	0.0000000	0.0	0.2017000	7.4000000%	0		0.0000000	78cha1	0
112	pd	g	u5n8.1	rc	cu	0.0000000	0.0	0.2172000	7.9000000%	0		0.0000000	78cha1	0
112	pd	g	u5n9.1	rc	cu	0.0000000	0.0	0.2917000	8.5000000%	0		0.0000000	78cha1	0
112	pd	g	u8n6.0	rc	cu	0.0000000	0.0	0.1526000	7.9000000%	0		0.0000000	78cha1	0
112	pd	g	u8n7.1	rc	cu	0.0000000	0.0	0.1393000	7.6000000%	0		0.0000000	78cha1	0
112	pd	g	u8n8.1	rc	cu	0.0000000	0.0	0.1688000	8.6000000%	0		0.0000000	78cha1	0
112	pd	g	u8n9.1	rc	cu	0.0000000	0.0	0.2225000	10.0000000%	0		0.0000000	78cha1	0
113	in	g	u234f	es	cu	0.0602212	30.0	0.0588700	0.0000000	0		0.0000000	75mee1	0
113	in	m	u234f	es	cu	0.0000000	30.0	0.0000004	0.0000000	0		10000.0000000	75mee1	0
113	cd	g	u234f	es	cu	0.0583083	30.0	0.0570000	0.0000000	0		0.0000000	72sid1	0
113	in	g	u237f	es	cu	0.0433752	30.0	0.0436500	0.0000000	0		0.0000000	75mee1	0
113	in	m	u237f	es	cu	0.0000000	30.0	0.0000000	0.0000000	0		1000.0000000	75mee1	0
113	cd	g	u237f	es	cu	0.0437230	30.0	0.0440000	0.0000000	0		0.0000000	72sid1	0
113	in	g	pu240h	es	cu	1.7287600	30.0	1.7221500	0.0000000	0		0.0000000	75mee1	0
113	in	m	pu240h	es	cu	0.0000000	30.0	0.0000000	0.0000000	0		0.0000000	75mee1	0
113	cd	g	pu240h	es	cu	1.3551816	30.0	0.0135000	0.0000000	0		0.0100000	77net1	0
113	ag	g	pu240h	rc	cu	1.5358725	5.2	0.0153000	5.2000000%	0		0.0100000	77net1	0
113	in	g	u234he	es	cu	1.2974181	30.0	1.3149100	0.0000000	0		0.0000000	75mee1	0
113	in	m	u234he	es	cu	0.0000000	30.0	0.0000000	0.0000000	0		0.0000000	75mee1	0
113	cd	g	u234he	es	cu	1.3024404	30.0	1.3200000	0.0000000	0		0.0000000	75mee1	0
113	in	g	u236he	es	cu	1.0830172	30.0	1.0860900	0.0000000	0		0.0000000	75mee1	0
113	in	m	u236he	es	cu	0.0000000	30.0	0.0000000	0.0000000	0		0.0000000	75mee1	0
113	cd	g	u236he	es	cu	1.0769444	30.0	1.0800000	0.0000000	0		0.0000000	75mee1	0
113	in	g	pu238f	es	cu	0.0826383	30.0	0.0815200	0.0000000	0		0.0000000	75mee1	0
113	in	m	pu238f	es	cu	0.0000000	30.0	0.0000000	0.0000000	0		0.0000000	75mee1	0
113	cd	g	pu238f	es	cu	0.0810974	30.0	0.0800000	0.0000000	0		0.0000000	72sid1	0
113			am241f	cm	cu	0.0000000	0.0	0.0039000	0.0000000	0		0.0100000	80sig1	0
113	in	g	am241f	es	cu	0.2887300	30.0	0.2811500	0.0000000	0		0.0000000	75mee1	0
113	in	m	am241f	es	cu	0.0000000	30.0	0.0000000	0.0000000	0		0.0000000	75mee1	0
113	cd	g	am241f	es	cu	0.2772794	30.0	0.2700000	0.0000000	0		0.0000000	72sid1	0

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0measured nuclide	fissile material	meas. tech. type	meas. value	note err.	updated value	pct.	published	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment

113	ag g	am241f	cm	cu	0.0000000	0.0	0.1800000	0.0000000	0			0.0000000	69gun2	0
113	in g	am243f	es	cu	0.4194510	30.0	0.4199800	0.0000000	0			0.0000000	75mee1	0
113	in m	am243f	es	cu	0.0000000	30.0	0.0000000	0.0000000	0			0.0000000	75mee1	0
113	cd g	am243f	es	cu	0.4194710	30.0	0.4200000	0.0000000	0			0.0000000	72sid1	0
113	in g	np238f	es	cu	0.0694650	30.0	0.0697000	0.0000000	0			0.0000000	75mee1	0
113	in m	np238f	es	cu	0.0000000	30.0	0.0000000	0.0000000	0			1000.0000000	75mee1	0
113	cd g	np238f	es	cu	0.0697640	30.0	0.0700000	0.0000000	0			0.0000000	72sid1	0
113	in g	cm242f	es	cu	0.3499855	30.0	0.3505400	0.0000000	0			0.0000000	75mee1	0
113	in m	cm242f	es	cu	0.0000001	30.0	0.0000001	0.0000000	0			0.0000000	75mee1	0
113	cd g	cm242f	es	cu	0.3494464	30.0	0.3500000	0.0000000	0			0.0000000	72sid1	0
113	ag g	p9v0.3	rc	cu	0.0000000	0.0	0.0760000	0.0100000	0			0.0000000	78kai2	0
113		t2n3.0	sp	cu	0.0000000	0.0	0.0320000	0.0000000	0			0.0000000	68ser1	0
113		t2n1.6	sp	cu	0.0000000	0.0	0.0140000	0.0000000	0			0.0000000	68ser1	0
113		t2n1.7	sp	cu	0.0000000	0.0	0.0018000	0.0000000	0			0.0000000	68ser1	0
113		t2n2.0	sp	cu	0.0000000	0.0	0.0050000	0.0000000	0			0.0000000	68ser1	0
113		t2n2.5	sp	cu	0.0000000	0.0	0.0050000	0.0000000	0			0.0000000	68ser1	0
113		t2n5.8	sp	cu	0.0000000	0.0	0.1490000	0.0000000	0			0.0000000	68ser1	0
113		n7n0.8	sp	cu	0.0000000	0.0	0.1160000	0.0000000	0			0.0000000	70kuz1	0
113		n7n1.1	sp	cu	0.0000000	0.0	0.1810000	0.0000000	0			0.0000000	70kuz1	0
113		n7n1.4	sp	cu	0.0000000	0.0	0.1900000	0.0000000	0			0.0000000	70kuz1	0
113		n7n1.7	sp	cu	0.0000000	0.0	0.1990000	0.0000000	0			0.0000000	70kuz1	0
113		n7n2.2	sp	cu	0.0000000	0.0	0.2330000	0.0000000	0			0.0000000	70kuz1	0
113	cd g	u3necd	ms	re	0.0000000	0.0	1.0000000	0.0900000	116	cd g	u3necd	1.0000000	75lae1	0
113	cd g	u5necd	ms	re	0.0000000	0.0	0.7000000	0.1600000	116	cd g	u5necd	1.0000000	75lae1	0
113	ag g	t2d14.	rc	cu	0.0000000	0.0	0.2500000	0.0000000	89	sr g	t2d14.	1.0000000	57ale1	0
113	ag g	u8d 5.	rc	cu	0.0000000	0.0	0.0330000	0.0000000	140	ba g	u8d10.	1.0000000	57ale1	0
113	ag g	u8d14.	rc	cu	0.0000000	0.0	0.2500000	0.0100000	140	ba g	u8d14.	1.0000000	57ale1	0
113	ag g	u5n14.	rc	re	0.0000000	0.0	1.0000000	11.0000000%	99	mo g	u235t	441.0000000	61cun1	0
113	ag g	u5n1.0	rc	re	0.0000000	0.0	1.0000000	11.0000000%	99	mo g	u235t	404.0000000	61cun1	0
113	ag g	u5n.54	rc	re	0.0000000	0.0	1.0000000	11.0000000%	99	mo g	u235t	392.0000000	61cun1	0
113	ag g	u5n.30	rc	re	0.0000000	0.0	1.0000000	13.0000000%	99	mo g	u235t	458.0000000	61cun1	0
113	ag g	u5n.30	rc	re	0.0000000	0.0	1.0000000	19.0000000%	99	mo g	u235t	458.0000000	61cun1	0
113	ag g	u5k125	rc	re	0.0000000	0.0	1.0000000	13.0000000%	99	mo g	u235t	803.0000000	61cun1	0
113	ag g	u5k65.	rc	re	0.0000000	0.0	1.0000000	20.0000000%	99	mo g	u235t	956.0000000	61cun1	0
113	ag g	t2p9.5	rc	cu	0.0000000	0.0	0.1300000	0.0260000	0		m barn	0.2100000	68fre1	0

113	ag g	t2p11.	rc	cu	0.0000000	0.0	0.8360000	0.1670000	0		m barn	0.7500000	68fre1	0
113	ag g	t2d12.	rc	cu	0.0000000	0.0	0.6580000	0.0000000	0		m barn	0.6600000	68fre1	0
113	ag g	u8p12g	rc	re	0.0000000	0.0	13.8000000	10.0000000%	0		m barn	0.0000000	70pan1	0
113	ag g	p9necd	rc	re	0.0000000	0.0	0.7200000	0.0460000	99	mo g	pu239t	0.0000000	64cro1	7
113	ag g	u8n1.5	rc	cu	0.0000000	0.0	0.0160000	0.0040000	0			0.0000000	78nag1	0
113	ag g	u8n2.0	rc	cu	0.0000000	0.0	0.0090000	0.0020000	0			0.0000000	78nag1	0
113	ag g	u8n3.9	rc	cu	0.0000000	0.0	0.0340000	0.0080000	0			0.0000000	78nag1	0
113	ag g	u8n5.5	rc	cu	0.0000000	0.0	0.0820000	0.0200000	0			0.0000000	78nag1	0
113	ag g	t2n3.0	rc	cu	0.0000000	0.0	0.0470000	0.0090000	99	mo g	th232h	3.1000000	64bro1	0
114		u234f	es	cu	0.0588502	30.0	0.0570000	0.0000000	0			0.0000000	72sid1	0
114		u237f	es	cu	0.0366705	30.0	0.0370000	0.0000000	0			0.0000000	72sid1	0
114		pu240h	es	cu	1.2488840	30.0	0.0123000	0.0000000	0			0.0100000	77net1	0
114		u234he	es	cu	1.3246026	30.0	1.3500000	0.0000000	0			0.0000000	75mee1	0
114		u236he	es	cu	1.0470293	30.0	1.0500000	0.0000000	0			0.0000000	75mee1	0
114		pu238f	es	cu	0.0815520	30.0	0.0800000	0.0000000	0			0.0000000	72sid1	0
114		am241f	cm	cu	0.0000000	0.0	0.0025000	0.0000000	0			0.0100000	80sig1	0
114		am241f	es	cu	0.1349567	30.0	0.1300000	0.0000000	0			0.0000000	72sid1	0
114		am243f	es	cu	0.2196081	30.0	0.2200000	0.0000000	0			0.0000000	72sid1	0
114		np238f	es	cu	0.0736472	30.0	0.0740000	0.0000000	0			0.0000000	72sid1	0
114		cm242f	es	cu	0.1795974	30.0	0.1800000	0.0000000	0			0.0000000	72sid1	0
114	cd g	u3necd	ms	re	0.0000000	0.0	1.0000000	0.0900000	116	cd g	u3necd	1.0000000	75lae1	0
114	cd g	u5necd	ms	re	0.0000000	0.0	1.1000000	0.1600000	116	cd g	u5necd	1.0000000	75lae1	0
114		t2n3.0	sp	cu	0.0000000	0.0	0.0320000	0.0000000	0			0.0000000	68ser1	0
114		t2n1.6	sp	cu	0.0000000	0.0	0.0090000	0.0000000	0			0.0000000	68ser1	0
114		t2n1.7	sp	cu	0.0000000	0.0	0.0016000	0.0000000	0			0.0000000	68ser1	0
114		t2n2.0	sp	cu	0.0000000	0.0	0.0040000	0.0000000	0			0.0000000	68ser1	0
114		t2n2.5	sp	cu	0.0000000	0.0	0.0020000	0.0000000	0			0.0000000	68ser1	0
114		t2n5.8	sp	cu	0.0000000	0.0	0.1470000	0.0000000	0			0.0000000	68ser1	0
114		n7n0.8	sp	cu	0.0000000	0.0	0.0760000	0.0000000	0			0.0000000	70kuz1	0
114		n7n1.1	sp	cu	0.0000000	0.0	0.1090000	0.0000000	0			0.0000000	70kuz1	0
114		n7n1.4	sp	cu	0.0000000	0.0	0.1150000	0.0000000	0			0.0000000	70kuz1	0
114		n7n1.7	sp	cu	0.0000000	0.0	0.1180000	0.0000000	0			0.0000000	70kuz1	0
114		n7n2.2	sp	cu	0.0000000	0.0	0.1360000	0.0000000	0			0.0000000	70kuz1	0
115		u234f	cm	cu	0.0000000	0.0	0.0620000	0.0000000	0			0.0000000	72sid1	0
115	in g	u234f	es	cu	0.0690423	14.8	0.0700000	0.0100000	140	ba g	u234f	5.9300000	77bla1	0
115	in g	u234f	es	cu	0.0556312	30.0	0.0550000	0.0000000	0			0.0000000	75mee1	0

115	in m	u234f	es	cu		0.0618720	30.0	0.0611700	0.0000000	0			0.0000000	75mee1	0
115	cd g	u234f	rc	cu	sm	0.0000000	0.0	0.0700000	0.0100000	140	ba g	u234f	5.9300000	77bla1	0
115	in g	u237f	es	cu		0.0408175	30.0	0.0410000	0.0000000	0			0.0000000	72sid1	0
115	in m	u237f	es	cu		0.0371439	30.0	0.0373100	0.0000000	0			0.0000000	75mee1	0
115		pu240h	cm	cu		0.0000000	0.0	0.0115000	0.0000000	0			0.0100000	77net1	0
115	in g	pu240h	es	cu		1.1622262	2.6	0.0116000	0.0003000	0			0.0100000	77net1	0
115	in m	pu240h	es	cu		1.0643086	30.0	1.0622700	0.0000000	0			0.0000000	75mee1	0
115	cd g	pu240h	rc	cu		1.0920918	5.0	0.0109000	3.0000000%	0			0.0100000	77net1	0
115	cd m	pu240h	rc	cu		0.0719378	5.0	0.0007180	3.0000000%	0			0.0100000	77net1	0
115	in g	u234he	es	cu		1.2930897	10.5	0.0134000	0.0013000	147	nd g	u234he	0.0132000	72net1	0
115	in m	u234he	es	cu		1.1832769	30.0	1.1912000	0.0000000	0			0.0000000	75mee1	0
115	cd m	u234he	rc	fc		0.0810284	23.2	0.0670000	0.0020000	115	cd g	u234he	1.0000000	72net2	0
115	in g	u236he	es	cu		1.0149039	10.3	0.0105000	0.0010000	147	nd g	u236he	0.0179000	72net1	0
115	in m	u236he	es	cu		0.9350853	30.0	0.9364100	0.0000000	0			0.0000000	75mee1	0
115	cd m	u236he	rc	fc		0.0679343	32.4	0.0710000	0.0020000	115	cd g	u236he	1.0000000	72net2	0
115	in g	pu238f	es	cu		0.0810974	30.0	0.0800000	0.0000000	0			0.0000000	72sid1	0
115	in m	pu238f	es	cu		0.0752989	30.0	0.0742800	0.0000000	0			0.0000000	75mee1	0
115		am241f	cm	cu		0.0000000	0.0	0.0016000	0.0000000	0			0.0100000	80sig1	0
115	in g	am241f	es	cu		0.1107414	30.0	0.1100000	0.0000000	0			0.0000000	72sid1	0
115	in m	am241f	es	cu		0.1473767	30.0	0.1463900	0.0000000	0			0.0000000	75mee1	0
115	cd g	am241f	cm	cu		0.0000000	0.0	0.0500000	0.0000000	0			0.0000000	69gun2	0
115	cd g	am241f	rc	cu		0.1510110	5.0	0.0015000	3.0000000%	0			0.0100000	80sig1	0
115	cd m	am241f	rc	cu		0.0097654	5.0	0.0000970	3.0000000%	0			0.0100000	80sig1	0
115	in g	am243f	es	cu		0.0998741	30.0	0.1000000	0.0000000	0			0.0000000	72sid1	0
115	in m	am243f	es	cu		0.0915645	30.0	0.0916800	0.0000000	0			0.0000000	75mee1	0
115	in g	np238f	es	cu		0.0697640	30.0	0.0700000	0.0000000	0			0.0000000	72sid1	0
115	in m	np238f	es	cu		0.0638141	30.0	0.0640300	0.0000000	0			0.0000000	75mee1	0
115	in g	cm242f	es	cu		0.1098260	30.0	0.1100000	0.0000000	0			0.0000000	72sid1	0
115	in m	cm242f	es	cu		0.0974257	30.0	0.0975800	0.0000000	0			0.0000000	75mee1	0
115	cd g	p9v0.3	rc	cu		0.0000000	0.0	0.0240000	0.0060000	0			0.0000000	78kai2	0
115	cd g	u3v2.3	rc	re		0.0000000	0.0	0.7070000	0.0510000	99	mo g	u235t	0.0000000	62bur1	7
115	cd g	u3necd	rc	re		0.0000000	0.0	0.8330000	0.0350000	99	mo g	u235t	0.0000000	62bur1	7
115	cd m	u5v.06	rc	re	su	0.0000000	0.0	1.2360000	14.0000000%	99	mo g	u235t	0.0000000	62fal1	7
115	cd m	u5v.10	rc	re	su	0.0000000	0.0	1.2560000	7.4000000%	99	mo g	u235t	0.0000000	62fal1	7
115	cd m	u5v.25	rc	re	su	0.0000000	0.0	1.3700000	3.0000000%	99	mo g	u235t	0.0000000	62fal1	7
115	cd m	u5v.28	rc	re	su	0.0000000	0.0	1.3400000	3.5000000%	99	mo g	u235t	0.0000000	62fal1	7

115 cd m u5v.33 rc re su 0.0000000 0.0 1.4120000 3.1000000% 99 mo g u235t 0.0000000 62fal1 7
115 cd m u5v.50 rc re su 0.0000000 0.0 1.1890000 3.9000000% 99 mo g u235t 0.0000000 62fal1 7
115 cd m u5necd rc re su 0.0000000 0.0 0.8470000 6.9000000% 99 mo g u235t 0.0000000 62fal1 7
115 u8n2.0 rc cu 0.0000000 0.0 0.0110000 0.0000000 0 0.0000000 75fly4 0
115 u8n8.0 rc cu 0.0000000 0.0 0.1600000 0.0000000 0 0.0000000 75fly4 0
115 t2n3.0 sp cu 0.0000000 0.0 0.0310000 0.0000000 0 0.0000000 68ser1 0
115 t2n1.6 sp cu 0.0000000 0.0 0.0060000 0.0000000 0 0.0000000 68ser1 0
115 t2n1.7 sp cu 0.0000000 0.0 0.0027000 0.0000000 0 0.0000000 68ser1 0
115 t2n2.0 sp cu 0.0000000 0.0 0.0050000 0.0000000 0 0.0000000 68ser1 0
115 t2n2.5 sp cu 0.0000000 0.0 0.0030000 0.0000000 0 0.0000000 68ser1 0
115 t2n5.8 sp cu 0.0000000 0.0 0.1440000 0.0000000 0 0.0000000 68ser1 0
115 n7n0.8 sp cu 0.0000000 0.0 0.0530000 0.0000000 0 0.0000000 70kuz1 0
115 n7n1.1 sp cu 0.0000000 0.0 0.0670000 0.0000000 0 0.0000000 70kuz1 0
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0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

115 n7n1.4 sp cu 0.0000000 0.0 0.0720000 0.0000000 0 0.0000000 70kuz1 0
115 n7n1.7 sp cu 0.0000000 0.0 0.0770000 0.0000000 0 0.0000000 70kuz1 0
115 n7n2.2 sp cu 0.0000000 0.0 0.0860000 0.0000000 0 0.0000000 70kuz1 0
115 in m p9v0.3 rc re 0.0000000 0.0 0.6590000 0.0450000 115 in m pu239t 1.0000000 73van1 0
115 cd g t2nlid rc cu 0.0000000 0.0 11.2000000 0.0000000 89 sr g th232f 0.0000000 53tur1 7
115 cd g n7ndf rc re 0.0000000 0.0 3.5000000 0.0000000 99 mo g u235t 0.0000000 56for1 7
115 cd g u5n1.2 rc cu 0.0000000 0.0 0.0190000 0.0000000 99 mo g u235t 0.0104000 56for1 6
115 cd g u5n5 rc cu 0.0000000 0.0 0.0970000 0.0000000 99 mo g u235t 0.0104000 56for1 6
115 cd g u5n8.1 rc cu 0.0000000 0.0 0.2600000 0.0000000 99 mo g u235t 0.0104000 56for1 6
115 cd g u5v1.1 rc cu 0.0000000 0.0 0.0130000 0.0000000 89 sr g u5v1.1 4.8000000 57nas1 0
115 cd g u5v3.1 rc cu 0.0000000 0.0 0.0080000 0.0000000 89 sr g u5v3.1 4.8000000 57nas1 0
115 cd g u5v9.5 rc cu 0.0000000 0.0 0.0100000 0.0000000 89 sr g u5v9.5 4.8000000 57nas1 0
115 cd g u8d05. rc cu 0.0000000 0.0 4.8000000 0.5000000 0 u barn 35.0000000 57sug1 0
115 cd g u8d10. rc cu 0.0000000 0.0 0.7300000 0.0300000 0 m barn 0.8600000 57sug1 0
115 cd g u8d14. rc cu 0.0000000 0.0 4.2000000 0.2000000 0 m barn 4.3000000 57sug1 0
115 cd g u3v2.3 rc re 0.0000000 0.0 0.7070000 0.0510000 99 mo g u233t 1.0000000 59reg1 7
115 cd g u3v4.7 rc re 0.0000000 0.0 0.9680000 0.1580000 99 mo g u233t 1.0000000 59reg1 7
115 cd g u3necd rc re 0.0000000 0.0 0.8340000 0.0360000 99 mo g u233t 1.0000000 59reg1 7
115 cd g p9v.06 rc re 0.0000000 0.0 0.7520000 0.0340000 99 mo g pu239t 1.0000000 60reg1 7

115	cd g	p9v.22	rc	re	0.0000000	0.0	0.3850000	0.0220000	99 mo g	pu239t	1.0000000	60reg1	7
115	cd g	p9v.30	rc	re	0.0000000	0.0	0.3330000	0.0310000	99 mo g	pu239t	1.0000000	60reg1	7
115	cd g	p9v.36	rc	re	0.0000000	0.0	0.3090000	0.0130000	99 mo g	pu239t	1.0000000	60reg1	7
115	cd g	p1nesm	rc	re	0.0000000	0.0	0.9800000	0.0290000	99 mo g	pu241t	1.0000000	60reg1	7
115	cd g	u5k125	rc	re	0.0000000	0.0	1.0000000	7.5000000%	97 zr g	u235t	809.0000000	61cun1	0
115	cd g	u5ndcu	rc	re	0.0000000	0.0	20.5000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
115	cd g	u8ndcu	rc	re	0.0000000	0.0	21.9000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
115	cd g	u8naal	rc	re	0.0000000	0.0	23.8000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
115	cd g	u8nabe	rc	re	0.0000000	0.0	32.5000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
115	cd g	u8ndbe	rc	re	0.0000000	0.0	33.4000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
115	cd g	u8ndli	rc	re	0.0000000	0.0	37.5000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
115	cd g	p9v.22	rc	re	0.0000000	0.0	0.3850000	0.0210000	99 mo g	u235t	0.0000000	62bur1	7
115	cd g	p9v.30	rc	re	0.0000000	0.0	0.3330000	0.0280000	99 mo g	u235t	0.0000000	62bur1	7
115	cd g	p9v.36	rc	re	0.0000000	0.0	0.3090000	0.0130000	99 mo g	u235t	0.0000000	62bur1	7
115	cd g	p1nesm	rc	re	0.0000000	0.0	0.9840000	0.0310000	99 mo g	u235t	0.0000000	62bur1	7
115	cd g	u3v4.7	rc	re	0.0000000	0.0	0.9700000	0.1360000	99 mo g	u235t	0.0000000	62bur1	7
115	cd g	t2a18.	rc	re	0.0000000	0.0	64.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
115	cd g	t2a19.	rc	re	0.0000000	0.0	82.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
115	cd g	t2a20.	rc	re	0.0000000	0.0	91.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
115	cd g	t2a20.	rc	re	0.0000000	0.0	97.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
115	cd g	t2a20.	rc	re	0.0000000	0.0	103.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
115	cd g	t2a22.	rc	re	0.0000000	0.0	118.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
115	cd g	t2a24.	rc	re	0.0000000	0.0	150.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
115	cd g	t2a24.	rc	re	0.0000000	0.0	153.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
115	cd g	t2a26.	rc	re	0.0000000	0.0	180.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
115	cd g	t2a27.	rc	re	0.0000000	0.0	194.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
115	cd g	t2a29.	rc	re	0.0000000	0.0	217.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
115	cd g	t2a30.	rc	re	0.0000000	0.0	224.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
115	cd g	t2a30.	rc	re	0.0000000	0.0	233.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
115	cd g	t2a32.	rc	re	0.0000000	0.0	249.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
115	cd g	t2a34.	rc	re	0.0000000	0.0	275.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
115	cd g	t2a34.	rc	re	0.0000000	0.0	281.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
115	cd g	t2a36.	rc	re	0.0000000	0.0	303.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
115	cd g	t2a37.	rc	re	0.0000000	0.0	308.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
115	cd g	t2a38.	rc	re	0.0000000	0.0	324.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
115	cd g	u8n1.5	rc	cu	0.0000000	0.0	1.0000000	0.0000000	140 ba g	u8n1.5	800.0000000	67bor1	0

115	cd	g	u8n5.0	rc	cu		0.0000000	0.0	1.0000000	0.0000000	140 ba g	u8n5.0	90.0000000	67bor1	0
115	cd	g	u8n3.0	rc	re		0.0000000	0.0	0.0038500	0.0000000	99 mo g	u8n3.0	1.0000000	68bor2	0
115	cd	g	u8n1.5	rc	re		0.0000000	0.0	0.0001190	0.0000000	99 mo g	u8n1.5	1.0000000	68bor2	0
115	cd	g	u8n2.0	rc	re		0.0000000	0.0	0.0020900	0.0000000	99 mo g	u8n2.0	1.0000000	68bor2	0
115	cd	g	u8n4.8	rc	re		0.0000000	0.0	0.0105000	0.0000000	99 mo g	u8n4.8	1.0000000	68bor2	0
115	cd	g	u8n13.	rc	re		0.0000000	0.0	0.1060000	0.0000000	99 mo g	u8n13.	1.0000000	68bor2	0
115	cd	g	u8n16.	rc	re		0.0000000	0.0	0.1570000	0.0000000	99 mo g	u8n16.	1.0000000	68bor2	0
115	cd	g	u8n18.	rc	re		0.0000000	0.0	0.1310000	0.0000000	99 mo g	u8n18.	1.0000000	68bor2	0
115	cd	g	u8p12g	rc	re		0.0000000	0.0	15.8000000	10.0000000%	0	m barn	0.0000000	70pan1	0
115	cd	g	p9npfr	rc	cu		0.0000000	0.0	0.2300000	0.0150000	0		0.0000000	71cun1	0
115	cd	g	p9npfr	rc	cu		0.0000000	0.0	0.2260000	0.0200000	99 mo g	pu239f	5.9800000	72cun1	0
115	cd	g	p9ndf	rc	cu		0.0000000	0.0	0.0450000	0.0000000	99 mo g	u235t	0.0104000	56for1	7
115	cd	g	u5ndf	rc	cu		0.0000000	0.0	0.0170000	0.0000000	99 mo g	u235t	0.0104000	56for1	7
115	cd	g	p9nesm	rc	re		0.0000000	0.0	0.4150000	0.0260000	99 mo g	pu239t	1.0000000	60reg1	7
115	cd	g	u5npbe	rc	re		0.0000000	0.0	4.6800000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
115	cd	g	u5naal	rc	re		0.0000000	0.0	22.9000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
115	cd	g	u5nabe	rc	re		0.0000000	0.0	32.2000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
115	cd	g	u5ndbe	rc	re		0.0000000	0.0	33.6000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
115	cd	g	u5ndli	rc	re		0.0000000	0.0	42.5000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
115	cd	g	p9nesm	rc	re		0.0000000	0.0	0.4150000	0.0230000	99 mo g	u235t	0.0000000	62bur1	7
115	cd	g	p9necd	rc	re		0.0000000	0.0	1.0000000	0.0000000	72 zn g	pu239t	1.3900000	66fri1	0
115	cd	g	p9necd	rc	re		0.0000000	0.0	0.5400000	1.0000000%	99 mo g	pu239t	0.0000000	69ton1	7
115	cd	g	t2n11.	rc	cu		0.0000000	0.0	0.7600000	0.0000000	0		0.0000000	53tur1	0
115	cd	g	p9v.06	rc	re		0.0000000	0.0	0.7520000	0.0320000	99 mo g	u235t	0.0000000	62bur1	7
115	cd	g	u3necd	rc	re		0.0000000	0.0	0.8330000	0.0350000	99 mo g	u235t	0.0000000	62bur1	7
115	cd	g	p9nesm	rc	re		0.0000000	0.0	0.5400000	1.0000000%	99 mo g	pu239t	0.0000000	69ton1	7
115	cd	g	u5necd	rc	cu		0.0000000	0.0	0.0087000	0.0000000	0		0.0000000	57bay2	0
115	cd	g	u5necd	rc	cu		0.0000000	0.0	0.0086000	0.0000000	0		0.0000000	57bay2	0
115	cd	g	t2n1.3	rc	re	le	0.0000000	0.0	0.0000660	30.0000000%	89 sr g	t2n1.3	1.0000000	76lis1	0
115	cd	g	t2n1.4	rc	re	le	0.0000000	0.0	0.0000220	30.0000000%	89 sr g	t2n1.4	1.0000000	76lis1	0
115	cd	g	t2n1.5	rc	re		0.0000000	0.0	0.0000200	30.0000000%	89 sr g	t2n1.5	1.0000000	76lis1	0
115	cd	g	t2n1.6	rc	re		0.0000000	0.0	0.0000150	30.0000000%	89 sr g	t2n1.6	1.0000000	76lis1	0
115	cd	g	t2n2.0	rc	re		0.0000000	0.0	0.0001600	30.0000000%	89 sr g	t2n2.0	1.0000000	76lis1	0
115	cd	g	t2n1.7	rc	re		0.0000000	0.0	0.0000150	30.0000000%	89 sr g	t2n1.7	1.0000000	76lis1	0
115	cd	g	t2n3.0	rc	re		0.0000000	0.0	0.0023000	10.0000000%	89 sr g	t2n3.0	1.0000000	76lis1	0
115	cd	g	t2n3.9	rc	re		0.0000000	0.0	0.0061000	10.0000000%	89 sr g	t2n3.9	1.0000000	76lis1	0

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 115 cd g   t2n4.8   rc    re        0.0000000  0.0   0.0160000 10.0000000%   89 sr g      t2n4.8      1.0000000   76lis1      0
 115 cd g   t2n13.   rc    re        0.0000000  0.0   0.1600000 10.0000000%   89 sr g      t2n13.      1.0000000   76lis1      0
 115 cd g   u8n1.5   rc    cu        0.0000000  0.0   0.0089000  0.0009000     0                    0.0000000   78nag1      0
 115 cd g   u8n2.0   rc    cu        0.0000000  0.0   0.0105000  0.0010000     0                    0.0000000   78nag1      0
 115 cd g   u8n3.9   rc    cu        0.0000000  0.0   0.0290000  0.0030000     0                    0.0000000   78nag1      0
 115 cd g   u8n5.5   rc    cu        0.0000000  0.0   0.0670000  0.0070000     0                    0.0000000   78nag1      0
 115 cd g   u8n6.9   rc    cu        0.0000000  0.0   0.1160000  0.0120000     0                    0.0000000   78nag1      0
 115 cd g   u8n7.7   rc    cu        0.0000000  0.0   0.1650000  0.0220000     0                    0.0000000   78nag1      0
 115 cd g   t2n2.0   rc    cu        0.0000000  0.0   0.0050000  0.0010000     0                    0.0000000   80gle1      0
 115 cd g   t2n3.0   rc    cu        0.0000000  0.0   0.0230000  0.0040000     0                    0.0000000   80gle1      0
 115 cd g   t2n4.0   rc    cu        0.0000000  0.0   0.0990000  0.0150000     0                    0.0000000   80gle1      0
 115 cd g   t2n5.9   rc    cu        0.0000000  0.0   0.2700000  0.0400000     0                    0.0000000   80gle1      0
 115 cd g   t2n6.4   rc    cu        0.0000000  0.0   0.2300000  0.0400000     0                    0.0000000   80gle1      0
 115 cd g   t2n6.9   rc    cu        0.0000000  0.0   0.2000000  0.0300000     0                    0.0000000   80gle1      0
 115 cd g   t2n7.6   rc    cu        0.0000000  0.0   0.2000000  0.0300000     0                    0.0000000   80gle1      0
 115 cd g   t2n8.0   rc    cu        0.0000000  0.0   0.2900000  0.0400000     0                    0.0000000   80gle1      0
 115 cd m   u8d05.   rc    cu    lt  0.0000000  0.0   0.4000000  0.2000000     0          u barn    35.0000000   57sug1      0
 115 cd m   u8d10.   rc    cu        0.0000000  0.0   0.0460000  0.0040000     0          m barn     0.8600000   57sug1      0
 115 cd m   u8d14.   rc    cu        0.0000000  0.0   0.3000000  0.0200000     0          m barn     4.3000000   57sug1      0
 115 cd m   t2a20.   rc    re        0.0000000  0.0  91.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 115 cd m   t2a20.   rc    re        0.0000000  0.0 103.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 115 cd m   t2a22.   rc    re        0.0000000  0.0 111.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 115 cd m   t2a24.   rc    re        0.0000000  0.0 150.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 115 cd m   t2a26.   rc    re        0.0000000  0.0 176.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 115 cd m   t2a27.   rc    re        0.0000000  0.0 196.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 115 cd m   t2a30.   rc    re        0.0000000  0.0 231.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 115 cd m   t2a30.   rc    re        0.0000000  0.0 240.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 115 cd m   t2a32.   rc    re        0.0000000  0.0 269.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 115 cd m   t2a34.   rc    re        0.0000000  0.0 289.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.    value                 nuclide     material      value      no.   treatment

 115 cd m   t2a34.   rc    re        0.0000000  0.0 298.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 115 cd m   t2a36.   rc    re        0.0000000  0.0 327.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
 115 cd m   t2a37.   rc    re        0.0000000  0.0 339.0000000  5.0000000%   99 mo g      u235t       0.0000000   62hic1      7
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115	cd m	t2a38.	rc	re	0.0000000	0.0	350.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
115	cd m	u5n2-3	rc	cu	0.0000000	0.0	0.7650000	0.0440000	99	mo g	u235t	0.0000000	63fal1	7
115	cd m	u5n4-3	rc	cu	0.0000000	0.0	0.8750000	0.0420000	99	mo g	u235t	0.0000000	63fal1	7
115	cd m	u5n.04	rc	cu	0.0000000	0.0	0.8800000	0.0470000	99	mo g	u235t	0.0000000	63fal1	7
115	cd m	u5n.06	rc	cu	0.0000000	0.0	0.7830000	0.0210000	99	mo g	u235t	0.0000000	63fal1	7
115	cd m	u5n.10	rc	cu	0.0000000	0.0	0.7960000	0.0590000	99	mo g	u235t	0.0000000	63fal1	7
115	cd m	u5n.25	rc	cu	0.0000000	0.0	0.7300000	0.0220000	99	mo g	u235t	0.0000000	63fal1	7
115	cd m	u5n.28	rc	cu	0.0000000	0.0	0.7460000	0.0260000	99	mo g	u235t	0.0000000	63fal1	7
115	cd m	u5n.33	rc	cu	0.0000000	0.0	0.7080000	0.0220000	99	mo g	u235t	0.0000000	63fal1	7
115	cd m	u5n.50	rc	cu	0.0000000	0.0	0.8410000	0.0330000	99	mo g	u235t	0.0000000	63fal1	7
115	cd m	u5n.70	rc	cu	0.0000000	0.0	0.7520000	0.0740000	99	mo g	u235t	0.0000000	63fal1	7
115	cd m	u5nesm	rc	cu	0.0000000	0.0	1.1810000	0.0810000	99	mo g	u235t	0.0000000	63fal1	7
115	cd m	u8p12g	rc	in	0.0000000	0.0	6.4000000	10.0000000%	0		m barn	0.0000000	70pan1	0
115	cd m	p9npfr	rc	cu	0.0000000	0.0	0.0165000	0.0014000	99	mo g	pu239f	5.9800000	72cun1	0
115	ag g	t2d14.	rc	cu	0.0000000	0.0	0.2700000	0.0000000	89	sr g	t2d14.	1.0000000	57ale1	0
115	ag g	u8d 5.	rc	cu	0.0000000	0.0	0.0350000	0.0000000	140	ba g	u8d10.	1.0000000	57ale1	0
115	ag g	u8d14.	rc	cu	0.0000000	0.0	0.2700000	0.0200000	140	ba g	u8d14.	1.0000000	57ale1	0
116		u234f	cm	cu	0.0000000	0.0	0.0250000	0.0000000	0			0.0000000	72sid1	0
116		u234f	es	cu	0.0567853	30.0	0.0550000	0.0000000	0			0.0000000	75mee1	0
116		u237f	es	cu	0.0346883	30.0	0.0350000	0.0000000	0			0.0000000	72sid1	0
116		pu240h	es	cu	1.0661205	30.0	0.0105000	0.0000000	0			0.0100000	77net1	0
116		u234he	es	cu	1.1802246	30.0	1.1900000	0.0000000	0			0.0000000	75mee1	0
116		u236he	es	cu	1.2664068	30.0	1.2700000	0.0000000	0			0.0000000	75mee1	0
116		pu238f	es	cu	0.0750151	30.0	0.0740000	0.0000000	0			0.0000000	72sid1	0
116		am241f	cm	cu	0.0000000	0.0	0.0013000	0.0000000	0			0.0100000	80sig1	0
116		am241f	es	cu	0.1026961	30.0	0.1000000	0.0000000	0			0.0000000	72sid1	0
116		am243f	es	cu	0.0998219	30.0	0.1000000	0.0000000	0			0.0000000	72sid1	0
116		np238f	es	cu	0.0607943	30.0	0.0610000	0.0000000	0			0.0000000	72sid1	0
116		cm242f	es	cu	0.0997763	30.0	0.1000000	0.0000000	0			0.0000000	72sid1	0
116	in m	u8p570	rc	in	0.0000000	0.0	11.9000000	0.6000000	0		m barn	0.0000000	70hag1	0
116	in m	u8p18g	rc	in	0.0000000	0.0	3.5000000	0.2900000	0		m barn	0.0000000	70hag1	0
116		n7n0.8	sp	cu	0.0000000	0.0	0.0290000	0.0000000	0			0.0000000	70kuz1	0
116		n7n1.1	sp	cu	0.0000000	0.0	0.0380000	0.0000000	0			0.0000000	70kuz1	0
116		n7n1.4	sp	cu	0.0000000	0.0	0.0380000	0.0000000	0			0.0000000	70kuz1	0
116		n7n1.7	sp	cu	0.0000000	0.0	0.0450000	0.0000000	0			0.0000000	70kuz1	0
116		n7n2.2	sp	cu	0.0000000	0.0	0.0560000	0.0000000	0			0.0000000	70kuz1	0

117		u234f	cm	cu	0.0000000	0.0	0.0270000	0.0000000	0		0.0000000	72sid1	0
117		u234f	es	cu	0.0547871	30.0	0.0550000	0.0000000	0		0.0000000	75mee1	0
117		u237f	es	cu	0.0347796	30.0	0.0350000	0.0000000	0		0.0000000	72sid1	0
117		pu240h	es	cu	0.9918999	30.0	0.0099000	0.0000000	0		0.0100000	77net1	0
117		pu240h	rc	cu	0.8616504	15.1	0.0086000	0.0013000	0		0.0100000	77net1	0
117	cd g	pu240h	rc	cu	0.6021534	5.0	0.0060100	3.0000000%	0		0.0100000	77net1	0
117	cd m	pu240h	rc	cu	0.2574932	5.0	0.0025700	3.0000000%	0		0.0100000	77net1	0
117		u234he	es	cu	1.1930297	30.0	1.2000000	0.0000000	0		0.0000000	75mee1	0
117		u236he	es	cu	1.1439875	30.0	1.1500000	0.0000000	0		0.0000000	75mee1	0
117		pu238f	es	cu	0.0750151	30.0	0.0740000	0.0000000	0		0.0000000	72sid1	0
117		am241f	cm	cu	0.0000000	0.0	0.0012000	0.0000000	0		0.0100000	80sig1	0
117		am241f	es	cu	0.0924265	30.0	0.0900000	0.0000000	0		0.0000000	72sid1	0
117		am243f	es	cu	0.0999109	30.0	0.1000000	0.0000000	0		0.0000000	72sid1	0
117		np238f	es	cu	0.0608546	30.0	0.0610000	0.0000000	0		0.0000000	72sid1	0
117		cm242f	es	cu	0.0998418	30.0	0.1000000	0.0000000	0		0.0000000	72sid1	0
117	cd g	p9v0.3	rc	cu	0.0000000	0.0	0.0180000	0.0040000	0		0.0000000	78kai2	0
117		n7n0.8	sp	cu	0.0000000	0.0	0.0160000	0.0000000	0		0.0000000	70kuz1	0
117		n7n1.1	sp	cu	0.0000000	0.0	0.0270000	0.0000000	0		0.0000000	70kuz1	0
117		n7n1.4	sp	cu	0.0000000	0.0	0.0220000	0.0000000	0		0.0000000	70kuz1	0
117		n7n1.7	sp	cu	0.0000000	0.0	0.0320000	0.0000000	0		0.0000000	70kuz1	0
117		n7n2.2	sp	cu	0.0000000	0.0	0.0410000	0.0000000	0		0.0000000	70kuz1	0
117	in g	u8p570	rc	in	0.0000000	0.0	18.6000000	0.0000000	0	m barn	0.0000000	70hag1	0
117	in g	u8p18g	rc	in	0.0000000	0.0	4.0800000	0.0000000	0	m barn	0.0000000	70hag1	0
117	in m	u8p570	rc	in	0.0000000	0.0	0.6400000	0.0000000	0	m barn	0.0000000	70hag1	0
117	in m	u8p18g	rc	in	0.0000000	0.0	0.1820000	0.0000000	0	m barn	0.0000000	70hag1	0
117	cd g	u8p570	rc	re	0.0000000	0.0	15.1000000	0.0000000	0	m barn	0.0000000	70hag1	0
117	cd g	u8p18g	rc	re	0.0000000	0.0	4.2800000	0.0000000	0	m barn	0.0000000	70hag1	0
117	cd g	t2n11.	rc	cu	0.0000000	0.0	0.3700000	0.0000000	0		0.0000000	53tur1	0
117	cd m	u8p570	rc	re	0.0000000	0.0	26.2000000	0.0000000	0	m barn	0.0000000	70hag1	0
117	cd m	u8p18g	rc	re	0.0000000	0.0	4.4100000	0.0000000	0	m barn	0.0000000	70hag1	0
118		u234f	cm	cu	0.0000000	0.0	0.0400000	0.0000000	0		0.0000000	72sid1	0
118		u234f	es	cu	0.0547871	30.0	0.0550000	0.0000000	0		0.0000000	75mee1	0
118		u237f	es	cu	0.0357733	30.0	0.0360000	0.0000000	0		0.0000000	72sid1	0
118		pu240h	es	cu	0.9848923	30.0	0.0097000	0.0000000	0		0.0100000	77net1	0
118	cd g	pu240h	rc	cu	x1 0.0000000	0.0	0.0049500	6.0000000%	0		0.0100000	77net1	0
118		u234he	es	cu	1.1901424	30.0	1.2000000	0.0000000	0		0.0000000	75mee1	0

118		u236he	es	cu	1.1017928	30.0	1.1100000	0.0000000	0			0.0000000	75mee1	0
118		pu238f	es	cu	0.0744162	30.0	0.0730000	0.0000000	0			0.0000000	72sid1	0
118		am241f	cm	cu	0.0000000	0.0	0.0011000	0.0000000	0			0.0100000	80sig1	0
118		am241f	es	cu	0.0924265	30.0	0.0900000	0.0000000	0			0.0000000	72sid1	0
118		am243f	es	cu	0.0948803	30.0	0.0950000	0.0000000	0			0.0000000	72sid1	0
118		np238f	es	cu	0.0597977	30.0	0.0600000	0.0000000	0			0.0000000	72sid1	0
118		cm242f	es	cu	0.0898576	30.0	0.0900000	0.0000000	0			0.0000000	72sid1	0
118	cd g	p9v0.3	rc	cu	0.0000000	0.0	0.0300000	0.0180000	0			0.0000000	78kai2	0
118	sn g	u5k400	sp	re	0.0000000	0.0	0.0170000	0.0050000	137	cs g	u5k400	6.4000000	71dya1	0
118	sn g	u5k500	sp	re	0.0000000	0.0	0.0170000	0.0050000	137	cs g	u5k500	6.2500000	71dya1	0
118	sn g	u5k600	sp	re	0.0000000	0.0	0.0180000	0.0070000	137	cs g	u5k600	6.3000000	71dya1	0
118	sn g	u5k650	sp	re	0.0000000	0.0	0.0150000	0.0070000	137	cs g	u5k650	6.3500000	71dya1	0
118	sn g	u5k700	sp	re	0.0000000	0.0	0.0150000	0.0070000	137	cs g	u5k700	6.3500000	71dya1	0
118	sn g	u5k750	sp	re	0.0000000	0.0	0.0150000	0.0070000	137	cs g	u5k750	6.4000000	71dya1	0
118	sn g	u5k800	sp	re	0.0000000	0.0	0.0150000	0.0070000	137	cs g	u5k800	6.2500000	71dya1	0
118	sn g	u5k900	sp	re	0.0000000	0.0	0.0220000	0.0070000	137	cs g	u5k900	6.3300000	71dya1	0
118	sn g	u5n1.0	sp	re	0.0000000	0.0	0.0180000	0.0100000	137	cs g	u5n1.0	6.4500000	71dya1	0
118	sn g	u5n1.1	sp	re	0.0000000	0.0	0.0170000	0.0100000	137	cs g	u5n1.1	6.3500000	71dya1	0
118	sn g	u5n1.2	sp	re	0.0000000	0.0	0.0210000	0.0100000	137	cs g	u5n1.2	6.3500000	71dya1	0
118	sn g	u5n1.3	sp	re	0.0000000	0.0	0.0250000	0.0100000	137	cs g	u5n1.3	6.3000000	71dya1	0
118	sn g	u5n1.4	sp	re	0.0000000	0.0	0.0250000	0.0100000	137	cs g	u5n1.4	6.3000000	71dya1	0
118	sn g	u5n1.5	sp	re	0.0000000	0.0	0.0300000	0.0100000	137	cs g	u5n1.5	6.2000000	71dya1	0
118	sn g	u5n1.6	sp	re	0.0000000	0.0	0.0350000	0.0100000	137	cs g	u5n1.6	6.3000000	71dya1	0
118	sn g	u5n1.7	sp	re	0.0000000	0.0	0.0300000	0.0100000	137	cs g	u5n1.7	6.3200000	71dya1	0
118	sn g	u5n1.8	sp	re	0.0000000	0.0	0.0250000	0.0100000	137	cs g	u5n1.8	6.3500000	71dya1	0
118	sn g	u5n1.9	sp	re	0.0000000	0.0	0.0200000	0.0100000	137	cs g	u5n1.9	6.3000000	71dya1	0
118	sn g	u5n2.0	sp	re	0.0000000	0.0	0.0350000	0.0100000	137	cs g	u5n2.0	6.3000000	71dya1	0
118	sn g	u5n2.2	sp	re	0.0000000	0.0	0.0350000	0.0100000	137	cs g	u5n2.2	6.3300000	71dya1	0
118	sn g	u5n2.4	sp	re	0.0000000	0.0	0.0400000	0.0100000	137	cs g	u5n2.4	6.2500000	71dya1	0
118	sn g	u5n2.5	sp	re	0.0000000	0.0	0.0400000	0.0100000	137	cs g	u5n2.5	6.3000000	71dya1	0
118	sn g	u5n2.6	sp	re	0.0000000	0.0	0.0550000	0.0100000	137	cs g	u5n2.6	6.3000000	71dya1	0
118	sn g	u5n3.0	sp	re	0.0000000	0.0	0.0450000	0.0100000	137	cs g	u5n3.0	6.2500000	71dya1	0
118	sn g	u5n3.6	sp	re	0.0000000	0.0	0.0650000	0.0150000	137	cs g	u5n3.6	6.2200000	71dya1	0
118	sn g	u5n5.0	sp	re	0.0000000	0.0	0.1300000	0.0200000	137	cs g	u5n5.0	6.0500000	71dya1	0
118	sn g	u5n6.0	sp	re	0.0000000	0.0	0.1450000	0.0200000	137	cs g	u5n6.0	6.0000000	71dya1	0
118	sn g	u5k120	sp	re	0.0000000	0.0	0.0070000	0.0050000	137	cs g	u5k120	6.3500000	71dya1	0

118	sn g	u5k125	sp	re	0.0000000	0.0	0.0080000	0.0050000	137	cs g	u5k125	6.3500000	71dya1	0
118	sn g	u5k200	sp	re	0.0000000	0.0	0.1080000	0.0050000	137	cs g	u5k200	6.4000000	71dya1	0
118	sn g	u5k250	sp	re	0.0000000	0.0	0.1080000	0.0050000	137	cs g	u5k250	6.3500000	71dya1	0
118	sn g	u5k300	sp	re	0.0000000	0.0	0.1020000	0.0050000	137	cs g	u5k300	6.3500000	71dya1	0
118		n7n0.8	sp	cu	0.0000000	0.0	0.0110000	0.0000000	0			0.0000000	70kuz1	0
118		n7n1.1	sp	cu	0.0000000	0.0	0.0260000	0.0000000	0			0.0000000	70kuz1	0
118		n7n1.4	sp	cu	0.0000000	0.0	0.0160000	0.0000000	0			0.0000000	70kuz1	0
118		n7n1.7	sp	cu	0.0000000	0.0	0.0320000	0.0000000	0			0.0000000	70kuz1	0
118		n7n2.2	sp	cu	0.0000000	0.0	0.0330000	0.0000000	0			0.0000000	70kuz1	0

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0measured nuclide	fissile material	meas. tech.	meas. type	note value	updated err.	pct. value	published	error nuclide	normalizing material	normalizing value	normalizing no.	ref. treatment	special
119	u234f	cm	cu	0.0000000	0.0	0.0390000	0.0000000	0		0.0000000	72sid1	0	
119	u234f	es	cu	0.0597678	30.0	0.0600000	0.0000000	0		0.0000000	75mee1	0	
119	u237f	es	cu	0.0347439	30.0	0.0350000	0.0000000	0		0.0000000	72sid1	0	
119	pu240h	es	cu	1.0042513	30.0	0.0099000	0.0000000	0		0.0100000	77net1	0	
119	u234he	es	cu	1.1703067	30.0	1.1800000	0.0000000	0		0.0000000	75mee1	0	
119	u236he	es	cu	1.0223843	30.0	1.0300000	0.0000000	0		0.0000000	75mee1	0	
119	pu238f	es	cu	0.0728871	30.0	0.0730000	0.0000000	0		0.0000000	72sid1	0	
119	am241f	cm	cu	0.0000000	0.0	0.0011000	0.0000000	0		0.0100000	80sig1	0	
119	am241f	es	cu	0.0872917	30.0	0.0850000	0.0000000	0		0.0000000	72sid1	0	
119	am243f	es	cu	0.0898866	30.0	0.0900000	0.0000000	0		0.0000000	72sid1	0	
119	np238f	es	cu	0.0583430	30.0	0.0600000	0.0000000	0		0.0000000	72sid1	0	
119	cm242f	es	cu	0.0898576	30.0	0.0900000	0.0000000	0		0.0000000	72sid1	0	
119 in m	u8p570	rc	in	0.0000000	0.0	4.8000000	0.0000000	0	m barn	0.0000000	70hag1	0	
119 in m	u8p18g	rc	in	0.0000000	0.0	1.6100000	0.0000000	0	m barn	0.0000000	70hag1	0	
119 cd g	u8p570	rc	re	0.0000000	0.0	0.7400000	0.0000000	0	m barn	0.0000000	70hag1	0	
119 cd g	u8p18g	rc	re	0.0000000	0.0	0.7400000	0.0000000	0	m barn	0.0000000	70hag1	0	
120	u234f	cm	cu	0.0000000	0.0	0.0400000	0.0000000	0		0.0000000	72sid1	0	
120	u234f	es	cu	0.0646442	30.0	0.0650000	0.0000000	0		0.0000000	75mee1	0	
120	u237f	es	cu	0.0347439	30.0	0.0350000	0.0000000	0		0.0000000	72sid1	0	
120	pu240h	es	cu	1.0651150	30.0	0.0105000	0.0000000	0		0.0100000	77net1	0	
120	u234he	es	cu	1.1504710	30.0	1.1600000	0.0000000	0		0.0000000	75mee1	0	
120	u236he	es	cu	1.0521625	30.0	1.0600000	0.0000000	0		0.0000000	75mee1	0	
120	pu238f	es	cu	0.0748841	30.0	0.0750000	0.0000000	0		0.0000000	72sid1	0	

120		am241f	cm	cu		0.0000000	0.0	0.0011000	0.0000000	0				0.0100000	80sig1	0	
120		am241f	es	cu		0.0872917	30.0	0.0850000	0.0000000	0				0.0000000	72sid1	0	
120		am243f	es	cu		0.0848929	30.0	0.0850000	0.0000000	0				0.0000000	72sid1	0	
120		np238f	es	cu		0.0593153	30.0	0.0610000	0.0000000	0				0.0000000	72sid1	0	
120		cm242f	es	cu		0.0848656	30.0	0.0850000	0.0000000	0				0.0000000	72sid1	0	
121		u234f	cm	cu		0.0000000	0.0	0.1500000	0.0000000	0				0.0000000	72sid1	0	
121		u234f	es	cu		0.0696169	30.0	0.0700000	0.0000000	0				0.0000000	75mee1	0	
121		u237f	es	cu		0.0366172	30.0	0.0370000	0.0000000	0				0.0000000	72sid1	0	
121		pu240h	es	cu		1.1665545	30.0	0.0115000	0.0000000	0				0.0100000	77net1	0	
121		u234he	es	cu		1.3389103	30.0	1.3500000	0.0000000	0				0.0000000	75mee1	0	
121		u236he	es	cu		1.1613491	30.0	1.1700000	0.0000000	0				0.0000000	75mee1	0	
121		pu238f	es	cu		0.0778295	30.0	0.0780000	0.0000000	0				0.0000000	72sid1	0	
121		am241f	cm	cu		0.0000000	0.0	0.0011000	0.0000000	0				0.0100000	80sig1	0	
121		am241f	es	cu		0.0936115	30.0	0.0900000	0.0000000	0				0.0000000	72sid1	0	
121	sn g	am241f	cm	cu		0.0000000	0.0	0.0450000	0.0000000	0				0.0000000	69gun2	0	
121		am243f	es	cu		0.0848486	30.0	0.0850000	0.0000000	0				0.0000000	72sid1	0	
121		np238f	es	cu		0.0615004	30.0	0.0640000	0.0000000	0				0.0000000	72sid1	0	
121		cm242f	es	cu		0.0828384	30.0	0.0850000	0.0000000	0				0.0000000	72sid1	0	
121		u8n2.0	rc	cu		0.0000000	0.0	0.0140000	0.0000000	0				0.0000000	75fly4	0	
121		u8n8.0	rc	cu		0.0000000	0.0	0.1600000	0.0000000	0				0.0000000	75fly4	0	
121	sn g	p9v.06	rc	re		0.0000000	0.0	0.7940000	0.0310000	99	mo g	pu239t		1.0000000	60reg1	7	
121	sn g	p9v.22	rc	re		0.0000000	0.0	0.3550000	0.0400000	99	mo g	pu239t		1.0000000	60reg1	7	
121	sn g	p9v.30	rc	re		0.0000000	0.0	0.3050000	0.0290000	99	mo g	pu239t		1.0000000	60reg1	7	
121	sn g	p9v.36	rc	re		0.0000000	0.0	0.3110000	0.0240000	99	mo g	pu239t		1.0000000	60reg1	7	
121	sn g	p1nesm	rc	re		0.0000000	0.0	0.9900000	0.0780000	99	mo g	pu241t		1.0000000	60reg1	7	
121	sn g	p9v.06	rc	re		0.0000000	0.0	0.7940000	0.0300000	99	mo g	u235t		0.0000000	62bur1	7	
121	sn g	p9v.22	rc	re		0.0000000	0.0	0.3550000	0.0360000	99	mo g	u235t		0.0000000	62bur1	7	
121	sn g	p9v.30	rc	re		0.0000000	0.0	0.3050000	0.0260000	99	mo g	u235t		0.0000000	62bur1	7	
121	sn g	p9v.36	rc	re		0.0000000	0.0	0.3110000	0.0220000	99	mo g	u235t		0.0000000	62bur1	7	
121	sn g	p1nesm	rc	re		0.0000000	0.0	0.9890000	0.0840000	99	mo g	u235t		0.0000000	62bur1	7	
121	sn g	p9nesm	rc	re		0.0000000	0.0	0.4270000	0.0110000	99	mo g	pu239t		1.0000000	60reg1	7	
121	sn g	p9nesm	rc	re		0.0000000	0.0	0.4270000	0.0110000	99	mo g	u235t		0.0000000	62bur1	7	
121	sn g	t2n1.4	rc	re	le	0.0000000	0.0	0.0000500	30.0000000%	89	sr g	t2n1.4		1.0000000	76lis1	0	
121	sn g	t2n1.3	rc	re	le	0.0000000	0.0	0.0001000	30.0000000%	89	sr g	t2n1.3		1.0000000	76lis1	0	
121	sn g	t2n1.4	rc	re	le	0.0000000	0.0	0.0000340	30.0000000%	89	sr g	t2n1.4		1.0000000	76lis1	0	
121	sn g	t2n1.5	rc	re		0.0000000	0.0	0.0000280	30.0000000%	89	sr g	t2n1.5		1.0000000	76lis1	0	

121	sn g	t2n1.6	rc	re	0.0000000	0.0	0.0000170	30.0000000%	89	sr g	t2n1.6	1.0000000	76lis1	0
121	sn g	t2n2.0	rc	re	0.0000000	0.0	0.0001800	30.0000000%	89	sr g	t2n2.0	1.0000000	76lis1	0
121	sn g	t2n1.7	rc	re	0.0000000	0.0	0.0000250	30.0000000%	89	sr g	t2n1.7	1.0000000	76lis1	0
121	sn g	t2n3.0	rc	re	0.0000000	0.0	0.0016000	10.0000000%	89	sr g	t2n3.0	1.0000000	76lis1	0
121	sn g	t2n3.9	rc	re	0.0000000	0.0	0.0059000	10.0000000%	89	sr g	t2n3.9	1.0000000	76lis1	0
121	sn g	t2n13.	rc	re	0.0000000	0.0	0.1200000	10.0000000%	89	sr g	t2n13.	1.0000000	76lis1	0
121	sn g	u8n1.5	rc	cu	0.0000000	0.0	0.0136000	0.0014000	0			0.0000000	78nag1	0
121	sn g	u8n2.0	rc	cu	0.0000000	0.0	0.0139000	0.0014000	0			0.0000000	78nag1	0
121	sn g	u8n3.9	rc	cu	0.0000000	0.0	0.0290000	0.0030000	0			0.0000000	78nag1	0
121	sn g	u8n5.5	rc	cu	0.0000000	0.0	0.0910000	0.0090000	0			0.0000000	78nag1	0
121	sn g	u8n6.9	rc	cu	0.0000000	0.0	0.1220000	0.0120000	0			0.0000000	78nag1	0
121	sn g	u8n7.7	rc	cu	0.0000000	0.0	0.1510000	0.0150000	0			0.0000000	78nag1	0
121	sn g	t2n4.0	rc	cu	0.0000000	0.0	0.0630000	0.0100000	0			0.0000000	80gle1	0
121	sn g	t2n5.9	rc	cu	0.0000000	0.0	0.1900000	0.0300000	0			0.0000000	80gle1	0
121	sn g	t2n6.4	rc	cu	0.0000000	0.0	0.1400000	0.0300000	0			0.0000000	80gle1	0
121	sn g	t2n7.6	rc	cu	0.0000000	0.0	0.2100000	0.0400000	0			0.0000000	80gle1	0
122		u234f	cm	cu	0.0000000	0.0	0.1900000	0.0000000	0			0.0000000	72sid1	0
122		u234f	es	cu	0.0815512	30.0	0.0820000	0.0000000	0			0.0000000	75mee1	0
122		u237f	es	cu	0.0445344	30.0	0.0450000	0.0000000	0			0.0000000	72sid1	0
122		pu240h	es	cu	1.2477061	30.0	0.0123000	0.0000000	0			0.0100000	77net1	0
122		u234he	es	cu	1.2198960	30.0	1.2300000	0.0000000	0			0.0000000	75mee1	0
122		u236he	es	cu	1.1017928	30.0	1.1100000	0.0000000	0			0.0000000	75mee1	0
122		pu238f	es	cu	0.0818207	30.0	0.0820000	0.0000000	0			0.0000000	72sid1	0
122		am241f	cm	cu	0.0000000	0.0	0.0012000	0.0000000	0			0.0100000	80sig1	0
122		am241f	es	cu	0.0988122	30.0	0.0950000	0.0000000	0			0.0000000	72sid1	0
122		am243f	es	cu	0.0946857	30.0	0.0950000	0.0000000	0			0.0000000	72sid1	0
122		np238f	es	cu	0.0643832	30.0	0.0670000	0.0000000	0			0.0000000	72sid1	0
122		cm242f	es	cu	0.0925840	30.0	0.0950000	0.0000000	0			0.0000000	72sid1	0
123		u234f	cm	cu	0.0000000	0.0	0.2500000	0.0000000	0			0.0000000	72sid1	0
123		u234f	es	cu	0.0994527	30.0	0.1000000	0.0000000	0			0.0000000	75mee1	0
123		u237f	es	cu	0.0564102	30.0	0.0570000	0.0000000	0			0.0000000	72sid1	0
123		pu240h	es	cu	1.3694335	30.0	0.0135000	0.0000000	0			0.0100000	77net1	0
123		u234he	es	cu	1.2992388	30.0	1.3100000	0.0000000	0			0.0000000	75mee1	0
123		u236he	es	cu	1.1712752	30.0	1.1800000	0.0000000	0			0.0000000	75mee1	0
123		pu238f	es	cu	0.0927967	30.0	0.0930000	0.0000000	0			0.0000000	72sid1	0
123		am241f	cm	cu	0.0000000	0.0	0.0014000	0.0000000	0			0.0100000	80sig1	0

123		am241f	es	cu		0.1144141	30.0	0.1100000	0.0000000	0						0.0000000	72sid1	0	
123		am243f	es	cu		0.0996692	30.0	0.1000000	0.0000000	0						0.0000000	72sid1	0	
123		np238f	es	cu		0.0720707	30.0	0.0750000	0.0000000	0						0.0000000	72sid1	0	
123		cm242f	es	cu		0.1072026	30.0	0.1100000	0.0000000	0						0.0000000	72sid1	0	
124		u234f	cm	cu		0.0000000	0.0	0.3100000	0.0000000	0						0.0000000	72sid1	0	
124		u234f	es	cu		0.1193432	30.0	0.1200000	0.0000000	0						0.0000000	75mee1	0	
124		u237f	es	cu		0.0712550	30.0	0.0720000	0.0000000	0						0.0000000	72sid1	0	
124		pu240h	es	cu		1.5215928	30.0	0.0150000	0.0000000	0						0.0100000	77net1	0	
124		u234he	es	cu		1.4133873	30.0	1.4300000	0.0000000	0						0.0000000	75mee1	0	
124		u236he	es	cu		1.2903879	30.0	1.3000000	0.0000000	0						0.0000000	75mee1	0	
124		pu238f	es	cu		0.1097595	30.0	0.1100000	0.0000000	0						0.0000000	72sid1	0	
124		am241f	cm	cu		0.0000000	0.0	0.0020000	0.0000000	0						0.0100000	80sig1	0	
124		am241f	es	cu		0.1248153	30.0	0.1200000	0.0000000	0						0.0000000	72sid1	0	
124		am243f	es	cu		0.1196030	30.0	0.1200000	0.0000000	0						0.0000000	72sid1	0	
124		np238f	es	cu		0.0826411	30.0	0.0860000	0.0000000	0						0.0000000	72sid1	0	
124		cm242f	es	cu		0.1169483	30.0	0.1200000	0.0000000	0						0.0000000	72sid1	0	
125		u234f	rc	cu		0.1458689	20.4	0.1500000	0.0300000	140	ba g	u234f				5.9300000	77bla1	0	
125		u234f	cm	cu	x3	0.0000000	0.0	0.4000000	0.0000000	0						0.0000000	72sid1	0	
125		u234f	es	cu		0.1795074	30.0	0.1800000	0.0000000	0						0.0000000	75mee1	0	
125		u237f	es	cu		0.1191220	30.0	0.1200000	0.0000000	0						0.0000000	72sid1	0	
125		pu240h	es	cu		1.6940400	30.0	0.0167000	0.0000000	0						0.0100000	77net1	0	
125	sb g	pu240h	rc	cu		1.5926005	99.9	0.0157000	3.0000000	0						0.0100000	77net1	0	
125	sn g	pu240h	rc	cu		0.8561496	99.9	0.0084400	3.0000000	0						0.0100000	77net1	0	
125		u234he	es	cu		1.6105900	30.0	1.6200000	0.0000000	0						0.0000000	75mee1	0	
125		u236he	es	cu		1.4690570	30.0	1.4800000	0.0000000	0						0.0000000	75mee1	0	

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0measured nuclide		fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
125		pu238f	es	cu		0.1497681	30.0	0.1500000	0.0000000	0						0.0000000	72sid1	0	
125		am241f	cm	cu		0.0000000	0.0	0.0031000	0.0000000	0						0.0100000	80sig1	0	
125		am241f	es	cu		0.1622700	30.0	0.1600000	0.0000000	0						0.0000000	72sid1	0	
125		am241f	cm	cu	x3	0.0000000	0.0	0.0200000	99.0000000%	0						0.0000000	81koc1	36	
125	sb g	am241f	rc	cu		0.1906672	18.5	0.1880000	18.5000000%	0						0.0000000	86dic2	0	
125	sb g	am241f	rc	cu		0.2018233	17.4	0.1990000	17.4000000%	0						0.0000000	86dic2	0	
125		am243f	es	cu		0.1498759	30.0	0.1500000	0.0000000	0						0.0000000	72sid1	0	

125	sb	g	am243f	rc	cu	0.1288933	8.1	0.1290000	8.1000000%	0			0.0000000	86dic2	0
125			np238f	es	cu	0.1264097	30.0	0.1300000	0.0000000	0			0.0000000	72sid1	0
125			cm242f	es	cu	0.1559310	30.0	0.1600000	0.0000000	0			0.0000000	72sid1	0
125			u8n2.0	rc	cu	0.0000000	0.0	0.0200000	0.0000000	0			0.0000000	75fly4	0
125			u8n8.0	rc	cu	0.0000000	0.0	0.2000000	0.0000000	0			0.0000000	75fly4	0
125	sn	g	n7ndf	rc	re	0.0000000	0.0	4.7000000	0.0000000	99	mo	g	u235t	0.0000000	56for1	7
125	sn	g	p9v.06	rc	re	0.0000000	0.0	0.8620000	0.0300000	99	mo	g	pu239t	1.0000000	60reg1	7
125	sn	g	p9v.22	rc	re	0.0000000	0.0	0.5410000	0.0530000	99	mo	g	pu239t	1.0000000	60reg1	7
125	sn	g	p9v.30	rc	re	0.0000000	0.0	0.4880000	0.0170000	99	mo	g	pu239t	1.0000000	60reg1	7
125	sn	g	p9v.36	rc	re	0.0000000	0.0	0.5620000	0.0510000	99	mo	g	pu239t	1.0000000	60reg1	7
125	sn	g	p1nesm	rc	re	0.0000000	0.0	1.0050000	0.1500000	99	mo	g	pu241t	1.0000000	60reg1	7
125	sn	g	p9v.06	rc	re	0.0000000	0.0	0.8620000	0.0290000	99	mo	g	u235t	0.0000000	62bur1	7
125	sn	g	p9v.22	rc	re	0.0000000	0.0	0.5410000	0.0480000	99	mo	g	u235t	0.0000000	62bur1	7
125	sn	g	p9v.30	rc	re	0.0000000	0.0	0.4880000	0.0160000	99	mo	g	u235t	0.0000000	62bur1	7
125	sn	g	p9v.36	rc	re	0.0000000	0.0	0.5620000	0.0460000	99	mo	g	u235t	0.0000000	62bur1	7
125	sn	g	p1nesm	rc	re	0.0000000	0.0	1.0050000	0.1500000	99	mo	g	u235t	0.0000000	62bur1	7
125	sn	g	p9nesm	rc	re	0.0000000	0.0	0.5590000	0.0190000	99	mo	g	pu239t	1.0000000	60reg1	7
125	sn	g	p9nesm	rc	re	0.0000000	0.0	0.5590000	0.0180000	99	mo	g	u235t	0.0000000	62bur1	7
125	sn	g	t2n13.	rc	re	0.0000000	0.0	0.0500000	10.0000000%	89	sr	g	t2n13.	1.0000000	76lis1	0
125	sn	g	t2n4.8	rc	re	0.0000000	0.0	0.0047000	10.0000000%	89	sr	g	t2n4.8	1.0000000	76lis1	0
125	sn	g	t2n3.9	rc	re	0.0000000	0.0	0.0014000	10.0000000%	89	sr	g	t2n3.9	1.0000000	76lis1	0
125	sn	g	t2n3.0	rc	re	0.0000000	0.0	0.0006700	10.0000000%	89	sr	g	t2n3.0	1.0000000	76lis1	0
125	sn	g	t2n1.7	rc	re	0.0000000	0.0	0.0000310	30.0000000%	89	sr	g	t2n1.7	1.0000000	76lis1	0
125	sn	g	t2n2.0	rc	re	0.0000000	0.0	0.0001200	30.0000000%	89	sr	g	t2n2.0	1.0000000	76lis1	0
125	sn	g	t2n1.6	rc	re	0.0000000	0.0	0.0000290	30.0000000%	89	sr	g	t2n1.6	1.0000000	76lis1	0
125	sn	g	t2n1.5	rc	re	0.0000000	0.0	0.0000360	30.0000000%	89	sr	g	t2n1.5	1.0000000	76lis1	0
125	sn	g	t2n1.3	rc	re	le	0.0000000	0.0	0.0002100	10.0000000%	89	sr	g	t2n1.3	1.0000000	76lis1	0
125	sn	g	u8n1.5	rc	cu	0.0000000	0.0	0.0062000	0.0015000	0			0.0000000	78nag1	0
125	sn	g	u8n2.0	rc	cu	0.0000000	0.0	0.0082000	0.0020000	0			0.0000000	78nag1	0
125	sn	g	u8n3.9	rc	cu	0.0000000	0.0	0.0260000	0.0070000	0			0.0000000	78nag1	0
125	sn	g	u8n5.5	rc	cu	0.0000000	0.0	0.0330000	0.0080000	0			0.0000000	78nag1	0
125	sn	g	u8n6.9	rc	cu	0.0000000	0.0	0.0670000	0.0170000	0			0.0000000	78nag1	0
125	sn	g	u8n7.7	rc	cu	0.0000000	0.0	0.0910000	0.0220000	0			0.0000000	78nag1	0
126			u234f	cm	cu	0.0000000	0.0	0.5600000	0.0000000	0			0.0000000	72sid1	0
126	sb	m	u234f	es	cu	0.2530057	30.0	0.2537000	0.0000000	0			0.0000000	75mee1	0
126	sn	g	u234f	es	cu	0.2592885	30.0	0.2600000	0.0000000	0			0.0000000	75mee1	0

126	sb	m	u237f	es	cu		0.1764992	30.0	0.1778000	0.0000000	0				0.0000000	75mee1	0		
126	sn	g	u237f	es	cu		0.1786831	30.0	0.1800000	0.0000000	0				0.0000000	72sid1	0		
126	sb	g	pu240h	rc	in	x1	0.0000000	0.0	0.0036000	0.0001200	0				0.0100000	77net1	0		
126	sb	g	pu240h	rc	cu		0.3636644	99.9	0.0036000	3.2000000	0				0.0100000	77net1	0		
126	sb	m	pu240h	es	cu		1.6617444	30.0	1.6450000	0.0000000	0				0.0000000	75mee1	0		
126	sn	g	pu240h	es	cu		1.9395436	30.0	0.0192000	0.0000000	0				0.0100000	77net1	0		
126	sb	m	u234he	es	cu		1.7537536	30.0	1.7640000	0.0000000	0				0.0000000	75mee1	0		
126	sn	g	u234he	es	cu		1.8690798	30.0	1.8800000	0.0000000	0				0.0000000	75mee1	0		
126	sb	g	u236he	rc	fc		0.0245918	11.2	0.0960000	0.0100000	126	sb	g	u236he	1.0000000	72net1	0		
126	sb	m	u236he	es	cu		1.6262858	30.0	1.6384000	0.0000000	0				0.0000000	75mee1	0		
126	sn	g	u236he	es	cu		1.7866910	30.0	1.8000000	0.0000000	0				0.0000000	75mee1	0		
126	sb	m	pu238f	es	cu		0.2258528	30.0	0.2261000	0.0000000	0				0.0000000	75mee1	0		
126	sn	g	pu238f	es	cu		0.2297486	30.0	0.2300000	0.0000000	0				0.0000000	72sid1	0		
126			am241f	cm	cu		0.0000000	0.0	0.0047000	0.0000000	0				0.0100000	80sig1	0		
126			am241f	cm	cu	x3	0.0000000	0.0	0.1000000	99.0000000%	0				0.0000000	81koc1	36		
126	sb	m	am241f	es	cu		0.2660327	30.0	0.2608000	0.0000000	0				0.0000000	75mee1	0		
126	sn	g	am241f	es	cu		0.2448153	30.0	0.2400000	0.0000000	0				0.0000000	72sid1	0		
126	sb	m	am243f	es	cu		0.2275230	30.0	0.2279000	0.0000000	0				0.0000000	75mee1	0		
126	sn	g	am243f	es	cu		0.2296195	30.0	0.2300000	0.0000000	0				0.0000000	72sid1	0		
126	sb	m	np238f	es	cu		0.1824190	30.0	0.1876000	0.0000000	0				0.0000000	75mee1	0		
126	sn	g	np238f	es	cu		0.1847527	30.0	0.1900000	0.0000000	0				0.0000000	72sid1	0		
126	sb	m	cm242f	es	cu		0.2347762	30.0	0.2378000	0.0000000	0				0.0000000	75mee1	0		
126	sn	g	cm242f	es	cu		0.2566940	30.0	0.2600000	0.0000000	0				0.0000000	72sid1	0		
127			u234f	rc	cu		0.3895173	8.5	0.4000000	0.0300000	140	ba	g	u234f	5.9300000	77bla1	0		
127			u234f	cm	cu		0.0000000	0.0	0.7400000	0.0000000	0				0.0000000	72sid1	0		
127			u234f	es	cu		0.3794801	30.0	0.3800000	0.0000000	0				0.0000000	75mee1	0		
127			u237f	es	cu		0.2481709	30.0	0.2500000	0.0000000	0				0.0000000	72sid1	0		
127			pu240h	es	cu		2.2480613	30.0	0.0224000	0.0000000	0				0.0100000	77net1	0		
127	sb	g	pu240h	rc	cu		1.9570177	5.0	0.0195000	3.0000000%	0				0.0100000	77net1	0		
127	sn	g	pu240h	rc	cu		1.4351463	5.0	0.0143000	4.0000000%	0				0.0100000	77net1	0		
127			u234he	es	cu		2.1971630	30.0	2.2100000	0.0000000	0				0.0000000	75mee1	0		
127			u236he	es	cu		1.9554340	30.0	1.9700000	0.0000000	0				0.0000000	75mee1	0		
127			pu238f	es	cu		0.3694280	30.0	0.3700000	0.0000000	0				0.0000000	72sid1	0		
127			am241f	cm	cu		0.0000000	0.0	0.0077000	0.0000000	0				0.0100000	80sig1	0		
127			am241f	es	cu		0.3804986	30.0	0.3700000	0.0000000	0				0.0000000	72sid1	0		
127			am241f	cm	cu		0.0000000	0.0	0.3000000	50.0000000%	0				0.0000000	81koc1	36		

127	sb g	am241f	rc	cu	x1	0.0000000	0.0	0.0077100	3.0000000%	0			0.0100000	80sig1	0		
127		am243f	es	cu		0.3491812	30.0	0.3500000	0.0000000	0			0.0000000	72sid1	0		
127		np238f	es	cu		0.2722671	30.0	0.2800000	0.0000000	0			0.0000000	72sid1	0		
127		cm242f	es	cu		0.3731667	30.0	0.3800000	0.0000000	0			0.0000000	72sid1	0		
127	sb g	u8n4.8	rc	cu		0.0000000	0.0	0.2400000	20.8000000%	0			0.0000000	88afa1	0		
127	sb g	u8n4.8	rc	cu		0.0000000	0.0	0.3900000	10.3000000%	0			0.0000000	88afa1	0		
127	sb g	u8n6.0	rc	cu		0.0000000	0.0	0.2700000	22.2000000%	0			0.0000000	88afa1	0		
127	sb g	u8n6.0	rc	cu		0.0000000	0.0	0.3700000	10.8000000%	0			0.0000000	88afa1	0		
127	cs g	u8p730	ms	in		0.0000000	0.0	0.3750000	0.0160000	134	cs g	u8p730	1.0000000	59chu1	0		
127	sb g	n7ndf	rc	re		0.0000000	0.0	3.0000000	0.0000000	99	mo g	u235t	0.0000000	56for1	7		
127	sb g	u5v1.1	rc	cu		0.0000000	0.0	0.1100000	0.0000000	89	sr g	u5v1.1	4.8000000	57nas1	0		
127	sb g	u8d05.	rc	cu		0.0000000	0.0	15.0000000	1.0000000	0		u barn	35.0000000	57sug1	0		
127	sb g	u8d10.	rc	cu		0.0000000	0.0	1.5600000	0.0600000	0		m barn	0.8600000	57sug1	0		
127	sb g	u8d14.	rc	cu		0.0000000	0.0	7.3000000	0.0000000	0		m barn	4.3000000	57sug1	0		
127	sb g	u5n1.0	rc	re		0.0000000	0.0	0.0510000	0.0020000	140	ba g	u5n1.0	1.0000000	73man1	0		
127	sb g	u5n2.0	rc	cu		0.0000000	0.0	0.0760000	0.0040000	140	ba g	u5n2.0	1.0000000	73man1	0		
127	sb g	u5n4.0	rc	cu		0.0000000	0.0	0.1660000	0.0090000	140	ba g	u5n4.0	1.0000000	73man1	0		
127	sb g	u5n6.0	rc	cu		0.0000000	0.0	0.2400000	0.0090000	140	ba g	u5n6.0	1.0000000	73man1	0		
127	sb g	u5n9.0	rc	cu		0.0000000	0.0	0.1400000	0.0050000	140	ba g	u5n9.0	1.0000000	73man1	0		
127	sb g	u8n4.0	rc	cu		0.0000000	0.0	0.0400000	0.0020000	140	ba g	u8n4.0	1.0000000	73man1	0		
127	sb g	u8n6.0	rc	cu		0.0000000	0.0	0.0790000	0.0030000	140	ba g	u8n6.0	1.0000000	73man1	0		
127	sb g	u8n9.0	rc	cu		0.0000000	0.0	0.0730000	0.0030000	140	ba g	u8n9.0	1.0000000	73man1	0		
127	sb g	u8n2.0	rc	cu		0.0000000	0.0	0.0560000	0.0000000	0			0.0000000	75fly4	0		
127	sb g	u8n8.0	rc	cu		0.0000000	0.0	0.3700000	0.0000000	0			0.0000000	75fly4	0		
127	sb g	u8n8.0	rc	cu		0.0000000	0.0	0.5700000	0.0000000	0			0.0000000	75fly4	0		
127	sb g	t2n1.3	rc	re		0.0000000	0.0	0.0002000	10.0000000%	89	sr g	t2n1.3	1.0000000	76lis1	0		
127	sb g	t2n1.4	rc	re		0.0000000	0.0	0.0002300	10.0000000%	89	sr g	t2n1.4	1.0000000	76lis1	0		
127	sb g	t2n1.5	rc	re		0.0000000	0.0	0.0003300	10.0000000%	89	sr g	t2n1.5	1.0000000	76lis1	0		
127	sb g	t2n1.6	rc	re		0.0000000	0.0	0.0002700	10.0000000%	89	sr g	t2n1.6	1.0000000	76lis1	0		
127	sb g	t2n2.0	rc	re		0.0000000	0.0	0.0005500	30.0000000%	89	sr g	t2n2.0	1.0000000	76lis1	0		
127	sb g	t2n1.7	rc	re		0.0000000	0.0	0.0002300	10.0000000%	89	sr g	t2n1.7	1.0000000	76lis1	0		
127	sb g	u8n1.5	rc	cu		0.0000000	0.0	0.0830000	0.0290000	0			0.0000000	78nag1	0		
127	sb g	u8n2.0	rc	cu		0.0000000	0.0	0.0650000	0.0100000	0			0.0000000	78nag1	0		
127	sb g	u8n3.9	rc	cu		0.0000000	0.0	0.1900000	0.0200000	0			0.0000000	78nag1	0		
127	sb g	u8n3.9	rc	cu		0.0000000	0.0	0.1600000	0.0200000	0			0.0000000	78nag1	0		
127	sb g	u8n5.5	rc	cu		0.0000000	0.0	0.4000000	0.0400000	0			0.0000000	78nag1	0		

127 sb g u8n7.7 rc cu 0.0000000 0.0 0.5300000 0.0600000 0 0.0000000 78nag1 0
127 sb g u8n7.7 rc cu 0.0000000 0.0 0.4100000 0.0600000 0 0.0000000 78nag1 0
127 sb g t2n2.0 rc cu 0.0000000 0.0 0.0030000 0.0010000 0 0.0000000 80gle1 0
127 sb g t2n4.0 rc cu 0.0000000 0.0 0.0560000 0.0110000 0 0.0000000 80gle1 0
127 sb g t2n5.9 rc cu 0.0000000 0.0 0.2200000 0.0400000 0 0.0000000 80gle1 0
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0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

127 sb g t2n6.4 rc cu 0.0000000 0.0 0.1800000 0.0300000 0 0.0000000 80gle1 0
127 sb g t2n6.9 rc cu 0.0000000 0.0 0.1500000 0.0300000 0 0.0000000 80gle1 0
127 sb g t2n7.6 rc cu 0.0000000 0.0 0.2000000 0.0300000 0 0.0000000 80gle1 0
127 sb g t2n8.0 rc cu 0.0000000 0.0 0.2600000 0.0500000 0 0.0000000 80gle1 0
127 sb g p9v0.3 rc re 0.0000000 0.0 0.8190000 0.0560000 127 sb g pu239t 1.0000000 73van1 0
128 u234f cm cu 0.0000000 0.0 1.0000000 0.0000000 0 0.0000000 72sid1 0
128 u234f es cu 0.6474844 30.0 0.6500000 0.0000000 0 0.0000000 75mee1 0
128 u237f es cu 0.5739989 30.0 0.5800000 0.0000000 0 0.0000000 72sid1 0
128 pu240h es cu 2.6365671 30.0 0.0261000 0.0000000 0 0.0100000 77net1 0
128 sb g pu240h rc cu 1.0202807 5.0 0.0101000 3.0000000% 0 0.0100000 77net1 0
128 sn g pu240h rc cu x1 0.0000000 0.0 0.0099400 3.0000000% 0 0.0100000 77net1 0
128 sn g pu240h rc in 1.0041179 5.0 0.0099400 0.0003100 0 0.0100000 77net1 0
128 u234he es cu 2.5092170 30.0 2.5300000 0.0000000 0 0.0000000 75mee1 0
128 u236he es cu 2.2333637 30.0 2.2500000 0.0000000 0 0.0000000 75mee1 0
128 pu238f es cu 0.6589797 30.0 0.6600000 0.0000000 0 0.0000000 72sid1 0
128 am241f cm cu 0.0000000 0.0 0.0116000 0.0000000 0 0.0100000 80sig1 0
128 am241f es cu 0.6136755 30.0 0.5900000 0.0000000 0 0.0000000 72sid1 0
128 am241f cm cu 0.0000000 0.0 0.5000000 50.0000000% 0 0.0000000 81koc1 36
128 sn g am241f rc cu x4 0.0000000 0.0 0.6700000 0.0800000 0 0.0000000 83gud1 0
128 am243f es cu 0.5681143 30.0 0.5700000 0.0000000 0 0.0000000 72sid1 0
128 np238f es cu 0.5861753 30.0 0.6100000 0.0000000 0 0.0000000 72sid1 0
128 cm242f es cu 0.6042327 30.0 0.6200000 0.0000000 0 0.0000000 72sid1 0
128 sb g u8d10. rc cu 0.0000000 0.0 0.3500000 0.0200000 0 m barn 0.8600000 57sug1 0
128 sb g u8d14. rc cu 0.0000000 0.0 3.9000000 0.0000000 0 m barn 4.3000000 57sug1 0
128 sb g p9v0.3 rc re 0.0000000 0.0 0.9400000 0.0330000 128 sb g pu239t 1.0000000 73van1 0
129 u234f cm cu 0.0000000 0.0 1.4400000 0.0000000 0 0.0000000 72sid1 0
129 i g u234f rc cu 1.6164969 6.7 1.6600000 0.0900000 140 ba g u234f 5.9300000 77bla1 0

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129	sb	g	u8n8.0	rc	cu	0.0000000	0.0	1.2900000	0.0000000	0			0.0000000	75fly4	0
129	sb	g	t2n1.3	rc	re	0.0000000	0.0	0.0100000	10.0000000%	89	sr	g	t2n1.3	1.0000000	76lis1	0
129	sb	g	t2n1.4	rc	re	0.0000000	0.0	0.0092000	10.0000000%	89	sr	g	t2n1.4	1.0000000	76lis1	0
129	sb	g	t2n1.5	rc	re	0.0000000	0.0	0.0130000	10.0000000%	89	sr	g	t2n1.5	1.0000000	76lis1	0
129	sb	g	t2n1.6	rc	re	0.0000000	0.0	0.0086000	10.0000000%	89	sr	g	t2n1.6	1.0000000	76lis1	0
129	sb	g	t2n2.0	rc	re	0.0000000	0.0	0.0092000	30.0000000%	89	sr	g	t2n2.0	1.0000000	76lis1	0
129	sb	g	t2n1.7	rc	re	0.0000000	0.0	0.0070000	10.0000000%	89	sr	g	t2n1.7	1.0000000	76lis1	0
129	sb	g	u8n1.5	rc	cu	0.0000000	0.0	0.4300000	0.0600000	0			0.0000000	78nag1	0
129	sb	g	u8n2.0	rc	cu	0.0000000	0.0	0.4000000	0.0500000	0			0.0000000	78nag1	0
129	sb	g	u8n3.9	rc	cu	0.0000000	0.0	0.7800000	0.0700000	0			0.0000000	78nag1	0
129	sb	g	u8n3.9	rc	cu	0.0000000	0.0	0.6100000	0.0900000	0			0.0000000	78nag1	0
129	sb	g	u8n5.5	rc	cu	0.0000000	0.0	1.1000000	0.0700000	0			0.0000000	78nag1	0
129	sb	g	u8n6.9	rc	cu	0.0000000	0.0	0.8900000	0.0600000	0			0.0000000	78nag1	0
129	sb	g	u8n6.9	rc	cu	0.0000000	0.0	0.9200000	0.1400000	0			0.0000000	78nag1	0
129	sb	g	u8n7.7	rc	cu	0.0000000	0.0	1.2300000	0.0800000	0			0.0000000	78nag1	0
129	sb	g	u8n7.7	rc	cu	0.0000000	0.0	0.9200000	0.1400000	0			0.0000000	78nag1	0
129	sb	g	t2n2.0	rc	cu	0.0000000	0.0	0.1100000	0.0200000	0			0.0000000	80gle1	0
129	sb	g	t2n3.0	rc	cu	0.0000000	0.0	0.0900000	0.0200000	0			0.0000000	80gle1	0
129	sb	g	t2n3.0	rc	cu	0.0000000	0.0	0.2000000	0.0500000	0			0.0000000	80gle1	0
129	sb	g	t2n4.0	rc	cu	0.0000000	0.0	0.3200000	0.0600000	0			0.0000000	80gle1	0
129	sb	g	t2n5.9	rc	cu	0.0000000	0.0	0.6400000	0.1300000	0			0.0000000	80gle1	0
129	sb	g	t2n5.9	rc	cu	0.0000000	0.0	0.9000000	0.1300000	0			0.0000000	80gle1	0
129	sb	g	t2n6.4	rc	cu	0.0000000	0.0	0.4700000	0.0700000	0			0.0000000	80gle1	0
129	sb	g	t2n6.4	rc	cu	0.0000000	0.0	0.6100000	0.0900000	0			0.0000000	80gle1	0
129	sb	g	t2n6.9	rc	cu	0.0000000	0.0	0.3700000	0.0700000	0			0.0000000	80gle1	0
129	sb	g	t2n6.9	rc	cu	0.0000000	0.0	0.5800000	0.1000000	0			0.0000000	80gle1	0
129	sb	g	t2n7.6	rc	cu	0.0000000	0.0	0.4800000	0.0700000	0			0.0000000	80gle1	0
129	sb	g	t2n7.6	rc	cu	0.0000000	0.0	0.5100000	0.0700000	0			0.0000000	80gle1	0
129	sb	g	t2n8.0	rc	cu	0.0000000	0.0	0.4000000	0.0800000	0			0.0000000	80gle1	0
129	sb	g	t2n8.0	rc	cu	0.0000000	0.0	0.6200000	0.1100000	0			0.0000000	80gle1	0
129	sb	g	p9v0.3	rc	re	0.0000000	0.0	0.9980000	0.0250000	129	sb	g	pu239t	1.0000000	73van1	0
130			u234f	es	cu	2.5401313	30.0	2.5500000	0.0000000	0			0.0000000	72sid1	0
130			u237f	es	cu	2.0294463	30.0	2.0400000	0.0000000	0			0.0000000	72sid1	0
130	i	g	pu240h	rc	cu	0.2111274	5.0	0.0020900	4.5000000%	0			0.0100000	77net1	0
130	i	g	pu240h	rc	in	0.2111274	5.0	0.0020900	0.0000900	0			0.0100000	77net1	0
130			pu240h	es	cu	3.7881711	30.0	0.0375000	0.0000000	0			0.0100000	77net1	0

130 sb g pu240h rc cu 1.7274060 5.0 0.0171000 5.0000000% 0 0.0100000 77net1 0
130 u234he es cu 3.4216595 30.0 3.4500000 0.0000000 0 0.0000000 75mee1 0
130 u236he es cu 3.3424330 30.0 3.3600000 0.0000000 0 0.0000000 75mee1 0
130 pu238f es cu 2.2265526 30.0 2.2300000 0.0000000 0 0.0000000 72sid1 0
130 am241f cm cu 0.0000000 0.0 0.0287000 0.0000000 0 0.0100000 80sig1 0
130 am241f es cu 1.8819257 30.0 1.8300000 0.0000000 0 0.0000000 72sid1 0
130 am241f cm cu 0.0000000 0.0 2.4000000 40.0000000% 0 0.0000000 81koc1 36
130 sb m am241f rc cu 1.1414959 7.2 1.1100000 0.0800000 0 0.0000000 83gud1 0
130 am243f es cu 1.7359296 30.0 1.7400000 0.0000000 0 0.0000000 72sid1 0
130 np238f es cu 2.0906227 30.0 2.1500000 0.0000000 0 0.0000000 72sid1 0
130 cm242f es cu 1.8854736 30.0 1.9200000 0.0000000 0 0.0000000 72sid1 0
130 xe g np238t ms cu 0.0000000 0.0 0.0005400 0.0001800 0 0.0000000 70tra1 0
131 u234f rc cu 3.7491042 6.4 3.8500000 0.0700000 140 ba g u234f 5.9300000 77bla1 0
131 u234f es cu 3.4452794 30.0 3.4500000 0.0000000 0 0.0000000 72sid1 0
131 u237f es cu 3.2132900 30.0 3.2300000 0.0000000 0 0.0000000 72sid1 0
131 pu240h es cu 4.5161946 30.0 0.0450000 0.0000000 0 0.0100000 77net1 0
131 i g pu240h rc cu 4.4660147 5.0 0.0445000 3.2000000% 0 0.0100000 77net1 0
131 te m pu240h rc cu 1.5455422 5.0 0.0154000 3.0000000% 0 0.0100000 77net1 0
131 u234he es cu 3.7083339 30.0 3.7300000 0.0000000 0 0.0000000 75mee1 0
131 u236he es cu 3.8099757 30.0 3.8300000 0.0000000 0 0.0000000 75mee1 0
131 pu238f es cu 3.9157150 30.0 3.9200000 0.0000000 0 0.0000000 72sid1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

131 am241f cm cu 0.0000000 0.0 0.0393000 0.0000000 0 0.0100000 80sig1 0
131 am241f es cu 3.3737638 30.0 3.3500000 0.0000000 0 0.0000000 72sid1 0
131 am241f cm cu 0.0000000 0.0 4.7100000 40.0000000% 0 0.0000000 81koc1 36
131 i g am241f cm cu 0.0000000 0.0 2.9000000 0.0000000 0 0.0000000 69gun2 0
131 i g am241f rc cu 4.1794387 5.0 0.0415000 3.0000000% 0 0.0100000 80sig1 0
131 te m am241f rc cu 1.2588671 23.2 1.2500000 0.2900000 0 0.0000000 83gud1 0
131 sb g am241f rc cu x4 0.0000000 0.0 1.9700000 0.3000000 0 0.0000000 83gud1 0
131 am243f es cu 3.1947067 30.0 3.2000000 0.0000000 0 0.0000000 72sid1 0
131 np238f es cu 3.6440677 30.0 3.6800000 0.0000000 0 0.0000000 72sid1 0
131 xe g np238f ms re 3.4396782 11.3 0.4170000 0.0020000 132 xe g np238f 0.6180000 84tep1 0
131 xe g np238f ms re 3.4902846 12.0 15.2000000 0.6000000 132 xe g np238f 22.2000000 72pet2 0

131		cm242f	es	cu	3.4554956	30.0	3.5000000	0.0000000	0			0.0000000	72sid1	0
131	i g	u8n1.7	rc	cu	0.0000000	0.0	3.5700000	10.4000000%	0			0.0000000	88afa1	0
131	i g	u8n2.2	rc	cu	0.0000000	0.0	3.5300000	10.5000000%	0			0.0000000	88afa1	0
131	i g	u8n3.7	rc	cu	0.0000000	0.0	3.6500000	10.1000000%	0			0.0000000	88afa1	0
131	i g	u8n4.8	rc	cu	0.0000000	0.0	3.8600000	10.1000000%	0			0.0000000	88afa1	0
131	i g	u8n6.0	rc	cu	0.0000000	0.0	3.7200000	10.2000000%	0			0.0000000	88afa1	0
131	cs g	u8p730	ms	in	0.0000000	0.0	1.0820000	0.0130000	134	cs g	u8p730	1.0000000	59chu1	0
131	cs g	u8c100	ms	in	0.0000000	0.0	0.1920000	0.0290000	134	cs g	u8c100	1.0000000	59chu1	0
131	cs g	u38a46	ms	fi	0.0000000	0.0	0.0000970	0.0000070	131		u38a46	1.0000000	59chu1	0
131	cs g	u35a46	ms	fi	0.0000000	0.0	0.0038000	0.0000900	131		u35a46	1.0000000	59chu1	0
131	i g	t2nlid	rc	cu	0.0000000	0.0	2.0000000	1.0000000	89	sr g	th232f	0.0000000	53tur1	7
131	i g	t2d14.	rc	cu	0.0000000	0.0	0.3600000	0.0000000	89	sr g	t2d14.	1.0000000	57ale1	0
131	i g	u8d 5.	rc	cu	0.0000000	0.0	0.4800000	0.0000000	140	ba g	u8d10.	1.0000000	57ale1	0
131	i g	u8d14.	rc	cu	0.0000000	0.0	0.6200000	0.0100000	140	ba g	u8d14.	1.0000000	57ale1	0
131	i g	u8d05.	rc	cu	0.0000000	0.0	128.0000000	1.0000000	0		u barn	35.0000000	57sug1	0
131	i g	u8d10.	rc	cu	0.0000000	0.0	4.2000000	0.1000000	0		m barn	0.8600000	57sug1	0
131	i g	u8d14.	rc	cu	0.0000000	0.0	19.0000000	2.0000000	0		m barn	4.3000000	57sug1	0
131	i g	u5necd	rc	cu	0.0000000	0.0	3.1000000	0.3000000	0			0.0000000	67rid1	0
131	i g	t2p9.5	rc	cu	0.0000000	0.0	0.4580000	0.0140000	0		m barn	0.2100000	68fre1	0
131	i g	t2p11.	rc	cu	0.0000000	0.0	4.5800000	0.9160000	0		m barn	0.7500000	68fre1	0
131	i g	t2d12.	rc	cu	0.0000000	0.0	3.5700000	0.0000000	0		m barn	0.6600000	68fre1	0
131	i g	u8n3.	rc	cu	0.0000000	0.0	3.1000000	0.0600000	99	mo g	u8n3.	6.3200000	70lyl1	0
131	i g	u5k446	rc	cu	0.0000000	0.0	0.5880000	0.0050000	140	ba g	u5k446	1.0000000	72lar1	0
131	i g	u5k442	rc	cu	0.0000000	0.0	0.5910000	0.0050000	140	ba g	u5k442	1.0000000	72lar1	0
131	i g	u5k315	rc	cu	0.0000000	0.0	0.5780000	0.0050000	140	ba g	u5k315	1.0000000	72lar1	0
131	i g	u5k293	rc	cu	0.0000000	0.0	0.5960000	0.0050000	140	ba g	u5k293	1.0000000	72lar1	0
131	i g	u5k132	rc	cu	0.0000000	0.0	0.5740000	0.0050000	140	ba g	u5k132	1.0000000	72lar1	0
131	i g	u5v370	rc	cu	0.0000000	0.0	0.5440000	0.0000000	140	ba g	u5v370	1.0000000	72lar1	0
131	i g	u5n1.0	rc	re	0.0000000	0.0	0.6800000	0.0400000	140	ba g	u5n1.0	1.0000000	73man1	0
131	i g	u5n2.0	rc	cu	0.0000000	0.0	0.7500000	0.0400000	140	ba g	u5n2.0	1.0000000	73man1	0
131	i g	u5n4.0	rc	cu	0.0000000	0.0	0.8700000	0.0600000	140	ba g	u5n4.0	1.0000000	73man1	0
131	i g	u5n6.0	rc	cu	0.0000000	0.0	0.8900000	0.0600000	140	ba g	u5n6.0	1.0000000	73man1	0
131	i g	u5n9.0	rc	cu	0.0000000	0.0	0.7800000	0.0500000	140	ba g	u5n9.0	1.0000000	73man1	0
131	i g	u8n4.0	rc	cu	0.0000000	0.0	0.7400000	0.0500000	140	ba g	u8n4.0	1.0000000	73man1	0
131	i g	u8n6.0	rc	cu	0.0000000	0.0	0.7800000	0.0500000	140	ba g	u8n6.0	1.0000000	73man1	0
131	i g	u8n9.0	rc	cu	0.0000000	0.0	0.7400000	0.0400000	140	ba g	u8n9.0	1.0000000	73man1	0

131	i	g	u8n2.0	rc	cu	0.0000000	0.0	3.3700000	0.0000000	0			0.0000000	75fly4	0
131	i	g	u8n2.0	rc	cu	0.0000000	0.0	2.4600000	0.0000000	0			0.0000000	75fly4	0
131	i	g	u8n8.0	rc	cu	0.0000000	0.0	2.3000000	0.0000000	0			0.0000000	75fly4	0
131	i	g	u8n8.0	rc	cu	0.0000000	0.0	4.3300000	0.0000000	0			0.0000000	75fly4	0
131	i	g	t2n11.	rc	cu	0.0000000	0.0	2.3000000	0.0000000	0			0.0000000	53tur1	0
131	i	g	u8n1.5	rc	cu	0.0000000	0.0	3.2400000	0.1300000	0			0.0000000	78nag1	0
131	i	g	u8n2.0	rc	cu	0.0000000	0.0	3.2500000	0.0900000	0			0.0000000	78nag1	0
131	i	g	u8n3.9	rc	cu	0.0000000	0.0	3.3600000	0.1000000	0			0.0000000	78nag1	0
131	i	g	u8n5.5	rc	cu	0.0000000	0.0	3.7200000	0.1400000	0			0.0000000	78nag1	0
131	i	g	u8n6.9	rc	cu	0.0000000	0.0	3.4800000	0.1300000	0			0.0000000	78nag1	0
131	i	g	u8n7.7	rc	cu	0.0000000	0.0	3.8900000	0.1400000	0			0.0000000	78nag1	0
131	i	g	t2n2.0	rc	cu	0.0000000	0.0	1.4000000	0.0700000	0			0.0000000	80gle1	0
131	i	g	t2n3.0	rc	cu	0.0000000	0.0	1.8700000	0.0800000	0			0.0000000	80gle1	0
131	i	g	t2n5.9	rc	cu	0.0000000	0.0	2.7500000	0.1600000	0			0.0000000	80gle1	0
131	i	g	t2n6.4	rc	cu	0.0000000	0.0	2.0100000	0.0900000	0			0.0000000	80gle1	0
131	i	g	t2n6.9	rc	cu	0.0000000	0.0	1.6700000	0.1000000	0			0.0000000	80gle1	0
131	i	g	t2n7.6	rc	cu	0.0000000	0.0	1.7600000	0.0800000	0			0.0000000	80gle1	0
131	i	g	t2n8.0	rc	cu	0.0000000	0.0	1.6900000	0.0900000	0			0.0000000	80gle1	0
131	i	g	t2n3.0	rc	cu	0.0000000	0.0	1.1500000	0.1400000	99	mo	g	th232h	3.1000000	64bro1	0
131	te	m	t32a33	rc	re	0.0000000	0.0	3.3000000	0.5000000	131	te	g	t32a33	1.0000000	65sar1	0
131	te	m	t32d18	rc	re	0.0000000	0.0	2.7000000	0.5000000	131	te	g	t32d18	1.0000000	65sar1	0
131	te	m	u38a33	rc	re	0.0000000	0.0	5.0000000	1.0000000	131	te	g	u38a33	1.0000000	65sar1	0
131	te	m	u38d18	rc	re	0.0000000	0.0	3.3000000	0.5000000	131	te	g	u38d18	1.0000000	65sar1	0
132			u234f	rc	cu	4.3333802	6.4	4.4500000	0.0600000	140	ba	g	u234f	5.9300000	77bla1	0
132			u234f	es	cu	5.0430902	30.0	5.0500000	0.0000000	0				0.0000000	72sid1	0
132			u237f	es	cu	4.7552712	30.0	4.7800000	0.0000000	0				0.0000000	72sid1	0
132	cs	g	pu240h	rc	cu	0.0017122	60.0	0.0000170	60.0000000%	0				0.0100000	77net1	0
132	cs	g	pu240h	rc	in	0.0017122	58.8	0.0000170	0.0000100	0				0.0100000	77net1	0
132			pu240h	es	cu	5.1971396	30.0	0.0516000	0.0000000	0				0.0100000	77net1	0
132	te	g	pu240h	rc	cu	3.5755515	5.0	0.0355000	3.0000000%	0				0.0100000	77net1	0
132	te	g	u234he	rc	cu	4.1600942	10.1	0.0430000	0.0040000	147	nd	g	u234he	0.0132000	72net1	0
132	te	g	u236he	rc	cu	4.5325199	11.4	0.0470000	0.0050000	147	nd	g	u236he	0.0179000	72net1	0
132			pu238f	es	cu	5.3041955	30.0	5.3100000	0.0000000	0				0.0000000	72sid1	0
132			am241f	cm	cu	0.0000000	0.0	0.0470000	0.0000000	0				0.0100000	80sig1	0
132			am241f	es	cu	4.8885547	30.0	4.8400000	0.0000000	0				0.0000000	72sid1	0
132			am241f	cm	cu	0.0000000	0.0	5.8000000	30.0000000%	0				0.0000000	81koc1	36

132	i	g	am241f	rc	in	0.2828089	45.0	0.2800000	45.0000000%	0			0.0000000	87red3	0
132	te	g	am241f	cm	cu	0.0000000	0.0	4.1900000	0.0000000	0			0.0000000	69gun2	0
132	te	g	am241f	rc	cu	3.9391247	5.0	0.0390000	3.0000000%	0			0.0100000	80sig1	0
132	te	g	am241f	rc	cu	4.5047425	13.5	4.4600000	0.6000000	0			0.0000000	83gud1	0
132	te	g	am241f	rc	fc	3.9679806	9.7	0.9090000	0.0500000	132	am241f		1.0000000	87red3	0
132			am243f	es	cu	4.7221758	30.0	4.7300000	0.0000000	0			0.0000000	72sid1	0
132			np238f	es	cu	5.1479187	30.0	5.2200000	0.0000000	0			0.0000000	72sid1	0
132	xe	g	np238f	ms	re	x1	0.0000000	0.0	0.6180000	0.0020000	132	xe g	np238f	0.6180000	84tep1	0
132	xe	g	np238f	ms	re	x1	0.0000000	0.0	22.2000000	0.8000000	132	xe g	np238f	22.2000000	72pet2	0
132			cm242f	es	cu	4.8870581	30.0	4.9500000	0.0000000	0			0.0000000	72sid1	0
132	i	g	u8n1.7	rc	cu	0.0000000	0.0	4.6200000	12.6000000%	0			0.0000000	88afa1	0
132	i	g	u8n1.7	rc	cu	0.0000000	0.0	4.9000000	10.2000000%	0			0.0000000	88afa1	0
132	i	g	u8n1.7	rc	cu	0.0000000	0.0	5.0100000	14.2000000%	0			0.0000000	88afa1	0
132	i	g	u8n1.7	rc	cu	0.0000000	0.0	5.4700000	10.8000000%	0			0.0000000	88afa1	0
132	i	g	u8n2.2	rc	cu	0.0000000	0.0	5.3800000	11.0000000%	0			0.0000000	88afa1	0
132	i	g	u8n2.2	rc	cu	0.0000000	0.0	5.6900000	10.4000000%	0			0.0000000	88afa1	0
132	i	g	u8n2.2	rc	cu	0.0000000	0.0	6.0500000	10.2000000%	0			0.0000000	88afa1	0
132	i	g	u8n2.2	rc	cu	0.0000000	0.0	6.1400000	11.2000000%	0			0.0000000	88afa1	0
132	i	g	u8n3.7	rc	cu	0.0000000	0.0	4.5900000	11.6000000%	0			0.0000000	88afa1	0
132	i	g	u8n3.7	rc	cu	0.0000000	0.0	4.6900000	11.3000000%	0			0.0000000	88afa1	0
132	i	g	u8n3.7	rc	cu	0.0000000	0.0	6.0800000	10.4000000%	0			0.0000000	88afa1	0
132	i	g	u8n4.8	rc	cu	0.0000000	0.0	4.3100000	10.7000000%	0			0.0000000	88afa1	0
132	i	g	u8n4.8	rc	cu	0.0000000	0.0	4.3500000	10.6000000%	0			0.0000000	88afa1	0
132	i	g	u8n4.8	rc	cu	0.0000000	0.0	4.8900000	10.4000000%	0			0.0000000	88afa1	0
132	i	g	u8n4.8	rc	cu	0.0000000	0.0	5.1800000	10.2000000%	0			0.0000000	88afa1	0
132	i	g	u8n6.0	rc	cu	0.0000000	0.0	4.4800000	10.3000000%	0			0.0000000	88afa1	0
132	i	g	u8n6.0	rc	cu	0.0000000	0.0	4.5600000	10.3000000%	0			0.0000000	88afa1	0
132	i	g	u8n6.0	rc	cu	0.0000000	0.0	4.7400000	10.1000000%	0			0.0000000	88afa1	0
132	i	g	u8n6.0	rc	cu	0.0000000	0.0	5.3200000	10.2000000%	0			0.0000000	88afa1	0
132	cs	g	u8p730	ms	in	0.0000000	0.0	1.0830000	0.0280000	134	cs g	u8p730	1.0000000	59chu1	0
132	cs	g	u8c100	ms	in	0.0000000	0.0	0.3990000	0.0360000	134	cs g	u8c100	1.0000000	59chu1	0
132	cs	g	u38a46	ms	fi	0.0000000	0.0	0.0008100	0.0000200	132	u38a46		1.0000000	59chu1	0
132	cs	g	u35a46	ms	fi	0.0000000	0.0	0.0175000	0.0006400	132	u35a46		1.0000000	59chu1	0
132	cs	g	u35a24	ms	fi	0.0000000	0.0	0.0016700	0.0000900	132	u35a24		1.0000000	59chu1	0
132	cs	g	u8p28g	rc	re	0.0000000	0.0	2.1000000	0.1003000	136	cs g	u8p28g	2.6400000	71fra1	0
132	cs	g	t2p28g	rc	re	0.0000000	0.0	1.3000000	0.0603000	136	cs g	t2p28g	1.1300000	71fra1	0

132 xe g t2a44. ms re 0.0000000 0.0 1.0210000 0.0000000 131 xe g t2a44. 1.0000000 68mch2 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

132 i g t2d14. rc cu 0.0000000 0.0 0.8200000 0.0000000 89 sr g t2d14. 1.0000000 57ale1 0
132 i g u8d 5. rc cu 0.0000000 0.0 0.9600000 0.0000000 140 ba g u8d10. 1.0000000 57ale1 0
132 i g u8d14. rc cu 0.0000000 0.0 1.0700000 0.1000000 140 ba g u8d14. 1.0000000 57ale1 0
132 i g u8d05. rc cu 0.0000000 0.0 172.0000000 3.0000000 0 u barn 35.0000000 57sug1 0
132 i g u8d10. rc cu 0.0000000 0.0 4.2000000 0.2000000 0 m barn 0.8600000 57sug1 0
132 i g u8d14. rc cu 0.0000000 0.0 20.6000000 1.1000000 0 m barn 4.3000000 57sug1 0
132 i g u5n1.0 rc re 0.0000000 0.0 1.0100000 0.0500000 140 ba g u5n1.0 1.0000000 73man1 0
132 i g u5n2.0 rc cu 0.0000000 0.0 0.9900000 0.0400000 140 ba g u5n2.0 1.0000000 73man1 0
132 i g u5n4.0 rc cu 0.0000000 0.0 1.0700000 0.0600000 140 ba g u5n4.0 1.0000000 73man1 0
132 i g u5n6.0 rc cu 0.0000000 0.0 1.2100000 0.0600000 140 ba g u5n6.0 1.0000000 73man1 0
132 i g u5n9.0 rc cu 0.0000000 0.0 1.0400000 0.0500000 140 ba g u5n9.0 1.0000000 73man1 0
132 i g u8n4.0 rc cu 0.0000000 0.0 0.8900000 0.0500000 140 ba g u8n4.0 1.0000000 73man1 0
132 i g u8n6.0 rc cu 0.0000000 0.0 0.9600000 0.0400000 140 ba g u8n6.0 1.0000000 73man1 0
132 i g u8n9.0 rc cu 0.0000000 0.0 0.8600000 0.0400000 140 ba g u8n9.0 1.0000000 73man1 0
132 i g t2n11. rc cu 0.0000000 0.0 1.8000000 0.0000000 0 0.0000000 53tur1 0
132 i g u8n1.5 rc cu 0.0000000 0.0 5.4000000 0.1400000 0 0.0000000 78nag1 0
132 i g u8n2.0 rc cu 0.0000000 0.0 5.2300000 0.1400000 0 0.0000000 78nag1 0
132 i g u8n3.9 rc cu 0.0000000 0.0 4.8900000 0.1200000 0 0.0000000 78nag1 0
132 i g u8n5.5 rc cu 0.0000000 0.0 5.0500000 0.1500000 0 0.0000000 78nag1 0
132 i g u8n6.9 rc cu 0.0000000 0.0 5.1000000 0.1300000 0 0.0000000 78nag1 0
132 i g u8n7.7 rc cu 0.0000000 0.0 5.2200000 0.1300000 0 0.0000000 78nag1 0
132 i g t2n3.0 rc cu 0.0000000 0.0 2.5000000 0.1900000 99 mo g th232h 3.1000000 64bro1 0
132 te g t2nlid rc cu 0.0000000 0.0 0.8000000 0.3000000 89 sr g th232f 0.0000000 53tur1 7
132 te g n7ndf rc re 0.0000000 0.0 1.1500000 0.0000000 99 mo g u235t 0.0000000 56for1 7
132 te g u5necd rc cu 0.0000000 0.0 4.8000000 0.5000000 0 0.0000000 67rid1 0
132 te g t2n3.0 rc cu 0.0000000 0.0 3.1200000 0.3000000 99 mo g t2n3.0 2.7800000 68lyl1 0
132 te g u8n2.0 rc cu 0.0000000 0.0 4.5900000 0.0000000 0 0.0000000 75fly4 0
132 te g u8n2.0 rc cu 0.0000000 0.0 4.1600000 0.0000000 0 0.0000000 75fly4 0
132 te g u8n8.0 rc cu 0.0000000 0.0 4.3500000 0.0000000 0 0.0000000 75fly4 0
132 te g u8n8.0 rc cu 0.0000000 0.0 5.0600000 0.0000000 0 0.0000000 75fly4 0
132 te g t2n2.0 rc cu 0.0000000 0.0 2.7400000 0.0800000 0 0.0000000 80gle1 0

132	te	g	t2n3.0	rc	cu		0.0000000	0.0	3.2500000	0.0900000	0			0.0000000	80gle1	0
132	te	g	t2n5.9	rc	cu		0.0000000	0.0	3.8000000	0.1300000	0			0.0000000	80gle1	0
132	te	g	t2n6.4	rc	cu		0.0000000	0.0	2.9800000	0.1500000	0			0.0000000	80gle1	0
132	te	g	t2n6.9	rc	cu		0.0000000	0.0	2.7200000	0.1100000	0			0.0000000	80gle1	0
132	te	g	t2n7.6	rc	cu		0.0000000	0.0	2.7800000	0.1100000	0			0.0000000	80gle1	0
132	te	g	t2n8.0	rc	cu		0.0000000	0.0	2.7700000	0.0900000	0			0.0000000	80gle1	0
133			u234f	rc	cu		6.5270335	6.4	6.7000000	0.1100000	140	ba	g	u234f	5.9300000	77bla1	0
133			u234f	es	cu		5.0850753	30.0	5.0900000	0.0000000	0			0.0000000	72sid1	0
133			u237f	es	cu		5.4699168	30.0	5.4900000	0.0000000	0			0.0000000	72sid1	0
133			pu240h	es	cu		5.3190736	30.0	0.0530000	0.0000000	0			0.0100000	77net1	0
133	i	g	pu240h	rc	cu		5.3993615	5.0	0.0538000	3.4000000%	0			0.0100000	77net1	0
133			u234he	es	cu		5.0107246	30.0	5.0400000	0.0000000	0			0.0000000	75mee1	0
133			u236he	es	cu		5.3899995	30.0	5.4100000	0.0000000	0			0.0000000	75mee1	0
133			pu238f	es	cu		5.8735725	30.0	5.8800000	0.0000000	0			0.0000000	72sid1	0
133			am241f	cm	cu		0.0000000	0.0	0.0530000	0.0000000	0			0.0100000	80sig1	0
133			am241f	es	cu		5.7084908	30.0	5.6800000	0.0000000	0			0.0000000	72sid1	0
133			am241f	cm	cu		0.0000000	0.0	6.8600000	20.0000000%	0			0.0000000	81koc1	36
133	xe	g	am241f	rc	cu		5.7587416	5.0	0.0573000	3.0000000%	0			0.0100000	80sig1	0
133	i	g	am241f	cm	cu		0.0000000	0.0	4.0000000	0.0000000	0			0.0000000	69gun2	0
133	i	g	am241f	rc	cu		5.8391428	5.0	0.0581000	3.0000000%	0			0.0100000	80sig1	0
133	i	g	am241f	rc	cu	x4	0.0000000	0.0	7.1600000	0.5600000	0			0.0000000	83gud1	0
133	i	g	am241f	rc	in		1.3567716	7.3	1.3500000	7.3000000%	0			0.0000000	87red3	0
133	te	g	am241f	rc	fc	sm	0.0000000	0.0	0.6060000	0.0300000	133			am241f	1.0000000	87red3	0
133			am243f	es	cu		5.6206871	30.0	5.6300000	0.0000000	0			0.0000000	72sid1	0
133			np238f	es	cu		5.7692192	30.0	5.8500000	0.0000000	0			0.0000000	72sid1	0
133			cm242f	es	cu		5.6472671	30.0	5.7200000	0.0000000	0			0.0000000	72sid1	0
133	i	g	u8n1.7	rc	cu		0.0000000	0.0	7.0800000	10.0000000%	0			0.0000000	88afa1	0
133	i	g	u8n2.2	rc	cu		0.0000000	0.0	6.9600000	10.3000000%	0			0.0000000	88afa1	0
133	i	g	u8n3.7	rc	cu		0.0000000	0.0	6.5000000	10.3000000%	0			0.0000000	88afa1	0
133	i	g	u8n4.8	rc	cu		0.0000000	0.0	6.1700000	10.2000000%	0			0.0000000	88afa1	0
133	i	g	u8n6.0	rc	cu		0.0000000	0.0	6.9400000	10.9000000%	0			0.0000000	88afa1	0
133	cs	g	t2a44.	ms	re		0.0000000	0.0	1.0060000	0.0000000	135	cs	g	t2a44.	1.0000000	68mch2	0
133	xe	g	u5a25.	rc	fi		0.0000000	0.0	0.2500000	0.0000000	133			u5a25.	1.0000000	62cor1	0
133	xe	g	t2a25.	rc	fi		0.0000000	0.0	0.0360000	0.0000000	133			t2a25.	1.0000000	62cor1	0
133	xe	g	u8d14.	rc	fi		0.0000000	0.0	0.0280000	0.0000000	133			u8d14.	1.0000000	62cor1	0
133	xe	g	u8a25.	rc	fi		0.0000000	0.0	0.0360000	0.0000000	133			u8a25.	1.0000000	62cor1	0

133	xe	g	t2d14.	rc	fi	0.0000000	0.0	0.0340000	0.0000000	133	t2d14.	1.0000000	62cor1	0
133	xe	g	u5d14.	rc	fi	0.0000000	0.0	0.2200000	0.0000000	133	u5d14.	1.0000000	62cor1	0
133	xe	g	u8d13.	rc	fi	0.0000000	0.0	0.0380000	0.0090000	133	u8d13.	1.0000000	65sto1	0
133	xe	g	u8a24.	rc	fi	0.0000000	0.0	0.0510000	0.0510000	133	u8a24.	1.0000000	65sto1	0
133	xe	g	u5d13.	rc	fi	0.0000000	0.0	0.2300000	0.0600000	133	u5d13.	1.0000000	65sto1	0
133	xe	g	u5a23.	rc	fi	0.0000000	0.0	0.2700000	0.0600000	133	u5a23.	1.0000000	65sto1	0
133	xe	g	t2d13.	rc	fi	0.0000000	0.0	0.0430000	0.0050000	133	t2d13.	1.0000000	65sto1	0
133	xe	g	t2a23.	rc	fi	0.0000000	0.0	0.6030000	0.0220000	133	t2a23.	1.0000000	65sto1	0
133	i	g	u8d05.	rc	cu	0.0000000	0.0	237.0000000	9.0000000	0	u barn	35.0000000	57sug1	0
133	i	g	u8d10.	rc	cu	0.0000000	0.0	5.3000000	0.2000000	0	m barn	0.8600000	57sug1	0
133	i	g	u8d14.	rc	cu	0.0000000	0.0	23.0000000	0.0000000	0	m barn	4.3000000	57sug1	0
133	i	g	u5n1.0	rc	re	0.0000000	0.0	1.1300000	0.0900000	140	ba g	u5n1.0	1.0000000	73man1	0
133	i	g	u5n2.0	rc	cu	0.0000000	0.0	1.2400000	0.0800000	140	ba g	u5n2.0	1.0000000	73man1	0
133	i	g	u5n4.0	rc	cu	0.0000000	0.0	1.2500000	0.1000000	140	ba g	u5n4.0	1.0000000	73man1	0
133	i	g	u5n6.0	rc	cu	0.0000000	0.0	1.3000000	0.0900000	140	ba g	u5n6.0	1.0000000	73man1	0
133	i	g	u5n9.0	rc	cu	0.0000000	0.0	1.1600000	0.1100000	140	ba g	u5n9.0	1.0000000	73man1	0
133	i	g	u8n2.0	rc	re	0.0000000	0.0	1.3600000	0.0900000	140	ba g	u8n2.0	1.0000000	73man1	0
133	i	g	u8n4.0	rc	cu	0.0000000	0.0	1.3900000	0.1300000	140	ba g	u8n4.0	1.0000000	73man1	0
133	i	g	u8n6.0	rc	cu	0.0000000	0.0	1.3600000	0.0900000	140	ba g	u8n6.0	1.0000000	73man1	0
133	i	g	u8n9.0	rc	cu	0.0000000	0.0	1.3900000	0.1100000	140	ba g	u8n9.0	1.0000000	73man1	0
133	i	g	u8n2.0	rc	cu	0.0000000	0.0	7.0500000	0.0000000	0		0.0000000	75fly4	0
133	i	g	u8n2.0	rc	cu	0.0000000	0.0	6.6000000	0.0000000	0		0.0000000	75fly4	0
133	i	g	u8n8.0	rc	cu	0.0000000	0.0	8.0700000	0.0000000	0		0.0000000	75fly4	0
133	i	g	u8n8.0	rc	cu	0.0000000	0.0	7.3300000	0.0000000	0		0.0000000	75fly4	0
133	i	g	u8n1.5	rc	cu	0.0000000	0.0	7.1500000	0.2200000	0		0.0000000	78nag1	0
133	i	g	u8n2.0	rc	cu	0.0000000	0.0	7.1200000	0.2100000	0		0.0000000	78nag1	0
133	i	g	u8n3.9	rc	cu	0.0000000	0.0	6.9500000	0.2500000	0		0.0000000	78nag1	0
133	i	g	u8n5.5	rc	cu	0.0000000	0.0	6.7700000	0.2000000	0		0.0000000	78nag1	0
133	i	g	u8n6.9	rc	cu	0.0000000	0.0	7.1000000	0.1900000	0		0.0000000	78nag1	0
133	i	g	u8n7.7	rc	cu	0.0000000	0.0	7.0400000	0.2000000	0		0.0000000	78nag1	0
133	i	g	t2n2.0	rc	cu	0.0000000	0.0	4.1100000	0.1500000	0		0.0000000	80gle1	0
133	i	g	t2n3.0	rc	cu	0.0000000	0.0	4.8500000	0.1500000	0		0.0000000	80gle1	0
133	i	g	t2n5.9	rc	cu	0.0000000	0.0	5.6400000	0.1900000	0		0.0000000	80gle1	0
133	i	g	t2n6.4	rc	cu	0.0000000	0.0	4.5100000	0.1500000	0		0.0000000	80gle1	0
133	i	g	t2n6.9	rc	cu	0.0000000	0.0	4.2300000	0.1400000	0		0.0000000	80gle1	0
133	i	g	t2n7.6	rc	cu	0.0000000	0.0	4.3400000	0.1400000	0		0.0000000	80gle1	0

133 i g t2n8.0 rc cu 0.0000000 0.0 4.3200000 0.1200000 0 0.0000000 80gle1 0
133 i g t2n3.0 rc cu 0.0000000 0.0 3.2600000 0.3100000 99 mo g th232h 3.1000000 64bro1 0
133 te m u38d18 rc re 0.0000000 0.0 1.8000000 1.1000000 133 te g u38d18 1.0000000 65sar1 0
133 te m u38a33 rc re 0.0000000 0.0 3.1000000 2.0000000 133 te g u38a33 1.0000000 65sar1 0
133 te m t32d18 rc re 0.0000000 0.0 1.7000000 0.9000000 133 te g t32d18 1.0000000 65sar1 0
133 te m t32a33 rc re 0.0000000 0.0 2.8000000 1.7000000 133 te g t32a33 1.0000000 65sar1 0
134 u234f rc cu 5.7161667 6.4 5.8700000 0.1200000 140 ba g u234f 5.9300000 77bla1 0
134 u234f es cu 6.4811199 30.0 6.4900000 0.0000000 0 0.0000000 72sid1 0
134 u237f es cu 6.7847175 30.0 6.8200000 0.0000000 0 0.0000000 72sid1 0
134 cs g pu240h rc cu 0.0425037 5.0 0.0004220 3.6000000% 0 0.0100000 77net1 0
134 cs g pu240h rc in 0.0649642 5.0 0.0006450 0.0000170 0 0.0100000 77net1 0
134 cs m pu240h rc cu 0.0224605 5.0 0.0002230 3.8000000% 0 0.0100000 77net1 0
134 pu240h es cu 5.4187231 30.0 0.0538000 0.0000000 0 0.0100000 77net1 0
134 u234he es cu 5.5172455 30.0 5.5400000 0.0000000 0 0.0000000 75mee1 0
134 u236he es cu 5.8393101 30.0 5.8700000 0.0000000 0 0.0000000 75mee1 0
134 pu238f es cu 6.6027745 30.0 6.6100000 0.0000000 0 0.0000000 72sid1 0
134 am241f cm cu 0.0000000 0.0 0.0594000 0.0000000 0 0.0100000 80sig1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

134 am241f es cu 6.3893802 30.0 6.3000000 0.0000000 0 0.0000000 72sid1 0
134 am241f cm cu 0.0000000 0.0 7.3500000 20.0000000% 0 0.0000000 81koc1 36
134 i g am241f rc cu x4 0.0000000 0.0 5.3000000 0.3600000 0 0.0000000 83gud1 0
134 i g am241f rc in 2.1399353 6.8 2.1100000 6.8000000% 0 0.0000000 87red3 0
134 te g am241f rc cu x4 0.0000000 0.0 5.4400000 0.4000000 0 0.0000000 83gud1 0
134 te g am241f rc fc 3.9211990 12.4 0.4940000 0.0200000 134 am241f 1.0000000 87red3 0
134 am243f es cu 6.2327013 30.0 6.2400000 0.0000000 0 0.0000000 72sid1 0
134 np238f es cu 6.1790714 30.0 6.2400000 0.0000000 0 0.0000000 72sid1 0
134 xe g np238f ms re 8.2486287 11.3 1.0000000 0.0020000 132 xe g np238f 0.6180000 84tep1 0
134 xe g np238f ms re 8.1057268 11.5 35.3000000 0.8000000 132 xe g np238f 22.2000000 72pet2 0
134 cm242f es cu 6.2692563 30.0 6.3500000 0.0000000 0 0.0000000 72sid1 0
134 te g u8n1.7 rc cu 0.0000000 0.0 6.6400000 11.1000000% 0 0.0000000 88afa1 0
134 te g u8n2.2 rc cu 0.0000000 0.0 6.5400000 10.9000000% 0 0.0000000 88afa1 0
134 te g u8n3.7 rc cu 0.0000000 0.0 6.1100000 12.3000000% 0 0.0000000 88afa1 0
134 te g u8n4.8 rc cu 0.0000000 0.0 6.2800000 11.5000000% 0 0.0000000 88afa1 0

134	te g	u8n6.0	rc	cu	0.0000000	0.0	5.3100000	11.5000000%	0			0.0000000	88afa1	0
134	cs g	u38a46	ms	fi	0.0000000	0.0	0.0309000	0.0002000	134	u38a46		1.0000000	59chu1	0
134	cs g	u38a24	ms	fi	0.0000000	0.0	0.0057500	0.0004000	134	u38a24		1.0000000	59chu1	0
134	cs g	u35a46	ms	fi	0.0000000	0.0	0.1834000	0.0023000	134	u35a46		1.0000000	59chu1	0
134	cs g	u35a24	ms	fi	0.0000000	0.0	0.0359000	0.0006000	134	u35a24		1.0000000	59chu1	0
134	cs m	t2p9.5	rc	in	0.0000000	0.0	0.0024500	0.0002700	0	m barn		0.2100000	68fre1	0
134	cs m	t2p11.	rc	in	0.0000000	0.0	0.0115000	0.0001500	0	m barn		0.7500000	68fre1	0
134	cs m	t2d12.	rc	in	0.0000000	0.0	0.0019500	0.0000000	0	m barn		0.6600000	68fre1	0
134	xe g	t2a44.	ms	re	0.0000000	0.0	1.0120000	0.0000000	131	xe g	t2a44.	1.0000000	68mch2	0
134	i g	t2d14.	rc	cu	0.0000000	0.0	1.0000000	0.0000000	89	sr g	t2d14.	1.0000000	57ale1	0
134	i g	u5necd	rc	cu	0.0000000	0.0	8.3000000	0.8000000	0			0.0000000	67rid1	0
134	i g	u8n7.7	rc	cu	0.0000000	0.0	7.0200000	0.4300000	0			0.0000000	78nag1	0
134	i g	t2n3.0	rc	cu	0.0000000	0.0	8.1500000	0.9200000	99	mo g	th232h	3.1000000	64bro1	0
134	te g	u8n1.5	rc	cu	0.0000000	0.0	8.1200000	0.4000000	0			0.0000000	78nag1	0
134	te g	u8n2.0	rc	cu	0.0000000	0.0	7.7800000	0.3700000	0			0.0000000	78nag1	0
134	te g	u8n3.9	rc	cu	0.0000000	0.0	7.7600000	0.4200000	0			0.0000000	78nag1	0
134	te g	u8n5.5	rc	cu	0.0000000	0.0	7.0000000	0.5000000	0			0.0000000	78nag1	0
134	te g	u8n6.9	rc	cu	0.0000000	0.0	7.2400000	0.8600000	0			0.0000000	78nag1	0
134	te g	t2n2.0	rc	cu	0.0000000	0.0	6.9700000	0.4400000	0			0.0000000	80gle1	0
134	te g	t2n3.0	rc	cu	0.0000000	0.0	7.4400000	0.7600000	0			0.0000000	80gle1	0
134	te g	t2n5.9	rc	cu	0.0000000	0.0	8.0800000	0.5300000	0			0.0000000	80gle1	0
134	te g	t2n6.4	rc	cu	0.0000000	0.0	6.3300000	0.4000000	0			0.0000000	80gle1	0
134	te g	t2n6.9	rc	cu	0.0000000	0.0	6.6200000	0.4100000	0			0.0000000	80gle1	0
134	te g	t2n7.6	rc	cu	0.0000000	0.0	6.8000000	0.5100000	0			0.0000000	80gle1	0
134	te g	t2n8.0	rc	cu	0.0000000	0.0	7.1600000	0.3200000	0			0.0000000	80gle1	0
135	cs g	u234f	es	cu	6.0382930	30.0	6.0500000	0.0000000	0			0.0000000	72sid1	0
135	i g	u234f	rc	cu	4.8467384	6.4	4.9800000	0.0800000	140	ba g	u234f	5.9300000	77bla1	0
135	cs g	u237f	es	cu	6.5957832	30.0	6.6200000	0.0000000	0			0.0000000	72sid1	0
135	cs g	pu240h	es	cu	5.3535889	30.0	0.0534000	0.0000000	0			0.0100000	77net1	0
135	cs g	pu240h	rc	cu	4.9826473	5.0	0.0497000	4.1000000%	0			0.0100000	77net1	0
135	cs m	pu240h	rc	cu	0.0656667	5.0	0.0006550	3.3000000%	0			0.0100000	77net1	0
135	cs m	pu240h	rc	in	0.0656667	5.0	0.0006550	0.0000220	0			0.0100000	77net1	0
135	xe g	pu240h	rc	cu	5.2132326	6.3	0.0520000	0.0033000	0			0.0100000	77net1	0
135	xe g	pu240h	rc	cu	5.8047340	6.2	0.0579000	6.2000000%	0			0.0100000	77net1	0
135	i g	pu240h	rc	cu	3.8698227	5.0	0.0386000	3.2000000%	0			0.0100000	77net1	0
135	cs g	u234he	es	cu	5.4581107	30.0	5.4900000	0.0000000	0			0.0000000	75mee1	0

| | | |

135	xe	g	t2d14.	rc	fi	0.0000000	0.0	0.1800000	0.0000000	135		t2d14.	1.0000000	62cor1	0		
135	xe	g	t2a25.	rc	fi	0.0000000	0.0	0.2400000	0.0000000	135		t2a25.	1.0000000	62cor1	0		
135	xe	g	u5d14.	rc	fi	0.0000000	0.0	0.4000000	0.0000000	135		u5d14.	1.0000000	62cor1	0		
135	xe	g	u8a25.	rc	fi	0.0000000	0.0	0.2600000	0.0000000	135		u8a25.	1.0000000	62cor1	0		
135	xe	g	u5a23.	rc	fi	0.0000000	0.0	0.5200000	0.0400000	135		u5a23.	1.0000000	65sto1	0		
135	xe	g	u8d13.	rc	fi	0.0000000	0.0	0.2100000	0.0300000	135		u8d13.	1.0000000	65sto1	0		
135	xe	g	u8a24.	rc	fi	0.0000000	0.0	0.2400000	0.0400000	135		u8a24.	1.0000000	65sto1	0		
135	xe	g	t2d13.	rc	fi	0.0000000	0.0	0.2000000	0.0400000	135		t2d13.	1.0000000	65sto1	0		
135	xe	g	t2a23.	rc	fi	0.0000000	0.0	0.2500000	0.0500000	135		t2a23.	1.0000000	65sto1	0		
135	xe	g	u5d13.	rc	fi	0.0000000	0.0	0.4200000	0.0900000	135		u5d13.	1.0000000	65sto1	0		
135	i	g	u5necd	rc	cu	0.0000000	0.0	6.9000000	0.7000000	0			0.0000000	67rid1	0		
135	i	g	u5n1.0	rc	re	0.0000000	0.0	1.4400000	0.0700000	140	ba	g	u5n1.0	1.0000000	73man1	0	
135	i	g	u5n2.0	rc	cu	0.0000000	0.0	1.6500000	0.0600000	140	ba	g	u5n2.0	1.0000000	73man1	0	
135	i	g	u5n4.0	rc	cu	0.0000000	0.0	1.5700000	0.1100000	140	ba	g	u5n4.0	1.0000000	73man1	0	
135	i	g	u5n6.0	rc	cu	0.0000000	0.0	1.4600000	0.0700000	140	ba	g	u5n6.0	1.0000000	73man1	0	
135	i	g	u5n9.0	rc	cu	0.0000000	0.0	1.4500000	0.0500000	140	ba	g	u5n9.0	1.0000000	73man1	0	
135	i	g	u8n4.0	rc	cu	0.0000000	0.0	1.1700000	0.0700000	140	ba	g	u8n4.0	1.0000000	73man1	0	
135	i	g	u8n6.0	rc	cu	0.0000000	0.0	1.0900000	0.0500000	140	ba	g	u8n6.0	1.0000000	73man1	0	
135	i	g	u8n9.0	rc	cu	0.0000000	0.0	1.1200000	0.0400000	140	ba	g	u8n9.0	1.0000000	73man1	0	
135	i	g	u8n2.0	rc	cu	0.0000000	0.0	6.2400000	0.0000000	0			0.0000000	75fly4	0		
135	i	g	u8n2.0	rc	cu	0.0000000	0.0	5.3400000	0.0000000	0			0.0000000	75fly4	0		
135	i	g	u8n8.0	rc	cu	0.0000000	0.0	7.6100000	0.0000000	0			0.0000000	75fly4	0		
135	i	g	u8n8.0	rc	cu	0.0000000	0.0	6.2800000	0.0000000	0			0.0000000	75fly4	0		
135	i	g	u8n1.5	rc	cu	0.0000000	0.0	7.2300000	0.2200000	0			0.0000000	78nag1	0		
135	i	g	u8n2.0	rc	cu	0.0000000	0.0	7.2000000	0.2000000	0			0.0000000	78nag1	0		
135	i	g	u8n3.9	rc	cu	0.0000000	0.0	6.4500000	0.4000000	0			0.0000000	78nag1	0		
135	i	g	u8n5.5	rc	cu	0.0000000	0.0	6.4900000	0.1900000	0			0.0000000	78nag1	0		
135	i	g	u8n6.9	rc	cu	0.0000000	0.0	6.6600000	0.1900000	0			0.0000000	78nag1	0		
135	i	g	u8n7.7	rc	cu	0.0000000	0.0	6.7900000	0.2000000	0			0.0000000	78nag1	0		
135	i	g	t2n2.0	rc	cu	0.0000000	0.0	5.9200000	0.1800000	0			0.0000000	80gle1	0		
135	i	g	t2n3.0	rc	cu	0.0000000	0.0	6.1800000	0.1700000	0			0.0000000	80gle1	0		
135	i	g	t2n5.9	rc	cu	0.0000000	0.0	5.9800000	0.1900000	0			0.0000000	80gle1	0		
135	i	g	t2n6.4	rc	cu	0.0000000	0.0	5.3800000	0.1600000	0			0.0000000	80gle1	0		

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0measured nuclide	fissile material	meas. tech. type	meas. note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment

135	i	g	t2n6.9	rc	cu	0.0000000	0.0	5.4200000	0.1600000	0			0.0000000	80gle1	0
135	i	g	t2n7.6	rc	cu	0.0000000	0.0	5.4900000	0.1600000	0			0.0000000	80gle1	0
135	i	g	t2n8.0	rc	cu	0.0000000	0.0	5.5800000	0.1500000	0			0.0000000	80gle1	0
135	i	g	t2n3.0	rc	cu	0.0000000	0.0	5.5700000	0.6000000	99	mo	g	th232h	3.1000000	64bro1	0
136			u234f	es	cu	6.3326228	30.0	6.3500000	0.0000000	0			0.0000000	72sid1	0
136			u237f	es	cu	6.3965148	30.0	6.4200000	0.0000000	0			0.0000000	72sid1	0
136	cs	g	pu240h	rc	cu	0.5081200	5.0	0.0050300	3.0000000%	0			0.0100000	77net1	0
136	cs	g	pu240h	rc	in	0.5081200	5.0	0.0050300	0.0001500	0			0.0100000	77net1	0
136			pu240h	es	cu	5.2024216	30.0	0.0515000	0.0000000	0			0.0100000	77net1	0
136	cs	g	u234he	rc	in	0.4742132	6.4	0.0049100	0.0002000	147	nd	g	u234he	0.0132000	72net1	0
136	cs	g	u234he	rc	fc	0.5674955	23.5	0.0950000	0.0060000	136			u234he	1.0000000	72net1	0
136			u234he	es	cu	5.9651483	30.0	6.0000000	0.0000000	0			0.0000000	75mee1	0
136	cs	g	u236he	rc	in	0.1155460	6.4	0.0012000	0.0000500	147	nd	g	u236he	0.0179000	72net1	0
136	cs	g	u236he	rc	fc	0.1311434	18.4	0.0220000	0.0020000	136			u236he	1.0000000	72net1	0
136			u236he	es	cu	5.8691532	30.0	5.9000000	0.0000000	0			0.0000000	75mee1	0
136			pu238f	es	cu	7.2320858	30.0	7.2400000	0.0000000	0			0.0000000	72sid1	0
136	cs	g	am241f	rc	in	0.4610689	5.0	0.0045200	3.0000000%	0			0.0100000	80sig1	0
136			am241f	cm	cu	0.0000000	0.0	0.0628000	0.0000000	0			0.0100000	80sig1	0
136			am241f	es	cu	7.3648616	30.0	7.2200000	0.0000000	0			0.0000000	72sid1	0
136			am241f	cm	cu	0.0000000	0.0	6.9000000	20.0000000%	0			0.0000000	81koc1	36
136			am243f	es	cu	7.1781066	30.0	7.1900000	0.0000000	0			0.0000000	72sid1	0
136			np238f	es	cu	6.9920965	30.0	7.0900000	0.0000000	0			0.0000000	72sid1	0
136	xe	g	np238f	ms	re	x1	0.0000000	0.0	1.0100000	0.0260000	132	xe	g	np238f	0.6180000	84tep1	0
136	xe	g	np238f	ms	re	x1	0.0000000	0.0	27.5000000	0.6000000	132	xe	g	np238f	22.2000000	72pet2	0
136			cm242f	es	cu	7.1676852	30.0	7.2600000	0.0000000	0			0.0000000	72sid1	0
136	ba	g	t2a44.	ms	fi	0.0000000	0.0	0.2300000	0.0080000	136			t2a44.	1.0000000	68mch2	0
136	cs	g	u5n5	rc	cu	0.0000000	0.0	0.0320000	0.0000000	99	mo	g	u235t	0.0062000	56for1	6
136	cs	g	t2d14.	rc	cu	0.0000000	0.0	0.0400000	0.0100000	89	sr	g	t2d14.	1.0000000	57ale1	0
136	cs	g	u8d 5.	rc	cu	0.0000000	0.0	0.0017000	0.0007000	140	ba	g	u8d10.	1.0000000	57ale1	0
136	cs	g	u8d14.	rc	cu	0.0000000	0.0	0.0570000	0.0060000	140	ba	g	u8d14.	1.0000000	57ale1	0
136	cs	g	u38a46	ms	fi	0.0000000	0.0	0.1671000	0.0040000	136			u38a46	1.0000000	59chu1	0
136	cs	g	u38a24	ms	fi	0.0000000	0.0	0.0292000	0.0020000	136			u38a24	1.0000000	59chu1	0
136	cs	g	u35a46	ms	fi	0.0000000	0.0	0.4435000	0.0085000	136			u35a46	1.0000000	59chu1	0
136	cs	g	u8p730	ms	in	0.0000000	0.0	0.9250000	0.0250000	134	cs	g	u8p730	1.0000000	59chu1	0
136	cs	g	u8c100	ms	in	0.0000000	0.0	0.9740000	0.0290000	134	cs	g	u8c100	1.0000000	59chu1	0

136	cs g	u35a24	ms	fi	0.0000000	0.0	0.2847000	0.0060000	136	u35a24	1.0000000	59chu1	0
136	cs g	u5ndcu	rc	re	0.0000000	0.0	9.9900000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
136	cs g	u8ndcu	rc	re	0.0000000	0.0	1.4000000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
136	cs g	u8naal	rc	re	0.0000000	0.0	2.0200000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
136	cs g	u8nabe	rc	re	0.0000000	0.0	3.0700000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
136	cs g	u8ndbe	rc	re	0.0000000	0.0	2.3200000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
136	cs g	u8ndli	rc	re	0.0000000	0.0	3.2700000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
136	cs g	u3d14.	rc	fi	0.0000000	0.0	0.2900000	0.0000000	136	u3d14.	1.0000000	62cor1	0
136	cs g	u3a25.	rc	fi	0.0000000	0.0	0.2200000	0.0000000	136	u3a25.	1.0000000	62cor1	0
136	cs g	t2a19.	rc	re	0.0000000	0.0	39.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
136	cs g	t2a20.	rc	re	0.0000000	0.0	49.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
136	cs g	t2a20.	rc	re	0.0000000	0.0	45.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
136	cs g	t2a22.	rc	re	0.0000000	0.0	58.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
136	cs g	t2a24.	rc	re	0.0000000	0.0	86.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
136	cs g	t2a26.	rc	re	0.0000000	0.0	97.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
136	cs g	t2a27.	rc	re	0.0000000	0.0	111.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
136	cs g	t2a30.	rc	re	0.0000000	0.0	139.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
136	cs g	t2a30.	rc	re	0.0000000	0.0	141.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
136	cs g	t2a32.	rc	re	0.0000000	0.0	162.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
136	cs g	t2a34.	rc	re	0.0000000	0.0	182.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
136	cs g	t2a34.	rc	re	0.0000000	0.0	194.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
136	cs g	t2a36.	rc	re	0.0000000	0.0	212.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
136	cs g	t2a37.	rc	re	0.0000000	0.0	211.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
136	cs g	t2a38.	rc	re	0.0000000	0.0	238.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
136	cs g	u3necd	rc	in	0.0000000	0.0	0.1018000	6.0000000%	140	ba g	u3necd	5.4000000	65bal1	0
136	cs g	t2p9.5	rc	in	0.0000000	0.0	0.0359000	0.0072000	0	m barn	0.2100000	68fre1	0	
136	cs g	t2p11.	rc	in	0.0000000	0.0	0.1710000	0.0085000	0	m barn	0.7500000	68fre1	0	
136	cs g	t2d12.	rc	in	0.0000000	0.0	0.0382000	0.0000000	0	m barn	0.6600000	68fre1	0	
136	cs g	u5npbe	rc	re	0.0000000	0.0	3.0800000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
136	cs g	u5naal	rc	re	0.0000000	0.0	13.7500000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
136	cs g	u5nabe	rc	re	0.0000000	0.0	18.6000000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
136	cs g	u5ndbe	rc	re	0.0000000	0.0	18.5000000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
136	cs g	u5ndli	rc	re	0.0000000	0.0	23.7000000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
136	cs g	u5necd	rc	in	0.0000000	0.0	0.0085600	6.0000000%	140	ba g	u235t	6.3500000	65bal1	0
136	cs g	u5necd	rc	in	0.0000000	0.0	0.0047990	2.7000000%	0	0.0000000	76for1	0		
136	xe g	t2a44.	ms	re	0.0000000	0.0	0.7670000	0.0000000	131	xe g	t2a44.	1.0000000	68mch2	0

137		u234f	rc	cu	5.8353628	6.4	5.9900000	0.0600000	140 ba g	u234f	5.9300000	77bla1	0
137		u234f	es	cu	6.3938079	30.0	6.4000000	0.0000000	0		0.0000000	72sid1	0
137		u237f	es	cu	6.3566611	30.0	6.3800000	0.0000000	0		0.0000000	72sid1	0
137		pu240h	es	cu	4.9577781	30.0	0.0494000	0.0000000	0		0.0100000	77net1	0
137	cs g	pu240h	rc	cu	4.4961226	5.0	0.0448000	4.0000000%	0		0.0100000	77net1	0
137	cs g	u234he	rc	cu	4.9636290	6.4	0.0512000	0.0023000	147 nd g	u234he	0.0132000	72net1	0
137	cs g	u236he	rc	cu	5.1302839	6.4	0.0531000	0.0022000	147 nd g	u236he	0.0179000	72net1	0
137		pu238f	es	cu	6.7426215	30.0	6.7500000	0.0000000	0		0.0000000	72sid1	0
137	i g	pu238f	rc	cu	1.4983603	26.7	1.5000000	0.4000000	0		0.0000000	81wal1	0
137		am241f	cm	cu	0.0000000	0.0	0.0610000	0.0000000	0		0.0100000	80sig1	0
137		am241f	es	cu	7.1604360	30.0	7.1100000	0.0000000	0		0.0000000	72sid1	0
137		am241f	cm	cu	0.0000000	0.0	6.2900000	20.0000000%	0		0.0000000	81koc1	36
137	cs g	am241f	cm	cu	0.0000000	0.0	7.4000000	0.0000000	0		0.0000000	69gun2	0
137	cs g	am241f	rc	cu	5.7404339	5.0	0.0570000	3.2000000%	0		0.0100000	80sig1	0
137	i g	am241f	rc	cu	1.8127686	16.7	1.8000000	0.3000000	0		0.0000000	81wal1	0
137		am243f	es	cu	7.1281893	30.0	7.1400000	0.0000000	0		0.0000000	72sid1	0
137		np238f	es	cu	6.4711124	30.0	6.6000000	0.0000000	0		0.0000000	72sid1	0
137		cm242f	es	cu	6.9801011	30.0	7.0700000	0.0000000	0		0.0000000	72sid1	0
137	cs g	t2d14.	rc	cu	0.0000000	0.0	1.2500000	0.0200000	89 sr g	t2d14.	1.0000000	57ale1	0
137	cs g	u8d 5.	rc	cu	0.0000000	0.0	1.0900000	0.0800000	140 ba g	u8d10.	1.0000000	57ale1	0
137	cs g	u8d10.	rc	cu	0.0000000	0.0	1.5200000	0.0300000	140 ba g	u8d10.	1.0000000	57ale1	0
137	cs g	u8d14.	rc	cu	0.0000000	0.0	1.3300000	0.1600000	140 ba g	u8d14.	1.0000000	57ale1	0
137	cs g	u8p730	ms	in	0.0000000	0.0	0.8700000	0.0210000	134 cs g	u8p730	1.0000000	59chu1	0
137	cs g	u8c100	ms	in	0.0000000	0.0	0.7630000	0.0030000	134 cs g	u8c100	1.0000000	59chu1	0
137	cs g	u5ndcu	rc	re	0.0000000	0.0	0.9800000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
137	cs g	u8ndcu	rc	re	0.0000000	0.0	0.9400000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
137	cs g	u8naal	rc	re	0.0000000	0.0	0.9800000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
137	cs g	u8nabe	rc	re	0.0000000	0.0	0.9200000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
137	cs g	u8ndbe	rc	re	0.0000000	0.0	0.9100000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
137	cs g	u8ndli	rc	re	0.0000000	0.0	0.9400000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
137	cs g	u3necd	rc	cu	0.0000000	0.0	6.8200000	6.0000000%	140 ba g	u3necd	5.4000000	65bal1	0
137	cs g	p9necd	rc	cu	0.0000000	0.0	6.2000000	0.8000000	0		0.0000000	67rid1	0
137	cs g	u3necd	rc	cu	0.0000000	0.0	7.3000000	0.8000000	0		0.0000000	67rid1	0
137	cs g	u5necd	rc	cu	0.0000000	0.0	7.1000000	0.8000000	0		0.0000000	67rid1	0
137	cs g	t2a44.	ms	re	0.0000000	0.0	0.8120000	0.0000000	135 cs g	t2a44.	1.0000000	68mch2	0
137	cs g	u5n2.0	rc	cu	0.0000000	0.0	1.0100000	0.0700000	140 ba g	u5n2.0	1.0000000	73man1	0

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 137 cs g   u5n4.0   rc    cu        0.0000000  0.0   0.9500000  0.1100000   140 ba g      u5n4.0      1.0000000   73man1      0
 137 cs g   u5n6.0   rc    cu        0.0000000  0.0   1.0000000  0.0600000   140 ba g      u5n6.0      1.0000000   73man1      0
 137 cs g   u5n9.0   rc    cu        0.0000000  0.0   0.9200000  0.0500000   140 ba g      u5n9.0      1.0000000   73man1      0
 137 cs g   u8n4.0   rc    cu        0.0000000  0.0   1.0400000  0.0800000   140 ba g      u8n4.0      1.0000000   73man1      0
 137 cs g   u8n6.0   rc    cu        0.0000000  0.0   1.1600000  0.0600000   140 ba g      u8n6.0      1.0000000   73man1      0
 137 cs g   u8n9.0   rc    cu        0.0000000  0.0   0.9600000  0.1000000   140 ba g      u8n9.0      1.0000000   73man1      0
 137 cs g   u5npbe   rc    re        0.0000000  0.0   0.9600000  0.0000000    99 mo g      u235t       0.0000000   61lev1      7
 137 cs g   u5naal   rc    re        0.0000000  0.0   1.0300000  0.0000000    99 mo g      u235t       0.0000000   61lev1      7
 137 cs g   u5nabe   rc    re        0.0000000  0.0   1.0600000  0.0000000    99 mo g      u235t       0.0000000   61lev1      7
 137 cs g   u5ndbe   rc    re        0.0000000  0.0   1.0100000  0.0000000    99 mo g      u235t       0.0000000   61lev1      7
 137 cs g   u5ndli   rc    re        0.0000000  0.0   1.1100000  0.0000000    99 mo g      u235t       0.0000000   61lev1      7
 137 cs g   u5necd   rc    cu        0.0000000  0.0   6.1340000  6.0000000%  140 ba g      u235t       6.3500000   65bal1      0
 138        u234f    es    cu        6.5819387 30.0   6.6000000  0.0000000     0                        0.0000000   72sid1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                 nuclide     material      value       no.   treatment

 138        u237f    es    cu        6.2176663 30.0   6.2500000  0.0000000     0                        0.0000000   72sid1      0
 138        pu240h   es    cu        4.7338287 30.0   0.0470000  0.0000000     0                        0.0100000   77net1      0
 138 cs g   pu240h   rc    cu        5.2273556 10.0   0.0519000 10.0000000%    0                        0.0100000   77net1      0
 138        u234he   es    cu        5.2592724 30.0   5.2900000  0.0000000     0                        0.0000000   75mee1      0
 138        u236he   es    cu        5.0633881 30.0   5.0900000  0.0000000     0                        0.0000000   75mee1      0
 138        pu238f   es    cu        6.2931134 30.0   6.3000000  0.0000000     0                        0.0000000   72sid1      0
 138        am241f   cm    cu        0.0000000  0.0   0.0590000  0.0000000     0                        0.0100000   80sig1      0
 138        am241f   es    cu        6.6530690 30.0   6.5600000  0.0000000     0                        0.0000000   72sid1      0
 138        am241f   cm    cu        0.0000000  0.0   6.3000000 15.0000000%    0                        0.0000000   81koc1     36
 138 cs g   am241f   cm    cu        0.0000000  0.0   6.4000000  0.0000000     0                        0.0000000   69gun2      0
 138 cs g   am241f   rc    cu    x4  0.0000000  0.0   4.4200000  0.4800000     0                        0.0000000   83gud1      0
 138 cs g   am241f   rc    in    x4  0.0000000  0.0   0.1900000  0.1000000     0                        0.0000000   83gud1      0
 138        am243f   es    cu        6.5990660 30.0   6.6100000  0.0000000     0                        0.0000000   72sid1      0
 138        np238f   es    cu        6.1573615 30.0   6.2800000  0.0000000     0                        0.0000000   72sid1      0
 138        cm242f   es    cu        6.4370947 30.0   6.5200000  0.0000000     0                        0.0000000   72sid1      0
 138 cs g   u8n2.2   rc    cu        0.0000000  0.0   5.2900000 10.8000000%    0                        0.0000000   88afa1      0
 138 cs g   u8n3.7   rc    cu        0.0000000  0.0   5.2900000 11.0000000%    0                        0.0000000   88afa1      0
 138 cs g   u8n3.7   rc    cu        0.0000000  0.0   5.3600000 11.2000000%    0                        0.0000000   88afa1      0
 138 cs g   u8n6.0   rc    cu        0.0000000  0.0   5.6400000 10.5000000%    0                        0.0000000   88afa1      0
```

138	ba	g	t2a44.	ms	re	0.0000000	0.0	3.1400000	0.0000000	136	ba	g	t2a44.	1.0000000	68mch2	0							
138	cs	g	t2p9.5	rc	cu	0.0000000	0.0	0.8440000	0.1690000	0		m	barn	0.2100000	68fre1	0							
138	cs	g	t2p11.	rc	cu	0.0000000	0.0	4.4700000	0.8900000	0		m	barn	0.7500000	68fre1	0							
138	cs	g	t2d12.	rc	cu	0.0000000	0.0	3.5800000	0.0000000	0		m	barn	0.6600000	68fre1	0							
138	cs	g	u8n1.5	rc	cu	0.0000000	0.0	5.2700000	0.1900000	0				0.0000000	78nag1	0							
138	cs	g	u8n2.0	rc	cu	0.0000000	0.0	5.6900000	0.1900000	0				0.0000000	78nag1	0							
138	cs	g	u8n3.9	rc	cu	0.0000000	0.0	5.8200000	0.1800000	0				0.0000000	78nag1	0							
138	cs	g	u8n5.5	rc	cu	0.0000000	0.0	5.8000000	0.2400000	0				0.0000000	78nag1	0							
138	cs	g	u8n7.7	rc	cu	0.0000000	0.0	5.1600000	0.2100000	0				0.0000000	78nag1	0							
138	cs	g	t2n2.0	rc	cu	0.0000000	0.0	6.3600000	0.3100000	0				0.0000000	80gle1	0							
138	cs	g	t2n3.0	rc	cu	0.0000000	0.0	6.2900000	0.2700000	0				0.0000000	80gle1	0							
138	cs	g	t2n5.9	rc	cu	0.0000000	0.0	5.9300000	0.2800000	0				0.0000000	80gle1	0							
138	cs	g	t2n6.4	rc	cu	0.0000000	0.0	6.0400000	0.3600000	0				0.0000000	80gle1	0							
138	cs	g	t2n6.9	rc	cu	0.0000000	0.0	6.1500000	0.3700000	0				0.0000000	80gle1	0							
138	cs	g	t2n7.6	rc	cu	0.0000000	0.0	5.8500000	0.3300000	0				0.0000000	80gle1	0							
138	cs	g	t2n8.0	rc	cu	0.0000000	0.0	5.9500000	0.3400000	0				0.0000000	80gle1	0							
138	xe	g	u8n8.0	rc	cu	0.0000000	0.0	5.5200000	0.0000000	0				0.0000000	75fly4	0							
139			u234f	es	cu	6.0035259	30.0	6.0200000	0.0000000	0				0.0000000	72sid1	0							
139			u237f	es	cu	6.0584941	30.0	6.0900000	0.0000000	0				0.0000000	72sid1	0							
139			pu240h	es	cu	4.3756908	30.0	0.0436000	0.0000000	0				0.0100000	77net1	0							
139	ba	g	pu240h	rc	cu	4.5764105	5.0	0.0456000	3.0000000%	0				0.0100000	77net1	0							
139			u234he	es	cu	5.2791562	30.0	5.3100000	0.0000000	0				0.0000000	75mee1	0							
139			u236he	es	cu	5.2026561	30.0	5.2300000	0.0000000	0				0.0000000	75mee1	0							
139			pu238f	es	cu	5.7237364	30.0	5.7300000	0.0000000	0				0.0000000	72sid1	0							
139			am241f	cm	cu	0.0000000	0.0	0.0560000	0.0000000	0				0.0100000	80sig1	0							
139			am241f	es	cu	5.9519236	30.0	5.9100000	0.0000000	0				0.0000000	72sid1	0							
139			am241f	cm	cu	0.0000000	0.0	5.9600000	15.0000000%	0				0.0000000	81koc1	36							
139	ba	g	am241f	cm	cu	0.0000000	0.0	6.2200000	0.0000000	0				0.0000000	69gun2	0							
139	ba	g	am241f	rc	cu	6.7676694	5.0	6.7200000	0.1400000	0				0.0000000	83gud1	0							
139			am243f	es	cu	5.9501412	30.0	5.9600000	0.0000000	0				0.0000000	72sid1	0							
139			np238f	es	cu	5.7259540	30.0	5.8400000	0.0000000	0				0.0000000	72sid1	0							
139			cm242f	es	cu	5.7756141	30.0	5.8500000	0.0000000	0				0.0000000	72sid1	0							
139	ba	g	u8n4.8	rc	cu	0.0000000	0.0	5.5300000	12.8000000%	0				0.0000000	88afa1	0							
139	ba	g	t2d14.	rc	cu	0.0000000	0.0	0.8500000	0.0000000	89	sr	g	t2d14.	1.0000000	57ale1	0							
139	ba	g	u8d 5.	rc	cu	0.0000000	0.0	1.2000000	0.1300000	140	ba	g	u8d10.	1.0000000	57ale1	0							
139	ba	g	u8d10.	rc	cu	0.0000000	0.0	1.2200000	0.1000000	140	ba	g	u8d10.	1.0000000	57ale1	0							

139 ba g u8d14. rc cu 0.0000000 0.0 1.2400000 0.0500000 140 ba g u8d14. 1.0000000 57ale1 0
139 ba g p9npfr rc cu 0.0000000 0.0 6.1000000 0.0000000 0 0.0000000 71cun1 0
139 ba g p9npfr rc cu 0.0000000 0.0 6.2400000 0.2200000 99 mo g pu239f 5.9800000 72cun1 0
139 ba g u8n2.0 rc cu 0.0000000 0.0 6.8100000 0.0000000 0 0.0000000 75fly4 0
139 ba g u8n8.0 rc cu 0.0000000 0.0 4.9100000 0.0000000 0 0.0000000 75fly4 0
139 ba g t2n11. rc cu 0.0000000 0.0 9.0000000 0.0000000 0 0.0000000 53tur1 0
139 ba g u8n1.5 rc cu 0.0000000 0.0 7.1100000 0.7100000 0 0.0000000 78nag1 0
139 ba g u8n2.0 rc cu 0.0000000 0.0 6.9500000 0.5500000 0 0.0000000 78nag1 0
139 ba g u8n3.9 rc cu 0.0000000 0.0 5.4300000 0.6000000 0 0.0000000 78nag1 0
139 ba g u8n5.5 rc cu 0.0000000 0.0 6.5000000 0.4700000 0 0.0000000 78nag1 0
139 ba g u8n6.9 rc cu 0.0000000 0.0 6.1000000 0.4500000 0 0.0000000 78nag1 0
139 ba g u8n7.7 rc cu 0.0000000 0.0 4.5400000 0.3500000 0 0.0000000 78nag1 0
139 ba g t2n2.0 rc cu 0.0000000 0.0 8.3400000 0.6400000 0 0.0000000 80gle1 0
139 ba g t2n3.0 rc cu 0.0000000 0.0 7.5600000 0.6200000 0 0.0000000 80gle1 0
139 ba g t2n5.9 rc cu 0.0000000 0.0 7.2400000 0.8800000 0 0.0000000 80gle1 0
139 ba g t2n6.4 rc cu 0.0000000 0.0 7.0500000 0.6900000 0 0.0000000 80gle1 0
139 ba g t2n6.9 rc cu 0.0000000 0.0 8.1600000 0.7700000 0 0.0000000 80gle1 0
139 ba g t2n7.6 rc cu 0.0000000 0.0 7.4900000 0.6300000 0 0.0000000 80gle1 0
139 ba g t2n8.0 rc cu 0.0000000 0.0 6.6100000 0.7100000 0 0.0000000 80gle1 0
139 ba g t2n3.0 rc cu 0.0000000 0.0 6.7800000 0.5000000 99 mo g th232h 3.1000000 64bro1 0
140 u234f es cu x3 0.0000000 0.0 6.1000000 0.0000000 0 0.0000000 72sid1 0
140 ba g u234f rc cu rp 5.7861661 3.8 5.9300000 0.0000000 no. relative values = 22 77bla1
140 ba g u234f es cu 5.7760457 5.0 5.7800000 5.0000000% 0 0.0000000 75mee1 0
140 u237f es cu 6.6354935 30.0 6.6700000 0.0000000 0 0.0000000 72sid1 0
140 pu240h es cu 4.0946831 30.0 0.0408000 0.0000000 0 0.0100000 77net1 0
140 ba g pu240h rc cu 3.7835675 5.0 0.0377000 3.0000000% 0 0.0100000 77net1 0
140 ba g u234he rc cu 3.8260981 6.4 0.0395000 0.0016000 147 nd g u234he 0.0132000 72net1 0
140 ba g u236he rc cu 4.1030097 6.4 0.0425000 0.0018000 147 nd g u236he 0.0179000 72net1 0
140 pu238f es cu 5.6138567 30.0 5.6200000 0.0000000 0 0.0000000 72sid1 0
140 am241f cm cu x3 0.0000000 0.0 5.4700000 0.0000000 0 0.0000000 72sid1 0
140 am241f es cu 5.1883371 30.0 0.0517000 0.0000000 0 0.0100000 80sig1 0
140 am241f es cu 5.2485499 15.0 5.2300000 15.0000000% 0 0.0000000 81koc1 36
140 am241f es cu cm 4.9374504 4.0 4.9200000 4.0000000% 0 0.0000000 91jam2 0
140 la g am241f es fc 4.9589425 3.0 0.9999920 1.0000000% 140 am241f 1.0000000 89rid1 0
140 la g am241f rc cu x4 0.0000000 0.0 5.6200000 0.5900000 0 0.0000000 83gud1 0
140 la g am241f rc in 0.0200709 30.0 0.0200000 0.0060000 0 0.0000000 83gud1 0

140 ba g am241f cm cu x3 0.0000000 0.0 5.6000000 0.0000000 0 0.0000000 69gun2 0
140 ba g am241f rc cu 4.8370957 5.0 0.0482000 3.0000000% 0 0.0100000 80sig1 0
140 ba g am241f rc cu 4.8370957 9.3 4.8200000 0.4500000 0 0.0000000 83gud1 0
140 am243f es cu 5.4809187 30.0 5.4900000 0.0000000 0 0.0000000 72sid1 0
140 np238f es cu 5.7847823 30.0 5.9000000 0.0000000 0 0.0000000 72sid1 0
140 cm242f es cu 5.3708275 30.0 5.4400000 0.0000000 0 0.0000000 72sid1 0
140 la g u8n1.7 rc cu 0.0000000 0.0 5.6900000 10.9000000% 0 0.0000000 88afa1 0
140 la g u8n1.7 rc cu 0.0000000 0.0 5.8200000 10.7000000% 0 0.0000000 88afa1 0
140 la g u8n2.2 rc cu 0.0000000 0.0 5.5900000 10.6000000% 0 0.0000000 88afa1 0
140 la g u8n2.2 rc cu 0.0000000 0.0 5.6400000 11.3000000% 0 0.0000000 88afa1 0
140 la g u8n2.2 rc cu 0.0000000 0.0 6.1300000 10.4000000% 0 0.0000000 88afa1 0
140 la g u8n3.7 rc cu 0.0000000 0.0 5.5100000 10.5000000% 0 0.0000000 88afa1 0
140 la g u8n3.7 rc cu 0.0000000 0.0 5.6300000 13.0000000% 0 0.0000000 88afa1 0
140 la g u8n4.8 rc cu 0.0000000 0.0 6.2000000 9.8000000% 0 0.0000000 88afa1 0
140 la g u8n6.0 rc cu 0.0000000 0.0 5.2100000 12.1000000% 0 0.0000000 88afa1 0
140 la g u8n6.0 rc cu 0.0000000 0.0 5.8400000 14.9000000% 0 0.0000000 88afa1 0
140 ba g u8n1.7 rc cu 0.0000000 0.0 5.6700000 10.8000000% 0 0.0000000 88afa1 0
140 ba g u8n2.2 rc cu 0.0000000 0.0 5.7300000 11.0000000% 0 0.0000000 88afa1 0
140 ba g u8n3.7 rc cu 0.0000000 0.0 5.7300000 10.5000000% 0 0.0000000 88afa1 0
140 ba g u8n4.8 rc cu 0.0000000 0.0 6.0600000 10.4000000% 0 0.0000000 88afa1 0
140 ba g u8n6.0 rc cu 0.0000000 0.0 5.8600000 10.9000000% 0 0.0000000 88afa1 0
140 ce g u38a46 ms re 0.0000000 0.0 1.2700000 0.0100000 143 nd g u38a46 1.0000000 59chu1 0
140 ce g u38a24 ms re 0.0000000 0.0 1.3500000 0.0300000 143 nd g u38a24 1.0000000 59chu1 0
140 ce g u35a46 ms re 0.0000000 0.0 1.1400000 0.0100000 143 nd g u35a46 1.0000000 59chu1 0
140 t2n1.9 sp cu 0.0000000 0.0 510.0000000 0.0000000 118 t2n1.9 1.0000000 71hol1 0
140 t2n3.0 sp cu 0.0000000 0.0 122.0000000 0.0000000 118 t2n3.0 1.0000000 71hol1 0
140 t2n4.8 sp cu 0.0000000 0.0 45.0000000 0.0000000 118 t2n4.8 1.0000000 71hol1 0
140 la g t2a39. rc fi 0.0000000 0.0 0.0709000 4.0000000% 140 t2a39. 1.0000000 65net1 0
140 la g t2a30. rc fi 0.0000000 0.0 0.0279000 6.4000000% 140 t2a30. 1.0000000 65net1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

140 la g t2a21. rc fi 0.0000000 0.0 0.0067000 18.0000000% 140 t2a21. 1.0000000 65net1 0
140 la g t2a31. rc fi 0.0000000 0.0 0.0307000 3.6000000% 140 t2a31. 1.0000000 65net1 0
140 la g t2a26. rc fi 0.0000000 0.0 0.0163000 4.4000000% 140 t2a26. 1.0000000 65net1 0

140 la g	t2a20.	rc	fi	0.0000000	0.0	0.0063000	6.8000000%	140	t2a20.	1.0000000	65net1	0	
140 la g	t2a39.	rc	fi	0.0000000	0.0	0.0653000	3.0000000%	140	t2a39.	1.0000000	65net1	0	
140 la g	t2a30.	rc	fi	0.0000000	0.0	0.0258000	3.5000000%	140	t2a30.	1.0000000	65net1	0	
140 la g	t2a21.	rc	fi	0.0000000	0.0	0.0065000	5.6000000%	140	t2a21.	1.0000000	65net1	0	
140 la g	t2a38.	rc	fi	0.0000000	0.0	0.0688000	3.1000000%	140	t2a38.	1.0000000	65net1	0	
140 la g	t2a30.	rc	fi	0.0000000	0.0	0.0266000	3.6000000%	140	t2a30.	1.0000000	65net1	0	
140 la g	t2a20.	rc	fi	0.0000000	0.0	0.0060000	6.4000000%	140	t2a20.	1.0000000	65net1	0	
140 la g	t2a38.	rc	fi	0.0000000	0.0	0.0726000	2.9000000%	140	t2a38.	1.0000000	65net1	0	
140 la g	t2a33.	rc	fi	0.0000000	0.0	0.0414000	3.0000000%	140	t2a33.	1.0000000	65net1	0	
140 la g	t2a22.	rc	fi	0.0000000	0.0	0.0095000	3.9000000%	140	t2a22.	1.0000000	65net1	0	
140 la g	t2a38.	rc	fi	0.0000000	0.0	0.0697000	2.9000000%	140	t2a38.	1.0000000	65net1	0	
140 la g	t2a31.	rc	fi	0.0000000	0.0	0.0345000	3.1000000%	140	t2a31.	1.0000000	65net1	0	
140 la g	t2a21.	rc	fi	0.0000000	0.0	0.0071000	4.2000000%	140	t2a21.	1.0000000	65net1	0	
140 la g	t2a36.	rc	fi	0.0000000	0.0	0.0569000	3.0000000%	140	t2a36.	1.0000000	65net1	0	
140 la g	t2a28.	rc	fi	0.0000000	0.0	0.0243000	3.4000000%	140	t2a28.	1.0000000	65net1	0	
140 la g	t2a22.	rc	fi	0.0000000	0.0	0.0102000	4.1000000%	140	t2a22.	1.0000000	65net1	0	
140 la g	u8n2.0	rc	cu	0.0000000	0.0	6.1000000	0.1300000	0		0.0000000	78nag1	0	
140 la g	u8n3.9	rc	cu	0.0000000	0.0	6.1700000	0.4800000	0		0.0000000	78nag1	0	
140 la g	u8n5.5	rc	cu	0.0000000	0.0	5.6100000	0.1500000	0		0.0000000	78nag1	0	
140 la g	u8n6.9	rc	cu	0.0000000	0.0	5.4000000	0.1800000	0		0.0000000	78nag1	0	
140 la g	u8n7.7	rc	cu	0.0000000	0.0	5.6900000	0.1400000	0		0.0000000	78nag1	0	
140 la g	p9v0.3	rc	re	0.0000000	0.0	1.0100000	0.0250000	140 la g	pu239t	1.0000000	73van1	0	
140 ba g	n7ndf	rc	re	0.0000000	0.0	0.8000000	0.0000000	99 mo g	u235t	0.0000000	56for1	7	
140 ba g	t2d14.	rc	cu	0.0000000	0.0	0.8700000	0.0000000	89 sr g	t2d14.	1.0000000	57ale1	0	
140 ba g	u8d05.	rc	cu	0.0000000	0.0	181.0000000	9.0000000	0	u barn	35.0000000	57sug1	0	
140 ba g	u8d10.	rc	cu	0.0000000	0.0	3.4000000	0.2000000	0	m barn	0.8600000	57sug1	0	
140 ba g	u8d14.	rc	cu	0.0000000	0.0	17.5000000	0.9000000	0	m barn	4.3000000	57sug1	0	
140 ba g	u5ndcu	rc	re	0.0000000	0.0	0.9450000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7	
140 ba g	u8ndcu	rc	re	0.0000000	0.0	0.9000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7	
140 ba g	u8naal	rc	re	0.0000000	0.0	0.9100000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7	
140 ba g	u8nabe	rc	re	0.0000000	0.0	0.8700000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7	
140 ba g	u8ndbe	rc	re	0.0000000	0.0	0.8300000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7	
140 ba g	u8ndli	rc	re	0.0000000	0.0	0.9000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7	
140 ba g	u5v8.9	rc	re	0.0000000	0.0	0.9600000	0.0400000	99 mo g	u235t	0.0000000	62gle1	7	
140 ba g	t2a19.	rc	re	0.0000000	0.0	0.8500000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7	
140 ba g	t2a20.	rc	re	0.0000000	0.0	0.8300000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7	

140	ba g	t2a20.	rc	re	0.0000000	0.0	0.8500000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
140	ba g	t2a22.	rc	re	0.0000000	0.0	0.8300000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
140	ba g	t2a24.	rc	re	0.0000000	0.0	0.8200000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
140	ba g	t2a26.	rc	re	0.0000000	0.0	0.8600000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
140	ba g	t2a27.	rc	re	0.0000000	0.0	0.7500000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
140	ba g	t2a30.	rc	re	0.0000000	0.0	0.7700000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
140	ba g	t2a30.	rc	re	0.0000000	0.0	0.8100000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
140	ba g	t2a32.	rc	re	0.0000000	0.0	0.7200000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
140	ba g	t2a34.	rc	re	0.0000000	0.0	0.7100000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
140	ba g	t2a34.	rc	re	0.0000000	0.0	0.7400000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
140	ba g	t2a36.	rc	re	0.0000000	0.0	0.6500000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
140	ba g	t2a37.	rc	re	0.0000000	0.0	0.6600000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
140	ba g	t2a38.	rc	re	0.0000000	0.0	0.6600000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
140	ba g	u5necd	rc	cu	0.0000000	0.0	7.0000000	0.7000000	0			0.0000000	67rid1	0
140	ba g	p9npfr	rc	cu	0.0000000	0.0	5.0000000	0.0000000	0			0.0000000	71cun1	0
140	ba g	p9npfr	rc	cu	0.0000000	0.0	5.3100000	0.4000000	99	mo g	pu239f	5.9800000	72cun1	0
140	ba g	u5n.13	rc	cu	0.0000000	0.0	6.1000000	0.4000000	0			0.0000000	73cun2	0
140	ba g	u5n.30	rc	cu	0.0000000	0.0	5.7900000	0.3500000	0			0.0000000	73cun2	0
140	ba g	u5n.70	rc	cu	0.0000000	0.0	6.0800000	0.3600000	0			0.0000000	73cun2	0
140	ba g	u5n.90	rc	cu	0.0000000	0.0	6.0100000	0.3500000	0			0.0000000	73cun2	0
140	ba g	u5n1.3	rc	cu	0.0000000	0.0	5.9700000	0.3600000	0			0.0000000	73cun2	0
140	ba g	u5n1.7	rc	cu	0.0000000	0.0	5.7500000	0.3200000	0			0.0000000	73cun2	0
140	ba g	u5npbe	rc	re	0.0000000	0.0	0.9400000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
140	ba g	u5naal	rc	re	0.0000000	0.0	0.9150000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
140	ba g	u5nabe	rc	re	0.0000000	0.0	0.9300000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
140	ba g	u5ndbe	rc	re	0.0000000	0.0	0.8600000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
140	ba g	u5ndli	rc	re	0.0000000	0.0	0.9900000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
140	ba g	u8n2.0	rc	cu	0.0000000	0.0	5.7700000	0.0000000	0			0.0000000	75fly4	0
140	ba g	u8n2.0	rc	cu	0.0000000	0.0	5.9700000	0.0000000	0			0.0000000	75fly4	0
140	ba g	u8n8.0	rc	cu	0.0000000	0.0	5.8200000	0.0000000	0			0.0000000	75fly4	0
140	ba g	u8n8.0	rc	cu	0.0000000	0.0	5.7100000	0.0000000	0			0.0000000	75fly4	0
140	ba g	t2n1.3	rc	re	0.0000000	0.0	1.1100000	10.0000000%	89	sr g	t2n1.3	1.0000000	76lis1	0
140	ba g	t2n1.4	rc	re	0.0000000	0.0	1.2000000	10.0000000%	89	sr g	t2n1.4	1.0000000	76lis1	0
140	ba g	t2n1.5	rc	re	0.0000000	0.0	1.3200000	10.0000000%	89	sr g	t2n1.5	1.0000000	76lis1	0
140	ba g	t2n1.6	rc	re	0.0000000	0.0	1.0500000	10.0000000%	89	sr g	t2n1.6	1.0000000	76lis1	0
140	ba g	t2n2.0	rc	re	0.0000000	0.0	1.1800000	30.0000000%	89	sr g	t2n2.0	1.0000000	76lis1	0

140	ba g	t2n1.7	rc	re	0.0000000	0.0	1.1200000	10.0000000%	89	sr g	t2n1.7	1.0000000	76lis1	0
140	ba g	t2n3.0	rc	re	0.0000000	0.0	1.1000000	10.0000000%	89	sr g	t2n3.0	1.0000000	76lis1	0
140	ba g	t2n3.9	rc	re	0.0000000	0.0	1.2000000	10.0000000%	89	sr g	t2n3.9	1.0000000	76lis1	0
140	ba g	t2n13.	rc	re	0.0000000	0.0	1.2000000	10.0000000%	89	sr g	t2n13.	1.0000000	76lis1	0
140	ba g	u8n1.5	rc	cu	0.0000000	0.0	6.0100000	0.1800000	0			0.0000000	78nag1	0
140	ba g	t2n2.0	rc	cu	0.0000000	0.0	8.9500000	0.2500000	0			0.0000000	80gle1	0
140	ba g	t2n3.0	rc	cu	0.0000000	0.0	8.6000000	0.2300000	0			0.0000000	80gle1	0
140	ba g	t2n5.9	rc	cu	0.0000000	0.0	7.7500000	0.5500000	0			0.0000000	80gle1	0
140	ba g	t2n6.4	rc	cu	0.0000000	0.0	8.0800000	0.2300000	0			0.0000000	80gle1	0
140	ba g	t2n6.9	rc	cu	0.0000000	0.0	8.7000000	0.3400000	0			0.0000000	80gle1	0
140	ba g	t2n7.6	rc	cu	0.0000000	0.0	8.3800000	0.2300000	0			0.0000000	80gle1	0
140	ba g	t2n8.0	rc	cu	0.0000000	0.0	7.8700000	0.3500000	0			0.0000000	80gle1	0
140	ba g	u5n.13	rc	cu	0.0000000	0.0	6.1000000	0.2200000	0			0.0000000	74cun1	0
140	ba g	u5n.30	rc	cu	0.0000000	0.0	5.7900000	0.1300000	0			0.0000000	74cun1	0
140	ba g	u5n.70	rc	cu	0.0000000	0.0	6.0800000	0.1300000	0			0.0000000	74cun1	0
140	ba g	u5n.90	rc	cu	0.0000000	0.0	6.0100000	0.0900000	0			0.0000000	74cun1	0
140	ba g	u5n1.3	rc	cu	0.0000000	0.0	5.9700000	0.1400000	0			0.0000000	74cun1	0
140	ba g	u5n1.7	rc	cu	0.0000000	0.0	5.7500000	0.0200000	0			0.0000000	74cun1	0
140	ba g	p9n.30	rc	cu	0.0000000	0.0	5.2200000	0.0100000	0			0.0000000	77cun1	0
140	ba g	p9n.70	rc	cu	0.0000000	0.0	5.9600000	0.6600000	0			0.0000000	77cun1	0
140	ba g	p9n.90	rc	cu	0.0000000	0.0	5.3400000	0.4200000	0			0.0000000	77cun1	0
140	ba g	p9n1.3	rc	cu	0.0000000	0.0	5.2200000	0.2300000	0			0.0000000	77cun1	0
140	ba g	p9n1.7	rc	cu	0.0000000	0.0	5.4200000	0.3900000	0			0.0000000	77cun1	0
140	ba g	p9n.13	rc	cu	0.0000000	0.0	4.9600000	0.1300000	0			0.0000000	77cun1	0
141		u234f	rc	cu	6.5244182	6.4	6.7000000	0.1100000	140	ba g	u234f	5.9300000	77bla1	0
141		u234f	es	cu	6.0916535	30.0	6.1000000	0.0000000	0			0.0000000	72sid1	0
141		u237f	es	cu	5.5710290	30.0	5.6000000	0.0000000	0			0.0000000	72sid1	0
141		pu240h	es	cu	3.7634955	30.0	0.0375000	0.0000000	0			0.0100000	77net1	0
141	ce g	pu240h	rc	cu	3.5828477	5.0	0.0357000	3.0000000%	0			0.0100000	77net1	0
141	ce g	u234he	rc	cu	3.6808032	8.9	0.0380000	0.0030000	147	nd g	u234he	0.0132000	72net1	0
141	ce g	u236he	rc	cu	4.0547390	8.2	0.0420000	0.0030000	147	nd g	u236he	0.0179000	72net1	0
141		pu238f	es	cu	4.7847640	30.0	4.7900000	0.0000000	0			0.0000000	72sid1	0
141		am241f	cm	cu	0.0000000	0.0	0.0468000	0.0000000	0			0.0100000	80sig1	0
141		am241f	es	cu	4.9347590	30.0	4.9000000	0.0000000	0			0.0000000	72sid1	0
141		am241f	cm	cu	0.0000000	0.0	4.4500000	15.0000000%	0			0.0000000	81koc1	36
141	ce g	am241f	cm	cu	0.0000000	0.0	4.8700000	0.0000000	0			0.0000000	69gun2	0

141 ce g am241f rc cu 4.7131984 5.0 0.0468000 3.0000000% 0 0.0100000 80sig1 0
141 am243f es cu 4.9517954 30.0 4.9600000 0.0000000 0 0.0000000 72sid1 0
141 np238f es cu 4.9317720 30.0 5.0300000 0.0000000 0 0.0000000 72sid1 0
141 cm242f es cu 4.7685839 30.0 4.8300000 0.0000000 0 0.0000000 72sid1 0
141 ba g u8n1.7 rc cu 0.0000000 0.0 4.9800000 13.1000000% 0 0.0000000 88afa1 0
141 ba g u8n2.2 rc cu 0.0000000 0.0 4.6700000 10.9000000% 0 0.0000000 88afa1 0
141 ba g u8n3.7 rc cu 0.0000000 0.0 4.9900000 15.8000000% 0 0.0000000 88afa1 0
141 ba g u8n4.8 rc cu 0.0000000 0.0 5.0900000 10.8000000% 0 0.0000000 88afa1 0
141 ba g u8n6.0 rc cu 0.0000000 0.0 5.2100000 12.1000000% 0 0.0000000 88afa1 0
1
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nuclide material tech. type value err. value nuclide material value no. treatment

141 u8d14. rc cu 0.0000000 0.0 15.6000000 1.6000000 0 m barn 4.3000000 57sug1 0
141 ce g u8d05. rc cu 0.0000000 0.0 160.0000000 16.0000000 0 u barn 35.0000000 57sug1 0
141 ce g u8d10. rc cu 0.0000000 0.0 2.9000000 0.1000000 0 m barn 0.8600000 57sug1 0
141 ce g t2a19. rc re 0.0000000 0.0 0.8600000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
141 ce g t2a20. rc re 0.0000000 0.0 0.7900000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
141 ce g t2a22. rc re 0.0000000 0.0 0.8900000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
141 ce g t2a24. rc re 0.0000000 0.0 0.7700000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
141 ce g t2a27. rc re 0.0000000 0.0 0.7500000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
141 ce g t2a30. rc re 0.0000000 0.0 0.7200000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
141 ce g t2a32. rc re 0.0000000 0.0 0.7100000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
141 ce g t2a34. rc re 0.0000000 0.0 0.6600000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
141 ce g t2a36. rc re 0.0000000 0.0 0.6800000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
141 ce g t2a38. rc re 0.0000000 0.0 0.7500000 5.0000000% 99 mo g u235t 0.0000000 62hic1 7
141 ce g u5necd rc cu 0.0000000 0.0 6.4000000 0.6000000 0 0.0000000 67rid1 0
141 ce g p9npfr rc cu 0.0000000 0.0 5.6000000 0.0000000 0 0.0000000 71cun1 0
141 ce g t2n3.0 rc cu 0.0000000 0.0 6.6000000 0.7000000 0 0.0000000 71swi3 0
141 ce g p9npfr rc cu 0.0000000 0.0 5.3000000 0.7200000 99 mo g pu239f 5.9800000 72cun1 0
141 ce g p9necd rc re 0.0000000 0.0 1.0400000 0.0240000 99 mo g pu239t 0.0000000 64cro1 7
141 ce g u8n2.0 rc cu 0.0000000 0.0 5.6900000 0.0000000 0 0.0000000 75fly4 0
141 ce g u8n2.0 rc cu 0.0000000 0.0 5.6100000 0.0000000 0 0.0000000 75fly4 0
141 ce g u8n8.0 rc cu 0.0000000 0.0 5.9200000 0.0000000 0 0.0000000 75fly4 0
141 ce g u8n8.0 rc cu 0.0000000 0.0 5.3900000 0.0000000 0 0.0000000 75fly4 0
141 ce g t2n1.3 rc re 0.0000000 0.0 0.7800000 10.0000000% 89 sr g t2n1.3 1.0000000 76lis1 0

141	ce g	t2n1.4	rc	re	0.0000000	0.0	0.8700000	10.0000000%	89	sr g	t2n1.4	1.0000000	76lis1	0			
141	ce g	t2n1.6	rc	re	0.0000000	0.0	0.7700000	10.0000000%	89	sr g	t2n1.6	1.0000000	76lis1	0			
141	ce g	t2n2.0	rc	re	0.0000000	0.0	0.9000000	30.0000000%	89	sr g	t2n2.0	1.0000000	76lis1	0			
141	ce g	t2n1.7	rc	re	0.0000000	0.0	0.9200000	10.0000000%	89	sr g	t2n1.7	1.0000000	76lis1	0			
141	ce g	u8n2.0	rc	cu	0.0000000	0.0	5.5500000	0.3600000	0			0.0000000	78nag1	0			
141	ce g	u8n3.9	rc	cu	0.0000000	0.0	5.6400000	0.3200000	0			0.0000000	78nag1	0			
141	ce g	u8n6.9	rc	cu	0.0000000	0.0	5.0700000	0.3600000	0			0.0000000	78nag1	0			
141	ce g	u8n7.7	rc	cu	0.0000000	0.0	5.5100000	0.3300000	0			0.0000000	78nag1	0			
141	ba g	u8n2.0	rc	cu	0.0000000	0.0	5.7300000	0.3000000	0			0.0000000	78nag1	0			
141	ba g	u8n3.9	rc	cu	0.0000000	0.0	5.8500000	0.5600000	0			0.0000000	78nag1	0			
141	ba g	u8n5.5	rc	cu	0.0000000	0.0	5.3000000	0.3600000	0			0.0000000	78nag1	0			
141	ba g	t2n2.0	rc	cu	0.0000000	0.0	8.9000000	0.4500000	0			0.0000000	80gle1	0			
141	ba g	t2n3.0	rc	cu	0.0000000	0.0	7.6900000	0.4100000	0			0.0000000	80gle1	0			
141	ba g	t2n5.9	rc	cu	0.0000000	0.0	7.3700000	0.5500000	0			0.0000000	80gle1	0			
141	ba g	t2n6.4	rc	cu	0.0000000	0.0	8.4100000	0.6300000	0			0.0000000	80gle1	0			
141	ba g	t2n6.9	rc	cu	0.0000000	0.0	8.0000000	0.8300000	0			0.0000000	80gle1	0			
141	ba g	t2n7.6	rc	cu	0.0000000	0.0	7.6400000	0.6100000	0			0.0000000	80gle1	0			
141	ba g	t2n8.0	rc	cu	0.0000000	0.0	7.2700000	0.5700000	0			0.0000000	80gle1	0			
142		u234f	rc	cu	6.0083075	6.4	6.1700000	0.1000000	140	ba g	u234f	5.9300000	77bla1	0			
142		u234f	es	cu	5.6023240	30.0	5.6100000	0.0000000	0			0.0000000	72sid1	0			
142		u237f	es	cu	5.4317533	30.0	5.4600000	0.0000000	0			0.0000000	72sid1	0			
142		pu240h	es	cu	3.4675587	30.0	0.0345000	0.0000000	0			0.0100000	77net1	0			
142	la g	pu240h	rc	cu	3.8997471	8.0	0.0388000	8.0000000%	0			0.0100000	77net1	0			
142		u234he	es	cu	4.3247325	30.0	4.3500000	0.0000000	0			0.0000000	75mee1	0			
142		u236he	es	cu	4.2576230	30.0	4.2800000	0.0000000	0			0.0000000	75mee1	0			
142		pu238f	es	cu	5.8735725	30.0	5.8800000	0.0000000	0			0.0000000	72sid1	0			
142		am241f	cm	cu	0.0000000	0.0	0.0434000	0.0000000	0			0.0100000	80sig1	0			
142		am241f	es	cu	5.4471414	30.0	5.3400000	0.0000000	0			0.0000000	72sid1	0			
142		am241f	cm	cu	0.0000000	0.0	4.1900000	15.0000000%	0			0.0000000	81koc1	36			
142	la g	am241f	rc	cu	x4 0.0000000	0.0	4.0400000	0.2400000	0			0.0000000	83gud1	0			
142		am243f	es	cu	5.2413157	30.0	5.2500000	0.0000000	0			0.0000000	72sid1	0			
142		np238f	es	cu	5.7553682	30.0	5.8700000	0.0000000	0			0.0000000	72sid1	0			
142		cm242f	es	cu	5.3807003	30.0	5.4500000	0.0000000	0			0.0000000	72sid1	0			
142	la g	u8n1.7	rc	cu	0.0000000	0.0	5.0400000	11.7000000%	0			0.0000000	88afa1	0			
142	la g	u8n2.2	rc	cu	0.0000000	0.0	4.7900000	10.9000000%	0			0.0000000	88afa1	0			
142	la g	u8n3.7	rc	cu	0.0000000	0.0	5.1100000	10.4000000%	0			0.0000000	88afa1	0			

142	la g	u8n4.8	rc	cu	0.0000000	0.0	3.8100000	10.2000000%	0			0.0000000	88afa1	0
142	la g	u8n6.0	rc	cu	0.0000000	0.0	4.6200000	10.4000000%	0			0.0000000	88afa1	0
142	nd g	u35a46	es	in	0.0000000	0.0	0.0066000	0.0000000	143	nd g	u35a46	1.0000000	59chu1	0
142	nd g	u8p730	ms	re	0.0000000	0.0	0.3900000	0.0600000	143	nd g	u8p730	1.0000000	59chu1	0
142	ce g	u38a46	ms	re	0.0000000	0.0	1.1500000	0.0100000	143	nd g	u38a46	1.0000000	59chu1	0
142	ce g	u38a24	ms	re	0.0000000	0.0	1.1800000	0.0300000	143	nd g	u38a24	1.0000000	59chu1	0
142	ce g	u35a46	ms	re	0.0000000	0.0	1.0400000	0.0100000	143	nd g	u35a46	1.0000000	59chu1	0
142	ce g	u8p730	ms	re	0.0000000	0.0	0.7100000	0.0300000	143	nd g	u8p730	1.0000000	59chu1	0
142	la g	u8n2.0	rc	cu	0.0000000	0.0	4.5400000	0.0000000	0			0.0000000	75fly4	0
142	la g	u8n8.0	rc	cu	0.0000000	0.0	4.4300000	0.0000000	0			0.0000000	75fly4	0
142	la g	u8n1.5	rc	cu	0.0000000	0.0	4.6900000	0.2900000	0			0.0000000	78nag1	0
142	la g	u8n2.0	rc	cu	0.0000000	0.0	4.6600000	0.2900000	0			0.0000000	78nag1	0
142	la g	u8n3.9	rc	cu	0.0000000	0.0	4.8500000	0.2800000	0			0.0000000	78nag1	0
142	la g	u8n5.5	rc	cu	0.0000000	0.0	4.5800000	0.2800000	0			0.0000000	78nag1	0
142	la g	u8n6.9	rc	cu	0.0000000	0.0	4.3700000	0.2300000	0			0.0000000	78nag1	0
142	la g	u8n7.7	rc	cu	0.0000000	0.0	4.3500000	0.2600000	0			0.0000000	78nag1	0
142	la g	t2n2.0	rc	cu	0.0000000	0.0	7.2300000	0.3800000	0			0.0000000	80gle1	0
142	la g	t2n3.0	rc	cu	0.0000000	0.0	6.6100000	0.3900000	0			0.0000000	80gle1	0
142	la g	t2n5.9	rc	cu	0.0000000	0.0	5.7600000	0.4300000	0			0.0000000	80gle1	0
142	la g	t2n6.4	rc	cu	0.0000000	0.0	6.5100000	0.4200000	0			0.0000000	80gle1	0
142	la g	t2n6.9	rc	cu	0.0000000	0.0	7.5500000	0.9400000	0			0.0000000	80gle1	0
142	la g	t2n7.6	rc	cu	0.0000000	0.0	7.0100000	0.4300000	0			0.0000000	80gle1	0
142	la g	t2n8.0	rc	cu	0.0000000	0.0	6.8400000	0.3600000	0			0.0000000	80gle1	0
143		u234f	rc	cu	6.1738524	6.4	6.3400000	0.0800000	140	ba g	u234f	5.9300000	77bla1	0
143		u234f	es	cu	5.4425429	30.0	5.4500000	0.0000000	0			0.0000000	72sid1	0
143		u237f	es	cu	4.8050126	30.0	4.8300000	0.0000000	0			0.0000000	72sid1	0
143		pu240h	es	cu	3.1211923	30.0	0.0311000	0.0000000	0			0.0100000	77net1	0
143	ce g	pu240h	rc	cu	3.1011203	5.0	0.0309000	3.0000000%	0			0.0100000	77net1	0
143	ce g	u234he	rc	cu	3.2836639	6.4	0.0339000	0.0017000	147	nd g	u234he	0.0132000	72net1	0
143	ce g	u236he	rc	cu	3.9388893	6.5	0.0408000	0.0021000	147	nd g	u236he	0.0179000	72net1	0
143		pu238f	es	cu	4.5350372	30.0	4.5400000	0.0000000	0			0.0000000	72sid1	0
143		am241f	cm	cu	0.0000000	0.0	0.0390000	0.0000000	0			0.0100000	80sig1	0
143		am241f	es	cu	5.1563196	30.0	5.1200000	0.0000000	0			0.0000000	72sid1	0
143		am241f	cm	cu	0.0000000	0.0	3.9600000	15.0000000%	0			0.0000000	81koc1	36
143	ce g	am241f	cm	cu	0.0000000	0.0	3.3600000	0.0000000	0			0.0000000	69gun2	0
143	ce g	am241f	rc	cu	3.8773106	5.0	0.0385000	3.0000000%	0			0.0100000	80sig1	0

143 ce g am241f rc cu 3.7766012 10.7 3.7500000 0.4000000 0 0.0000000 83gud1 0
143 am243f es cu 5.2013818 30.0 5.2100000 0.0000000 0 0.0000000 72sid1 0
143 np238f es cu 4.3729032 30.0 4.4600000 0.0000000 0 0.0000000 72sid1 0
143 cm242f es cu 4.9660408 30.0 5.0300000 0.0000000 0 0.0000000 72sid1 0
143 ce g u8n1.7 rc cu 0.0000000 0.0 4.6000000 12.0000000% 0 0.0000000 88afa1 0
143 ce g u8n2.2 rc cu 0.0000000 0.0 4.4900000 11.1000000% 0 0.0000000 88afa1 0
143 ce g u8n3.7 rc cu 0.0000000 0.0 4.3900000 10.2000000% 0 0.0000000 88afa1 0
143 ce g u8n4.8 rc cu 0.0000000 0.0 4.4700000 10.3000000% 0 0.0000000 88afa1 0
143 ce g u8n6.0 rc cu 0.0000000 0.0 4.6400000 11.8000000% 0 0.0000000 88afa1 0
143 pm g u8p730 es re 0.0000000 0.0 0.1200000 0.0000000 143 nd g u8p730 1.0000000 59chu1 0
143 nd g p9necd ms cu 0.0000000 0.0 3.8000000 0.5000000 0 0.0000000 67rid1 0
143 nd g u3necd ms cu 0.0000000 0.0 5.5000000 0.6000000 0 0.0000000 67rid1 0
143 nd g u5necd ms cu 0.0000000 0.0 6.5000000 0.7000000 0 0.0000000 67rid1 0
143 pr g u8d05. rc cu 0.0000000 0.0 120.0000000 7.0000000 0 u barn 35.0000000 57sug1 0
143 pr g u8d10. rc cu 0.0000000 0.0 2.6000000 0.1000000 0 m barn 0.8600000 57sug1 0
143 pr g u8d14. rc cu 0.0000000 0.0 12.1000000 0.3000000 0 m barn 4.3000000 57sug1 0
143 pr g t2n3.0 rc cu 0.0000000 0.0 6.2000000 0.1000000 99 mo g t2n3.0 2.7800000 68lyl1 0
143 ce g u5n5 rc cu 0.0000000 0.0 4.6100000 0.0000000 99 mo g u235t 5.7000000 56for1 6
143 ce g u8n3. rc cu 0.0000000 0.0 5.1400000 0.1900000 99 mo g u8n3. 6.3200000 70lyl1 0
143 ce g p9npfr rc cu 0.0000000 0.0 4.8000000 0.0000000 0 0.0000000 71cun1 0
143 ce g t2n3.0 rc cu 0.0000000 0.0 6.0000000 0.6000000 0 0.0000000 71swi3 0
143 ce g p9npfr rc cu 0.0000000 0.0 4.6200000 0.3600000 99 mo g pu239f 5.9800000 72cun1 0
143 ce g u5n2.0 rc cu 0.0000000 0.0 1.0100000 0.0600000 140 ba g u5n2.0 1.0000000 73man1 0
143 ce g u5n4.0 rc cu 0.0000000 0.0 0.9500000 0.0800000 140 ba g u5n4.0 1.0000000 73man1 0
143 ce g u5n6.0 rc cu 0.0000000 0.0 0.8900000 0.0700000 140 ba g u5n6.0 1.0000000 73man1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

143 ce g u5n9.0 rc cu 0.0000000 0.0 0.9600000 0.0800000 140 ba g u5n9.0 1.0000000 73man1 0
143 ce g u8n2.0 rc re 0.0000000 0.0 0.6700000 0.0400000 140 ba g u8n2.0 1.0000000 73man1 0
143 ce g u8n4.0 rc cu 0.0000000 0.0 0.7300000 0.0600000 140 ba g u8n4.0 1.0000000 73man1 0
143 ce g u8n6.0 rc cu 0.0000000 0.0 0.7100000 0.0500000 140 ba g u8n6.0 1.0000000 73man1 0
143 ce g u8n9.0 rc cu 0.0000000 0.0 0.6900000 0.0300000 140 ba g u8n9.0 1.0000000 73man1 0
143 ce g p9necd rc re 0.0000000 0.0 1.0110000 0.0210000 99 mo g pu239t 0.0000000 64cro1 7
143 ce g u8n2.0 rc cu 0.0000000 0.0 4.2800000 0.0000000 0 0.0000000 75fly4 0

143	ce g	u8n2.0	rc	cu	0.0000000	0.0	4.9200000	0.0000000	0			0.0000000	75fly4	0
143	ce g	u8n8.0	rc	cu	0.0000000	0.0	4.6100000	0.0000000	0			0.0000000	75fly4	0
143	ce g	u8n8.0	rc	cu	0.0000000	0.0	4.3500000	0.0000000	0			0.0000000	75fly4	0
143	ce g	u8n1.5	rc	cu	0.0000000	0.0	4.6300000	0.2900000	0			0.0000000	78nag1	0
143	ce g	u8n2.0	rc	cu	0.0000000	0.0	4.6200000	0.2500000	0			0.0000000	78nag1	0
143	ce g	u8n3.9	rc	cu	0.0000000	0.0	4.6000000	0.2800000	0			0.0000000	78nag1	0
143	ce g	u8n5.5	rc	cu	0.0000000	0.0	4.7500000	0.2900000	0			0.0000000	78nag1	0
143	ce g	u8n6.9	rc	cu	0.0000000	0.0	4.2800000	0.2600000	0			0.0000000	78nag1	0
143	ce g	u8n7.7	rc	cu	0.0000000	0.0	4.5800000	0.2700000	0			0.0000000	78nag1	0
143	ce g	t2n2.0	rc	cu	0.0000000	0.0	6.7900000	0.3800000	0			0.0000000	80gle1	0
143	ce g	t2n3.0	rc	cu	0.0000000	0.0	6.4500000	0.3700000	0			0.0000000	80gle1	0
143	ce g	t2n5.9	rc	cu	0.0000000	0.0	5.5900000	0.3500000	0			0.0000000	80gle1	0
143	ce g	t2n6.4	rc	cu	0.0000000	0.0	6.6600000	0.4000000	0			0.0000000	80gle1	0
143	ce g	t2n6.9	rc	cu	0.0000000	0.0	7.6700000	0.4600000	0			0.0000000	80gle1	0
143	ce g	t2n7.6	rc	cu	0.0000000	0.0	6.9500000	0.4100000	0			0.0000000	80gle1	0
143	ce g	t2n8.0	rc	cu	0.0000000	0.0	6.9400000	0.3300000	0			0.0000000	80gle1	0
144		u234f	rc	cu	5.4824589	6.4	5.6300000	0.0900000	140	ba g	u234f	5.9300000	77bla1	0
144		u234f	es	cu	4.5937059	30.0	4.6000000	0.0000000	0			0.0000000	72sid1	0
144		u237f	es	cu	4.8448056	30.0	4.8700000	0.0000000	0			0.0000000	72sid1	0
144		pu240h	es	cu	2.8201126	30.0	0.0281000	0.0000000	0			0.0100000	77net1	0
144	ce g	pu240h	rc	cu	2.6595368	5.0	0.0265000	3.0000000%	0			0.0100000	77net1	0
144	ce g	u234he	rc	cu	2.6831118	8.3	0.0277000	0.0020000	147	nd g	u234he	0.0132000	72net1	0
144	ce g	u236he	rc	cu	3.4851447	7.8	0.0361000	0.0024000	147	nd g	u236he	0.0179000	72net1	0
144		pu238f	es	cu	3.9257040	30.0	3.9300000	0.0000000	0			0.0000000	72sid1	0
144		am241f	cm	cu	0.0000000	0.0	0.0351000	0.0000000	0			0.0100000	80sig1	0
144		am241f	es	cu	4.1089422	30.0	4.0800000	0.0000000	0			0.0000000	72sid1	0
144		am241f	cm	cu	0.0000000	0.0	3.4700000	15.0000000%	0			0.0000000	81koc1	36
144	ce g	am241f	cm	cu	0.0000000	0.0	3.1700000	0.0000000	0			0.0000000	69gun2	0
144	ce g	am241f	rc	cu	3.3939057	5.0	0.0337000	3.5000000%	0			0.0100000	80sig1	0
144		am243f	es	cu	4.1531187	30.0	4.1600000	0.0000000	0			0.0000000	72sid1	0
144		np238f	es	cu	4.1375901	30.0	4.2200000	0.0000000	0			0.0000000	72sid1	0
144		cm242f	es	cu	3.9491378	30.0	4.0000000	0.0000000	0			0.0000000	72sid1	0
144	sm g	u8p730	ms	re	0.0000000	0.0	0.0400000	0.0030000	143	nd g	u8p730	1.0000000	59chu1	0
144	nd g	u38a46	ms	re	0.0000000	0.0	0.9000000	0.0300000	143	nd g	u38a46	1.0000000	59chu1	0
144	nd g	u38a24	ms	re	0.0000000	0.0	0.8600000	0.0400000	143	nd g	u38a24	1.0000000	59chu1	0
144	nd g	u35a46	ms	re	0.0000000	0.0	0.8900000	0.0200000	143	nd g	u35a46	1.0000000	59chu1	0

144	nd g	u8p730	ms	re		0.0000000	0.0	0.5000000	0.0700000	143	nd g	u8p730	1.0000000	59chu1	0
144	nd g	p9necd	ms	cu		0.0000000	0.0	3.3000000	0.4000000	0			0.0000000	67rid1	0
144	nd g	u3necd	ms	cu		0.0000000	0.0	4.6000000	0.5000000	0			0.0000000	67rid1	0
144	nd g	u5necd	ms	cu		0.0000000	0.0	6.1000000	0.7000000	0			0.0000000	67rid1	0
144	nd g	t2a44.	ms	re		0.0000000	0.0	0.8250000	0.0160000	143	nd g	t2a44.	1.0000000	68mch2	0
144	ce g	t2nlid	rc	cu		0.0000000	0.0	1.1000000	0.0000000	89	sr g	th232f	0.0000000	53tur1	7
144	ce g	n7ndf	rc	re		0.0000000	0.0	0.7500000	0.0000000	99	mo g	u235t	0.0000000	56for1	7
144	ce g	u8d05.	rc	cu	lt	0.0000000	0.0	183.0000000	4.0000000	0		u barn	35.0000000	57sug1	0
144	ce g	u8d10.	rc	cu	lt	0.0000000	0.0	3.0000000	0.3000000	0		m barn	0.8600000	57sug1	0
144	ce g	u8d14.	rc	cu	lt	0.0000000	0.0	14.0000000	2.0000000	0		m barn	4.3000000	57sug1	0
144	ce g	u5n8	rc	cu		0.0000000	0.0	3.6000000	15.0000000%	99	mo g	u235t	6.0000000	59bun2	12
144	ce g	u8n8	rc	cu		0.0000000	0.0	4.1000000	15.0000000%	99	mo g	u235t	6.0000000	59bun2	13
144	ce g	u8p730	ms	re		0.0000000	0.0	1.4400000	0.0600000	143	nd g	u8p730	1.0000000	59chu1	0
144	ce g	u8p730	ms	re		0.0000000	0.0	0.3900000	0.0200000	143	nd g	u8p730	1.0000000	59chu1	0
144	ce g	t2a19.	rc	re		0.0000000	0.0	0.6900000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
144	ce g	t2a20.	rc	re		0.0000000	0.0	0.6500000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
144	ce g	t2a22.	rc	re		0.0000000	0.0	0.6100000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
144	ce g	t2a24.	rc	re		0.0000000	0.0	0.6100000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
144	ce g	t2a27.	rc	re		0.0000000	0.0	0.5700000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
144	ce g	t2a30.	rc	re		0.0000000	0.0	0.5600000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
144	ce g	t2a32.	rc	re		0.0000000	0.0	0.5100000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
144	ce g	t2a34.	rc	re		0.0000000	0.0	0.5000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
144	ce g	t2a36.	rc	re		0.0000000	0.0	0.4600000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
144	ce g	t2a38.	rc	re		0.0000000	0.0	0.4700000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
144	ce g	t2a44.	ms	re		0.0000000	0.0	0.7400000	0.0150000	142	ce g	t2a44.	1.0000000	68mch2	0
144	ce g	p9npfr	rc	cu		0.0000000	0.0	5.6000000	0.0000000	0			0.0000000	71cun1	0
144	ce g	p9npfr	rc	cu		0.0000000	0.0	5.5400000	0.0900000	99	mo g	pu239f	5.9800000	72cun1	0
144	ce g	u5n1.0	rc	re		0.0000000	0.0	0.5600000	0.0800000	140	ba g	u5n1.0	1.0000000	73man1	0
144	ce g	u5n2.0	rc	cu		0.0000000	0.0	0.5200000	0.0900000	140	ba g	u5n2.0	1.0000000	73man1	0
144	ce g	u5n4.0	rc	cu		0.0000000	0.0	0.7300000	0.2500000	140	ba g	u5n4.0	1.0000000	73man1	0
144	ce g	u5n6.0	rc	cu		0.0000000	0.0	0.5100000	0.1300000	140	ba g	u5n6.0	1.0000000	73man1	0
144	ce g	u5n9.0	rc	cu		0.0000000	0.0	0.5100000	0.0900000	140	ba g	u5n9.0	1.0000000	73man1	0
144	ce g	u8n2.0	rc	re		0.0000000	0.0	0.6400000	0.0700000	140	ba g	u8n2.0	1.0000000	73man1	0
144	ce g	u8n4.0	rc	cu		0.0000000	0.0	0.5400000	0.0700000	140	ba g	u8n4.0	1.0000000	73man1	0
144	ce g	u8n6.0	rc	cu		0.0000000	0.0	0.6300000	0.0500000	140	ba g	u8n6.0	1.0000000	73man1	0
144	ce g	u8n9.0	rc	cu		0.0000000	0.0	0.6500000	0.0800000	140	ba g	u8n9.0	1.0000000	73man1	0

144	ce	g	u8n2.0	rc	cu	0.0000000	0.0	4.8000000	0.0000000	0			0.0000000	75fly4	0
144	ce	g	t2n11.	rc	cu	0.0000000	0.0	7.2000000	0.0000000	0			0.0000000	53tur1	0
144	ce	g	t2n1.3	rc	re	0.0000000	0.0	1.2500000	10.0000000%	89	sr	g	t2n1.3	1.0000000	76lis1	0
144	ce	g	t2n1.4	rc	re	0.0000000	0.0	0.9600000	10.0000000%	89	sr	g	t2n1.4	1.0000000	76lis1	0
144	ce	g	t2n1.6	rc	re	0.0000000	0.0	0.9000000	10.0000000%	89	sr	g	t2n1.6	1.0000000	76lis1	0
144	ce	g	t2n2.0	rc	re	0.0000000	0.0	0.8600000	30.0000000%	89	sr	g	t2n2.0	1.0000000	76lis1	0
144	ce	g	t2n1.7	rc	re	0.0000000	0.0	0.8800000	10.0000000%	89	sr	g	t2n1.7	1.0000000	76lis1	0
144	ce	g	u8n2.0	rc	cu	0.0000000	0.0	4.6500000	0.2500000	0			0.0000000	78nag1	0
144	ce	g	u8n6.9	rc	cu	0.0000000	0.0	4.7500000	0.6200000	0			0.0000000	78nag1	0
145			u234f	es	cu	3.9890538	30.0	4.0000000	0.0000000	0			0.0000000	72sid1	0
145			u237f	es	cu	3.6311171	30.0	3.6500000	0.0000000	0			0.0000000	72sid1	0
145			pu240h	es	cu	2.4575621	30.0	0.0244000	0.0000000	0			0.0100000	77net1	0
145	pr	g	pu240h	rc	cu	2.7093615	10.0	0.0269000	10.0000000%	0			0.0100000	77net1	0
145			u234he	es	cu	2.3406135	30.0	2.3600000	0.0000000	0			0.0000000	75mee1	0
145			u236he	es	cu	2.5509977	30.0	2.5700000	0.0000000	0			0.0000000	75mee1	0
145			pu238f	es	cu	3.2364583	30.0	3.2400000	0.0000000	0			0.0000000	72sid1	0
145			am241f	cm	cu	0.0000000	0.0	0.0310000	0.0000000	0			0.0100000	80sig1	0
145			am241f	es	cu	3.4478161	30.0	3.3800000	0.0000000	0			0.0000000	72sid1	0
145			am241f	cm	cu	0.0000000	0.0	3.0100000	15.0000000%	0			0.0000000	81koc1	36
145			am243f	es	cu	3.4143428	30.0	3.4200000	0.0000000	0			0.0000000	72sid1	0
145			np238f	es	cu	3.2649704	30.0	3.3300000	0.0000000	0			0.0000000	72sid1	0
145			cm242f	es	cu	3.2975301	30.0	3.3400000	0.0000000	0			0.0000000	72sid1	0
145	sm	g	u8p730	ms	re	0.0000000	0.0	0.0800000	0.0050000	143	nd	g	u8p730	1.0000000	59chu1	0
145	nd	g	u38a46	ms	re	0.0000000	0.0	0.8100000	0.0200000	143	nd	g	u38a46	1.0000000	59chu1	0
145	nd	g	u38a24	ms	re	0.0000000	0.0	0.7600000	0.0200000	143	nd	g	u38a24	1.0000000	59chu1	0
145	nd	g	u35a46	ms	re	0.0000000	0.0	0.7700000	0.0100000	143	nd	g	u35a46	1.0000000	59chu1	0
145	nd	g	u8p730	ms	re	0.0000000	0.0	0.5900000	0.0800000	143	nd	g	u8p730	1.0000000	59chu1	0
145	nd	g	p9necd	ms	cu	0.0000000	0.0	2.6000000	0.3000000	0			0.0000000	67rid1	0
145	nd	g	u3necd	ms	cu	0.0000000	0.0	3.3000000	0.4000000	0			0.0000000	67rid1	0
145	nd	g	u5necd	ms	cu	0.0000000	0.0	4.3000000	0.5000000	0			0.0000000	67rid1	0
145	nd	g	t2a44.	ms	re	0.0000000	0.0	0.7130000	0.0110000	143	nd	g	t2a44.	1.0000000	68mch2	0
145	pr	g	t2n3.0	rc	cu	0.0000000	0.0	4.9400000	0.1900000	99	mo	g	t2n3.0	2.7800000	68lyl1	0
145	pr	g	u8n3.	rc	cu	0.0000000	0.0	4.0800000	0.1100000	99	mo	g	u8n3.	6.3200000	70lyl1	0
145	pr	g	t2n3.0	rc	cu	0.0000000	0.0	4.7000000	0.5000000	0			0.0000000	71swi3	0
146			u234f	es	cu	3.0715714	30.0	3.0800000	0.0000000	0			0.0000000	72sid1	0
146			u237f	es	cu	3.1237556	30.0	3.1400000	0.0000000	0			0.0000000	72sid1	0

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 146        pu240h   es    cu        2.1302299 30.0   0.0210000  0.0000000     0                    0.0100000   77net1      0
 146        u234he   es    cu        1.9141458 30.0   1.9300000  0.0000000     0                    0.0000000   75mee1      0
 146        u236he   es    cu        1.9951383 30.0   2.0100000  0.0000000     0                    0.0000000   75mee1      0
 146        pu238f   es    cu        2.7669721 30.0   2.7700000  0.0000000     0                    0.0000000   72sid1      0
 146        am241f   cm    cu         0.0000000  0.0   0.0266000  0.0000000     0                    0.0100000   80sig1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type          value   err.     value                nuclide     material       value      no.   treatment

 146        am241f   es    cu        2.9173829 30.0   2.8600000  0.0000000     0                    0.0000000   72sid1      0
 146        am241f   cm    cu         0.0000000  0.0   2.6500000 15.0000000%    0                    0.0000000   81koc1     36
 146        am243f   es    cu        2.8952029 30.0   2.9000000  0.0000000     0                    0.0000000   72sid1      0
 146        np238f   es    cu        2.8531723 30.0   2.9100000  0.0000000     0                    0.0000000   72sid1      0
 146        cm242f   es    cu        2.7940150 30.0   2.8300000  0.0000000     0                    0.0000000   72sid1      0
 146 ce g   u8n1.7   rc    cu         0.0000000  0.0   3.2900000 11.8000000%    0                    0.0000000   88afa1      0
 146 ce g   u8n2.2   rc    cu         0.0000000  0.0   3.5400000 13.0000000%    0                    0.0000000   88afa1      0
 146 ce g   u8n3.7   rc    cu         0.0000000  0.0   3.3400000 12.9000000%    0                    0.0000000   88afa1      0
 146 ce g   u8n3.7   rc    cu         0.0000000  0.0   3.4500000 13.0000000%    0                    0.0000000   88afa1      0
 146 ce g   u8n4.8   rc    cu         0.0000000  0.0   3.5500000 11.0000000%    0                    0.0000000   88afa1      0
 146 ce g   u8n6.0   rc    cu         0.0000000  0.0   3.3800000 13.3000000%    0                    0.0000000   88afa1      0
 146 sm g   u8p730   ms    re         0.0000000  0.0   0.0700000  0.0070000   143 nd g     u8p730      1.0000000   59chu1      0
 146 nd g   u38a46   ms    re         0.0000000  0.0   0.6700000  0.0100000   143 nd g     u38a46      1.0000000   59chu1      0
 146 nd g   u38a24   ms    re         0.0000000  0.0   0.6400000  0.0200000   143 nd g     u38a24      1.0000000   59chu1      0
 146 nd g   u35a46   ms    re         0.0000000  0.0   0.6500000  0.0100000   143 nd g     u35a46      1.0000000   59chu1      0
 146 nd g   u8p730   ms    re         0.0000000  0.0   0.5100000  0.0700000   143 nd g     u8p730      1.0000000   59chu1      0
 146 nd g   p9necd   ms    cu         0.0000000  0.0   2.2000000  0.3000000     0                    0.0000000   67rid1      0
 146 nd g   u3necd   ms    cu         0.0000000  0.0   2.6000000  0.3000000     0                    0.0000000   67rid1      0
 146 nd g   u5necd   ms    cu         0.0000000  0.0   3.4000000  0.4000000     0                    0.0000000   67rid1      0
 146 nd g   t2a44.   ms    re         0.0000000  0.0   0.5740000  0.0100000   143 nd g     t2a44.      1.0000000   68mch2      0
 146 ce g   u8n8.0   rc    cu         0.0000000  0.0   3.4000000  0.0000000     0                    0.0000000   75fly4      0
 146 ce g   u8n1.5   rc    cu         0.0000000  0.0   3.8200000  0.3200000     0                    0.0000000   78nag1      0
 146 ce g   u8n2.0   rc    cu         0.0000000  0.0   3.7200000  0.2700000     0                    0.0000000   78nag1      0
 146 ce g   u8n3.9   rc    cu         0.0000000  0.0   3.4400000  0.3100000     0                    0.0000000   78nag1      0
 146 ce g   u8n5.5   rc    cu         0.0000000  0.0   3.6400000  0.3000000     0                    0.0000000   78nag1      0
 146 ce g   u8n7.7   rc    cu         0.0000000  0.0   3.1900000  0.2500000     0                    0.0000000   78nag1      0
 146 ce g   t2n2.0   rc    cu         0.0000000  0.0   4.4500000  0.6500000     0                    0.0000000   80gle1      0
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146 ce g t2n3.0 rc cu 0.0000000 0.0 3.7100000 0.7000000 0 0.0000000 80gle1 0
146 ce g t2n5.9 rc cu 0.0000000 0.0 3.0700000 1.1100000 0 0.0000000 80gle1 0
146 ce g t2n6.4 rc cu 0.0000000 0.0 3.6700000 0.6200000 0 0.0000000 80gle1 0
146 ce g t2n6.9 rc cu 0.0000000 0.0 3.1100000 0.5000000 0 0.0000000 80gle1 0
146 ce g t2n7.6 rc cu 0.0000000 0.0 3.1300000 0.4600000 0 0.0000000 80gle1 0
146 ce g t2n8.0 rc cu 0.0000000 0.0 3.8800000 0.4900000 0 0.0000000 80gle1 0
147 u234f rc cu 2.0254910 6.4 2.0800000 0.0500000 140 ba g u234f 5.9300000 77bla1 0
147 u234f es cu 1.8474687 30.0 1.8500000 0.0000000 0 0.0000000 72sid1 0
147 u237f es cu 2.6163940 30.0 2.6300000 0.0000000 0 0.0000000 72sid1 0
147 pu240h es cu 1.7663339 30.0 0.0176000 0.0000000 0 0.0100000 77net1 0
147 nd g pu240h rc cu 1.7864059 5.0 0.0178000 3.0000000% 0 0.0100000 77net1 0
147 nd g u234he rc cu 1.2804569 7.9 0.0132000 0.0009000 147 nd g u234he 0.0132000 72net1 0
147 nd g u234he rc cu rp 1.2758255 5.7 0.0132000 0.0000000 no. relative values = 15 72net1
147 nd g u234he es cu 1.2881267 5.0 1.2900000 5.0000000% 0 0.0000000 75mee1 0
147 nd g u236he rc cu 1.7303558 6.9 0.0179000 0.0010000 147 nd g u236he 0.0179000 72net1 0
147 nd g u236he rc cu rp 1.7278250 5.5 0.0179000 0.0000000 no. relative values = 15 72net1
147 nd g u236he es cu 1.7377257 5.0 1.7400000 5.0000000% 0 0.0000000 75mee1 0
147 pu238f es cu 2.2365372 30.0 2.2400000 0.0000000 0 0.0000000 72sid1 0
147 am241f cm cu 0.0000000 0.0 0.0235000 0.0000000 0 0.0100000 80sig1 0
147 am241f es cu 2.2961736 30.0 2.2800000 0.0000000 0 0.0000000 72sid1 0
147 am241f cm cu 0.0000000 0.0 2.1800000 15.0000000% 0 0.0000000 81koc1 36
147 nd g am241f cm cu 0.0000000 0.0 2.0600000 0.0000000 0 0.0000000 69gun2 0
147 nd g am241f rc cu 2.1451095 5.0 0.0213000 3.0000000% 0 0.0100000 80sig1 0
147 am243f es cu 2.3361293 30.0 2.3400000 0.0000000 0 0.0000000 72sid1 0
147 np238f es cu 2.3920613 30.0 2.4600000 0.0000000 0 0.0000000 72sid1 0
147 cm242f es cu 2.1800789 30.0 2.2200000 0.0000000 0 0.0000000 72sid1 0
147 nd g u8n1.7 rc cu 0.0000000 0.0 2.6400000 15.9000000% 0 0.0000000 88afa1 0
147 nd g u8n2.2 rc cu 0.0000000 0.0 2.7300000 16.1000000% 0 0.0000000 88afa1 0
147 nd g u8n3.7 rc cu 0.0000000 0.0 2.7700000 15.5000000% 0 0.0000000 88afa1 0
147 nd g u8n4.8 rc cu 0.0000000 0.0 2.7400000 12.4000000% 0 0.0000000 88afa1 0
147 nd g u8n6.0 rc cu 0.0000000 0.0 2.9300000 10.2000000% 0 0.0000000 88afa1 0
147 sm g u38a46 ms re 0.0000000 0.0 0.5800000 0.0200000 143 nd g u38a46 1.0000000 59chu1 0
147 sm g u38a24 ms re 0.0000000 0.0 0.5700000 0.0300000 143 nd g u38a24 1.0000000 59chu1 0
147 sm g u35a46 ms re 0.0000000 0.0 0.5400000 0.0600000 143 nd g u35a46 1.0000000 59chu1 0
147 sm g u8p730 ms re 0.0000000 0.0 0.4200000 0.0300000 143 nd g u8p730 1.0000000 59chu1 0
147 sm g t2a44. ms re 0.0000000 0.0 1.4900000 0.0070000 149 sm g t2a44. 1.0000000 68mch2 0

147	nd	g	u8d05.	rc	cu	0.0000000	0.0	89.0000000	4.0000000	0	u barn	35.0000000	57sug1	0
147	nd	g	u8d10.	rc	cu	0.0000000	0.0	1.6000000	0.1000000	0	m barn	0.8600000	57sug1	0
147	nd	g	u8d14.	rc	cu	0.0000000	0.0	8.7000000	0.3000000	0	m barn	4.3000000	57sug1	0
147	nd	g	u5n8	rc	cu	0.0000000	0.0	2.0500000	15.0000000%	99 mo g	u235t	2.6000000	59bun2	12
147	nd	g	u8n8	rc	cu	0.0000000	0.0	2.7000000	15.0000000%	99 mo g	u235t	2.6000000	59bun2	13
147	nd	g	u5ndcu	rc	re	0.0000000	0.0	0.8800000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
147	nd	g	u8ndcu	rc	re	0.0000000	0.0	1.0200000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
147	nd	g	u8naal	rc	re	0.0000000	0.0	1.1200000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
147	nd	g	u8nabe	rc	re	0.0000000	0.0	0.9500000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
147	nd	g	u8ndbe	rc	re	0.0000000	0.0	1.0400000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
147	nd	g	u8ndli	rc	re	0.0000000	0.0	1.1000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
147	nd	g	t2a19.	rc	re	0.0000000	0.0	0.8500000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
147	nd	g	t2a20.	rc	re	0.0000000	0.0	0.8300000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
147	nd	g	t2a20.	rc	re	0.0000000	0.0	0.8000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
147	nd	g	t2a22.	rc	re	0.0000000	0.0	0.7800000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
147	nd	g	t2a24.	rc	re	0.0000000	0.0	0.7600000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
147	nd	g	t2a26.	rc	re	0.0000000	0.0	0.8000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
147	nd	g	t2a27.	rc	re	0.0000000	0.0	0.7000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
147	nd	g	t2a30.	rc	re	0.0000000	0.0	0.7000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
147	nd	g	t2a30.	rc	re	0.0000000	0.0	0.7300000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
147	nd	g	t2a32.	rc	re	0.0000000	0.0	0.6400000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
147	nd	g	t2a34.	rc	re	0.0000000	0.0	0.6600000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
147	nd	g	t2a34.	rc	re	0.0000000	0.0	0.6800000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
147	nd	g	t2a36.	rc	re	0.0000000	0.0	0.5900000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
147	nd	g	t2a37.	rc	re	0.0000000	0.0	0.6100000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
147	nd	g	t2a38.	rc	re	0.0000000	0.0	0.6100000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
147	nd	g	t2n3.0	rc	cu	0.0000000	0.0	2.2000000	0.2000000	0		0.0000000	71swi3	0
147	nd	g	u5n.13	rc	cu	0.0000000	0.0	2.3500000	0.1400000	0		0.0000000	73cun2	0
147	nd	g	u5n.30	rc	cu	0.0000000	0.0	2.6100000	0.1600000	0		0.0000000	73cun2	0
147	nd	g	u5n.70	rc	cu	0.0000000	0.0	2.5100000	0.1800000	0		0.0000000	73cun2	0
147	nd	g	u5n.90	rc	cu	0.0000000	0.0	2.4600000	0.1400000	0		0.0000000	73cun2	0
147	nd	g	u5n1.3	rc	cu	0.0000000	0.0	2.5600000	0.1700000	0		0.0000000	73cun2	0
147	nd	g	u5n1.7	rc	cu	0.0000000	0.0	2.4200000	0.1300000	0		0.0000000	73cun2	0
147	nd	g	u5n1.0	rc	re	0.0000000	0.0	0.4800000	0.0200000	140 ba g	u5n1.0	1.0000000	73man1	0
147	nd	g	u5n2.0	rc	cu	0.0000000	0.0	0.4900000	0.0200000	140 ba g	u5n2.0	1.0000000	73man1	0
147	nd	g	u5n4.0	rc	cu	0.0000000	0.0	0.4800000	0.0400000	140 ba g	u5n4.0	1.0000000	73man1	0

147 nd g	u5n6.0	rc	cu	0.0000000	0.0	0.5200000	0.0300000	140 ba g	u5n6.0	1.0000000	73man1	0		
147 nd g	u5n9.0	rc	cu	0.0000000	0.0	0.5000000	0.0300000	140 ba g	u5n9.0	1.0000000	73man1	0		
147 nd g	u8n4.0	rc	cu	0.0000000	0.0	0.4300000	0.0100000	140 ba g	u8n4.0	1.0000000	73man1	0		
147 nd g	u8n6.0	rc	cu	0.0000000	0.0	0.4100000	0.0100000	140 ba g	u8n6.0	1.0000000	73man1	0		
147 nd g	u8n9.0	rc	cu	0.0000000	0.0	0.4200000	0.0100000	140 ba g	u8n9.0	1.0000000	73man1	0		
147 nd g	u5npbe	rc	re	0.0000000	0.0	0.9200000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7		
147 nd g	u5naal	rc	re	0.0000000	0.0	0.9250000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7		
147 nd g	u5ndbe	rc	re	0.0000000	0.0	0.8800000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7		
147 nd g	u5ndli	rc	re	0.0000000	0.0	0.9900000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7		
147 nd g	u8n2.0	rc	cu	0.0000000	0.0	2.2500000	0.0000000	0		0.0000000	75fly4	0		
147 nd g	u8n8.0	rc	cu	0.0000000	0.0	2.8500000	0.0000000	0		0.0000000	75fly4	0		
147 nd g	p9n.13	rc	cu	0.0000000	0.0	2.1900000	0.0700000	0		0.0000000	77cun1	0		
147 nd g	p9n.30	rc	cu	0.0000000	0.0	2.2200000	0.0400000	0		0.0000000	77cun1	0		
147 nd g	p9n.70	rc	cu	0.0000000	0.0	2.4600000	0.0900000	0		0.0000000	77cun1	0		
147 nd g	p9n.90	rc	cu	0.0000000	0.0	2.3800000	0.0600000	0		0.0000000	77cun1	0		
147 nd g	p9n1.3	rc	cu	0.0000000	0.0	2.2500000	0.3000000	0		0.0000000	77cun1	0		
147 nd g	p9n1.7	rc	cu	0.0000000	0.0	2.6000000	0.1500000	0		0.0000000	77cun1	0		
147 nd g	u8n1.5	rc	cu	0.0000000	0.0	2.6500000	0.3500000	0		0.0000000	78nag1	0		
147 nd g	u8n2.0	rc	cu	0.0000000	0.0	2.8200000	0.3700000	0		0.0000000	78nag1	0		
147 nd g	u8n3.9	rc	cu	0.0000000	0.0	2.7000000	0.2000000	0		0.0000000	78nag1	0		
147 nd g	u8n3.9	rc	cu	0.0000000	0.0	3.2300000	0.2500000	0		0.0000000	78nag1	0		
1														
0measured nuclide	fissile material	meas. tech.	meas. type	note value	updated err.	pct. value	published error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment		
147 nd g	u8n5.5	rc	cu	0.0000000	0.0	2.9600000	0.2900000	0		0.0000000	78nag1	0		
147 nd g	u8n6.9	rc	cu	0.0000000	0.0	2.9000000	0.2600000	0		0.0000000	78nag1	0		
147 nd g	u8n7.7	rc	cu	0.0000000	0.0	2.6600000	0.2400000	0		0.0000000	78nag1	0		
147 nd g	t2n2.0	rc	cu	0.0000000	0.0	3.4000000	0.9700000	0		0.0000000	80gle1	0		
147 nd g	t2n3.0	rc	cu	0.0000000	0.0	3.3200000	0.4900000	0		0.0000000	80gle1	0		
147 nd g	t2n6.4	rc	cu	0.0000000	0.0	3.0200000	0.6400000	0		0.0000000	80gle1	0		
147 nd g	t2n7.6	rc	cu	0.0000000	0.0	3.1100000	0.5700000	0		0.0000000	80gle1	0		
147 nd g	t2n8.0	rc	cu	0.0000000	0.0	2.8800000	0.3200000	0		0.0000000	80gle1	0		
147 nd g	u5n.13	rc	cu	0.0000000	0.0	2.3500000	0.0600000	0		0.0000000	74cun1	0		
147 nd g	u5n.30	rc	cu	0.0000000	0.0	2.6100000	0.0800000	0		0.0000000	74cun1	0		
147 nd g	u5n.70	rc	cu	0.0000000	0.0	2.5100000	0.1000000	0		0.0000000	74cun1	0		

147	nd g	u5n.90	rc	cu	0.0000000	0.0	2.4600000	0.0400000	0			0.0000000	74cun1	0
147	nd g	u5n1.3	rc	cu	0.0000000	0.0	2.5600000	0.0900000	0			0.0000000	74cun1	0
147	nd g	u5n1.7	rc	cu	0.0000000	0.0	2.4200000	0.0300000	0			0.0000000	74cun1	0
148		u234f	es	cu	1.4344271	30.0	1.4400000	0.0000000	0			0.0000000	72sid1	0
148		u237f	es	cu	1.8563186	30.0	1.8700000	0.0000000	0			0.0000000	72sid1	0
148		pu240h	es	cu	1.5114489	30.0	0.0149000	0.0000000	0			0.0100000	77net1	0
148		u234he	es	cu	1.0476857	30.0	1.0600000	0.0000000	0			0.0000000	75mee1	0
148		u236he	es	cu	1.2705358	30.0	1.2800000	0.0000000	0			0.0000000	75mee1	0
148		pu238f	es	cu	1.7572792	30.0	1.7600000	0.0000000	0			0.0000000	72sid1	0
148		am241f	cm	cu	0.0000000	0.0	0.0190000	0.0000000	0			0.0100000	80sig1	0
148		am241f	es	cu	1.9024932	30.0	1.8500000	0.0000000	0			0.0000000	72sid1	0
148		am241f	cm	cu	0.0000000	0.0	1.7700000	15.0000000%	0			0.0000000	81koc1	36
148		am243f	es	cu	1.8656254	30.0	1.8700000	0.0000000	0			0.0000000	72sid1	0
148		np238f	es	cu	1.7697364	30.0	1.8200000	0.0000000	0			0.0000000	72sid1	0
148		cm242f	es	cu	1.8069122	30.0	1.8400000	0.0000000	0			0.0000000	72sid1	0
148	sm g	u35a46	ms	re	0.0000000	0.0	0.0070000	0.0010000	143	nd g	u35a46	1.0000000	59chu1	0
148	sm g	u8p730	ms	re	0.0000000	0.0	0.1000000	0.0080000	143	nd g	u8p730	1.0000000	59chu1	0
148	nd g	u38a46	ms	re	0.0000000	0.0	0.5200000	0.0100000	143	nd g	u38a46	1.0000000	59chu1	0
148	nd g	u38a24	ms	re	0.0000000	0.0	0.5100000	0.0200000	143	nd g	u38a24	1.0000000	59chu1	0
148	nd g	u35a46	ms	re	0.0000000	0.0	0.4570000	0.0070000	143	nd g	u35a46	1.0000000	59chu1	0
148	nd g	u8p730	ms	re	0.0000000	0.0	0.2700000	0.0400000	143	nd g	u8p730	1.0000000	59chu1	0
148	nd g	p9necd	ms	cu	0.0000000	0.0	1.5000000	0.2000000	0			0.0000000	67rid1	0
148	nd g	u3necd	ms	cu	0.0000000	0.0	1.3000000	0.1000000	0			0.0000000	67rid1	0
148	nd g	u5necd	ms	cu	0.0000000	0.0	1.9000000	0.2000000	0			0.0000000	67rid1	0
148	nd g	t2a44.	ms	re	0.0000000	0.0	0.3550000	0.0090000	143	nd g	t2a44.	1.0000000	68mch2	0
149		u234f	rc	cu	1.0413680	9.3	1.0700000	0.0900000	140	ba g	u234f	5.9300000	77bla1	0
149		u234f	es	cu	0.9781037	30.0	0.9800000	0.0000000	0			0.0000000	72sid1	0
149		u237f	cm	cu	x3 0.0000000	0.0	1.8400000	0.0000000	0			0.0000000	72sid1	0
149		u237f	es	cu	1.4424986	30.0	1.4500000	0.0000000	0			0.0000000	89rid1	0
149		pu240h	es	cu	1.2431555	30.0	0.0124000	0.0000000	0			0.0100000	77net1	0
149		pu240h	rc	cu	1.3634608	5.9	0.0136000	0.0008000	0			0.0100000	77net1	0
149	pm g	pu240h	rc	cu	1.2932827	5.0	0.0129000	3.0000000%	0			0.0100000	77net1	0
149	nd g	pu240h	rc	cu	1.4536899	5.0	0.0145000	3.2000000%	0			0.0100000	77net1	0
149		u234he	es	cu	0.6226811	30.0	0.6300000	0.0000000	0			0.0000000	75mee1	0
149		u236he	es	cu	0.8806937	30.0	0.8900000	0.0000000	0			0.0000000	75mee1	0
149		pu238f	es	cu	1.5975266	30.0	1.6000000	0.0000000	0			0.0000000	72sid1	0

149		am241f	cm	cu	x3	0.0000000	0.0	0.0156000	0.0000000	0				0.0100000	80sig1	0	
149		am241f	es	cu		1.5509242	30.0	1.5400000	0.0000000	0				0.0000000	72sid1	0	
149		am241f	cm	cu		0.0000000	0.0	1.4000000	15.0000000%	0				0.0000000	81koc1	36	
149	pm g	am241f	rc	cu		1.5710661	5.0	0.0156000	3.0000000%	0				0.0100000	80sig1	0	
149		am243f	es	cu		1.5563506	30.0	1.5600000	0.0000000	0				0.0000000	72sid1	0	
149		np238f	es	cu		1.7502887	30.0	1.8000000	0.0000000	0				0.0000000	72sid1	0	
149		cm242f	es	cu		1.4926666	30.0	1.5200000	0.0000000	0				0.0000000	72sid1	0	
149	nd g	u8n1.7	rc	cu		0.0000000	0.0	1.6500000	15.2000000%	0				0.0000000	88afa1	0	
149	nd g	u8n2.2	rc	cu		0.0000000	0.0	1.6800000	15.5000000%	0				0.0000000	88afa1	0	
149	nd g	u8n3.7	rc	cu		0.0000000	0.0	1.8400000	15.2000000%	0				0.0000000	88afa1	0	
149	nd g	u8n4.8	rc	cu		0.0000000	0.0	1.7100000	12.9000000%	0				0.0000000	88afa1	0	
149	nd g	u8n6.0	rc	cu		0.0000000	0.0	1.6100000	12.4000000%	0				0.0000000	88afa1	0	
149	sm g	u38a46	ms	re		0.0000000	0.0	0.4300000	0.0100000	143	nd g	u38a46		1.0000000	59chu1	0	
149	sm g	u38a24	ms	re		0.0000000	0.0	0.3900000	0.0100000	143	nd g	u38a24		1.0000000	59chu1	0	
149	sm g	u35a46	ms	re		0.0000000	0.0	0.3830000	0.0120000	143	nd g	u35a46		1.0000000	59chu1	0	
149	sm g	u8p730	ms	re		0.0000000	0.0	0.3000000	0.0200000	143	nd g	u8p730		1.0000000	59chu1	0	
149	sm g	t2a44.	ms	re		0.0000000	0.0	0.2860000	0.0020000	143	nd g	t2a44.		1.0000000	68mch2	0	
149	pm g	u8d05.	rc	cu		0.0000000	0.0	33.0000000	2.0000000	0		u barn		35.0000000	57sug1	0	
149	pm g	u8d10.	rc	cu		0.0000000	0.0	0.8000000	0.0000000	0		m barn		0.8600000	57sug1	0	
149	pm g	u8d14.	rc	cu		0.0000000	0.0	3.8000000	0.6000000	0		m barn		4.3000000	57sug1	0	
149	pm g	u5n8	rc	cu		0.0000000	0.0	1.2500000	15.0000000%	99	mo g	u235t		1.3000000	59bun2	12	
149	pm g	u8n8	rc	cu		0.0000000	0.0	1.9000000	15.0000000%	99	mo g	u235t		1.3000000	59bun2	13	
149	pm g	t2n3.0	rc	cu		0.0000000	0.0	1.0000000	0.1000000	0				0.0000000	71swi3	0	
149	pm g	u8n2.0	rc	cu		0.0000000	0.0	2.1500000	0.0000000	0				0.0000000	75fly4	0	
149	pm g	u8n8.0	rc	cu		0.0000000	0.0	0.6900000	0.0000000	0				0.0000000	75fly4	0	
149	pm g	u8n1.5	rc	cu		0.0000000	0.0	1.7400000	0.3700000	0				0.0000000	78nag1	0	
149	pm g	u8n2.0	rc	cu		0.0000000	0.0	1.7200000	0.2000000	0				0.0000000	78nag1	0	
149	pm g	u8n3.9	rc	cu		0.0000000	0.0	1.9400000	0.2000000	0				0.0000000	78nag1	0	
149	pm g	u8n5.5	rc	cu		0.0000000	0.0	1.5100000	0.2400000	0				0.0000000	78nag1	0	
149	pm g	u8n6.9	rc	cu		0.0000000	0.0	1.7500000	0.2700000	0				0.0000000	78nag1	0	
149	pm g	u8n7.7	rc	cu		0.0000000	0.0	1.9100000	0.1900000	0				0.0000000	78nag1	0	
149	pm g	p9v0.3	rc	re		0.0000000	0.0	0.9800000	0.0360000	149	pm g	pu239t		1.0000000	73van1	0	
149	nd g	u8n2.0	rc	cu		0.0000000	0.0	1.6700000	0.0000000	0				0.0000000	75fly4	0	
149	nd g	u8n8.0	rc	cu		0.0000000	0.0	2.0300000	0.0000000	0				0.0000000	75fly4	0	
149	nd g	t2n2.0	rc	cu		0.0000000	0.0	1.3800000	0.2100000	0				0.0000000	80gle1	0	
149	nd g	t2n3.0	rc	cu		0.0000000	0.0	1.0600000	0.1600000	0				0.0000000	80gle1	0	

149	nd g	t2n5.9	rc	cu		0.0000000	0.0	1.4500000	0.3500000	0		0.0000000	80gle1	0
149	nd g	t2n6.4	rc	cu		0.0000000	0.0	1.1700000	0.3000000	0		0.0000000	80gle1	0
149	nd g	t2n6.9	rc	cu		0.0000000	0.0	1.2900000	0.2200000	0		0.0000000	80gle1	0
149	nd g	t2n7.6	rc	cu		0.0000000	0.0	1.0200000	0.2200000	0		0.0000000	80gle1	0
149	nd g	t2n8.0	rc	cu		0.0000000	0.0	1.0800000	0.1700000	0		0.0000000	80gle1	0
150		u234f	es	cu		0.6364972	30.0	0.6400000	0.0000000	0		0.0000000	72sid1	0
150		u237f	cm	cu	x3	0.0000000	0.0	0.8200000	0.0000000	0		0.0000000	72sid1	0
150		u237f	es	cu		1.0423179	30.0	1.0500000	0.0000000	0		0.0000000	89rid1	0
150		pu240h	es	cu		1.0407651	30.0	0.0102000	0.0000000	0		0.0100000	77net1	0
150		u234he	es	cu		0.4744237	30.0	0.4800000	0.0000000	0		0.0000000	75mee1	0
150		u236he	es	cu		0.6827850	30.0	0.6900000	0.0000000	0		0.0000000	75mee1	0
150		pu238f	es	cu		0.9778575	30.0	0.9800000	0.0000000	0		0.0000000	72sid1	0
150		am241f	cm	cu		0.0000000	0.0	0.0128000	0.0000000	0		0.0100000	80sig1	0
150		am241f	es	cu	x3	0.0000000	0.0	1.2000000	0.0000000	0		0.0000000	72sid1	0
150		am241f	cm	cu		0.0000000	0.0	1.2000000	15.0000000%	0		0.0000000	81koc1	36
150		am241f	es	cu		1.2340496	20.0	1.2000000	20.0000000%	0		0.0000000	91jam2	0
150		am243f	es	cu		1.2271226	30.0	1.2300000	0.0000000	0		0.0000000	72sid1	0
150		np238f	es	cu		0.9032865	30.0	0.9400000	0.0000000	0		0.0000000	72sid1	0
150		cm242f	es	cu		1.1402456	30.0	1.1700000	0.0000000	0		0.0000000	72sid1	0
150	sm g	u38a46	ms	re		0.0000000	0.0	0.0125000	0.0010000	143	nd g	u38a46	1.0000000	59chu1	0
150	sm g	u35a46	ms	re		0.0000000	0.0	0.0530000	0.0030000	143	nd g	u35a46	1.0000000	59chu1	0
150	sm g	u8p730	ms	re		0.0000000	0.0	0.0600000	0.0060000	143	nd g	u8p730	1.0000000	59chu1	0
150	sm g	t2a44.	ms	re		0.0000000	0.0	0.0250000	0.0030000	149	sm g	t2a44.	1.0000000	68mch2	0
150	nd g	u38a46	ms	re		0.0000000	0.0	0.3700000	0.0090000	143	nd g	u38a46	1.0000000	59chu1	0
150	nd g	u38a24	ms	re		0.0000000	0.0	0.3500000	0.0100000	143	nd g	u38a24	1.0000000	59chu1	0
150	nd g	u35a46	ms	re		0.0000000	0.0	0.2730000	0.0090000	143	nd g	u35a46	1.0000000	59chu1	0
150	nd g	u8p730	ms	re		0.0000000	0.0	0.1500000	0.0200000	143	nd g	u8p730	1.0000000	59chu1	0
150	nd g	p9necd	ms	cu		0.0000000	0.0	0.8900000	0.1200000	0		0.0000000	67rid1	0
150	nd g	u3necd	ms	cu		0.0000000	0.0	0.5300000	0.0600000	0		0.0000000	67rid1	0
150	nd g	u5necd	ms	cu		0.0000000	0.0	0.7600000	0.0900000	0		0.0000000	67rid1	0
150	nd g	t2a44.	ms	re		0.0000000	0.0	0.2180000	0.0060000	143	nd g	t2a44.	1.0000000	68mch2	0
151		u234f	rc	cu		0.2917379	17.1	0.3000000	0.0500000	140	ba g	u234f	5.9300000	77bla1	0
151		u234f	es	cu		0.3989054	30.0	0.4000000	0.0000000	0		0.0000000	72sid1	0
151		u237f	es	cu		0.7719295	30.0	0.7800000	0.0000000	0		0.0000000	72sid1	0
151		pu240h	es	cu		0.8241734	30.0	0.0082000	0.0000000	0		0.0100000	77net1	0
151	pm g	pu240h	rc	cu		0.8090970	6.2	0.0080500	6.2000000%	0		0.0100000	77net1	0

151 u234he es cu 0.3360501 30.0 0.3400000 0.0000000 0 0.0000000 75mee1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

151 u236he es cu 0.4848763 30.0 0.4900000 0.0000000 0 0.0000000 75mee1 0
151 pu238f es cu 0.9080105 30.0 0.9100000 0.0000000 0 0.0000000 72sid1 0
151 am241f cm cu 0.0000000 0.0 0.0102000 0.0000000 0 0.0100000 80sig1 0
151 am241f es cu 0.9668099 30.0 0.9600000 0.0000000 0 0.0000000 72sid1 0
151 am241f cm cu 0.0000000 0.0 1.0000000 15.0000000% 0 0.0000000 81koc1 36
151 pm g am241f rc cu 0.9456610 5.0 0.0093900 3.0000000% 0 0.0100000 80sig1 0
151 am243f es cu 0.9667909 30.0 0.9700000 0.0000000 0 0.0000000 72sid1 0
151 np238f es cu 0.8945920 30.0 0.9200000 0.0000000 0 0.0000000 72sid1 0
151 cm242f es cu 0.9329166 30.0 0.9500000 0.0000000 0 0.0000000 72sid1 0
151 sm g u38a46 ms re 0.0000000 0.0 0.3120000 0.0100000 143 nd g u38a46 1.0000000 59chu1 0
151 sm g u38a24 ms re 0.0000000 0.0 0.2880000 0.0030000 143 nd g u38a24 1.0000000 59chu1 0
151 sm g u35a46 ms re 0.0000000 0.0 0.2660000 0.0090000 143 nd g u35a46 1.0000000 59chu1 0
151 sm g u8p730 ms re 0.0000000 0.0 0.1200000 0.0100000 143 nd g u8p730 1.0000000 59chu1 0
151 sm g t2a44. ms re 0.0000000 0.0 0.5980000 0.0000000 149 sm g t2a44. 1.0000000 68mch2 0
151 sm g u8n2.0 rc cu 0.0000000 0.0 0.9200000 0.0000000 0 0.0000000 75fly4 0
151 pm g u8d10. rc cu 0.0000000 0.0 0.5000000 0.0000000 0 m barn 0.8600000 57sug1 0
151 pm g u8d14. rc cu 0.0000000 0.0 3.0000000 0.2000000 0 m barn 4.3000000 57sug1 0
151 pm g u5n1.0 rc re 0.0000000 0.0 0.0410000 0.0020000 140 ba g u5n1.0 1.0000000 73man1 0
151 pm g u5n2.0 rc cu 0.0000000 0.0 0.0430000 0.0020000 140 ba g u5n2.0 1.0000000 73man1 0
151 pm g u5n4.0 rc cu 0.0000000 0.0 0.0550000 0.0030000 140 ba g u5n4.0 1.0000000 73man1 0
151 pm g u5n6.0 rc cu 0.0000000 0.0 0.0540000 0.0040000 140 ba g u5n6.0 1.0000000 73man1 0
151 pm g u5n9.0 rc cu 0.0000000 0.0 0.0460000 0.0030000 140 ba g u5n9.0 1.0000000 73man1 0
151 pm g u8n4.0 rc cu 0.0000000 0.0 0.1680000 0.0100000 140 ba g u8n4.0 1.0000000 73man1 0
151 pm g u8n6.0 rc cu 0.0000000 0.0 0.1620000 0.0100000 140 ba g u8n6.0 1.0000000 73man1 0
151 pm g u8n9.0 rc cu 0.0000000 0.0 0.1360000 0.0050000 140 ba g u8n9.0 1.0000000 73man1 0
151 pm g u8n2.0 rc cu 0.0000000 0.0 0.6400000 0.0000000 0 0.0000000 75fly4 0
151 pm g u8n8.0 rc cu 0.0000000 0.0 0.7000000 0.0000000 0 0.0000000 75fly4 0
151 pm g u8n8.0 rc cu 0.0000000 0.0 0.5400000 0.0000000 0 0.0000000 75fly4 0
151 pm g u8n2.0 rc cu 0.0000000 0.0 0.8200000 0.0700000 0 0.0000000 78nag1 0
151 pm g u8n3.9 rc cu 0.0000000 0.0 0.9000000 0.0600000 0 0.0000000 78nag1 0
151 pm g u8n6.9 rc cu 0.0000000 0.0 0.8500000 0.0500000 0 0.0000000 78nag1 0

152		u234f	es	cu	0.2486317	30.0	0.2500000	0.0000000	0			0.0000000	72sid1	0
152		u237f	es	cu	0.5245162	30.0	0.5300000	0.0000000	0			0.0000000	72sid1	0
152		pu240h	es	cu	0.6530291	30.0	0.0064000	0.0000000	0			0.0100000	77net1	0
152		u234he	es	cu	0.2372119	30.0	0.2400000	0.0000000	0			0.0000000	75mee1	0
152		u236he	es	cu	0.3562356	30.0	0.3600000	0.0000000	0			0.0000000	75mee1	0
152		pu238f	es	cu	0.6785134	30.0	0.6800000	0.0000000	0			0.0000000	72sid1	0
152		am241f	cm	cu	0.0000000	0.0	0.0080000	0.0000000	0			0.0100000	80sig1	0
152		am241f	es	cu	0.8112998	30.0	0.7800000	0.0000000	0			0.0000000	72sid1	0
152		am241f	cm	cu	0.0000000	0.0	0.8500000	15.0000000%	0			0.0000000	81koc1	36
152		am243f	es	cu	0.7973533	30.0	0.8000000	0.0000000	0			0.0000000	72sid1	0
152		np238f	es	cu	0.6438319	30.0	0.6700000	0.0000000	0			0.0000000	72sid1	0
152		cm242f	es	cu	0.7504181	30.0	0.7700000	0.0000000	0			0.0000000	72sid1	0
152	sm g	u38a46	ms	re	0.0000000	0.0	0.2590000	0.0090000	143	nd g	u38a46	1.0000000	59chu1	0
152	sm g	u38a24	ms	re	0.0000000	0.0	0.2220000	0.0010000	143	nd g	u38a24	1.0000000	59chu1	0
152	sm g	u35a46	ms	re	0.0000000	0.0	0.2030000	0.0040000	143	nd g	u35a46	1.0000000	59chu1	0
152	sm g	u8p730	ms	re	0.0000000	0.0	0.1200000	0.0100000	143	nd g	u8p730	1.0000000	59chu1	0
152	sm g	t2a44.	ms	re	0.0000000	0.0	0.4410000	0.0000000	149	sm g	t2a44.	1.0000000	68mch2	0
153		u234f	rc	cu	0.1458689	15.5	0.1500000	0.0000000	140	ba g	u234f	5.9300000	77bla1	0
153		u234f	es	cu	0.1595622	30.0	0.1600000	0.0000000	0			0.0000000	72sid1	0
153		u237f	es	cu	0.3463786	30.0	0.3500000	0.0000000	0			0.0000000	72sid1	0
153		pu240h	es	cu	0.5017994	30.0	0.0050000	0.0000000	0			0.0100000	77net1	0
153	sm g	pu240h	cm	cu	x3	0.0000000	0.0	0.0058000	3.0000000%	0		0.0100000	79pri1	0
153	sm g	pu240h	rc	cu	0.5820873	5.0	0.0058000	3.0000000%	0			0.0100000	77net1	0
153	sm g	u234he	rc	cu	0.1818832	8.9	0.0018800	0.0001500	147	nd g	u234he	0.0132000	72net1	0
153	sm g	u236he	rc	cu	0.2796661	9.2	0.0029000	0.0002400	147	nd g	u236he	0.0179000	72net1	0
153		pu238f	es	cu	0.4689725	30.0	0.4700000	0.0000000	0			0.0000000	72sid1	0
153		am241f	cm	cu	0.0000000	0.0	0.0063000	0.0000000	0			0.0100000	80sig1	0
153		am241f	es	cu	0.5841143	30.0	0.5800000	0.0000000	0			0.0000000	72sid1	0
153	sm g	am241f	cm	cu	0.0000000	0.0	0.7600000	0.0000000	0			0.0000000	69gun2	0
153	sm g	am241f	rc	cu	0.6304406	5.0	0.0062600	3.0000000%	0			0.0100000	80sig1	0
153		am243f	es	cu	0.5880481	30.0	0.5900000	0.0000000	0			0.0000000	72sid1	0
153		np238f	es	cu	0.4324244	30.0	0.4500000	0.0000000	0			0.0000000	72sid1	0
153		cm242f	es	cu	0.5457586	30.0	0.5600000	0.0000000	0			0.0000000	72sid1	0
153	eu g	u38a46	ms	re	0.0000000	0.0	0.2180000	0.0050000	143	nd g	u38a46	1.0000000	59chu1	0
153	eu g	u38a24	ms	re	0.0000000	0.0	0.1640000	0.0050000	143	nd g	u38a24	1.0000000	59chu1	0
153	eu g	u35a46	ms	re	0.0000000	0.0	0.1740000	0.0040000	143	nd g	u35a46	1.0000000	59chu1	0

153	sm g	u8d05.	rc	cu	0.0000000	0.0	12.1000000	0.1000000	0	u barn	35.0000000	57sug1	0	
153	sm g	u8d10.	rc	cu	0.0000000	0.0	0.3300000	0.0100000	0	m barn	0.8600000	57sug1	0	
153	sm g	u8d14.	rc	cu	0.0000000	0.0	2.0000000	0.1000000	0	m barn	4.3000000	57sug1	0	
153	sm g	u5n8	rc	cu	0.0000000	0.0	0.1850000	15.0000000%	99 mo g	u235t	0.1400000	59bun2	12	
153	sm g	u8n8	rc	cu	0.0000000	0.0	0.4100000	15.0000000%	99 mo g	u235t	0.1400000	59bun2	13	
153	sm g	u5ndcu	rc	re	0.0000000	0.0	1.3700000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7	
153	sm g	u8ndcu	rc	re	0.0000000	0.0	2.6400000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7	
153	sm g	u8naal	rc	re	0.0000000	0.0	2.8050000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7	
153	sm g	u8nabe	rc	re	0.0000000	0.0	2.7000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7	
153	sm g	u8ndbe	rc	re	0.0000000	0.0	2.8500000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7	
153	sm g	u8ndli	rc	re	0.0000000	0.0	2.8700000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7	
153	sm g	t2a19.	rc	re	0.0000000	0.0	2.0100000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7	
153	sm g	t2a20.	rc	re	0.0000000	0.0	1.8400000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7	
153	sm g	t2a20.	rc	re	0.0000000	0.0	1.7000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7	
153	sm g	t2a22.	rc	re	0.0000000	0.0	1.7300000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7	
153	sm g	t2a24.	rc	re	0.0000000	0.0	1.7700000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7	
153	sm g	t2a26.	rc	re	0.0000000	0.0	1.8600000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7	
153	sm g	t2a27.	rc	re	0.0000000	0.0	1.8100000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7	
153	sm g	t2a30.	rc	re	0.0000000	0.0	1.7900000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7	
153	sm g	t2a30.	rc	re	0.0000000	0.0	1.8100000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7	
153	sm g	t2a32.	rc	re	0.0000000	0.0	1.7400000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7	
153	sm g	t2a34.	rc	re	0.0000000	0.0	1.7700000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7	
153	sm g	t2a34.	rc	re	0.0000000	0.0	1.8000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7	
153	sm g	t2a36.	rc	re	0.0000000	0.0	1.7000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7	
153	sm g	t2a37.	rc	re	0.0000000	0.0	1.6700000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7	
153	sm g	t2a38.	rc	re	0.0000000	0.0	1.7900000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7	
153	sm g	t2n3.0	rc	cu	0.0000000	0.0	0.0300000	0.0040000	0		0.0000000	71swi3	0	
153	sm g	u5n.13	rc	cu	0.0000000	0.0	0.1320000	0.0130000	0		0.0000000	73cun2	0	
153	sm g	u5n.30	rc	cu	0.0000000	0.0	0.1520000	0.0090000	0		0.0000000	73cun2	0	
153	sm g	u5n.70	rc	cu	0.0000000	0.0	0.1540000	0.0100000	0		0.0000000	73cun2	0	
153	sm g	u5n.90	rc	cu	0.0000000	0.0	0.1590000	0.0140000	0		0.0000000	73cun2	0	
153	sm g	u5n1.3	rc	cu	0.0000000	0.0	0.1760000	0.0130000	0		0.0000000	73cun2	0	
153	sm g	u5n1.7	rc	cu	0.0000000	0.0	0.1720000	0.0130000	0		0.0000000	73cun2	0	
153	sm g	u5npbe	rc	re	0.0000000	0.0	1.2400000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7	
153	sm g	u5naal	rc	re	0.0000000	0.0	1.4450000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7	
153	sm g	u5nabe	rc	re	0.0000000	0.0	1.4600000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7	

153 sm g u5ndbe rc re 0.0000000 0.0 1.4800000 0.0000000 99 mo g u235t 0.0000000 61lev1 7
153 sm g u5ndli rc re 0.0000000 0.0 1.6700000 0.0000000 99 mo g u235t 0.0000000 61lev1 7
153 sm g u5n.13 rc cu 0.0000000 0.0 0.1320000 0.0110000 0 0.0000000 74cun1 0
153 sm g u5n.30 rc cu 0.0000000 0.0 0.1520000 0.0030000 0 0.0000000 74cun1 0
153 sm g u5n.70 rc cu 0.0000000 0.0 0.1540000 0.0040000 0 0.0000000 74cun1 0
153 sm g u5n.90 rc cu 0.0000000 0.0 0.1590000 0.0110000 0 0.0000000 74cun1 0
153 sm g u5n1.3 rc cu 0.0000000 0.0 0.1760000 0.0090000 0 0.0000000 74cun1 0
153 sm g u5n1.7 rc cu 0.0000000 0.0 0.1720000 0.0090000 0 0.0000000 74cun1 0
153 sm g u8n2.0 rc cu 0.0000000 0.0 0.3800000 0.0000000 0 0.0000000 75fly4 0
153 sm g u8n8.0 rc cu 0.0000000 0.0 0.1900000 0.0000000 0 0.0000000 75fly4 0
153 sm g p9n.13 rc cu 0.0000000 0.0 0.3000000 0.0300000 0 0.0000000 77cun1 0
153 sm g p9n.30 rc cu 0.0000000 0.0 0.3300000 0.0500000 0 0.0000000 77cun1 0
153 sm g p9n.70 rc cu 0.0000000 0.0 0.3600000 0.0500000 0 0.0000000 77cun1 0
153 sm g p9n.90 rc cu 0.0000000 0.0 0.3500000 0.0300000 0 0.0000000 77cun1 0
153 sm g p9n1.3 rc cu 0.0000000 0.0 0.3600000 0.0500000 0 0.0000000 77cun1 0
153 sm g p9n1.7 rc cu 0.0000000 0.0 0.3600000 0.0100000 0 0.0000000 77cun1 0
153 sm g u8n2.0 rc cu 0.0000000 0.0 0.4300000 0.1400000 0 0.0000000 78nag1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

153 sm g u8n3.9 rc cu 0.0000000 0.0 0.4300000 0.0800000 0 0.0000000 78nag1 0
153 sm g u8n6.9 rc cu 0.0000000 0.0 0.4600000 0.0500000 0 0.0000000 78nag1 0
153 pm g t2n3.0 rc cu 0.0000000 0.0 0.1000000 0.0200000 0 0.0000000 71swi3 0
154 u234f es cu 0.0805567 30.0 0.0810000 0.0000000 0 0.0000000 72sid1 0
154 u237f es cu 0.1880341 30.0 0.1900000 0.0000000 0 0.0000000 72sid1 0
154 pu240h es cu 0.3979396 30.0 0.0039000 0.0000000 0 0.0100000 77net1 0
154 u234he es cu 0.0889544 30.0 0.0900000 0.0000000 0 0.0000000 75mee1 0
154 u236he es cu 0.1415047 30.0 0.1430000 0.0000000 0 0.0000000 75mee1 0
154 pu238f es cu 0.3193004 30.0 0.3200000 0.0000000 0 0.0000000 72sid1 0
154 am241f cm cu 0.0000000 0.0 0.0047000 0.0000000 0 0.0100000 80sig1 0
154 am241f es cu 0.4264524 30.0 0.4100000 0.0000000 0 0.0000000 72sid1 0
154 am243f es cu 0.4186105 30.0 0.4200000 0.0000000 0 0.0000000 72sid1 0
154 np238f es cu 0.2882829 30.0 0.3000000 0.0000000 0 0.0000000 72sid1 0
154 cm242f es cu 0.3995732 30.0 0.4100000 0.0000000 0 0.0000000 72sid1 0
154 eu g u35a46 ms re 0.0000000 0.0 0.0060000 0.0003000 143 nd g u35a46 1.0000000 59chu1 0

154	eu g	u38a46	ms	fi	0.0000000	0.0	0.0037400	0.0002000	154	u38a46	1.0000000	59chu1	0
154	eu g	u35a46	ms	fi	0.0000000	0.0	0.0496000	0.0024000	154	u35a46	1.0000000	59chu1	0
154	sm g	u38a46	ms	re	0.0000000	0.0	0.1600000	0.0030000	143	nd g	u38a46	1.0000000	59chu1	0
154	sm g	u38a24	ms	re	0.0000000	0.0	0.1270000	0.0040000	143	nd g	u38a24	1.0000000	59chu1	0
154	sm g	u35a46	ms	re	0.0000000	0.0	0.1180000	0.0030000	143	nd g	u35a46	1.0000000	59chu1	0
154	sm g	u8p730	ms	re	0.0000000	0.0	0.0600000	0.0040000	143	nd g	u8p730	1.0000000	59chu1	0
154	sm g	t2a44.	ms	re	0.0000000	0.0	0.2240000	0.0000000	149	sm g	t2a44.	1.0000000	68mch2	0
155		u234f	es	cu	0.0507209	30.0	0.0510000	0.0000000	0			0.0000000	72sid1	0
155		u237f	es	cu	0.1187584	30.0	0.1200000	0.0000000	0			0.0000000	72sid1	0
155		pu240h	es	cu	0.2940544	30.0	0.0029300	0.0000000	0			0.0100000	77net1	0
155	eu g	pu240h	rc	cu	0.2790005	5.0	0.0027800	3.0000000%	0			0.0100000	77net1	0
155		u234he	es	cu	0.0642449	30.0	0.0650000	0.0000000	0			0.0000000	75mee1	0
155		u236he	es	cu	0.0920275	30.0	0.0930000	0.0000000	0			0.0000000	75mee1	0
155		pu238f	es	cu	0.2394753	30.0	0.2400000	0.0000000	0			0.0000000	72sid1	0
155		am241f	cm	cu	0.0000000	0.0	0.0035000	0.0000000	0			0.0100000	80sig1	0
155		am241f	es	cu	0.3121990	30.0	0.3100000	0.0000000	0			0.0000000	72sid1	0
155	eu g	am241f	rc	cu	0.4119013	5.0	0.0040900	3.6000000%	0			0.0100000	80sig1	0
155	eu g	am241f	cm	cu	x3	0.0000000	0.0	0.4090000	5.6000000%	0		0.0000000	91jam2	0
155	eu g	am241f	rc	cu	0.3273054	12.7	0.3250000	12.7000000%	0			0.0000000	86dic2	0
155		am243f	es	cu	0.3089744	30.0	0.3100000	0.0000000	0			0.0000000	72sid1	0
155		np238f	es	cu	0.2017981	30.0	0.2100000	0.0000000	0			0.0000000	72sid1	0
155		cm242f	es	cu	0.2923707	30.0	0.3000000	0.0000000	0			0.0000000	72sid1	0
155	eu g	u38a46	ms	re	0.0000000	0.0	0.1250000	0.0030000	143	nd g	u38a46	1.0000000	59chu1	0
155	eu g	u38a24	ms	re	0.0000000	0.0	0.1050000	0.0030000	143	nd g	u38a24	1.0000000	59chu1	0
155	eu g	u35a46	ms	re	0.0000000	0.0	0.1050000	0.0020000	143	nd g	u35a46	1.0000000	59chu1	0
156		u234f	es	cu	0.0208851	30.0	0.0210000	0.0000000	0			0.0000000	72sid1	0
156		u237f	es	cu	0.0573999	30.0	0.0580000	0.0000000	0			0.0000000	72sid1	0
156		pu240h	es	cu	0.2177809	30.0	0.0021700	0.0000000	0			0.0100000	77net1	0
156	eu g	pu240h	rc	cu	0.2258097	5.0	0.0022500	3.0000000%	0			0.0100000	77net1	0
156	eu g	u234he	rc	cu	0.0470755	6.4	0.0004860	0.0000220	147	nd g	u234he	0.0132000	72net1	0
156	eu g	u236he	rc	cu	0.0704752	6.4	0.0007300	0.0000300	147	nd g	u236he	0.0179000	72net1	0
156		pu238f	es	cu	0.1596502	30.0	0.1600000	0.0000000	0			0.0000000	72sid1	0
156		am241f	cm	cu	0.0000000	0.0	0.0025000	0.0000000	0			0.0100000	80sig1	0
156		am241f	es	cu	0.2114897	30.0	0.2100000	0.0000000	0			0.0000000	72sid1	0
156	eu g	am241f	rc	cu	0.2638585	5.0	0.0026200	3.0000000%	0			0.0100000	80sig1	0
156		am243f	es	cu	0.2192722	30.0	0.2200000	0.0000000	0			0.0000000	72sid1	0

156		np238f	es	cu	0.1249226	30.0	0.1300000	0.0000000	0		0.0000000	72sid1	0
156		cm242f	es	cu	0.2046595	30.0	0.2100000	0.0000000	0		0.0000000	72sid1	0
156	eu g	n7ndf	rc	re	0.0000000	0.0	8.3000000	0.0000000	99 mo g	u235t	0.0000000	56for1	7
156	eu g	u8d05.	rc	cu	0.0000000	0.0	3.0000000	0.5000000	0	u barn	35.0000000	57sug1	0
156	eu g	u8d10.	rc	cu	0.0000000	0.0	0.1320000	0.0020000	0	m barn	0.8600000	57sug1	0
156	eu g	u8d14.	rc	cu	0.0000000	0.0	0.6600000	0.0800000	0	m barn	4.3000000	57sug1	0
156	eu g	u5n8	rc	cu	0.0000000	0.0	0.0350000	15.0000000%	99 mo g	u235t	0.0130000	59bun2	12
156	eu g	u8n8	rc	cu	0.0000000	0.0	0.0895000	15.0000000%	99 mo g	u235t	0.0130000	59bun2	13
156	eu g	u5ndcu	rc	re	0.0000000	0.0	2.4300000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
156	eu g	u8ndcu	rc	re	0.0000000	0.0	6.3700000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
156	eu g	u8naal	rc	re	0.0000000	0.0	6.6600000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
156	eu g	u8nabe	rc	re	0.0000000	0.0	6.5200000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
156	eu g	u8ndbe	rc	re	0.0000000	0.0	7.1400000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
156	eu g	u8ndli	rc	re	0.0000000	0.0	7.3300000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
156	eu g	t2a19.	rc	re	0.0000000	0.0	5.4000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
156	eu g	t2a20.	rc	re	0.0000000	0.0	5.1000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
156	eu g	t2a20.	rc	re	0.0000000	0.0	5.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
156	eu g	t2a22.	rc	re	0.0000000	0.0	5.2000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
156	eu g	t2a24.	rc	re	0.0000000	0.0	5.7000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
156	eu g	t2a26.	rc	re	0.0000000	0.0	6.3000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
156	eu g	t2a27.	rc	re	0.0000000	0.0	6.2000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
156	eu g	t2a30.	rc	re	0.0000000	0.0	6.4000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
156	eu g	t2a30.	rc	re	0.0000000	0.0	6.7000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
156	eu g	t2a32.	rc	re	0.0000000	0.0	6.5000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
156	eu g	t2a34.	rc	re	0.0000000	0.0	6.9000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
156	eu g	t2a34.	rc	re	0.0000000	0.0	7.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
156	eu g	t2a36.	rc	re	0.0000000	0.0	6.6000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
156	eu g	t2a37.	rc	re	0.0000000	0.0	6.8000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
156	eu g	t2a38.	rc	re	0.0000000	0.0	7.2000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7
156	eu g	u38a25	rc	cu	0.0000000	0.0	0.2700000	0.0700000	0		0.0000000	66dan1	0
156	eu g	p9npfr	rc	cu	0.0000000	0.0	0.1500000	0.0000000	0		0.0000000	71cun1	0
156	eu g	p9npfr	rc	cu	0.0000000	0.0	0.1460000	0.0190000	99 mo g	pu239f	5.9800000	72cun1	0
156	eu g	u5npbe	rc	re	0.0000000	0.0	1.7600000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
156	eu g	u5naal	rc	re	0.0000000	0.0	2.7200000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
156	eu g	u5nabe	rc	re	0.0000000	0.0	2.9900000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7
156	eu g	u5ndbe	rc	re	0.0000000	0.0	3.0000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7

156 eu g u5ndli rc re 0.0000000 0.0 3.5500000 0.0000000 99 mo g u235t 0.0000000 61lev1 7
156 eu g u8n2.0 rc cu 0.0000000 0.0 0.0910000 0.0000000 0 0.0000000 75fly4 0
156 eu g p9n1.7 rc cu 0.0000000 0.0 0.0870000 0.0010000 0 0.0000000 77cun1 0
156 sm g t2n3.0 rc cu 0.0000000 0.0 0.0013000 0.0005000 0 0.0000000 71swi3 0
157 u234f es cu 0.0109398 30.0 0.0110000 0.0000000 0 0.0000000 72sid1 0
157 u237f es cu 0.0425551 30.0 0.0430000 0.0000000 0 0.0000000 72sid1 0
157 pu240h es cu 0.1565614 30.0 0.0015600 0.0000000 0 0.0100000 77net1 0
157 eu g pu240h rc cu 0.1585686 5.0 0.0015800 3.0000000% 0 0.0100000 77net1 0
157 u234he es cu 0.0326166 30.0 0.0330000 0.0000000 0 0.0000000 75mee1 0
157 u236he es cu 0.0494772 30.0 0.0500000 0.0000000 0 0.0000000 75mee1 0
157 pu238f es cu 0.0997814 30.0 0.1000000 0.0000000 0 0.0000000 72sid1 0
157 am241f cm cu 0.0000000 0.0 0.0018000 0.0000000 0 0.0100000 80sig1 0
157 am241f es cu 0.1456179 30.0 0.1400000 0.0000000 0 0.0000000 72sid1 0
157 am243f es cu 0.1495038 30.0 0.1500000 0.0000000 0 0.0000000 72sid1 0
157 np238f es cu 0.0778364 30.0 0.0810000 0.0000000 0 0.0000000 72sid1 0
157 cm242f es cu 0.1364396 30.0 0.1400000 0.0000000 0 0.0000000 72sid1 0
157 eu g u8d05. rc cu 0.0000000 0.0 1.6000000 0.0000000 0 u barn 35.0000000 57sug1 0
157 eu g u8d10. rc cu 0.0000000 0.0 0.0760000 0.0020000 0 m barn 0.8600000 57sug1 0
157 eu g u8d14. rc cu 0.0000000 0.0 0.4500000 0.0600000 0 m barn 4.3000000 57sug1 0
157 eu g u38a25 rc cu 0.0000000 0.0 0.1300000 0.0200000 0 0.0000000 66dan1 0
157 eu g p9npfr rc cu 0.0000000 0.0 0.1100000 0.0000000 0 0.0000000 71cun1 0
157 eu g p9npfr rc cu 0.0000000 0.0 0.1120000 0.0040000 99 mo g pu239f 5.9800000 72cun1 0
158 u234f es cu 0.0063650 30.0 0.0064000 0.0000000 0 0.0000000 72sid1 0
158 u237f es cu 0.0148448 30.0 0.0150000 0.0000000 0 0.0000000 72sid1 0
158 pu240h es cu 0.1101987 30.0 0.0010800 0.0000000 0 0.0100000 77net1 0
158 u234he es cu 0.0197677 30.0 0.0200000 0.0000000 0 0.0000000 75mee1 0
158 u236he es cu 0.0277072 30.0 0.0280000 0.0000000 0 0.0000000 75mee1 0
158 am241f cm cu 0.0000000 0.0 0.0012100 0.0000000 0 0.0100000 80sig1 0
158 am241f es cu 0.0967319 30.0 0.0930000 0.0000000 0 0.0000000 72sid1 0
158 am243f es cu 0.0956824 30.0 0.0960000 0.0000000 0 0.0000000 72sid1 0
158 np238f es cu 0.0432424 30.0 0.0450000 0.0000000 0 0.0000000 72sid1 0
158 cm242f es cu 0.0886858 30.0 0.0910000 0.0000000 0 0.0000000 72sid1 0
158 eu g u38a25 rc cu 0.0000000 0.0 0.0890000 0.0150000 0 0.0000000 66dan1 0
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159		u234f	es	cu		0.0020885	30.0	0.0021000	0.0000000	0			0.0000000	72sid1	0
159		u237f	es	cu		0.0068286	30.0	0.0069000	0.0000000	0			0.0000000	72sid1	0
159		pu240h	es	cu		0.0757634	30.0	0.0007500	0.0000000	0			0.0100000	77net1	0
159	gd g	pu240h	rc	cu		0.0686922	15.0	0.0006800	15.0000000%	0			0.0100000	77net1	0
159	gd g	u234he	rc	cu		0.0116096	10.8	0.0001200	0.0000120	147	nd g	u234he	0.0132000	72net1	0
159	gd g	u236he	rc	cu		0.0162978	10.8	0.0001690	0.0000170	147	nd g	u236he	0.0179000	72net1	0
159		pu238f	es	cu		0.0359213	30.0	0.0360000	0.0000000	0			0.0000000	72sid1	0
159		am241f	cm	cu		0.0000000	0.0	0.0007900	0.0000000	0			0.0100000	80sig1	0
159		am241f	es	cu		0.0574043	30.0	0.0570000	0.0000000	0			0.0000000	72sid1	0
159	gd g	am241f	rc	cu		0.0799632	5.0	0.0007940	3.0000000%	0			0.0100000	80sig1	0
159		am243f	es	cu		0.0578081	30.0	0.0580000	0.0000000	0			0.0000000	72sid1	0
159		np238f	es	cu		0.0259455	30.0	0.0270000	0.0000000	0			0.0000000	72sid1	0
159		cm242f	es	cu		0.0536013	30.0	0.0550000	0.0000000	0			0.0000000	72sid1	0
159	gd g	u8d10.	rc	cu		0.0000000	0.0	0.0390000	0.0010000	0	m	barn	0.8600000	57sug1	0
159	gd g	u8d14.	rc	cu		0.0000000	0.0	0.2100000	0.0100000	0	m	barn	4.3000000	57sug1	0
159	gd g	u5n8	rc	cu		0.0000000	0.0	0.0063000	15.0000000%	99	mo g	u235t	0.0011000	59bun2	12
159	gd g	u8n8	rc	cu		0.0000000	0.0	0.0170000	15.0000000%	99	mo g	u235t	0.0011000	59bun2	13
159	eu g	u38a25	rc	cu		0.0000000	0.0	0.0570000	0.0100000	0			0.0000000	66dan1	0
160		u234f	es	cu		0.0010940	30.0	0.0011000	0.0000000	0			0.0000000	72sid1	0
160		u237f	es	cu		0.0026802	30.0	0.0027000	0.0000000	0			0.0000000	72sid1	0
160		u237f	es	cu		0.0027795	30.0	0.0028000	0.0000000	0			0.0000000	75mee1	0
160	tb g	pu240h	rc	cu	le	0.0001531	15.0	0.0000015	0.0000000	0			0.0100000	77net1	0
160	tb g	pu240h	rc	in	le	0.0001531	15.0	0.0000015	0.0000000	0			0.0100000	77net1	0
160		pu240h	es	cu		0.0520383	30.0	0.0005100	0.0000000	0			0.0100000	77net1	0
160		u234he	es	cu		0.0069187	30.0	0.0070000	0.0000000	0			0.0000000	75mee1	0
160		u236he	es	cu		0.0098954	30.0	0.0100000	0.0000000	0			0.0000000	75mee1	0
160		pu238f	es	cu		0.0199563	30.0	0.0200000	0.0000000	0			0.0000000	72sid1	0
160	tb g	am241f	rc	in	le	0.0010609	5.0	0.0000102	3.0000000%	0			0.0100000	80sig1	0
160		am241f	cm	cu	x3	0.0000000	0.0	0.0005400	0.0000000	0			0.0100000	80sig1	0
160		am241f	cm	cu	x3	0.0000000	0.0	0.0340000	0.0000000	0			0.0000000	72sid1	0
160		am241f	es	cu		0.0624077	30.0	0.0600000	0.0000000	0			0.0000000	89rid1	0
160		am243f	es	cu		0.0348842	30.0	0.0350000	0.0000000	0			0.0000000	72sid1	0
160		np238f	es	cu		0.0134532	30.0	0.0140000	0.0000000	0			0.0000000	72sid1	0
160		cm242f	es	cu		0.0321608	30.0	0.0330000	0.0000000	0			0.0000000	72sid1	0
161		u234f	es	cu		0.0004483	30.0	0.0004500	0.0000000	0			0.0000000	72sid1	0

161		u234f	es	cu		0.0004283	30.0	0.0004300	0.0000000	0			0.0000000	75mee1	0
161		u237f	es	cu		0.0012905	30.0	0.0013000	0.0000000	0			0.0000000	72sid1	0
161		u237f	es	cu		0.0007941	30.0	0.0008000	0.0000000	0			0.0000000	75mee1	0
161		pu240h	es	cu		0.0351260	30.0	0.0003500	0.0000000	0			0.0100000	77net1	0
161	tb g	pu240h	rc	cu		0.0347245	5.0	0.0003460	3.0000000%	0			0.0100000	77net1	0
161	tb g	u234he	rc	cu		0.0045471	11.4	0.0000470	0.0000050	147	nd g	u234he	0.0132000	72net1	0
161	tb g	u236he	rc	cu		0.0064683	7.2	0.0000670	0.0000040	147	nd g	u236he	0.0179000	72net1	0
161		pu238f	es	cu		0.0109830	30.0	0.0110000	0.0000000	0			0.0000000	72sid1	0
161		pu238f	es	cu		0.0094853	30.0	0.0095000	0.0000000	0			0.0000000	75mee1	0
161		am241f	cm	cu		0.0000000	0.0	0.0003700	0.0000000	0			0.0100000	80sig1	0
161		am241f	es	cu	x3	0.0000000	0.0	0.0200000	0.0000000	0			0.0000000	72sid1	0
161	tb g	am241f	rc	cu		0.0376653	5.0	0.0003740	3.0000000%	0			0.0100000	80sig1	0
161		am243f	es	cu		0.0199338	30.0	0.0200000	0.0000000	0			0.0000000	72sid1	0
161		np238f	es	cu		0.0076818	30.0	0.0079000	0.0000000	0			0.0000000	72sid1	0
161		np238f	es	cu		0.0063205	30.0	0.0065000	0.0000000	0			0.0000000	75mee1	0
161		cm242f	es	cu		0.0185168	30.0	0.0190000	0.0000000	0			0.0000000	72sid1	0
161	tb g	u5n8	rc	cu		0.0000000	0.0	0.0019500	15.0000000%	99	mo g	u235t	0.0000780	59bun2	12
161	tb g	u8n8	rc	cu		0.0000000	0.0	0.0042500	15.0000000%	99	mo g	u235t	0.0000780	59bun2	13
161	tb g	u5ndcu	rc	re		0.0000000	0.0	18.2000000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
161	tb g	u8ndcu	rc	re		0.0000000	0.0	48.3000000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
161	tb g	u8naal	rc	re		0.0000000	0.0	53.6500000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
161	tb g	u8nabe	rc	re		0.0000000	0.0	64.2000000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
161	tb g	u8ndbe	rc	re		0.0000000	0.0	68.0000000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
161	tb g	u8ndli	rc	re		0.0000000	0.0	76.9000000	0.0000000	99	mo g	u235t	0.0000000	61lev1	7
161	tb g	t2a19.	rc	re		0.0000000	0.0	80.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
161	tb g	t2a20.	rc	re		0.0000000	0.0	82.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
161	tb g	t2a22.	rc	re		0.0000000	0.0	97.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
161	tb g	t2a24.	rc	re		0.0000000	0.0	116.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
161	tb g	t2a26.	rc	re		0.0000000	0.0	137.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
161	tb g	t2a27.	rc	re		0.0000000	0.0	144.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
161	tb g	t2a30.	rc	re		0.0000000	0.0	159.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
161	tb g	t2a30.	rc	re		0.0000000	0.0	168.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
161	tb g	t2a32.	rc	re		0.0000000	0.0	176.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
161	tb g	t2a34.	rc	re		0.0000000	0.0	205.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
161	tb g	t2a34.	rc	re		0.0000000	0.0	202.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7
161	tb g	t2a36.	rc	re		0.0000000	0.0	212.0000000	5.0000000%	99	mo g	u235t	0.0000000	62hic1	7

161	tb g	t2a37.	rc	re	0.0000000	0.0	222.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7		
161	tb g	t2a38.	rc	re	0.0000000	0.0	239.0000000	5.0000000%	99 mo g	u235t	0.0000000	62hic1	7		
161	tb g	u5npbe	rc	re	0.0000000	0.0	6.7750000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7		
161	tb g	u5naal	rc	re	0.0000000	0.0	23.8500000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7		
161	tb g	u5nabe	rc	re	0.0000000	0.0	30.8000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7		
161	tb g	u5ndbe	rc	re	0.0000000	0.0	32.1000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7		
161	tb g	u5ndli	rc	re	0.0000000	0.0	41.4000000	0.0000000	99 mo g	u235t	0.0000000	61lev1	7		
162		u234f	es	cu	0.0001591	30.0	0.0001600	0.0000000	0		0.0000000	75mee1	0		
162		u237f	es	cu	0.0002969	30.0	0.0003000	0.0000000	0		0.0000000	75mee1	0		
162		pu240h	es	cu	0.0234682	30.0	0.0002300	0.0000000	0		0.0100000	77net1	0		
162		u234he	es	cu	0.0027675	30.0	0.0028000	0.0000000	0		0.0000000	75mee1	0		
162		u236he	es	cu	0.0038592	30.0	0.0039000	0.0000000	0		0.0000000	75mee1	0		
162		pu238f	es	cu	0.0044930	30.0	0.0045000	0.0000000	0		0.0000000	72sid1	0		
162		pu238f	es	cu	0.0029954	30.0	0.0030000	0.0000000	0		0.0000000	75mee1	0		
162		am241f	es	cu	0.0102837	30.0	0.0100000	0.0000000	0		0.0000000	72sid1	0		
162		am241f	es	cu	0.0071986	30.0	0.0070000	0.0000000	0		0.0000000	75mee1	0		
162		am243f	es	cu	0.0099766	30.0	0.0100000	0.0000000	0		0.0000000	72sid1	0		
162		am243f	es	cu	0.0069836	30.0	0.0070000	0.0000000	0		0.0000000	75mee1	0		
162		np238f	es	cu	0.0029171	30.0	0.0030000	0.0000000	0		0.0000000	72sid1	0		
162		np238f	es	cu	0.0029171	30.0	0.0030000	0.0000000	0		0.0000000	75mee1	0		
162		cm242f	es	cu	0.0088382	30.0	0.0090000	0.0000000	0		0.0000000	72sid1	0		
162		cm242f	es	cu	0.0058921	30.0	0.0060000	0.0000000	0		0.0000000	75mee1	0		
163		u234f	es	cu	0.0000497	30.0	0.0000500	0.0000000	0		0.0000000	75mee1	0		
163		u237f	es	cu	0.0000515	30.0	0.0000520	0.0000000	0		0.0000000	75mee1	0		
163		pu240h	es	cu	0.0163257	30.0	0.0001600	0.0000000	0		0.0100000	77net1	0		
163		u234he	es	cu	0.0016803	30.0	0.0017000	0.0000000	0		0.0000000	75mee1	0		
163		u236he	es	cu	0.0022759	30.0	0.0023000	0.0000000	0		0.0000000	75mee1	0		
163		pu238f	es	cu	0.0017961	30.0	0.0018000	0.0000000	0		0.0000000	75mee1	0		
163		am241f	es	cu	0.0020567	30.0	0.0020000	0.0000000	0		0.0000000	72sid1	0		
163		am241f	es	cu	0.0030851	30.0	0.0030000	0.0000000	0		0.0000000	75mee1	0		
163		am243f	es	cu	0.0029930	30.0	0.0030000	0.0000000	0		0.0000000	72sid1	0		
163		am243f	es	cu	0.0034918	30.0	0.0035000	0.0000000	0		0.0000000	75mee1	0		
163		np238f	es	cu	0.0009417	30.0	0.0009800	0.0000000	0		0.0000000	75mee1	0		
163		cm242f	es	cu	0.0019640	30.0	0.0020000	0.0000000	0		0.0000000	72sid1	0		
163		cm242f	es	cu	0.0029461	30.0	0.0030000	0.0000000	0		0.0000000	75mee1	0		
164		u234f	es	cu	0.0000288	30.0	0.0000290	0.0000000	0		0.0000000	75mee1	0		

164	u237f	es	cu	0.0000277	30.0	0.0000280	0.0000000	0			0.0000000	75mee1	0
164	pu240h	es	cu	0.0102036	30.0	0.0001000	0.0000000	0			0.0100000	77net1	0
164	u234he	es	cu	0.0009884	30.0	0.0010000	0.0000000	0			0.0000000	75mee1	0
164	u236he	es	cu	0.0013854	30.0	0.0014000	0.0000000	0			0.0000000	75mee1	0
164	pu238f	es	cu	0.0006985	30.0	0.0007000	0.0000000	0			0.0000000	75mee1	0
164	am241f	es	cu	0.0010401	30.0	0.0010000	0.0000000	0			0.0000000	75mee1	0
164	am243f	es	cu	0.0013954	30.0	0.0014000	0.0000000	0			0.0000000	75mee1	0
164	np238f	es	cu	0.0002787	30.0	0.0002900	0.0000000	0			0.0000000	75mee1	0
164	cm242f	es	cu	0.0010720	30.0	0.0011000	0.0000000	0			0.0000000	75mee1	0
165	u234f	es	cu	0.0000095	30.0	0.0000095	0.0000000	0			0.0000000	75mee1	0
165	u237f	es	cu	0.0000099	30.0	0.0000100	0.0000000	0			0.0000000	75mee1	0
165	pu240h	es	cu	0.0069384	30.0	0.0000680	0.0000000	0			0.0100000	77net1	0
165	u234he	es	cu	0.0005831	30.0	0.0005900	0.0000000	0			0.0000000	75mee1	0

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nuclide	material	tech.	type	value	err.	value		nuclide	material	value	no.	treatment
165	u236he	es	cu	0.0007544	30.0	0.0007600	0.0000000	0			0.0000000	75mee1	0
165	pu238f	es	cu	0.0002995	30.0	0.0003000	0.0000000	0			0.0000000	75mee1	0
165	am241f	es	cu	0.0006170	30.0	0.0006000	0.0000000	0			0.0000000	75mee1	0
165	am243f	es	cu	0.0005986	30.0	0.0006000	0.0000000	0			0.0000000	75mee1	0
165	np238f	es	cu	0.0000817	30.0	0.0000840	0.0000000	0			0.0000000	75mee1	0
165	cm242f	es	cu	0.0005263	30.0	0.0005400	0.0000000	0			0.0000000	75mee1	0
166	u234f	es	cu	0.0000025	30.0	0.0000025	0.0000000	0			0.0000000	75mee1	0
166	u237f	es	cu	0.0000059	30.0	0.0000060	0.0000000	0			0.0000000	75mee1	0
166	pu240h	es	cu	0.0044896	30.0	0.0000440	0.0000000	0			0.0100000	77net1	0
166	u234he	es	cu	0.0002570	30.0	0.0002600	0.0000000	0			0.0000000	75mee1	0
166 dy g	u236he	rc	cu	0.0004151	8.0	0.0000043	0.0000003	147 nd g	u236he	0.0179000		72net1	0
166	pu238f	es	cu	0.0001297	30.0	0.0001300	0.0000000	0			0.0000000	75mee1	0
166	am241f	es	cu	0.0002392	30.0	0.0002300	0.0000000	0			0.0000000	75mee1	0
166	am243f	es	cu	0.0002990	30.0	0.0003000	0.0000000	0			0.0000000	75mee1	0
166	np238f	es	cu	0.0000269	30.0	0.0000280	0.0000000	0			0.0000000	75mee1	0
166	cm242f	es	cu	0.0002144	30.0	0.0002200	0.0000000	0			0.0000000	75mee1	0
166 ho g	p9nesm	rc	cu	0.0000000	0.0	1.0000000	0.0700000	166 ho g	pu239t	1.4500000		73ton1	0
167	u234f	es	cu	0.0000006	30.0	0.0000006	0.0000000	0			0.0000000	75mee1	0
167	u237f	es	cu	0.0000024	30.0	0.0000024	0.0000000	0			0.0000000	75mee1	0

167		pu240h	es	cu	0.0028570	30.0	0.0000280	0.0000000	0			0.0100000	77net1	0
167		u234he	es	cu	0.0002076	30.0	0.0002100	0.0000000	0			0.0000000	75mee1	0
167		u236he	es	cu	0.0002573	30.0	0.0002600	0.0000000	0			0.0000000	75mee1	0
167		pu238f	es	cu	0.0000449	30.0	0.0000450	0.0000000	0			0.0000000	75mee1	0
167		am241f	es	cu	0.0001040	30.0	0.0001000	0.0000000	0			0.0000000	75mee1	0
167		am243f	es	cu	0.0000997	30.0	0.0001000	0.0000000	0			0.0000000	75mee1	0
167		np238f	es	cu	0.0000115	30.0	0.0000120	0.0000000	0			0.0000000	75mee1	0
167		cm242f	es	cu	0.0000780	30.0	0.0000800	0.0000000	0			0.0000000	75mee1	0
168		u234f	es	cu	0.0000003	30.0	0.0000003	0.0000000	0			0.0000000	75mee1	0
168		u237f	es	cu	0.0000011	30.0	0.0000011	0.0000000	0			0.0000000	75mee1	0
168		pu240h	es	cu	0.0018366	30.0	0.0000180	0.0000000	0			0.0100000	77net1	0
168		u234he	es	cu	0.0001186	30.0	0.0001200	0.0000000	0			0.0000000	75mee1	0
168		u236he	es	cu	0.0001484	30.0	0.0001500	0.0000000	0			0.0000000	75mee1	0
168		pu238f	es	cu	0.0000070	30.0	0.0000070	0.0000000	0			0.0000000	75mee1	0
168		am241f	es	cu	0.0000416	30.0	0.0000400	0.0000000	0			0.0000000	75mee1	0
168		am243f	es	cu	0.0000558	30.0	0.0000560	0.0000000	0			0.0000000	75mee1	0
168		np238f	es	cu	0.0000041	30.0	0.0000043	0.0000000	0			0.0000000	75mee1	0
168		cm242f	es	cu	0.0000244	30.0	0.0000250	0.0000000	0			0.0000000	75mee1	0
169		u234f	es	cu	0.0000001	30.0	0.0000001	0.0000000	0			0.0000000	75mee1	0
169		u237f	es	cu	0.0000004	30.0	0.0000004	0.0000000	0			0.0000000	75mee1	0
169		pu240h	es	cu	0.0011040	30.0	0.0000110	0.0000000	0			0.0100000	77net1	0
169	er g	pu240h	rc	cu	0.0011541	5.0	0.0000115	4.0000000%	0			0.0100000	77net1	0
169		u234he	es	cu	0.0000791	30.0	0.0000800	0.0000000	0			0.0000000	75mee1	0
169	er g	u236he	rc	cu	0.0001191	21.3	0.0000012	0.0000003	147	nd g	u236he	0.0179000	72net1	0
169		pu238f	es	cu	0.0000040	30.0	0.0000040	0.0000000	0			0.0000000	75mee1	0
169		am241f	es	cu	0.0000146	30.0	0.0000140	0.0000000	0			0.0000000	75mee1	0
169		am243f	es	cu	0.0000239	30.0	0.0000240	0.0000000	0			0.0000000	75mee1	0
169		np238f	es	cu	0.0000012	30.0	0.0000013	0.0000000	0			0.0000000	75mee1	0
169		cm242f	es	cu	0.0000146	30.0	0.0000150	0.0000000	0			0.0000000	75mee1	0
170		u234f	es	cu	0.0000000	30.0	0.0000000	0.0000000	0			0.0000000	75mee1	0
170		u237f	es	cu	0.0000001	30.0	0.0000001	0.0000000	0			0.0000000	75mee1	0
170		pu240h	es	cu	0.0007347	30.0	0.0000072	0.0000000	0			0.0100000	77net1	0
170		u234he	es	cu	0.0000385	30.0	0.0000390	0.0000000	0			0.0000000	75mee1	0
170		u236he	es	cu	0.0000445	30.0	0.0000450	0.0000000	0			0.0000000	75mee1	0
170		pu238f	es	cu	0.0000017	30.0	0.0000017	0.0000000	0			0.0000000	75mee1	0
170		am241f	es	cu	0.0000083	30.0	0.0000080	0.0000000	0			0.0000000	75mee1	0

170	am243f	es	cu	0.0000130	30.0	0.0000130	0.0000000	0			0.0000000	75mee1	0	
170	np238f	es	cu	0.0000003	30.0	0.0000003	0.0000000	0			0.0000000	75mee1	0	
170	cm242f	es	cu	0.0000097	30.0	0.0000100	0.0000000	0			0.0000000	75mee1	0	
171	u234f	es	cu	0.0000000	30.0	0.0000000	0.0000000	0			0.0000000	75mee1	0	
171	u237f	es	cu	0.0000000	30.0	0.0000000	0.0000000	0			0.0000000	75mee1	0	
171	pu240h	es	cu	0.0005306	30.0	0.0005200	0.0000000	0			0.0000000	75mee1	0	
171	u234he	es	cu	0.0000208	30.0	0.0000210	0.0000000	0			0.0000000	75mee1	0	
171	u236he	es	cu	0.0000247	30.0	0.0000250	0.0000000	0			0.0000000	75mee1	0	
171	pu238f	es	cu	0.0000007	30.0	0.0000007	0.0000000	0			0.0000000	75mee1	0	
171	am241f	es	cu	0.0000049	30.0	0.0000047	0.0000000	0			0.0000000	75mee1	0	
171	am243f	es	cu	0.0000035	30.0	0.0000035	0.0000000	0			0.0000000	75mee1	0	
171	np238f	es	cu	0.0000001	30.0	0.0000001	0.0000000	0			0.0000000	75mee1	0	
171	cm242f	es	cu	0.0000045	30.0	0.0000046	0.0000000	0			0.0000000	75mee1	0	
172	u234f	es	cu	0.0000000	30.0	0.0000000	0.0000000	0			0.0000000	75mee1	0	
172	u237f	es	cu	0.0000000	30.0	0.0000000	0.0000000	0			0.0000000	75mee1	0	
172	pu240h	es	cu	0.0003673	30.0	0.0003600	0.0000000	0			0.0000000	75mee1	0	
172	u234he	es	cu	0.0000168	30.0	0.0000170	0.0000000	0			0.0000000	75mee1	0	
172	er g	u236he	rc	cu	0.0000134	43.0	0.0000001	0.0000001	147	nd g	u236he	0.0179000	72net1	0
172	pu238f	es	cu	0.0000004	30.0	0.0000004	0.0000000	0			0.0000000	75mee1	0	
172	am241f	es	cu	0.0000020	30.0	0.0000019	0.0000000	0			0.0000000	75mee1	0	
172	am243f	es	cu	0.0000018	30.0	0.0000018	0.0000000	0			0.0000000	75mee1	0	
172	np238f	es	cu	0.0000000	30.0	0.0000000	0.0000000	0			0.0000000	75mee1	0	
172	cm242f	es	cu	0.0000027	30.0	0.0000028	0.0000000	0			0.0000000	75mee1	0	

1 Appendix D

Set D Yields Evaluated and Compiled
for
Los Alamos report LA-UR-94-3106 (ENDF-349)

T. R. England and B. F. Rider
October, 1994

Set D Contains yields for:
th227t, th229t, pa231f, am241t, am241h, a242mt, cm245t, cf249t, cf251t, es254t

Note: print landscape with page control parameter set
1

mass number 66 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	24 cr g	25 mn g	26 fe g	27 co g	28 ni g	29 cu g	30 zn g	31 ga g	32 ge g
half life			0.23s	54.6 h	5.10 m	stable	9.49h	2.27h	
lambda	0.0	0.0	0.0	3.014e+00	3.526e-06	2.265e-03	0.0	2.029e-05	8.482e-05
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	-100.0000	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
th227t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	8.53e-08n	0.0	0.0
zp 27.01 ri	0.0	6.97e-11p	2.57e-08p	3.23e-08p	2.71e-08p	7.76e-11p	0.0	0.0	0.0
sig0.507 cc	0.0	6.97e-11p	2.58e-08p	5.81e-08p	8.52e-08p	8.53e-08p	8.53e-08p	0.0	0.0
rc	0.0	6.97e-11p	2.58e-08p	5.81e-08p	8.52e-08o	8.53e-08o	8.53e-08n	0.0	0.0
th229t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	3.02e-08l	0.0	0.0
zp 26.76 ri	0.0	1.20e-10p	1.79e-08p	7.39e-09p	4.80e-09p	7.27e-12p	0.0	0.0	0.0
sig0.538 cc	0.0	1.21e-10p	1.80e-08p	2.54e-08p	3.02e-08p	3.02e-08p	3.02e-08p	0.0	0.0
rc	0.0	1.21e-10p	1.80e-08p	2.54e-08p	3.02e-08o	3.02e-08n	3.02e-08l	0.0	0.0
pa231f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	9.85e-05n	0.0	0.0
zp 26.87 ri	8.56e-10p	6.39e-07p	2.41e-05p	6.13e-05p	1.24e-05p	1.55e-07p	9.30e-11p	0.0	0.0

sig0.552 cc 8.56e-10p 6.40e-07p 2.47e-05p 8.60e-05p 9.83e-05p 9.85e-05p 9.85e-05p 0.0 0.0
rc 8.56e-10p 6.40e-07p 2.47e-05p 8.60e-05p 9.83e-05p 9.85e-05o 9.85e-05n 0.0 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.36e-07n 0.0 0.0
zp 27.05 ri 0.0 3.69e-10p 2.15e-08p 8.53e-08p 2.82e-08p 6.55e-10p 0.0 0.0 0.0
sig0.559 cc 0.0 3.70e-10p 2.19e-08p 1.07e-07p 1.35e-07p 1.36e-07p 1.36e-07p 0.0 0.0
rc 0.0 3.70e-10p 2.19e-08p 1.07e-07p 1.35e-07p 1.36e-07o 1.36e-07n 0.0 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000339n 0.0 0.0
zp 27.01 ri 2.23e-08p 3.63e-06p 7.08e-05p 0.000188p 7.28e-05p 3.85e-06p 2.44e-08p 1.71e-11p 0.0
sig0.656 cc 2.23e-08p 3.65e-06p 7.44e-05p 0.000262p 0.000335p 0.000339p 0.000339p 1.71e-11p 0.0
rc 2.23e-08p 3.65e-06p 7.44e-05p 0.000262p 0.000335o 0.000339o 0.000339n 1.71e-11p 0.0
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 9.57e-06n 0.0 0.0
zp 26.94 ri 7.45e-11p 5.15e-08p 2.03e-06p 5.95e-06p 1.51e-06p 2.75e-08p 2.80e-11p 0.0 0.0
sig0.565 cc 7.45e-11p 5.15e-08p 2.08e-06p 8.03e-06p 9.54e-06p 9.57e-06p 9.57e-06p 0.0 0.0
rc 7.45e-11p 5.15e-08p 2.08e-06p 8.03e-06p 9.54e-06p 9.57e-06o 9.57e-06n 0.0 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.04e-06n 0.0 0.0
zp 26.89 ri 1.96e-11p 7.74e-09p 2.82e-07p 5.88e-07p 1.64e-07p 2.48e-09p 3.32e-12p 0.0 0.0
sig0.576 cc 1.96e-11p 7.76e-09p 2.90e-07p 8.78e-07p 1.04e-06p 1.04e-06p 1.04e-06p 0.0 0.0
rc 1.96e-11p 7.76e-09p 2.90e-07p 8.78e-07p 1.04e-06o 1.04e-06o 1.04e-06n 0.0 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.00e-07o 0.0 0.0
zp 27.66 ri 0.0 1.04e-10p 1.23e-08p 9.28e-08p 1.71e-07p 2.35e-08p 7.24e-10p 1.31e-12p 0.0
sig0.645 cc 0.0 1.04e-10p 1.24e-08p 1.05e-07p 2.76e-07p 3.00e-07p 3.00e-07p 1.31e-12p 0.0
rc 0.0 1.04e-10p 1.24e-08p 1.05e-07p 2.76e-07p 3.00e-07o 3.00e-07n 1.31e-12p 0.0
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 9.35e-05n 0.0 0.0
zp 26.91 ri 2.11e-09p 7.99e-07p 2.22e-05p 5.59e-05p 1.44e-05p 3.21e-07p 5.11e-10p 0.0 0.0
sig0.590 cc 2.11e-09p 8.01e-07p 2.30e-05p 7.88e-05p 9.32e-05p 9.35e-05p 9.35e-05p 0.0 0.0
rc 2.11e-09p 8.01e-07p 2.30e-05p 7.88e-05p 9.32e-05o 9.35e-05o 9.35e-05n 0.0 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 9.39e-09n 0.0 0.0
zp 26.91 ri 0.0 8.01e-11p 2.22e-09p 5.61e-09p 1.44e-09p 3.23e-11p 0.0 0.0 0.0
sig0.590 cc 0.0 8.03e-11p 2.30e-09p 7.91e-09p 9.35e-09p 9.39e-09p 9.39e-09p 0.0 0.0

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        rc      0.0  8.03e-11p 2.30e-09p 7.91e-09p 9.35e-09o 9.39e-09o 9.39e-09n      0.0       0.0

  co, ni, cu half lives from 89wal1; ga half life 90bur1.
1

    mass number     67                    LA-UR-94-3106 (ENDF-349)                        percent yields
 nuclide       24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g
 half life                                          21. s    2.580d    stable    3.261d    19.0 m
 lambda            0.0       0.0       0.0       0.0 3.301e-02 3.110e-06       0.0 2.460e-06 6.080e-04
  z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
  z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
  z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
  th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.16e-07n      0.0       0.0
 zp 27.40 ri      0.0  1.35e-11p 1.13e-08p 8.12e-08p 1.21e-07p 2.23e-09p 5.02e-12p      0.0       0.0
 sig0.507 cc      0.0  1.35e-11p 1.13e-08p 9.26e-08p 2.13e-07p 2.16e-07p 2.16e-07p      0.0       0.0
        rc      0.0  1.35e-11p 1.13e-08p 9.26e-08p 2.13e-07p 2.16e-07o 2.16e-07n      0.0       0.0
  th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  7.18e-08l      0.0       0.0
 zp 27.14 ri      0.0  5.00e-11p 1.46e-08p 2.68e-08p 3.02e-08p 2.37e-10p      0.0       0.0       0.0
 sig0.538 cc      0.0  5.00e-11p 1.46e-08p 4.14e-08p 7.16e-08p 7.18e-08p 7.18e-08p      0.0       0.0
        rc      0.0  5.00e-11p 1.46e-08p 4.14e-08p 7.16e-08o 7.18e-08n 7.18e-08l      0.0       0.0
  pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000177n      0.0       0.0
 zp 27.25 ri 5.50e-11p 1.34e-07p 1.53e-05p 0.000104p 5.56e-05p 2.08e-06p 4.05e-09p      0.0       0.0
 sig0.552 cc 5.50e-11p 1.34e-07p 1.54e-05p 0.000120p 0.000175p 0.000177p 0.000177p      0.0       0.0
        rc 5.50e-11p 1.34e-07p 1.54e-05p 0.000120p 0.000175p 0.000177o 0.000177n      0.0       0.0
  am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.52e-07n      0.0       0.0
 zp 27.43 ri      0.0  6.81e-11p 1.19e-08p 1.26e-07p 1.07e-07p 7.08e-09p 2.74e-11p      0.0       0.0
 sig0.559 cc      0.0  6.81e-11p 1.20e-08p 1.38e-07p 2.45e-07p 2.52e-07p 2.52e-07p      0.0       0.0
        rc      0.0  6.81e-11p 1.20e-08p 1.38e-07p 2.45e-07p 2.52e-07o 2.52e-07n      0.0       0.0
  am241h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000726n      0.0       0.0
 zp 27.39 ri 3.89e-09p 1.45e-06p 6.25e-05p 0.000349p 0.000281p 3.21e-05p 4.63e-07p 7.53e-10p      0.0
 sig0.656 cc 3.89e-09p 1.46e-06p 6.40e-05p 0.000413p 0.000694p 0.000726p 0.000726p 7.53e-10p      0.0
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        rc 3.89e-09p 1.46e-06p 6.40e-05p 0.000413p 0.000694p 0.000726o 0.000726n 7.53e-10p      0.0
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.91e-05n      0.0       0.0
zp 27.32 ri 5.68e-12p 1.21e-08p 1.39e-06p 1.06e-05p 6.83e-06p 3.50e-07p 1.09e-09p      0.0       0.0
sig0.565 cc 5.68e-12p 1.21e-08p 1.40e-06p 1.20e-05p 1.88e-05p 1.91e-05p 1.91e-05p      0.0       0.0
        rc 5.68e-12p 1.21e-08p 1.40e-06p 1.20e-05p 1.88e-05p 1.91e-05o 1.91e-05n      0.0       0.0
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.09e-06n      0.0       0.0
zp 27.27 ri 1.70e-12p 2.14e-09p 2.00e-07p 1.13e-06p 7.24e-07p 3.22e-08p 1.17e-10p      0.0       0.0
sig0.576 cc 1.70e-12p 2.15e-09p 2.02e-07p 1.33e-06p 2.06e-06p 2.09e-06p 2.09e-06p      0.0       0.0
        rc 1.70e-12p 2.15e-09p 2.02e-07p 1.33e-06p 2.06e-06p 2.09e-06o 2.09e-06n      0.0       0.0
 cf249t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.01e-07o      0.0       0.0
zp 28.02 ri      0.0  2.47e-11p 4.54e-09p 1.05e-07p 2.74e-07p 1.12e-07p 5.19e-09p 3.04e-11p      0.0
sig0.645 cc      0.0  2.47e-11p 4.57e-09p 1.09e-07p 3.84e-07p 4.96e-07p 5.01e-07p 3.04e-11p      0.0
        rc      0.0  2.47e-11p 4.57e-09p 1.09e-07p 3.84e-07p 4.96e-07o 5.01e-07n 3.04e-11p      0.0
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000140n      0.0       0.0
zp 27.29 ri 1.62e-10p 1.72e-07p 1.26e-05p 7.72e-05p 4.75e-05p 2.76e-06p 1.22e-08p 3.56e-12p      0.0
sig0.590 cc 1.62e-10p 1.73e-07p 1.28e-05p 9.00e-05p 0.000138p 0.000140p 0.000140p 3.56e-12p      0.0
        rc 1.62e-10p 1.73e-07p 1.28e-05p 9.00e-05p 0.000138p 0.000140o 0.000140n 3.56e-12p      0.0
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.88e-08n      0.0       0.0
zp 27.29 ri      0.0  2.30e-11p 1.69e-09p 1.03e-08p 6.36e-09p 3.70e-10p 1.64e-12p      0.0       0.0
sig0.590 cc      0.0  2.31e-11p 1.71e-09p 1.20e-08p 1.84e-08p 1.88e-08p 1.88e-08p      0.0       0.0
        rc      0.0  2.31e-11p 1.71e-09p 1.20e-08p 1.84e-08p 1.88e-08o 1.88e-08n      0.0       0.0

  ni, cu half lives from 89wal1; ga half life from 90bur1.
1

    mass number     68                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide      24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu m   29 cu g   30 zn g   31 ga g   32 ge g
half life                                   19. s     3.79m     31. s    stable    68.06m    287. d
lambda          0.0       0.0       0.0       0.0 3.648e-02 3.048e-03 2.236e-02       0.0 1.697e-04 2.795e-08
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0   50.0000       0.0       0.0
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 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0   50.0000       0.0       0.0       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  8.23e-07n      0.0       0.0
zp 27.79 ri      0.0  1.01e-12p 6.08e-09p 8.95e-08p 7.02e-07p 1.79e-08p 7.68e-09p 4.04e-10p       0.0       0.0
sig0.507 cc      0.0  1.01e-12p 6.08e-09p 9.56e-08p 7.97e-07p 1.79e-08p 8.14e-07p 8.23e-07p       0.0       0.0
         rc      0.0  1.01e-12p 6.08e-09p 9.56e-08p 7.97e-07p 1.79e-08p 8.14e-07o 8.23e-07n       0.0       0.0
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.71e-07l      0.0       0.0
zp 27.52 ri      0.0  8.37e-12p 1.30e-08p 4.31e-08p 2.11e-07p 2.20e-09p 9.42e-10p 4.96e-11p       0.0       0.0
sig0.538 cc      0.0  8.38e-12p 1.30e-08p 5.61e-08p 2.67e-07p 2.20e-09p 2.70e-07p 2.71e-07p       0.0       0.0
         rc      0.0  8.38e-12p 1.30e-08p 5.61e-08p 2.67e-07p 2.20e-09p 2.70e-07n 2.71e-07l       0.0       0.0
 pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000345n      0.0       0.0
zp 27.63 ri 2.41e-12p 1.94e-08p 6.96e-06p 0.000133p 0.000185p 1.44e-05p 5.32e-06p 1.21e-07p 3.44e-11p       0.0
sig0.552 cc 2.41e-12p 1.95e-08p 6.97e-06p 0.000140p 0.000325p 1.44e-05p 0.000337p 0.000345p 3.44e-11p       0.0
         rc 2.41e-12p 1.95e-08p 6.97e-06p 0.000140p 0.000325p 1.44e-05p 0.000337o 0.000345n 3.44e-11p       0.0
 am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.81e-07n      0.0       0.0
zp 27.81 ri      0.0  1.01e-11p 5.43e-09p 1.61e-07p 3.50e-07p 4.41e-08p 1.89e-08p 7.39e-10p       0.0       0.0
sig0.559 cc      0.0  1.01e-11p 5.44e-09p 1.67e-07p 5.17e-07p 4.41e-08p 5.58e-07p 5.81e-07p       0.0       0.0
         rc      0.0  1.01e-11p 5.44e-09p 1.67e-07p 5.17e-07p 4.41e-08p 5.58e-07o 5.81e-07n       0.0       0.0
 am241h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001162n      0.0       0.0
zp 27.77 ri 3.66e-10p 3.17e-07p 3.07e-05p 0.000366p 0.000612p 0.000122p 2.67e-05p 4.77e-06p 1.79e-08p 7.32e-12p
sig0.656 cc 3.66e-10p 3.17e-07p 3.10e-05p 0.000397p 0.001009p 0.000122p 0.001096p 0.001162p 1.80e-08p 7.32e-12p
         rc 3.66e-10p 3.17e-07p 3.10e-05p 0.000397p 0.001009p 0.000122p 0.001096o 0.001162n 1.80e-08p 7.32e-12p
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.87e-05n      0.0       0.0
zp 27.70 ri      0.0  1.41e-09p 4.80e-07p 9.89e-06p 1.61e-05p 1.56e-06p 6.69e-07p 2.07e-08p 1.03e-11p       0.0
sig0.565 cc      0.0  1.41e-09p 4.82e-07p 1.04e-05p 2.65e-05p 1.56e-06p 2.79e-05p 2.87e-05p 1.03e-11p       0.0
         rc      0.0  1.41e-09p 4.82e-07p 1.04e-05p 2.65e-05p 1.56e-06p 2.79e-05o 2.87e-05n 1.03e-11p       0.0
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.18e-06n      0.0       0.0
zp 27.65 ri      0.0  3.61e-10p 1.04e-07p 1.41e-06p 2.40e-06p 1.81e-07p 7.76e-08p 2.92e-09p 1.37e-12p       0.0
sig0.576 cc      0.0  3.61e-10p 1.04e-07p 1.52e-06p 3.92e-06p 1.81e-07p 4.09e-06p 4.18e-06p 1.37e-12p       0.0
         rc      0.0  3.61e-10p 1.04e-07p 1.52e-06p 3.92e-06p 1.81e-07p 4.09e-06o 4.18e-06n 1.37e-12p       0.0
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 cf249t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.00e-06o      0.0       0.0
zp 28.39 ri      0.0  9.62e-12p 5.88e-09p 2.10e-07p 1.66e-06p 6.88e-07p 2.95e-07p 1.42e-07p 1.32e-09p 2.35e-12p
sig0.645 cc      0.0  9.63e-12p 5.89e-09p 2.16e-07p 1.88e-06p 6.88e-07p 2.52e-06p 3.00e-06p 1.32e-09p 2.35e-12p
         rc      0.0  9.63e-12p 5.89e-09p 2.16e-07p 1.88e-06p 6.88e-07p 2.52e-06o 3.00e-06n 1.32e-09p 2.35e-12p
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000187n      0.0       0.0
zp 27.67 ri 7.45e-12p 2.25e-08p 4.47e-06p 6.83e-05p 9.95e-05p 1.02e-05p 4.36e-06p 1.75e-07p 1.45e-10p       0.0
sig0.590 cc 7.45e-12p 2.25e-08p 4.49e-06p 7.28e-05p 0.000172p 1.02e-05p 0.000182p 0.000187p 1.45e-10p       0.0
         rc 7.45e-12p 2.25e-08p 4.49e-06p 7.28e-05p 0.000172p 1.02e-05p 0.000182o 0.000187n 1.45e-10p       0.0
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.75e-08n      0.0       0.0
zp 27.67 ri      0.0  4.50e-12p 8.96e-10p 1.37e-08p 2.00e-08p 2.05e-09p 8.77e-10p 3.52e-11p       0.0       0.0
sig0.590 cc      0.0  4.50e-12p 9.01e-10p 1.46e-08p 3.46e-08p 2.05e-09p 3.65e-08p 3.75e-08p       0.0       0.0
         rc      0.0  4.50e-12p 9.01e-10p 1.46e-08p 3.46e-08p 2.05e-09p 3.65e-08o 3.75e-08n       0.0       0.0

  ni, cu half lives from 89wal1; ga, ge half lives from 90bur1.
1

    mass number     69                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn m   30 zn g   31 ga g   32 ge g   33 as g
half life                                 10. s     2.8 m    13.76h     56. m    stable    39.2 h     15. m
lambda           0.0       0.0       0.0 6.931e-02 4.126e-03 1.399e-05 2.063e-04       0.0 4.912e-06 7.702e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.35e-06n      0.0       0.0
zp 28.19 ri      0.0  1.23e-09p 1.24e-07p 1.83e-06p 3.80e-07p 1.11e-08p 2.61e-09p 3.65e-12p       0.0       0.0
sig0.507 cc      0.0  1.23e-09p 1.26e-07p 1.96e-06p 2.34e-06p 1.11e-08p 2.35e-06p 2.35e-06p       0.0       0.0
         rc      0.0  1.23e-09p 1.26e-07p 1.96e-06p 2.34e-06p 1.11e-08p 2.35e-06o 2.35e-06n       0.0       0.0
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.15e-06l      0.0       0.0
zp 27.90 ri 2.15e-12p 7.06e-09p 1.16e-07p 9.54e-07p 6.60e-08p 1.72e-09p 4.05e-10p       0.0       0.0       0.0
sig0.538 cc 2.15e-12p 7.07e-09p 1.23e-07p 1.08e-06p 1.14e-06p 1.72e-09p 1.15e-06p 1.15e-06p       0.0       0.0
         rc 2.15e-12p 7.07e-09p 1.23e-07p 1.08e-06p 1.14e-06o 1.72e-09p 1.15e-06n 1.15e-06l       0.0       0.0
```

pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000689n 0.0 0.0
zp 28.01 ri 1.85e-09p 2.13e-06p 0.000120p 0.000438p 0.000127p 1.99e-06p 4.07e-07p 2.22e-09p 0.0 0.0
sig0.552 cc 1.85e-09p 2.13e-06p 0.000122p 0.000560p 0.000687p 1.99e-06p 0.000689p 0.000689p 0.0 0.0
rc 1.85e-09p 2.13e-06p 0.000122p 0.000560p 0.000687p 1.99e-06p 0.000689o 0.000689n 0.0 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.26e-06n 0.0 0.0
zp 28.20 ri 0.0 1.45e-09p 1.30e-07p 7.54e-07p 3.63e-07p 1.04e-08p 2.43e-09p 2.50e-11p 0.0 0.0
sig0.559 cc 0.0 1.45e-09p 1.31e-07p 8.85e-07p 1.25e-06p 1.04e-08p 1.26e-06p 1.26e-06p 0.0 0.0
rc 0.0 1.45e-09p 1.31e-07p 8.85e-07p 1.25e-06p 1.04e-08p 1.26e-06o 1.26e-06n 0.0 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.001937n 0.0 0.0
zp 28.15 ri 5.25e-08p 1.16e-05p 0.000302p 0.001051p 0.000534p 3.35e-05p 4.14e-06p 3.23e-07p 3.09e-10p 0.0
sig0.656 cc 5.25e-08p 1.16e-05p 0.000313p 0.001365p 0.001899p 3.35e-05p 0.001937p 0.001937p 3.09e-10p 0.0
rc 5.25e-08p 1.16e-05p 0.000313p 0.001365p 0.001899o 3.35e-05p 0.001937o 0.001937n 3.09e-10p 0.0
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.74e-05n 0.0 0.0
zp 28.08 ri 1.41e-10p 1.47e-07p 8.58e-06p 3.55e-05p 1.28e-05p 2.77e-07p 6.51e-08p 5.27e-10p 0.0 0.0
sig0.565 cc 1.41e-10p 1.48e-07p 8.73e-06p 4.43e-05p 5.71e-05p 2.77e-07p 5.74e-05p 5.74e-05p 0.0 0.0
rc 1.41e-10p 1.48e-07p 8.73e-06p 4.43e-05p 5.71e-05o 2.77e-07p 5.74e-05o 5.74e-05n 0.0 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.04e-05n 0.0 0.0
zp 28.03 ri 5.57e-11p 4.32e-08p 1.72e-06p 6.66e-06p 1.97e-06p 4.62e-08p 1.08e-08p 8.61e-11p 0.0 0.0
sig0.576 cc 5.57e-11p 4.32e-08p 1.77e-06p 8.42e-06p 1.04e-05p 4.62e-08p 1.04e-05p 1.04e-05p 0.0 0.0
rc 5.57e-11p 4.32e-08p 1.77e-06p 8.42e-06p 1.04e-05p 4.62e-08p 1.04e-05o 1.04e-05n 0.0 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.71e-06o 0.0 0.0
zp 28.75 ri 1.41e-12p 1.36e-09p 1.55e-07p 1.79e-06p 3.09e-06p 5.27e-07p 1.24e-07p 1.91e-08p 5.38e-11p 0.0
sig0.645 cc 1.41e-12p 1.37e-09p 1.56e-07p 1.95e-06p 5.04e-06p 5.27e-07p 5.69e-06p 5.71e-06p 5.39e-11p 0.0
rc 1.41e-12p 1.37e-09p 1.56e-07p 1.95e-06p 5.04e-06p 5.27e-07p 5.69e-06o 5.71e-06n 5.39e-11p 0.0
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000281n 0.0 0.0
zp 28.04 ri 2.40e-09p 1.29e-06p 4.97e-05p 0.000169p 5.87e-05p 1.48e-06p 3.48e-07p 4.14e-09p 0.0 0.0
sig0.590 cc 2.40e-09p 1.29e-06p 5.10e-05p 0.000220p 0.000279p 1.48e-06p 0.000281p 0.000281p 0.0 0.0
rc 2.40e-09p 1.29e-06p 5.10e-05p 0.000220p 0.000279o 1.48e-06p 0.000281o 0.000281n 0.0 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

```
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  7.51e-08n      0.0       0.0
zp 28.05 ri      0.0  3.28e-10p 1.30e-08p 4.52e-08p 1.61e-08p 4.16e-10p 9.76e-11p 1.19e-12p      0.0       0.0
sig0.590 cc      0.0  3.29e-10p 1.33e-08p 5.85e-08p 7.46e-08p 4.16e-10p 7.51e-08p 7.51e-08p      0.0       0.0
        rc      0.0  3.29e-10p 1.33e-08p 5.85e-08p 7.46e-08o 4.16e-10p 7.51e-08o 7.51e-08n      0.0       0.0

  ni, cu, zn half lives from 89wal1.
1

    mass number     70                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide      24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu m   29 cu g   30 zn g   31 ga g   32 ge g
half life                                                    47. s      5. s    stable    21.1 m    stable
lambda          0.0       0.0       0.0       0.0       0.0 1.475e-02 1.386e-01       0.0 5.475e-04       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000   50.0000   50.0000  100.0000       0.0  100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 th227t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.19e-06n      0.0       0.0
zp 28.58 ri      0.0       0.0  1.74e-10p 4.09e-08p 3.57e-06p 9.71e-07p 3.24e-07p 2.91e-07p 1.84e-10p      0.0
sig0.507 cc      0.0       0.0  1.74e-10p 4.11e-08p 3.61e-06p 2.78e-06p 2.13e-06p 5.19e-06p 1.84e-10p 1.84e-10p
        rc      0.0       0.0  1.74e-10p 4.11e-08p 3.61e-06p 2.78e-06p 2.13e-06p 5.19e-06n 1.84e-10p 1.84e-10p
 th229t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.64e-06l      0.0       0.0
zp 28.29 ri      0.0       0.0  2.41e-09p 8.12e-08p 3.12e-06p 2.83e-07p 9.45e-08p 6.39e-08p 2.17e-11p      0.0
sig0.538 cc      0.0       0.0  2.41e-09p 8.37e-08p 3.20e-06p 1.88e-06p 1.70e-06p 3.64e-06p 2.17e-11p 2.17e-11p
        rc      0.0       0.0  2.41e-09p 8.37e-08p 3.20e-06p 1.88e-06p 1.70e-06p 3.64e-06l 2.17e-11p 2.17e-11p
 pa231f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001280n      0.0       0.0
zp 28.40 ri      0.0  9.40e-11p 3.66e-07p 6.54e-05p 0.000666p 0.000405p 0.000114p 2.96e-05p 9.09e-08p 1.25e-11p
sig0.552 cc      0.0  9.40e-11p 3.67e-07p 6.57e-05p 0.000732p 0.000771p 0.000480p 0.001280p 9.09e-08p 9.09e-08p
        rc      0.0  9.40e-11p 3.67e-07p 6.57e-05p 0.000732p 0.000771p 0.000480p 0.001280n 9.09e-08p 9.09e-08p
 am241t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.55e-06n      0.0       0.0
zp 28.58 ri      0.0       0.0  4.38e-10p 1.19e-07p 1.88e-06p 1.74e-06p 5.79e-07p 2.28e-07p 1.37e-09p      0.0
sig0.559 cc      0.0       0.0  4.38e-10p 1.19e-07p 2.00e-06p 2.74e-06p 1.58e-06p 4.55e-06p 1.37e-09p 1.38e-09p
        rc      0.0       0.0  4.38e-10p 1.19e-07p 2.00e-06p 2.74e-06p 1.58e-06p 4.55e-06n 1.37e-09p 1.38e-09p
 am241h  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.003196n      0.0       0.0
zp 28.53 ri 1.32e-12p 6.26e-09p 3.18e-06p 0.000184p 0.001359p 0.001217p 0.000215p 0.000217p 4.20e-06p 9.32e-09p
sig0.656 cc 1.32e-12p 6.26e-09p 3.19e-06p 0.000188p 0.001547p 0.001991p 0.000988p 0.003196p 4.20e-06p 4.21e-06p
        rc 1.32e-12p 6.26e-09p 3.19e-06p 0.000188p 0.001547p 0.001991p 0.000988p 0.003196n 4.20e-06p 4.21e-06p
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.57e-05n      0.0       0.0
zp 28.46 ri      0.0  7.63e-12p 2.48e-08p 4.24e-06p 4.63e-05p 3.15e-05p 1.05e-05p 3.13e-06p 1.46e-08p 3.53e-12p
sig0.565 cc      0.0  7.63e-12p 2.48e-08p 4.26e-06p 5.05e-05p 5.68e-05p 3.58e-05p 9.57e-05p 1.46e-08p 1.46e-08p
        rc      0.0  7.63e-12p 2.48e-08p 4.26e-06p 5.05e-05p 5.68e-05p 3.58e-05p 9.57e-05n 1.46e-08p 1.46e-08p
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.61e-05n      0.0       0.0
zp 28.41 ri      0.0  5.23e-12p 1.31e-08p 1.35e-06p 1.43e-05p 7.22e-06p 2.41e-06p 8.14e-07p 3.30e-09p 1.11e-12p
sig0.576 cc      0.0  5.23e-12p 1.31e-08p 1.36e-06p 1.57e-05p 1.51e-05p 1.02e-05p 2.61e-05p 3.30e-09p 3.30e-09p
        rc      0.0  5.24e-12p 1.31e-08p 1.36e-06p 1.57e-05p 1.51e-05p 1.02e-05p 2.61e-05n 3.30e-09p 3.30e-09p
 cf249t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.02e-05n      0.0       0.0
zp 29.11 ri      0.0       0.0  9.56e-10p 1.69e-07p 6.03e-06p 1.11e-05p 3.70e-06p 9.21e-06p 4.06e-07p 3.71e-09p
sig0.645 cc      0.0       0.0  9.57e-10p 1.70e-07p 6.20e-06p 1.42e-05p 6.81e-06p 3.02e-05p 4.06e-07p 4.10e-07p
        rc      0.0       0.0  9.57e-10p 1.70e-07p 6.20e-06p 1.42e-05p 6.81e-06p 3.02e-05n 4.06e-07p 4.10e-07p
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000374n      0.0       0.0
zp 28.42 ri      0.0  1.43e-10p 2.17e-07p 2.23e-05p 0.000186p 0.000115p 3.84e-05p 1.23e-05p 7.68e-08p 3.20e-11p
sig0.590 cc      0.0  1.43e-10p 2.17e-07p 2.25e-05p 0.000208p 0.000219p 0.000143p 0.000374p 7.68e-08p 7.68e-08p
        rc      0.0  1.43e-10p 2.17e-07p 2.25e-05p 0.000208p 0.000219p 0.000143p 0.000374n 7.68e-08p 7.68e-08p
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.41e-07n      0.0       0.0
zp 28.42 ri      0.0       0.0  8.15e-11p 8.39e-09p 6.99e-08p 4.34e-08p 1.45e-08p 4.63e-09p 2.90e-11p      0.0
sig0.590 cc      0.0       0.0  8.15e-11p 8.47e-09p 7.84e-08p 8.25e-08p 5.36e-08p 1.41e-07p 2.90e-11p 2.90e-11p
        rc      0.0       0.0  8.15e-11p 8.47e-09p 7.84e-08p 8.25e-08p 5.36e-08p 1.41e-07n 2.90e-11p 2.90e-11p

  cu half life from 89wal1.
1

    mass number     71                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn m   30 zn g   31 ga g   32 ge m   32 ge g   33 as g
half life                                   20. s    3.97 h     2.4 m    stable    11.8 d    0.020s     64. h
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lambda          0.0       0.0       0.0       0.0 3.466e-02 4.850e-05 4.814e-03       0.0 6.799e-07 3.466e+01 3.008e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000       0.0 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0   99.9500       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0    0.0500       0.0       0.0  100.0000       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.27e-05n      0.0       0.0       0.0
zp 28.98 ri      0.0  9.67e-12p 1.71e-08p 3.28e-06p 6.54e-06p 2.34e-06p 5.49e-07p 1.30e-08p 3.13e-12p 3.13e-12p       0.0
sig0.507 cc      0.0  9.67e-12p 1.71e-08p 3.30e-06p 9.84e-06p 2.34e-06p 1.04e-05p 1.27e-05p 3.13e-12p 6.25e-12p       0.0
         rc      0.0  9.67e-12p 1.71e-08p 3.30e-06p 9.84e-06p 2.34e-06p 1.04e-05p 1.27e-05n 3.13e-12p 6.25e-12p       0.0
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.56e-05l      0.0       0.0       0.0
zp 28.68 ri      0.0  6.60e-10p 1.24e-07p 9.03e-06p 4.88e-06p 1.27e-06p 2.99e-07p 2.99e-09p       0.0       0.0       0.0
sig0.538 cc      0.0  6.60e-10p 1.25e-07p 9.15e-06p 1.40e-05p 1.27e-06p 1.43e-05p 1.56e-05p       0.0  1.90e-12p       0.0
         rc      0.0  6.60e-10p 1.25e-07p 9.15e-06p 1.40e-05o 1.27e-06p 1.43e-05n 1.56e-05l       0.0  1.90e-12p       0.0
 pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.002462n      0.0       0.0       0.0
zp 28.78 ri 3.40e-12p 4.41e-08p 2.49e-05p 0.000727p 0.001473p 0.000195p 3.99e-05p 2.26e-06p 5.11e-10p 5.11e-10p       0.0
sig0.552 cc 3.40e-12p 4.41e-08p 2.50e-05p 0.000752p 0.002225p 0.000195p 0.002265p 0.002462p 5.11e-10p 1.02e-09p       0.0
         rc 3.40e-12p 4.41e-08p 2.50e-05p 0.000752p 0.002225p 0.000195p 0.002265o 0.002462n 5.11e-10p 1.02e-09p       0.0
 am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.78e-06n      0.0       0.0       0.0
zp 28.96 ri      0.0  3.53e-11p 2.99e-08p 1.35e-06p 4.26e-06p 9.09e-07p 2.13e-07p 2.02e-08p 9.58e-12p 9.58e-12p       0.0
sig0.559 cc      0.0  3.53e-11p 2.99e-08p 1.38e-06p 5.64e-06p 9.09e-07p 5.85e-06p 6.78e-06p 9.58e-12p 1.92e-11p       0.0
         rc      0.0  3.53e-11p 2.99e-08p 1.38e-06p 5.64e-06p 9.09e-07p 5.85e-06p 6.78e-06n 9.58e-12p 1.92e-11p       0.0
 am241h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.004842n      0.0       0.0       0.0
zp 28.92 ri 4.56e-10p 5.52e-07p 7.38e-05p 0.001196p 0.002666p 0.000772p 9.55e-05p 3.81e-05p 9.94e-08p 9.94e-08p 1.13e-10p
sig0.656 cc 4.56e-10p 5.52e-07p 7.43e-05p 0.001270p 0.003936p 0.000772p 0.004032p 0.004842p 9.94e-08p 1.99e-07p 1.13e-10p
         rc 4.56e-10p 5.52e-07p 7.43e-05p 0.001270p 0.003936p 0.000772p 0.004032p 0.004842n 9.94e-08p 1.99e-07p 1.13e-10p
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000191n      0.0       0.0       0.0
zp 28.84 ri      0.0  3.27e-09p 1.68e-06p 5.06e-05p 0.000116p 1.86e-05p 4.35e-06p 3.15e-07p 1.19e-10p 1.19e-10p       0.0
sig0.565 cc      0.0  3.27e-09p 1.69e-06p 5.23e-05p 0.000168p 1.86e-05p 0.000172p 0.000191p 1.19e-10p 2.38e-10p       0.0
         rc      0.0  3.27e-09p 1.69e-06p 5.23e-05p 0.000168p 1.86e-05p 0.000172o 0.000191n 1.19e-10p 2.38e-10p       0.0
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.75e-05n      0.0       0.0       0.0
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zp 28.79 ri       0.0  2.16e-09p 6.97e-07p 1.80e-05p 3.22e-05p 5.26e-06p 1.23e-06p 8.10e-08p 3.76e-11p 3.76e-11p       0.0
sig0.576 cc       0.0  2.17e-09p 6.99e-07p 1.87e-05p 5.09e-05p 5.26e-06p 5.21e-05p 5.75e-05p 3.76e-11p 7.52e-11p       0.0
        rc       0.0  2.17e-09p 6.99e-07p 1.87e-05p 5.09e-05p 5.26e-06p 5.21e-05o 5.75e-05n 3.76e-11p 7.52e-11p       0.0
 cf249t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.36e-05n       0.0       0.0       0.0
zp 29.47 ri       0.0  1.10e-10p 6.31e-08p 3.42e-06p 2.50e-05p 1.79e-05p 4.19e-06p 2.96e-06p 2.09e-08p 2.09e-08p 7.01e-11p
sig0.645 cc       0.0  1.10e-10p 6.32e-08p 3.48e-06p 2.85e-05p 1.79e-05p 3.27e-05p 5.36e-05p 2.09e-08p 4.18e-08p 7.01e-11p
        rc       0.0  1.10e-10p 6.32e-08p 3.48e-06p 2.85e-05p 1.79e-05p 3.27e-05p 5.36e-05n 2.09e-08p 4.18e-08p 7.01e-11p
 cf251t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000468n       0.0       0.0       0.0
zp 28.80 ri 5.36e-12p 2.32e-08p 6.52e-06p 0.000137p 0.000269p 4.33e-05p 1.02e-05p 9.03e-07p 5.33e-10p 5.33e-10p       0.0
sig0.590 cc 5.36e-12p 2.32e-08p 6.54e-06p 0.000144p 0.000413p 4.33e-05p 0.000423p 0.000468p 5.33e-10p 1.07e-09p       0.0
        rc 5.36e-12p 2.32e-08p 6.54e-06p 0.000144p 0.000413p 4.33e-05p 0.000423o 0.000468n 5.33e-10p 1.07e-09p       0.0
 es254t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc       0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.35e-07n       0.0       0.0       0.0
zp 28.80 ri       0.0  1.16e-11p 3.27e-09p 6.89e-08p 1.35e-07p 2.18e-08p 5.10e-09p 4.54e-10p       0.0       0.0       0.0
sig0.590 cc       0.0  1.16e-11p 3.28e-09p 7.22e-08p 2.07e-07p 2.18e-08p 2.12e-07p 2.35e-07p       0.0       0.0       0.0
        rc       0.0  1.16e-11p 3.28e-09p 7.22e-08p 2.07e-07p 2.18e-08p 2.12e-07o 2.35e-07n       0.0       0.0       0.0

  cu, zn half lives from 89wal1.
1

    mass number     72                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g   33 as g   34 se g
half life              0.124s    3.83 s     6.6 s    46.5 h    14.10h    stable    26.0 h    8.40 d
lambda            0.0 5.590e+00 1.810e-01 1.050e-01 4.141e-06 1.366e-05       0.0 7.405e-06 9.551e-07
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 th227t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc       0.0       0.0       0.0       0.0       0.0       0.0  5.68e-05n       0.0       0.0
zp 29.38 ri       0.0  2.90e-09p 3.94e-06p 1.53e-05p 3.73e-05p 3.71e-07p 1.35e-09p       0.0       0.0
sig0.507 cc       0.0  2.90e-09p 3.94e-06p 1.92e-05p 5.65e-05p 5.68e-05p 5.68e-05p       0.0       0.0
        rc       0.0  2.90e-09p 3.94e-06p 1.92e-05p 5.65e-05p 5.68e-05o 5.68e-05n       0.0       0.0
 th229t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc       0.0       0.0       0.0       0.0       0.0       0.0  7.18e-05l       0.0       0.0
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zp 29.07 ri 1.35e-10p 5.62e-08p 2.13e-05p 2.01e-05p 3.03e-05p 1.19e-07p 4.41e-10p 0.0 0.0
sig0.538 cc 1.35e-10p 5.63e-08p 2.13e-05p 4.14e-05p 7.17e-05p 7.18e-05p 7.18e-05p 0.0 0.0
rc 1.35e-10p 5.63e-08p 2.13e-05p 4.14e-05p 7.17e-05o 7.18e-05n 7.18e-05l 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.004432n 0.0 0.0
zp 29.16 ri 3.16e-09p 5.80e-06p 0.000507p 0.002726p 0.001160p 3.37e-05p 4.96e-08p 3.18e-12p 0.0
sig0.552 cc 3.16e-09p 5.80e-06p 0.000512p 0.003238p 0.004398p 0.004432p 0.004432p 3.18e-12p 0.0
rc 3.16e-09p 5.80e-06p 0.000512p 0.003238p 0.004398p 0.004432o 0.004432n 3.18e-12p 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 9.93e-06n 0.0 0.0
zp 29.34 ri 1.79e-12p 4.81e-09p 6.46e-07p 5.41e-06p 3.68e-06p 1.91e-07p 5.65e-10p 0.0 0.0
sig0.559 cc 1.79e-12p 4.82e-09p 6.51e-07p 6.06e-06p 9.74e-06p 9.93e-06p 9.93e-06p 0.0 0.0
rc 1.79e-12p 4.82e-09p 6.51e-07p 6.06e-06p 9.74e-06p 9.93e-06o 9.93e-06n 0.0 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.008716n 0.0 0.0
zp 29.30 ri 8.70e-08p 2.67e-05p 0.000950p 0.004439p 0.003010p 0.000287p 3.41e-06p 4.54e-09p 0.0
sig0.656 cc 8.70e-08p 2.67e-05p 0.000977p 0.005416p 0.008426p 0.008713p 0.008716p 4.54e-09p 0.0
rc 8.70e-08p 2.67e-05p 0.000977p 0.005416p 0.008426p 0.008713o 0.008716n 4.54e-09p 0.0
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000478n 0.0 0.0
zp 29.22 ri 3.50e-10p 5.55e-07p 4.78e-05p 0.000282p 0.000143p 5.60e-06p 1.30e-08p 1.52e-12p 0.0
sig0.565 cc 3.50e-10p 5.55e-07p 4.84e-05p 0.000330p 0.000473p 0.000478p 0.000478p 1.52e-12p 0.0
rc 3.50e-10p 5.55e-07p 4.84e-05p 0.000330p 0.000473p 0.000478o 0.000478n 1.53e-12p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000104n 0.0 0.0
zp 29.17 ri 2.10e-10p 1.83e-07p 1.41e-05p 5.77e-05p 3.15e-05p 9.99e-07p 2.96e-09p 0.0 0.0
sig0.576 cc 2.10e-10p 1.83e-07p 1.43e-05p 7.19e-05p 0.000103p 0.000104p 0.000104p 0.0 0.0
rc 2.10e-10p 1.83e-07p 1.43e-05p 7.19e-05p 0.000103o 0.000104o 0.000104n 0.0 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000109n 0.0 0.0
zp 29.84 ri 1.41e-11p 1.32e-08p 2.33e-06p 2.56e-05p 6.73e-05p 1.33e-05p 6.05e-07p 1.64e-09p 0.0
sig0.645 cc 1.41e-11p 1.32e-08p 2.34e-06p 2.80e-05p 9.52e-05p 0.000109p 0.000109p 1.64e-09p 0.0
rc 1.41e-11p 1.32e-08p 2.34e-06p 2.80e-05p 9.52e-05p 0.000109o 0.000109n 1.64e-09p 0.0
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000655n 0.0 0.0
zp 29.18 ri 1.87e-09p 1.47e-06p 8.09e-05p 0.000381p 0.000183p 8.09e-06p 2.67e-08p 5.72e-12p 0.0

```
sig0.590 cc 1.87e-09p 1.47e-06p 8.24e-05p 0.000464p 0.000647p 0.000655p 0.000655p 5.72e-12p       0.0
         rc 1.87e-09p 1.47e-06p 8.24e-05p 0.000464p 0.000647p 0.000655o 0.000655n 5.72e-12p       0.0
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.45e-07l      0.0       0.0
zp 29.18 ri      0.0  3.25e-10p 1.80e-08p 8.47e-08p 4.06e-08p 1.80e-09p 5.93e-12p       0.0       0.0
sig0.590 cc      0.0  3.26e-10p 1.83e-08p 1.03e-07p 1.44e-07p 1.45e-07p 1.45e-07p       0.0       0.0
         rc      0.0  3.26e-10p 1.83e-08p 1.03e-07p 1.44e-07o 1.45e-07n 1.45e-07l       0.0       0.0

  co, ni half lives from 80eng2; cu, zn, ga half lives from 89wal1; as, se half lives 90bur1.

1

    mass number     73                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge m   32 ge g   33 as g   34 se m   34 se g
half life              0.129s    0.491s     3.9 s     24. s    4.87 h    0.53 s    stable    80.30d    39.8 m    7.15 h
lambda            0.0 5.373e+00 1.412e+00 1.777e-01 2.888e-02 3.954e-05 1.308e+00       0.0 9.991e-08 2.903e-04 2.693e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000 -100.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.37e-05n      0.0       0.0       0.0
zp 29.77 ri      0.0  2.19e-10p 7.05e-07p 1.68e-05p 7.18e-05p 4.27e-06p 6.89e-09p 2.94e-08p 2.03e-12p       0.0       0.0
sig0.507 cc      0.0  2.19e-10p 7.05e-07p 1.75e-05p 8.94e-05p 9.36e-05p 9.36e-05p 9.37e-05p 2.03e-12p       0.0       0.0
         rc      0.0  2.19e-10p 7.05e-07p 1.75e-05p 8.94e-05p 9.36e-05p 9.36e-05o 9.37e-05m 2.03e-12p       0.0       0.0
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000260l      0.0       0.0       0.0
zp 29.47 ri 6.91e-12p 1.74e-08p 1.43e-05p 6.60e-05p 0.000176p 3.66e-06p 5.80e-09p 2.47e-08p 1.13e-12p       0.0       0.0
sig0.538 cc 6.91e-12p 1.74e-08p 1.43e-05p 8.03e-05p 0.000257p 0.000260p 0.000260p 0.000260p 1.13e-12p       0.0       0.0
         rc 6.91e-12p 1.74e-08p 1.43e-05p 8.03e-05p 0.000257p 0.000260p 0.000260n 0.000260l 1.13e-12p       0.0       0.0
 pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.008903n      0.0       0.0       0.0
zp 29.54 ri 1.60e-10p 9.67e-07p 0.000263p 0.003926p 0.004347p 0.000364p 2.91e-07p 1.42e-06p 3.64e-10p       0.0       0.0
sig0.552 cc 1.60e-10p 9.67e-07p 0.000264p 0.004191p 0.008538p 0.008902p 0.008902p 0.008903p 3.64e-10p       0.0       0.0
         rc 1.60e-10p 9.67e-07p 0.000264p 0.004191p 0.008538p 0.008902o 0.008902n 0.008903m 3.64e-10p       0.0       0.0
 am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.98e-05n      0.0       0.0       0.0
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zp 29.72 ri 0.0 1.38e-09p 5.67e-07p 1.31e-05p 2.28e-05p 3.25e-06p 5.59e-09p 2.38e-08p 1.34e-11p 0.0 0.0
sig0.559 cc 0.0 1.38e-09p 5.68e-07p 1.37e-05p 3.65e-05p 3.98e-05p 3.98e-05p 3.98e-05p 1.34e-11p 0.0 0.0
rc 0.0 1.38e-09p 5.68e-07p 1.37e-05p 3.65e-05p 3.98e-05o 3.98e-05n 3.98e-05m 1.34e-11p 0.0 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.013559n 0.0 0.0 0.0
zp 29.68 ri 8.60e-09p 6.10e-06p 0.000486p 0.004842p 0.006802p 0.001385p 4.05e-06p 3.28e-05p 1.14e-07p 4.16e-12p 3.37e-11p
sig0.656 cc 8.60e-09p 6.11e-06p 0.000492p 0.005335p 0.012137p 0.013522p 0.013526p 0.013559p 1.14e-07p 4.16e-12p 3.37e-11p
rc 8.60e-09p 6.11e-06p 0.000492p 0.005335p 0.012137p 0.013522o 0.013526o 0.013559n 1.14e-07p 4.16e-12p 3.37e-11p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000957n 0.0 0.0 0.0
zp 29.60 ri 1.93e-11p 9.58e-08p 2.45e-05p 0.000386p 0.000493p 5.28e-05p 7.00e-08p 2.98e-07p 1.36e-10p 0.0 0.0
sig0.565 cc 1.93e-11p 9.58e-08p 2.46e-05p 0.000411p 0.000904p 0.000956p 0.000957p 0.000957p 1.36e-10p 0.0 0.0
rc 1.93e-11p 9.58e-08p 2.46e-05p 0.000411p 0.000904p 0.000956o 0.000957o 0.000957n 1.36e-10p 0.0 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000209n 0.0 0.0 0.0
zp 29.55 ri 1.32e-11p 3.73e-08p 7.50e-06p 8.57e-05p 0.000106p 9.65e-06p 1.45e-08p 6.18e-08p 2.91e-11p 0.0 0.0
sig0.576 cc 1.32e-11p 3.73e-08p 7.54e-06p 9.33e-05p 0.000199p 0.000209p 0.000209p 0.000209p 2.91e-11p 0.0 0.0
rc 1.32e-11p 3.73e-08p 7.54e-06p 9.33e-05p 0.000199p 0.000209o 0.000209o 0.000209n 2.91e-11p 0.0 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000213n 0.0 0.0 0.0
zp 30.20 ri 1.03e-12p 3.20e-09p 8.83e-07p 3.00e-05p 0.000113p 6.56e-05p 8.47e-07p 3.61e-06p 3.90e-08p 5.93e-12p 2.53e-11p
sig0.645 cc 1.03e-12p 3.20e-09p 8.87e-07p 3.09e-05p 0.000143p 0.000209p 0.000210p 0.000214p 3.90e-08p 5.93e-12p 2.53e-11p
rc 1.03e-12p 3.20e-09p 8.87e-07p 3.09e-05p 0.000143p 0.000209o 0.000210n 0.000214m 3.90e-08p 5.93e-12p 2.53e-11p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000954n 0.0 0.0 0.0
zp 29.55 ri 1.15e-10p 2.49e-07p 3.61e-05p 0.000411p 0.000456p 5.00e-05p 8.37e-08p 3.57e-07p 2.62e-10p 0.0 0.0
sig0.590 cc 1.15e-10p 2.49e-07p 3.63e-05p 0.000447p 0.000904p 0.000954p 0.000954p 0.000954p 2.62e-10p 0.0 0.0
rc 1.15e-10p 2.49e-07p 3.63e-05p 0.000447p 0.000904p 0.000954o 0.000954n 0.000954m 2.62e-10p 0.0 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 9.69e-07l 0.0 0.0 0.0
zp 29.56 ri 0.0 2.37e-10p 3.53e-08p 4.12e-07p 4.68e-07p 5.26e-08p 9.05e-11p 3.86e-10p 0.0 0.0 0.0
sig0.590 cc 0.0 2.37e-10p 3.55e-08p 4.48e-07p 9.16e-07p 9.69e-07p 9.69e-07p 9.69e-07p 0.0 0.0 0.0
rc 0.0 2.37e-10p 3.55e-08p 4.48e-07p 9.16e-07p 9.69e-07o 9.69e-07n 9.69e-07l 0.0 0.0 0.0

co, ni half lives from 80eng2; cu, zn, ga half lives from 89wal1; as half life 73bro1; se half life 90bur1.

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    mass number     74                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g   33 as m   33 as g   34 se g
half life              0.092s    0.900s    0.648s    1.60 m     8.1 m    stable    8.0  s    17.76d    stable
lambda            0.0 7.534e+00 7.702e-01 1.070e+00 7.220e-03 1.426e-03       0.0 8.664e-02 4.517e-07       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  -67.3000   32.7000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 th227t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.000265n      0.0       0.0       0.0
zp 30.17 ri     0.0  7.12e-12p 1.74e-07p 9.47e-06p 0.000228p 2.57e-05p 1.51e-06p 1.50e-10p 6.43e-11p       0.0
sig0.507 cc     0.0  7.12e-12p 1.74e-07p 9.65e-06p 0.000237p 0.000263p 0.000265p 1.50e-10p 2.14e-10p 7.01e-11p
         rc     0.0  7.12e-12p 1.74e-07p 9.65e-06p 0.000237p 0.000263o 0.000265n 1.50e-10p 2.14e-10p 7.01e-11o
 th229t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.001041l      0.0       0.0       0.0
zp 29.87 ri     0.0  1.68e-09p 8.07e-06p 7.49e-05p 0.000920p 3.64e-05p 1.72e-06p 1.04e-10p 4.47e-11p       0.0
sig0.538 cc     0.0  1.68e-09p 8.07e-06p 8.30e-05p 0.001003p 0.001039p 0.001041p 1.04e-10p 1.49e-10p 4.87e-11p
         rc     0.0  1.68e-09p 8.07e-06p 8.30e-05p 0.001003p 0.001039n 0.001041l 1.04e-10p 1.49e-10p 4.87e-11o
 pa231f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.016742n      0.0       0.0       0.0
zp 29.92 ri 4.76e-12p 9.63e-08p 8.39e-05p 0.003649p 0.010550p 0.002424p 3.52e-05p 1.80e-08p 6.66e-09p       0.0
sig0.552 cc 4.76e-12p 9.64e-08p 8.40e-05p 0.003733p 0.014283p 0.016707p 0.016742p 1.80e-08p 2.47e-08p 8.07e-09p
         rc 4.76e-12p 9.64e-08p 8.40e-05p 0.003733p 0.014283p 0.016707o 0.016742n 1.80e-08p 2.47e-08p 8.07e-09o
 am241t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  8.94e-05n      0.0       0.0       0.0
zp 30.10 ri     0.0  1.42e-10p 1.83e-07p 1.23e-05p 5.55e-05p 2.08e-05p 5.56e-07p 5.63e-10p 2.41e-10p       0.0
sig0.559 cc     0.0  1.42e-10p 1.84e-07p 1.25e-05p 6.80e-05p 8.88e-05p 8.94e-05p 5.63e-10p 8.04e-10p 2.63e-10p
         rc     0.0  1.42e-10p 1.84e-07p 1.25e-05p 6.80e-05p 8.88e-05o 8.94e-05n 5.63e-10p 8.04e-10p 2.63e-10o
 am241h  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.021307n      0.0       0.0       0.0
zp 30.06 ri 6.21e-10p 1.03e-06p 0.000186p 0.004026p 0.011771p 0.005027p 0.000294p 1.71e-06p 3.75e-07p 1.63e-09p
sig0.656 cc 6.21e-10p 1.03e-06p 0.000187p 0.004213p 0.015984p 0.021011p 0.021307p 1.71e-06p 2.08e-06p 6.83e-07p
         rc 6.21e-10p 1.03e-06p 0.000187p 0.004213p 0.015984p 0.021011o 0.021307n 1.71e-06p 2.08e-06p 6.83e-07p
 a242mt  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.001722n      0.0       0.0       0.0
```

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zp 29.98 ri       0.0  9.70e-09p 7.54e-06p 0.000333p 0.001074p 0.000302p 6.14e-06p 4.92e-09p 2.11e-09p       0.0
sig0.565 cc       0.0  9.70e-09p 7.55e-06p 0.000340p 0.001414p 0.001716p 0.001722p 4.92e-09p 7.02e-09p 2.30e-09p
         rc       0.0  9.70e-09p 7.55e-06p 0.000340p 0.001414p 0.001716o 0.001722n 4.92e-09p 7.02e-09p 2.30e-09o
 cm245t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.000460n      0.0       0.0       0.0
zp 29.93 ri       0.0  5.09e-09p 3.22e-06p 9.10e-05p 0.000300p 6.42e-05p 1.55e-06p 1.13e-09p 4.86e-10p       0.0
sig0.576 cc       0.0  5.10e-09p 3.23e-06p 9.42e-05p 0.000394p 0.000458p 0.000460p 1.13e-09p 1.62e-09p 5.30e-10p
         rc       0.0  5.10e-09p 3.23e-06p 9.42e-05p 0.000394p 0.000458o 0.000460n 1.13e-09p 1.62e-09p 5.30e-10o
 cf249t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.000533n      0.0       0.0       0.0
zp 30.56 ri       0.0  4.87e-10p 4.39e-07p 2.28e-05p 0.000255p 0.000211p 4.34e-05p 4.10e-07p 1.76e-07p 1.54e-09p
sig0.645 cc       0.0  4.87e-10p 4.40e-07p 2.32e-05p 0.000279p 0.000489p 0.000533p 4.10e-07p 5.85e-07p 1.93e-07p
         rc       0.0  4.87e-10p 4.40e-07p 2.32e-05p 0.000279p 0.000489o 0.000533m 4.10e-07p 5.85e-07p 1.93e-07o
 cf251t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.001216n      0.0       0.0       0.0
zp 29.93 ri 3.83e-12p 2.37e-08p 9.47e-06p 0.000276p 0.000729p 0.000196p 4.63e-06p 5.44e-09p 2.33e-09p       0.0
sig0.590 cc 3.83e-12p 2.37e-08p 9.49e-06p 0.000286p 0.001015p 0.001211p 0.001216p 5.44e-09p 7.77e-09p 2.54e-09p
         rc 3.83e-12p 2.37e-08p 9.49e-06p 0.000286p 0.001015p 0.001211o 0.001216n 5.44e-09p 7.77e-09p 2.54e-09o
 es254t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  1.88e-06n      0.0       0.0       0.0
zp 29.93 ri       0.0  3.65e-11p 1.46e-08p 4.26e-07p 1.13e-06p 3.03e-07p 7.15e-09p 8.41e-12p 3.60e-12p       0.0
sig0.590 cc       0.0  3.66e-11p 1.46e-08p 4.41e-07p 1.57e-06p 1.87e-06p 1.88e-06p 8.41e-12p 1.20e-11p 3.93e-12p
         rc       0.0  3.66e-11p 1.46e-08p 4.41e-07p 1.57e-06p 1.87e-06o 1.88e-06n 8.41e-12p 1.20e-11p 3.93e-12o

  co, ni, cu half lives 80eng2; zn, ga half lives 89wal1.
1

    mass number     75                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge m   32 ge g   33 as g   34 se g   35 br g
half life     0.082s    0.231s     1.3 s    10.2 s    2.10 m    48.9 s    1.380h    stable    119.8d     97. m
lambda      8.453e+00 3.001e+00 5.332e-01 6.796e-02 5.501e-03 1.417e-02 1.395e-04       0.0 6.697e-08 1.191e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000    4.0000   96.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 th227t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000784n      0.0       0.0
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zp 30.57 ri 0.0 2.39e-08p 9.42e-06p 0.000459p 0.000281p 3.07e-05p 4.58e-06p 3.72e-08p 3.89e-12p 0.0
sig0.507 cc 0.0 2.39e-08p 9.45e-06p 0.000468p 0.000749p 6.06e-05p 0.000784p 0.000784p 3.89e-12p 0.0
rc 0.0 2.39e-08p 9.45e-06p 0.000468p 0.000749p 6.06e-05p 0.000784o 0.000784n 3.89e-12p 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.003383l 0.0 0.0
zp 30.27 ri 2.13e-10p 2.35e-06p 0.000120p 0.002708p 0.000503p 4.32e-05p 6.45e-06p 2.55e-08p 4.14e-12p 0.0
sig0.538 cc 2.13e-10p 2.35e-06p 0.000123p 0.002831p 0.003334p 0.000177p 0.003383p 0.003383p 4.14e-12p 0.0
rc 2.13e-10p 2.35e-06p 0.000123p 0.002831p 0.003334o 0.000177o 0.003383n 0.003383l 4.14e-12p 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.031514n 0.0 0.0
zp 30.31 ri 5.54e-09p 1.63e-05p 0.002219p 0.017754p 0.011035p 0.000431p 5.87e-05p 1.14e-06p 1.18e-10p 0.0
sig0.552 cc 5.54e-09p 1.63e-05p 0.002235p 0.019989p 0.031024p 0.001672p 0.031513p 0.031514p 1.18e-10p 0.0
rc 5.54e-09p 1.63e-05p 0.002235p 0.019989p 0.031024p 0.001672o 0.031513o 0.031514n 1.18e-10p 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000248n 0.0 0.0
zp 30.48 ri 1.16e-11p 4.79e-08p 9.68e-06p 0.000117p 0.000113p 7.41e-06p 1.11e-06p 3.82e-08p 8.37e-12p 0.0
sig0.559 cc 1.16e-11p 4.79e-08p 9.73e-06p 0.000127p 0.000240p 1.70e-05p 0.000248p 0.000248p 8.37e-12p 0.0
rc 1.16e-11p 4.79e-08p 9.73e-06p 0.000127p 0.000240p 1.70e-05p 0.000248o 0.000248n 8.37e-12p 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.027118n 0.0 0.0
zp 30.44 ri 1.02e-07p 4.24e-05p 0.002032p 0.012518p 0.011100p 0.001291p 0.000112p 2.25e-05p 4.08e-08p 7.92e-12p
sig0.656 cc 1.02e-07p 4.25e-05p 0.002074p 0.014592p 0.025692p 0.002319p 0.027095p 0.027118p 4.09e-08p 7.92e-12p
rc 1.02e-07p 4.25e-05p 0.002074p 0.014592p 0.025692p 0.002319p 0.027095o 0.027118n 4.09e-08p 7.92e-12p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.002871n 0.0 0.0
zp 30.36 ri 5.89e-10p 1.42e-06p 0.000182p 0.001532p 0.001092p 5.43e-05p 8.11e-06p 2.18e-07p 3.90e-11p 0.0
sig0.565 cc 5.89e-10p 1.42e-06p 0.000183p 0.001716p 0.002808p 0.000167p 0.002870p 0.002871p 3.90e-11p 0.0
rc 5.89e-10p 1.42e-06p 0.000183p 0.001716p 0.002808p 0.000167o 0.002870o 0.002871n 3.90e-11p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000773n 0.0 0.0
zp 30.30 ri 4.31e-10p 7.24e-07p 5.99e-05p 0.000447p 0.000251p 1.28e-05p 1.92e-06p 4.77e-08p 1.08e-11p 0.0
sig0.576 cc 4.31e-10p 7.24e-07p 6.06e-05p 0.000507p 0.000758p 4.32e-05p 0.000773p 0.000773p 1.08e-11p 0.0
rc 4.31e-10p 7.24e-07p 6.06e-05p 0.000507p 0.000758p 4.32e-05o 0.000773o 0.000773n 1.08e-11p 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000956n 0.0 0.0
zp 30.93 ri 5.27e-11p 7.75e-08p 1.31e-05p 0.000222p 0.000548p 0.000144p 2.15e-05p 7.16e-06p 3.03e-08p 1.47e-11p

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sig0.645 cc 5.27e-11p 7.76e-08p 1.32e-05p 0.000235p 0.000783p 0.000175p 0.000949p 0.000956p 3.03e-08p 1.47e-11p
        rc 5.27e-11p 7.76e-08p 1.32e-05p 0.000235p 0.000783p 0.000175p 0.000949n 0.000956m 3.03e-08p 1.47e-11p
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001777n      0.0       0.0
zp 30.31 ri 1.74e-09p 1.95e-06p 0.000151p 0.000965p 0.000621p 3.30e-05p 4.94e-06p 1.77e-07p 5.45e-11p       0.0
sig0.590 cc 1.74e-09p 1.95e-06p 0.000153p 0.001117p 0.001739p 0.000103p 0.001777p 0.001777p 5.45e-11p       0.0
        rc 1.74e-09p 1.95e-06p 0.000153p 0.001117p 0.001739p 0.000103o 0.001777o 0.001777n 5.45e-11p       0.0
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.29e-06n      0.0       0.0
zp 30.31 ri 3.21e-12p 3.60e-09p 2.78e-07p 1.78e-06p 1.15e-06p 6.12e-08p 9.14e-09p 3.28e-10p       0.0       0.0
sig0.590 cc 3.21e-12p 3.61e-09p 2.82e-07p 2.07e-06p 3.21e-06p 1.90e-07p 3.28e-06p 3.29e-06p       0.0       0.0
        rc 3.21e-12p 3.61e-09p 2.82e-07p 2.07e-06p 3.21e-06p 1.90e-07o 3.28e-06o 3.29e-06n       0.0       0.0

  co, ni half lives 80eng2; cu, zn, ga, ge half lives 89wal1; se, br half lives 90bur1.

1

    mass number     76                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g   33 as g   34 se g
half life                     0.305s     0.6 s     5.7 s     29. s    stable    26.3 h    stable
lambda            0.0       0.0 2.273e+00 1.155e+00 1.216e-01 2.390e-02       0.0 7.321e-06       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.002254n      0.0       0.0
zp 30.96 ri       0.0       0.0  2.67e-09p 2.53e-06p 0.000786p 0.000851p 0.000615p 1.48e-06p 1.15e-09p
sig0.507 cc       0.0       0.0  2.67e-09p 2.53e-06p 0.000789p 0.001640p 0.002254p 1.48e-06p 1.48e-06p
        rc      0.0       0.0  2.67e-09p 2.53e-06p 0.000789p 0.001640p 0.002254n 1.48e-06p 1.48e-06p
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.011971l      0.0       0.0
zp 30.66 ri       0.0  1.02e-11p 6.67e-07p 7.30e-05p 0.008069p 0.002568p 0.001261p 1.40e-06p 1.34e-09p
sig0.538 cc       0.0  1.02e-11p 6.67e-07p 7.37e-05p 0.008143p 0.010710p 0.011971p 1.40e-06p 1.40e-06p
        rc      0.0  1.02e-11p 6.67e-07p 7.37e-05p 0.008143p 0.010710n 0.011971l 1.40e-06p 1.40e-06p
 pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.059089n      0.0       0.0
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zp 30.71 ri       0.0  1.76e-10p 1.82e-06p 0.000833p 0.019938p 0.033841p 0.004475p 3.50e-05p 1.27e-08p
sig0.552 cc       0.0  1.76e-10p 1.82e-06p 0.000835p 0.020773p 0.054614p 0.059089p 3.50e-05p 3.50e-05p
         rc       0.0  1.76e-10p 1.82e-06p 0.000835p 0.020773p 0.054614p 0.059089n 3.50e-05p 3.50e-05p
 am241t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.000516n      0.0       0.0
zp 30.87 ri       0.0       0.0  5.59e-09p 3.61e-06p 0.000127p 0.000319p 6.69e-05p 9.32e-07p 6.73e-10p
sig0.559 cc       0.0       0.0  5.59e-09p 3.61e-06p 0.000130p 0.000449p 0.000516p 9.32e-07p 9.33e-07p
         rc       0.0       0.0  5.59e-09p 3.61e-06p 0.000130p 0.000449p 0.000516n 9.32e-07p 9.33e-07p
 am241h  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.038739n      0.0       0.0
zp 30.82 ri       0.0  8.25e-09p 7.98e-06p 0.000860p 0.011370p 0.020902p 0.005599p 0.000200p 8.38e-07p
sig0.656 cc       0.0  8.25e-09p 7.99e-06p 0.000868p 0.012238p 0.033140p 0.038739p 0.000200p 0.000200p
         rc       0.0  8.25e-09p 7.99e-06p 0.000868p 0.012238p 0.033140p 0.038739n 0.000200p 0.000200p
 a242mt  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.005741n      0.0       0.0
zp 30.74 ri       0.0  2.77e-11p 2.10e-07p 8.05e-05p 0.001846p 0.003307p 0.000508p 5.27e-06p 2.96e-09p
sig0.565 cc       0.0  2.77e-11p 2.10e-07p 8.07e-05p 0.001926p 0.005233p 0.005741p 5.27e-06p 5.28e-06p
         rc       0.0  2.77e-11p 2.10e-07p 8.07e-05p 0.001926p 0.005233p 0.005741n 5.27e-06p 5.28e-06p
 cm245t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.002090n      0.0       0.0
zp 30.68 ri       0.0  3.30e-11p 1.80e-07p 3.92e-05p 0.000827p 0.001048p 0.000175p 1.49e-06p 1.10e-09p
sig0.576 cc       0.0  3.30e-11p 1.80e-07p 3.94e-05p 0.000866p 0.001915p 0.002090p 1.49e-06p 1.49e-06p
         rc       0.0  3.30e-11p 1.80e-07p 3.94e-05p 0.000866p 0.001915o 0.002090n 1.49e-06p 1.49e-06p
 cf249t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.001864m      0.0       0.0
zp 31.29 ri       0.0  3.56e-12p 1.74e-08p 4.61e-06p 0.000243p 0.000856p 0.000760p 4.89e-05p 6.66e-07p
sig0.645 cc       0.0  3.56e-12p 1.74e-08p 4.63e-06p 0.000247p 0.001103p 0.001864p 4.89e-05p 4.96e-05p
         rc       0.0  3.56e-12p 1.74e-08p 4.63e-06p 0.000247p 0.001103p 0.001864m 4.89e-05p 4.96e-05p
 cf251t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.002338n      0.0       0.0
zp 30.69 ri       0.0  7.72e-11p 2.46e-07p 5.16e-05p 0.000829p 0.001264p 0.000194p 2.46e-06p 2.15e-09p
sig0.590 cc       0.0  7.72e-11p 2.46e-07p 5.19e-05p 0.000880p 0.002144p 0.002338p 2.46e-06p 2.46e-06p
         rc       0.0  7.72e-11p 2.46e-07p 5.19e-05p 0.000880p 0.002144p 0.002338n 2.46e-06p 2.46e-06p
 es254t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  6.57e-06n      0.0       0.0
zp 30.69 ri       0.0       0.0  6.90e-10p 1.45e-07p 2.33e-06p 3.55e-06p 5.45e-07p 6.92e-09p 6.05e-12p
```

```
 sig0.590 cc      0.0       0.0  6.90e-10p 1.46e-07p 2.47e-06p 6.03e-06p 6.57e-06p 6.92e-09p 6.92e-09p
          rc      0.0       0.0  6.90e-10p 1.46e-07p 2.47e-06p 6.03e-06p 6.57e-06n 6.92e-09p 6.92e-09p

   ni half lives 80eng2; cu, zn, ga half lives 89wal1.
1

      mass number     77                    LA-UR-94-3106 (ENDF-349)                        percent yields
 nuclide       28 ni g   29 cu g   30 zn g   31 ga g   32 ge m   32 ge g   33 as g   34 se m   34 se g   35 br m   35 br g   36 kr g
 half life     0.103s    0.305s     2.1 s    13.0 s     53. s    11.30h    38.8 h    17.45s    stable    4.3  m    57.04h    74.4 m
 lambda       6.730e+00 2.273e+00 3.301e-01 5.332e-02 1.308e-02 1.704e-05 4.962e-06 3.972e-02       0.0 2.687e-03 3.376e-06
1.553e-04
  z - 1 g    100.0000  100.0000  100.0000  100.0000   88.0000   12.0000  100.0000    0.3000   99.7000       0.0  -99.0000  -80.0000
  z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0   79.0000       0.0       0.0       0.0   -1.0000  -20.0000
  z - 0 m        0.0       0.0       0.0       0.0       0.0   21.0000       0.0       0.0  100.0000       0.0  100.0000       0.0
  th227t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.010891l      0.0       0.0       0.0
 zp 31.36 ri 1.30e-10p 9.43e-07p 0.000687p 0.004343p 0.000750p 0.005017p 9.33e-05p 1.58e-07p 2.36e-08p 1.68e-12p       0.0
0.0
 sig0.507 cc 1.30e-10p 9.43e-07p 0.000688p 0.005031p 0.005177p 0.006707p 0.010890p 3.28e-05p 0.010891p 1.68e-12p 2.19e-12p
0.0
          rc 1.30e-10p 9.43e-07p 0.000688p 0.005031p 0.005177p 0.006707p 0.010890n 3.28e-05o 0.010891l 1.68e-12p 2.19e-12p
0.0
  th229t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc     0.0       0.0       0.0       0.0       0.0  0.011225l 0.062202k      0.0  0.029745k      0.0       0.0       0.0
 zp 31.06 ri 7.41e-08p 4.81e-05p 0.010944p 0.016224p 0.001917p 0.012831p 9.09e-05p 1.23e-07p 1.83e-08p 1.02e-12p       0.0
0.0
 sig0.538 cc 7.41e-08p 4.81e-05p 0.010992p 0.027216p 0.025868p 0.021529p 0.042056p 0.000126p 0.042056p 1.46e-12p 1.90e-
12p      0.0
          rc 7.41e-08p 4.81e-05p 0.010992p 0.027216p 0.025868p 0.021529k 0.042056l 0.000126l 0.042056j 1.02e-12p 1.33e-12p
0.0
  pa231f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.098926n      0.0       0.0       0.0
 zp 31.10 ri 1.21e-07p 0.000184p 0.013488p 0.062046p 0.002718p 0.019935p 0.000554p 5.97e-07p 8.15e-08p 2.84e-11p 7.54e-12p
0.0
 sig0.552 cc 1.21e-07p 0.000184p 0.013672p 0.075718p 0.069350p 0.043585p 0.098926p 0.000297p 0.098926p 2.84e-11p 3.59e-
11p      0.0
```

rc 1.21e-07p 0.000184p 0.013672p 0.075718p 0.069350p 0.043585o 0.098926n 0.000297n 0.098926m 2.84e-11p 3.59e-11p
0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.003383n 0.0 0.0 0.0
zp 31.25 ri 1.41e-09p 2.88e-06p 0.000297p 0.001968p 0.000139p 0.000932p 4.34e-05p 8.56e-08p 1.28e-08p 8.16e-12p 2.44e-12p
0.0
sig0.559 cc 1.41e-09p 2.88e-06p 0.000300p 0.002268p 0.002135p 0.001653p 0.003383p 1.02e-05p 0.003383p 8.16e-12p 1.06e-11p
0.0
rc 1.41e-09p 2.88e-06p 0.000300p 0.002268p 0.002135p 0.001653p 0.003383n 1.02e-05n 0.003383m 8.16e-12p 1.06e-11p
0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.058663n 0.0 0.0 0.0
zp 31.20 ri 1.15e-06p 0.000282p 0.008155p 0.031324p 0.001227p 0.016296p 0.001365p 1.20e-05p 1.05e-06p 1.20e-08p 1.95e-09p
1.57e-12p
sig0.656 cc 1.15e-06p 0.000283p 0.008439p 0.039762p 0.036217p 0.028673p 0.058650p 0.000188p 0.058663p 1.20e-08p 1.40e-
08p 1.57e-12p
rc 1.15e-06p 0.000283p 0.008439p 0.039762p 0.036217p 0.028673p 0.058650n 0.000188n 0.058663m 1.20e-08p 1.40e-08p
1.57e-12p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.009695n 0.0 0.0 0.0
zp 31.12 ri 1.69e-08p 2.00e-05p 0.001299p 0.005945p 0.000307p 0.002053p 7.05e-05p 1.06e-07p 1.59e-08p 8.14e-12p 2.43e-12p
0.0
sig0.565 cc 1.69e-08p 2.00e-05p 0.001319p 0.007264p 0.006699p 0.004332p 0.009695p 2.92e-05p 0.009695p 8.14e-12p 1.06e-11p
0.0
rc 1.69e-08p 2.00e-05p 0.001319p 0.007264p 0.006699p 0.004332p 0.009695n 2.92e-05n 0.009695m 8.14e-12p 1.06e-11p
0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.005158n 0.0 0.0 0.0 0.0 0.0
zp 31.06 ri 2.45e-08p 1.69e-05p 0.000894p 0.003038p 0.000153p 0.001026p 3.03e-05p 5.29e-08p 7.90e-09p 4.30e-12p 1.29e-12p
0.0
sig0.576 cc 2.45e-08p 1.69e-05p 0.000911p 0.003949p 0.003628p 0.002261p 0.005158p 1.55e-05p 0.005158p 4.30e-12p 5.59e-12p
0.0
rc 2.45e-08p 1.69e-05p 0.000911p 0.003949p 0.003628p 0.002261o 0.005158m 1.55e-05m 0.005158m 4.30e-12p 5.59e-12p
0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.004619m 0.0 0.0 0.0

zp 31.65 ri 2.39e-09p 2.08e-06p 0.000167p 0.001777p 0.000290p 0.001942p 0.000433p 7.88e-06p 1.18e-06p 1.77e-08p 5.28e-09p 5.13e-12p
sig0.645 cc 2.39e-09p 2.08e-06p 0.000170p 0.001946p 0.002003p 0.002596p 0.004611p 2.17e-05p 0.004620p 1.77e-08p 2.30e-08p 5.13e-12p
rc 2.39e-09p 2.08e-06p 0.000170p 0.001946p 0.002003p 0.002596p 0.004611n 2.17e-05o 0.004620m 1.77e-08p 2.30e-08p 5.13e-12p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.003340n 0.0 0.0 0.0
zp 31.07 ri 2.27e-08p 1.32e-05p 0.000550p 0.002005p 9.70e-05p 0.000649p 2.51e-05p 5.35e-08p 8.00e-09p 7.48e-12p 2.23e-12p 0.0
sig0.590 cc 2.27e-08p 1.32e-05p 0.000563p 0.002568p 0.002357p 0.001452p 0.003340p 1.01e-05p 0.003340p 7.48e-12p 9.72e-12p 0.0
rc 2.27e-08p 1.32e-05p 0.000563p 0.002568p 0.002357p 0.001452o 0.003340n 1.01e-05n 0.003340m 7.48e-12p 9.72e-12p 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.36e-05l 0.0 0.0 0.0
zp 31.06 ri 9.93e-11p 5.64e-08p 2.29e-06p 8.16e-06p 3.86e-07p 2.58e-06p 9.73e-08p 2.02e-10p 3.02e-11p 0.0 0.0 0.0
sig0.590 cc 9.93e-11p 5.65e-08p 2.34e-06p 1.05e-05p 9.63e-06p 5.87e-06p 1.36e-05p 4.09e-08p 1.36e-05p 0.0 0.0 0.0
rc 9.93e-11p 5.65e-08p 2.34e-06p 1.05e-05p 9.63e-06p 5.87e-06o 1.36e-05n 4.09e-08n 1.36e-05l 0.0 0.0 0.0

ni, cu half lives from 80eng2; zn, ga, ge, as half lives from 89wal1; kr, br, se half lives 90bur1.

1

mass number 78 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 28 ni g 29 cu g 30 zn g 31 ga d 31 ga g 32 ge d 32 ge g 33 as g 34 se g 35 br g 36 kr g
half life 0.132s 0.118s 1.5 s 0.313s 5.09 s 3.0 s 1.45 h 1.512h stable 6.4 m stable
lambda 5.251e+00 5.874e+00 4.621e-01 2.215e+00 1.362e-01 2.310e-01 1.328e-04 1.273e-04 0.0 1.805e-03 0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 100.0000 0.0 100.0000 100.0000 100.0000 -100.0000 0.0
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 1.1460 100.0000 0.0890 100.0000 0.0 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.037244n 0.0 0.0
zp 31.75 ri 3.69e-12p 6.72e-08p 0.000348p 0.0 0.004486p 0.0 0.031345p 0.001011p 1.39e-05p 4.16e-10p 0.0
sig0.507 cc 3.69e-12p 6.72e-08p 0.000348p 0.0 0.004834p 0.0 0.036179p 0.037190p 0.037204p 4.16e-10p 0.0
rc 3.69e-12p 6.72e-08p 0.000348p 5.43e-06o 0.004840p 3.62e-05o 0.036221p 0.037232o 0.037246n 4.16e-10p 0.0

th229t xi 0.0 0.0 0.0 0.0 0.071654n 0.0 0.192753m 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.264380l 0.113188p 0.0 0.0
zp 31.45 ri 9.28e-09p 1.35e-05p 0.016824p 0.0 0.068085p 0.0 0.168510o 0.002265p 2.04e-05p 4.38e-10p 0.0
sig0.538 cc 9.45e-09p 1.38e-05p 0.017138p 0.0 0.063545p 0.0 0.253384p 0.255689p 0.255719p 6.26e-10p 0.0
rc 9.28e-09p 1.35e-05p 0.016838p 6.17e-05o 0.084984p 7.03e-05o 0.253565m 0.255830k 0.255851k 4.38e-10p 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.196963n 0.0 0.0
zp 31.51 ri 4.80e-09p 2.65e-05p 0.006572p 0.0 0.090325p 0.0 0.092761p 0.007153p 3.07e-05p 5.95e-09p 0.0
sig0.552 cc 4.80e-09p 2.65e-05p 0.006598p 0.0 0.096924p 0.0 0.189684p 0.196837p 0.196867p 5.95e-09p 0.0
rc 4.80e-09p 2.65e-05p 0.006598p 2.40e-05o 0.096948p 8.06e-05o 0.189789p 0.196941o 0.196972n 5.95e-09p 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.007148n 0.0 0.0
zp 31.63 ri 7.33e-11p 4.81e-07p 0.000151p 0.0 0.002746p 0.0 0.003815p 0.000429p 2.99e-06p 1.04e-09p 0.0
sig0.559 cc 7.33e-11p 4.81e-07p 0.000152p 0.0 0.002898p 0.0 0.006714p 0.007143p 0.007146p 1.04e-09p 0.0
rc 7.33e-11p 4.81e-07p 0.000152p 4.62e-07o 0.002898p 1.90e-06o 0.006716p 0.007145o 0.007148n 1.04e-09p 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.077479n 0.0 0.0
zp 31.59 ri 9.72e-08p 5.64e-05p 0.003713p 0.0 0.030853p 0.0 0.036470p 0.006214p 0.000137p 3.46e-07p 9.42e-11p
sig0.656 cc 9.72e-08p 5.65e-05p 0.003770p 0.0 0.034623p 0.0 0.071093p 0.077307p 0.077444p 3.46e-07p 9.42e-11p
rc 9.72e-08p 5.65e-05p 0.003770p 1.54e-05o 0.034638p 2.25e-05o 0.071131p 0.077345o 0.077482n 3.46e-07p 9.42e-11p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.019137n 0.0 0.0
zp 31.50 ri 1.04e-09p 3.80e-06p 0.000728p 0.0 0.008828p 0.0 0.008835p 0.000730p 3.82e-06p 1.04e-09p 0.0
sig0.565 cc 1.04e-09p 3.80e-06p 0.000732p 0.0 0.009560p 0.0 0.018395p 0.019125p 0.019129p 1.04e-09p 0.0
rc 1.04e-09p 3.80e-06p 0.000732p 2.44e-06o 0.009563p 6.53e-06o 0.018404p 0.019134o 0.019138n 1.04e-09p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.010448n 0.0 0.0
zp 31.44 ri 1.93e-09p 3.65e-06p 0.000587p 0.0 0.004690p 0.0 0.004850p 0.000309p 1.95e-06p 4.99e-10p 0.0
sig0.576 cc 1.93e-09p 3.65e-06p 0.000591p 0.0 0.005280p 0.0 0.010130p 0.010439p 0.010440p 4.99e-10p 0.0
rc 1.93e-09p 3.65e-06p 0.000591p 2.69e-06o 0.005283p 4.99e-06o 0.010138p 0.010446o 0.010448n 4.99e-10p 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.008170m 0.0 0.0
zp 32.02 ri 2.27e-10p 3.23e-07p 8.53e-05p 0.0 0.001371p 0.0 0.005152p 0.001463p 9.76e-05p 3.97e-07p 3.01e-10p
sig0.645 cc 2.27e-10p 3.23e-07p 8.56e-05p 0.0 0.001457p 0.0 0.006609p 0.008072p 0.008170p 3.97e-07p 3.01e-10p
rc 2.27e-10p 3.23e-07p 8.56e-05p 3.72e-07o 0.001457p 1.48e-06o 0.006610p 0.008074n 0.008172l 3.97e-07p 3.01e-10p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.004676n 0.0 0.0
zp 31.45 ri 1.38e-09p 2.26e-06p 0.000252p 0.0 0.002253p 0.0 0.001994p 0.000172p 1.16e-06p 5.25e-10p 0.0
sig0.590 cc 1.38e-09p 2.26e-06p 0.000254p 0.0 0.002507p 0.0 0.004501p 0.004673p 0.004674p 5.25e-10p 0.0
rc 1.38e-09p 2.26e-06p 0.000254p 8.53e-07o 0.002508p 1.53e-06o 0.004503p 0.004675o 0.004676n 5.25e-10p 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.42e-05l 0.0 0.0
zp 31.44 ri 7.76e-12p 1.24e-08p 1.35e-06p 0.0 1.18e-05p 0.0 1.02e-05p 8.58e-07p 5.66e-09p 2.49e-12p 0.0
sig0.590 cc 7.76e-12p 1.24e-08p 1.36e-06p 0.0 1.31e-05p 0.0 2.33e-05p 2.42e-05p 2.42e-05p 2.49e-12p 0.0
rc 7.76e-12p 1.24e-08p 1.36e-06p 7.11e-09o 1.32e-05p 1.27e-08o 2.34e-05o 2.42e-05n 2.42e-05l 2.49e-12p 0.0

ni, cu half lives from 80eng2; zn, ga, ge, as half lives from 89wal1.

1

mass number 79 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 29 cu g 30 zn g 31 ga g 32 ge d 32 ge g 33 as g 34 se m 34 se g 35 br m 35 br g 36 kr g 37 rb g
half life 0.135s 1.0 s 2.85 s 1.66s 19.1s 9.0 m 3.89 m 6.5e4y 4.86 s stable 35.04h 22.9 m
lambda 5.134e+00 6.931e-01 2.432e-01 4.176e-01 3.629e-02 1.284e-03 2.970e-03 3.381e-13 1.426e-01 0.0 5.495e-06
5.045e-04
z - 1 g 100.0000 100.0000 98.8540 0.0 99.9110 100.0000 100.0000 0.0 0.0 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.8300 100.0000 0.0 0.0 100.0000 0.0 100.0000 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.643537l 0.0 0.0
zp 32.14 ri 3.76e-08p 0.000474p 0.040211p 0.0 0.508782o 0.091174p 0.000362p 0.002425p 4.74e-07p 1.42e-07p 1.27e-11p
0.0
sig0.507 cc 3.75e-08p 0.000474p 0.040676p 0.0 0.549433p 0.640600p 0.640962p 0.643387p 4.74e-07p 0.643388p 1.27e-11p
0.0
rc 3.76e-08p 0.000474p 0.040680p 0.000152o 0.549578o 0.640752n 0.641115n 0.643540m 4.74e-07p 0.643541l 1.27e-11p
0.0
th229t xi 0.0 0.0 0.075936n 0.0 0.339123l 0.015964o 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.413405l 0.0 0.0 0.0 0.0 0.416873k 0.0 0.0
zp 31.84 ri 1.99e-06p 0.005385p 0.073668p 0.0 0.327565l 0.015487p 6.94e-05p 0.000464p 5.19e-08p 1.55e-08p 2.58e-12p
0.0
sig0.538 cc 1.34e-06p 0.003624p 0.053139p 0.0 0.401532p 0.422004p 0.422075p 0.422552p 5.33e-08p 0.422552p 2.65e-12p
0.0

rc 1.99e-06p 0.005387p 0.078994p 0.000291o 0.406779k 0.422266k 0.422335k 0.422800k 5.19e-08p 0.422800j 2.58e-12p
0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.396963l 0.0 0.0
zp 31.91 ri 2.48e-06p 0.002096p 0.088523p 0.0 0.249400p 0.055844p 9.45e-05p 0.000693p 4.23e-07p 1.12e-07p 1.54e-11p
0.0
sig0.552 cc 2.48e-06p 0.002098p 0.090573p 0.0 0.339932p 0.395761p 0.395856p 0.396549p 4.23e-07p 0.396549p 1.54e-11p
0.0
rc 2.48e-06p 0.002099p 0.090597p 0.000420o 0.340336p 0.396181o 0.396275n 0.396968m 4.23e-07p 0.396969l 1.54e-11p
0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.011939m 0.0 0.0
zp 32.01 ri 4.09e-08p 4.03e-05p 0.002096p 0.0 0.007504p 0.002244p 6.05e-06p 4.05e-05p 3.95e-08p 1.18e-08p 2.63e-12p
0.0
sig0.559 cc 4.09e-08p 4.03e-05p 0.002136p 0.0 0.009638p 0.011883p 0.011889p 0.011929p 3.95e-08p 0.011929p 2.63e-12p
0.0
rc 4.09e-08p 4.03e-05p 0.002136p 9.93e-06o 0.009648p 0.011893p 0.011899o 0.011939n 3.95e-08p 0.011939m 2.63e-12p
0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.106534n 0.0 0.0
zp 31.97 ri 8.96e-06p 0.001336p 0.023997p 0.0 0.058926p 0.021139p 7.20e-05p 0.000956p 5.15e-06p 8.38e-07p 3.82e-09p
0.0
sig0.656 cc 8.96e-06p 0.001345p 0.025326p 0.0 0.084229p 0.105369p 0.105441p 0.106397p 5.15e-06p 0.106403p 3.82e-09p
0.0
rc 8.96e-06p 0.001345p 0.025326p 0.000143o 0.084372p 0.105512o 0.105584o 0.106540o 5.15e-06p 0.106546n 3.82e-09p
0.0
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.029353l 0.0 0.0
zp 31.88 ri 3.67e-07p 0.000213p 0.007130p 0.0 0.017988p 0.003936p 7.88e-06p 5.27e-05p 3.97e-08p 1.19e-08p 2.15e-12p
0.0
sig0.565 cc 3.67e-07p 0.000213p 0.007340p 0.0 0.025322p 0.029258p 0.029266p 0.029319p 3.97e-08p 0.029319p 2.15e-12p
0.0
rc 3.67e-07p 0.000213p 0.007340p 3.42e-05o 0.025356p 0.029293o 0.029300n 0.029353m 3.97e-08p 0.029353l 2.15e-12p
0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.020448l 0.0 0.0

zp 31.82 ri 5.48e-07p 0.000234p 0.005369p 0.0 0.012552p 0.002232p 4.80e-06p 3.21e-05p 2.35e-08p 7.03e-09p 1.70e-12p 0.0
sig0.576 cc 5.48e-07p 0.000235p 0.005601p 0.0 0.018148p 0.020380p 0.020385p 0.020417p 2.35e-08p 0.020417p 1.70e-12p 0.0
rc 5.48e-07p 0.000235p 0.005601p 3.06e-05o 0.018179p 0.020411p 0.020416o 0.020448n 2.35e-08p 0.020448l 1.70e-12p 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.018446m 0.0 0.0
zp 32.38 ri 7.78e-08p 3.24e-05p 0.001623p 0.0 0.008767p 0.007296p 9.37e-05p 0.000627p 7.25e-06p 2.16e-06p 1.14e-08p 1.53e-12p
sig0.645 cc 7.78e-08p 3.24e-05p 0.001655p 0.0 0.010421p 0.017717p 0.017811p 0.018438p 7.25e-06p 0.018448p 1.14e-08p 1.53e-12p
rc 7.78e-08p 3.24e-05p 0.001655p 6.02e-06o 0.010427p 0.017724p 0.017817o 0.018444m 7.25e-06p 0.018454l 1.14e-08p 1.53e-12p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.005806l 0.0 0.0
zp 31.82 ri 2.50e-07p 7.41e-05p 0.001642p 0.0 0.003369p 0.000702p 1.62e-06p 1.08e-05p 1.20e-08p 3.57e-09p 1.22e-12p 0.0
sig0.590 cc 2.50e-07p 7.44e-05p 0.001716p 0.0 0.005083p 0.005785p 0.005787p 0.005797p 1.20e-08p 0.005797p 1.22e-12p 0.0
rc 2.50e-07p 7.44e-05p 0.001716p 8.28e-06o 0.005092p 0.005793o 0.005795n 0.005806m 1.20e-08p 0.005806l 1.22e-12p 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.85e-05l 0.0 0.0
zp 31.82 ri 2.08e-09p 6.18e-07p 1.37e-05p 0.0 2.81e-05p 5.86e-06p 1.35e-08p 9.06e-08p 1.00e-10p 2.99e-11p 0.0 0.0
sig0.590 cc 2.08e-09p 6.20e-07p 1.43e-05p 0.0 4.24e-05p 4.83e-05p 4.83e-05p 4.84e-05p 1.00e-10p 4.84e-05p 0.0 0.0
rc 2.08e-09p 6.20e-07p 1.43e-05p 9.18e-08o 4.25e-05p 4.84e-05o 4.84e-05n 4.85e-05m 1.00e-10p 4.85e-05l 0.0 0.0

cu half life 80eng2; zn, ga, ge, as, se half lives 89wal1; kr, rb half lives 90bur1.

1

mass number 80 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	28 ni g	29 cu g	30 zn g	31 ga g	32 ge d	32 ge g	33 as g	34 se g	35 br m	35 br g	36 kr g
half life	0.090s	0.55 s	1.68 s	1.23s	29.5 s	16.0 s	stable	4.42 h	17.68m	stable	
lambda	0.0	7.702e+00	1.260e+00	4.126e-01	5.635e-01	2.350e-02	4.332e-02	0.0	4.356e-05	6.534e-04	0.0

```
 z - 1 g    100.0000  100.0000  100.0000  100.0000       0.0   99.1700  100.0000  100.0000       0.0       0.0  100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0   11.9000  100.0000       0.0       0.0       0.0  100.0000       0.0
 th227t  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.883141n      0.0       0.0       0.0
zp 32.53 ri      0.0  9.89e-10p 9.31e-05p 0.018272p       0.0  1.355656n 0.426691p 0.081876p 3.24e-05p 1.08e-05p 6.73e-09p
sig0.507 cc      0.0  9.88e-10p 9.31e-05p 0.018362p       0.0  1.373937p 1.800572p 1.882435p 3.24e-05p 4.32e-05p 4.32e-05p
         rc      0.0  9.89e-10p 9.31e-05p 0.018365p 0.000805o 1.374674m 1.801364n 1.883240m 3.24e-05p 4.32e-05p 4.32e-05o
 th229t  xi    0.0       0.0       0.0  0.034864p       0.0  1.573848j 0.051465p       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.636332i      0.0       0.0       0.0
zp 32.23 ri 3.89e-12p 7.74e-08p 0.001210p 0.033846p       0.0  1.527896n 0.049963p 0.020557p 4.32e-06p 1.44e-06p 1.32e-09p
sig0.538 cc 5.02e-12p 9.99e-08p 0.001562p 0.045276p       0.0  1.465218p 1.612277p 1.633095p 4.37e-06p 5.83e-06p 5.83e-06p
         rc 3.89e-12p 7.74e-08p 0.001210p 0.035055p 0.003305p 1.565965o 1.615928n 1.636485i 4.32e-06p 5.75e-06p 5.76e-06p
 pa231f  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.689372n      0.0       0.0       0.0
zp 32.30 ri 1.96e-12p 1.33e-07p 0.000379p 0.050182p       0.0  0.390462p 0.236894p 0.010219p 1.81e-05p 5.10e-06p 2.31e-09p
sig0.552 cc 1.95e-12p 1.33e-07p 0.000379p 0.050516p       0.0  0.440743p 0.677508p 0.687717p 1.81e-05p 2.31e-05p 2.31e-05p
         rc 1.96e-12p 1.33e-07p 0.000380p 0.050561p 0.001743o 0.442347p 0.679241o 0.689460n 1.81e-05p 2.32e-05p 2.32e-05p
 am241t  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.021841n      0.0       0.0       0.0
zp 32.39 ri      0.0  2.44e-09p 7.66e-06p 0.001189p       0.0  0.011348p 0.008732p 0.000518p 1.34e-06p 4.46e-07p 2.96e-10p
sig0.559 cc      0.0  2.44e-09p 7.66e-06p 0.001197p       0.0  0.012535p 0.021268p 0.021786p 1.34e-06p 1.78e-06p 1.78e-06p
         rc      0.0  2.44e-09p 7.66e-06p 0.001197p 5.90e-05o 0.012594p 0.021327o 0.021845n 1.34e-06p 1.78e-06p 1.78e-06o
 am241h  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.180878m      0.0       0.0       0.0
zp 32.36 ri 3.67e-10p 1.19e-06p 0.000416p 0.016816p       0.0  0.088443p 0.067275p 0.007244p 8.31e-05p 1.47e-05p 1.49e-07p
sig0.656 cc 3.67e-10p 1.19e-06p 0.000417p 0.017233p       0.0  0.105533p 0.172808p 0.180052p 8.31e-05p 9.78e-05p 9.79e-05p
         rc 3.67e-10p 1.19e-06p 0.000417p 0.017233p 0.000850o 0.106383p 0.173658o 0.180902m 8.31e-05p 9.78e-05p 9.79e-05p
 a242mt  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.047843n      0.0       0.0       0.0
zp 32.27 ri      0.0  2.23e-08p 4.11e-05p 0.004078p       0.0  0.027280p 0.015627p 0.000701p 1.41e-06p 4.71e-07p 2.57e-10p
sig0.565 cc      0.0  2.23e-08p 4.11e-05p 0.004119p       0.0  0.031366p 0.046992p 0.047694p 1.41e-06p 1.88e-06p 1.88e-06p
         rc      0.0  2.23e-08p 4.11e-05p 0.004119p 0.000159o 0.031525p 0.047152o 0.047853n 1.41e-06p 1.88e-06p 1.88e-06p
 cm245t  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.036566n      0.0       0.0       0.0
zp 32.20 ri 2.63e-12p 4.56e-08p 6.22e-05p 0.003620p       0.0  0.022888p 0.009363p 0.000461p 7.77e-07p 2.59e-07p 1.90e-10p
```

sig0.576 cc 2.63e-12p 4.56e-08p 6.23e-05p 0.003682p 0.0 0.026539p 0.035902p 0.036362p 7.77e-07p 1.04e-06p 1.04e-06p
rc 2.63e-12p 4.56e-08p 6.23e-05p 0.003682p 0.000218o 0.026757p 0.036120o 0.036581n 7.77e-07p 1.04e-06p 1.04e-06p
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.030175m 0.0 0.0 0.0
zp 32.74 ri 0.0 6.79e-09p 9.26e-06p 0.000714p 0.0 0.011644p 0.013713p 0.004066p 6.09e-05p 2.03e-05p 3.22e-07p
sig0.645 cc 0.0 6.79e-09p 9.26e-06p 0.000724p 0.0 0.012362p 0.026075p 0.030142p 6.09e-05p 8.12e-05p 8.16e-05p
rc 0.0 6.79e-09p 9.26e-06p 0.000724p 3.74e-05o 0.012400p 0.026113o 0.030179l 6.09e-05p 8.12e-05p 8.16e-05o
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.008417n 0.0 0.0 0.0
zp 32.20 ri 1.55e-12p 2.03e-08p 1.69e-05p 0.000980p 0.0 0.004844p 0.002428p 0.000113p 2.95e-07p 9.83e-08p 8.91e-11p
sig0.590 cc 1.55e-12p 2.03e-08p 1.69e-05p 0.000997p 0.0 0.005833p 0.008261p 0.008374p 2.95e-07p 3.93e-07p 3.93e-07p
rc 1.55e-12p 2.03e-08p 1.69e-05p 0.000997p 4.56e-05o 0.005878p 0.008307o 0.008420n 2.95e-07p 3.93e-07p 3.93e-07p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 9.39e-05n 0.0 0.0 0.0
zp 32.20 ri 0.0 2.25e-10p 1.87e-07p 1.09e-05p 0.0 5.38e-05p 2.70e-05p 1.26e-06p 3.28e-09p 1.09e-09p 0.0
sig0.590 cc 0.0 2.25e-10p 1.87e-07p 1.11e-05p 0.0 6.47e-05p 9.17e-05p 9.29e-05p 3.28e-09p 4.37e-09p 4.37e-09p
rc 0.0 2.25e-10p 1.87e-07p 1.11e-05p 9.88e-07o 6.57e-05p 9.27e-05o 9.39e-05n 3.28e-09p 4.37e-09p 4.37e-09p

ga, cu half lives 80eng2; zn, ga, ge, as half lives 89wal1; br half life 90bur1.

1

mass number 81 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 29 cu g 30 zn g 31 ga g 32 ge d 32 ge g 33 as g 34 se m 34 se g 35 br g 36 kr m 36 kr g 37 rb g
half life 0.074s 0.123s 1.22 s 0.60s 7.6 s 33. s 57.3 m 18.5 m stable 13. s 2.3e5y 4.576h
lambda 9.367e+00 5.635e+00 5.682e-01 1.155e+00 9.120e-02 2.100e-02 2.016e-04 6.245e-04 0.0 5.332e-02 9.556e-14
4.208e-05
z - 1 g 100.0000 100.0000 100.0000 0.0 88.1000 100.0000 0.0 100.0000 100.0000 0.0 -100.0000 -25.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -75.0000
z - 0 m 0.0 0.0 0.0 21.1000 100.0000 0.0 0.0 100.0000 0.0 0.0 100.0000 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.484998n 0.0 0.0 0.0
zp 32.92 ri 2.02e-11p 4.78e-06p 0.006761p 0.0 1.057202n 1.766721n 0.567807o 0.084845p 0.002378p 1.19e-07p 7.99e-07p
2.09e-12p
sig0.507 cc 2.02e-11p 4.78e-06p 0.006766p 0.0 1.063184p 2.829891p 0.567801p 3.482535p 3.484914p 1.19e-07p 9.18e-07p
2.09e-12p

rc 2.02e-11p 4.78e-06p 0.006766p 9.38e-05o 1.063257m 2.829977l 0.567807o 3.482629l 3.485008l 1.19e-07p 9.18e-07p 2.09e-12p
th229t xi 0.0 0.0 0.027977p 0.0 1.664614j 0.578185k 0.052736o 0.007880o 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.298062i 0.0 0.0 0.0
zp 32.62 ri 5.02e-09p 0.000178p 0.027597p 0.0 1.641994n 0.570329p 0.052019p 0.007773p 0.000282p 1.91e-08p 1.28e-07p 0.0
sig0.538 cc 4.28e-09p 0.000151p 0.023675p 0.0 1.453949p 2.116811p 0.156826p 2.297070p 2.297354p 1.92e-08p 1.48e-07p 0.0
rc 5.02e-09p 0.000178p 0.027774p 0.001254p 1.667717n 2.238046n 0.052019p 2.297838n 2.298120i 1.91e-08p 1.47e-07p 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.989264n 0.0 0.0 0.0
zp 32.70 ri 3.28e-09p 3.30e-05p 0.014615p 0.0 0.339875p 0.562827p 0.063779p 0.008697p 0.000550p 2.33e-08p 1.71e-07p 2.86e-12p
sig0.552 cc 3.28e-09p 3.30e-05p 0.014644p 0.0 0.352909p 0.915627p 0.063761p 0.988083p 0.988633p 2.33e-08p 1.94e-07p 2.86e-12p
rc 3.28e-09p 3.30e-05p 0.014648p 0.000665o 0.353445p 0.916271n 0.063779p 0.988747n 0.989297m 2.33e-08p 1.94e-07p 2.86e-12p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.043683n 0.0 0.0 0.0
zp 32.77 ri 1.02e-10p 1.03e-06p 0.000494p 0.0 0.013156p 0.025839p 0.003644p 0.000545p 4.38e-05p 3.03e-09p 2.03e-08p 0.0
sig0.559 cc 1.02e-10p 1.03e-06p 0.000495p 0.0 0.013593p 0.039431p 0.003644p 0.043620p 0.043664p 3.03e-09p 2.33e-08p 0.0
rc 1.02e-10p 1.03e-06p 0.000495p 1.97e-05o 0.013612p 0.039451p 0.003644p 0.043640o 0.043684n 3.03e-09p 2.33e-08p 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.249318m 0.0 0.0 0.0
zp 32.75 ri 9.21e-08p 7.63e-05p 0.007067p 0.0 0.081049p 0.130178p 0.027985p 0.002433p 0.000937p 2.36e-07p 3.14e-06p 1.31e-09p
sig0.656 cc 9.20e-08p 7.63e-05p 0.007142p 0.0 0.087322p 0.217528p 0.027979p 0.247940p 0.248880p 2.37e-07p 3.37e-06p 1.31e-09p
rc 9.21e-08p 7.63e-05p 0.007144p 0.000449o 0.087792p 0.217970o 0.027985p 0.248388n 0.249329m 2.37e-07p 3.37e-06p 1.31e-09p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.066980n 0.0 0.0 0.0

zp 32.66 ri 7.39e-10p 4.39e-06p 0.001335p 0.0 0.024701p 0.036431p 0.003967p 0.000593p 3.77e-05p 2.16e-09p 1.45e-08p
0.0
sig0.565 cc 7.39e-10p 4.39e-06p 0.001339p 0.0 0.025881p 0.062312p 0.003967p 0.066872p 0.066909p 2.17e-09p 1.67e-08p
0.0
rc 7.39e-10p 4.39e-06p 0.001339p 7.37e-05o 0.025955p 0.062385p 0.003967p 0.066945o 0.066983n 2.17e-09p 1.67e-08p
0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.062685n 0.0 0.0 0.0
zp 32.58 ri 2.71e-09p 1.02e-05p 0.001825p 0.0 0.027496p 0.029855p 0.003116p 0.000466p 2.52e-05p 1.66e-09p 1.11e-08p
0.0
sig0.576 cc 2.71e-09p 1.02e-05p 0.001835p 0.0 0.029113p 0.058968p 0.003116p 0.062549p 0.062574p 1.66e-09p 1.28e-08p
0.0
rc 2.71e-09p 1.02e-05p 0.001835p 0.000117o 0.029230p 0.059085p 0.003116p 0.062666o 0.062692n 1.66e-09p 1.28e-08p
0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.048019m 0.0 0.0 0.0
zp 33.11 ri 5.51e-10p 1.23e-06p 0.000312p 0.0 0.007756p 0.027376p 0.010310p 0.001541p 0.000750p 6.19e-07p 4.15e-06p
3.49e-09p
sig0.645 cc 5.51e-10p 1.23e-06p 0.000314p 0.0 0.008032p 0.035409p 0.010310p 0.047259p 0.048014p 6.22e-07p 4.77e-06p
3.49e-09p
rc 5.51e-10p 1.23e-06p 0.000314p 1.57e-05o 0.008048p 0.035425p 0.010310p 0.047275n 0.048030l 6.22e-07p 4.77e-06p
3.49e-09p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.011222n 0.0 0.0 0.0
zp 32.58 ri 1.03e-09p 2.43e-06p 0.000380p 0.0 0.004663p 0.005541p 0.000568p 8.49e-05p 6.22e-06p 5.23e-10p 3.50e-09p
0.0
sig0.590 cc 1.03e-09p 2.43e-06p 0.000383p 0.0 0.005000p 0.010542p 0.000568p 0.011195p 0.011201p 5.23e-10p 4.02e-09p
0.0
rc 1.03e-09p 2.43e-06p 0.000383p 2.23e-05o 0.005023p 0.010564p 0.000568p 0.011217o 0.011223n 5.23e-10p 4.02e-09p
0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000235n 0.0 0.0 0.0
zp 32.57 ri 2.36e-11p 5.40e-08p 8.25e-06p 0.0 9.87e-05p 0.000115p 1.15e-05p 1.72e-06p 1.23e-07p 1.00e-11p 6.71e-11p
0.0
sig0.590 cc 2.36e-11p 5.40e-08p 8.30e-06p 0.0 0.000106p 0.000221p 1.15e-05p 0.000234p 0.000234p 1.00e-11p 7.72e-11p
0.0

rc 2.36e-11p 5.40e-08p 8.30e-06p 6.36e-07o 0.000107p 0.000221p 1.15e-05p 0.000235o 0.000235n 1.00e-11p 7.72e-11p 0.0

cu, zn half lives 80eng2; ga, ge, as, se half lives 89wal1; kr, rb half lives 90bur1.

1

mass number 82 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	28 ni g	29 cu g	30 zn g	31 ga g	32 ge d	32 ge g	33 as m	33 as g	34 se g	35 br m	35 br g	36 kr g
half life		0.127s	0.607s	0.31 s	4.6 s	13.7 s	19. s	stable	6.1 m	35.3 h	stable	
lambda	0.0	0.0	5.458e+00	1.142e+00	2.236e+00	1.507e-01	5.059e-02	3.648e-02	0.0	1.894e-03	5.454e-06	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	0.0	78.9000	0.0	100.0000	100.0000	0.0	0.0	100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	0.0	2.4000
z - 0 m	0.0	0.0	0.0	0.0	56.2000	100.0000	0.0240	0.0	0.0	0.0	97.6000	0.0
th227t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.860672n	0.0	0.0	0.0

zp 33.31 ri 0.0 0.0 1.28e-07p 0.000444p 0.0 0.470041p 0.732237p 0.732243p 2.925777o 0.006938p 0.016189p 6.52e-05p
sig0.507 cc 0.0 0.0 1.28e-07p 0.000444p 0.0 0.470395p 0.732242p 1.202637p 4.860648p 0.006938p 0.022960p 0.023192p
rc 0.0 0.0 1.28e-07p 0.000444p 1.31e-05o 0.470405p 0.732251o 1.202648o 4.860676m 0.006938p 0.022960p 0.023192p

th229t xi	0.0	0.0	0.0	0.0	0.0	1.183702k	0.704585k	0.704585k	0.838456k	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.454246j	0.0	0.0	0.0

zp 33.00 ri 0.0 8.80e-11p 1.79e-05p 0.005924p 0.0 1.189242n 0.707882p 0.707882p 0.842380k 0.001268p 0.002958p 1.24e-05p
sig0.538 cc 0.0 6.08e-11p 1.24e-05p 0.004104p 0.0 1.254002p 0.488823p 1.742825p 3.452803p 0.001166p 0.003859p 0.003898p
rc 0.0 8.80e-11p 1.79e-05p 0.005942p 0.000136p 1.194067n 0.707919p 1.901949n 3.452248j 0.001268p 0.004196p 0.004239p

pa231f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.681749n	0.0	0.0	0.0

zp 33.10 ri 0.0 5.75e-11p 2.07e-06p 0.003148p 0.0 0.230605p 0.530540p 0.530537p 0.387414p 0.002558p 0.006916p 1.16e-05p
sig0.552 cc 0.0 5.75e-11p 2.07e-06p 0.003150p 0.0 0.233136p 0.530525p 0.763661p 1.681582p 0.002558p 0.009412p 0.009485p

rc 0.0 5.75e-11p 2.07e-06p 0.003150p 0.000162o 0.233253p 0.530558o 0.763790o 1.681761m 0.002558p 0.009412p 0.009485p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.063539n 0.0 0.0 0.0
zp 33.16 ri 0.0 1.77e-12p 6.01e-08p 9.32e-05p 0.0 0.007438p 0.019510p 0.019510p 0.016993p 0.000161p 0.000376p 9.30e-07p
sig0.559 cc 0.0 1.77e-12p 6.01e-08p 9.33e-05p 0.0 0.007512p 0.019510p 0.027022p 0.063526p 0.000161p 0.000533p 0.000538p
rc 0.0 1.77e-12p 6.01e-08p 9.33e-05p 1.27e-05o 0.007524p 0.019512p 0.027035p 0.063540n 0.000161p 0.000533p 0.000538p
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.347090m 0.0 0.0 0.0
zp 33.15 ri 0.0 4.74e-09p 9.61e-06p 0.002119p 0.0 0.055202p 0.096146p 0.096146p 0.097694p 0.001238p 0.005638p 5.91e-05p
sig0.656 cc 0.0 4.75e-09p 9.61e-06p 0.002128p 0.0 0.056881p 0.096146p 0.153026p 0.346865p 0.001238p 0.006846p 0.006935p
rc 0.0 4.75e-09p 9.61e-06p 0.002128p 0.000235o 0.057115p 0.096152p 0.153261p 0.347106m 0.001238p 0.006846p 0.006935p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.114822n 0.0 0.0 0.0
zp 33.05 ri 0.0 1.88e-11p 3.65e-07p 0.000349p 0.0 0.018694p 0.035910p 0.035910p 0.023995p 0.000178p 0.000414p 8.33e-07p
sig0.565 cc 0.0 1.88e-11p 3.65e-07p 0.000349p 0.0 0.018969p 0.035910p 0.054880p 0.114785p 0.000178p 0.000588p 0.000593p
rc 0.0 1.88e-11p 3.65e-07p 0.000349p 3.86e-05o 0.019008p 0.035913p 0.054918p 0.114826n 0.000178p 0.000588p 0.000593p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.104475n 0.0 0.0 0.0
zp 32.96 ri 0.0 9.36e-11p 1.15e-06p 0.000554p 0.0 0.024287p 0.029940p 0.029940p 0.019803p 0.000108p 0.000252p 5.89e-07p
sig0.576 cc 0.0 9.36e-11p 1.15e-06p 0.000555p 0.0 0.024725p 0.029940p 0.054665p 0.104407p 0.000108p 0.000358p 0.000361p
rc 0.0 9.36e-11p 1.15e-06p 0.000555p 7.26e-05o 0.024798p 0.029943p 0.054737p 0.104483n 0.000108p 0.000358p 0.000361p
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.073883m 0.0 0.001498j 0.0

zp 33.47 ri 0.0 2.49e-11p 1.84e-07p 7.39e-05p 0.0 0.005752p 0.014650p 0.014650p 0.037095p 0.001039p 0.002425p 7.03e-05p
sig0.645 cc 0.0 2.49e-11p 1.84e-07p 7.41e-05p 0.0 0.005810p 0.014650p 0.020460p 0.072205p 0.001039p 0.003439p 0.003534p
rc 0.0 2.49e-11p 1.84e-07p 7.41e-05p 1.10e-05o 0.005821p 0.014650p 0.020471p 0.072216m 0.001039p 0.003439h 0.003534i
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.015481l 0.0 0.0 0.0
zp 32.96 ri 0.0 3.61e-11p 2.43e-07p 0.000105p 0.0 0.003313p 0.004684p 0.004684p 0.002705p 2.06e-05p 4.81e-05p 1.25e-07p
sig0.590 cc 0.0 3.61e-11p 2.43e-07p 0.000105p 0.0 0.003396p 0.004684p 0.008080p 0.015469p 2.06e-05p 6.83e-05p 6.89e-05p
rc 0.0 3.61e-11p 2.43e-07p 0.000105p 1.21e-05o 0.003408p 0.004685p 0.008092p 0.015482l 2.06e-05p 6.83e-05p 6.89e-05p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000422n 0.0 0.0 0.0
zp 32.95 ri 0.0 1.09e-12p 7.13e-09p 3.01e-06p 0.0 9.23e-05p 0.000128p 0.000128p 7.20e-05p 5.36e-07p 1.25e-06p 3.17e-09p
sig0.590 cc 0.0 1.09e-12p 7.13e-09p 3.01e-06p 0.0 9.47e-05p 0.000128p 0.000222p 0.000422p 5.36e-07p 1.77e-06p 1.79e-06p
rc 0.0 1.09e-12p 7.13e-09p 3.01e-06p 4.79e-07o 9.52e-05p 0.000128p 0.000223p 0.000422n 5.36e-07p 1.77e-06p 1.79e-06p

zn half life estimated by 80eng2; ga, ge, as half lives from 89wal1; br half life 90bur1.

1

mass number 83 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 30 zn g 31 ga g 32 ge g 33 as d 33 as g 34 se m 34 se g 35 br g 36 kr m 36 kr g 37 rb g 38 sr g
half life 0.084s 0.31s 1.9 s 1.2 s 13.4 s 1.17m 22.3m 2.40h 1.83 h stable 86.2 d 32.4 h
lambda 8.252e+00 2.236e+00 3.648e-01 5.776e-01 5.173e-02 9.874e-03 5.180e-04 8.023e-05 1.052e-04 0.0 9.307e-08 5.943e-06
z - 1 g 100.0000 100.0000 43.8000 0.0 99.9760 64.0000 36.0000 100.0000 100.0000 0.0 -23.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 -77.0000 0.0
z - 0 m 0.0 0.0 0.0 5.2060 100.0000 0.0860 0.0 0.0 0.0 100.0000 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.653221n 0.0 0.0
zp 33.71 ri 8.55e-10p 2.32e-05p 0.059937p 0.0 1.172456n 0.800011p 3.410603n 0.208248p 0.000272p 0.001157p 6.40e-08p 0.0
sig0.507 cc 8.55e-10p 2.32e-05p 0.059946p 0.0 1.232467p 1.588782p 3.854227p 5.651252p 5.651524p 5.652681p 6.40e-08p 0.0
rc 8.55e-10p 2.32e-05p 0.059947p 0.000334o 1.232723m 1.588954n 3.854384m 5.651586l 5.651858l 5.653015l 6.40e-08p 0.0
th229t xi 0.0 0.0 0.157111o 0.0 1.707272j 0.622892j 2.655436j 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.004418j 3.275097h 0.0 0.0 5.126094g 0.0 0.0
zp 33.39 ri 1.26e-07p 0.000242p 0.154351p 0.0 1.765817m 0.611952j 2.608795j 0.052786p 6.48e-05p 0.000276p 9.68e-09p 0.0
sig0.538 cc 3.30e-07p 0.000636p 0.405407p 0.0 1.899631p 1.831325p 3.308103p 5.192776p 5.192841p 5.193120p 9.78e-09p 0.0
rc 1.26e-07p 0.000242p 0.154457p 0.005317o 1.925555l 1.844307j 3.301994h 5.199087h 5.199152h 5.199428g 9.68e-09p 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.300879j 0.0 0.0 0.0 0.0
zp 33.52 ri 5.06e-08p 0.000288p 0.073748p 0.0 1.041458n 0.186484p 0.910485p 0.086928p 6.54e-05p 0.000319p 7.69e-08p 0.0
sig0.552 cc 5.06e-08p 0.000288p 0.073864p 0.0 1.115448p 0.900351p 1.311945p 2.299211p 2.299277p 2.299596p 7.69e-08p 0.0
rc 5.06e-08p 0.000288p 0.073874p 0.000947o 1.116261m 0.900892n 1.312339o 2.300158j 2.300223j 2.300542j 7.69e-08p 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.177280k 0.0 0.0
zp 33.54 ri 4.55e-09p 2.26e-05p 0.005455p 0.0 0.077594p 0.016411p 0.069963p 0.007663p 7.80e-06p 3.32e-05p 1.08e-08p 0.0
sig0.559 cc 4.55e-09p 2.26e-05p 0.005465p 0.0 0.083058p 0.069568p 0.099864p 0.177095p 0.177103p 0.177136p 1.08e-08p 0.0
rc 4.55e-09p 2.26e-05p 0.005465p 7.66e-05o 0.083134p 0.069617p 0.099892p 0.177172o 0.177180l 0.177213j 1.08e-08p 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.464416m 0.0 0.0
zp 33.55 ri 7.84e-07p 0.000417p 0.025188p 0.0 0.193091p 0.023267p 0.188243p 0.033292p 7.41e-05p 0.000599p 1.56e-06p 3.88e-10p

sig0.656 cc 7.84e-07p 0.000417p 0.025364p 0.0 0.218508p 0.163107p 0.266869p 0.463259p 0.463334p 0.463933p 1.56e-06p 3.88e-10p
rc 7.84e-07p 0.000418p 0.025371p 0.000372o 0.218828p 0.163317o 0.267021p 0.463630n 0.463705n 0.464305m 1.56e-06p 3.88e-10p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.246809j 0.0 0.251282l 0.0 0.0
zp 33.45 ri 2.18e-08p 6.87e-05p 0.011389p 0.0 0.121097p 0.020408p 0.087004p 0.007785p 6.76e-06p 2.88e-05p 8.36e-09p 0.0
sig0.565 cc 2.18e-08p 6.87e-05p 0.011417p 0.0 0.132536p 0.105228p 0.134700p 0.247711p 0.247718p 0.247747p 8.28e-09p 0.0
rc 2.18e-08p 6.87e-05p 0.011420p 0.000159o 0.132673p 0.105319o 0.134766p 0.247870j 0.247877j 0.247906j 8.36e-09p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.233639m 0.0 0.162532l 0.0 0.0
zp 33.34 ri 8.38e-08p 0.000129p 0.014552p 0.0 0.098095p 0.014062p 0.059948p 0.003952p 2.81e-06p 1.20e-05p 3.07e-09p 0.0
sig0.576 cc 8.38e-08p 0.000129p 0.014604p 0.0 0.112722p 0.086200p 0.100510p 0.190660p 0.190663p 0.190678p 3.62e-09p 0.0
rc 8.38e-08p 0.000129p 0.014609p 0.000237o 0.112938p 0.086342p 0.100606p 0.190900m 0.190903m 0.190915k 3.07e-09p 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.129939i 0.0 0.122408m 0.0 0.0
zp 33.84 ri 1.45e-08p 1.95e-05p 0.002400p 0.0 0.037863p 0.013155p 0.056081p 0.019711p 0.000115p 0.000489p 2.35e-06p 8.18e-10p
sig0.645 cc 1.45e-08p 1.95e-05p 0.002408p 0.0 0.040265p 0.038922p 0.070568p 0.129199p 0.129319p 0.129824p 2.43e-06p 8.44e-10p
rc 1.45e-08p 1.96e-05p 0.002409p 4.24e-05o 0.040313p 0.038955p 0.070594p 0.129261i 0.129377i 0.129866i 2.35e-06p 8.18e-10p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.021946n 0.0 0.0
zp 33.33 ri 1.81e-08p 2.15e-05p 0.001747p 0.0 0.011736p 0.001503p 0.006408p 0.000508p 4.75e-07p 2.03e-06p 8.12e-10p 0.0
sig0.590 cc 1.81e-08p 2.15e-05p 0.001757p 0.0 0.013492p 0.010138p 0.011265p 0.021911p 0.021911p 0.021913p 8.12e-10p 0.0
rc 1.81e-08p 2.15e-05p 0.001757p 2.64e-05o 0.013518p 0.010155p 0.011274p 0.021937o 0.021938n 0.021940m 8.12e-10p 0.0

es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000872l 0.0 0.0
zp 33.33 ri 7.20e-10p 8.52e-07p 6.93e-05p 0.0 0.000466p 5.97e-05p 0.000255p 2.02e-05p 1.89e-08p 8.05e-08p 3.23e-11p 0.0
sig0.590 cc 7.20e-10p 8.53e-07p 6.97e-05p 0.0 0.000536p 0.000403p 0.000447p 0.000870p 0.000870p 0.000870p 3.23e-11p 0.0
rc 7.20e-10p 8.53e-07p 6.97e-05p 1.52e-06o 0.000537p 0.000404p 0.000448p 0.000872o 0.000872n 0.000872l 3.23e-11p 0.0

as-to-se branching to fit data; zn half life from 80eng2; ga, ge, as, se half lives 89wal1; kr, rb, sr 90bur1.

1

mass number 84 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 30 zn g 31 ga g 32 ge g 33 as d 33 as g 34 se d 34 se g 35 br m 35 br g 36 kr g 37 rb g 38 sr g
half life 0.098s 1.2 s 0.250s 5.5 s 2.03 s 3.3 m 6.0 m 31.8 m stable 32.87d stable
lambda 0.0 7.073e+00 5.776e-01 2.773e+00 1.260e-01 3.415e-01 3.501e-03 1.925e-03 3.633e-04 0.0 2.441e-07 0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 94.7940 0.0 99.8700 0.0 100.0000 100.0000 -97.0000 3.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 16.4540 100.0000 50.0000 100.0000 0.0 0.0 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.138349n 0.0 0.0
zp 34.10 ri 4.96e-12p 3.40e-07p 0.006420p 0.0 0.273216p 0.0 5.298317m 0.312913p 0.176000p 0.022643p 2.49e-06p 7.66e-11p
sig0.507 cc 4.95e-12p 3.39e-07p 0.006399p 0.0 0.278386p 0.0 5.578966p 0.311861p 5.754388p 6.088818p 2.48e-06p 7.45e-08p
rc 4.96e-12p 3.40e-07p 0.006420p 6.97e-05o 0.279372p 0.060407o 5.637733m 0.312913p 5.813734m 6.149292l 2.49e-06p 7.47e-08p
th229t xi 0.0 0.0 0.0 0.0 0.723735l 0.0 8.299459i 0.216557n 0.121813n 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 8.377702h 0.319629j10.171847i 9.254897g 0.0 0.0
zp 33.79 ri 6.08e-09p 2.76e-05p 0.102105p 0.0 0.726570p 0.0 7.784460h 0.309988j 0.281134n 0.009454p 6.27e-07p 3.27e-11p
sig0.538 cc 6.59e-09p 2.99e-05p 0.110651p 0.0 0.912538p 0.0 8.942507p 0.163108p 9.034256p 9.206792p 6.26e-07p 1.88e-08p
rc 6.08e-09p 2.76e-05p 0.102133p 0.001571o 0.824956o 0.142439o 8.750783g 0.309988i 9.031917g 9.351360f 6.27e-07p 1.88e-08p

pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.840667j 3.974855n 0.0 0.0
zp 33.94 ri 9.08e-10p 1.96e-05p 0.018164p 0.0 0.836147p 0.0 2.589182m 0.418722p 0.223232p 0.009479p 7.07e-06p 2.25e-10p
sig0.552 cc 9.24e-10p 1.99e-05p 0.018501p 0.0 0.868379p 0.0 3.456689p 0.426032p 3.657175p 4.092860p 7.20e-06p 2.16e-07p
rc 9.08e-10p 1.96e-05p 0.018183p 0.000283o 0.853667o 0.136928o 3.578667l 0.418722p 3.801899j 4.230106j 7.07e-06p 2.12e-07p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.277763k 0.0 0.0
zp 33.92 ri 1.22e-10p 1.96e-06p 0.001469p 0.0 0.059345p 0.0 0.164040p 0.025820p 0.014524p 0.000649p 5.45e-07p 2.11e-11p
sig0.559 cc 1.19e-10p 1.92e-06p 0.001442p 0.0 0.059538p 0.0 0.225515p 0.025309p 0.239751p 0.265696p 5.34e-07p 1.60e-08p
rc 1.22e-10p 1.96e-06p 0.001471p 3.20e-05o 0.060772p 0.012034o 0.236767n 0.025820p 0.251290m 0.277759j 5.45e-07p 1.64e-08p
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.591519m 0.0 0.0
zp 33.97 ri 3.52e-08p 4.76e-05p 0.007093p 0.0 0.127323p 0.0 0.305687p 0.087542p 0.024691p 0.005461p 3.18e-05p 2.03e-08p
sig0.656 cc 3.47e-08p 4.70e-05p 0.007049p 0.0 0.132453p 0.0 0.441121p 0.086419p 0.465495p 0.557335p 3.14e-05p 9.61e-07p
rc 3.52e-08p 4.76e-05p 0.007140p 0.000269o 0.134361p 0.035874o 0.475748p 0.087542p 0.500439o 0.593473m 3.18e-05p 9.74e-07p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.366009j 0.367483m 0.0 0.0
zp 33.85 ri 5.45e-10p 5.75e-06p 0.003049p 0.0 0.094157p 0.0 0.225754o 0.028666p 0.016125p 0.000634p 4.93e-07p 1.88e-11p
sig0.565 cc 5.52e-10p 5.83e-06p 0.003097p 0.0 0.098402p 0.0 0.322045p 0.029064p 0.338394p 0.368101p 5.00e-07p 1.50e-08p
rc 5.45e-10p 5.75e-06p 0.003055p 8.09e-05o 0.097133p 0.022617o 0.345379l 0.028666p 0.361504j 0.390804j 4.93e-07p 1.48e-08p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.299177n 0.237278n 0.0 0.0
zp 33.72 ri 3.04e-09p 1.30e-05p 0.004544p 0.0 0.074099p 0.0 0.149874p 0.012170p 0.006846p 0.000260p 1.49e-07p 6.71e-12p

sig0.576 cc 3.06e-09p 1.31e-05p 0.004589p 0.0 0.078967p 0.0 0.228054p 0.012255p 0.234948p 0.247464p 1.50e-07p 4.51e-09p
rc 3.04e-09p 1.30e-05p 0.004557p 0.000149o 0.078568p 0.022104o 0.250443o 0.012170p 0.257289n 0.269719m 1.49e-07p 4.48e-09p
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.189468m 0.0 0.0
zp 34.22 ri 8.64e-10p 1.95e-06p 0.000811p 0.0 0.020018p 0.0 0.110683p 0.030361p 0.017078p 0.004825p 3.07e-05p 3.70e-08p
sig0.645 cc 8.56e-10p 1.94e-06p 0.000806p 0.0 0.020607p 0.0 0.131901p 0.030096p 0.148830p 0.183739p 3.05e-05p 9.51e-07p
rc 8.64e-10p 1.95e-06p 0.000813p 2.35e-05o 0.020812p 0.005870o 0.137338p 0.030361p 0.154416o 0.189633l 3.07e-05p 9.59e-07p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.028055n 0.0 0.0
zp 33.71 ri 6.76e-10p 2.28e-06p 0.000504p 0.0 0.008498p 0.0 0.013567p 0.001395p 0.000785p 2.92e-05p 2.69e-08p 1.56e-12p
sig0.590 cc 6.76e-10p 2.28e-06p 0.000506p 0.0 0.008978p 0.0 0.022534p 0.001395p 0.023319p 0.024743p 2.69e-08p 8.09e-10p
rc 6.76e-10p 2.28e-06p 0.000506p 2.74e-05o 0.009006p 0.003710o 0.026271p 0.001395p 0.027056o 0.028480n 2.69e-08p 8.09e-10p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.001690n 0.0 0.0
zp 33.71 ri 3.89e-11p 1.31e-07p 2.91e-05p 0.0 0.000490p 0.0 0.000783p 8.05e-05p 4.53e-05p 1.68e-06p 1.55e-09p 0.0
sig0.590 cc 3.89e-11p 1.31e-07p 2.92e-05p 0.0 0.000518p 0.0 0.001300p 8.05e-05p 0.001345p 0.001427p 1.55e-09p 4.67e-11p
rc 3.89e-11p 1.31e-07p 2.92e-05p 2.24e-06o 0.000520p 0.000296o 0.001599p 8.05e-05p 0.001644o 0.001726n 1.55e-09p 4.67e-11p

ga half life from 80eng2; ge, as, se, br half lives from 89wal1; rb half life 90bur1.

1

mass number 85 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	31 ga g	32 ge g	33 as d	33 as g	34 se m	34 se g	35 br g	36 kr m	36 kr g	37 rb g	38 sr g	39 y g
half life	0.087s	0.250s	0.247s	2.03 s	19. s	39. s	2.87m	4.48 h	10.73y	stable	64.84d	5.0 h

```
 lambda      7.967e+00 2.773e+00 2.806e+00 3.415e-01 3.648e-02 1.777e-02 4.025e-03 4.298e-05 2.048e-09       0.0 1.237e-07
3.851e-05
  z - 1 g    100.0000  100.0000       0.0   83.5460       0.0   50.0000  100.0000  100.0000       0.0  100.0000 -100.0000 -100.0000
  z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0   80.0210       0.0       0.0
  z - 0 m       0.0       0.0   15.2150  100.0000    8.5030       0.0       0.0       0.0   19.9790       0.0       0.0       0.0
  th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.722398n      0.0       0.0
 zp 34.48 ri 9.42e-09p 0.000424p       0.0  0.120457p 2.192963n 2.193529n 2.078691n 0.037200p 0.158588p 0.000150p 1.11e-08p
0.0
 sig0.507 cc 9.42e-09p 0.000424p       0.0  0.120802p 2.193335p 2.253736p 6.525610p 6.562806p 1.469757p 6.721530p 1.11e-08p
0.0
          rc 9.42e-09p 0.000424p 2.98e-06o 0.120814p 2.194095m 2.253936m 6.526722l 6.563921l 1.469993l 6.722658k 1.11e-08p
0.0
  th229t  xi      0.0       0.0       0.0  0.277686o 3.651575i 3.651575i 1.684630k       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0  7.538424l      0.0  9.044449f      0.0  9.778992i      0.0       0.0
 zp 34.20 ri 1.09e-06p 0.009548p       0.0  0.276736p 3.639082n 3.639082i 1.678867n 0.019202p 0.081860p 4.14e-05p 5.32e-09p
0.0
 sig0.538 cc 1.14e-06p 0.010032p       0.0  0.420885p 3.823317p 4.033759p 9.037583p 9.055577p 1.885925p 9.132327p 4.98e-09p
0.0
          rc 1.09e-06p 0.009549p 0.000168p 0.284882p 3.647660o 3.781523j 9.108050l 9.127252f 1.905394i 9.209154f 5.32e-09p
0.0
  pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.411129i      0.0  4.467976n      0.0       0.0
 zp 34.36 ri 5.01e-07p 0.001722p       0.0  0.272403p 1.243984n 1.246158n 1.763011n 0.015227p 0.074344p 0.000244p 2.94e-08p
0.0
 sig0.552 cc 5.01e-07p 0.001724p       0.0  0.274092p 1.247278p 1.384324p 4.389868p 4.405109p 0.954507p 4.479763p 2.95e-08p
0.0
          rc 5.01e-07p 0.001722p 1.37e-05o 0.273856p 1.248337m 1.383086m 4.394434j 4.409661i 0.955350k 4.484248i 2.94e-08p
0.0
  am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.311438k      0.0  0.321704l      0.0       0.0
 zp 34.31 ri 7.92e-08p 0.000194p       0.0  0.023903p 0.092452p 0.092452p 0.114921p 0.001059p 0.004516p 1.51e-05p 1.96e-09p
0.0
 sig0.559 cc 7.88e-08p 0.000193p       0.0  0.023928p 0.091927p 0.103891p 0.311957p 0.313011p 0.067027p 0.317517p 1.95e-09p
0.0
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rc 7.92e-08p 0.000194p 2.64e-06o 0.024068p 0.093025p 0.104486p 0.312432m 0.313491k 0.067149k 0.318023j 1.96e-09p 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.782174n 0.0 0.0
zp 34.39 ri 4.38e-06p 0.001634p 0.0 0.070349p 0.195393p 0.196300p 0.316232p 0.003979p 0.032196p 0.000521p 8.47e-07p 1.47e-10p
sig0.656 cc 4.37e-06p 0.001636p 0.0 0.071630p 0.196062p 0.231877p 0.743873p 0.747848p 0.181569p 0.780525p 8.47e-07p 1.47e-10p
rc 4.38e-06p 0.001638p 3.09e-05o 0.071748p 0.197226p 0.232174p 0.745632o 0.749611o 0.181961n 0.782329m 8.48e-07p 1.47e-10p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.419502m 0.0 0.463377l 0.0 0.0
zp 34.24 ri 2.92e-07p 0.000491p 0.0 0.044818p 0.138367p 0.138870p 0.143301p 0.001163p 0.004959p 1.51e-05p 1.88e-09p 0.0
sig0.565 cc 2.89e-07p 0.000487p 0.0 0.044747p 0.137390p 0.159763p 0.443459p 0.444610p 0.093735p 0.449531p 1.86e-09p 0.0
rc 2.92e-07p 0.000492p 6.42e-06o 0.045235p 0.139399p 0.161487p 0.444187n 0.445350l 0.093936l 0.450324k 1.88e-09p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.292294j 0.0 0.292294n 0.0 0.0
zp 34.10 ri 9.53e-07p 0.000902p 0.0 0.043430p 0.099313p 0.099313p 0.069419p 0.000460p 0.001963p 4.46e-06p 5.63e-10p 0.0
sig0.576 cc 9.53e-07p 0.000903p 0.0 0.044184p 0.099313p 0.121405p 0.290137p 0.290597p 0.060022p 0.292565p 5.63e-10p 0.0
rc 9.53e-07p 0.000903p 2.28e-05o 0.044207p 0.100917p 0.121417p 0.291753l 0.292213j 0.060344j 0.294181i 5.63e-10p 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.250617l 0.0 0.0
zp 34.60 ri 2.07e-07p 0.000143p 0.0 0.011589p 0.049149p 0.049149p 0.126264p 0.003724p 0.015874p 0.000415p 8.31e-07p 1.86e-10p
sig0.645 cc 2.07e-07p 0.000143p 0.0 0.011712p 0.049165p 0.055021p 0.230408p 0.234133p 0.062656p 0.250428p 8.32e-07p 1.87e-10p
rc 2.07e-07p 0.000143p 3.65e-06o 0.011712p 0.049419p 0.055005p 0.230689o 0.234412n 0.062707n 0.250702l 8.32e-07p 1.86e-10p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.042937n 0.0 0.0

zp 34.09 ri 2.70e-07p 0.000166p 0.0 0.007277p 0.013902p 0.013902p 0.010835p 7.28e-05p 0.000310p 9.91e-07p 1.66e-10p 0.0
sig0.590 cc 2.70e-07p 0.000166p 0.0 0.007416p 0.013902p 0.017610p 0.042347p 0.042420p 0.008785p 0.042731p 1.66e-10p 0.0
rc 2.70e-07p 0.000166p 3.58e-06o 0.007419p 0.014139p 0.017612p 0.042585o 0.042658n 0.008833n 0.042969m 1.66e-10p 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.003348n 0.0 0.0
zp 34.08 ri 2.27e-08p 1.36e-05p 0.0 0.000581p 0.001085p 0.001085p 0.000827p 5.42e-06p 2.31e-05p 7.19e-08p 1.17e-11p 0.0
sig0.590 cc 2.27e-08p 1.36e-05p 0.0 0.000592p 0.001085p 0.001381p 0.003293p 0.003299p 0.000682p 0.003322p 1.17e-11p 0.0
rc 2.27e-08p 1.36e-05p 4.70e-07o 0.000593p 0.001115p 0.001382p 0.003324o 0.003329n 0.000688n 0.003352m 1.17e-11p 0.0

kr branching to fit data; ga half life from 80eng2; as, se, br, kr half lives from 89wal1.

1

mass number 86 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 30 zn g 31 ga g 32 ge g 33 as g 34 se d 34 se g 35 br m 35 br g 36 kr d 36 kr g 37 rb g 38 sr g
half life 0.247s 0.9 s 0.30 s 15.0 s 4.5 s 55.5 s 55.7 s stable 18.66d stable
lambda 0.0 0.0 2.806e+00 7.702e-01 2.310e+00 4.621e-02 1.540e-01 1.249e-02 1.244e-02 0.0 4.299e-07 0.0
z - 1 g 100.0000 100.0000 100.0000 84.7850 0.0 91.4970 0.0 100.0000 0.0 100.0000 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 44.3600 100.0000 0.1880 0.0 2.5400 100.0000 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.000430n 0.0 0.0
zp 34.87 ri 0.0 5.76e-11p 1.96e-05p 0.013291p 0.0 3.041641n 1.265579n 1.266214n 0.0 1.396847n 0.002464p 1.37e-06p
sig0.507 cc 0.0 5.76e-11p 1.96e-05p 0.013306p 0.0 3.053635p 1.266071p 4.319706p 0.0 6.982458p 0.002463p 0.002465p
rc 0.0 5.76e-11p 1.96e-05p 0.013308p 0.000596o 3.054413m 1.266870m 4.320627l 0.098143m 7.082488k 0.002464p 0.002465p
th229t xi 0.0 0.0 0.0 0.0 0.0 5.133915i 1.656209i 0.931618i 0.0 0.576000m 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.577689i 0.0 8.303844f 0.0 0.0

zp 34.60 ri 0.0 2.07e-08p 0.001107p 0.099936p 0.0 5.002843n 1.613925n 0.907833i 0.0 0.561295m 0.000607p 4.77e-07p
sig0.538 cc 0.0 1.31e-08p 0.000700p 0.063837p 0.0 5.923800p 0.797923p 6.721723p 0.0 8.181405p 0.000606p 0.000607p
rc 0.0 2.07e-08p 0.001107p 0.100875p 0.003254p 5.098394o 1.616622o 6.006227n 0.121270k 8.305413f 0.000607p 0.000608p
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.061283n 0.0 0.0
zp 34.78 ri 0.0 6.97e-09p 9.03e-05p 0.051116p 0.0 1.489332n 1.508528n 1.508994n 0.0 0.480528p 0.004624p 2.09e-06p
sig0.552 cc 0.0 6.96e-09p 9.03e-05p 0.051177p 0.0 1.536551p 1.508646p 3.045197p 0.0 5.034225p 0.004622p 0.004624p
rc 0.0 6.97e-09p 9.03e-05p 0.051193p 0.002861o 1.539033m 1.509692m 3.048027l 0.106731m 5.144978l 0.004624p 0.004626p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.442383l 0.0 0.0
zp 34.70 ri 0.0 2.13e-09p 1.73e-05p 0.006725p 0.0 0.147440p 0.121813p 0.120678p 0.0 0.032957p 0.000282p 1.21e-07p
sig0.559 cc 0.0 2.12e-09p 1.73e-05p 0.006716p 0.0 0.153261p 0.121478p 0.274738p 0.0 0.429057p 0.000281p 0.000281p
rc 0.0 2.13e-09p 1.73e-05p 0.006740p 0.000665o 0.154272p 0.121999p 0.274950o 0.013410o 0.443315l 0.000282p 0.000282p
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.001944n 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.938608n 0.0 0.0
zp 34.81 ri 2.39e-11p 2.14e-07p 0.000203p 0.021378p 0.0 0.276331p 0.249549p 0.249609p 0.0 0.131179p 0.001920p 1.88e-05p
sig0.656 cc 2.38e-11p 2.13e-07p 0.000202p 0.021471p 0.0 0.295528p 0.248763p 0.544291p 0.0 0.923750p 0.004563p 0.004582p
rc 2.39e-11p 2.14e-07p 0.000203p 0.021550p 0.002019o 0.298068p 0.249816p 0.547677p 0.018051o 0.946723m 0.001920p 0.001939p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.568321m 0.0 0.0
zp 34.64 ri 0.0 7.54e-09p 4.22e-05p 0.012104p 0.0 0.212031p 0.149043p 0.148622p 0.0 0.035465p 0.000277p 1.15e-07p
sig0.565 cc 0.0 7.53e-09p 4.21e-05p 0.012120p 0.0 0.223055p 0.148904p 0.371959p 0.0 0.556270p 0.000277p 0.000277p

rc 0.0 7.54e-09p 4.22e-05p 0.012139p 0.000984o 0.224122p 0.149256p 0.372744o 0.013305o 0.570770m 0.000277p 0.000277p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.48e-05n 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.470139n 0.0 0.0
zp 34.48 ri 1.24e-12p 4.90e-08p 0.000150p 0.018740p 0.0 0.236947p 0.094046p 0.094046p 0.0 0.019007p 6.36e-05p 3.86e-08p
sig0.576 cc 1.24e-12p 4.90e-08p 0.000150p 0.018842p 0.0 0.254450p 0.093924p 0.348374p 0.0 0.461280p 9.34e-05p 9.34e-05p
rc 1.24e-12p 4.90e-08p 0.000150p 0.018867p 0.002032o 0.256241p 0.094317p 0.350287o 0.010713n 0.474324n 6.36e-05p 6.37e-05p
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.333360l 0.0 0.0
zp 34.98 ri 0.0 1.01e-08p 2.39e-05p 0.003153p 0.0 0.085211p 0.080741p 0.080741p 0.0 0.077532p 0.002594p 1.77e-05p
sig0.645 cc 0.0 1.01e-08p 2.39e-05p 0.003173p 0.0 0.088115p 0.080741p 0.168856p 0.0 0.327129p 0.002594p 0.002612p
rc 0.0 1.01e-08p 2.39e-05p 0.003173p 0.000383o 0.088498p 0.080811p 0.169239p 0.006402o 0.333983l 0.002594p 0.002612p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.056111n 0.0 0.0
zp 34.47 ri 0.0 1.35e-08p 2.35e-05p 0.002756p 0.0 0.025879p 0.011983p 0.011983p 0.0 0.002167p 1.55e-05p 7.38e-09p
sig0.590 cc 0.0 1.35e-08p 2.35e-05p 0.002776p 0.0 0.028419p 0.011983p 0.040402p 0.0 0.054552p 1.55e-05p 1.55e-05p
rc 0.0 1.35e-08p 2.35e-05p 0.002776p 0.000364o 0.028783p 0.012021p 0.040766p 0.001597o 0.056550n 1.55e-05p 1.55e-05p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.007040n 0.0 0.0
zp 34.46 ri 0.0 1.82e-09p 3.09e-06p 0.000353p 0.0 0.003236p 0.001465p 0.001465p 0.0 0.000259p 1.80e-06p 8.36e-10p
sig0.590 cc 0.0 1.82e-09p 3.09e-06p 0.000355p 0.0 0.003561p 0.001465p 0.005026p 0.0 0.006750p 1.80e-06p 1.80e-06p
rc 0.0 1.82e-09p 3.09e-06p 0.000355p 6.98e-05o 0.003631p 0.001472p 0.005096p 0.000295o 0.007122n 1.80e-06p 1.80e-06p

ge half life from 80eng2; as, se, br half lives from 89wal1; rb half life 90bur1.

mass number 87 LA-UR-94-3106 (ENDF-349) percent yields

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 nuclide      32 ge g   33 as g   34 se g   35 br d   35 br g   36 kr d   36 kr g   37 rb g   38 sr m   38 sr g   39 y  g   40 zr g
 half life    0.134s     0.8 s     5.6 s     1.50s    55.9 s    16.0 s    1.27 h    10.67l    2.81 h    stable    80.3 h     1.6 h
 lambda       5.173e+00 8.664e-01 1.238e-01 4.621e-01 1.240e-02 4.332e-02 1.516e-04 4.699e-19 6.852e-05       0.0 2.398e-06
1.203e-04
  z - 1 g    100.0000  100.0000   55.6400       0.0   99.8120       0.0   97.4600  100.0000   -0.3000  100.0000       0.0       0.0
  z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0 -100.0000 -100.0000
  z - 0 m        0.0       0.0       0.0    0.9660  100.0000    6.2600  100.0000       0.0       0.0   99.7000       0.0       0.0
  th227t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.999599n 1.67e-05n      0.0       0.0       0.0
 zp 35.26 ri 2.68e-07p 0.001344p 0.686136p      0.0  3.177160n      0.0  3.159603n 0.036834p 9.47e-06p 4.04e-05p 4.11e-10p      0.0
 sig0.507 cc 2.68e-07p 0.001342p 0.685761p      0.0  3.856758p      0.0  6.924457p 6.961230p 9.45e-06p 6.961280p 4.10e-10p
0.0
          rc 2.68e-07p 0.001344p 0.686884o 0.001144o 3.863895m 0.075892m 7.001248l 7.038082l 9.47e-06p 7.038131l 4.11e-10p
0.0
  th229t  xi     0.0       0.0  1.414145j      0.0  3.498915j      0.0  2.376347j      0.0       0.0       0.0       0.0       0.0
          xc     0.0       0.0       0.0       0.0       0.0       0.0  7.039481h 7.584558l 1.88e-05n 7.765862i      0.0       0.0
 zp 35.01 ri 1.33e-05p 0.007323p 1.430427n      0.0  3.340124m      0.0  2.400962j 0.012340p 4.48e-06p 1.91e-05p 1.87e-10p      0.0
 sig0.538 cc 2.00e-05p 0.011054p 2.161529p      0.0  4.949979p      0.0  7.044736p 7.056494p 4.21e-06p 7.056516p 1.76e-10p
0.0
          rc 1.33e-05p 0.007336p 1.434509n 0.002551o 4.774487j 0.170566l 7.224743g 7.237083g 4.48e-06p 7.237106g 1.87e-10p
0.0
  pa231f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.855110n 8.25e-06n      0.0       0.0       0.0
 zp 35.19 ri 3.20e-06p 0.006447p 0.615414p      0.0  3.582613n      0.0  1.635041n 0.051996p 1.43e-05p 6.98e-05p 5.92e-09p      0.0
 sig0.552 cc 3.19e-06p 0.006439p 0.617942p      0.0  4.193701p      0.0  5.729069p 5.780976p 1.43e-05p 5.781060p 5.91e-09p
0.0
          rc 3.20e-06p 0.006450p 0.619003o 0.001549o 4.202001m 0.181441m 5.911752l 5.963748l 1.43e-05m 5.963832l 5.92e-09p
0.0
  am241t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.696382m 1.34e-06n      0.0       0.0       0.0
 zp 35.09 ri 1.19e-06p 0.001498p 0.097859p      0.0  0.429149p      0.0  0.155090p 0.004077p 1.09e-06p 4.64e-06p 3.75e-10p      0.0
```

sig0.559 cc 1.19e-06p 0.001495p 0.098416p 0.0 0.526250p 0.0 0.669395p 0.673460p 1.08e-06p 0.673466p 3.74e-10p 0.0
rc 1.19e-06p 0.001500p 0.098693p 0.000279o 0.527936p 0.024207o 0.693824n 0.697901m 1.09e-06o 0.697907m 3.75e-10p 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.044151i 1.133649n 6.30e-06n 0.0 0.0 0.0
zp 35.23 ri 1.73e-05p 0.004534p 0.139571p 0.0 0.568366p 0.0 0.323303p 0.029493p 3.31e-05p 0.000268p 3.44e-07p 4.14e-11p
sig0.656 cc 1.71e-05p 0.004500p 0.140505p 0.0 0.702340p 0.0 1.017616p 1.045203p 3.13e-05p 1.045485p 3.21e-07p 3.88e-11p
rc 1.73e-05p 0.004551p 0.142103p 0.000466o 0.710668o 0.030990o 1.046909i 1.076402i 3.35e-05j 1.076704i 3.44e-07p 4.14e-11p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.669702n 3.99e-07n 0.0 0.0 0.0
zp 35.03 ri 2.46e-06p 0.002216p 0.112227p 0.0 0.410116p 0.0 0.129418p 0.003046p 7.68e-07p 3.27e-06p 2.66e-10p 0.0
sig0.565 cc 2.45e-06p 0.002214p 0.113265p 0.0 0.522570p 0.0 0.639516p 0.642556p 7.67e-07p 0.642560p 2.66e-10p 0.0
rc 2.46e-06p 0.002218p 0.113462p 0.000442o 0.523807p 0.031650o 0.671569o 0.674615n 7.68e-07m 0.674619n 2.66e-10p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.505594j 0.535930n 4.63e-07n 0.0 0.0 0.0
zp 34.86 ri 1.17e-05p 0.004568p 0.142030p 0.0 0.276832p 0.0 0.071584p 0.001110p 2.39e-07p 1.02e-06p 6.45e-11p 0.0
sig0.576 cc 1.12e-05p 0.004385p 0.138429p 0.0 0.424357p 0.0 0.482119p 0.483152p 2.23e-07p 0.483153p 6.01e-11p 0.0
rc 1.17e-05p 0.004580p 0.144578p 0.000648o 0.421786n 0.024437o 0.507095j 0.508204j 2.39e-07p 0.508205j 6.45e-11p 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.422043m 3.99e-05n 0.420951n 0.0 0.0
zp 35.36 ri 1.92e-06p 0.000860p 0.036642p 0.0 0.214166p 0.0 0.149089p 0.016246p 3.42e-05p 0.000146p 2.34e-07p 2.66e-11p
sig0.645 cc 1.91e-06p 0.000856p 0.036860p 0.0 0.249496p 0.0 0.394088p 0.410219p 3.42e-05p 0.410398p 2.33e-07p 2.65e-11p
rc 1.92e-06p 0.000862p 0.037121p 0.000171o 0.251388p 0.011655o 0.405747n 0.421993l 3.44e-05o 0.422173l 2.34e-07p 2.66e-11p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.074721n 8.66e-08n 0.0 0.0 0.0

zp 34.85 ri 2.54e-06p 0.000817p 0.019505p 0.0 0.042853p 0.0 0.009575p 0.000184p 4.72e-08p 2.01e-07p 2.13e-11p 0.0
sig0.590 cc 2.54e-06p 0.000820p 0.019961p 0.0 0.062777p 0.0 0.070757p 0.070941p 4.72e-08p 0.070941p 2.13e-11p
0.0
rc 2.54e-06p 0.000820p 0.019961p 0.000105o 0.062881p 0.004242o 0.075101o 0.075285n 4.72e-08p 0.075285n 2.13e-11p
0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.014070n 2.64e-09n 0.0 0.0 0.0
zp 34.84 ri 5.00e-07p 0.000157p 0.003656p 0.0 0.007854p 0.0 0.001715p 3.21e-05p 8.03e-09p 3.42e-08p 3.52e-12p 0.0
sig0.590 cc 5.00e-07p 0.000157p 0.003743p 0.0 0.011590p 0.0 0.013011p 0.013043p 8.03e-09p 0.013043p 3.52e-12p
0.0
rc 5.00e-07p 0.000157p 0.003743p 2.97e-05o 0.011620p 0.001158o 0.014198o 0.014230n 8.03e-09k 0.014230n 3.52e-12p
0.0

ge half life from 80eng2; as, se, br, kr half lives from 89wal1; sr half life 90bur1.

1

mass number 88 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 32 ge g 33 as g 34 se g 35 br d 35 br g 36 kr d 36 kr g 37 rb g 38 sr g 39 y g 40 zr g
half life 0.129s 0.135s 1.50 s 0.41 s 16.4 s 4.38 s 2.84 h 17.7 m stable 106.6d 85. d
lambda 5.373e+00 5.134e+00 4.621e-01 1.691e+00 4.227e-02 1.583e-01 6.780e-05 6.527e-04 0.0 7.526e-08 9.438e-08
z - 1 g 100.0000 100.0000 100.0000 0.0 99.0340 0.0 93.7400 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 7.7000 100.0000 14.0000 100.0000 0.0 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.059101n 0.0 0.0
zp 35.65 ri 2.64e-09p 3.29e-05p 0.118358p 0.0 1.094231n 0.0 5.715208n 0.135854p 0.001307p 2.69e-08p 0.0
sig0.507 cc 2.62e-09p 3.28e-05p 0.117862p 0.0 1.206317p 0.0 6.851776p 6.987036p 6.988337p 2.68e-08p 0.0
rc 2.64e-09p 3.29e-05p 0.118391p 0.000853o 1.212331m 0.094360o 6.946007m 7.081861m 7.083168l 2.69e-08p 0.0
th229t xi 0.0 0.0 0.263963n 0.0 2.408664j 0.0 5.221522j 0.362949p 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 3.152678l 0.0 7.772787h 7.729672i 8.594047h 0.0 0.0
zp 35.42 ri 1.77e-07p 0.000233p 0.263834p 0.0 2.455573j 0.0 5.089782i 0.362772p 0.000782p 1.52e-08p 0.0
sig0.538 cc 4.21e-07p 0.000556p 0.628785p 0.0 2.186031p 0.0 7.963446p 8.029302p 8.030057p 1.47e-08p 0.0
rc 1.77e-07p 0.000234p 0.264068p 0.007628o 2.724718k 0.182124m 7.826056g 8.188829g 8.189610g 1.52e-08p 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.549896n 0.0 0.0

zp 35.59 ri 7.11e-08p 0.000505p 0.159858p 0.0 2.737711n 0.0 3.399753n 0.329232p 0.001799p 4.49e-07p 4.65e-12p
sig0.552 cc 7.07e-08p 0.000502p 0.159449p 0.0 2.880588p 0.0 6.117702p 6.445205p 6.446994p 4.46e-07p 4.62e-12p
rc 7.11e-08p 0.000505p 0.160363p 0.001890o 2.898415m 0.185775m 6.302502l 6.631734l 6.633533l 4.49e-07p 4.65e-12p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.768494l 0.0 0.0
zp 35.49 ri 3.24e-08p 0.000138p 0.028751p 0.0 0.357593p 0.0 0.344953p 0.027341p 0.000126p 2.85e-08p 0.0
sig0.559 cc 3.21e-08p 0.000137p 0.028613p 0.0 0.382664p 0.0 0.707466p 0.734547p 0.734672p 2.83e-08p 0.0
rc 3.24e-08p 0.000138p 0.028889p 0.000492o 0.386694p 0.033969o 0.741409o 0.768751n 0.768877l 2.85e-08p 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.058079i 0.0 1.334959n 0.0 0.0
zp 35.65 ri 9.60e-07p 0.000637p 0.047640p 0.0 0.446219p 0.0 0.572552o 0.132510p 0.003224p 9.32e-06p 2.90e-09p
sig0.656 cc 9.60e-07p 0.000638p 0.048253p 0.0 0.494072p 0.0 1.055006p 1.168554p 1.171397p 8.20e-06p 2.55e-09p
rc 9.60e-07p 0.000638p 0.048278p 0.001013o 0.495043p 0.042139o 1.078744i 1.211255l 1.214488k 9.32e-06p 2.90e-09p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.921016n 0.0 0.872542n 0.0 0.0
zp 35.43 ri 9.78e-08p 0.000291p 0.045513p 0.0 0.459311p 0.0 0.372453p 0.025691p 0.000110p 2.43e-08p 0.0
sig0.565 cc 9.60e-08p 0.000285p 0.044958p 0.0 0.495598p 0.0 0.845602p 0.871798p 0.871910p 2.48e-08p 0.0
rc 9.78e-08p 0.000291p 0.045804p 0.000912o 0.505584p 0.048649o 0.895037n 0.920728n 0.920838m 2.43e-08p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.606159i 0.0 0.0 0.0 0.0
zp 35.24 ri 6.69e-07p 0.000714p 0.066365p 0.0 0.322195p 0.0 0.193705p 0.007920p 2.86e-05p 4.10e-09p 0.0
sig0.576 cc 6.52e-07p 0.000697p 0.065427p 0.0 0.379482p 0.0 0.558788p 0.566513p 0.566541p 4.00e-09p 0.0
rc 6.69e-07p 0.000714p 0.067079p 0.001746o 0.390372p 0.047297o 0.606938i 0.614858i 0.614886i 4.10e-09p 0.0
cf249t xi 0.0 0.0 0.018245m 0.0 0.194440m 0.0 0.296091m 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.520244m 0.0 0.0
zp 35.73 ri 1.74e-07p 0.000127p 0.017533p 0.0 0.168111p 0.0 0.284230p 0.049575p 0.001774p 3.75e-06p 1.45e-09p
sig0.645 cc 1.66e-07p 0.000121p 0.016836p 0.0 0.162444p 0.0 0.460361p 0.509268p 0.511022p 3.70e-06p 1.43e-09p
rc 1.74e-07p 0.000127p 0.017660p 0.000240o 0.185841p 0.011376o 0.469813o 0.519388n 0.521166l 3.75e-06p 1.45e-09p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.102870n 0.0 0.0
zp 35.23 ri 1.89e-07p 0.000170p 0.010689p 0.0 0.056678p 0.0 0.030426p 0.001526p 5.75e-06p 1.42e-09p 0.0
sig0.590 cc 1.89e-07p 0.000171p 0.010860p 0.0 0.067432p 0.0 0.093637p 0.095164p 0.095169p 1.42e-09p 0.0
rc 1.89e-07p 0.000171p 0.010860p 0.000328o 0.067760p 0.008575o 0.102519p 0.104045o 0.104051n 1.42e-09p 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.028159n 0.0 0.0
zp 35.21 ri 5.95e-08p 5.08e-05p 0.003028p 0.0 0.015323p 0.0 0.007863p 0.000375p 1.34e-06p 3.13e-10p 0.0

sig0.590 cc 5.95e-08p 5.08e-05p 0.003078p 0.0 0.018372p 0.0 0.025085p 0.025460p 0.025462p 3.13e-10p 0.0
rc 5.95e-08p 5.08e-05p 0.003078p 0.000123o 0.018495p 0.003016o 0.028216p 0.028592o 0.028593n 3.13e-10p 0.0

ge, as half lives from 80eng2; se, br, kr, rb half lives from 89wal1.

1

mass number 89 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 33 as g 34 se g 35 br d 35 br g 36 kr d 36 kr g 37 rb g 38 sr g 39 y m 39 y g 40 zr g 41 nb g
half life 0.121s 0.41 s 0.427s 4.37 s 1.80 s 3.15 m 15.4 m 50.52d 15.7 s stable 78.5 h 2.0 h
lambda 5.728e+00 1.691e+00 1.623e+00 1.586e-01 3.851e-01 3.667e-03 7.502e-04 1.588e-07 4.415e-02 0.0 2.453e-06
9.627e-05
z - 1 g 100.0000 100.0000 0.0 92.3000 0.0 86.0000 100.0000 100.0000 0.0100 99.9900 -0.2000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -99.8000 0.0
z - 0 m 0.0 0.0 9.1320 100.0000 24.6000 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.980113i 0.0 7.301803i 0.0 0.0
zp 36.04 ri 1.27e-06p 0.011071p 0.0 0.663705p 0.0 6.152008m 0.811372p 0.018106p 2.13e-06p 5.00e-07p 3.72e-11p
0.0
sig0.507 cc 1.26e-06p 0.010938p 0.0 0.665773p 0.0 6.721524p 7.544326p 7.562212p 0.000758p 7.562214p 3.86e-11p
0.0
rc 1.27e-06p 0.011072p 7.41e-05o 0.673998o 0.027489o 6.759135m 7.570507k 7.588613i 0.000761i 7.588615h 3.72e-11p
0.0
th229t xi 0.0 0.100109p 0.0 1.219512k 0.0 7.244266i 0.536949m 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 8.823856i 8.599503i 9.136570i 0.0 9.107038i 0.0 0.0
zp 35.83 ri 3.79e-05p 0.099022p 0.0 1.208899n 0.0 7.348294h 0.531119m 0.011171p 1.11e-06p 2.59e-07p 5.05e-11p
0.0
sig0.538 cc 3.19e-05p 0.083261p 0.0 1.181804p 0.0 8.582920p 9.015448p 9.026678p 0.000904p 9.026680p 5.08e-11p
0.0
rc 3.79e-05p 0.099060p 0.000562o 1.300894m 0.045142o 8.512204h 9.043323g 9.054494g 0.000907g 9.054495f 5.05e-11p
0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.983645j 0.0 0.0 0.0 0.0
zp 35.99 ri 2.27e-05p 0.024518p 0.0 1.304106n 0.0 4.487753n 1.239888n 0.022123p 1.60e-05p 3.28e-06p 7.18e-10p 0.0
sig0.552 cc 2.26e-05p 0.024445p 0.0 1.321623p 0.0 5.631762p 6.869465p 6.891501p 0.000705p 6.891520p 7.15e-10p
0.0

rc 2.27e-05p 0.024541p 0.000207o 1.326964m 0.094245o 5.723187m 6.963075k 6.985197i 0.000715j 6.985217i 7.18e-10p 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.991921i 0.0 0.954940m 0.0 0.0
zp 35.89 ri 9.30e-06p 0.006374p 0.0 0.236663p 0.0 0.614807o 0.137105p 0.002041p 1.24e-06p 2.92e-07p 5.41e-11p 0.0
sig0.559 cc 9.18e-06p 0.006301p 0.0 0.239423p 0.0 0.824503p 0.960981p 0.962995p 9.76e-05p 0.962997p 5.44e-11p 0.0
rc 9.30e-06p 0.006384p 7.92e-05o 0.242635p 0.025684o 0.849156n 0.986262k 0.988303i 0.000100i 0.988304i 5.41e-11p 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.535016n 0.0 0.0
zp 36.07 ri 7.06e-05p 0.013080p 0.0 0.288658p 0.0 0.853592p 0.374224p 0.022394p 0.000144p 1.78e-05p 1.29e-07p 1.08e-11p
sig0.656 cc 7.03e-05p 0.013086p 0.0 0.299384p 0.0 1.113930p 1.486814p 1.509099p 0.000294p 1.509260p 1.29e-07p 1.08e-11p
rc 7.06e-05p 0.013150p 0.000197o 0.300993p 0.028683o 1.141129o 1.515353o 1.537748n 0.000298p 1.537910m 1.29e-07p 1.08e-11p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.025982k 0.0 1.196948j 0.0 0.0 0.0 0.0
zp 35.82 ri 2.43e-05p 0.011822p 0.0 0.336415p 0.0 0.712091n 0.144827p 0.001843p 1.06e-06p 2.49e-07p 4.56e-11p 0.0
sig0.565 cc 2.41e-05p 0.011713p 0.0 0.343480p 0.0 1.019930p 1.156259p 1.158033p 0.000117p 1.158034p 4.39e-11p 0.0
rc 2.43e-05p 0.011846p 0.000147o 0.347496p 0.034541o 1.045478k 1.190305l 1.192148j 0.000120j 1.192149j 4.56e-11p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.826487k 0.861059i 0.0 0.0 0.0 0.0
zp 35.63 ri 8.99e-05p 0.022587p 0.0 0.316453p 0.0 0.468688o 0.052563p 0.000533p 2.07e-07p 4.87e-08p 8.16e-12p 0.0
sig0.576 cc 8.95e-05p 0.022576p 0.0 0.336032p 0.0 0.759287p 0.811616p 0.812132p 8.14e-05p 0.812132p 7.89e-12p 0.0
rc 8.99e-05p 0.022677p 0.000453o 0.337837p 0.044878o 0.804106m 0.856669j 0.857202i 8.59e-05i 0.857202i 8.16e-12p 0.0
cf249t xi 0.0 0.0 0.0 0.078751j 0.0 0.306858j 0.066531j 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.351212j 0.499765l 0.0 0.0 0.637321n 0.0 0.0
zp 36.11 ri 1.39e-05p 0.003124p 0.0 0.078796p 0.0 0.303175j 0.066569j 0.009689p 5.63e-05p 1.32e-05p 4.52e-08p 3.22e-12p

sig0.645 cc 1.27e-05p 0.002865p 0.0 0.082469p 0.0 0.320809p 0.442771p 0.449621p 8.47e-05p 0.449670p 3.19e-08p 2.27e-12p
rc 1.39e-05p 0.003138p 4.56e-05o 0.081737p 0.005568o 0.379038j 0.445606i 0.455295i 0.000102p 0.455365i 4.52e-08p 3.22e-12p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.149629n 0.0 0.0
zp 35.62 ri 2.43e-05p 0.004231p 0.0 0.057178p 0.0 0.074401p 0.009651p 0.000102p 5.96e-08p 1.40e-08p 3.32e-12p 0.0
sig0.590 cc 2.43e-05p 0.004255p 0.0 0.061105p 0.0 0.126951p 0.136603p 0.136705p 1.37e-05p 0.136705p 3.32e-12p 0.0
rc 2.43e-05p 0.004255p 0.000142o 0.061247p 0.014371o 0.141444p 0.151096o 0.151198o 1.52e-05o 0.151198n 3.32e-12p 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.051850l 0.0 0.0 0.0 0.0
zp 35.59 ri 9.88e-06p 0.001591p 0.0 0.019995p 0.0 0.024318p 0.002938p 2.87e-05p 1.55e-08p 3.63e-09p 0.0 0.0
sig0.590 cc 9.88e-06p 0.001601p 0.0 0.021473p 0.0 0.042785p 0.045722p 0.045751p 4.59e-06p 0.045751p 0.0 0.0
rc 9.88e-06p 0.001601p 6.79e-05o 0.021541p 0.006084o 0.048927p 0.051865n 0.051894l 5.20e-06k 0.051894k 0.0 0.0

as half life from 80eng2; se, br, kr, rb, sr half lives 89wal1.
1

mass number 90 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 34 se g 35 br d 35 br g 36 kr d 36 kr g 37 rb m 37 rb g 38 sr g 39 y g 40 zr g 41 nb g 42 mo g
half life 0.427s 0.27s 1.9 s 0.60 s 32.3 s 4.3 m 2.6 m 29.1 y 2.67 d stable 14.59h 5.7 h
lambda 1.623e+00 2.567e+00 3.648e-01 1.155e+00 2.146e-02 2.687e-03 4.443e-03 7.553e-10 3.005e-06 0.0 1.320e-05 3.378e-05
z - 1 g 100.0000 0.0 90.8680 0.0 75.4000 11.0000 89.0000 100.0000 100.0000 100.0000 -3.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 97.4000 0.0 0.0 -97.0000 0.0
z - 0 m 0.0 24.4380 100.0000 18.1000 100.0000 0.0 2.6000 0.0 0.0 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 8.689344k 0.0 7.403879i 0.0 0.0
zp 36.43 ri 0.000811p 0.0 0.111000p 0.0 5.980315n 1.147994n 0.269288p 0.197180p 6.70e-05p 7.17e-09p 0.0 0.0
sig0.507 cc 0.000811p 0.0 0.111723p 0.0 6.064916p 1.815001p 5.714217p 7.679025p 7.679097p 7.679097p 0.0 0.0
rc 0.000811p 5.31e-06o 0.111743p 0.003858o 6.068427m 1.815521m 5.717392m 7.682889k 7.682956j 7.682956i 0.0 0.0
th229t xi 0.0 0.0 0.0 0.0 6.318728j 1.438843l 0.337506l 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 6.021069j 2.091210j 0.0 8.526480i 0.0 8.344636i 0.0 0.0

zp 36.24 ri 0.006158p 0.0 0.177711p 0.0 6.185037i 1.452061l 0.340607p 0.231641p 3.31e-05p 7.83e-09p 0.0 0.0
sig0.538 cc 0.007550p 0.0 0.224836p 0.0 7.450407p 1.446438p 6.815518p 8.337217p 8.337249p 8.337249p 0.0 0.0
rc 0.006158p 0.000199o 0.183506p 0.025350o 6.348751i 2.150424k 6.046906j 8.373060h 8.373093h 8.373093h 0.0
0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.847618n 0.0 0.0
zp 36.38 ri 0.002268p 0.0 0.381017p 0.0 3.674809n 2.262942n 0.463488p 0.146972p 0.000425p 5.47e-08p 0.0 0.0
sig0.552 cc 0.002267p 0.0 0.382856p 0.0 3.965266p 2.697894p 4.062475p 6.837108p 6.837533p 6.837533p 0.0 0.0
rc 0.002268p 3.06e-05o 0.383108p 0.012445o 3.976118m 2.700315m 4.072441m 6.849521l 6.849946l 6.849946l 0.0
0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.367531j 0.0 1.347567n 0.0 0.0
zp 36.30 ri 0.000867p 0.0 0.103602p 0.0 0.779231p 0.389718p 0.091429p 0.022352p 5.84e-05p 7.34e-09p 0.0 0.0
sig0.559 cc 0.000866p 0.0 0.104271p 0.0 0.858515p 0.483746p 0.867975p 1.361469p 1.361528p 1.361528p 0.0 0.0
rc 0.000867p 1.70e-05o 0.104407p 0.005056o 0.863010o 0.484649p 0.872108n 1.366509j 1.366567j 1.366567j 0.0 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.740336n 0.0 0.0
zp 36.49 ri 0.002154p 0.0 0.114582p 0.0 0.778062p 0.677327p 0.083724p 0.106311p 0.001893p 3.84e-06p 8.34e-10p
0.0
sig0.656 cc 0.002152p 0.0 0.116430p 0.0 0.866836p 0.772009p 0.875188p 1.733324p 1.735215p 1.735219p 8.34e-10p
0.0
rc 0.002154p 6.05e-05o 0.116599p 0.005898o 0.871876o 0.773234o 0.879798n 1.739238m 1.741132m 1.741136m 8.34e-10p
0.0
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.900598k 0.0 0.0 1.384899j 0.0 0.0 0.0 0.0
zp 36.22 ri 0.001612p 0.0 0.138914p 0.0 0.813886l 0.353678p 0.082542p 0.017066p 3.96e-05p 4.65e-09p 0.0 0.0
sig0.565 cc 0.001632p 0.0 0.142170p 0.0 0.935878p 0.443321p 0.924299p 1.372576p 1.372614p 1.372614p 0.0 0.0
rc 0.001612p 3.15e-05o 0.140410p 0.006341o 0.926097j 0.455548p 0.918612k 1.379382j 1.379422j 1.379422j 0.0 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.843133n 0.0 0.0 1.097089l 0.0 0.0 0.0 0.0
zp 36.02 ri 0.004960p 0.0 0.177808p 0.0 0.721071n 0.166954p 0.038810p 0.006263p 8.47e-06p 9.17e-10p 0.0 0.0
sig0.576 cc 0.004991p 0.0 0.183513p 0.0 0.869580p 0.253381p 0.817512p 1.070267p 1.070275p 1.070275p 0.0 0.0
rc 0.004960p 0.000114o 0.182430p 0.009528o 0.868151m 0.262451p 0.818288m 1.080178k 1.080187k 1.080187k 0.0
0.0
cf249t xi 0.0 0.0 0.0 0.0 0.338550j 0.0 0.0 0.024140k 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.588873i 0.0 0.0

zp 36.49 ri 0.000499p 0.0 0.022155p 0.0 0.386812p 0.125428p 0.029421p 0.027581p 0.000486p 1.09e-06p 1.31e-10p
0.0
sig0.645 cc 0.000702p 0.0 0.031839p 0.0 0.327115p 0.212625p 0.338095p 0.584035p 0.584485p 0.584486p 1.22e-10p
0.0
rc 0.000499p 1.93e-05p 0.022627p 0.002079p 0.405953p 0.170082p 0.395141p 0.588383p 0.588869k 0.588870i 1.31e-10p
0.0
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.295791n 0.0 0.0
zp 36.02 ri 0.001554p 0.0 0.056936p 0.0 0.183475p 0.049685p 0.011655p 0.001817p 3.89e-06p 5.35e-10p 0.0 0.0
sig0.590 cc 0.001546p 0.0 0.058067p 0.0 0.227843p 0.074509p 0.216316p 0.290695p 0.290699p 0.290699p 0.0 0.0
rc 0.001554p 6.99e-05o 0.058418p 0.005505o 0.233026p 0.075318p 0.221006p 0.296183o 0.296187n 0.296187m 0.0
0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.112634n 0.0 0.0
zp 35.97 ri 0.000743p 0.0 0.023999p 0.0 0.069491p 0.016638p 0.003903p 0.000536p 1.00e-06p 1.20e-10p 0.0 0.0
sig0.590 cc 0.000743p 0.0 0.024674p 0.0 0.088096p 0.026328p 0.082992p 0.109172p 0.109173p 0.109173p 0.0 0.0
rc 0.000743p 5.92e-05o 0.024734p 0.003795o 0.091935p 0.026751p 0.086420p 0.113011o 0.113012o 0.113012n 0.0
0.0

kr-rb branching from 70bal1; se half lives from 80eng2; br, kr, rb, sr, y half lives from 89wal1.

1

mass number 91 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 34 se g 35 br g 36 kr d 36 kr g 37 rb d 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb g 42 mo g
half life 0.27s 0.54 s 0.360s 8.6 s 1.84 s 58.0 s 4.53 s 9.5 h 58.5 d stable long 15.5 m
lambda 2.567e+00 1.284e+00 1.925e+00 8.060e-02 3.767e-01 1.195e-02 1.530e-01 2.027e-05 1.371e-07 0.0 0.0 7.453e-
04
z - 1 g 100.0000 75.5620 0.0 81.9000 0.0 100.0000 0.0 100.0000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 42.7300 100.0000 0.0330 100.0000 0.0100 100.0000 0.0 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.166336l 0.0 6.156406n 0.0 0.0
zp 36.82 ri 2.17e-05p 0.021298p 0.0 2.371962n 0.0 2.964810n 0.0 0.809954p 0.002078p 5.53e-07p 0.0 0.0
sig0.507 cc 2.17e-05p 0.021314p 0.0 2.389452p 0.0 5.354206p 0.0 6.164182p 6.166262p 6.166262p 0.0 0.0

rc 2.17e-05p 0.021315p 0.000374o 2.389793m 0.000222o 5.354825l 0.000226m 6.165006k 6.167084k 6.167085k 0.0
0.0
th229t xi 0.0 0.145796p 0.0 2.809881i 0.0 3.021947i 0.0 0.642827l 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.404430h 7.437912i 6.506659h 0.0 0.0
zp 36.65 ri 0.000815p 0.139443p 0.0 3.396094m 0.0 2.464719m 0.0 0.613838l 0.001023p 5.58e-07p 1.32e-12p 0.0
sig0.538 cc 0.000350p 0.060064p 0.0 4.025992p 0.0 6.015264p 0.0 6.603956p 6.604975p 6.604976p 1.38e-12p 0.0
rc 0.000815p 0.140059p 0.002132o 3.512935l 0.000472m 5.978126i 0.000341l 6.592305g 6.593328g 6.593329f 1.33e-12p
0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.443286j 0.0 0.0 0.0 0.0
zp 36.77 ri 0.000125p 0.068662p 0.0 1.944614n 0.0 3.842238n 0.0 0.595737p 0.005566p 2.44e-06p 4.50e-11p 0.0
sig0.552 cc 0.000125p 0.068737p 0.0 2.001606p 0.0 5.843230p 0.0 6.438906p 6.444470p 6.444473p 4.50e-11p 0.0
rc 0.000125p 0.068757p 0.003767o 2.004693m 0.000256o 5.847187l 0.000492m 6.443416j 6.448982j 6.448984j 4.50e-11p
0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.006380j 1.750039i 1.703286l 0.0 0.0
zp 36.71 ri 6.98e-05p 0.027879p 0.0 0.628540p 0.0 1.030322n 0.0 0.163279p 0.001212p 5.11e-07p 1.03e-11p 0.0
sig0.559 cc 6.90e-05p 0.027642p 0.0 0.645100p 0.0 1.698802p 0.0 1.844997p 1.846283p 1.846283p 1.14e-11p 0.0
rc 6.98e-05p 0.027932p 0.001482o 0.652898o 8.44e-05o 1.683305l 0.000149m 1.846733j 1.847945i 1.847946h 1.03e-11p
0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.002082i 2.071807i 1.992122n 0.0 0.0
zp 36.91 ri 0.000248p 0.032400p 0.0 0.513827p 0.0 1.125593n 0.0 0.360435p 0.015662p 7.89e-05p 4.41e-08p 2.57e-
12p
sig0.656 cc 0.000248p 0.032600p 0.0 0.541531p 0.0 1.667325p 0.0 2.026755p 2.042202p 2.042281p 4.40e-08p 2.57e-
12p
rc 0.000248p 0.032587p 0.002408o 0.542924o 7.30e-05o 1.668589m 0.000132m 2.029156i 2.044818h 2.044897h 4.41e-08p
2.57e-12p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.568577l 0.0 0.0 0.0 0.0 1.752847k 0.0 0.0 0.0
zp 36.62 ri 0.000129p 0.034936p 0.0 0.579391l 0.0 1.017095p 0.0 0.120989p 0.000826p 3.23e-07p 6.11e-12p 0.0
sig0.565 cc 0.000153p 0.041439p 0.0 0.721255p 0.0 1.641187p 0.0 1.745061p 1.745828p 1.745828p 5.67e-12p 0.0
rc 0.000129p 0.035034p 0.002405o 0.610489k 9.25e-05l 1.627676n 0.000160m 1.748826m 1.749651k 1.749651k 6.11e-12p
0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.039929i 0.715021i 0.0 0.0 0.0

```
 zp 36.41 ri 0.000468p 0.052287p      0.0  0.511248p      0.0  0.290452p      0.0  0.029138p 0.000107p 3.32e-08p      0.0       0.0
 sig0.576 cc 0.000427p 0.048040p      0.0  0.507454p      0.0  0.848193p      0.0  0.874784p 0.874901p 0.874901p      0.0       0.0
          rc 0.000468p 0.052641p 0.005898o 0.560259o 0.000137o 0.850848k 0.000111m 0.880097i 0.880204h 0.880204h      0.0
0.0
  cf249t  xi      0.0  0.011593l      0.0  0.250079j      0.0  0.457926j      0.0  0.108478j      0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0  0.261090j      0.0       0.0       0.0  0.829805h 0.804811l 0.820142i      0.0       0.0
 zp 36.86 ri 7.89e-05p 0.011426p      0.0  0.246792i      0.0  0.459713p      0.0  0.106918j 0.004473p 1.63e-05p 6.70e-09p      0.0
 sig0.645 cc 0.000103p 0.015039p      0.0  0.230640p      0.0  0.698975p      0.0  0.822077p 0.826653p 0.826670p 6.80e-09p      0.0
          rc 7.89e-05p 0.011486p 0.000723o 0.256922i 3.39e-05l 0.716669p 5.21e-05o 0.823639h 0.828112h 0.828128g 6.70e-09p
0.0
  cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.519831i      0.0       0.0       0.0       0.0
 zp 36.43 ri 0.000286p 0.030196p      0.0  0.256628p      0.0  0.217298p      0.0  0.017868p 0.000115p 4.91e-08p 1.30e-12p      0.0
 sig0.590 cc 0.000285p 0.030327p      0.0  0.281673p      0.0  0.498900p      0.0  0.516718p 0.516832p 0.516832p 1.29e-12p      0.0
          rc 0.000286p 0.030412p 0.003025o 0.284561p 5.43e-05o 0.501913l 5.02e-05o 0.519832i 0.519946i 0.519946i 1.30e-12p
0.0
  es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.275703j      0.0       0.0       0.0       0.0
 zp 36.35 ri 0.000242p 0.020781p      0.0  0.145585p      0.0  0.102931p      0.0  0.006976p 3.62e-05p 1.24e-08p      0.0       0.0
 sig0.590 cc 0.000241p 0.020865p      0.0  0.162863p      0.0  0.265737p      0.0  0.272680p 0.272716p 0.272716p      0.0       0.0
          rc 0.000242p 0.020964p 0.002970o 0.165725p 4.09e-05o 0.268697l 3.20e-05o 0.275705j 0.275741j 0.275741j      0.0       0.0

   y half life from 80eng2; se,br,kr,rb,sr,y half lives from 89wal1.
1

     mass number     92                    LA-UR-94-3106 (ENDF-349)                    percent yields
 nuclide       34 se g   35 br g   36 kr d   36 kr g   37 rb d   37 rb g   38 sr d   38 sr g   39 y  g   40 zr g   41 nb g   42 mo g
 half life     0.168s    0.34 s    0.176s    1.84 s    1.29 s    4.48 s    5.86s    2.71 h    3.54 h    stable    2.e7y    stable
 lambda       4.126e+00 2.039e+00 3.938e+00 3.767e-01 5.373e-01 1.547e-01 1.183e-01 7.105e-05 5.439e-05       0.0 1.099e-15
0.0
  z - 1 g    100.0000  100.0000       0.0   57.2700       0.0   99.9670       0.0   99.9900  100.0000  100.0000 -100.0000       0.0
  z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
  z - 0 m        0.0       0.0   25.0890  100.0000    2.0100  100.0000    1.3500  100.0000       0.0       0.0       0.0       0.0
  th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.732469n      0.0       0.0
 zp 37.22 ri 3.52e-07p 0.000875p      0.0  0.672690p      0.0  1.587424n      0.0  2.447785n 0.014354p 2.91e-05p 1.19e-10p      0.0
```

sig0.507 cc 3.52e-07p 0.000874p 0.0 0.672688p 0.0 2.259045p 0.0 4.707963p 4.722306p 4.722335p 1.19e-10p 0.0
rc 3.52e-07p 0.000875p 1.12e-05o 0.673202o 0.001615o 2.262019m 0.016328m 4.725905l 4.740259l 4.740288l 1.19e-10p 0.0
th229t xi 0.0 0.0 0.0 1.171604j 0.0 2.241068j 0.0 2.589545j 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.719248i 6.271139j 6.040291j 0.0 0.0
zp 37.05 ri 1.28e-05p 0.004977p 0.0 1.428832n 0.0 1.975696n 0.0 2.524203j 0.008845p 3.04e-05p 1.71e-10p 0.0
sig0.538 cc 1.35e-05p 0.005260p 0.0 1.872342p 0.0 3.543404p 0.0 5.930495p 5.939345p 5.939376p 1.73e-10p 0.0
rc 1.28e-05p 0.004989p 8.12e-05o 1.431770m 0.005177o 3.412171k 0.020139m 5.956172h 5.965017h 5.965047g 1.71e-10p 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.748377n 0.0 0.0
zp 37.16 ri 4.80e-06p 0.008812p 0.0 0.769951p 0.0 4.142334n 0.0 1.760313n 0.051163p 7.55e-05p 4.83e-09p 0.0
sig0.552 cc 4.79e-06p 0.008812p 0.0 0.774669p 0.0 4.915786p 0.0 6.676927p 6.728064p 6.728140p 4.83e-09p 0.0
rc 4.80e-06p 0.008817p 0.000169o 0.775169o 0.003799o 4.921046m 0.041552m 6.722419l 6.773582l 6.773657l 4.83e-09p 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.004702j 1.982427j 2.039052k 0.0 0.0
zp 37.13 ri 2.45e-06p 0.003466p 0.0 0.253734p 0.0 1.232270n 0.0 0.489719o 0.014342p 2.29e-05p 1.70e-09p 0.0
sig0.559 cc 2.44e-06p 0.003453p 0.0 0.254593p 0.0 1.481659p 0.0 1.977421p 1.991826p 1.991849p 1.69e-09p 0.0
rc 2.45e-06p 0.003468p 8.53e-05o 0.255806p 0.001655o 1.489646m 0.016859m 1.996076i 2.010418i 2.010441h 1.70e-09p 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.133062i 0.0 2.202510n 0.0 0.0
zp 37.34 ri 1.68e-05p 0.005619p 0.0 0.217738p 0.0 1.100820n 0.0 0.798505n 0.083093p 0.001075p 1.57e-06p 2.42e-10p
sig0.656 cc 1.67e-05p 0.005614p 0.0 0.220192p 0.0 1.317180p 0.0 2.120127p 2.203189p 2.204264p 1.56e-06p 2.42e-10p
rc 1.68e-05p 0.005635p 0.000174o 0.221140p 0.001331o 1.323217m 0.011261o 2.132851i 2.215943j 2.217020j 1.57e-06p 2.42e-10p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.271129k 0.0 0.0 0.0 2.060776j 2.203067k 0.0 0.0 0.0
zp 37.02 ri 6.42e-06p 0.005623p 0.0 0.276950k 0.0 1.320187n 0.0 0.472956p 0.009714p 1.25e-05p 8.00e-10p 0.0
sig0.565 cc 8.46e-06p 0.007412p 0.0 0.369018p 0.0 1.669520p 0.0 2.072817p 2.081981p 2.081993p 7.55e-10p 0.0
rc 6.42e-06p 0.005629p 0.000116o 0.280290j 0.001423l 1.601807m 0.017307m 2.091910i 2.101624i 2.101637i 8.00e-10p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.287950j 0.0 0.0 0.0 0.0
zp 36.81 ri 4.38e-05p 0.013758p 0.0 0.406494p 0.0 0.692624o 0.0 0.160150p 0.001958p 2.09e-06p 8.52e-11p 0.0
sig0.576 cc 4.35e-05p 0.013696p 0.0 0.411421p 0.0 1.107218p 0.0 1.266987p 1.268929p 1.268931p 8.46e-11p 0.0
rc 4.38e-05p 0.013802p 0.000654o 0.415053p 0.004186o 1.111727m 0.016420m 1.288185j 1.290143j 1.290145j 8.52e-11p
0.0
cf249t xi 0.0 0.0 0.0 0.106928j 0.0 0.457117j 0.0 0.327913j 0.056137n 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.084651k 0.0 0.0 0.0 0.889519j 1.019660l 0.860798i 0.0 0.0
zp 37.24 ri 7.10e-06p 0.001684p 0.0 0.101590j 0.0 0.417487p 0.0 0.311687j 0.053335n 0.000224p 1.54e-07p 1.90e-11p
sig0.645 cc 1.14e-05p 0.002722p 0.0 0.129415p 0.0 0.537363p 0.0 0.865509p 0.884524p 0.884756p 1.60e-07p 1.97e-
11p
rc 7.10e-06p 0.001691p 0.000120o 0.102679j 0.000733o 0.520865p 0.005076o 0.837576j 0.890911i 0.891135h 1.54e-07p
1.90e-11p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.579812n 0.0 0.0
zp 36.83 ri 2.31e-05p 0.007056p 0.0 0.160148p 0.0 0.335976p 0.0 0.071705p 0.001307p 1.67e-06p 1.36e-10p 0.0
sig0.590 cc 2.31e-05p 0.007074p 0.0 0.164173p 0.0 0.500179p 0.0 0.571782p 0.573089p 0.573090p 1.35e-10p 0.0
rc 2.31e-05p 0.007080p 0.000278o 0.164481p 0.001453o 0.501855p 0.006206o 0.579715o 0.581023o 0.581024n 1.36e-10p
0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.356674n 0.0 0.0
zp 36.72 ri 3.04e-05p 0.006921p 0.0 0.119540p 0.0 0.195240p 0.0 0.032189p 0.000442p 4.19e-07p 2.50e-11p 0.0
sig0.590 cc 3.04e-05p 0.006944p 0.0 0.123503p 0.0 0.318761p 0.0 0.350882p 0.351323p 0.351323p 2.50e-11p 0.0
rc 3.04e-05p 0.006951p 0.000380o 0.123901p 0.001391o 0.320491p 0.004528o 0.357176o 0.357618o 0.357619n 2.50e-11p
0.0

se half life from 80eng2; br, kr, rb, sr, y half lives from 89wal1.

1

mass number 93 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 35 br g 36 kr g 37 rb d 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb m 41 nb g 42 mo g 43 tc g
half life 0.176s 1.29 s 0.210s 5.85 s 2.76 s 7.4 m 10.2 h 1.5e6y 12. y stable 3.e3 y 2.73 h
lambda 3.938e+00 5.373e-01 3.301e+00 1.185e-01 2.511e-01 1.561e-03 1.888e-05 1.465e-14 1.832e-09 0.0 7.327e-39
7.053e-05
z - 1 g 100.0000 74.9110 0.0 97.9900 0.0 98.6500 100.0000 100.0000 95.0000 5.0000 -15.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -85.0000 0.0

z - 0 m 0.0 0.0 6.1300 100.0000 10.0000 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.385949n 4.074082n 0.0 0.0 0.0
zp 37.61 ri 4.48e-05p 0.080323p 0.0 1.130294n 0.0 3.047365n 0.110439p 0.000531p 3.10e-09p 1.32e-08p 0.0 0.0
sig0.507 cc 4.48e-05p 0.080258p 0.0 1.207672p 0.0 4.240236p 4.350539p 4.351069p 4.133516p 4.351069p 0.0 0.0
rc 4.48e-05p 0.080357p 0.000426o 1.209462m 0.022308o 4.262808m 4.373247m 4.373777l 4.155088l 4.373777l 0.0
0.0
th229t xi 0.0 0.0 0.0 1.224658j 0.0 3.244613j 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.256769h 5.065085h 4.744126l 4.531597n 5.169811i 0.0 0.0
zp 37.46 ri 0.000324p 0.257327p 0.0 1.236492n 0.0 3.264192i 0.071334p 0.000540p 3.84e-09p 1.64e-08p 0.0 0.0
sig0.538 cc 0.000348p 0.277124p 0.0 1.517240p 0.0 4.738148p 4.803540p 4.804069p 4.563865p 4.804069p 0.0 0.0
rc 0.000324p 0.257570p 0.002897o 1.491782l 0.036345o 4.772179h 4.843514g 4.844053g 4.601851g 4.844053g 0.0
0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.659061n 6.339505n 0.0 0.0 0.0
zp 37.55 ri 0.000672p 0.188501p 0.0 2.890953n 0.0 3.258005n 0.282182p 0.001367p 5.11e-08p 2.50e-07p 2.74e-12p
0.0
sig0.552 cc 0.000670p 0.188283p 0.0 3.064943p 0.0 6.293797p 6.574989p 6.576350p 6.247533p 6.576351p 2.73e-12p
0.0
rc 0.000672p 0.189004p 0.001792o 3.077950m 0.137228m 6.431631l 6.713813l 6.715180l 6.379421l 6.715180l 2.74e-12p
0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.682662i 2.696559n 2.600682n 0.0 0.0 0.0
zp 37.54 ri 0.000340p 0.082075p 0.0 1.167281n 0.0 1.274445n 0.114193p 0.000619p 3.10e-08p 1.32e-07p 1.93e-12p
0.0
sig0.559 cc 0.000337p 0.081509p 0.0 1.235771p 0.0 2.505781p 2.619936p 2.620547p 2.489520p 2.620547p 1.90e-12p
0.0
rc 0.000340p 0.082330p 0.000877o 1.248833m 0.065913o 2.572331k 2.686524i 2.687143i 2.552786i 2.687143i 1.93e-12p
0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.421239n 2.280492n 0.0 0.0 0.0
zp 37.76 ri 0.000694p 0.065679p 0.0 0.768398p 0.0 1.252729n 0.299696p 0.009433p 3.82e-06p 3.09e-05p 1.38e-08p
0.0
sig0.656 cc 0.000692p 0.066012p 0.0 0.831153p 0.0 2.075447p 2.374501p 2.383908p 2.264716p 2.383942p 1.38e-08p
0.0

rc 0.000694p 0.066199p 0.000850o 0.834116o 0.039594o 2.115178m 2.414874m 2.424307m 2.303096l 2.424342l 1.38e-08p 0.0
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.068886k 0.0 0.0 0.0 0.0 2.591739j 0.0 2.434454n 0.0 0.0 0.0
zp 37.42 ri 0.000463p 0.070445p 0.0 1.211010n 0.0 1.160148n 0.074831p 0.000311p 1.27e-08p 5.40e-08p 0.0 0.0
sig0.565 cc 0.000848p 0.129706p 0.0 1.396983p 0.0 2.425131p 2.495237p 2.495528p 2.370751p 2.495528p 0.0 0.0
rc 0.000463p 0.070792k 0.001653o 1.282031m 0.079136o 2.504008k 2.578839j 2.579150j 2.450192j 2.579150j 0.0 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.816387i 0.0 1.712441n 0.0 0.0 0.0
zp 37.21 ri 0.002608p 0.206319p 0.0 1.009131n 0.0 0.529658o 0.021356p 6.54e-05p 1.77e-09p 7.55e-09p 0.0 0.0
sig0.576 cc 0.002563p 0.204670p 0.0 1.192958p 0.0 1.727225p 1.748212p 1.748276p 1.660862p 1.748276p 0.0 0.0
rc 0.002608p 0.208273p 0.003053o 1.216271m 0.065704o 1.795214k 1.816570i 1.816635i 1.725804i 1.816635i 0.0 0.0
cf249t xi 0.0 0.0 0.0 0.418363j 0.0 0.582257j 0.256624n 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.996327l 1.004784j 0.0 0.945685n 1.068012i 0.0 0.0
zp 37.62 ri 0.000479p 0.036124p 0.0 0.339514p 0.0 0.476743j 0.210402n 0.001511p 6.79e-07p 2.89e-06p 7.45e-10p 0.0
sig0.645 cc 0.000566p 0.043048p 0.0 0.467049p 0.0 0.963882p 1.055659p 1.057459p 1.004587p 1.057463p 8.87e-10p 0.0
rc 0.000479p 0.036483p 0.000605o 0.375868p 0.018867o 0.866404l 1.076806j 1.078317j 1.024401i 1.078320h 7.45e-10p 0.0
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.703500k 0.0 0.646829n 0.0 0.0 0.0
zp 37.24 ri 0.001110p 0.071445p 0.0 0.387524p 0.0 0.205387p 0.010952p 4.24e-05p 2.04e-09p 8.69e-09p 0.0 0.0
sig0.590 cc 0.001097p 0.071435p 0.0 0.453345p 0.0 0.657762p 0.668587p 0.668629p 0.635198p 0.668629p 0.0 0.0
rc 0.001110p 0.072276p 0.001326o 0.459673p 0.031840o 0.690695m 0.701647k 0.701689k 0.666605k 0.701689k 0.0 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.424728n 0.478298n 0.0 0.0
zp 37.10 ri 0.001514p 0.068051p 0.0 0.265896p 0.0 0.106225p 0.003852p 1.02e-05p 3.35e-10p 1.43e-09p 0.0 0.0
sig0.590 cc 0.001513p 0.069124p 0.0 0.333789p 0.0 0.435414p 0.439263p 0.439273p 0.417310p 0.439273p 0.0 0.0
rc 0.001514p 0.069185p 0.001744o 0.335435p 0.029875o 0.467007o 0.470859o 0.470869o 0.447326n 0.470869m 0.0 0.0

kr, rb half lives from 80eng2; br, kr, rb, sr, y, zr half lives from 89wal1.

mass number 94 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 34 se g 35 br g 36 kr g 37 rb d 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb m 41 nb g 42 mo g

half life 0.111s 0.21 s 0.78 s 2.73 s 0.38 s 1.25 m 18.7 m stable 6.26 m 2.0e4y stable

lambda 0.0 6.245e+00 3.301e+00 8.887e-01 2.539e-01 1.824e+00 9.242e-03 6.178e-04 0.0 1.845e-03 1.099e-12 0.0

z - 1 g 100.0000 100.0000 100.0000 0.0 93.8700 0.0 90.0000 100.0000 100.0000 0.0 0.0 100.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.2000

z - 0 m 0.0 0.0 0.0 7.5050 100.0000 8.6200 100.0000 0.0 0.0 0.0 99.8000 0.0

th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.663208n 0.0 0.0 0.0

zp 38.01 ri 1.06e-11p 5.15e-07p 0.006952p 0.0 0.216527p 0.0 3.221181n 0.227562p 0.007743p 2.50e-07p 3.60e-07p 1.33e-11p

sig0.507 cc 1.06e-11p 5.14e-07p 0.006948p 0.0 0.222913p 0.0 3.422091p 3.649511p 3.657249p 2.50e-07p 6.09e-07p 6.10e-07p

rc 1.06e-11p 5.15e-07p 0.006952p 2.93e-05o 0.223083p 0.007212o 3.429168m 3.656730m 3.664473l 2.50e-07p 6.10e-07p 6.10e-07p

th229t xi 0.0 0.0 0.054542p 0.0 0.356618m 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.990128k 3.990128k 0.0 0.0 0.0

zp 37.86 ri 1.77e-09p 1.02e-05p 0.047244p 0.0 0.319006p 0.0 3.615745m 0.157088p 0.005581p 1.91e-07p 2.75e-07p 3.08e-11p

sig0.538 cc 1.28e-09p 7.31e-06p 0.033975p 0.0 0.337678p 0.0 3.961681p 4.102355p 4.108824p 2.22e-07p 5.40e-07p 5.41e-07p

rc 1.77e-09p 1.02e-05p 0.047254p 9.70e-05o 0.363460p 0.005805o 3.948665l 4.105753k 4.111334j 1.91e-07p 4.66e-07p 4.66e-07p

pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.351414n 0.0 0.0 0.0

zp 37.94 ri 1.46e-09p 3.15e-05p 0.029207p 0.0 1.344615n 0.0 4.083008n 0.989883p 0.015243p 4.21e-06p 7.17e-06p 3.61e-10p

sig0.552 cc 1.46e-09p 3.15e-05p 0.029195p 0.0 1.370068p 0.0 5.319301p 6.307972p 6.323192p 4.20e-06p 1.13e-05p 1.14e-05p

rc 1.46e-09p 3.15e-05p 0.029239p 0.000218o 1.372280m 0.036392o 5.354451m 6.344334m 6.359577l 4.21e-06p 1.14e-05p 1.14e-05p

am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.188466n 0.0 0.0 0.0

zp 37.96 ri 9.27e-10p 1.69e-05p 0.014287p 0.0 0.645579p 0.0 2.032629n 0.536938p 0.009674p 3.76e-06p 5.41e-06p 4.02e-10p
sig0.559 cc 9.26e-10p 1.69e-05p 0.014281p 0.0 0.657960p 0.0 2.626547p 3.162794p 3.172452p 3.75e-06p 9.15e-06p 9.16e-06p
rc 9.27e-10p 1.69e-05p 0.014304p 0.000119o 0.659126o 0.020228o 2.646069m 3.183007m 3.192681l 3.76e-06p 9.16e-06p 9.17e-06p
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.535795i 2.684959n 0.0 0.0 0.0
zp 38.18 ri 2.71e-08p 5.86e-05p 0.013803p 0.0 0.382759p 0.0 1.410598n 0.758562o 0.058965p 0.000141p 0.000400p 5.52e-07p
sig0.656 cc 2.70e-08p 5.86e-05p 0.013841p 0.0 0.395241p 0.0 1.767571p 2.527534p 2.584392p 0.000136p 0.000521p 0.000522p
rc 2.71e-08p 5.86e-05p 0.013861p 0.000171o 0.395942p 0.013142o 1.780088m 2.538649i 2.597615i 0.000141p 0.000541p 0.000541p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.714574n 0.0 0.0 0.0
zp 37.82 ri 5.75e-09p 5.54e-05p 0.026908p 0.0 0.765746p 0.0 1.661631n 0.313721p 0.004083p 1.19e-06p 1.71e-06p 1.01e-10p
sig0.565 cc 5.74e-09p 5.53e-05p 0.026900p 0.0 0.789287p 0.0 2.374388p 2.687494p 2.691567p 1.19e-06p 2.90e-06p 2.90e-06p
rc 5.75e-09p 5.54e-05p 0.026964p 0.000306o 0.791363o 0.029786o 2.403644m 2.717365m 2.721448m 1.19e-06p 2.90e-06p 2.91e-06p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.532025k 1.622737j 2.066218n 0.0 0.0 0.0
zp 37.61 ri 6.22e-08p 0.000193p 0.049620p 0.0 0.609512p 0.0 0.919840n 0.091874p 0.001054p 1.81e-07p 2.60e-07p 1.44e-11p
sig0.576 cc 6.14e-08p 0.000190p 0.049198p 0.0 0.648408p 0.0 1.512577p 1.603318p 1.604235p 1.57e-07p 3.83e-07p 3.84e-07p
rc 6.22e-08p 0.000193p 0.049812p 0.000772o 0.657042o 0.035270o 1.546448k 1.638322i 1.639376i 1.81e-07p 4.41e-07p 4.41e-07p
cf249t xi 0.0 0.0 0.0 0.0 0.202282j 0.0 0.821096j 0.173555j 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.669777l 1.089637l 1.254283i 0.0 0.0 0.0
zp 38.00 ri 2.87e-08p 3.89e-05p 0.009834p 0.0 0.179237p 0.0 0.823344j 0.181507j 0.014527p 2.32e-05p 3.34e-05p 4.10e-08p
sig0.645 cc 4.00e-08p 5.43e-05p 0.013761p 0.0 0.224069p 0.0 0.963878p 1.171946p 1.185243p 2.12e-05p 5.17e-05p 5.18e-05p

rc 2.87e-08p 3.90e-05p 0.009873p 0.000136o 0.188640p 0.007810o 1.000931j 1.182438i 1.196965h 2.32e-05p 5.65e-05p 5.66e-05p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.748145n 0.0 0.0 0.0
zp 37.63 ri 4.45e-08p 0.000120p 0.021505p 0.0 0.297726p 0.0 0.393792p 0.052672p 0.000572p 1.74e-07p 2.50e-07p 1.96e-11p
sig0.590 cc 4.44e-08p 0.000120p 0.021547p 0.0 0.316991p 0.0 0.680315p 0.732797p 0.733367p 1.73e-07p 4.22e-07p 4.22e-07p
rc 4.45e-08p 0.000120p 0.021625p 0.000376o 0.318401p 0.016214o 0.696566p 0.749239o 0.749811n 1.74e-07p 4.24e-07p 4.24e-07p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.563170n 0.0 0.0 0.0
zp 37.48 ri 1.31e-07p 0.000234p 0.028223p 0.0 0.271459p 0.0 0.255418p 0.023856p 0.000175p 3.52e-08p 5.07e-08p 2.61e-12p
sig0.590 cc 1.31e-07p 0.000233p 0.028350p 0.0 0.297218p 0.0 0.523966p 0.547732p 0.547906p 3.51e-08p 8.55e-08p 8.56e-08p
rc 1.31e-07p 0.000234p 0.028457p 0.000579o 0.298751p 0.016902o 0.541196p 0.565052o 0.565227n 3.52e-08p 8.58e-08p 8.59e-08p

br, kr, rb, sr, y half lives from 89wal1.
1

mass number 95 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 36 kr g 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb m 41 nb g 42 mo g 43 tc m 43 tc g 44 ru g
half life 0.78 s 0.377s 0.204s 25.1s 10.3 m 64.02d 3.61 d 34.97d stable 61. d 20.0 h 1.64 h
lambda 8.887e-01 1.839e+00 3.398e+00 2.762e-02 1.122e-03 1.253e-07 2.222e-06 2.294e-07 0.0 1.315e-07 9.627e-06 1.174e-04
z - 1 g 100.0000 92.4950 0.0 91.3800 100.0000 100.0000 1.0000 99.0000 100.0000 -96.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 14.0000 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0 4.0000 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.383096k 0.0 0.0 3.373145n 0.0 0.0 0.0
zp 38.40 ri 0.000391p 0.083307p 0.0 2.352424n 0.887950p 0.064542p 7.00e-06p 2.98e-05p 2.03e-09p 0.0 0.0 0.0
sig0.507 cc 0.000391p 0.083651p 0.0 2.428721p 3.316846p 3.381374p 0.033821p 3.381411p 3.381411p 0.0 0.0 0.0
rc 0.000391p 0.083668p 0.001020o 2.429901m 3.317851l 3.382393j 0.033831j 3.382430j 3.382430j 0.0 0.0 0.0
th229t xi 0.0 0.0 0.0 1.616125j 0.908902k 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 2.362040l 2.697132h 0.0 0.0 2.668893g 0.0 0.0 0.0
zp 38.27 ri 0.001293p 0.066152p 0.0 1.600085m 0.969280k 0.042346p 4.11e-06p 1.75e-05p 3.51e-09p 0.0 0.0 0.0
sig0.538 cc 0.001863p 0.097059p 0.0 2.233326p 2.631333p 2.670652p 0.026710p 2.670672p 2.670672p 0.0 0.0 0.0
rc 0.001293p 0.067348p 0.002090o 1.663718m 2.632998l 2.675344h 0.026758h 2.675366g 2.675366f 0.0 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 6.355895i 0.0 0.0 0.0 0.0 0.0 0.0
zp 38.33 ri 0.002900p 0.419495p 0.0 3.538417n 2.313830n 0.108545p 4.58e-05p 0.000224p 2.96e-08p 0.0 0.0 0.0
sig0.552 cc 0.002898p 0.421925p 0.0 3.924776p 6.238112p 6.346600p 0.063512p 6.346869p 6.346869p 0.0 0.0 0.0
rc 0.002900p 0.422177p 0.009388o 3.933590m 6.247420k 6.355965i 0.063605i 6.356235i 6.356235i 0.0 0.0 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.946159g 0.0 0.0 4.337261k 0.0 0.0 0.0
zp 38.37 ri 0.001592p 0.233187p 0.0 2.109073n 1.560375m 0.086916p 5.62e-05p 0.000240p 4.61e-08p 0.0 0.0 0.0
sig0.559 cc 0.001596p 0.235367p 0.0 2.332554p 3.883569p 3.970747p 0.039761p 3.971030p 3.971030p 0.0 0.0 0.0
rc 0.001592p 0.234659p 0.006454o 2.329958m 3.890334j 3.977249g 0.039829g 3.977545g 3.977545g 0.0 0.0 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.122508i 0.0 0.0 3.003176n 0.0 0.0 0.0
zp 38.59 ri 0.002285p 0.150346p 0.0 1.247721n 1.475587n 0.251759p 0.000597p 0.004830p 1.37e-05p 4.11e-10p 3.33e-09p
0.0
sig0.656 cc 0.002283p 0.152330p 0.0 1.387411p 2.862887p 3.114289p 0.031751p 3.119822p 3.119836p 4.19e-10p 3.41e-09p
0.0
rc 0.002285p 0.152459p 0.004992o 1.392030m 2.867618l 3.119376i 0.031791i 3.124803i 3.124817i 4.11e-10p 3.34e-09p
0.0
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.294080j 0.0 0.0 0.0 0.0 0.0 0.0
zp 38.21 ri 0.004079p 0.341774p 0.0 1.959127n 0.969687p 0.037082p 1.59e-05p 6.77e-05p 9.51e-09p 0.0 0.0 0.0
sig0.565 cc 0.004072p 0.345003p 0.0 2.274927p 3.244681p 3.281705p 0.032833p 3.281789p 3.281789p 0.0 0.0 0.0
rc 0.004079p 0.345547p 0.012538o 2.287427m 3.257113l 3.294196j 0.032958j 3.294279j 3.294279j 0.0 0.0 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.028372o 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.353736h 0.0 2.292755i 0.0 0.0 0.0 0.0
zp 38.02 ri 0.010285p 0.399652p 0.0 1.500698n 0.416957p 0.012284p 3.38e-06p 0.028058o 1.78e-09p 0.0 0.0 0.0
sig0.576 cc 0.010303p 0.409901p 0.0 1.883909p 2.319506p 2.331812p 0.023322p 2.331830p 2.331830p 0.0 0.0 0.0
rc 0.010285p 0.409165p 0.019311o 1.893904m 2.310861j 2.323145h 0.023235h 2.351206h 2.351206h 0.0 0.0 0.0
cf249t xi 0.0 0.088855i 0.0 0.719875i 0.609936i 0.085843i 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.389908i 0.0 1.539744i 1.508201g 0.0 0.0 0.0
zp 38.37 ri 0.001811p 0.088917p 0.0 0.720382p 0.610366p 0.085903i 0.000138p 0.000589p 8.67e-07p 2.16e-11p 9.21e-11p
0.0

sig0.645 cc 0.002779p 0.139015p 0.0 0.849026p 1.438172p 1.495187p 0.015090p 1.495915p 1.495916p 2.15e-11p 9.23e-11p 0.0
rc 0.001811p 0.090593p 0.005908p 0.809073p 1.419439o 1.505342h 0.015192i 1.506069g 1.506070f 2.16e-11p 9.29e-11p 0.0
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.978926j 0.0 0.0 0.0 0.0 0.0 0.0
zp 38.02 ri 0.005007p 0.183463p 0.0 0.591984p 0.196676p 0.005854p 2.38e-06p 1.02e-05p 1.72e-09p 0.0 0.0 0.0
sig0.590 cc 0.004982p 0.187150p 0.0 0.763992p 0.960654p 0.966478p 0.009667p 0.966491p 0.966491p 0.0 0.0 0.0
rc 0.005007p 0.188095p 0.012552o 0.776417n 0.973093l 0.978947j 0.009792j 0.978960j 0.978960j 0.0 0.0 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.708951j 0.0 0.0 0.0 0.0 0.0 0.0
zp 37.86 ri 0.007715p 0.188942p 0.0 0.419722p 0.097238p 0.001916p 5.06e-07p 2.16e-06p 2.35e-10p 0.0 0.0 0.0
sig0.590 cc 0.007660p 0.194663p 0.0 0.599740p 0.696276p 0.698179p 0.006982p 0.698181p 0.698181p 0.0 0.0 0.0
rc 0.007715p 0.196079p 0.010905o 0.609803n 0.707042l 0.708958j 0.007090j 0.708960j 0.708960j 0.0 0.0 0.0

rb half life from 80eng2; kr, rb, sr, y, zr, nb half lives 89wal; tc half life 90bur1.

1

mass number 96 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	34 se g	35 br g	36 kr g	37 rb g	38 sr d	38 sr g	39 y m	39 y g	40 zr d	40 zr g	41 nb g	42 mo g
half life		0.089s	0.293s	0.199s	0.170s	1.06 s	9.6 s	6.2 s	3.7 s	stable	23.4 h	stable
lambda	0.0	7.788e+00	2.366e+00	3.483e+00	4.077e+00	6.539e-01	7.220e-02	1.118e-01	1.873e-01	0.0	8.228e-06	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	0.0	86.0000	0.0	100.0000	0.0	100.0000	0.0	100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	26.6000	100.0000	0.0050	100.0000	0.0540	100.0000	0.0	0.0
th227t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.612734n	0.0	0.0
zp 38.80 ri	0.0	5.31e-11p	1.39e-05p	0.007273p	0.0	1.313986n	0.804139p	0.089350p	0.0	0.398521p	0.000550p	2.36e-07p
sig0.507 cc	0.0	5.31e-11p	1.39e-05p	0.007287p	0.0	1.320284p	0.804123p	2.213754p	0.0	2.612262p	0.000550p	0.000550p
rc	0.0	5.31e-11p	1.39e-05p	0.007287p	0.000203o	1.320456m	0.804155o	2.213960m	0.000780m	2.613261m	0.000550p	0.000550p
th229t xi	0.0	0.0	0.0	0.0	0.0	0.629539k	0.504476k	0.056053k	0.0	0.202804l	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.379944j	0.0	0.0

zp 38.67 ri 0.0 1.94e-09p 0.000131p 0.014799p 0.0 0.617735p 0.495018p 0.055002p 0.0 0.199002l 0.000170p 1.69e-07p
sig0.538 cc 0.0 1.06e-09p 7.16e-05p 0.008164p 0.0 0.927848p 0.270693p 1.228618p 0.0 1.380541p 0.000174p 0.000174p
rc 0.0 1.94e-09p 0.000131p 0.014930p 0.000253p 0.630828p 0.495024p 1.180854o 0.000252o 1.380107j 0.000170p 0.000170p
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.962042n 0.0 0.0
zp 38.72 ri 0.0 1.33e-08p 0.000142p 0.066912p 0.0 1.646286n 2.608690n 0.258002p 0.0 0.389313p 0.003135p 1.18e-06p
sig0.552 cc 0.0 1.33e-08p 0.000142p 0.067045p 0.0 1.704403p 2.608332p 4.570702p 0.0 4.959959p 0.003135p 0.003136p
rc 0.0 1.33e-08p 0.000142p 0.067054p 0.002036o 1.705989m 2.608719m 4.572709l 0.001786m 4.963808l 0.003135p 0.003136p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.254610n 0.0 0.0
zp 38.78 ri 0.0 8.96e-09p 9.34e-05p 0.046008p 0.0 1.257862n 2.280296n 0.253366p 0.0 0.421496p 0.004537p 2.49e-06p
sig0.559 cc 0.0 8.96e-09p 9.34e-05p 0.046095p 0.0 1.297911p 2.279989p 3.831232p 0.0 4.252669p 0.004537p 0.004539p
rc 0.0 8.96e-09p 9.34e-05p 0.046102p 0.001710o 1.299220m 2.280325m 3.832910l 0.002015m 4.256421l 0.004537p 0.004540p
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.015251n 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.267689n 0.015453i 0.0
zp 39.01 ri 1.04e-11p 1.47e-07p 0.000218p 0.035439p 0.0 0.690636p 1.723914n 0.110037p 0.0 0.710962p 0.015246n 0.000168p
sig0.656 cc 1.04e-11p 1.46e-07p 0.000217p 0.035410p 0.0 0.716848p 1.711969p 2.538091p 0.0 3.244124p 0.037302p 0.037539p
rc 1.04e-11p 1.47e-07p 0.000218p 0.035658p 0.001632o 0.722933o 1.723928m 2.556898m 0.001052m 3.268912m 0.015246i 0.015415i
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.620179n 0.0 0.0
zp 38.61 ri 0.0 6.64e-08p 0.000339p 0.089220p 0.0 1.443598n 1.699030n 0.188780p 0.0 0.207727p 0.001490p 5.66e-07p
sig0.565 cc 0.0 6.63e-08p 0.000339p 0.089521p 0.0 1.521478p 1.698339p 3.408521p 0.0 3.616161p 0.001489p 0.001490p

rc 0.0 6.64e-08p 0.000339p 0.089559p 0.004502o 1.525121m 1.699070m 3.412971l 0.001876m 3.622574l 0.001490p 0.001491p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.821760n 0.0 0.0
zp 38.43 ri 1.39e-11p 4.74e-07p 0.001254p 0.136683p 0.0 1.525349n 0.968023p 0.107557p 0.0 0.095727p 0.000410p 1.46e-07p
sig0.576 cc 1.39e-11p 4.74e-07p 0.001254p 0.137819p 0.0 1.644977p 0.967211p 2.719655p 0.0 2.815300p 0.000410p 0.000410p
rc 1.39e-11p 4.74e-07p 0.001255p 0.137938p 0.007488o 1.651464m 0.968066o 2.727087m 0.001356m 2.824169l 0.000410p 0.000410p
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.504523j 0.0 0.0 0.0 0.227957j 0.004398l 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.677006i 0.0 0.0
zp 38.74 ri 5.20e-11p 3.96e-07p 0.000540p 0.041650p 0.0 0.592809p 0.725118o 0.079951p 0.0 0.238118j 0.004594p 1.88e-05p
sig0.645 cc 4.97e-11p 3.78e-07p 0.000516p 0.040284p 0.0 0.682870p 0.687053p 1.446262p 0.0 1.672619p 0.004522p 0.004540p
rc 5.20e-11p 3.96e-07p 0.000540p 0.042190p 0.003357o 0.632449o 0.725129o 1.437530k 0.000740n 1.676388i 0.004594p 0.004613p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.431249n 0.0 0.0
zp 38.41 ri 2.54e-11p 6.01e-07p 0.000886p 0.088772p 0.0 0.719866p 0.525000p 0.058335p 0.0 0.045572p 0.000277p 1.12e-07p
sig0.590 cc 2.54e-11p 6.00e-07p 0.000885p 0.089542p 0.0 0.797790p 0.524334p 1.380382p 0.0 1.425896p 0.000277p 0.000277p
rc 2.54e-11p 6.01e-07p 0.000886p 0.089658p 0.005901o 0.802873o 0.525025o 1.386233n 0.000783m 1.432588m 0.000277p 0.000277p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.750893n 0.0 0.0
zp 38.25 ri 8.07e-11p 1.22e-06p 0.001161p 0.076732p 0.0 0.424625p 0.215876p 0.023987p 0.0 0.012649p 5.03e-05p 1.31e-08p
sig0.590 cc 8.04e-11p 1.22e-06p 0.001159p 0.077678p 0.0 0.492335p 0.215287p 0.731542p 0.0 0.744157p 5.02e-05p 5.02e-05p
rc 8.07e-11p 1.22e-06p 0.001162p 0.077894p 0.007059o 0.498673p 0.215896p 0.738556o 0.000488m 0.751694n 5.03e-05p 5.03e-05p

br, kr half lives from 80eng2; rb, sr, y half lives from 89wal1.

mass number 97 LA-UR-94-3106 (ENDF-349) percent yields

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 nuclide      36 kr g   37 rb g   38 sr d   38 sr g   39 y  g   40 zr d   40 zr g   41 nb m   41 nb g   42 mo g   43 tc g   44  ru g
 half life     0.1 s    0.169s    0.110s    0.42 s    3.76 s     2.0 s    16.8 h    58.1 s    1.23 h    stable    2.6e6y     2.9 d
 lambda      6.931e+00 4.101e+00 6.301e+00 1.650e+00 1.843e-01 3.466e-01 1.146e-05 1.193e-02 1.565e-04       0.0 8.454e-15
2.766e-06
  z - 1 g    100.0000  100.0000       0.0   73.4000   99.9950       0.0   99.9460   94.0000    6.0000  100.0000 -100.0000  -99.9600
  z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   -0.0400
  z - 0 m        0.0       0.0   13.3000  100.0000       0.0    0.2280  100.0000       0.0  100.0000       0.0       0.0       0.0
  th227t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc     0.0       0.0       0.0       0.0       0.0       0.0  2.386036n      0.0       0.0  2.336533n      0.0       0.0
 zp 39.19 ri 1.98e-07p 0.000765p      0.0  0.304888p 1.139394n      0.0  0.929595p 0.001603p 0.006835p 8.83e-06p 5.59e-11p
0.0
 sig0.507 cc 1.98e-07p 0.000765p      0.0  0.305422p 1.444695p      0.0  2.373541p 2.232751p 2.382081p 2.382090p 5.65e-11p
0.0
          rc 1.98e-07p 0.000765p 1.46e-06o 0.305451p 1.444830m 0.000348o 2.373993m 2.233156l 2.382431l 2.382440l 5.59e-11p
0.0
  th229t  xi     0.0       0.0       0.0  0.117813k 0.317358j      0.0  0.246670j      0.0       0.0       0.0       0.0       0.0
          xc     0.0       0.0       0.0       0.0       0.0       0.0  0.710576h      0.0  0.689963i 0.819593i      0.0       0.0
 zp 39.07 ri 1.41e-06p 0.000948p      0.0  0.125912p 0.339175p      0.0  0.263700j 0.000325p 0.001387p 4.27e-06p 4.15e-11p      0.0
 sig0.538 cc 1.17e-06p 0.000788p      0.0  0.185357p 0.466795p      0.0  0.729309p 0.685868p 0.730979p 0.730983p 3.72e-11p
0.0
          rc 1.41e-06p 0.000950p 1.66e-06p 0.126611p 0.465780p 9.19e-05o 0.729321g 0.685887g 0.731033g 0.731037g 4.15e-11p
0.0
  pa231f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc     0.0       0.0       0.0       0.0       0.0       0.0  4.327563h      0.0       0.0       0.0       0.0       0.0
 zp 39.11 ri 4.87e-06p 0.007648p      0.0  0.577034p 2.724667n      0.0  1.020149n 0.004366p 0.021314p 3.25e-05p 1.77e-09p
0.0
 sig0.552 cc 4.87e-06p 0.007652p      0.0  0.582622p 3.307026p      0.0  4.325655p 4.070481p 4.351332p 4.351365p 1.77e-09p
0.0
          rc 4.87e-06p 0.007653p 6.08e-05o 0.582712o 3.307350m 0.001931o 4.327644h 4.072351h 4.353324h 4.353357h 1.77e-09p
0.0
  am241t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc     0.0       0.0       0.0       0.0       0.0       0.0  5.237537g      0.0       0.0  5.151911j      0.0       0.0
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zp 39.19 ri 3.78e-06p 0.006426p 0.0 0.558881p 3.167130n 0.0 1.485255n 0.009565p 0.040777p 9.54e-05p 8.53e-09p
0.0
sig0.559 cc 3.78e-06p 0.006428p 0.0 0.563450p 3.729593p 0.0 5.213298p 4.910188p 5.264285p 5.264382p 8.64e-09p
0.0
rc 3.78e-06p 0.006430p 6.06e-05o 0.563661o 3.730763m 0.002956m 5.216960g 4.913507g 5.267302g 5.267398g 8.53e-09p
0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.363293i 0.0 0.0 3.611323n 0.0 0.0
zp 39.42 ri 1.53e-05p 0.006119p 0.0 0.280695p 1.662542n 0.0 1.418121m 0.019341p 0.156706p 0.002699p 4.69e-06p
8.70e-10p
sig0.656 cc 1.54e-05p 0.006139p 0.0 0.285477p 1.949442p 0.0 3.368427p 3.185292p 3.540892p 3.543543p 4.60e-06p
8.53e-10p
rc 1.53e-05p 0.006134p 0.000101o 0.285298p 1.947826m 0.001480o 3.366376i 3.183735i 3.542424j 3.545127j 4.70e-06p
8.70e-10p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.263510j 0.0 0.0 0.0 0.0 0.0
zp 39.00 ri 2.05e-05p 0.016905p 0.0 0.787941p 2.673628n 0.0 0.788184p 0.003223p 0.013739p 2.06e-05p 1.24e-09p
0.0
sig0.565 cc 2.05e-05p 0.016921p 0.0 0.800226p 3.473085p 0.0 4.260267p 4.007873p 4.277224p 4.277245p 1.24e-09p
0.0
rc 2.05e-05p 0.016926p 0.000249o 0.800614o 3.474202m 0.003315m 4.263825j 4.011218j 4.280787j 4.280808j 1.24e-09p
0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.890975h 0.0 0.0 0.0 0.0 0.0
zp 38.84 ri 7.58e-05p 0.028075p 0.0 0.828137p 1.661439n 0.0 0.378601p 0.001029p 0.004386p 5.81e-06p 2.80e-10p
0.0
sig0.576 cc 7.57e-05p 0.028136p 0.0 0.848535p 2.509846p 0.0 2.887449p 2.715230p 2.892861p 2.892866p 2.80e-10p
0.0
rc 7.58e-05p 0.028151p 0.000510o 0.849310o 2.510707l 0.003057o 2.891008h 2.718577h 2.896423h 2.896429h 2.80e-10p
0.0
cf249t xi 0.0 0.0 0.0 0.208552i 1.122008i 0.0 0.663194i 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.016331h 0.0 2.139644i 2.088992g 0.0 0.0
zp 39.12 ri 4.84e-05p 0.012570p 0.0 0.213394p 1.148061n 0.0 0.678603i 0.006768p 0.028855p 0.000225p 1.69e-07p
1.09e-11p
sig0.645 cc 5.00e-05p 0.013051p 0.0 0.339300p 1.526643p 0.0 2.050083p 1.933521p 2.083993p 2.084213p 1.65e-07p
1.07e-11p

rc 4.84e-05p 0.012619p 0.000139p 0.222795p 1.370845n 0.001051o 2.049759h 1.933542h 2.085383g 2.085608f 1.69e-07p 1.09e-11p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.646374i 0.0 0.0 0.0 0.0 0.0
zp 38.81 ri 7.64e-05p 0.022108p 0.0 0.477421p 0.956033o 0.0 0.194882p 0.000641p 0.002733p 4.09e-06p 3.13e-10p 0.0
sig0.590 cc 7.64e-05p 0.022162p 0.0 0.493383p 1.449985p 0.0 1.643822p 1.545833p 1.647192p 1.647197p 3.13e-10p 0.0
rc 7.64e-05p 0.022185p 0.000554o 0.494259p 1.450267m 0.002002o 1.646368i 1.548227i 1.649742i 1.649746i 3.13e-10p 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.974808j 0.0 0.0 0.0 0.0 0.0
zp 38.64 ri 0.000144p 0.026395p 0.0 0.374566p 0.509518o 0.0 0.069514p 0.000147p 0.000628p 5.91e-07p 2.82e-11p 0.0
sig0.590 cc 0.000143p 0.026502p 0.0 0.393755p 0.903651p 0.0 0.972581p 0.914373p 0.973355p 0.973355p 2.81e-11p 0.0
rc 0.000144p 0.026538p 0.000769o 0.394815p 0.904313m 0.001439o 0.974778j 0.916439j 0.975553j 0.975554j 2.82e-11p 0.0

kr, rb, sr, y, zr, nb half lives from 89wal1; ru half life 90bur1.
1

mass number 98 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	36 kr g	37 rb g	38 sr g	39 y m	39 y g	40 zr d	40 zr g	41 nb m	41 nb g	42 mo g	43 tc g	44 ru g
half life	0.160s	0.107s	0.65 s	2.1 s	0.59 s	1.4 s	30.7 s	51. m	2.9 s	stable	1.5e6y	stable
lambda	4.332e+00	6.478e+00	1.066e+00	3.301e-01	1.175e+00	4.951e-01	2.258e-02	2.265e-04	2.390e-01	0.0	1.465e-14	0.0
z - 1 g	100.0000	100.0000	86.7000	0.0	100.0000	0.0	99.7720	0.0	100.0000	100.0000	0.0	100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	0.0	100.0000	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.1290	0.0	2.0200	100.0000	0.0	0.0	0.0	0.0	0.0

th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.366278n 0.0 0.0
zp 39.59 ri 1.10e-09p 1.10e-05p 0.031807p 0.120838p 0.120838p 0.0 1.069189n 0.005235p 0.015706p 0.000163p 2.68e-09p 0.0
sig0.507 cc 1.10e-09p 1.10e-05p 0.031801p 0.120779p 0.152580p 0.0 1.342344p 0.005233p 1.358042p 1.363437p 2.67e-09p 2.67e-09p

rc 1.10e-09p 1.10e-05p 0.031816p 0.120838p 0.152654p 0.003371o 1.345705m 0.005235p 1.361411m 1.366808l 2.68e-09p 2.68e-09p
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.271352j 0.0 0.0
zp 39.47 ri 8.02e-09p 1.25e-05p 0.016545p 0.023735p 0.023735p 0.0 0.204429o 0.000658p 0.001974p 3.55e-05p 8.14e-10p 0.0
sig0.538 cc 8.01e-09p 1.25e-05p 0.016547p 0.023722p 0.040269p 0.0 0.268365p 0.000658p 0.270338p 0.271032p 8.14e-10p 8.14e-10p
rc 8.02e-09p 1.25e-05p 0.016556p 0.023735p 0.040291p 0.000320o 0.268684m 0.000658p 0.270658l 0.271352j 8.14e-10p 8.14e-10p
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.175707n 0.0 0.0
zp 39.50 ri 8.55e-08p 0.000457p 0.110150p 0.736501p 0.736510p 0.0 1.474126n 0.024351p 0.086336p 0.000461p 8.66e-08p 0.0
sig0.552 cc 8.55e-08p 0.000457p 0.110506p 0.736241p 0.846747p 0.0 3.055793p 0.024342p 3.142097p 3.166900p 8.66e-08p 8.66e-08p
rc 8.55e-08p 0.000457p 0.110546p 0.736519o 0.847056o 0.012026o 3.067796m 0.024351p 3.154132m 3.178944l 8.66e-08p 8.66e-08p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.868771n 0.0 0.0
zp 39.61 ri 7.39e-08p 0.000455p 0.135157p 1.161053n 1.161066n 0.0 3.067754n 0.081980p 0.245925p 0.002155p 7.03e-07p 1.03e-11p
sig0.559 cc 7.38e-08p 0.000455p 0.135472p 1.160385p 1.295857p 0.0 5.522649p 0.081932p 5.768445p 5.852531p 7.03e-07p 7.03e-07p
rc 7.39e-08p 0.000455p 0.135551p 1.161080m 1.296618m 0.023412o 5.545908l 0.081980p 5.791834l 5.875969l 7.03e-07p 7.03e-07p
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.936974n 0.0 0.0
zp 39.83 ri 7.68e-07p 0.000761p 0.083746p 0.564882p 0.564893p 0.0 2.115578n 0.086761p 0.491587p 0.021054p 9.03e-05p 4.21e-08p
sig0.656 cc 7.68e-07p 0.000761p 0.084365p 0.564619p 0.648984p 0.0 3.328514p 0.086719p 3.819920p 3.927682p 9.03e-05p 9.03e-05p
rc 7.68e-07p 0.000761p 0.084406p 0.564905o 0.649300o 0.011743o 3.340046m 0.086761p 3.831633m 3.939447l 9.03e-05p 9.03e-05p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.598605n 0.0 0.0

zp 39.39 ri 7.11e-07p 0.001873p 0.261637p 1.190814n 1.190853n 0.0 1.823162n 0.028232p 0.084695p 0.000430p 8.43e-08p 0.0
sig0.565 cc 7.10e-07p 0.001873p 0.263098p 1.190112p 1.453211p 0.0 4.464848p 0.028214p 4.549490p 4.578134p 8.43e-08p 8.43e-08p
rc 7.11e-07p 0.001874p 0.263262p 1.190891m 1.454114m 0.032985o 4.497838l 0.028232p 4.582533l 4.611194l 8.43e-08p 8.43e-08p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.670333n 0.0 0.0
zp 39.26 ri 3.39e-06p 0.003833p 0.376373p 0.960958p 0.961015p 0.0 1.298554n 0.013027p 0.039080p 0.000199p 3.03e-08p 0.0
sig0.576 cc 3.39e-06p 0.003835p 0.379509p 0.960532p 1.340041p 0.0 3.597197p 0.013020p 3.636257p 3.649476p 3.02e-08p 3.02e-08p
rc 3.39e-06p 0.003837p 0.379700p 0.961072o 1.340714o 0.030386o 3.627669m 0.013027p 3.666749m 3.679975l 3.03e-08p 3.03e-08p
cf249t xi 0.0 0.0 0.090406k 0.0 0.0 0.0 1.193823j 0.0 0.310326k 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.317533i 0.0 0.0
zp 39.51 ri 2.37e-06p 0.001040p 0.088376p 0.356236p 0.371766p 0.0 1.170806n 0.029204p 0.285636p 0.002588p 3.31e-06p 7.68e-10p
sig0.645 cc 4.15e-06p 0.001825p 0.156309p 0.427797p 0.584106p 0.0 2.182616p 0.029708p 2.271741p 2.304081p 3.37e-06p 3.37e-06p
rc 2.37e-06p 0.001043p 0.089280p 0.356278p 0.461046p 0.013913o 2.000992l 0.029204p 2.286628k 2.318420i 3.31e-06p 3.31e-06p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.194582n 0.0 0.0
zp 39.21 ri 4.88e-06p 0.004158p 0.247788p 0.626689p 0.626748p 0.0 0.641595p 0.007670p 0.023010p 0.000110p 2.55e-08p 0.0
sig0.590 cc 4.87e-06p 0.004160p 0.251240p 0.626356p 0.877597p 0.0 2.144448p 0.007665p 2.167444p 2.175219p 2.55e-08p 2.55e-08p
rc 4.88e-06p 0.004163p 0.251397p 0.626808o 0.878145o 0.027780o 2.172327n 0.007670p 2.195337n 2.203117m 2.55e-08p 2.55e-08p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.339234n 0.0 0.0
zp 39.05 ri 1.04e-05p 0.005773p 0.228409p 0.397799p 0.397875p 0.0 0.282193p 0.002261p 0.006784p 2.10e-05p 3.14e-09p 0.0
sig0.590 cc 1.04e-05p 0.005780p 0.233276p 0.397623p 0.630899p 0.0 1.309858p 0.002260p 1.316638p 1.318919p 3.14e-09p 3.14e-09p

rc 1.04e-05p 0.005783p 0.233424p 0.397954p 0.631299p 0.024783o 1.334789o 0.002261p 1.341574n 1.343856m 3.14e-09p 3.14e-09p

kr half life from 80eng2; rb, sr, y, zr, nb half lives from 89wal1.

1

mass number 99 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 38 sr g 39 y g 40 zr d 40 zr g 41 nb m 41 nb g 42 mo g 43 tc m 43 tc g 44 ru g 45 rh g 46 pd g

half life 0.269s 1.47 s 0.80 s 2.2 s 2.6 m 15.0 s 2.748d 6.01 h 2.1e5y stable 15.0 d 21.4m

lambda 2.577e+00 4.715e-01 8.664e-01 3.151e-01 4.443e-03 4.621e-02 2.919e-06 3.204e-05 1.047e-13 0.0 5.348e-07 5.398e-04

z - 1 g 100.0000 99.8710 0.0 97.9800 30.0000 70.0000 100.0000 88.0000 12.0000 100.0000 -100.0000 -100.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0 0.0 0.0

z - 0 m 0.0 0.0 0.8420 100.0000 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0

th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 1.432841k 0.0 1.432841n 0.0 0.0 0.0

zp 39.79 ri 0.000185p 0.166713p 0.0 1.252029m 0.015688p 0.001364p 7.97e-07p 0.0 0.0 0.0 0.0 0.0

sig0.350 cc 0.000185p 0.166886p 0.0 1.415558p 0.440355p 0.992255p 1.432610p 1.260697p 1.432610p 1.432610p 0.0 0.0

rc 0.000185p 0.166898p 0.000245o 1.415801l 0.440429l 0.992425l 1.432854j 1.260912j 1.432854j 1.432854j 0.0 0.0

th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.152208h 0.0 0.149516l 0.0 0.0 0.0

zp 39.74 ri 3.79e-05p 0.015801p 0.0 0.135634p 0.000837p 7.28e-05p 4.17e-08p 0.0 0.0 0.0 0.0 0.0

sig0.350 cc 3.79e-05p 0.015830p 0.0 0.151154p 0.046183p 0.105880p 0.152063p 0.133816p 0.152063p 0.152063p 0.0 0.0

rc 3.79e-05p 0.015839p 8.26e-06o 0.151161n 0.046186o 0.105886n 0.152071h 0.133823h 0.152071h 0.152071h 0.0 0.0

pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 2.534031h 0.0 0.0 0.0 0.0 0.0

zp 39.90 ri 0.014162p 0.581195p 0.0 1.596533n 0.320350p 0.027858p 0.004769p 5.34e-07p 2.61e-06p 8.78e-11p 0.0 0.0

sig0.552 cc 0.014161p 0.595270p 0.0 2.179877p 0.974288p 1.553768p 2.532825p 2.228886p 2.532828p 2.532828p 0.0 0.0

rc 0.014162p 0.595339o 0.001224o 2.181070m 0.974671n 1.554606m 2.534047h 2.229962h 2.534050h 2.534050h 0.0 0.0

```
  am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  6.628033g      0.0  5.976190n      0.0       0.0       0.0
 zp 40.02 ri 0.021255p 1.137806n       0.0  4.177415n 1.178958n 0.102521p 0.027349p 5.61e-06p 2.39e-05p 1.56e-09p       0.0
0.0
 sig0.559 cc 0.021253p 1.158911p       0.0  5.313140p 2.772809p 3.821709p 6.621864p 5.827246p 6.621895p 6.621895p       0.0
0.0
          rc 0.021255p 1.159033m 0.002497o 5.315533m 2.773618l 3.823394l 6.624360g 5.829443g 6.624390g 6.624390g       0.0
0.0
  am241h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  4.335712i      0.0  4.335712n      0.0       0.0       0.0
 zp 40.23 ri 0.018291p 0.563045p       0.0  2.292925n 1.250343n 0.108728p 0.112538p 0.000126p 0.001023p 1.31e-06p 1.58e-10p
0.0
 sig0.656 cc 0.018289p 0.581247p       0.0  2.862608p 2.109020p 2.112542p 4.334104p 3.814138p 4.335254p 4.335255p 1.58e-10p
0.0
          rc 0.018291p 0.581313o 0.001647o 2.864142m 2.109585l 2.113627m 4.335750i 3.815587i 4.336900i 4.336901i 1.58e-10p
0.0
  a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  5.348889j      0.0       0.0       0.0       0.0       0.0
 zp 39.79 ri 0.059953p 1.573040n       0.0  3.182490n 0.510821p 0.044423p 0.006639p 8.21e-07p 3.50e-06p 1.37e-10p       0.0
0.0
 sig0.565 cc 0.059938p 1.632522p       0.0  4.782522p 1.945495p 3.392177p 5.344310p 4.702994p 5.344314p 5.344314p       0.0
0.0
          rc 0.059953p 1.632915m 0.005117o 4.787537m 1.947082m 3.395699l 5.349419j 4.707490j 5.349424i 5.349424i       0.0
0.0
  cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0  2.346545j 4.092749g 4.101440i      0.0       0.0       0.0       0.0
 zp 39.68 ri 0.088816p 1.415559n       0.0  2.387725n 0.275225p 0.023952p 0.003382p 3.57e-07p 1.52e-06p 6.92e-11p       0.0
0.0
 sig0.576 cc 0.089053p 1.508284p       0.0  3.860485p 1.434331p 2.726356p 4.164078p 3.664389p 4.164080p 4.164080p       0.0
0.0
          rc 0.088816p 1.504261m 0.005424o 3.867024l 1.435332m 2.730869j 4.169583g 3.669234g 4.169585f 4.169585f       0.0
0.0
  cf249t  xi 0.030806m 0.632918j      0.0  1.447871j      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  2.904328i 2.359445k 3.369207n 2.758378g      0.0       0.0
 zp 39.91 ri 0.031960p 0.656632p       0.0  1.558022n 0.502704p 0.043080p 0.019785p 1.85e-05p 7.90e-05p 3.58e-08p 1.59e-12p
0.0
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 sig0.645 cc 0.039749p 0.766532p       0.0  2.278022p 1.143661p 1.634637p 2.796661p 2.461078p 2.796745p 2.796745p 1.53e-12p
0.0
          rc 0.031960p 0.688551p 0.002384o 2.235049m 1.173218o 1.607614m 2.800617i 2.464562h 2.800715h 2.800715g 1.60e-12p
0.0
  cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  3.288032i      0.0       0.0       0.0       0.0       0.0
 zp 39.63 ri 0.092619p 1.282768n       0.0  1.706543n 0.208683p 0.018148p 0.002463p 3.47e-07p 1.48e-06p 8.45e-11p       0.0
0.0
 sig0.590 cc 0.092592p 1.374866p       0.0  3.054083p 1.124870p 2.156001p 3.283333p 2.889333p 3.283335p 3.283335p       0.0
0.0
          rc 0.092619p 1.375268m 0.004937o 3.058967l 1.126373m 2.159426l 3.288261i 2.893670i 3.288263h 3.288263h       0.0
0.0
  es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  2.297239j      0.0       0.0       0.0       0.0       0.0
 zp 39.46 ri 0.120632p 1.106398n       0.0  1.001294n 0.081388p 0.007077p 0.000615p 5.43e-08p 2.32e-07p 8.23e-12p       0.0
0.0
 sig0.590 cc 0.120589p 1.226437p       0.0  2.203426p 0.742386p 1.549473p 2.292474p 2.017377p 2.292474p 2.292474p       0.0
0.0
          rc 0.120632p 1.226874m 0.005240o 2.208625l 0.743975m 1.553114l 2.297704i 2.021980i 2.297705i 2.297705i       0.0       0.0

    nb decay from 71har1;  sr, y, zr, nb, mo, tc half lives 89wal1.
1

     mass number    100                    LA-UR-94-3106 (ENDF-349)                    percent yields
 nuclide       36 kr g   37 rb g   38 sr g   39 y  g   40 zr g   41 nb m   41 nb g   42 mo g   43 tc g   44 ru g
 half life              0.053s    0.201s    0.73 s     7.1 s     3.0 s     1.5 s    stable     16. s    stable
 lambda            0.0 1.308e+01 3.448e+00 9.495e-01 9.763e-02 2.310e-01 4.621e-01       0.0 4.332e-02       0.0
  z - 1 g    100.0000  100.0000  100.0000  100.0000   99.1580   50.0000   50.0000  100.0000       0.0  100.0000
  z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
  z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
  th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.936641n      0.0       0.0
 zp 39.96 ri       0.0       0.0  1.60e-05p 0.029030p 0.889267o 0.009283p 0.009283p 5.49e-06p       0.0       0.0
 sig0.350 cc       0.0       0.0  1.60e-05p 0.029046p 0.918069p 0.468318p 0.468318p 0.936641p       0.0       0.0
          rc      0.0       0.0  1.60e-05p 0.029046p 0.918069n 0.468318n 0.468318n 0.936641m       0.0       0.0
  th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.036026l      0.0       0.0
zp 39.93 ri      0.0       0.0  9.45e-07p 0.000980p 0.034613p 0.000220p 0.000220p 1.39e-07p      0.0       0.0
sig0.350 cc      0.0       0.0  9.45e-07p 0.000981p 0.035585p 0.018013p 0.018013p 0.036026p      0.0       0.0
        rc      0.0       0.0  9.45e-07p 0.000981p 0.035585p 0.018013p 0.018013p 0.036026l      0.0       0.0
 pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.978528n      0.0       0.0
zp 40.30 ri 5.62e-12p 3.83e-07p 0.001091p 0.144242p 1.123882n 0.340582p 0.340582p 0.029372p 6.66e-05p 6.64e-09p
sig0.552 cc 5.62e-12p 3.83e-07p 0.001091p 0.145333p 1.267991p 0.974578p 0.974578p 1.978528p 6.66e-05p 6.66e-05p
        rc 5.62e-12p 3.83e-07p 0.001091p 0.145333p 1.267991m 0.974578o 0.974578o 1.978528m 6.66e-05p 6.66e-05p
 am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.254020n      0.0       0.0
zp 40.43 ri 6.05e-12p 4.77e-07p 0.001689p 0.294898p 3.128107n 1.328120n 1.328120n 0.175584p 0.000680p 1.28e-07p
sig0.559 cc 6.05e-12p 4.77e-07p 0.001689p 0.296587p 3.422196p 3.039218p 3.039218p 6.254020p 0.000680p 0.000680p
        rc 6.05e-12p 4.77e-07p 0.001689p 0.296587p 3.422196m 3.039218l 3.039218l 6.254020k 0.000680p 0.000680p
 am241h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.557048n      0.0       0.0
zp 40.63 ri 7.11e-10p 4.24e-06p 0.002692p 0.192939p 1.737119n 1.108536n 1.108536n 0.408868p 0.009790p 2.71e-05p
sig0.656 cc 7.11e-10p 4.24e-06p 0.002696p 0.195636p 1.931107p 2.074090p 2.074090p 4.557048p 0.009790p 0.009817p
        rc 7.11e-10p 4.24e-06p 0.002696p 0.195636p 1.931107m 2.074090l 2.074090l 4.557048l 0.009790p 0.009817p
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.479189n      0.0       0.0
zp 40.19 ri 1.76e-10p 5.23e-06p 0.007578p 0.600175p 3.276597n 0.772055p 0.772055p 0.055842p 0.000119p 1.27e-08p
sig0.565 cc 1.76e-10p 5.23e-06p 0.007583p 0.607758p 3.879238p 2.711674p 2.711674p 5.479189p 0.000119p 0.000119p
        rc 1.76e-10p 5.23e-06p 0.007583p 0.607758o 3.879238m 2.711674m 2.711674m 5.479189l 0.000119p 0.000119p
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.938080n      0.0       0.0
zp 40.11 ri 9.83e-10p 1.31e-05p 0.013818p 0.630358p 3.201016n 0.528615p 0.528615p 0.041068p 7.17e-05p 1.01e-08p
sig0.576 cc 9.83e-10p 1.31e-05p 0.013831p 0.644189p 3.839780p 2.448506p 2.448506p 4.938080p 7.17e-05p 7.17e-05p
        rc 9.83e-10p 1.31e-05p 0.013831p 0.644189o 3.839780m 2.448506m 2.448506m 4.938080l 7.17e-05p 7.17e-05p
 cf249t  xi      0.0       0.0       0.0       0.0  1.924852j      0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.232554i      0.0       0.0
zp 40.32 ri 6.01e-09p 1.72e-05p 0.008943p 0.274107p 1.882429n 0.476333p 0.476333p 0.119693p 0.000952p 1.44e-06p
sig0.645 cc 5.98e-09p 1.71e-05p 0.008911p 0.281512p 2.151232p 1.557367p 1.557367p 3.235477p 0.000961p 0.000962p
        rc 6.01e-09p 1.72e-05p 0.008960p 0.283067p 2.163113n 1.557890o 1.557890o 3.235472i 0.000952p 0.000954p
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.386567n      0.0       0.0
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zp 40.06 ri 2.80e-09p 2.49e-05p 0.014106p 0.572191p 2.039236n 0.370822p 0.370822p 0.024303p 5.80e-05p 8.91e-09p
sig0.590 cc 2.80e-09p 2.49e-05p 0.014131p 0.586322p 2.620621p 1.681132p 1.681132p 3.386567p 5.80e-05p 5.80e-05p
        rc 2.80e-09p 2.49e-05p 0.014131p 0.586322o 2.620621m 1.681132n 1.681132n 3.386567l 5.80e-05p 5.80e-05p
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.423271n      0.0       0.0
zp 39.89 ri 1.14e-08p 6.33e-05p 0.022707p 0.599505p 1.444227n 0.177232p 0.177232p 0.007544p 1.14e-05p 1.09e-09p
sig0.590 cc 1.14e-08p 6.33e-05p 0.022770p 0.622275p 2.061262p 1.207864p 1.207864p 2.423271p 1.14e-05p 1.14e-05p
        rc 1.14e-08p 6.33e-05p 0.022770p 0.622275o 2.061262m 1.207864m 1.207864m 2.423271l 1.14e-05p 1.14e-05p

  rb, sr, y, zr, nb half lives from 89wal1.
1

    mass number    101                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       38 sr g   39 y  g   40 zr g   41 nb g   42 mo g   43 tc g   44 ru g   45 rh m   45 rh g   46 pd g
half life     0.115s    0.43 s     2.1 s     7.1 s    14.6 m    14.2 m    stable    4.47 d     3.  y     8.3 h
lambda      6.027e+00 1.612e+00 3.301e-01 9.763e-02 7.913e-04 8.136e-04       0.0 1.795e-06 7.327e-09 2.320e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  -90.0000 -100.0000       0.0
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0 -100.0000
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   10.0000       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.749312n      0.0       0.0       0.0
zp 40.14 ri 1.15e-06p 0.014109p 0.672619o 0.062543p 4.07e-05p 3.01e-12p      0.0       0.0       0.0       0.0
sig0.350 cc 1.15e-06p 0.014110p 0.686729p 0.749272p 0.749312p 0.749312p 0.749312p      0.0       0.0       0.0
        rc 1.15e-06p 0.014110p 0.686729o 0.749272n 0.749312n 0.749312n 0.749312m      0.0       0.0       0.0
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.013081l      0.0       0.0       0.0
zp 40.13 ri 2.48e-08p 0.000187p 0.012173p 0.000721p 6.29e-07p      0.0       0.0       0.0       0.0       0.0
sig0.350 cc 2.48e-08p 0.000187p 0.012360p 0.013081p 0.013081p 0.013081p 0.013081p      0.0       0.0       0.0
        rc 2.48e-08p 0.000187p 0.012360p 0.013081p 0.013081o 0.013081n 0.013081l      0.0       0.0       0.0
 pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.384969n      0.0       0.0       0.0
zp 40.66 ri 4.48e-10p 0.000626p 0.446744p 0.926256p 0.011344p 9.98e-08p      0.0       0.0       0.0       0.0
sig0.350 cc 4.48e-10p 0.000626p 0.447370p 1.373625p 1.384969p 1.384969p 1.384969p      0.0       0.0       0.0
        rc 4.48e-10p 0.000626p 0.447370p 1.373625n 1.384969n 1.384969n 1.384969m      0.0       0.0       0.0
 am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.998302n      0.0       0.0       0.0
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zp 40.83 ri 8.90e-05p 0.050937p 1.600214n 3.648179n 0.690297p 0.008580p 5.48e-06p 1.30e-10p 3.04e-11p       0.0
sig0.559 cc 8.90e-05p 0.051026p 1.651240p 5.299420p 5.989717p 5.998297p 5.998302p 1.30e-10p 4.34e-11p       0.0
        rc 8.90e-05p 0.051026p 1.651240m 5.299420m 5.989717l 5.998297l 5.998302l 1.30e-10p 4.34e-11p       0.0
 am241h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  4.783424n      0.0       0.0       0.0
zp 41.03 ri 0.000278p 0.047252p 0.960364p 2.648932n 1.067443n 0.058765p 0.000390p 2.53e-07p 3.13e-08p 2.18e-11p
sig0.656 cc 0.000278p 0.047531p 1.007894p 3.656826p 4.724269p 4.783034p 4.783424p 2.53e-07p 5.66e-08p 2.18e-11p
        rc 0.000278p 0.047531p 1.007894o 3.656826m 4.724269l 4.783034l 4.783424l 2.53e-07p 5.66e-08p 2.18e-11p
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.870560n      0.0       0.0       0.0
zp 40.58 ri 0.000676p 0.163075p 2.439601n 2.963511n 0.301711p 0.001986p 6.90e-07p 9.34e-12p 2.19e-12p       0.0
sig0.565 cc 0.000676p 0.163751p 2.603351p 5.566862p 5.868573p 5.870559p 5.870560p 9.34e-12p 3.12e-12p       0.0
        rc 0.000676p 0.163751p 2.603351m 5.566862l 5.868573l 5.870559l 5.870560l 9.35e-12p 3.13e-12p       0.0
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  5.763774k      0.0  5.713214n      0.0       0.0       0.0
zp 40.52 ri 0.001388p 0.210219p 2.720026n 2.563743n 0.264695p 0.001569p 6.70e-07p 1.02e-11p 2.40e-12p       0.0
sig0.576 cc 0.001388p 0.211579p 2.931246p 5.495523p 5.760064p 5.761640p 5.761641p 1.03e-11p 3.44e-12p       0.0
        rc 0.001388p 0.211607p 2.931633m 5.495377l 5.760071j 5.761640j 5.761641j 1.03e-11p 3.43e-12p       0.0
 cf249t  xi      0.0       0.0  1.105670j 2.355077j      0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  4.148046l      0.0  3.641430i      0.0       0.0       0.0
zp 40.72 ri 0.000872p 0.092507p 1.006677n 2.144222n 0.431446p 0.010285p 2.71e-05p 6.51e-09p 1.53e-09p       0.0
sig0.645 cc 0.001047p 0.112091p 1.320484p 3.285764p 3.675303p 3.686009p 3.686038p 6.78e-09p 2.27e-09p       0.0
        rc 0.000872p 0.093380p 1.100057o 3.244279n 3.675725l 3.686011k 3.686038i 6.51e-09p 2.18e-09p       0.0
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.870362n      0.0       0.0       0.0
zp 40.49 ri 0.001468p 0.181495p 1.788550n 1.733154n 0.164458p 0.001236p 6.24e-07p 1.58e-11p 3.71e-12p       0.0
sig0.590 cc 0.001468p 0.182963p 1.971513p 3.704667p 3.869125p 3.870362p 3.870362p 1.58e-11p 5.29e-12p       0.0
        rc 0.001468p 0.182963p 1.971513m 3.704667l 3.869125l 3.870362l 3.870362l 1.58e-11p 5.29e-12p       0.0
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.487148n      0.0       0.0       0.0
zp 40.32 ri 0.002577p 0.204291p 1.340762n 0.883845p 0.055408p 0.000266p 8.40e-08p 1.32e-12p       0.0       0.0
sig0.590 cc 0.002577p 0.206868p 1.547630p 2.431475p 2.486882p 2.487148p 2.487148p 1.32e-12p       0.0       0.0
        rc 0.002577p 0.206868p 1.547630m 2.431475n 2.486882m 2.487148m 2.487148m 1.32e-12p       0.0       0.0

  sr, y, zr, nb, mo, tc half lives from 89wal1.
1
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mass number 102 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 38 sr g 39 y g 40 zr g 41 nb g 42 mo d 42 mo g 43 tc m 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g
half life 0.068s 0.36 s 2.9 s 1.3 s 1.5 s 11.3 m 4.4 m 5.3 s stable 3. y 207. d stable
lambda 1.019e+01 1.925e+00 2.390e-01 5.332e-01 4.621e-01 1.022e-03 2.626e-03 1.308e-01 0.0 7.327e-09 3.876e-08
0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 100.0000 100.0000 0.0 100.0000 -100.0000 -84.0000 16.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 95.0000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0140 100.0000 0.0 5.0000 0.0 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.581703n 0.0 0.0 0.0
zp 40.31 ri 8.61e-08p 0.002235p 0.516504o 0.062664p 0.0 0.000243p 1.98e-11p 1.98e-11p 0.0 0.0 0.0 0.0
sig0.350 cc 8.61e-08p 0.002235p 0.518739p 0.581403p 0.0 0.581645p 0.581645p 0.029082p 0.581645p 0.0 0.0 0.0
rc 8.61e-08p 0.002235p 0.518738o 0.581403n 7.96e-05o 0.581725n 0.581725n 0.029086n 0.581725m 0.0 0.0 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.006552l 0.0 0.0 0.0
zp 40.32 ri 9.02e-10p 1.81e-05p 0.005982p 0.000548p 0.0 3.06e-06p 0.0 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 9.02e-10p 1.81e-05p 0.006000p 0.006549p 0.0 0.006552p 0.006552p 0.000328p 0.006552p 0.0 0.0 0.0
rc 9.02e-10p 1.81e-05p 0.006000p 0.006549p 8.36e-07o 0.006552o 0.006552n 0.000328n 0.006552l 0.0 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.643022n 0.0 0.0 0.0
zp 40.87 ri 3.89e-12p 2.85e-05p 0.092962p 0.526882o 0.0 0.023113p 5.10e-07p 5.10e-07p 0.0 0.0 0.0 0.0
sig0.350 cc 3.89e-12p 2.85e-05p 0.092989p 0.619873p 0.0 0.642985p 0.642986p 0.032150p 0.642986p 0.0 0.0 0.0
rc 3.89e-12p 2.85e-05p 0.092990p 0.619872n 4.56e-05o 0.643031n 0.643031n 0.032152n 0.643032m 0.0 0.0 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.177654n 0.0 0.0 0.0
zp 41.23 ri 3.09e-06p 0.005930p 0.578709p 3.636120n 0.0 1.884347n 0.036112p 0.036112p 0.000154p 7.81e-09p 7.81e-09p
0.0
sig0.559 cc 3.09e-06p 0.005933p 0.584640p 4.220745p 0.0 6.105109p 6.141222p 0.343173p 6.177488p 7.81e-09p 7.81e-09p
1.25e-09p
rc 3.09e-06p 0.005933p 0.584642o 4.220762m 0.000359n 6.105468l 6.141580l 0.343191m 6.177847l 7.81e-09p 7.81e-09p
1.25e-09p
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.891691n 0.0 0.0 0.0
zp 41.42 ri 2.12e-05p 0.008447p 0.387565p 2.295253n 0.0 1.958740n 0.118947p 0.118947p 0.003650p 3.17e-06p 3.17e-06p
1.18e-09p

sig0.656 cc 2.12e-05p 0.008468p 0.396031p 2.691271p 0.0 4.650027p 4.768973p 0.357395p 4.891576p 3.17e-06p 3.17e-06p 5.09e-07p
rc 2.12e-05p 0.008468p 0.396033p 2.691286m 0.000222n 4.650248l 4.769195l 0.357406n 4.891798l 3.17e-06p 3.17e-06p 5.09e-07p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.653302n 0.0 0.0 0.0
zp 40.98 ri 3.75e-05p 0.029136p 1.285148n 4.149427n 0.0 1.165586n 0.011850p 0.011850p 2.71e-05p 7.68e-10p 7.68e-10p 0.0
sig0.565 cc 3.75e-05p 0.029174p 1.314319p 5.463738p 0.0 6.629335p 6.641185p 0.343910p 6.653063p 7.68e-10p 7.68e-10p 1.23e-10p
rc 3.75e-05p 0.029174p 1.314321m 5.463749m 0.000571n 6.629906l 6.641756l 0.343938l 6.653634l 7.68e-10p 7.68e-10p 1.23e-10p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.891772m 0.0 0.0 6.257468n 0.0 0.0 0.0
zp 40.94 ri 7.65e-05p 0.034684p 1.442894n 3.391095n 0.0 1.068577n 0.009483p 0.009483p 2.93e-05p 8.76e-10p 8.76e-10p 0.0
sig0.576 cc 7.65e-05p 0.034764p 1.477783p 4.869174p 0.0 5.937868p 5.947081p 0.306567p 5.956322p 8.51e-10p 8.51e-10p 1.36e-10p
rc 7.65e-05p 0.034761p 1.477655m 4.868750m 0.000523n 5.937850l 5.947333l 0.306850l 5.956845k 8.76e-10p 8.76e-10p 1.40e-10p
cf249t xi 0.0 0.0 0.526712j 2.081566k 0.0 1.449512j 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.214875i 0.0 0.0 0.0
zp 41.12 ri 8.13e-05p 0.014702p 0.535657p 2.116915o 0.0 1.486985n 0.029524p 0.029524p 0.000551p 1.44e-07p 1.44e-07p 2.67e-11p
sig0.645 cc 0.000123p 0.022379p 0.833295p 2.865968p 0.0 4.155346p 4.184371p 0.238244p 4.213938p 1.41e-07p 1.41e-07p 2.27e-08p
rc 8.13e-05p 0.014783p 0.550439p 2.667354n 0.000309o 4.154649l 4.184173k 0.238733l 4.214248i 1.44e-07p 1.44e-07p 2.30e-08p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.257398n 0.0 0.0 0.0
zp 40.91 ri 9.61e-05p 0.036361p 1.008933n 2.543493n 0.0 0.653711p 0.007317p 0.007317p 2.33e-05p 1.18e-09p 1.18e-09p 0.0
sig0.590 cc 9.61e-05p 0.036457p 1.045389p 3.588877p 0.0 4.242594p 4.249911p 0.219813p 4.257252p 1.18e-09p 1.18e-09p 1.89e-10p
rc 9.61e-05p 0.036457p 1.045390m 3.588883m 0.000379n 4.242973m 4.250291m 0.219832l 4.257632l 1.18e-09p 1.18e-09p 1.89e-10p

es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.714063n 0.0 0.0 0.0
zp 40.76 ri 0.000177p 0.044835p 0.855828p 1.531707n 0.0 0.277164p 0.002111p 0.002111p 4.47e-06p 1.49e-10p 1.49e-10p
0.0
sig0.590 cc 0.000177p 0.045012p 0.900839p 2.432544p 0.0 2.709711p 2.711822p 0.137702p 2.713937p 1.49e-10p 1.49e-10p
2.38e-11p
rc 0.000177p 0.045012p 0.900840o 2.432547m 0.000305n 2.710016m 2.712127m 0.137717m 2.714242l 1.49e-10p 1.49e-10p
2.38e-11p

rb, sr, y, zr, nb, mo, tc half lives from 89wal1.
1

mass number 103 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 39 y g 40 zr g 41 nb d 41 nb g 42 mo d 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g 47 ag g
half life 0.260s 1.3 s 2.573s 1.5 s 4.8 s 1.13 m 54. s 39.27d 56.12m stable 16.99d 1.10 h
lambda 2.666e+00 5.332e-01 2.694e-01 4.621e-01 1.444e-01 1.022e-02 1.284e-02 2.043e-07 2.059e-04 0.0 4.722e-07
1.750e-04
z - 1 g 100.0000 100.0000 0.0 100.0000 0.0 99.9860 100.0000 100.0000 99.0000 1.0000 -0.1000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -99.9000 0.0
z - 0 m 0.0 0.0 0.1820 100.0000 0.0410 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.574233l 0.0 0.554432n 0.0 0.0
zp 40.49 ri 0.000891p 0.384075p 0.0 0.183528p 0.0 0.001436p 1.67e-09p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.000891p 0.384894p 0.0 0.568495p 0.0 0.569851p 0.569851p 0.569851p 0.564152p 0.569851p 0.0 0.0
rc 0.000891p 0.384967p 0.000237o 0.568732o 0.000100o 0.570188o 0.570188n 0.570188l 0.564486l 0.570188l 0.0
0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.006025k 0.0 0.005919l 0.0 0.0
zp 40.51 ri 6.19e-06p 0.004410p 0.0 0.001548p 0.0 2.00e-05p 1.80e-11p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 6.19e-06p 0.004417p 0.0 0.005964p 0.0 0.005983p 0.005983p 0.005983p 0.005924p 0.005983p 0.0 0.0
rc 6.19e-06p 0.004417p 1.04e-05o 0.005975o 3.38e-06o 0.005997n 0.005997m 0.005997k 0.005937k 0.005997j 0.0
0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.370689i 0.0 0.0 0.0 0.0
zp 41.09 ri 1.00e-06p 0.016912p 0.0 0.308952p 0.0 0.044798p 1.03e-05p 1.04e-12p 0.0 0.0 0.0 0.0
sig0.350 cc 1.00e-06p 0.016910p 0.0 0.325873p 0.0 0.370617p 0.370628p 0.370628p 0.366922p 0.370628p 0.0 0.0

rc 1.00e-06p 0.016913p 3.93e-06o 0.325869o 5.74e-05o 0.370679m 0.370689k 0.370689i 0.366982i 0.370689i 0.0 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.187006h 0.0 6.434245k 0.0 0.0
zp 41.62 ri 0.000449p 0.137420p 0.0 2.425869n 0.0 3.299123n 0.364028p 0.002440p 7.28e-07p 1.09e-07p 1.27e-11p
0.0
sig0.559 cc 0.000450p 0.138185p 0.0 2.569616p 0.0 5.865211p 6.226524p 6.228969p 6.166680p 6.228970p 1.25e-11p
0.0
rc 0.000449p 0.137870p 3.82e-05o 2.563777m 0.000456n 5.862997l 6.227024j 6.229464h 6.167170h 6.229465h 1.27e-11p
0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.041756i 0.0 4.992035n 0.0 0.0
zp 41.82 ri 0.001033p 0.111342p 0.0 1.471805n 0.0 2.705784n 0.724524p 0.025840p 9.93e-05p 8.63e-06p 4.92e-08p
2.34e-12p
sig0.656 cc 0.001033p 0.112367p 0.0 1.584070p 0.0 4.289484p 5.014267p 5.040106p 4.989804p 5.040214p 4.95e-08p
2.35e-12p
rc 0.001033p 0.112375p 3.97e-05o 1.584220m 0.000272o 4.290053l 5.014577k 5.040417i 4.990113i 5.040525i 4.92e-08p
2.34e-12p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.072875k 0.0 0.0 0.0 0.0
zp 41.39 ri 0.002890p 0.403638p 0.0 3.674309n 0.0 2.816840n 0.174212p 0.000663p 1.13e-07p 1.69e-08p 1.21e-12p
0.0
sig0.565 cc 0.002890p 0.406516p 0.0 4.080759p 0.0 6.897106p 7.071318p 7.071981p 7.001261p 7.071981p 1.21e-12p
0.0
rc 0.002890p 0.406528p 0.000135o 4.080971m 0.000846n 6.898087l 7.072299k 7.072962j 7.002233j 7.072962j 1.22e-12p
0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 7.039159n 6.317670h 0.0 0.0 0.0 0.0
zp 41.36 ri 0.003877p 0.461551p 0.0 3.271691n 0.0 2.444692n 0.145363p 0.000615p 1.18e-07p 1.76e-08p 1.95e-12p
0.0
sig0.576 cc 0.003793p 0.455245p 0.0 3.655401p 0.0 6.184432p 6.326614p 6.327277p 6.264005p 6.327278p 2.10e-12p
0.0
rc 0.003877p 0.465429o 0.000182o 3.737302m 0.000802n 6.182272l 6.327635j 6.328250h 6.264968h 6.328250h 1.96e-12p
0.0
cf249t xi 0.0 0.0 0.0 1.970825j 0.0 2.448750j 0.369530j 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.083240h 0.0 4.835605g 0.0 0.0

zp 41.52 ri 0.005022p 0.303606p 0.0 1.898548n 0.0 2.358946n 0.355978p 0.004987p 7.94e-06p 1.19e-06p 1.51e-09p
0.0
sig0.645 cc 0.004477p 0.275156p 0.0 2.470129p 0.0 4.604369p 4.921739p 4.926740p 4.877481p 4.926750p 1.55e-09p
0.0
rc 0.005022p 0.308628p 8.46e-05p 2.207261n 0.000402p 4.566299n 4.922277n 4.927264h 4.877999g 4.927273f 1.51e-09p
0.0
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.354158n 0.0 0.0
zp 41.32 ri 0.004516p 0.357877p 0.0 2.347529n 0.0 1.546743n 0.096918p 0.000464p 1.28e-07p 1.91e-08p 2.85e-12p
0.0
sig0.590 cc 0.004516p 0.362384p 0.0 2.709898p 0.0 4.256288p 4.353203p 4.353668p 4.310131p 4.353668p 2.85e-12p
0.0
rc 0.004516p 0.362393p 0.000169o 2.710091m 0.000676n 4.257130l 4.354048l 4.354513l 4.310968l 4.354513l 2.85e-12p
0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.128249j 0.0 0.0 0.0 0.0
zp 41.20 ri 0.006291p 0.365570p 0.0 1.807234n 0.0 0.906363p 0.042215p 0.000147p 2.90e-08p 4.33e-09p 0.0 0.0
sig0.590 cc 0.006291p 0.371848p 0.0 2.179059p 0.0 3.085155p 3.127368p 3.127515p 3.096240p 3.127515p 0.0 0.0
rc 0.006291p 0.371861p 0.000173o 2.179268m 0.000576n 3.085902m 3.128118l 3.128264j 3.096982j 3.128265j 0.0
0.0

y half life from 80eng2; zr, nb, mo, tc, ru, rh half lives 89wal1; pd half life 90bur1.

1

mass number 104 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 38 sr g 39 y g 40 zr g 41 nb d 41 nb g 42 mo d 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g
half life 0.163s 0.128s 1.2 s 0.493s 4.8 s 2.8 s 60. s 18.2 m stable 4.35 m 42. s stable
lambda 4.252e+00 5.415e+00 5.776e-01 1.406e+00 1.444e-01 2.476e-01 1.155e-02 6.348e-04 0.0 2.656e-03 1.650e-02
0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 99.8180 0.0 99.9590 100.0000 100.0000 0.0 -0.5000 99.5000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1800
z - 0 m 0.0 0.0 0.0 1.0880 100.0000 2.2320 100.0000 0.0 0.0 0.0 99.8200 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.313636n 0.0 0.0 0.0
zp 40.89 ri 7.24e-07p 0.000529p 0.129572p 0.0 0.114312p 0.0 0.066979p 0.000127p 7.59e-08p 0.0 0.0 0.0

sig0.507 cc 7.24e-07p 0.000530p 0.130093p 0.0 0.244181p 0.0 0.311055p 0.311182p 0.311182p 0.0 0.0 0.0
rc 7.24e-07p 0.000530p 0.130101p 0.000184o 0.244360p 0.002831o 0.314070o 0.314197o 0.314197n 0.0 0.0 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.010112l 0.0 0.0 0.0
zp 40.79 ri 2.10e-07p 3.49e-05p 0.005668p 0.0 0.002536p 0.0 0.001788p 2.98e-06p 4.39e-09p 0.0 0.0 0.0
sig0.538 cc 2.10e-07p 3.51e-05p 0.005703p 0.0 0.008228p 0.0 0.010013p 0.010016p 0.010016p 0.0 0.0 0.0
rc 2.10e-07p 3.51e-05p 0.005703p 1.18e-05o 0.008240p 8.57e-05o 0.010111o 0.010114n 0.010114l 0.0 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.196963n 0.0 0.0 0.0
zp 41.30 ri 0.0 2.56e-08p 0.002158p 0.0 0.137881p 0.0 0.055564p 5.91e-05p 3.12e-11p 0.0 0.0 0.0
sig0.350 cc 0.0 2.56e-08p 0.002158p 0.0 0.140035p 0.0 0.195541p 0.195600p 0.195600p 0.0 0.0 0.0
rc 0.0 2.56e-08p 0.002158p 2.82e-06o 0.140037p 0.001570o 0.197114o 0.197173o 0.197173n 0.0 0.0 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.217509n 0.0 0.0 0.0
zp 42.01 ri 1.00e-09p 2.13e-05p 0.020976p 0.0 1.091514n 0.0 3.906069n 1.168790n 0.024251p 2.01e-05p 6.68e-06p 1.37e-09p
sig0.559 cc 1.00e-09p 2.13e-05p 0.020990p 0.0 1.112114p 0.0 5.018411p 6.186884p 6.211127p 2.00e-05p 2.67e-05p 2.66e-05p
rc 1.00e-09p 2.13e-05p 0.020997p 2.40e-05o 1.112497m 0.007928o 5.026038m 6.194828l 6.219079l 2.01e-05p 2.67e-05p 2.66e-05o
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.604208i 4.872703n 0.0 0.0 0.0
zp 42.21 ri 3.73e-08p 8.64e-05p 0.021714p 0.0 0.641083p 0.0 2.509745n 1.431405n 0.117601p 0.000978p 0.000173p 1.26e-06p
sig0.656 cc 3.73e-08p 8.64e-05p 0.021810p 0.0 0.663137p 0.0 3.174911p 4.607443p 4.721365p 0.000947p 0.001113p 0.001110p
rc 3.73e-08p 8.64e-05p 0.021801p 3.56e-05o 0.662880o 0.004982o 3.177335m 4.608741i 4.726348i 0.000978p 0.001149p 0.001146p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.946830n 0.0 0.0 0.0
zp 41.80 ri 1.78e-08p 0.000161p 0.073836p 0.0 1.990479n 0.0 4.124674n 0.738424p 0.009082p 4.57e-06p 1.52e-06p 1.99e-10p
sig0.565 cc 1.78e-08p 0.000161p 0.073958p 0.0 2.063261p 0.0 6.188505p 6.926599p 6.935676p 4.57e-06p 6.08e-06p 6.06e-06p
rc 1.78e-08p 0.000161p 0.073998p 8.79e-05o 2.064430m 0.015714o 6.203971m 6.942395l 6.951477l 4.57e-06p 6.08e-06p 6.06e-06o

cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.744626j 6.744626n 0.0 0.0 0.0
zp 41.77 ri 5.03e-08p 0.000248p 0.099919p 0.0 1.854906n 0.0 4.169142n 0.605361p 0.009473p 4.71e-06p 1.57e-06p 3.27e-10p
sig0.576 cc 5.02e-08p 0.000248p 0.100082p 0.0 1.953266p 0.0 6.123141p 6.728595p 6.738066p 4.71e-06p 6.27e-06p 6.25e-06p
rc 5.03e-08p 0.000248p 0.100167p 0.000130o 1.955022m 0.016212o 6.139573l 6.744934j 6.754407j 4.71e-06p 6.27e-06p 6.25e-06o
cf249t xi 0.0 0.0 0.045829m 0.0 0.967492j 0.0 3.381131j 0.697613j 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.968346j 5.113634i 0.0 0.0 0.0
zp 41.91 ri 2.03e-07p 0.000224p 0.046248p 0.0 0.932691p 0.0 3.362202m 0.704003j 0.038443p 9.17e-05p 3.06e-05p 7.18e-08p
sig0.645 cc 3.64e-07p 0.000402p 0.083239p 0.0 1.137452p 0.0 4.319212p 5.044925p 5.083195p 9.12e-05p 0.000121p 0.000121p
rc 2.03e-07p 0.000224p 0.046473p 0.000102o 0.979180o 0.009178o 4.350160k 5.054163j 5.092606h 9.17e-05p 0.000122p 0.000122o
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.547676n 0.0 0.0 0.0
zp 41.71 ri 1.24e-07p 0.000417p 0.092356p 0.0 1.557002n 0.0 2.482377n 0.399404p 0.005341p 3.70e-06p 1.23e-06p 2.85e-10p
sig0.590 cc 1.24e-07p 0.000417p 0.092703p 0.0 1.648414p 0.0 4.131560p 4.530716p 4.536053p 3.69e-06p 4.92e-06p 4.90e-06p
rc 1.24e-07p 0.000417p 0.092774p 0.000180o 1.649786m 0.016924o 4.148411l 4.547815m 4.553156l 3.70e-06p 4.92e-06p 4.90e-06o
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.392579n 0.0 0.0 0.0
zp 41.63 ri 1.96e-07p 0.000528p 0.094569p 0.0 1.310389n 0.0 1.742277n 0.231943p 0.002520p 1.40e-06p 4.67e-07p 8.66e-11p
sig0.590 cc 1.95e-07p 0.000528p 0.095014p 0.0 1.404136p 0.0 3.147188p 3.378959p 3.381477p 1.40e-06p 1.86e-06p 1.86e-06p
rc 1.96e-07p 0.000528p 0.095097p 0.000203o 1.405516m 0.016857o 3.164074l 3.396017l 3.398536l 1.40e-06p 1.87e-06p 1.86e-06o

sr, y half lives from 80eng2; zr, nb, mo, tc half lives 89wal1.

mass number 105 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 40 zr g 41 nb g 42 mo d 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g

half life 0.493s 3.0 s 1.0 s 36. s 7.6 m 4.44 h 40. s 35.4 h stable 7.2 m 41.0d 55.5m

lambda 1.406e+00 2.310e-01 6.931e-01 1.925e-02 1.520e-03 4.337e-05 1.733e-02 5.439e-06 0.0 1.605e-03 1.957e-07 2.082e-04

z - 1 g 100.0000 98.9120 0.0 97.7680 100.0000 100.0000 27.0000 73.0000 100.0000 -50.0000 -100.0000 -100.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

z - 0 m 0.0 0.0 0.9400 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0 50.0000 0.0

th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.278031l 0.0 0.0 0.268102n 0.0 0.0 0.0

zp 41.37 ri 0.016889p 0.110132p 0.0 0.150078p 0.002515p 5.08e-06p 8.10e-12p 5.42e-11p 0.0 0.0 0.0 0.0

sig0.507 cc 0.016866p 0.126668p 0.0 0.274092p 0.276603p 0.276608p 0.074684p 0.276608p 0.276608p 0.0 0.0 0.0

rc 0.016889p 0.126837p 0.000166o 0.274251o 0.276765n 0.276770l 0.074728l 0.276770k 0.276770k 0.0 0.0 0.0

th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.008084i 0.0 0.0 0.008183l 0.0 0.0 0.0

zp 41.26 ri 0.001081p 0.002770p 0.0 0.004275p 4.80e-05p 2.04e-07p 0.0 3.28e-12p 0.0 0.0 0.0 0.0

sig0.538 cc 0.001081p 0.003840p 0.0 0.008029p 0.008077p 0.008077p 0.002181p 0.008077p 0.008077p 0.0 0.0 0.0

rc 0.001081p 0.003840p 1.33e-05o 0.008042m 0.008090k 0.008090i 0.002184i 0.008090h 0.008090h 0.0 0.0 0.0

pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.144936m 0.0 0.147518m 0.0 0.0 0.0 0.0

zp 41.52 ri 0.000260p 0.070091p 0.0 0.076913p 0.000376p 1.12e-09p 0.0 0.0 0.0 0.0 0.0 0.0

sig0.350 cc 0.000260p 0.070348p 0.0 0.145691p 0.146067p 0.146067p 0.039438p 0.146067p 0.146067p 0.0 0.0 0.0

rc 0.000260p 0.070348p 0.000239o 0.145930p 0.146306o 0.146306m 0.039503m 0.146306k 0.146306k 0.0 0.0 0.0

am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 6.793938i 0.0 6.705725i 6.010391j 0.0 0.0 0.0

zp 42.40 ri 0.002207p 0.353028p 0.0 3.458866n 2.664057n 0.173047p 7.60e-05p 0.000508p 9.47e-08p 0.0 0.0 0.0

sig0.559 cc 0.002188p 0.352169p 0.0 3.773719p 6.478434p 6.643322p 1.793773p 6.643906p 6.643906p 0.0 0.0 0.0

rc 0.002207p 0.355211p 0.000578o 3.806727m 6.470784j 6.643831h 1.793910i 6.644415g 6.644416g 0.0 0.0 0.0

am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.733483i 4.574375n 0.0 0.0 0.0

zp 42.60 ri 0.003272p 0.219988p 0.0 1.864806n 2.247141n 0.390067p 0.000614p 0.008163p 2.23e-05p 5.72e-09p 4.97e-10p 0.0

sig0.656 cc 0.003272p 0.223194p 0.0 2.082904p 4.329766p 4.720258p 1.275084p 4.729035p 4.729058p 5.81e-09p 3.41e-09p 0.0

rc 0.003272p 0.223225p 0.000471o 2.083519m 4.330660l 4.720728l 1.275211l 4.729505i 4.729528i 5.72e-09p 3.36e-09p 0.0

```
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  6.894817k      0.0  7.320179l 6.528808n      0.0       0.0       0.0
zp 42.22 ri 0.008076p 0.696034p       0.0  4.099464n 2.083118n 0.081549p 2.54e-05p 0.000170p 2.17e-08p      0.0       0.0       0.0
sig0.565 cc 0.008080p 0.704404p       0.0  4.790737p 6.870843p 6.952436p 1.877182p 6.952625p 6.952626p      0.0       0.0       0.0
         rc 0.008076p 0.704022o 0.001315o 4.789087m 6.872205l 6.953754k 1.877539k 6.953949j 6.953949j      0.0       0.0       0.0
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  6.547731h      0.0  5.992161h      0.0       0.0       0.0       0.0
zp 42.18 ri 0.011968p 0.714495p       0.0  3.969575n 1.649211n 0.072296p 2.07e-05p 0.000139p 2.54e-08p      0.0       0.0       0.0
sig0.576 cc 0.011913p 0.722989p       0.0  4.658547p 6.329307p 6.401271p 1.728365p 6.401437p 6.401437p      0.0       0.0       0.0
         rc 0.011968p 0.726332o 0.001455o 4.681151m 6.330361j 6.402657h 1.728738h 6.402817g 6.402817g      0.0       0.0       0.0
 cf249t  xi      0.0  0.402140i      0.0  2.592174i 2.184599i 0.255413i      0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  5.514401g      0.0  5.380508i 5.360571g      0.0       0.0       0.0
zp 42.31 ri 0.009328p 0.401935p       0.0  2.590848n 2.183482n 0.255283i 0.000245p 0.001638p 1.93e-06p 1.92e-10p 2.86e-11p
0.0
sig0.645 cc 0.013443p 0.592515p       0.0  3.292531p 5.259468p 5.427510p 1.465672p 5.429388p 5.429390p 1.92e-10p 1.25e-10p
0.0
         rc 0.009328p 0.411161p 0.001102p 2.993934n 5.177417m 5.432700g 1.467074g 5.434583f 5.434585f 1.92e-10p 1.24e-10p
0.0
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  4.843362j      0.0       0.0       0.0       0.0       0.0       0.0
zp 42.10 ri 0.016514p 0.741895p       0.0  2.901116n 1.156842n 0.041931p 1.45e-05p 9.70e-05p 1.91e-08p      0.0       0.0       0.0
sig0.590 cc 0.016512p 0.758128p       0.0  3.642482p 4.799272p 4.841197p 1.307138p 4.841309p 4.841309p      0.0       0.0       0.0
         rc 0.016514p 0.758230o 0.002194o 3.644616m 4.801458k 4.843389i 1.307729i 4.843500i 4.843500i      0.0       0.0       0.0
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  4.248763j      0.0       0.0       0.0       0.0       0.0       0.0
zp 42.05 ri 0.018623p 0.736842p       0.0  2.566590n 0.912626p 0.029181p 8.82e-06p 5.90e-05p 1.01e-08p      0.0       0.0       0.0
sig0.590 cc 0.018620p 0.755148p       0.0  3.304970p 4.217628p 4.246805p 1.146646p 4.246873p 4.246873p      0.0       0.0       0.0
         rc 0.018623p 0.755263o 0.001986o 3.306981m 4.219606l 4.248788j 1.147182j 4.248856i 4.248856i      0.0       0.0       0.0

  zr half life from 80eng2; nb, mo, tc, ru, rh half lives 89wal1.
1

    mass number    106                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide      40 zr g   41 nb g   42 mo g   43 tc g   44 ru g   45 rh m   45 rh g   46 pd g   47 ag m   47 ag g   48 cd g
half life     0.907s     1.0 s     8.4 s     36. s    1.020y    2.18 h    29.9 s    stable     8.4 d    24.1 m    stable
lambda      7.642e-01 6.931e-01 8.252e-02 1.925e-02 2.155e-08 8.832e-05 2.318e-02       0.0 9.551e-07 4.794e-04       0.0
```

z - 1 g 100.0000 100.0000 99.0600 100.0000 100.0000 0.0 100.0000 100.0000 -100.0000 -100.0000 0.0
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.187328n 0.0 0.0 0.157750n 0.0 0.0 0.0
zp 41.84 ri 0.000959p 0.016712p 0.149077p 0.006425p 0.000121p 2.32e-09p 2.32e-09p 0.0 0.0 0.0 0.0
sig0.507 cc 0.000947p 0.017445p 0.166667p 0.173010p 0.173130p 2.50e-09p 0.173130p 0.173130p 0.0 0.0 0.0
rc 0.000959p 0.017671p 0.166582p 0.173007o 0.173128n 2.32e-09p 0.173128n 0.173128m 0.0 0.0 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.011940j 0.0 0.0 0.012246l 0.0 0.0 0.0
zp 41.73 ri 0.000199p 0.001215p 0.010318p 0.000277p 8.50e-06p 2.34e-10p 2.34e-10p 0.0 0.0 0.0 0.0
sig0.538 cc 0.000199p 0.001414p 0.011718p 0.011995p 0.012004p 2.31e-10p 0.012004p 0.012004p 0.0 0.0 0.0
rc 0.000199p 0.001414p 0.011718n 0.011995l 0.012004j 2.34e-10p 0.012004j 0.012004j 0.0 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.103468k 0.0 0.0 0.0 0.0 0.0 0.0
zp 41.88 ri 0.000640p 0.024786p 0.064713p 0.013395p 0.000173p 5.36e-08p 5.36e-08p 2.81e-12p 0.0 0.0 0.0
sig0.552 cc 0.000640p 0.025426p 0.089900p 0.103295p 0.103468p 5.36e-08p 0.103468p 0.103468p 0.0 0.0 0.0
rc 0.000640p 0.025426p 0.089900o 0.103295m 0.103468k 5.36e-08p 0.103468k 0.103468k 0.0 0.0 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.958447n 0.0 0.0 0.0
zp 42.79 ri 0.000121p 0.061323p 1.724344n 3.558962n 0.607539p 0.003366p 0.003366p 3.81e-06p 6.87e-11p 2.95e-11p 0.0
sig0.559 cc 0.000121p 0.061444p 1.785210p 5.344172p 5.951711p 0.003366p 5.955077p 5.958447p 6.87e-11p 2.95e-11p 0.0
rc 0.000121p 0.061444p 1.785210m 5.344172m 5.951711l 0.003366p 5.955077l 5.958447l 6.87e-11p 2.95e-11p 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 4.077160i 0.0 0.0 4.246213n 0.0 0.0 0.0
zp 42.98 ri 0.000327p 0.049746p 0.912123p 2.283562n 0.835254p 0.021380p 0.021380p 0.000254p 1.36e-07p 2.99e-08p 1.14e-11p
sig0.656 cc 0.000327p 0.050088p 0.962024p 3.246297p 4.081811p 0.020749p 4.102560p 4.123556p 1.32e-07p 2.90e-08p 1.10e-11p
rc 0.000327p 0.050072p 0.961725o 3.245287m 4.080542i 0.021380p 4.101922i 4.123556i 1.36e-07p 2.99e-08p 1.14e-11p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.164088n 0.0 0.0 0.0
zp 42.63 ri 0.000500p 0.139358p 2.380325n 3.264139n 0.378207p 0.001436p 0.001436p 1.16e-06p 1.58e-11p 6.77e-12p 0.0
sig0.565 cc 0.000500p 0.139858p 2.518869p 5.783008p 6.161215p 0.001436p 6.162651p 6.164088p 1.58e-11p 6.77e-12p 0.0
rc 0.000500p 0.139858p 2.518869m 5.783008l 6.161215l 0.001436p 6.162651l 6.164088l 1.58e-11p 6.77e-12p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

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        xc      0.0       0.0       0.0  5.362089k 5.748960j      0.0       0.0       0.0       0.0       0.0       0.0
zp 42.59 ri 0.000907p 0.153913p 2.578463n 2.644885m 0.363828p 0.001179p 0.001179p 1.34e-06p 2.00e-11p 8.58e-12p       0.0
sig0.576 cc 0.000909p 0.155124p 2.737197p 5.387281p 5.740541p 0.001178p 5.741718p 5.742897p 2.00e-11p 8.57e-12p       0.0
        rc 0.000907p 0.154820p 2.731828m 5.376713k 5.740541i 0.001179p 5.741720i 5.742900i 2.00e-11p 8.58e-12p       0.0
 cf249t  xi      0.0       0.0  1.792085j 2.825765j 0.921323j      0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0  5.198776j 5.576385j      0.0  5.598682j 5.482259i      0.0       0.0       0.0
zp 42.71 ri 0.001601p 0.115585p 1.769719o 2.811334i 0.907836j 0.006494p 0.006494p 4.80e-05p 6.78e-09p 2.91e-09p       0.0
sig0.645 cc 0.002040p 0.149328p 2.403053p 4.906113p 5.604582p 0.006538p 5.611120p 5.617706p 6.83e-09p 2.93e-09p       0.0
        rc 0.001601p 0.117186p 1.885803n 4.697137j 5.604973i 0.006494p 5.611466h 5.618008g 6.78e-09p 2.91e-09p       0.0
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.934712n      0.0       0.0       0.0
zp 42.49 ri 0.001873p 0.231509p 2.281415n 2.210754n 0.209777p 0.000789p 0.000789p 7.96e-07p 1.74e-11p 7.47e-12p       0.0
sig0.590 cc 0.001873p 0.233381p 2.512602p 4.723357p 4.933134p 0.000789p 4.933922p 4.934712p 1.74e-11p 7.47e-12p       0.0
        rc 0.001873p 0.233381p 2.512602m 4.723357l 4.933134l 0.000789p 4.933922l 4.934712l 1.74e-11p 7.47e-12p       0.0
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  4.022785j      0.0       0.0       0.0       0.0       0.0       0.0
zp 42.46 ri 0.001832p 0.209394p 1.920497n 1.739490n 0.153558p 0.000534p 0.000534p 4.96e-07p 1.00e-11p 4.28e-12p       0.0
sig0.590 cc 0.001832p 0.211225p 2.129737p 3.869227p 4.022785p 0.000534p 4.023319p 4.023853p 1.00e-11p 4.28e-12p       0.0
        rc 0.001832p 0.211225p 2.129737m 3.869227k 4.022785j 0.000534p 4.023319j 4.023853j 1.00e-11p 4.28e-12p       0.0

  zr half life from 80eng2; nb, mo, tc, ru, rh half lives 89wal1.
1

    mass number    107                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       41 nb g   42 mo g   43 tc g   44 ru g   45 rh g   46 pd m   46 pd g   47 ag m   47 ag g   48 cd g   49 in g
half life     0.766s     3.5 s    21.2 s     3.8 m    21.7 m    21.3 s    6.5e6y     44. s    stable     6.5 h     33. m
lambda      9.049e-01 1.980e-01 3.270e-02 3.040e-03 5.324e-04 3.254e-02 3.381e-15 1.575e-02       0.0 2.962e-05 3.501e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000       0.0  100.0000   -0.3400 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  -99.6600       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0  100.0000       0.0       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.094091n      0.0       0.0       0.0       0.0
zp 42.32 ri 0.003141p 0.069035p 0.020755p 0.001159p 4.96e-07p 1.31e-11p 7.07e-12p       0.0       0.0       0.0       0.0
sig0.507 cc 0.003141p 0.072176p 0.092931p 0.094090p 0.094091p 1.31e-11p 0.094091p       0.0  0.094091p       0.0       0.0
        rc 0.003141p 0.072176p 0.092931p 0.094090o 0.094091o 1.31e-11p 0.094091n       0.0  0.094091n       0.0       0.0
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.011451l      0.0  0.009369m      0.0       0.0
zp 42.19 ri 0.000492p 0.008881p 0.001335p 0.000104p 4.12e-08p 3.33e-12p 1.79e-12p      0.0       0.0       0.0       0.0
sig0.538 cc 0.000492p 0.009373p 0.010709p 0.010813p 0.010813p 3.33e-12p 0.010813p      0.0  0.010813p      0.0       0.0
        rc 0.000492p 0.009373p 0.010709p 0.010813o 0.010813n 3.33e-12p 0.010813l      0.0  0.010813l      0.0       0.0
 pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.095527n      0.0       0.0       0.0       0.0
zp 42.38 ri 0.005249p 0.050683p 0.037564p 0.002025p 5.86e-06p 5.20e-10p 2.34e-10p      0.0       0.0       0.0       0.0
sig0.552 cc 0.005249p 0.055932p 0.093497p 0.095521p 0.095527p 5.20e-10p 0.095527p      0.0  0.095527p      0.0       0.0
        rc 0.005249p 0.055932p 0.093497p 0.095521o 0.095527o 5.20e-10p 0.095527n      0.0  0.095527n      0.0       0.0
 am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.270934n      0.0       0.0       0.0       0.0
zp 43.19 ri 0.006428p 0.559029p 3.167855n 1.486511n 0.051014p 6.28e-05p 3.38e-05p 7.52e-09p 1.12e-09p      0.0       0.0
sig0.559 cc 0.006428p 0.565457p 3.733312p 5.219823p 5.270837p 6.28e-05p 5.270934p 7.52e-09p 5.270934p      0.0       0.0
        rc 0.006428p 0.565457o 3.733312m 5.219823l 5.270837l 6.28e-05p 5.270934l 7.52e-09p 5.270934l      0.0       0.0
 am241h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  3.778831i      0.0  3.898163n      0.0       0.0       0.0       0.0
zp 43.36 ri 0.008728p 0.352860p 1.855908n 1.412579n 0.151872p 0.001646p 0.000438p 2.92e-06p 2.54e-07p 5.13e-10p      0.0
sig0.656 cc 0.008730p 0.361661p 2.217944p 3.629940p 3.781978p 0.001621p 3.784030p 2.88e-06p 3.784033p 5.06e-10p      0.0
        rc 0.008728p 0.361588p 2.217496m 3.630075k 3.781946i 0.001646p 3.784030i 2.92e-06p 3.784033i 5.13e-10p      0.0
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.381347n      0.0       0.0       0.0       0.0
zp 43.03 ri 0.018116p 0.917600p 3.354141n 1.066556n 0.024901p 2.15e-05p 1.16e-05p 1.90e-09p 2.83e-10p      0.0       0.0
sig0.565 cc 0.018116p 0.935716p 4.289857p 5.356413p 5.381314p 2.15e-05p 5.381347p 1.90e-09p 5.381347p      0.0       0.0
        rc 0.018116p 0.935716o 4.289857m 5.356413l 5.381314l 2.15e-05p 5.381347l 1.90e-09p 5.381347l      0.0       0.0
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  5.561536k      0.0  5.814333n      0.0       0.0       0.0       0.0
zp 42.99 ri 0.026209p 1.148687n 3.298147n 1.083160n 0.023102p 2.53e-05p 1.36e-05p 2.53e-09p 3.79e-10p      0.0       0.0
sig0.576 cc 0.026215p 1.175162p 4.474055p 5.556199p 5.579306p 2.47e-05p 5.579344p 2.48e-09p 5.579344p      0.0       0.0
        rc 0.026209p 1.174896m 4.473043m 5.556203k 5.579305j 2.53e-05p 5.579344j 2.53e-09p 5.579344j      0.0       0.0
 cf249t  xi 0.022790p 0.655225j 3.196360j 1.663702j      0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  5.687321k      0.0       0.0       0.0  5.699316i      0.0       0.0
zp 43.11 ri 0.023077p 0.663473p 3.236594o 1.684644n 0.089953p 0.000372p 0.000200p 3.65e-07p 5.45e-08p 2.65e-11p      0.0
sig0.645 cc 0.037053p 0.956853p 4.203426p 5.608751p 5.697749p 0.000367p 5.698314p 3.60e-07p 5.698314p 2.62e-11p      0.0
        rc 0.023077p 0.686550p 3.923145n 5.607789m 5.697742k 0.000372p 5.698314j 3.65e-07p 5.698314i 2.65e-11p      0.0
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.224989n      0.0       0.0       0.0       0.0
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```
 zp 42.89 ri 0.048903p 1.290427n 3.107182n 0.762240p 0.016213p 1.59e-05p 8.55e-06p 2.03e-09p 3.04e-10p       0.0        0.0
 sig0.590 cc 0.048903p 1.339329p 4.446511p 5.208752p 5.224965p 1.59e-05p 5.224989p 2.03e-09p 5.224989p       0.0        0.0
          rc 0.048903p 1.339329m 4.446511m 5.208752m 5.224965m 1.59e-05p 5.224989l 2.03e-09p 5.224989l       0.0        0.0
  es254t  xi      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
          xc      0.0        0.0        0.0        0.0        0.0        0.0  3.877233n      0.0        0.0        0.0        0.0
 zp 42.87 ri 0.039685p 0.996505p 2.293035n 0.537132p 0.010860p 1.01e-05p 5.43e-06p 1.22e-09p 1.83e-10p       0.0        0.0
 sig0.590 cc 0.039685p 1.036191p 3.329226p 3.866358p 3.877218p 1.01e-05p 3.877234p 1.22e-09p 3.877234p       0.0        0.0
          rc 0.039685p 1.036191o 3.329226m 3.866358m 3.877218m 1.01e-05p 3.877234l 1.22e-09p 3.877234l       0.0        0.0

   nb half life from 80eng2; mo, tc, ru, rh, pd half lives 89wal1.
1

     mass number    108                    LA-UR-94-3106 (ENDF-349)                    percent yields
 nuclide       40 zr g   41 nb g   42 mo g   43 tc d   43 tc g   44 ru d   44 ru g   45 rh m   45 rh g   46 pd g   47 ag g   48 cd g
 half life     0.378s    0.242s     1.5 s    1.41 s     5.1 s     1.4 s     4.5 m     5.9 m     17. s    stable    2.41 m    stable
 lambda       1.834e+00 2.864e+00 4.621e-01 4.916e-01 1.359e-01 4.951e-01 2.567e-03 1.958e-03 4.077e-02        0.0 4.794e-03
0.0
  z - 1 g    100.0000  100.0000  100.0000       0.0  100.0000       0.0  100.0000       0.0  100.0000  100.0000   -2.3000   97.7000
  z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
  z - 0 m        0.0       0.0       0.0    0.1360  100.0000    0.0880  100.0000       0.0       0.0       0.0       0.0       0.0
  th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.053906n      0.0       0.0
 zp 42.79 ri 3.12e-07p 0.000158p 0.027599p       0.0  0.018233p       0.0  0.007888p 5.25e-06p 5.25e-06p 4.34e-09p       0.0        0.0
 sig0.507 cc 3.12e-07p 0.000158p 0.027757p       0.0  0.045990p       0.0  0.053878p 5.25e-06p 0.053883p 0.053889p       0.0        0.0
          rc 3.12e-07p 0.000158p 0.027757p 4.46e-06o 0.045995p 1.62e-05o 0.053899o 5.25e-06p 0.053904o 0.053909n       0.0        0.0
  th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.011742l      0.0       0.0
 zp 42.65 ri 7.03e-07p 7.45e-05p 0.007994p       0.0  0.002478p       0.0  0.001183p 6.35e-07p 6.35e-07p 1.18e-09p       0.0        0.0
 sig0.538 cc 7.03e-07p 7.52e-05p 0.008069p       0.0  0.010547p       0.0  0.011730p 6.35e-07p 0.011731p 0.011732p       0.0        0.0
          rc 7.03e-07p 7.52e-05p 0.008069p 3.93e-06o 0.010551p 6.84e-06o 0.011741o 6.35e-07p 0.011742n 0.011742l       0.0        0.0
  pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.078785n      0.0       0.0
 zp 42.86 ri 7.43e-07p 0.000538p 0.019676p       0.0  0.048819p       0.0  0.009591p 5.84e-05p 5.84e-05p 6.79e-08p 1.67e-12p       0.0
 sig0.552 cc 7.43e-07p 0.000538p 0.020214p       0.0  0.069033p       0.0  0.078623p 5.84e-05p 0.078682p 0.078740p 1.67e-12p
1.63e-12p
```

rc 7.43e-07p 0.000538p 0.020214p 7.16e-06o 0.069040p 4.35e-05o 0.078674p 5.84e-05p 0.078732o 0.078791n 1.67e-12p 1.63e-12p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.254610n 0.0 0.0
zp 43.60 ri 5.94e-08p 0.000355p 0.102362p 0.0 1.711726n 0.0 2.208710n 0.114851p 0.114851p 0.001466p 4.64e-07p 6.61e-12p
sig0.559 cc 5.94e-08p 0.000355p 0.102716p 0.0 1.814420p 0.0 4.023156p 0.114850p 4.138006p 4.254322p 4.64e-07p 4.53e-07p
rc 5.94e-08p 0.000355p 0.102718p 1.21e-05o 1.814455m 0.000405o 4.023570l 0.114851p 4.138421l 4.254738l 4.64e-07p 4.53e-07p
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.513750n 0.0 0.0
zp 43.74 ri 1.40e-06p 0.001134p 0.102901p 0.0 1.156447n 0.0 1.822817n 0.208748p 0.208747p 0.012594p 4.44e-05p 1.69e-08p
sig0.656 cc 1.40e-06p 0.001136p 0.104033p 0.0 1.260454p 0.0 3.083312p 0.208742p 3.292054p 3.513390p 4.44e-05p 4.34e-05p
rc 1.40e-06p 0.001136p 0.104037p 3.12e-05o 1.260514m 0.000503o 3.083834l 0.208748p 3.292581l 3.513924l 4.44e-05p 4.34e-05p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.109392n 0.0 0.0
zp 43.45 ri 3.61e-07p 0.001139p 0.188831p 0.0 2.008505n 0.0 1.780737n 0.064532p 0.064532p 0.000585p 1.37e-07p 1.54e-12p
sig0.565 cc 3.61e-07p 0.001139p 0.189965p 0.0 2.198425p 0.0 3.979215p 0.064531p 4.043746p 4.108861p 1.37e-07p 1.34e-07p
rc 3.61e-07p 0.001139p 0.189970p 3.89e-05o 2.198513m 0.000845o 3.980095l 0.064532p 4.044628l 4.109745l 1.37e-07p 1.34e-07p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.623072n 0.0 0.0 5.674191n 0.0 0.0
zp 43.38 ri 1.84e-06p 0.002928p 0.399023p 0.0 2.743287n 0.0 2.463158n 0.066753p 0.066753p 0.000714p 1.54e-07p 2.54e-12p
sig0.576 cc 1.83e-06p 0.002929p 0.401870p 0.0 3.144606p 0.0 5.607441p 0.067229p 5.674670p 5.742617p 1.55e-07p 1.51e-07p
rc 1.84e-06p 0.002930p 0.401953p 7.33e-05o 3.145313m 0.001024n 5.609495l 0.066753p 5.676248l 5.743715l 1.54e-07p 1.50e-07p
cf249t xi 0.0 0.0 0.429390j 0.0 1.929392j 0.0 2.885500j 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.047623n 0.0 0.0 5.736091i 0.0 0.0

zp 43.51 ri 1.17e-05p 0.005143p 0.436950p 0.0 2.039188n 0.0 2.932261j 0.150375p 0.153733p 0.006663p 8.53e-06p 1.98e-09p
sig0.645 cc 1.03e-05p 0.004531p 0.388675p 0.0 2.512888p 0.0 5.422758p 0.147516p 5.570274p 5.724325p 8.37e-06p 8.18e-06p
rc 1.17e-05p 0.005154p 0.442104p 9.68e-05o 2.481389m 0.001225o 5.414875k 0.150375p 5.568608j 5.725646i 8.53e-06p 8.34e-06p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.321748n 0.0 0.0
zp 43.30 ri 5.67e-06p 0.006181p 0.464968p 0.0 2.908709n 0.0 1.831216n 0.054614p 0.054614p 0.000496p 1.48e-07p 2.72e-12p
sig0.590 cc 5.67e-06p 0.006186p 0.471139p 0.0 3.379786p 0.0 5.211084p 0.054612p 5.265696p 5.320805p 1.48e-07p 1.45e-07p
rc 5.67e-06p 0.006187p 0.471155p 0.000145o 3.380010m 0.001670n 5.212895l 0.054614p 5.267510l 5.322620l 1.48e-07p 1.45e-07p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.683372n 0.0 0.0
zp 43.26 ri 5.46e-06p 0.005342p 0.362447p 0.0 2.063693n 0.0 1.186733n 0.032078p 0.032078p 0.000262p 7.02e-08p 1.15e-12p
sig0.590 cc 5.46e-06p 0.005347p 0.367781p 0.0 2.431433p 0.0 3.618224p 0.032077p 3.650301p 3.682640p 7.02e-08p 6.86e-08p
rc 5.46e-06p 0.005347p 0.367794p 0.000126o 2.431614m 0.001294n 3.619642l 0.032078p 3.651720l 3.684061l 7.02e-08p 6.86e-08p

zr, nb half lives from 80eng2; mo, tc, ru, rh half lives 89wal1.
1

mass number 109 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 41 nb g 42 mo g 43 tc g 44 ru d 44 ru g 45 rh m 45 rh g 46 pd m 46 pd g 47 ag g 48 cd g 49 in g
half life 0.315s 1.41 s 1.4 s 0.83 s 34.5 s 50. s 1.34 m 4.69 m 13.5 h stable 462.9d 4.2 h
lambda 2.200e+00 4.916e-01 4.951e-01 8.351e-01 2.009e-02 1.386e-02 8.621e-03 2.463e-03 1.426e-05 0.0 1.733e-08 4.584e-05
z - 1 g 100.0000 100.0000 99.8640 0.0 99.9120 50.0000 50.0000 0.0 100.0000 100.0000 0.0 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -100.0000 0.0
z - 0 m 0.0 0.0 0.0 0.6210 100.0000 0.0 100.0000 0.0 100.0000 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.032536o 0.035494n 0.0 0.0

zp 43.26 ri 6.41e-06p 0.003274p 0.015160p 0.0 0.015128p 8.79e-05p 8.79e-05p 1.55e-07p 8.32e-08p 2.05e-12p 0.0 0.0
sig0.507 cc 6.41e-06p 0.003280p 0.018435p 0.0 0.033547p 0.016861p 0.033722p 1.55e-07p 0.033723p 0.033723p 0.0
0.0
rc 6.41e-06p 0.003280p 0.018435p 3.01e-05o 0.033577p 0.016876o 0.033752n 1.55e-07p 0.033753m 0.033753m 0.0
0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.012916k 0.012862l 0.0 0.0
zp 43.11 ri 1.08e-05p 0.002879p 0.004888p 0.0 0.005076p 1.82e-05p 1.82e-05p 6.18e-08p 3.33e-08p 1.05e-12p 0.0 0.0
sig0.538 cc 1.08e-05p 0.002890p 0.007773p 0.0 0.012842p 0.006439p 0.012879p 6.18e-08p 0.012879p 0.012879p 0.0
0.0
rc 1.08e-05p 0.002890p 0.007773p 1.91e-05o 0.012861o 0.006449o 0.012898m 6.18e-08p 0.012898k 0.012898k 0.0
0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.079651j 0.0 0.0 0.0
zp 43.33 ri 3.61e-05p 0.005226p 0.044120p 0.0 0.028838p 0.000676p 0.000676p 2.32e-06p 1.04e-06p 3.69e-10p 0.0 0.0
sig0.552 cc 3.61e-05p 0.005262p 0.049375p 0.0 0.078170p 0.039761p 0.079522p 2.32e-06p 0.079525p 0.079525p 0.0
0.0
rc 3.61e-05p 0.005262p 0.049375p 0.000126o 0.078295o 0.039824o 0.079648l 2.32e-06p 0.079651j 0.079651j 0.0 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.536763i 2.237380l 0.0 0.0
zp 44.00 ri 9.33e-06p 0.008911p 0.450792p 0.0 1.573625n 0.229481p 0.222426p 0.006017p 0.003240p 9.31e-06p 4.62e-10p
0.0
sig0.559 cc 9.30e-06p 0.008895p 0.458383p 0.0 2.027204p 1.242427p 2.484855p 0.006000p 2.494086p 2.494096p 4.90e-10p
0.0
rc 9.33e-06p 0.008921p 0.459700p 0.000491o 2.033412m 1.246187n 2.485319k 0.006017p 2.494576i 2.494585i 4.62e-10p
0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.221951i 3.221951n 0.0 0.0
zp 44.11 ri 0.000113p 0.022856p 0.548096p 0.0 1.765791n 0.415314p 0.415213p 0.042563p 0.011314p 0.000425p 3.71e-07p
3.41e-11p
sig0.656 cc 0.000113p 0.022966p 0.570962p 0.0 2.336310p 1.583428p 3.166856p 0.042558p 3.220727p 3.221152p 3.71e-07p
3.41e-11p
rc 0.000113p 0.022969p 0.571034o 0.001217o 2.337539m 1.584083n 3.168066k 0.042563p 3.221944i 3.222369i 3.71e-07p
3.41e-11p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.749119k 0.0 0.0 0.0

zp 43.87 ri 5.08e-05p 0.028556p 0.931275p 0.0 2.292432n 0.244638p 0.244615p 0.004760p 0.002563p 6.05e-06p 2.45e-10p 0.0
sig0.565 cc 5.08e-05p 0.028605p 0.959774p 0.0 3.251438p 1.870342p 3.740685p 0.004760p 3.748008p 3.748014p 2.45e-10p 0.0
rc 5.08e-05p 0.028607p 0.959844o 0.001178o 3.252609m 1.870943m 3.741863k 0.004760p 3.749186j 3.749192j 2.45e-10p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.987777p 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.771733l 0.0 5.288515l 0.0 0.0 0.0
zp 43.78 ri 0.000141p 0.053742p 1.109733n 0.0 2.358906n 0.190213p 0.936960p 0.004591p 0.002472p 5.22e-06p 2.58e-10p 0.0
sig0.576 cc 0.000167p 0.064186p 1.386034p 0.0 4.195546p 2.324365p 4.648729p 0.004369p 4.655451p 4.655456p 2.46e-10p 0.0
rc 0.000141p 0.053883p 1.163542m 0.003057o 3.524481l 1.952454m 4.651654k 0.004591p 4.658717j 4.658722j 2.58e-10p 0.0
cf249t xi 0.0 0.0 1.322200j 0.0 2.889871j 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.998003m 0.0 5.474896k 5.575629i 0.0 0.0
zp 43.92 ri 0.000481p 0.070692p 1.320274o 0.0 3.037372n 0.556736p 0.553962p 0.024780p 0.013343p 0.000178p 7.43e-08p 3.39e-12p
sig0.645 cc 0.000516p 0.076313p 1.491835p 0.0 4.524191p 2.769099p 5.538198p 0.024717p 5.576224p 5.576401p 7.44e-08p 3.39e-12p
rc 0.000481p 0.071173p 1.391351n 0.002781o 4.430279m 2.771875m 5.540977j 0.024780p 5.579100i 5.579277h 7.43e-08p 3.39e-12p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.224889i 0.0 0.0 0.0
zp 43.71 ri 0.000480p 0.106246p 1.791225n 0.0 2.858583n 0.229759p 0.229631p 0.003994p 0.002151p 5.67e-06p 3.28e-10p 0.0
sig0.590 cc 0.000480p 0.106703p 1.897409p 0.0 4.754673p 2.607055p 5.214110p 0.003993p 5.220253p 5.220259p 3.28e-10p 0.0
rc 0.000480p 0.106726p 1.897806m 0.004810o 4.759529l 2.609523m 5.218919k 0.003994p 5.225063i 5.225069i 3.28e-10p 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.720844k 0.0 0.0 0.0
zp 43.66 ri 0.000476p 0.092403p 1.378159n 0.0 1.963927n 0.140255p 0.140228p 0.002142p 0.001153p 2.65e-06p 1.34e-10p 0.0
sig0.590 cc 0.000476p 0.092859p 1.470590p 0.0 3.433569p 1.857014p 3.714028p 0.002141p 3.717323p 3.717325p 1.34e-10p 0.0

rc 0.000476p 0.092879p 1.470912m 0.004270o 3.437814l 1.859162m 3.718297k 0.002142p 3.721593j 3.721595j 1.34e-10p
0.0

nb, mo half lives from 80eng2; tc, ru, rh, pd half lives 89wal1.
1

mass number 110 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 40 zr g 41 nb g 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g
half life 0.130s 2.77 s 0.83 s 15. s 29. s 3.1 s stable 252. d 24.6 s stable
lambda 0.0 5.332e+00 2.502e-01 8.351e-01 4.621e-02 2.390e-02 2.236e-01 0.0 3.184e-08 2.818e-02 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 99.3790 0.0 100.0000 100.0000 0.0 -0.3000 99.7000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 98.6000
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.4000 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.035284n 0.0 0.0 0.0
zp 43.73 ri 4.57e-12p 7.72e-08p 0.000372p 0.004479p 0.029555p 0.000448p 0.000448p 1.15e-05p 2.23e-10p 9.56e-11p 0.0
sig0.507 cc 4.57e-12p 7.72e-08p 0.000372p 0.004851p 0.034376p 0.000448p 0.034824p 0.035284p 2.23e-10p 9.87e-11p 3.18e-10p
rc 4.57e-12p 7.72e-08p 0.000372p 0.004851p 0.034376p 0.000448p 0.034824o 0.035284n 2.23e-10p 9.87e-11p 3.18e-10p
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.016895l 0.0 0.0 0.0
zp 43.57 ri 1.61e-10p 3.49e-07p 0.000636p 0.002433p 0.013607p 0.000117p 0.000117p 4.32e-06p 9.68e-11p 4.15e-11p 0.0
sig0.538 cc 1.61e-10p 3.49e-07p 0.000636p 0.003070p 0.016658p 0.000117p 0.016774p 0.016895p 9.68e-11p 4.28e-11p 1.38e-10p
rc 1.61e-10p 3.49e-07p 0.000636p 0.003070p 0.016658o 0.000117p 0.016774m 0.016895k 9.68e-11p 4.28e-11p 1.38e-10p
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.068937n 0.0 0.0 0.0
zp 43.80 ri 7.64e-11p 1.06e-06p 0.000635p 0.019596p 0.041752p 0.003504p 0.003504p 7.15e-05p 2.52e-08p 9.31e-09p 0.0
sig0.552 cc 7.64e-11p 1.06e-06p 0.000636p 0.020232p 0.061858p 0.003504p 0.065362p 0.068937p 2.52e-08p 9.66e-09p 3.45e-08p
rc 7.64e-11p 1.06e-06p 0.000636p 0.020232p 0.061858p 0.003504p 0.065362o 0.068937n 2.52e-08p 9.66e-09p 3.45e-08p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.492354m 0.0 0.0 0.0
zp 44.40 ri 2.12e-12p 1.52e-07p 0.000491p 0.078558p 0.769722p 0.303533p 0.303533p 0.037009p 9.18e-05p 3.93e-05p 2.24e-08p
sig0.559 cc 2.12e-12p 1.52e-07p 0.000491p 0.079049p 0.848280p 0.303533p 1.151813p 1.492354p 9.18e-05p 4.06e-05p
0.000131p
rc 2.12e-12p 1.52e-07p 0.000491p 0.079049p 0.848280o 0.303533p 1.151813o 1.492354m 9.18e-05p 4.06e-05p 0.000131p
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.873991n 0.0 0.0 0.0

zp 44.48 ri 1.91e-09p 8.11e-06p 0.003692p 0.192292p 1.282847n 0.614097o 0.614097p 0.168170p 0.002404p 0.000528p 5.82e-06p
sig0.656 cc 1.91e-09p 8.11e-06p 0.003700p 0.195992p 1.477621p 0.614097p 2.091718p 2.873993p 0.002404p 0.000561p 0.002936p
rc 1.91e-09p 8.11e-06p 0.003700p 0.195992p 1.477621m 0.614097o 2.091718m 2.873986l 0.002404p 0.000561p 0.002936p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.423727n 0.0 0.0 0.0
zp 44.30 ri 2.08e-11p 8.64e-07p 0.001740p 0.188012p 1.357789n 0.418330p 0.418330p 0.040704p 8.35e-05p 3.58e-05p 1.78e-08p
sig0.565 cc 2.08e-11p 8.64e-07p 0.001740p 0.189752p 1.546363p 0.418330p 1.964693p 2.423727p 8.35e-05p 3.70e-05p 0.000119p
rc 2.08e-11p 8.64e-07p 0.001740p 0.189752p 1.546363m 0.418330p 1.964693n 2.423727m 8.35e-05p 3.70e-05p 0.000119p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.723381n 0.0 0.0 0.0
zp 44.19 ri 3.83e-10p 6.44e-06p 0.008546p 0.483700p 2.984670n 0.596191p 0.596191p 0.057133p 8.75e-05p 3.75e-05p 2.22e-08p
sig0.576 cc 3.83e-10p 6.44e-06p 0.008553p 0.492252p 3.473865p 0.596191p 4.070056p 4.723381p 8.75e-05p 3.87e-05p 0.000125p
rc 3.83e-10p 6.44e-06p 0.008553p 0.492252p 3.473865m 0.596191o 4.070056m 4.723380l 8.75e-05p 3.87e-05p 0.000125p
cf249t xi 0.0 0.0 0.0 0.0 3.128188k 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.411914i 0.0 0.0 0.0
zp 44.34 ri 8.31e-09p 2.49e-05p 0.013557p 0.434002p 3.104012n 0.826492o 0.821571p 0.215943p 0.001257p 0.000539p 2.85e-06p
sig0.645 cc 8.29e-09p 2.48e-05p 0.013545p 0.446356p 3.539078p 0.828624p 4.367702p 5.412832p 0.001261p 0.000558p 0.001802p
rc 8.31e-09p 2.49e-05p 0.013582p 0.447584p 3.548817n 0.826492o 4.370388m 5.412825i 0.001257p 0.000556p 0.001797p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.224989n 0.0 0.0 0.0
zp 44.12 ri 2.29e-09p 2.40e-05p 0.016042p 0.758528p 3.108241n 0.648758o 0.648758p 0.049448p 9.71e-05p 4.16e-05p 2.52e-08p
sig0.590 cc 2.29e-09p 2.40e-05p 0.016066p 0.774594p 3.878025p 0.648758p 4.526783p 5.224989p 9.71e-05p 4.30e-05p 0.000139p
rc 2.29e-09p 2.40e-05p 0.016066p 0.774594o 3.878025m 0.648758o 4.526783m 5.224989l 9.71e-05p 4.30e-05p 0.000139p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.877233n 0.0 0.0 0.0
zp 44.05 ri 3.54e-09p 3.07e-05p 0.016951p 0.670659p 2.336493n 0.415405p 0.415405p 0.026560p 4.32e-05p 1.85e-05p 9.23e-09p
sig0.590 cc 3.54e-09p 3.07e-05p 0.016981p 0.687640p 3.019863p 0.415405p 3.435268p 3.877234p 4.32e-05p 1.91e-05p 6.17e-05p
rc 3.54e-09p 3.07e-05p 0.016981p 0.687640o 3.019863m 0.415405p 3.435268m 3.877233l 4.32e-05p 1.91e-05p 6.17e-05p

nb, mo half lives from 80eng2; tc, ru, rh half lives from 89wal1.
1

mass number 111 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 42 mo g 43 tc g 44 ru g 45 rh g 46 pd m 46 pd g 47 ag m 47 ag g 48 cd m 48 cd g 49 in g 50 sn g
half life 0.466s 1.98 s 1.5 s 11. s 5.5 h 23.4 m 1.08 m 7.47 d 48.7 m stable 2.83 d 35.3 m
lambda 1.487e+00 3.501e-01 4.621e-01 6.301e-02 3.501e-05 4.937e-04 1.070e-02 1.074e-06 2.372e-04 0.0 2.835e-06
3.273e-04
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.4300 99.5700 99.3000 0.7000 0.0 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 21.7000 7.0000 0.0 0.3000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 71.3000 0.0 99.7000 0.0 100.0000 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.050493m 0.0 0.026732n 0.0 0.0
zp 44.19 ri 2.14e-05p 0.002169p 0.031944p 0.006615p 0.000156p 8.38e-05p 5.53e-08p 8.27e-09p 1.22e-12p 0.0 0.0 0.0
sig0.507 cc 2.14e-05p 0.002191p 0.034134p 0.040749p 0.000331p 0.040894p 0.040679p 0.040867p 1.22e-12p 0.040989p 0.0
0.0
rc 2.14e-05p 0.002191p 0.034134o 0.040749o 0.000331n 0.040894n 0.040679n 0.040867m 1.22e-12p 0.040989l 0.0
0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.021452i 0.0 0.022728l 0.0 0.0
zp 44.03 ri 6.40e-05p 0.001556p 0.018159p 0.001785p 5.57e-05p 3.00e-05p 1.76e-08p 2.63e-09p 1.13e-12p 0.0 0.0 0.0
sig0.538 cc 6.40e-05p 0.001620p 0.019779p 0.021564p 0.000148p 0.021607p 0.021488p 0.021585p 1.13e-12p 0.021650p 0.0
0.0
rc 6.40e-05p 0.001620p 0.019779p 0.021564p 0.000148p 0.021607o 0.021488m 0.021585i 1.13e-12p 0.021650i 0.0
0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.095020j 0.0 0.094922n 0.0 0.0
zp 44.25 ri 7.20e-05p 0.008205p 0.055976p 0.029906p 0.000773p 0.000347p 1.92e-06p 2.61e-07p 1.47e-10p 3.90e-11p 0.0
0.0
sig0.552 cc 7.20e-05p 0.008277p 0.064253p 0.094160p 0.001178p 0.094942p 0.094535p 0.094999p 1.47e-10p 0.095282p 0.0
0.0
rc 7.20e-05p 0.008277p 0.064253p 0.094160p 0.001178p 0.094942o 0.094535m 0.094999j 1.47e-10p 0.095282j 0.0
0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.968131i 0.0 0.895343j 0.0 0.0
zp 44.70 ri 1.39e-10p 0.000272p 0.263839p 0.676301p 0.006970p 0.003753p 1.14e-07p 1.71e-08p 0.0 0.0 0.0 0.0

sig0.350 cc 1.40e-10p 0.000275p 0.266557p 0.940313p 0.011078p 0.947956p 0.943725p 0.948305p 0.0 0.951136p 0.0 0.0
rc 1.39e-10p 0.000272p 0.264112p 0.940412n 0.011014p 0.947975n 0.943729l 0.948305i 0.0 0.951136h 0.0 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.176014k 0.0 0.0 2.297132i 0.0 2.605405n 0.0 0.0
zp 44.72 ri 0.000864p 0.075043p 0.809951p 1.228606n 0.152974k 0.056814p 0.007200p 0.000626p 2.27e-05p 3.69e-06p 9.61e-09p 0.0
sig0.656 cc 0.000842p 0.073979p 0.863365p 2.060776p 0.217164p 2.262125p 2.300432p 2.325177p 2.21e-05p 2.332104p 9.37e-09p 0.0
rc 0.000864p 0.075907p 0.885858o 2.114463m 0.162066j 2.277739m 2.304163l 2.325165i 2.27e-05p 2.332104i 9.61e-09p 0.0
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.533281j 0.0 1.518180n 0.0 0.0
zp 44.67 ri 4.16e-10p 0.000627p 0.479640p 1.040896n 0.008807p 0.004742p 1.12e-07p 1.67e-08p 0.0 0.0 0.0 0.0
sig0.350 cc 4.17e-10p 0.000628p 0.480540p 1.521156p 0.015353p 1.530306p 1.522926p 1.530144p 0.0 1.534712p 0.0 0.0
rc 4.16e-10p 0.000627p 0.480268p 1.521163m 0.015348p 1.530307m 1.522926m 1.530144j 0.0 1.534712j 0.0 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.992638i 0.0 4.042150n 0.0 0.0
zp 44.62 ri 0.000498p 0.099594p 1.662239n 1.983032n 0.170890p 0.092018p 0.001795p 0.000268p 9.06e-07p 2.71e-07p 2.98e-11p 0.0
sig0.576 cc 0.000498p 0.100092p 1.762331p 3.745363p 0.186996p 3.954604p 3.969294p 3.998427p 9.06e-07p 4.010336p 2.98e-11p 0.0
rc 0.000498p 0.100092p 1.762331m 3.745363l 0.186996p 3.954604l 3.969294l 3.998427i 9.06e-07p 4.010336i 2.98e-11p 0.0
cf249t xi 0.0 0.137497l 1.534465j 3.035930j 0.456489j 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.629790k 0.0 0.0 5.543515h 0.0 5.336709j 0.0 0.0
zp 44.75 ri 0.001228p 0.139136p 1.552762n 3.072131o 0.501340j 0.215637p 0.015713p 0.002348p 3.92e-05p 1.17e-05p 1.62e-08p 0.0
sig0.645 cc 0.001314p 0.150291p 1.876262p 4.854623p 0.428603p 5.358888p 5.430388p 5.484003p 3.99e-05p 5.500346p 1.65e-08p 0.0
rc 0.001228p 0.140364p 1.693126n 4.765257n 0.521830i 5.332469m 5.424092k 5.484023h 3.92e-05p 5.500346h 1.62e-08p 0.0
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.006783h 0.0 4.977424n 0.0 0.0

zp 44.52 ri 0.001581p 0.211515p 2.241192n 2.324598n 0.154160p 0.083009p 0.001679p 0.000251p 8.14e-07p 2.43e-07p 3.60e-11p 0.0
sig0.590 cc 0.001581p 0.213096p 2.454288p 4.778886p 0.174709p 4.965914p 4.970744p 5.003073p 8.14e-07p 5.017987p 3.60e-11p 0.0
rc 0.001581p 0.213096p 2.454288m 4.778886l 0.174709p 4.965914l 4.970744k 5.003073h 8.14e-07p 5.017987h 3.60e-11p 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.182659h 0.0 4.160445n 0.0 0.0
zp 44.43 ri 0.002286p 0.241497p 2.060854n 1.743871n 0.093025p 0.050090p 0.000799p 0.000119p 3.03e-07p 9.05e-08p 1.04e-11p 0.0
sig0.590 cc 0.002286p 0.243782p 2.304636p 4.048507p 0.110433p 4.159927p 4.155571p 4.180074p 3.03e-07p 4.192541p 1.04e-11p 0.0
rc 0.002286p 0.243782p 2.304636m 4.048507l 0.110433p 4.159927l 4.155571k 4.180074h 3.03e-07p 4.192541h 1.04e-11p 0.0

mo, tc half lives from 80eng2; ru, rh, pd, ag half lives 89wal1.
1

mass number 112 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 42 mo g 43 tc g 44 ru g 45 rh g 46 pd g 47 ag g 48 cd g 49 in m 49 in g 50 sn g
half life 0.975s 0.431s 4.5 s 4. s 20.04h 3.13 h stable 20.8 m 14.4 m stable
lambda 7.109e-01 1.608e+00 1.540e-01 1.733e-01 9.608e-06 6.151e-05 0.0 5.554e-04 8.023e-04 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 0.0 -56.0000 44.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.028712m 0.0 0.028712n 0.0 0.0 0.0
zp 44.66 ri 5.05e-07p 0.000159p 0.017990p 0.008191p 0.002371p 1.99e-06p 5.06e-10p 0.0 0.0 0.0
sig0.507 cc 5.05e-07p 0.000159p 0.018149p 0.026340p 0.028711p 0.028713p 0.028713p 0.0 0.0 0.0
rc 5.05e-07p 0.000159p 0.018149p 0.026340o 0.028711m 0.028713m 0.028713l 0.0 0.0 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.020882i 0.0 0.020290l 0.0 0.0 0.0
zp 44.48 ri 4.05e-06p 0.000249p 0.016366p 0.003257p 0.000959p 5.91e-07p 3.12e-10p 0.0 0.0 0.0
sig0.538 cc 4.05e-06p 0.000253p 0.016619p 0.019877p 0.020836p 0.020836p 0.020836p 0.0 0.0 0.0
rc 4.05e-06p 0.000253p 0.016620o 0.019877l 0.020836i 0.020836i 0.020836i 0.0 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

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        xc      0.0       0.0       0.0       0.0  0.058484j      0.0       0.0       0.0       0.0       0.0
zp 44.68 ri 2.27e-06p 0.000945p 0.020802p 0.032737p 0.003996p 2.86e-05p 9.46e-09p      0.0       0.0       0.0
sig0.552 cc 2.27e-06p 0.000948p 0.021750p 0.054487p 0.058484p 0.058512p 0.058512p      0.0       0.0       0.0
        rc 2.27e-06p 0.000948p 0.021750p 0.054487m 0.058484j 0.058512j 0.058512j      0.0       0.0       0.0
 am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.569274i      0.0  0.394829m      0.0       0.0       0.0
zp 44.88 ri 2.66e-12p 2.16e-05p 0.077493p 0.460189m 0.022152p 9.13e-07p      0.0       0.0       0.0       0.0
sig0.350 cc 2.62e-12p 2.13e-05p 0.076342p 0.538039p 0.559856p 0.559857p 0.559857p      0.0       0.0       0.0
        rc 2.66e-12p 2.16e-05p 0.077515p 0.537704k 0.559856i 0.559857i 0.559857i      0.0       0.0       0.0
 am241h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  2.406519i      0.0  2.317020n      0.0       0.0       0.0
zp 44.93 ri 0.000260p 0.035532p 0.587954p 1.336312n 0.443578p 0.019421p 0.000104p 5.38e-08p 6.65e-09p 3.69e-12p
sig0.656 cc 0.000260p 0.035785p 0.623629p 1.959704p 2.403188p 2.423053p 2.423159p 5.51e-08p 6.19e-08p 2.72e-08p
        rc 0.000260p 0.035792p 0.623745o 1.960057m 2.403635i 2.423056i 2.423159i 5.38e-08p 6.05e-08p 2.66e-08p
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.642989j      0.0       0.0       0.0       0.0
zp 44.88 ri 3.21e-12p 2.54e-05p 0.088962p 0.529442n 0.024558p 1.17e-06p      0.0       0.0       0.0       0.0
sig0.350 cc 3.21e-12p 2.54e-05p 0.088987p 0.618429p 0.642988p 0.642989p 0.642989p      0.0       0.0       0.0
        rc 3.21e-12p 2.54e-05p 0.088987p 0.618429m 0.642988l 0.642989j 0.642989j      0.0       0.0       0.0
 cm245t  xi      0.0       0.0       0.0       0.0       0.0  0.073292p      0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  1.625316n 3.474114l 2.437975n      0.0       0.0       0.0
zp 45.06 ri 1.20e-05p 0.007678p 0.439509p 1.506660p 0.943936p 0.108452p 5.04e-05p 3.46e-09p 8.13e-10p      0.0
sig0.576 cc 1.50e-05p 0.009558p 0.555815p 2.268822p 2.989168p 3.006260p 3.006297p 2.55e-09p 3.15e-09p 1.39e-09p
        rc 1.20e-05p 0.007690p 0.447199o 1.953858m 2.897795k 3.006246k 3.006297k 3.46e-09p 4.28e-09o 1.88e-09n
 cf249t  xi      0.0  0.182231n 1.182037j 2.039014j 1.526798j 0.172380n      0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  5.254204j 5.268246l 4.759032i      0.0       0.0       0.0
zp 45.15 ri 0.000908p 0.175824p 1.140478o 1.967324n 1.473882j 0.166320n 0.000739p 3.35e-07p 7.86e-08p 4.12e-11p
sig0.645 cc 0.000118p 0.022886p 0.907647p 3.263025p 4.848665p 4.924716p 4.925475p 3.44e-07p 4.25e-07p 1.87e-07p
        rc 0.000908p 0.176732p 1.317210n 3.284534n 4.758416j 4.924736i 4.925475h 3.35e-07p 4.14e-07p 1.82e-07p
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  5.314687i      0.0       0.0       0.0       0.0       0.0
zp 44.92 ri 0.000112p 0.043504p 1.237879n 3.193176n 0.840016p 0.019292p 3.15e-05p 2.66e-09p 6.24e-10p      0.0
sig0.590 cc 0.000112p 0.043616p 1.281495p 4.474670p 5.314687p 5.333979p 5.334010p 2.66e-09p 3.28e-09p 1.44e-09p
        rc 0.000112p 0.043616p 1.281495m 4.474670m 5.314687i 5.333979i 5.334010i 2.66e-09p 3.28e-09p 1.44e-09p
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  4.332478j      0.0       0.0       0.0       0.0       0.0
```

zp 44.83 ri 0.000174p 0.053090p 1.206192n 2.532740n 0.540283p 0.009857p 1.26e-05p 8.29e-10p 1.94e-10p 0.0
sig0.590 cc 0.000174p 0.053264p 1.259455p 3.792195p 4.332478p 4.342335p 4.342348p 8.29e-10p 1.02e-09p 4.50e-10p
rc 0.000174p 0.053264p 1.259455m 3.792195m 4.332478j 4.342335j 4.342348j 8.29e-10p 1.02e-09p 4.50e-10p

mo, tc half lives from 80eng2; ru, rh, pd, ag half lives 89wal1.
1

mass number 113 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 43 tc g 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd m 48 cd g 49 in m 49 in g 50 sn g 51 sb g
half life 0.652s 2.7 s 0.9 s 1.64 m 1.14 m 5.3 h 14.6 y 9.e15y 1.658h stable 115.1d 6.7 m
lambda 1.063e+00 2.567e-01 7.702e-01 7.044e-03 1.013e-02 3.633e-05 1.505e-09 2.442e-24 1.161e-04 0.0 6.970e-08
1.724e-03
z - 1 g 100.0000 100.0000 100.0000 100.0000 10.0000 90.0000 1.3000 98.7000 0.0 100.0000 0.0 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 99.9000 -100.0000 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1000 0.0 100.0000 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.033662m 0.0 0.034652n 5.66e-11n 0.036632n 0.0 0.0
zp 45.11 ri 2.08e-05p 0.006274p 0.018407p 0.011911p 7.26e-05p 1.09e-05p 5.01e-08p 1.50e-08p 0.0 0.0 0.0 0.0
sig0.507 cc 2.08e-05p 0.006295p 0.024702p 0.036613p 0.003734p 0.032962p 0.000429p 0.036268p 0.0 0.036696p 0.0
0.0
rc 2.08e-05p 0.006295p 0.024702p 0.036613n 0.003734o 0.032962m 0.000429m 0.036268l 0.0 0.036696l 0.0 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.015431j 0.0 0.017348l 1.01e-10n 0.016412l 0.0 0.0
zp 44.93 ri 4.07e-05p 0.006238p 0.006525p 0.004182p 1.51e-05p 2.25e-06p 1.93e-08p 5.77e-09p 0.0 0.0 0.0 0.0
sig0.538 cc 4.07e-05p 0.006279p 0.012804p 0.016986p 0.001714p 0.015290p 0.000199p 0.016805p 0.0 0.017003p 0.0
0.0
rc 4.07e-05p 0.006279p 0.012804o 0.016986l 0.001714o 0.015290j 0.000199j 0.016805j 0.0 0.017003j 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.073139j 0.0 0.072455n 5.36e-11n 0.078999n 0.0 0.0
zp 45.10 ri 0.000151p 0.011039p 0.050780p 0.018540p 0.000399p 5.44e-05p 4.39e-07p 1.17e-07p 4.99e-12p 2.44e-11p 0.0
0.0
sig0.552 cc 0.000151p 0.011189p 0.061969p 0.080510p 0.008450p 0.072513p 0.000943p 0.080021p 4.99e-12p 0.080964p 0.0
0.0
rc 0.000151p 0.011189p 0.061969p 0.080510l 0.008450o 0.072513j 0.000943j 0.080021j 4.99e-12p 0.080964j 0.0 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.178249k 0.0 0.189516n 7.80e-10n 0.189715n 0.0 0.0

zp 45.06 ri 7.50e-07p 0.010322p 0.165815p 0.020438p 3.35e-06p 5.01e-07p 0.0 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 7.65e-07p 0.010523p 0.175740p 0.196576p 0.019661p 0.176919p 0.002300p 0.194282p 0.0 0.196580p 0.0
0.0
rc 7.50e-07p 0.010323p 0.176137n 0.196576m 0.019661o 0.176919k 0.002300k 0.194282k 0.0 0.196580k 0.0 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.197689i 0.0 2.078357n 1.77e-07n 2.425413n 0.0 0.0
zp 45.13 ri 0.015945p 0.398563p 1.335267n 0.673579o 0.040575p 0.003528p 0.000312p 5.08e-05p 3.65e-08p 2.95e-07p 3.19e-11p
0.0
sig0.656 cc 0.016081p 0.418040p 1.764685p 2.422975p 0.283218p 2.184236p 0.028710p 2.439139p 3.68e-08p 2.467821p 3.21e-
11p 0.0
rc 0.015945p 0.414508p 1.749775m 2.423354k 0.282910m 2.184547i 0.028711i 2.439137i 3.67e-08p 2.467821i 3.19e-11p
0.0
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.232678n 1.34e-10n 0.263798n 0.0 0.0
zp 45.08 ri 7.85e-07p 0.012260p 0.210532p 0.029072p 5.40e-06p 8.07e-07p 0.0 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 7.82e-07p 0.012218p 0.222894p 0.251865p 0.025192p 0.226680p 0.002947p 0.248928p 0.0 0.251871p 0.0
0.0
rc 7.85e-07p 0.012261p 0.222793p 0.251865o 0.025192o 0.226680o 0.002947o 0.248928m 0.0 0.251871m 0.0 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.051962n 0.0 1.218987n 1.10e-09n 2.121038n 0.0 0.0
zp 45.50 ri 0.000506p 0.088613p 0.892283p 0.978663n 0.068492p 0.010234p 0.000417p 0.000125p 3.40e-08p 1.45e-07p 3.89e-
12p 0.0
sig0.576 cc 0.000506p 0.089039p 0.980510p 1.960137p 0.264444p 1.774348p 0.023484p 2.015874p 3.40e-08p 2.039334p 3.89e-
12p 0.0
rc 0.000506p 0.089120p 0.981402o 1.960065m 0.264499n 1.774293m 0.023483l 2.015874l 3.40e-08h 2.039334k 3.89e-12p
0.0
cf249t xi 0.0 0.312367l 1.953334j 1.632637j 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.918625k 0.0 3.018578n 2.33e-08n 4.257655i 0.0 0.0
zp 45.54 ri 0.004904p 0.309794p 1.937248n 1.619192n 0.251948p 0.037535p 0.003661p 0.001094p 1.78e-06p 7.59e-06p 1.62e-
09p 0.0
sig0.645 cc 0.003406p 0.218571p 2.036680p 3.875800p 0.635430p 3.525256p 0.049440p 4.115986p 1.76e-06p 4.165386p 1.60e-
09p 0.0
rc 0.004904p 0.314698p 2.251946n 3.871138m 0.639062o 3.521560k 0.049442k 4.115984j 1.78e-06g 4.165386i 1.62e-09p
0.0
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.590853k 0.0 4.850111k 2.66e-09n 4.338537n 0.0 0.0

zp 45.32 ri 0.004594p 0.364012p 2.387820n 1.601312n 0.085764p 0.012815p 0.000364p 0.000109p 2.83e-08p 1.21e-07p 2.90e-12p 0.0
sig0.590 cc 0.004623p 0.370935p 2.773843p 4.357111p 0.522017p 3.934296p 0.051512p 4.405329p 2.85e-08p 4.456789p 2.92e-12p 0.0
rc 0.004594p 0.368606p 2.756425m 4.357737k 0.521538m 3.934779j 0.051516j 4.405325j 2.84e-08i 4.456789j 2.90e-12p 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.436443k 0.0 3.869691n 2.50e-10n 3.918924n 0.0 0.0
zp 45.24 ri 0.006305p 0.406187p 2.206201n 1.209517n 0.054254p 0.008107p 0.000186p 5.56e-05p 1.16e-08p 4.96e-08p 0.0 0.0
sig0.590 cc 0.006300p 0.412202p 2.616856p 3.828253p 0.437041p 3.453529p 0.045082p 3.845774p 1.16e-08p 3.890811p 0.0 0.0
rc 0.006305p 0.412491p 2.618692m 3.828209l 0.437075m 3.453495k 0.045081k 3.845775j 1.16e-08h 3.890811j 0.0 0.0

tc half life from 80eng2; ru, rh, pd, ag half lives 89wal1; sn, in half lives 90bur1.

1

mass number 114 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	42 mo g	43 tc g	44 ru g	45 rh g	46 pd g	47 ag g	48 cd g	49 in m	49 in g	50 sn g
half life	0.377s	0.202s	8.14 s	1.8 s	2.48 m	4.6 s	stable	49.51d	71.9 s	stable
lambda	1.839e+00	3.431e+00	8.515e-02	3.851e-01	4.658e-03	1.507e-01	0.0	1.620e-07	9.640e-03	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	-3.5000	-2.0000	98.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	96.5000	0.0
th227t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.030304n	0.0	0.0	0.0
zp 45.56 ri	3.61e-11p	3.21e-07p	0.000832p	0.005736p	0.023317p	0.000415p	2.89e-06p	3.19e-11p	1.06e-11p	0.0
sig0.507 cc	3.61e-11p	3.21e-07p	0.000833p	0.006568p	0.029886p	0.030301p	0.030304p	3.19e-11p	4.14e-11p	4.06e-11p
rc	3.61e-11p	3.21e-07p	0.000833p	0.006568p	0.029886p	0.030301o	0.030304n	3.19e-11p	4.14e-11p	4.06e-11o
th229t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.021486l	0.0	0.0	0.0
zp 45.39 ri	1.54e-09p	1.84e-06p	0.001890p	0.004321p	0.015117p	0.000154p	1.61e-06p	2.12e-11p	7.07e-12p	0.0
sig0.538 cc	1.54e-09p	1.84e-06p	0.001892p	0.006213p	0.021330p	0.021484p	0.021486p	2.12e-11p	2.75e-11p	2.70e-11p
rc	1.54e-09p	1.84e-06p	0.001892p	0.006213p	0.021330p	0.021484n	0.021486l	2.12e-11p	2.75e-11p	2.70e-11o

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 pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.061059n      0.0       0.0       0.0
zp 45.51 ri 1.49e-09p 8.20e-06p 0.002038p 0.028014p 0.028770p 0.002218p 9.52e-06p 1.44e-09p 4.06e-10p       0.0
sig0.552 cc 1.49e-09p 8.21e-06p 0.002047p 0.030061p 0.058831p 0.061049p 0.061059p 1.44e-09p 1.80e-09p 1.76e-09p
         rc 1.49e-09p 8.21e-06p 0.002047p 0.030061p 0.058831p 0.061049o 0.061059n 1.44e-09p 1.80e-09p 1.76e-09p
 am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.148919n      0.0       0.0       0.0
zp 45.23 ri       0.0  5.32e-08p 0.002676p 0.113026p 0.033196p 2.18e-05p 6.78e-12p       0.0       0.0       0.0
sig0.350 cc       0.0  5.32e-08p 0.002676p 0.115701p 0.148897p 0.148919p 0.148919p       0.0       0.0       0.0
         rc       0.0  5.32e-08p 0.002676p 0.115701p 0.148897o 0.148919o 0.148919n       0.0       0.0       0.0
 am241h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.838108n      0.0       0.0       0.0
zp 45.33 ri 1.49e-05p 0.004887p 0.185493p 0.919570p 0.660358p 0.066938p 0.000847p 1.03e-06p 1.81e-07p 1.83e-10p
sig0.656 cc 1.49e-05p 0.004902p 0.190395p 1.109964p 1.770322p 1.837261p 1.838108p 1.03e-06p 1.17e-06p 1.15e-06p
         rc 1.49e-05p 0.004902p 0.190395p 1.109964o 1.770322n 1.837261n 1.838108m 1.03e-06p 1.17e-06p 1.15e-06p
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.105254n      0.0       0.0       0.0
zp 45.27 ri       0.0  2.18e-08p 0.001453p 0.076892p 0.026886p 2.30e-05p 9.57e-12p       0.0       0.0       0.0
sig0.350 cc       0.0  2.18e-08p 0.001453p 0.078345p 0.105231p 0.105254p 0.105254p       0.0       0.0       0.0
         rc       0.0  2.18e-08p 0.001453p 0.078345p 0.105231p 0.105254o 0.105254n       0.0       0.0       0.0
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.093787n      0.0       0.0       0.0
zp 45.76 ri       0.0  5.13e-11p 0.000184p 0.219513p 0.858027p 0.016063p 3.58e-07p       0.0       0.0       0.0
sig0.350 cc       0.0  5.13e-11p 0.000184p 0.219697p 1.077724p 1.093787p 1.093787p       0.0       0.0       0.0
         rc       0.0  5.13e-11p 0.000184p 0.219697p 1.077724n 1.093787n 1.093787m       0.0       0.0       0.0
 cf249t  xi      0.0       0.0  0.090590o 0.938513j 2.083571j 0.510928l      0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  4.457900l 3.577627i      0.0       0.0       0.0
zp 45.92 ri 3.77e-07p 0.000426p 0.089854p 0.930892p 2.066653n 0.506965l 0.029274p 7.14e-05p 2.38e-05p 5.73e-08p
sig0.645 cc 2.38e-07p 0.000269p 0.057035p 0.795007p 3.066983p 3.595589p 3.624069p 6.94e-05p 9.02e-05p 8.84e-05p
         rc 3.77e-07p 0.000426p 0.090281p 1.021173p 3.087826n 3.594791k 3.624069i 7.14e-05p 9.27e-05p 9.09e-05p
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  4.508972n      0.0       0.0       0.0
zp 45.73 ri 1.02e-07p 0.000362p 0.084489p 1.496551n 2.500345n 0.421291p 0.005933p 4.34e-06p 1.45e-06p 3.54e-10p
sig0.590 cc 1.02e-07p 0.000362p 0.084851p 1.581403p 4.081747p 4.503039p 4.508972p 4.34e-06p 5.63e-06p 5.52e-06p
         rc 1.02e-07p 0.000362p 0.084851p 1.581403m 4.081747l 4.503039m 4.508972l 4.34e-06p 5.63e-06p 5.52e-06o
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

xc 0.0 0.0 0.0 0.0 0.0 0.0 4.943473n 0.0 0.0 0.0
zp 45.65 ri 2.37e-07p 0.000676p 0.127740p 1.859018n 2.590708n 0.361196p 0.004134p 2.43e-06p 8.10e-07p 1.59e-10p
sig0.590 cc 2.37e-07p 0.000677p 0.128417p 1.987435p 4.578143p 4.939339p 4.943473p 2.43e-06p 3.15e-06p 3.09e-06p
rc 2.37e-07p 0.000677p 0.128417p 1.987435m 4.578143l 4.939339l 4.943473l 2.43e-06p 3.15e-06p 3.09e-06o

mo, tc, ru half lives from 80eng2; rh, pd, ag half lives 89wal1.
1

mass number 115 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd m 48 cd g 49 in m 49 in g 50 sn g 51 sb g 52 te g
half life 0.878s 0.99 s 47. s 18.7 s 20. m 44.6 d 2.228d 4.486h 5.e14y stable 32. m 6. m
lambda 7.895e-01 7.001e-01 1.475e-02 3.707e-02 5.776e-04 1.799e-07 3.601e-06 4.292e-05 4.396e-23 0.0 3.610e-04
1.925e-03
z - 1 g 100.0000 100.0000 100.0000 27.0000 73.0000 9.5000 90.5000 100.0000 0.0 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 5.0000 95.0000 0.0100 99.9900 3.7000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 96.3000 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.030215n 0.0 0.0
zp 46.00 ri 5.59e-05p 0.002917p 0.024297p 0.001445p 0.001445p 4.21e-05p 1.26e-05p 1.37e-09p 5.84e-09p 0.0 0.0 0.0
sig0.507 cc 5.59e-05p 0.002973p 0.027270p 0.008808p 0.021352p 0.002511p 0.027704p 0.027704p 0.029190p 0.030215p 0.0
0.0
rc 5.59e-05p 0.002973p 0.027270p 0.008808p 0.021352p 0.002511o 0.027704o 0.027704o 0.029190n 0.030215m 0.0
0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.018258i 0.0 0.0 0.019639k 0.0 0.0
zp 45.83 ri 0.000179p 0.002382p 0.016314p 0.000466p 0.000466p 1.86e-05p 5.57e-06p 5.62e-10p 2.40e-09p 0.0 0.0 0.0
sig0.538 cc 0.000179p 0.002562p 0.018876p 0.005563p 0.014246p 0.001650p 0.018183p 0.018183p 0.019160p 0.019833p 0.0
0.0
rc 0.000179p 0.002562p 0.018876p 0.005563p 0.014246n 0.001650o 0.018183i 0.018183i 0.019160i 0.019833i 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.076751j 0.0 0.0 0.079696n 0.0 0.0
zp 45.90 ri 0.000464p 0.019023p 0.052265p 0.005699p 0.005699p 0.000123p 3.28e-05p 1.75e-08p 8.54e-08p 2.87e-12p 0.0
0.0
sig0.552 cc 0.000464p 0.019486p 0.071751p 0.025072p 0.058077p 0.006894p 0.076410p 0.076411p 0.080478p 0.083305p 0.0
0.0
rc 0.000464p 0.019486p 0.071751o 0.025072o 0.058077n 0.006894o 0.076410j 0.076411j 0.080478j 0.083305j 0.0 0.0

am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.003996n 0.046656i 0.0 0.0 0.051575i 0.0 0.0
zp 45.40 ri 0.000250p 0.030867p 0.019964p 2.19e-05p 2.19e-05p 4.01e-11p 1.20e-11p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.000250p 0.031116p 0.051081p 0.013814p 0.037311p 0.004235p 0.046889p 0.046890p 0.049390p 0.051124p 0.0
0.0
rc 0.000250p 0.031116p 0.051081o 0.013814o 0.037311n 0.004235n 0.046889i 0.046890i 0.049390i 0.051124h 0.0
0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.129276i 1.591087i 0.0 0.0 1.720363n 0.0 0.0
zp 45.52 ri 0.102270p 0.738849p 0.763691p 0.056623p 0.056623p 0.001848p 0.000301p 5.13e-07p 4.15e-06p 1.08e-09p 0.0
0.0
sig0.656 cc 0.102268p 0.841103p 1.604812p 0.489921p 1.228135p 0.143017p 1.577188p 1.577203p 1.661853p 1.720210p 0.0
0.0
rc 0.102270p 0.841119o 1.604810n 0.489922n 1.228134m 0.143017i 1.577188i 1.577203i 1.661853i 1.720210i 0.0 0.0
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.009892j 0.063804j 0.0 0.0 0.0 0.0 0.0
zp 45.46 ri 0.000222p 0.039980p 0.033432p 5.44e-05p 5.44e-05p 1.55e-10p 4.63e-11p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.000222p 0.040202p 0.073634p 0.019935p 0.053807p 0.006108p 0.067634p 0.067635p 0.071240p 0.073742p 0.0
0.0
rc 0.000222p 0.040202p 0.073634o 0.019935p 0.053807n 0.006108l 0.067634j 0.067635j 0.071240j 0.073742j 0.0 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.511846h 0.0 0.0 0.599009n 0.0 0.0
zp 45.96 ri 9.04e-06p 0.050764p 0.476601o 0.016082p 0.016082p 2.33e-06p 6.97e-07p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 8.73e-06p 0.049011p 0.528490p 0.158217p 0.401322p 0.046039p 0.513503p 0.513508p 0.540542p 0.559542p 0.0
0.0
rc 9.04e-06p 0.050773p 0.527374n 0.158473n 0.401065m 0.046027m 0.513514h 0.513519h 0.540541h 0.559542h 0.0
0.0
cf249t xi 0.017917o 0.471816j 1.552811j 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.268981i 2.779346h 0.0 0.0 2.847108i 0.0 0.0
zp 46.29 ri 0.016571p 0.436357p 1.436112n 0.512308p 0.499630p 0.065108p 0.019448p 0.000160p 0.000681p 8.28e-07p 8.99e-
11p 0.0
sig0.645 cc 0.008117p 0.343028p 1.849550p 1.024314p 1.875107p 0.295596p 2.689858p 2.690062p 2.886842p 2.986375p 9.85e-
11p 0.0
rc 0.016571p 0.452928p 1.889040o 1.022349n 1.878629n 0.294695i 2.690838h 2.691027h 2.886806h 2.986375g 9.00e-11p
0.0
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 4.165995h 0.0 0.0 4.553934h 0.0 0.0
zp 46.15 ri 0.011965p 0.611013p 2.685434n 0.600395p 0.600898p 0.037988p 0.011347p 2.85e-05p 0.000122p 2.96e-08p 0.0
0.0
sig0.590 cc 0.011967p 0.623047p 3.308777p 1.493831p 3.015868p 0.399191p 4.159849p 4.159917p 4.405273p 4.559190p 0.0
0.0
rc 0.011965p 0.622978o 3.308412m 1.493666n 3.016039l 0.399195m 4.159845h 4.159913h 4.405273h 4.559190g 0.0
0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.297698j 5.269075i 0.0 0.0 5.565981i 0.0 0.0
zp 46.08 ri 0.020939p 0.894295p 3.340350n 0.636328p 0.636760p 0.033791p 0.010093p 2.10e-05p 8.97e-05p 1.80e-08p 0.0
0.0
sig0.590 cc 0.020940p 0.915304p 4.255914p 1.785474p 3.743194p 0.478670p 5.093885p 5.093954p 5.384190p 5.572666p 0.0
0.0
rc 0.020939p 0.915233o 4.255584m 1.785336n 3.743336l 0.478674i 5.093881i 5.093950i 5.384190i 5.572666h 0.0 0.0

ru half life 80eng2; ag-115g branching 80tob1; ag-115m branching to fit data; rh, pd, ag, cd, in half lives 89wal1.

1

mass number 116 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 42 mo g 43 tc g 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g 49 in m 49 in g 50 sn g
half life 0.115s 1.70 s 0.7 s 12.7 s 10.5 s 2.68 m stable 54.2 m 14.2 s stable
lambda 0.0 6.027e+00 4.077e-01 9.902e-01 5.458e-02 6.601e-02 4.311e-03 0.0 2.131e-04 4.881e-02 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 50.0000 50.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 100.0000
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.032324n 0.0 0.0 0.0
zp 46.42 ri 0.0 5.88e-11p 3.66e-06p 0.000483p 0.025241p 0.002907p 0.002907p 0.000782p 1.39e-07p 1.39e-07p 2.86e-11p
sig0.507 cc 0.0 5.88e-11p 3.66e-06p 0.000487p 0.025728p 0.015771p 0.015771p 0.032324p 1.39e-07p 1.39e-07p 2.77e-07p
rc 0.0 5.88e-11p 3.66e-06p 0.000487p 0.025728p 0.015771p 0.015771p 0.032324n 1.39e-07p 1.39e-07p 2.77e-07o
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.019618l 0.0 0.0 0.0
zp 46.27 ri 0.0 8.22e-10p 1.47e-05p 0.000465p 0.016887p 0.000971p 0.000971p 0.000310p 4.93e-08p 4.93e-08p 2.58e-11p
sig0.538 cc 0.0 8.22e-10p 1.47e-05p 0.000480p 0.017367p 0.009654p 0.009654p 0.019618p 4.93e-08p 4.93e-08p 9.87e-08p
rc 0.0 8.22e-10p 1.47e-05p 0.000480p 0.017367p 0.009654p 0.009654p 0.019618l 4.93e-08p 4.93e-08p 9.87e-08o

pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.064666n 0.0 0.0 0.0
zp 46.29 ri 0.0 1.38e-08p 3.80e-05p 0.004874p 0.036981p 0.010928p 0.010928p 0.000916p 1.01e-06p 1.01e-06p 1.95e-10p
sig0.552 cc 0.0 1.38e-08p 3.80e-05p 0.004912p 0.041894p 0.031875p 0.031875p 0.064666p 1.01e-06p 1.01e-06p 2.01e-06p
rc 0.0 1.38e-08p 3.80e-05p 0.004912p 0.041894p 0.031875p 0.031875p 0.064666m 1.01e-06p 1.01e-06p 2.01e-06o
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.039796m 0.0 0.0 0.0
zp 45.60 ri 5.56e-10p 3.32e-06p 0.000958p 0.016012p 0.020661p 0.001074p 0.001074p 1.37e-05p 2.17e-09p 2.17e-09p 0.0
sig0.559 cc 5.56e-10p 3.32e-06p 0.000961p 0.016973p 0.037634p 0.019891p 0.019891p 0.039796p 2.17e-09p 2.17e-09p 4.34e-09p
rc 5.56e-10p 3.32e-06p 0.000961p 0.016973p 0.037634o 0.019891o 0.019891o 0.039796m 2.17e-09p 2.17e-09p 4.34e-09o
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.544793n 0.0 0.0 0.0
zp 45.71 ri 7.77e-07p 0.000589p 0.050118p 0.530112p 0.788827p 0.085161p 0.085161p 0.004825p 7.96e-06p 7.96e-06p 5.67e-09p
sig0.656 cc 7.77e-07p 0.000590p 0.050708p 0.580820p 1.369647p 0.769984p 0.769984p 1.544793p 7.96e-06p 7.96e-06p 1.59e-05p
rc 7.77e-07p 0.000590p 0.050708p 0.580820o 1.369647n 0.769984n 0.769984n 1.544793m 7.96e-06p 7.96e-06p 1.59e-05o
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.038780n 0.0 0.0 0.0
zp 45.73 ri 2.07e-10p 1.52e-06p 0.000568p 0.012682p 0.022174p 0.001660p 0.001660p 3.35e-05p 9.12e-09p 9.12e-09p 0.0
sig0.565 cc 2.07e-10p 1.52e-06p 0.000570p 0.013252p 0.035426p 0.019373p 0.019373p 0.038780p 9.12e-09p 9.12e-09p 1.82e-08p
rc 2.07e-10p 1.52e-06p 0.000570p 0.013252p 0.035426p 0.019373p 0.019373p 0.038780m 9.12e-09p 9.12e-09p 1.82e-08o
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.216646n 0.0 0.0 0.0
zp 46.15 ri 0.0 0.0 2.75e-07p 0.005980p 0.181399p 0.014627p 0.014627p 1.23e-05p 0.0 0.0 0.0
sig0.350 cc 0.0 0.0 2.75e-07p 0.005981p 0.187379p 0.108317p 0.108317p 0.216646p 0.0 0.0 1.62e-12p
rc 0.0 0.0 2.75e-07p 0.005981p 0.187379o 0.108317o 0.108317o 0.216646m 0.0 0.0 1.62e-12o
cf249t xi 0.0 0.0 0.0 0.133792l 0.991378j 0.0 0.0 0.142565l 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.849600k 2.191968i 0.0 0.0 0.0
zp 46.65 ri 2.45e-10p 1.51e-06p 0.001673p 0.105738p 0.783502p 0.608868p 0.581188p 0.112672l 0.003145p 0.003145p 2.03e-05p
sig0.645 cc 1.63e-10p 1.01e-06p 0.001117p 0.071619p 1.024458p 0.982005p 0.982005p 2.196127p 0.001907p 0.001907p 0.003827p
rc 2.45e-10p 1.51e-06p 0.001675p 0.107413p 0.890915p 1.054325m 1.026645j 2.193642i 0.003145p 0.003145p 0.006311p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.625831n 0.0 0.0 0.0
zp 46.57 ri 9.85e-12p 3.65e-07p 0.000834p 0.127370p 1.523757n 0.885082p 0.885082p 0.203707p 0.000945p 0.000945p 1.19e-06p

sig0.590 cc 9.85e-12p 3.65e-07p 0.000835p 0.128205p 1.651962p 1.711062p 1.711062p 3.625831p 0.000945p 0.000945p 0.001891p
rc 9.85e-12p 3.65e-07p 0.000835p 0.128205p 1.651962m 1.711062n 1.711062n 3.625831m 0.000945p 0.000945p 0.001891o
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.478467n 0.0 0.0 0.0
zp 46.50 ri 3.40e-11p 1.03e-06p 0.001952p 0.247898p 2.503919n 1.241588n 1.241588n 0.241521p 0.000933p 0.000933p 9.68e-07p
sig0.590 cc 3.40e-11p 1.03e-06p 0.001953p 0.249851p 2.753771p 2.618473p 2.618473p 5.478467p 0.000933p 0.000933p 0.001866p
rc 3.40e-11p 1.03e-06p 0.001953p 0.249851p 2.753771m 2.618473l 2.618473l 5.478467k 0.000933p 0.000933p 0.001866o

tc, ru half lives from 80eng2; rh, pd, ag half lives from 89wal1.
1

mass number 117 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd m 48 cd g 49 in m 49 in g 50 sn g 51 sb g 52 te g
half life 0.343s 1.22 s 5. s 5.3 s 1.22 m 3.4 h 2.49 h 1.94 h 44. m stable 2.80 h 64. m
lambda 2.021e+00 5.682e-01 1.386e-01 1.308e-01 9.469e-03 5.663e-05 7.733e-05 9.925e-05 2.626e-04 0.0 6.876e-05 1.805e-04
z - 1 g 100.0000 100.0000 100.0000 50.0000 50.0000 50.0000 50.0000 92.0000 8.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 1.0000 99.0000 53.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 47.0000 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.038272n 0.0 0.0
zp 46.84 ri 1.12e-07p 0.000118p 0.014080p 0.009323p 0.009323p 0.004168p 0.001245p 2.83e-06p 1.21e-05p 4.28e-09p 0.0 0.0
sig0.507 cc 1.12e-07p 0.000118p 0.014198p 0.016422p 0.016422p 0.012379p 0.025878p 0.023934p 0.025587p 0.038272p 0.0 0.0
rc 1.12e-07p 0.000118p 0.014198p 0.016422p 0.016422p 0.012379o 0.025878o 0.023934o 0.025587n 0.038272m 0.0 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.015695l 0.0 0.015984j 0.020220k 0.0 0.0
zp 46.72 ri 7.10e-07p 0.000152p 0.012432p 0.003734p 0.003734p 0.002070p 0.000618p 1.10e-06p 4.70e-06p 4.21e-09p 0.0 0.0
sig0.538 cc 7.10e-07p 0.000153p 0.012584p 0.010026p 0.010026p 0.007083p 0.015658p 0.014477p 0.015074p 0.022747p 0.0 0.0

rc 7.10e-07p 0.000153p 0.012584p 0.010026o 0.010026o 0.007083o 0.015658k 0.014477k 0.015074j 0.022747i 0.0
0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.065692n 0.0 0.0
zp 46.68 ri 2.55e-06p 0.001061p 0.023355p 0.018377p 0.018377p 0.003544p 0.000942p 5.45e-06p 2.66e-05p 1.06e-08p 0.0
0.0
sig0.552 cc 2.55e-06p 0.001064p 0.024419p 0.030587p 0.030587p 0.018838p 0.046823p 0.043271p 0.042759p 0.065692p 0.0
0.0
rc 2.55e-06p 0.001064p 0.024419p 0.030587p 0.030587p 0.018838o 0.046823o 0.043271o 0.042759n 0.065692m 0.0
0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.031885m 0.0 0.0
zp 46.19 ri 3.89e-05p 0.003382p 0.019163p 0.004496p 0.004496p 0.000238p 7.10e-05p 1.11e-07p 4.74e-07p 5.23e-11p 0.0
0.0
sig0.559 cc 3.89e-05p 0.003421p 0.022583p 0.015788p 0.015788p 0.008131p 0.023753p 0.021934p 0.020260p 0.031885p 0.0
0.0
rc 3.89e-05p 0.003421p 0.022583p 0.015788p 0.015788p 0.008131o 0.023753o 0.021934n 0.020260n 0.031885l 0.0
0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.496050n 0.0 0.0
zp 46.20 ri 0.007193p 0.207987p 0.798843p 0.223436p 0.223436p 0.029946p 0.004875p 3.67e-05p 0.000297p 3.56e-07p 4.01e-
11p 0.0
sig0.656 cc 0.007193p 0.215181p 1.014024p 0.730448p 0.730448p 0.395170p 1.100546p 1.016491p 0.957310p 1.496050p 4.01e-
11p 0.0
rc 0.007193p 0.215181p 1.014024o 0.730448o 0.730448o 0.395170n 1.100546n 1.016491n 0.957310m 1.496050l 4.01e-11p
0.0
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.029353n 0.0 0.0
zp 46.28 ri 2.38e-05p 0.002429p 0.016666p 0.004891p 0.004891p 0.000347p 0.000104p 2.37e-07p 1.01e-06p 1.75e-10p 0.0
0.0
sig0.565 cc 2.38e-05p 0.002453p 0.019119p 0.014450p 0.014450p 0.007572p 0.021779p 0.020113p 0.018693p 0.029353p 0.0
0.0
rc 2.38e-05p 0.002453p 0.019119p 0.014450p 0.014450p 0.007572o 0.021779o 0.020113n 0.018693n 0.029353l 0.0
0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.143133n 0.0 0.0

zp 46.33 ri 1.28e-08p 0.001200p 0.100396p 0.020739p 0.020739p 4.55e-05p 1.36e-05p 6.63e-12p 2.82e-11p 0.0 0.0 0.0
sig0.350 cc 1.28e-08p 0.001200p 0.101595p 0.071537p 0.071537p 0.035814p 0.107319p 0.099091p 0.090614p 0.143133p 0.0
0.0
rc 1.28e-08p 0.001200p 0.101595p 0.071537o 0.071537o 0.035814o 0.107319n 0.099091n 0.090614m 0.143133l 0.0
0.0
cf249t xi 0.0 0.0 0.353297k 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.559627l 0.0 0.0 0.0 1.862943k 0.0 0.0
zp 46.85 ri 5.27e-05p 0.017089p 0.373875p 0.592143p 0.592143p 0.192384p 0.057871p 0.001011p 0.004309p 7.22e-06p 7.20e-
10p 0.0
sig0.593 cc 6.67e-05p 0.021691p 0.494787p 0.796058p 0.796058p 0.578072p 1.247867p 1.154757p 1.218858p 1.830886p 6.68e-
10p 0.0
rc 5.27e-05p 0.017142p 0.391017p 0.787652o 0.787652o 0.586210k 1.239349n 1.147074n 1.222930l 1.830886j 7.20e-10p
0.0
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.902772n 0.0 0.0
zp 46.99 ri 3.62e-05p 0.017016p 0.577781p 0.875578p 0.875578p 0.417247p 0.124632p 0.002826p 0.012048p 2.94e-05p 3.72e-
09p 0.0
sig0.590 cc 3.62e-05p 0.017052p 0.594833p 1.172995p 1.172995p 1.003744p 1.884124p 1.746258p 1.977226p 2.902772p 3.72e-
09p 0.0
rc 3.62e-05p 0.017052p 0.594833o 1.172995o 1.172995o 1.003744o 1.884124n 1.746258n 1.977226m 2.902772l 3.72e-09p
0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.087148n 0.0 0.0
zp 46.92 ri 0.000107p 0.041450p 1.180066n 1.522757n 1.522757n 0.617203p 0.184359p 0.003500p 0.014919p 3.01e-05p 3.14e-
09p 0.0
sig0.590 cc 0.000107p 0.041557p 1.221623p 2.133568p 2.133568p 1.683987p 3.384712p 3.134274p 3.425953p 5.087148p 3.14e-
09p 0.0
rc 0.000107p 0.041557p 1.221623m 2.133568m 2.133568m 1.683987n 3.384712l 3.134274l 3.425953l 5.087148k 3.14e-09p
0.0

ag-to-cd branching from 80eng2; ru half life from 80eng2; rh, pd, ag, cd, in half lives 89wal1.

1

mass number 118 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g 49 in m 49 in g 50 sn g 51 sb m 51 sb g 52 te g

half life 0.662s 0.316s 2.4 s 2.4 s 4.0 s 50.3 m 4.4 m 5.0 s stable 5.00 h 3.6 m 6.00 d
lambda 1.047e+00 2.194e+00 2.888e-01 2.888e-01 1.733e-01 2.297e-04 2.626e-03 1.386e-01 0.0 3.851e-05 3.209e-03 1.337e-06
z - 1 g 100.0000 100.0000 100.0000 50.0000 50.0000 100.0000 0.0 100.0000 100.0000 -100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 54.0000 0.0 0.0 100.0000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 46.0000 0.0 0.0 0.0 0.0 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.047476n 0.0 0.0 0.0
zp 47.24 ri 2.81e-09p 7.53e-06p 0.006214p 0.007798p 0.007798p 0.025498p 3.99e-05p 0.000120p 3.48e-07p 0.0 0.0 0.0
sig0.507 cc 2.81e-09p 7.53e-06p 0.006222p 0.010909p 0.015927p 0.047315p 3.99e-05p 0.047435p 0.047476p 0.0 0.0 0.0
rc 2.81e-09p 7.53e-06p 0.006222p 0.010909p 0.015927p 0.047315p 3.99e-05p 0.047435o 0.047476n 0.0 0.0 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.007029k 0.0 0.0 0.016754i 0.0 0.0 0.017332l 0.0 0.0 0.0
zp 47.16 ri 1.64e-08p 9.16e-06p 0.004583p 0.002113p 0.002113p 0.008083p 7.36e-06p 2.21e-05p 1.46e-07p 0.0 0.0 0.0
sig0.538 cc 1.34e-08p 7.49e-06p 0.003747p 0.004128p 0.006028p 0.016885p 1.11e-05p 0.016919p 0.016930p 1.06e-12p 0.0 0.0
rc 1.64e-08p 9.18e-06p 0.004592l 0.004409p 0.006436p 0.016900i 7.36e-06p 0.016922i 0.016930i 0.0 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.066719n 0.0 0.0 0.0
zp 47.08 ri 9.73e-08p 0.000139p 0.009625p 0.021017p 0.021017p 0.014583p 7.41e-05p 0.000263p 3.88e-07p 1.21e-11p 7.12e-12p 0.0
sig0.552 cc 9.73e-08p 0.000139p 0.009765p 0.025900p 0.037813p 0.066382p 7.41e-05p 0.066644p 0.066719p 1.21e-11p 7.12e-12p 0.0
rc 9.73e-08p 0.000139p 0.009765p 0.025900p 0.037813p 0.066382o 7.41e-05p 0.066644n 0.066719m 1.21e-11p 7.12e-12p 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.036024m 0.0 0.0 0.0
zp 46.76 ri 9.20e-07p 0.000427p 0.011049p 0.010584p 0.010584p 0.003344p 8.50e-06p 2.55e-05p 1.75e-08p 0.0 0.0 0.0
sig0.559 cc 9.20e-07p 0.000428p 0.011477p 0.016323p 0.023831p 0.035990p 8.50e-06p 0.036015p 0.036024p 0.0 0.0 0.0
rc 9.20e-07p 0.000428p 0.011477p 0.016323p 0.023831o 0.035990n 8.50e-06p 0.036015m 0.036024l 0.0 0.0 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.447021n 0.0 0.0 0.0
zp 46.81 ri 0.000314p 0.033133p 0.429170p 0.386981p 0.386981p 0.203314p 0.001065p 0.006034p 2.91e-05p 9.62e-09p 3.38e-09p 0.0

sig0.656 cc 0.000314p 0.033448p 0.462618p 0.618290p 0.902703p 1.439893p 0.001065p 1.445927p 1.447021p 9.62e-09p 3.38e-09p 0.0
rc 0.000314p 0.033448p 0.462618p 0.618290p 0.902703o 1.439893n 0.001065p 1.445927n 1.447021m 9.62e-09p 3.38e-09p 0.0
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.027146n 0.0 0.0 0.0
zp 46.81 ri 5.84e-07p 0.000276p 0.007633p 0.008111p 0.008111p 0.002976p 9.41e-06p 2.82e-05p 2.60e-08p 0.0 0.0 0.0
sig0.565 cc 5.84e-07p 0.000276p 0.007909p 0.012066p 0.017616p 0.027108p 9.41e-06p 0.027136p 0.027146p 0.0 0.0 0.0
rc 5.84e-07p 0.000276p 0.007909p 0.012066p 0.017616p 0.027108o 9.41e-06p 0.027136n 0.027146m 0.0 0.0 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.084595n 0.0 0.0 0.0
zp 46.49 ri 6.07e-10p 0.000182p 0.047080p 0.018579p 0.018579p 0.000174p 8.33e-11p 2.50e-10p 0.0 0.0 0.0 0.0
sig0.350 cc 6.07e-10p 0.000182p 0.047262p 0.042210p 0.061627p 0.084595p 8.33e-11p 0.084595p 0.084595p 0.0 0.0 0.0
rc 6.07e-10p 0.000182p 0.047262p 0.042210p 0.061627o 0.084595n 8.33e-11p 0.084595n 0.084595m 0.0 0.0 0.0
cf249t xi 0.0 0.0 0.268583j 0.0 0.0 0.223649k 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.021375i 0.0 0.0 0.0
zp 47.04 ri 1.35e-05p 0.005055p 0.255362p 0.271185p 0.271185p 0.212640p 0.001480p 0.004441p 1.92e-05p 1.33e-09p 9.23e-10p 0.0
sig0.593 cc 1.14e-05p 0.004295p 0.220669p 0.379868p 0.554607p 1.015290p 0.001518p 1.019843p 1.021380p 1.36e-09p 9.46e-10p 0.0
rc 1.35e-05p 0.005069p 0.260430p 0.401400p 0.586044p 1.015440o 0.001480p 1.019881k 1.021380i 1.33e-09p 9.23e-10p 0.0
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.908332n 0.0 0.0 0.0
zp 47.39 ri 9.47e-07p 0.001321p 0.125590p 0.486669p 0.486669p 0.751827p 0.013983p 0.041950p 0.000323p 7.30e-08p 5.07e-08p 2.92e-12p
sig0.590 cc 9.47e-07p 0.001321p 0.126911p 0.550124p 0.803181p 1.852075p 0.013983p 1.894026p 1.908332p 7.30e-08p 5.07e-08p 2.92e-12p
rc 9.47e-07p 0.001321p 0.126911p 0.550124p 0.803181p 1.852075n 0.013983p 1.894026n 1.908332m 7.30e-08p 5.07e-08p 2.92e-12p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.458818n 0.0 0.0 0.0
zp 47.32 ri 4.01e-06p 0.004619p 0.366241p 1.201820n 1.201820n 1.584506n 0.024833p 0.074499p 0.000476p 8.88e-08p 6.17e-08p 2.92e-12p

sig0.590 cc 4.01e-06p 0.004623p 0.370864p 1.387252p 2.025388p 4.359011p 0.024833p 4.433509p 4.458818p 8.88e-08p 6.17e-08p 2.92e-12p
rc 4.01e-06p 0.004623p 0.370864p 1.387252m 2.025388l 4.359011l 0.024833p 4.433509l 4.458818l 8.88e-08p 6.17e-08p 2.92e-12p

ru, rh, ag half lives 80eng2; pd, ag, cd, in half lives 89wal1; sb half life 90bur1.

1

mass number 119 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag g 48 cd m 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te g
half life 0.195s 0.465s 1.76 s 2.1s 2.20 m 2.69 m 17.9 m 2.3 m 293. d stable 38.1 h 16. h
lambda 3.555e+00 1.491e+00 3.938e-01 3.301e-01 5.251e-03 4.295e-03 6.454e-04 5.023e-03 2.738e-08 0.0 5.054e-06 1.203e-05
z - 1 g 100.0000 100.0000 100.0000 100.0000 50.0000 50.0000 100.0000 0.0 5.0000 95.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 95.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.0000 0.0 100.0000 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.063451n 0.0 0.0
zp 47.65 ri 2.09e-11p 4.53e-07p 0.000939p 0.015060p 0.022786p 0.022786p 0.000355p 0.001514p 7.98e-06p 2.38e-06p 3.71e-10p 0.0
sig0.507 cc 2.09e-11p 4.53e-07p 0.000939p 0.015999p 0.030785p 0.030785p 0.031141p 0.033857p 0.001701p 0.063451p 3.71e-10p 0.0
rc 2.09e-11p 4.53e-07p 0.000939p 0.015999p 0.030785p 0.030785p 0.031141p 0.033857p 0.001701o 0.063451m 3.71e-10p 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.015712k 0.0 0.0
zp 47.59 ri 1.08e-10p 4.06e-07p 0.000489p 0.003199p 0.005839p 0.005839p 6.49e-05p 0.000277p 3.22e-06p 9.61e-07p 2.31e-10p 0.0
sig0.538 cc 1.08e-10p 4.06e-07p 0.000489p 0.003688p 0.007683p 0.007683p 0.007748p 0.008347p 0.000421p 0.015712p 2.31e-10p 0.0
rc 1.08e-10p 4.06e-07p 0.000489p 0.003688p 0.007683p 0.007683p 0.007748p 0.008347p 0.000421o 0.015712k 2.31e-10p 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.068772n 0.0 0.0

zp 47.48 ri 2.27e-09p 1.14e-05p 0.002587p 0.032752p 0.015599p 0.015599p 0.000377p 0.001839p 6.86e-06p 1.82e-06p 1.53e-09p 0.0
sig0.552 cc 2.27e-09p 1.14e-05p 0.002598p 0.035350p 0.033274p 0.033274p 0.033650p 0.036795p 0.001847p 0.068772p 1.53e-09p 0.0
rc 2.27e-09p 1.14e-05p 0.002598p 0.035350p 0.033274p 0.033274p 0.033650o 0.036795o 0.001847o 0.068772m 1.53e-09p 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.027857m 0.0 0.0
zp 47.31 ri 6.66e-09p 1.63e-05p 0.002009p 0.015543p 0.004909p 0.004909p 8.91e-05p 0.000380p 9.79e-07p 2.92e-07p 1.65e-10p 0.0
sig0.559 cc 6.66e-09p 1.63e-05p 0.002026p 0.017569p 0.013694p 0.013694p 0.013783p 0.014762p 0.000739p 0.027857p 1.65e-10p 0.0
rc 6.66e-09p 1.63e-05p 0.002026p 0.017569p 0.013694p 0.013694p 0.013783o 0.014762o 0.000739o 0.027857m 1.65e-10p 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.447021n 0.0 0.0
zp 47.43 ri 5.84e-06p 0.002379p 0.111494p 0.673510p 0.292948p 0.292948p 0.007986p 0.064611p 0.000979p 0.000159p 2.02e-06p 3.84e-10p
sig0.656 cc 5.84e-06p 0.002385p 0.113879p 0.787389p 0.686642p 0.686642p 0.694628p 0.785985p 0.040278p 1.447021p 2.02e-06p 3.84e-10p
rc 5.84e-06p 0.002385p 0.113879p 0.787389o 0.686642o 0.686642o 0.694628o 0.785985o 0.040278n 1.447021m 2.02e-06p 3.84e-10p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.023268n 0.0 0.0
zp 47.29 ri 9.08e-09p 1.77e-05p 0.001864p 0.013121p 0.003945p 0.003945p 7.10e-05p 0.000303p 8.19e-07p 2.45e-07p 1.54e-10p 0.0
sig0.565 cc 9.08e-09p 1.78e-05p 0.001882p 0.015002p 0.011446p 0.011446p 0.011518p 0.012325p 0.000617p 0.023268p 1.54e-10p 0.0
rc 9.08e-09p 1.78e-05p 0.001882p 0.015002p 0.011446p 0.011446p 0.011518o 0.012325o 0.000617o 0.023268m 1.54e-10p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.052614n 0.0 0.0
zp 46.81 ri 1.71e-06p 0.000583p 0.015910p 0.029733p 0.003151p 0.003151p 1.58e-05p 6.72e-05p 6.29e-08p 1.88e-08p 3.61e-12p 0.0
sig0.576 cc 1.71e-06p 0.000585p 0.016495p 0.046228p 0.026265p 0.026265p 0.026281p 0.027647p 0.001382p 0.052614p 3.61e-12p 0.0

rc 1.71e-06p 0.000585p 0.016495p 0.046228p 0.026265o 0.026265o 0.026281o 0.027647o 0.001382o 0.052614m 3.61e-12p 0.0
cf249t xi 0.0 0.0 0.035956l 0.355294j 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.609927i 0.0 0.0
zp 47.21 ri 8.30e-07p 0.000705p 0.038158p 0.377056p 0.091974p 0.091974p 0.001826p 0.007784p 2.63e-05p 7.84e-06p 9.16e-09p 0.0
sig0.593 cc 1.47e-06p 0.001248p 0.068725p 0.426594p 0.300216p 0.300216p 0.301935p 0.322642p 0.016157p 0.609513p 8.62e-09p 0.0
rc 8.30e-07p 0.000706p 0.038864p 0.415920p 0.299935p 0.299935p 0.301761p 0.322806o 0.016167o 0.609513i 9.16e-09p 0.0
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.240416n 0.0 0.0
zp 47.70 ri 0.0 2.10e-10p 0.000388p 0.356182p 0.435250p 0.435250p 0.002536p 0.010810p 1.19e-07p 3.55e-08p 0.0 0.0
sig0.350 cc 0.0 2.10e-10p 0.000388p 0.356570p 0.613535p 0.613535p 0.616071p 0.655149p 0.032758p 1.240416p 0.0 0.0
rc 0.0 2.10e-10p 0.000388p 0.356570p 0.613535p 0.613535p 0.616071p 0.655149o 0.032758o 1.240416m 0.0 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.913191n 0.0 0.0
zp 47.71 ri 1.07e-07p 0.000359p 0.079531p 1.341530n 1.071328n 1.071328n 0.065455p 0.279046p 0.003549p 0.001060p 4.26e-06p 2.47e-10p
sig0.590 cc 1.07e-07p 0.000359p 0.079890p 1.421420p 1.782038p 1.782038p 1.847494p 2.153459p 0.111222p 3.913191p 4.26e-06p 2.47e-10p
rc 1.07e-07p 0.000359p 0.079890p 1.421420m 1.782038l 1.782038l 1.847494l 2.153459m 0.111222m 3.913191k 4.26e-06p 2.47e-10p

ru, rh, pd half lives 80eng2; ag, cd, in, sn half lives 89wal1.
1

mass number 120 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	44 ru g	45 rh g	46 pd g	47 ag g	48 cd g	49 in m	49 in g	50 sn g	51 sb m	51 sb g	52 te g
half life	0.350s	0.172s	3.91 s	1.23 s	50.8 s	46. s	3.1 s	stable	5.76 d	16.0 m	stable
lambda	1.980e+00	4.030e+00	1.773e-01	5.635e-01	1.364e-02	1.507e-02	2.236e-01	0.0	1.393e-06	7.220e-04	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	50.0000	50.0000	100.0000	-100.0000	-100.0000	0.0
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.083840n 0.0 0.0 0.0
zp 48.06 ri 0.0 7.05e-09p 0.000115p 0.004241p 0.073251p 0.002995p 0.002995p 0.000242p 1.35e-08p 9.41e-09p 0.0
sig0.507 cc 0.0 7.05e-09p 0.000115p 0.004356p 0.077607p 0.041799p 0.041799p 0.083840p 1.35e-08p 9.41e-09p 0.0
rc 0.0 7.05e-09p 0.000115p 0.004356p 0.077607p 0.041799p 0.041799p 0.083840n 1.35e-08p 9.41e-09p 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.014678l 0.0 0.0 0.0
zp 48.02 ri 0.0 6.23e-09p 4.88e-05p 0.000714p 0.013081p 0.000388p 0.000388p 5.83e-05p 4.86e-09p 3.38e-09p 0.0
sig0.538 cc 0.0 6.23e-09p 4.88e-05p 0.000762p 0.013844p 0.007310p 0.007310p 0.014678p 4.86e-09p 3.38e-09p 0.0
rc 0.0 6.23e-09p 4.88e-05p 0.000762p 0.013844p 0.007310p 0.007310p 0.014678l 4.86e-09p 3.38e-09p 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.072878n 0.0 0.0 0.0
zp 47.90 ri 2.61e-11p 4.95e-07p 0.000406p 0.016642p 0.045723p 0.004985p 0.004985p 0.000137p 5.67e-08p 3.33e-08p 2.51e-12p
sig0.552 cc 2.61e-11p 4.95e-07p 0.000406p 0.017048p 0.062770p 0.036370p 0.036370p 0.072878p 5.67e-08p 3.33e-08p 2.51e-12p
rc 2.61e-11p 4.95e-07p 0.000406p 0.017048p 0.062770p 0.036370p 0.036370p 0.072878m 5.67e-08p 3.33e-08p 2.51e-12p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.025867n 0.0 0.0 0.0
zp 47.82 ri 3.52e-11p 4.15e-07p 0.000231p 0.007045p 0.015667p 0.001445p 0.001445p 3.49e-05p 1.28e-08p 8.87e-09p 0.0
sig0.559 cc 3.52e-11p 4.15e-07p 0.000231p 0.007276p 0.022943p 0.012916p 0.012916p 0.025867p 1.28e-08p 8.87e-09p 0.0
rc 3.52e-11p 4.15e-07p 0.000231p 0.007276p 0.022943p 0.012916p 0.012916p 0.025867m 1.28e-08p 8.87e-09p 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.540443n 0.0 0.0 0.0
zp 48.06 ri 4.49e-08p 7.43e-05p 0.013461p 0.291073p 0.850994p 0.181706p 0.181706p 0.021278p 0.000111p 3.92e-05p 1.18e-07p
sig0.656 cc 4.49e-08p 7.43e-05p 0.013536p 0.304609p 1.155602p 0.759507p 0.759507p 1.540443p 0.000111p 3.92e-05p 1.18e-07p
rc 4.49e-08p 7.43e-05p 0.013536p 0.304609p 1.155602o 0.759507o 0.759507o 1.540443m 0.000111p 3.92e-05p 1.18e-07p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.023268n 0.0 0.0 0.0
zp 47.76 ri 9.09e-11p 7.31e-07p 0.000298p 0.007204p 0.013551p 0.001095p 0.001095p 2.41e-05p 8.45e-09p 5.87e-09p 0.0
sig0.565 cc 9.09e-11p 7.31e-07p 0.000298p 0.007502p 0.021053p 0.011622p 0.011622p 0.023268p 8.45e-09p 5.87e-09p 0.0
rc 9.09e-11p 7.31e-07p 0.000298p 0.007502p 0.021053p 0.011622p 0.011622p 0.023268m 8.45e-09p 5.87e-09p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.037139n 0.0 0.0 0.0
zp 47.44 ri 6.85e-09p 1.30e-05p 0.002088p 0.016682p 0.017252p 0.000549p 0.000549p 6.94e-06p 1.05e-09p 7.28e-10p 0.0
sig0.576 cc 6.85e-09p 1.30e-05p 0.002101p 0.018783p 0.036035p 0.018566p 0.018566p 0.037139p 1.05e-09p 7.28e-10p 0.0
rc 6.85e-09p 1.30e-05p 0.002101p 0.018783p 0.036035o 0.018566o 0.018566o 0.037139m 1.05e-09p 7.28e-10p 0.0

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 cf249t  xi      0.0       0.0  0.026192m 0.199909m 0.159080m      0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.384712l      0.0       0.0       0.0
zp 47.37 ri 2.39e-07p 0.000218p 0.025562p 0.195101p 0.155254p 0.004550p 0.004550p 7.08e-05p 1.21e-08p 8.40e-09p       0.0
sig0.593 cc 2.99e-07p 0.000273p 0.032235p 0.204001p 0.376019p 0.192618p 0.192618p 0.385308p 1.22e-08p 8.51e-09p       0.0
         rc 2.39e-07p 0.000218p 0.025781p 0.220882p 0.376136p 0.192618p 0.192618p 0.385308l 1.21e-08p 8.40e-09p       0.0
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.763333n      0.0       0.0       0.0
zp 47.89 ri       0.0  3.40e-12p 2.82e-05p 0.102843p 0.630239o 0.015110p 0.015110p 1.50e-06p       0.0       0.0       0.0
sig0.350 cc       0.0  3.40e-12p 2.82e-05p 0.102872p 0.733111p 0.381666p 0.381666p 0.763333p       0.0       0.0       0.0
         rc       0.0  3.40e-12p 2.82e-05p 0.102872p 0.733111n 0.381666n 0.381666n 0.763333m       0.0       0.0       0.0
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.392579n      0.0       0.0       0.0
zp 48.10 ri 1.83e-09p 1.82e-05p 0.011518p 0.517709p 2.025829n 0.404062p 0.404062p 0.029304p 4.60e-05p 3.20e-05p 1.34e-08p
sig0.590 cc 1.83e-09p 1.82e-05p 0.011536p 0.529245p 2.555073p 1.681599p 1.681599p 3.392579p 4.60e-05p 3.20e-05p 1.34e-08p
         rc 1.83e-09p 1.82e-05p 0.011536p 0.529245o 2.555073m 1.681599n 1.681599n 3.392579l 4.60e-05p 3.20e-05p 1.34e-08p

  ru, rh, pd half lives from 80eng2; ag, cd, in half lives 89wal1.
1

     mass number    121                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       45 rh g   46 pd g   47 ag g   48 cd d   48 cd g   49 in m   49 in g   50 sn m   50 sn g   51 sb g   52 te g   53 i  g
half life     0.250s    0.644s    0.78 s     1.5 s    13.5 s     3.8 m     23. s     55. y    1.128d    stable     17. d    2.12 h
lambda       2.773e+00 1.076e+00 8.887e-01 4.621e-01 5.134e-02 3.040e-03 3.014e-02 3.996e-10 7.112e-06       0.0 4.719e-07
9.082e-05
 z - 1 g    100.0000  100.0000  100.0000       0.0  100.0000   18.0000   82.0000       0.0  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000  100.0000       0.0       0.0
 z - 0 m       0.0       0.0       0.0    0.1840  100.0000       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.110787o 0.113808n      0.0       0.0
zp 48.48 ri 1.58e-10p 7.10e-06p 0.002017p       0.0  0.073475p 0.006615p 0.028200p 0.002328p 0.000951p 2.51e-06p 1.87e-10p
0.0
sig0.507 cc 1.58e-10p 7.10e-06p 0.002025p       0.0  0.075499p 0.020205p 0.090109p 0.002328p 0.111265p 0.113596p 1.87e-10p
0.0
         rc 1.58e-10p 7.10e-06p 0.002025p 3.04e-07o 0.075500p 0.020205p 0.090110o 0.002328p 0.111265n 0.113596m 1.87e-10p
0.0
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.94e-06n 0.013657l 0.012961l 0.0 0.0
zp 48.45 ri 1.43e-10p 2.88e-06p 0.000260p 0.0 0.009687p 0.000547p 0.002331p 0.000342p 0.000140p 4.29e-07p 1.27e-10p
0.0
sig0.538 cc 1.43e-10p 2.88e-06p 0.000262p 0.0 0.009950p 0.002338p 0.010489p 0.000342p 0.012967p 0.013309p 1.31e-10p
0.0
rc 1.43e-10p 2.88e-06p 0.000262p 6.00e-08o 0.009950p 0.002338p 0.010489o 0.000342h 0.012967l 0.013309k 1.27e-10p
0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.078590k 0.074978n 0.0 0.0
zp 48.33 ri 1.15e-08p 3.59e-05p 0.005190p 0.0 0.043816p 0.004869p 0.023770p 0.000994p 0.000349p 3.34e-06p 3.66e-10p
0.0
sig0.552 cc 1.15e-08p 3.59e-05p 0.005226p 0.0 0.049042p 0.013696p 0.063985p 0.000994p 0.078030p 0.079027p 3.66e-10p
0.0
rc 1.15e-08p 3.59e-05p 0.005226p 1.79e-06o 0.049044p 0.013697p 0.063986n 0.000994p 0.078032k 0.079029k 3.66e-10p
0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.026180n 0.0 0.0
zp 48.30 ri 6.87e-09p 1.63e-05p 0.001953p 0.0 0.014718p 0.001723p 0.007347p 0.000299p 0.000122p 1.11e-06p 1.39e-10p
0.0
sig0.559 cc 6.87e-09p 1.63e-05p 0.001969p 0.0 0.016687p 0.004727p 0.021030p 0.000299p 0.025880p 0.026180p 1.39e-10p
0.0
rc 6.87e-09p 1.63e-05p 0.001969p 6.12e-07o 0.016688p 0.004727p 0.021031p 0.000299p 0.025880o 0.026180n 1.39e-10p
0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.601250n 0.0 0.0
zp 48.71 ri 8.06e-07p 0.000611p 0.051948p 0.0 0.549470p 0.089941p 0.727701p 0.144765p 0.031778p 0.005001p 1.65e-05p
5.88e-09p
sig0.656 cc 8.06e-07p 0.000612p 0.052560p 0.0 0.602034p 0.198306p 1.221366p 0.144765p 1.451450p 1.601233p 1.65e-05p
5.88e-09p
rc 8.06e-07p 0.000612p 0.052560p 1.89e-05o 0.602049o 0.198310o 1.221381n 0.144765p 1.451469n 1.601252m 1.65e-05p
5.88e-09p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.019345j 0.019827n 0.0 0.0
zp 48.22 ri 1.43e-08p 2.26e-05p 0.001952p 0.0 0.011496p 0.001108p 0.004722p 0.000162p 6.63e-05p 5.30e-07p 6.22e-11p
0.0

sig0.565 cc 1.43e-08p 2.27e-05p 0.001974p 0.0 0.013470p 0.003532p 0.015767p 0.000162p 0.019365p 0.019528p 6.22e-11p 0.0
rc 1.43e-08p 2.27e-05p 0.001974p 1.06e-06o 0.013471p 0.003532p 0.015768n 0.000162p 0.019367j 0.019529j 6.22e-11p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.029735k 0.038601n 0.0 0.0
zp 48.05 ri 1.41e-07p 0.000116p 0.004886p 0.0 0.019800p 0.001167p 0.004974p 0.000133p 5.45e-05p 3.00e-07p 3.27e-11p 0.0
sig0.576 cc 1.41e-07p 0.000116p 0.005002p 0.0 0.024802p 0.005631p 0.025311p 0.000133p 0.030997p 0.031131p 3.27e-11p 0.0
rc 1.41e-07p 0.000116p 0.005002p 2.17e-06o 0.024804p 0.005631p 0.025313n 0.000133p 0.030999k 0.031133k 3.27e-11p 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.201923i 0.223740k 0.0 0.0
zp 47.93 ri 1.84e-05p 0.002765p 0.052738p 0.0 0.110056p 0.007469p 0.031843p 0.001069p 0.000437p 7.20e-06p 3.08e-09p 0.0
sig0.645 cc 1.79e-05p 0.002714p 0.054149p 0.0 0.166585p 0.037270p 0.167656p 0.001043p 0.205352p 0.206402p 3.01e-09p 0.0
rc 1.84e-05p 0.002783p 0.055521p 2.13e-05o 0.165598o 0.037277o 0.167633m 0.001069p 0.205347i 0.206423i 3.08e-09p 0.0
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.465035j 0.534178j 0.0 0.0
zp 48.07 ri 0.0 1.95e-06p 0.027371p 0.0 0.414119o 0.010585p 0.045126p 7.60e-06p 3.11e-06p 0.0 0.0 0.0
sig0.350 cc 0.0 1.87e-06p 0.026222p 0.0 0.443835p 0.090030p 0.407173p 7.28e-06p 0.497207p 0.497214p 0.0 0.0
rc 0.0 1.95e-06p 0.027373p 1.05e-05o 0.441503n 0.090056o 0.407158m 7.60e-06p 0.497217i 0.497224i 0.0 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.498483i 2.878826j 0.0 0.0
zp 48.48 ri 6.12e-07p 0.001094p 0.131768p 0.0 1.268198n 0.228370p 0.954170n 0.079080p 0.032300p 0.000816p 4.01e-07p 1.22e-11p
sig0.590 cc 6.08e-07p 0.001086p 0.131912p 0.0 1.391046p 0.477126p 2.107276p 0.078514p 2.616471p 2.695796p 3.98e-07p 1.21e-11p
rc 6.12e-07p 0.001094p 0.132862p 8.60e-07o 1.401061m 0.480561o 2.103040l 0.079080p 2.615901i 2.695797i 4.01e-07p 1.22e-11p

in branching from 71erd1; rh, pd half lives 80eng2; ag, cd, in, sn half lives 89wal1.

mass number 122 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	44 ru g	45 rh g	46 pd g	47 ag g	48 cd d	48 cd g	49 in m	49 in g	50 sn g	51 sb m	51 sb g	52 te g
half life	0.107s	1.41 s	0.56 s	0.39s	5.3 s	10. s	1.5 s	stable	4.2 m	2.72 d	stable	
lambda	0.0	6.478e+00	4.916e-01	1.238e+00	1.777e+00	1.308e-01	6.931e-02	4.621e-01	0.0	2.751e-03	2.949e-06	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	0.0	99.8160	0.0	100.0000	100.0000	0.0	-3.0000	97.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.5450	100.0000	0.0	0.0	0.0	0.0	100.0000	0.0
th227t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.109093n	0.0	0.0	0.0
zp 48.91 ri	0.0	0.0	2.10e-07p	0.000165p	0.0	0.043273p	0.020237p	0.020237p	0.025179p	2.71e-05p	2.40e-05p	3.30e-08p
sig0.507 cc	0.0	0.0	2.10e-07p	0.000165p	0.0	0.043437p	0.020237p	0.063675p	0.109092p	2.71e-05p	5.11e-05p	4.96e-05p
rc	0.0	0.0	2.10e-07p	0.000165p	1.13e-07o	0.043438p	0.020237p	0.063675p	0.109093n	2.71e-05p	5.11e-05p	4.96e-05p
th229t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.013666k	0.0	0.0	0.0
zp 48.87 ri	0.0	1.14e-12p	1.50e-07p	3.24e-05p	0.0	0.006689p	0.001848p	0.001848p	0.003247p	3.67e-06p	3.26e-06p	1.33e-08p
sig0.538 cc	0.0	1.14e-12p	1.50e-07p	3.26e-05p	0.0	0.006722p	0.001848p	0.008570p	0.013666p	3.67e-06p	6.93e-06p	6.74e-06p
rc	0.0	1.14e-12p	1.50e-07p	3.26e-05p	1.78e-08o	0.006722p	0.001848p	0.008570p	0.013666k	3.67e-06p	6.93e-06p	6.74e-06p
pa231f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.087142n	0.0	0.0	0.0
zp 48.76 ri	0.0	1.50e-10p	1.83e-06p	0.000972p	0.0	0.026791p	0.025793p	0.025793p	0.007790p	4.03e-05p	3.04e-05p	3.01e-08p
sig0.552 cc	0.0	1.50e-10p	1.83e-06p	0.000974p	0.0	0.027763p	0.025793p	0.053556p	0.087141p	4.03e-05p	7.06e-05p	6.86e-05p
rc	0.0	1.50e-10p	1.83e-06p	0.000974p	5.52e-07o	0.027764p	0.025793p	0.053557p	0.087142n	4.03e-05p	7.06e-05p	6.86e-05p
am241t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.029322n	0.0	0.0	0.0
zp 48.77 ri	0.0	6.87e-11p	6.94e-07p	0.000332p	0.0	0.008832p	0.008673p	0.008673p	0.002812p	1.56e-05p	1.38e-05p	1.56e-08p

sig0.559 cc 0.0 6.87e-11p 6.94e-07p 0.000333p 0.0 0.009164p 0.008673p 0.017836p 0.029322p 1.56e-05p 2.94e-05p 2.85e-05p
rc 0.0 6.87e-11p 6.94e-07p 0.000333p 1.74e-07o 0.009164p 0.008673p 0.017837p 0.029322n 1.56e-05p 2.94e-05p 2.85e-05p
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.753267n 0.0 0.0 0.0
zp 49.16 ri 1.11e-12p 2.19e-08p 4.54e-05p 0.010244p 0.0 0.272513p 0.484007p 0.484006p 0.501368p 0.025210p 0.010804p 0.000316p
sig0.656 cc 1.11e-12p 2.19e-08p 4.55e-05p 0.010289p 0.0 0.282790p 0.484005p 0.766794p 1.753245p 0.025209p 0.036014p 0.035250p
rc 1.11e-12p 2.19e-08p 4.55e-05p 0.010289p 2.40e-05o 0.282807p 0.484007p 0.766813p 1.753269m 0.025210p 0.036014p 0.035250o
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.032828n 0.0 0.0 0.0
zp 48.69 ri 0.0 2.66e-10p 1.73e-06p 0.000574p 0.0 0.011515p 0.009134p 0.009134p 0.002470p 1.18e-05p 1.05e-05p 1.07e-08p
sig0.565 cc 0.0 2.66e-10p 1.73e-06p 0.000576p 0.0 0.012090p 0.009134p 0.021224p 0.032828p 1.18e-05p 2.22e-05p 2.16e-05p
rc 0.0 2.66e-10p 1.73e-06p 0.000576p 3.70e-07o 0.012091p 0.009134p 0.021224p 0.032828n 1.18e-05p 2.22e-05p 2.16e-05p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.053282n 0.0 0.0 0.0
zp 48.64 ri 0.0 1.24e-09p 6.03e-06p 0.001175p 0.0 0.022379p 0.012912p 0.012912p 0.003900p 1.58e-05p 1.40e-05p 1.95e-08p
sig0.576 cc 0.0 1.24e-09p 6.03e-06p 0.001181p 0.0 0.023558p 0.012912p 0.036470p 0.053282p 1.58e-05p 2.98e-05p 2.90e-05p
rc 0.0 1.24e-09p 6.03e-06p 0.001181p 4.46e-07o 0.023558p 0.012912p 0.036470p 0.053282n 1.58e-05p 2.98e-05p 2.90e-05p
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.180160l 0.0 0.0 0.0
zp 48.43 ri 1.17e-10p 4.32e-07p 0.000290p 0.011279p 0.0 0.096905p 0.030975p 0.030975p 0.009751p 5.24e-05p 4.65e-05p 1.93e-07p
sig0.645 cc 1.17e-10p 4.33e-07p 0.000290p 0.011569p 0.0 0.108453p 0.030975p 0.139427p 0.180156p 5.24e-05p 9.90e-05p 9.62e-05p
rc 1.17e-10p 4.33e-07p 0.000290p 0.011569p 1.37e-05o 0.108466p 0.030975p 0.139441o 0.180170l 5.24e-05p 9.90e-05p 9.62e-05p

cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.280554n 0.0 0.0 0.0
zp 48.22 ri 0.0 0.0 1.29e-07p 0.005692p 0.0 0.216380p 0.029226p 0.029226p 3.38e-05p 4.86e-12p 4.31e-12p 0.0
sig0.350 cc 0.0 0.0 1.29e-07p 0.005692p 0.0 0.222063p 0.029226p 0.251288p 0.280548p 4.86e-12p 9.17e-12p 8.90e-12p
rc 0.0 0.0 1.29e-07p 0.005693p 7.10e-06o 0.222069p 0.029226p 0.251295o 0.280555n 4.86e-12p 9.17e-12p 8.90e-12p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.295829n 0.0 0.0 0.0
zp 48.74 ri 0.0 0.0 1.84e-10p 0.000467p 0.0 0.572532p 0.844783p 0.844783p 0.033265p 2.78e-07p 2.47e-07p 0.0
sig0.350 cc 0.0 0.0 1.84e-10p 0.000467p 0.0 0.572998p 0.844783p 1.417781p 2.295829p 2.78e-07p 5.25e-07p 5.09e-07p
rc 0.0 0.0 1.84e-10p 0.000467p 2.70e-07o 0.572999o 0.844783o 1.417781n 2.295829m 2.78e-07p 5.25e-07p 5.09e-07p

ru, rh pd half lives from 80eng2; ag, cd, in half lives 89wal1.
1

mass number 123 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 45 rh g 46 pd g 47 ag g 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te m 52 te g 53 i g
half life 0.134s 0.300s 0.31 s 2.09 s 47. s 6.0 s 40.1 m 129.2d stable 119.7d 1e+13y 13.2 h
lambda 5.173e+00 2.310e+00 2.236e+00 3.316e-01 1.475e-02 1.155e-01 2.881e-04 6.209e-08 0.0 6.702e-08 2.198e-21 1.459e-05
z - 1 g 100.0000 100.0000 100.0000 99.4550 23.0000 77.0000 100.0000 0.0 100.0000 0.0 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 100.0000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.221216n 0.0 0.0 0.0
zp 49.35 ri 0.0 2.96e-09p 2.08e-05p 0.014598p 0.016987p 0.072420p 0.033460p 0.081920p 0.001806p 2.61e-06p 7.80e-07p 3.93e-11p
sig0.507 cc 0.0 2.96e-09p 2.08e-05p 0.014619p 0.020350p 0.083677p 0.137487p 0.081920p 0.221216p 2.61e-06p 3.39e-06p 3.93e-11p
rc 0.0 2.96e-09p 2.08e-05p 0.014619p 0.020350p 0.083677p 0.137487o 0.081920p 0.221216n 2.61e-06p 3.39e-06p 3.93e-11p
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.012893l 0.0 0.0 0.0

zp 49.29 ri 0.0 2.36e-09p 3.26e-06p 0.001517p 0.000803p 0.003425p 0.002047p 0.005011p 8.67e-05p 3.12e-07p 9.33e-08p 8.24e-12p
sig0.538 cc 0.0 2.36e-09p 3.27e-06p 0.001521p 0.001153p 0.004595p 0.007795p 0.005011p 0.012893p 3.12e-07p 4.06e-07p 8.24e-12p
rc 0.0 2.36e-09p 3.27e-06p 0.001521p 0.001153p 0.004595p 0.007795o 0.005011p 0.012893l 3.12e-07p 4.06e-07p 8.24e-12p
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.098553n 0.0 0.0 0.0
zp 49.20 ri 0.0 4.87e-08p 0.000101p 0.009961p 0.010122p 0.049422p 0.007289p 0.020745p 0.000912p 1.20e-06p 3.19e-07p 1.10e-10p
sig0.552 cc 0.0 4.87e-08p 0.000101p 0.010062p 0.012437p 0.057169p 0.076895p 0.020745p 0.098553p 1.20e-06p 1.52e-06p 1.10e-10p
rc 0.0 4.87e-08p 0.000101p 0.010062p 0.012437p 0.057169p 0.076895o 0.020745p 0.098553n 1.20e-06p 1.52e-06p 1.10e-10p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.039794n 0.0 0.0 0.0
zp 49.26 ri 0.0 1.51e-08p 3.18e-05p 0.003387p 0.004370p 0.018630p 0.003723p 0.009116p 0.000534p 9.62e-07p 2.87e-07p 1.39e-10p
sig0.559 cc 0.0 1.51e-08p 3.18e-05p 0.003418p 0.005156p 0.021263p 0.030142p 0.009116p 0.039794p 9.62e-07p 1.25e-06p 1.39e-10p
rc 0.0 1.51e-08p 3.18e-05p 0.003418p 0.005156p 0.021263p 0.030142o 0.009116p 0.039794n 9.62e-07p 1.25e-06p 1.39e-10p
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.905285n 0.0 0.0 0.0
zp 49.36 ri 3.87e-09p 1.26e-05p 0.004396p 0.177704p 0.102812p 0.831844p 0.127972p 0.582982p 0.076552p 0.000889p 0.000145p 1.57e-06p
sig0.656 cc 3.87e-09p 1.26e-05p 0.004408p 0.182089p 0.144693p 0.972052p 1.244716p 0.582982p 1.905284p 0.000889p 0.001035p 1.57e-06p
rc 3.87e-09p 1.26e-05p 0.004408p 0.182089p 0.144693p 0.972052o 1.244716n 0.582982o 1.905286m 0.000889p 0.001035p 1.57e-06p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.043771n 0.0 0.0 0.0
zp 49.17 ri 1.78e-12p 4.97e-08p 6.79e-05p 0.005082p 0.005012p 0.021366p 0.003433p 0.008404p 0.000405p 6.26e-07p 1.87e-07p 8.19e-11p
sig0.565 cc 1.78e-12p 4.97e-08p 6.79e-05p 0.005149p 0.006196p 0.025331p 0.034960p 0.008404p 0.043771p 6.26e-07p 8.13e-07p 8.19e-11p

rc 1.78e-12p 4.97e-08p 6.79e-05p 0.005149p 0.006196p 0.025331p 0.034960o 0.008404p 0.043771n 6.26e-07p 8.13e-07p 8.19e-11p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.054518m 0.0 0.055216o 0.0 0.0 0.0
zp 49.23 ri 2.91e-12p 7.28e-08p 8.18e-05p 0.006834p 0.006675p 0.028459p 0.005925p 0.014506p 0.000821p 2.05e-06p 6.12e-07p 4.01e-10p
sig0.576 cc 2.91e-12p 7.28e-08p 8.19e-05p 0.006916p 0.008266p 0.033784p 0.047975p 0.014506p 0.063304p 2.05e-06p 2.66e-06p 4.01e-10p
rc 2.91e-12p 7.28e-08p 8.19e-05p 0.006916p 0.008266p 0.033784p 0.047975m 0.014506p 0.063303m 2.05e-06p 2.66e-06o 4.01e-10p
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.045978m 0.167423j 0.0 0.0 0.0
zp 48.91 ri 1.10e-08p 1.54e-05p 0.002501p 0.040558p 0.018254p 0.077819p 0.008096p 0.019820p 0.001155p 3.60e-06p 1.08e-06p 2.16e-09p
sig0.645 cc 1.10e-08p 1.54e-05p 0.002516p 0.043060p 0.028158p 0.110975p 0.147229p 0.019820p 0.168209p 3.60e-06p 4.68e-06p 2.16e-09p
rc 1.10e-08p 1.54e-05p 0.002516p 0.043060p 0.028158p 0.110975o 0.147229l 0.019820o 0.168209i 3.60e-06p 4.68e-06p 2.16e-09p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.196388n 0.0 0.0 0.0
zp 48.37 ri 0.0 9.32e-09p 0.001302p 0.126174p 0.013072p 0.055730p 3.38e-05p 8.26e-05p 1.03e-10p 0.0 0.0 0.0
sig0.350 cc 0.0 9.32e-09p 0.001302p 0.127469p 0.042390p 0.153881p 0.196305p 8.26e-05p 0.196388p 0.0 0.0 0.0
rc 0.0 9.32e-09p 0.001302p 0.127469p 0.042390o 0.153881p 0.196305o 8.26e-05p 0.196388n 0.0 0.0 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.938617n 0.0 0.0 0.0
zp 48.92 ri 0.0 4.71e-12p 4.96e-05p 0.226613p 0.307756p 1.312010n 0.026733p 0.065450p 5.76e-06p 0.0 0.0 0.0
sig0.350 cc 0.0 4.71e-12p 4.96e-05p 0.226662p 0.359888p 1.486540p 1.873161p 0.065450p 1.938617p 0.0 0.0 0.0
rc 0.0 4.71e-12p 4.96e-05p 0.226662p 0.359888p 1.486540m 1.873161m 0.065450p 1.938617l 0.0 0.0 0.0

rh, pd half lives from 80eng2; ag, cd, in, sn half lives 89wal1; i, te half lives 90bur1.

1

nuclide	44 ru g	45 rh g	46 pd g	47 ag g	48 cd g	49 in g	50 sn g	51 sb m	51 sb g	52 te g
half life		0.514s	0.22 s	1.24 s	3.18 s	stable	20.2 m	60.20d	stable	

```
lambda          0.0       0.0 1.349e+00 3.151e+00 5.590e-01 2.180e-01       0.0 5.719e-04 1.333e-07       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0       0.0  100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 th227t  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0       0.0  0.313136n      0.0       0.0       0.0
zp 49.59 ri    0.0       0.0       0.0  1.50e-10p 0.000408p 0.050976p 0.261752p 0.000292p 0.000292p 1.01e-08p
sig0.350 cc    0.0       0.0       0.0  1.50e-10p 0.000408p 0.051384p 0.313136p 0.000292p 0.000583p 0.000583p
         rc    0.0       0.0       0.0  1.50e-10p 0.000408p 0.051384p 0.313136n 0.000292p 0.000583p 0.000583p
 th229t  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0       0.0  0.011098l      0.0       0.0       0.0
zp 49.48 ri    0.0       0.0       0.0  3.25e-11p 5.01e-05p 0.002116p 0.008932p 3.42e-06p 3.42e-06p 6.72e-11p
sig0.350 cc    0.0       0.0       0.0  3.25e-11p 5.01e-05p 0.002166p 0.011098p 3.42e-06p 6.84e-06p 6.84e-06p
         rc    0.0       0.0       0.0  3.25e-11p 5.01e-05p 0.002166p 0.011098l 3.42e-06p 6.84e-06p 6.84e-06p
 pa231f  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0       0.0  0.116189n      0.0       0.0       0.0
zp 49.46 ri    0.0       0.0       0.0  1.20e-09p 0.000350p 0.063048p 0.052791p 8.60e-05p 8.60e-05p 3.19e-10p
sig0.350 cc    0.0       0.0       0.0  1.20e-09p 0.000350p 0.063398p 0.116189p 8.60e-05p 0.000172p 0.000172p
         rc    0.0       0.0       0.0  1.20e-09p 0.000350p 0.063398p 0.116189n 8.60e-05p 0.000172p 0.000172p
 am241t  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0       0.0  0.050266n      0.0       0.0       0.0
zp 49.50 ri    0.0       0.0       0.0  2.54e-10p 0.000103p 0.024880p 0.025283p 5.52e-05p 5.52e-05p 2.86e-10p
sig0.350 cc    0.0       0.0       0.0  2.54e-10p 0.000103p 0.024984p 0.050266p 5.52e-05p 0.000110p 0.000110p
         rc    0.0       0.0       0.0  2.54e-10p 0.000103p 0.024984p 0.050266n 5.52e-05p 0.000110p 0.000110p
 am241h  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0       0.0  2.118109n      0.0       0.0       0.0
zp 49.57 ri    0.0  6.42e-10p 3.34e-06p 0.001858p 0.117146p 0.935202p 1.063900o 0.087115p 0.087115p 0.003676p
sig0.656 cc    0.0  6.42e-10p 3.34e-06p 0.001861p 0.119007p 1.054209p 2.118109p 0.087115p 0.174230p 0.177905p
         rc    0.0  6.42e-10p 3.34e-06p 0.001861p 0.119007p 1.054209o 2.118109m 0.087115p 0.174230p 0.177905p
 a242mt  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0       0.0  0.054713n      0.0       0.0       0.0
zp 49.45 ri    0.0       0.0       0.0  6.70e-10p 0.000180p 0.030308p 0.024225p 3.68e-05p 3.68e-05p 1.26e-10p
sig0.350 cc    0.0       0.0       0.0  6.70e-10p 0.000180p 0.030488p 0.054713p 3.68e-05p 7.36e-05p 7.36e-05p
         rc    0.0       0.0       0.0  6.70e-10p 0.000180p 0.030488p 0.054713n 3.68e-05p 7.36e-05p 7.36e-05p
 cm245t  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0       0.0  0.070949n      0.0       0.0       0.0
```

zp 49.42 ri 0.0 0.0 0.0 1.37e-09p 0.000342p 0.038679p 0.031928p 3.23e-05p 3.23e-05p 1.02e-10p
sig0.350 cc 0.0 0.0 0.0 1.37e-09p 0.000342p 0.039021p 0.070949p 3.23e-05p 6.46e-05p 6.46e-05p
rc 0.0 0.0 0.0 1.37e-09p 0.000342p 0.039021p 0.070949n 3.23e-05p 6.46e-05p 6.46e-05p
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.132285m 0.0 0.0 0.0
zp 49.40 ri 0.0 8.94e-11p 5.63e-07p 0.000192p 0.012844p 0.056704p 0.062545p 0.002528p 0.002528p 8.79e-05p
sig0.645 cc 0.0 8.94e-11p 5.63e-07p 0.000193p 0.013037p 0.069741p 0.132285p 0.002528p 0.005055p 0.005143p
rc 0.0 8.94e-11p 5.63e-07p 0.000193p 0.013037p 0.069741p 0.132285l 0.002528p 0.005055p 0.005143p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.187036n 0.0 0.0 0.0
zp 49.50 ri 0.0 0.0 0.0 1.07e-09p 0.000412p 0.094128p 0.092497p 0.000192p 0.000192p 9.40e-10p
sig0.350 cc 0.0 0.0 0.0 1.07e-09p 0.000412p 0.094540p 0.187036p 0.000192p 0.000384p 0.000384p
rc 0.0 0.0 0.0 1.07e-09p 0.000412p 0.094540p 0.187036n 0.000192p 0.000384p 0.000384p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.339234n 0.0 0.0 0.0
zp 49.07 ri 0.0 0.0 0.0 5.02e-06p 0.070539p 1.124791n 0.143899p 1.39e-05p 1.39e-05p 2.29e-12p
sig0.350 cc 0.0 0.0 0.0 5.02e-06p 0.070544p 1.195335p 1.339234p 1.39e-05p 2.77e-05p 2.77e-05p
rc 0.0 0.0 0.0 5.02e-06p 0.070544p 1.195335m 1.339234m 1.39e-05p 2.77e-05p 2.77e-05p

pd, sb half lives from 80eng2; ag, cd, in half lives from 89wal1.
1

mass number 125 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 46 pd g 47 ag g 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te m 52 te g 53 i g 54 xe g
half life 0.166s 0.334s 0.68 s 12.2 s 2.36 s 9.5 m 9.63 d 2.758y 58. d stable 60.14d 17. h
lambda 4.176e+00 2.075e+00 1.019e+00 5.682e-02 2.937e-01 1.216e-03 8.331e-07 7.969e-09 1.383e-07 0.0 1.334e-07
1.133e-05
z - 1 g 100.0000 100.0000 100.0000 30.0000 70.0000 50.0000 50.0000 100.0000 22.5000 77.5000 -100.0000 -
100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 50.0000 50.0000 100.0000 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.431538n 0.0 0.0 0.441574l 0.0 0.0
zp 49.75 ri 0.0 1.44e-11p 7.98e-05p 0.026851p 0.026851p 0.096598p 0.346129n 0.003558p 9.42e-08p 2.81e-08p 0.0 0.0
sig0.350 cc 0.0 1.85e-11p 0.000102p 0.034421p 0.034462p 0.158163p 0.337346p 0.500067p 0.112515p 0.500067p 0.0
0.0

rc 0.0 1.44e-11p 7.98e-05p 0.026875p 0.026907p 0.123489p 0.373019m 0.500067m 0.112515m 0.500067k 0.0 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.003021n 0.0 0.0 0.006982p 0.0 0.0
zp 49.64 ri 0.0 1.28e-12p 4.29e-06p 0.000439p 0.000439p 0.001376p 0.003368p 1.69e-05p 2.76e-10p 8.25e-11p 0.0 0.0
sig0.350 cc 0.0 1.28e-12p 4.29e-06p 0.000441p 0.000442p 0.001817p 0.003810p 0.005644p 0.001270p 0.005644p 0.0
0.0
rc 0.0 1.28e-12p 4.29e-06p 0.000441p 0.000442p 0.001817p 0.003810m 0.005644n 0.001270n 0.005644m 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.145755n 0.0 0.0
zp 49.63 ri 0.0 8.10e-11p 8.93e-05p 0.025783p 0.025783p 0.024221p 0.068938p 0.000941p 5.19e-09p 1.38e-09p 0.0 0.0
sig0.350 cc 0.0 8.10e-11p 8.93e-05p 0.025809p 0.025845p 0.050049p 0.094765p 0.145755p 0.032795p 0.145755p 0.0
0.0
rc 0.0 8.10e-11p 8.93e-05p 0.025809p 0.025845p 0.050049p 0.094765p 0.145755o 0.032795o 0.145755m 0.0 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.081637n 0.0 0.0
zp 49.66 ri 0.0 2.51e-11p 3.58e-05p 0.013044p 0.013044p 0.015901p 0.038929p 0.000684p 4.74e-09p 1.42e-09p 0.0 0.0
sig0.350 cc 0.0 2.51e-11p 3.58e-05p 0.013055p 0.013069p 0.028962p 0.051991p 0.081637p 0.018368p 0.081637p 0.0
0.0
rc 0.0 2.51e-11p 3.58e-05p 0.013055p 0.013069p 0.028962p 0.051991p 0.081637o 0.018368o 0.081637m 0.0 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.352158n 0.0 0.0
zp 49.77 ri 7.41e-07p 0.000642p 0.062070p 0.370636p 0.370636p 0.222806p 1.015003n 0.300673p 0.008305p 0.001352p 3.63e-
05p 1.48e-08p
sig0.656 cc 7.41e-07p 0.000642p 0.062712p 0.389449p 0.414534p 0.624797p 1.416995p 2.342465p 0.535360p 2.352158p 3.63e-
05p 1.48e-08p
rc 7.41e-07p 0.000642p 0.062712p 0.389449p 0.414534p 0.624797o 1.416995m 2.342465m 0.535360m 2.352158l 3.63e-05p
1.48e-08p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.035917j 0.126703n 0.0 0.0 0.0 0.0
zp 49.61 ri 0.0 8.26e-11p 7.76e-05p 0.019459p 0.019459p 0.018587p 0.045506p 0.000568p 2.61e-09p 7.78e-10p 0.0 0.0
sig0.350 cc 0.0 8.26e-11p 7.76e-05p 0.019483p 0.019514p 0.038085p 0.065004p 0.103657p 0.023323p 0.103657p 0.0
0.0
rc 0.0 8.26e-11p 7.76e-05p 0.019483p 0.019514p 0.038085p 0.065004i 0.103657m 0.023323m 0.103657l 0.0 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.075837j 0.071340m 0.0 0.0 0.0 0.0

zp 49.56 ri 0.0 1.77e-10p 0.000122p 0.019129p 0.019129p 0.015896p 0.038918p 0.000311p 1.05e-09p 3.12e-10p 0.0
0.0
sig0.350 cc 0.0 1.77e-10p 0.000122p 0.019165p 0.019214p 0.035085p 0.058107p 0.093503p 0.021038p 0.093503p 0.0
0.0
rc 0.0 1.77e-10p 0.000122p 0.019165p 0.019214p 0.035085o 0.058107k 0.093503k 0.021038k 0.093503k 0.0 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.101343k 0.0 0.0 0.208690l 0.0 0.0
zp 49.90 ri 1.40e-08p 2.17e-05p 0.003044p 0.027245p 0.027245p 0.032545p 0.079680p 0.036039p 0.000997p 0.000298p 5.78e-
06p 2.31e-09p
sig0.645 cc 1.40e-08p 2.17e-05p 0.003065p 0.028164p 0.029390p 0.061323p 0.108457p 0.205818p 0.047306p 0.207119p 5.78e-
06p 2.31e-09p
rc 1.40e-08p 2.17e-05p 0.003065p 0.028164p 0.029390p 0.061323p 0.108457j 0.205818m 0.047306m 0.207119k 5.78e-06p
2.31e-09p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.190782j 0.0 0.0 0.390833k 0.0 0.0
zp 49.62 ri 0.0 3.14e-10p 0.000309p 0.080728p 0.080728p 0.079175p 0.137515n 0.002512p 1.21e-08p 3.60e-09p 0.0
0.0
sig0.350 cc 0.0 2.74e-10p 0.000269p 0.070411p 0.070518p 0.139441p 0.239338p 0.380967p 0.085718p 0.380967p 0.0
0.0
rc 0.0 3.14e-10p 0.000309p 0.080821p 0.080945p 0.160058o 0.218398j 0.380967l 0.085718m 0.380967k 0.0 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.439465j 0.0 0.0 0.919600k 0.0 0.0
zp 49.17 ri 0.0 8.53e-07p 0.025620p 0.362069p 0.362069p 0.044517p 0.108989p 6.18e-05p 8.70e-12p 2.60e-12p 0.0 0.0
sig0.350 cc 0.0 8.53e-07p 0.025621p 0.369755p 0.380003p 0.419396p 0.483868p 0.903326p 0.203248p 0.903326p 0.0
0.0
rc 0.0 8.53e-07p 0.025621p 0.369755p 0.380003p 0.419396o 0.483868i 0.903326l 0.203248m 0.903326k 0.0 0.0

pd, ag half lives from 80eng2; cd, in, sn, sb, te half lives from 89wal1; i half life 90bur1.

1

mass number 126 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	46 pd g	47 ag g	48 cd g	49 in g	50 sn d	50 sn g	51 sb m	51 sb g	52 te g	53 i g	54 xe g
half life	0.252s	0.140s	0.52 s	1.63 s	3.76 s	1.e5y	19.0 m	12.4 d	stable	13.02d	stable
lambda	2.751e+00	4.951e+00	1.333e+00	4.252e-01	1.843e-01	2.198e-13	6.080e-04	6.470e-07	0.0	6.162e-07	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	0.0	100.0000	100.0000	0.0	100.0000	-56.0000	44.0000

```
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   86.0000       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0    0.6600  100.0000       0.0   14.0000       0.0       0.0       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.563838n 0.557606n      0.0       0.0       0.0       0.0
zp 49.92 ri      0.0       0.0  1.61e-05p 0.021656p      0.0  0.538406n 0.005676p 0.003333p 1.97e-06p      0.0       0.0
sig0.350 cc      0.0       0.0  1.61e-05p 0.021653p      0.0  0.560086p 0.565757p 0.082536p 0.569089p      0.0       0.0
         rc      0.0       0.0  1.61e-05p 0.021672p 5.99e-05o 0.560138m 0.565814m 0.082547l 0.569149l      0.0       0.0
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.009636l 0.035057l      0.0  0.009683l      0.0       0.0
zp 49.80 ri      0.0       0.0  2.44e-06p 0.000972p      0.0  0.017951p 7.22e-05p 4.24e-05p 1.34e-08p      0.0       0.0
sig0.350 cc      0.0       0.0  2.44e-06p 0.000975p      0.0  0.018933p 0.019001p 0.002700p 0.019041p      0.0       0.0
         rc      0.0       0.0  2.44e-06o 0.000975o 4.72e-06o 0.018931j 0.019003k 0.002703k 0.019045j      0.0       0.0
 pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.186422n 0.195794n      0.0       0.0       0.0       0.0
zp 49.80 ri      0.0  4.58e-12p 1.93e-05p 0.037600p      0.0  0.151176o 0.002546p 0.001843p 1.14e-07p      0.0       0.0
sig0.350 cc      0.0  4.58e-12p 1.93e-05p 0.037671p      0.0  0.188790p 0.191339p 0.028633p 0.193185p      0.0       0.0
         rc      0.0  4.58e-12p 1.93e-05p 0.037619p 8.58e-05o 0.188881m 0.191427m 0.028643m 0.193271l      0.0       0.0
 am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.163777n 0.171761n      0.0       0.0       0.0       0.0
zp 49.82 ri      0.0  2.59e-12p 1.31e-05p 0.030115p      0.0  0.135313o 0.002839p 0.001667p 1.39e-07p      0.0       0.0
sig0.350 cc      0.0  2.59e-12p 1.31e-05p 0.030152p      0.0  0.165437p 0.168278p 0.025227p 0.169946p      0.0       0.0
         rc      0.0  2.59e-12p 1.31e-05p 0.030128p 0.000153o 0.165594m 0.168432m 0.025248m 0.170100l      0.0       0.0
 am241h  xi      0.0       0.0       0.0       0.0       0.0       0.0  0.402700m 0.533812m      0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  2.637619n 3.563100n 0.693633l      0.0       0.0       0.0
zp 49.98 ri 1.92e-07p 0.000266p 0.040530p 0.743151p      0.0  1.861591n 0.408701m 0.484120l 0.038300p 0.000228p 1.49e-07p
sig0.656 cc 2.05e-07p 0.000284p 0.043443p 0.834800p      0.0  2.816015p 3.127622p 0.850926p 3.576793p 0.000214p 9.43e-05p
         rc 1.92e-07p 0.000266p 0.040797p 0.783948o 0.001122o 2.646661m 3.055361l 0.911871j 3.577909k 0.000228p 0.000100p
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.167541n 0.165342n      0.0       0.0       0.0       0.0
zp 49.77 ri      0.0  7.16e-12p 2.38e-05p 0.037178p      0.0  0.128702o 0.001969p 0.001156p 6.41e-08p      0.0       0.0
sig0.350 cc      0.0  7.15e-12p 2.37e-05p 0.037146p      0.0  0.165909p 0.167875p 0.024657p 0.169030p      0.0       0.0
         rc      0.0  7.17e-12p 2.38e-05p 0.037202p 9.62e-05o 0.166001m 0.167970m 0.024672m 0.169126l      0.0       0.0
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.161085n 0.160380n      0.0       0.0       0.0       0.0
zp 49.70 ri      0.0  2.35e-11p 5.25e-05p 0.040641p      0.0  0.119572o 0.000974p 0.000572p 2.17e-08p      0.0       0.0
sig0.350 cc      0.0  2.34e-11p 5.24e-05p 0.040646p      0.0  0.160267p 0.161240p 0.023145p 0.161811p      0.0       0.0
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        rc      0.0  2.35e-11p 5.25e-05p 0.040693p 0.000180o 0.160445m 0.161419m 0.023171m 0.161991l      0.0       0.0
 cf249t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.439607n 0.406804n      0.0  0.286078m      0.0       0.0
zp 50.43 ri 3.30e-10p 1.22e-06p 0.000815p 0.031758p      0.0  0.272821o 0.076464p 0.044908p 0.019105p 0.000194p 3.78e-07p
sig0.645 cc 2.90e-10p 1.07e-06p 0.000718p 0.028627p      0.0  0.268407p 0.364977p 0.107813p 0.445959p 0.000245p 0.000108p
        rc 3.30e-10p 1.22e-06p 0.000816p 0.032575p 6.18e-05o 0.305458n 0.381922n 0.098377p 0.446091l 0.000194p 8.57e-05p
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.506748m      0.0       0.0
zp 49.73 ri      0.0  4.92e-11p 0.000115p 0.131074p      0.0  0.368419p 0.004293p 0.002521p 9.94e-08p      0.0       0.0
sig0.350 cc      0.0  4.92e-11p 0.000115p 0.131135p      0.0  0.499611p 0.503902p 0.073066p 0.506422p      0.0       0.0
        rc      0.0  4.92e-11p 0.000115p 0.131189p 0.000297o 0.499905o 0.504198n 0.073109n 0.506719m      0.0       0.0
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.840753n 0.820674n      0.0       0.0       0.0       0.0
zp 49.76 ri      0.0  4.66e-11p 0.000138p 0.195893p      0.0  0.634442o 0.008913p 0.005234p 2.60e-07p      0.0       0.0
sig0.350 cc      0.0  4.66e-11p 0.000138p 0.195767p      0.0  0.830493p 0.839394p 0.122743p 0.844621p      0.0       0.0
        rc      0.0  4.66e-11p 0.000138p 0.196032p 0.000502o 0.830976m 0.839889m 0.122819m 0.845123l      0.0       0.0

  pd, ag half lives from 80eng2; cd, in, sn, sb half lives 89wal1; i half life 90bur1.

1

    mass number    127                    LA-UR-94-3106 (ENDF-349)                    percent yields
 nuclide      47 ag g   48 cd g   49 in m   49 in g   50 sn m   50 sn g   51 sb g   52 te m   52 te g   53 i  g   54 xe g   55 cs g
 half life     0.175s     0.4 s    3.73 s    1.14 s    4.15 m    2.12 h    3.84 d    109. d     9.4 h    stable    36.41d     6.2 h
 lambda      3.961e+00 1.733e+00 1.858e-01 6.080e-01 2.784e-03 9.082e-05 2.089e-06 7.360e-08 2.048e-05       0.0 2.203e-07
3.105e-05
  z - 1 g    100.0000  100.0000   50.0000   50.0000   49.6700   49.6700  100.0000   16.0000   84.0000  100.0000 -100.0000 -
100.0000
  z - 1 m       0.0       0.0       0.0       0.0       0.0  100.0000  100.0000       0.0       0.0    2.4000       0.0       0.0
  z - 0 m       0.0       0.0    0.1220       0.0    0.0610       0.0       0.0       0.0   97.6000       0.0       0.0       0.0
  th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.683440n      0.0  0.532681p 0.699521n      0.0       0.0
zp 50.08 ri      0.0  2.34e-06p 0.009067p 0.009067p 0.178092p 0.434791p 0.042127p 1.26e-05p 5.17e-06p      0.0       0.0       0.0
sig0.350 cc      0.0  2.33e-06p 0.009052p 0.009052p 0.182264p 0.448773p 0.673087p 0.107706p 0.670520p 0.673105p      0.0
0.0
        rc      0.0  2.34e-06p 0.009068p 0.009068p 0.182597p 0.448364p 0.673087m 0.107707m 0.670520m 0.673105l      0.0       0.0
```

th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.039770l 0.0 0.0 0.037030l 0.0 0.0
zp 49.96 ri 0.0 6.83e-07p 0.000715p 0.000715p 0.010614p 0.025987p 0.000887p 1.49e-07p 6.09e-08p 0.0 0.0 0.0
sig0.350 cc 0.0 6.83e-07p 0.000715p 0.000715p 0.010970p 0.027057p 0.038914p 0.006226p 0.038765p 0.038914p 0.0
0.0
rc 0.0 6.83e-07p 0.000715p 0.000715p 0.010970p 0.027057p 0.038914l 0.006226l 0.038765k 0.038914k 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.291510n 0.0 0.0
zp 49.97 ri 0.0 3.80e-06p 0.013002p 0.013002p 0.064120p 0.182494p 0.018961p 1.32e-06p 4.64e-07p 0.0 0.0 0.0
sig0.350 cc 0.0 3.80e-06p 0.013004p 0.013004p 0.070579p 0.201957p 0.291497p 0.046641p 0.290379p 0.291498p 0.0
0.0
rc 0.0 3.80e-06p 0.013004p 0.013004p 0.070579p 0.201957p 0.291497o 0.046641o 0.290379n 0.291498m 0.0 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.588452h 0.0 0.0 0.321889n 0.0 0.0
zp 49.99 ri 0.0 5.72e-06p 0.023218p 0.023218p 0.144300p 0.351711p 0.043331p 2.66e-06p 1.09e-06p 0.0 0.0 0.0
sig0.350 cc 0.0 5.70e-06p 0.023158p 0.023158p 0.155415p 0.386999p 0.585629p 0.093704p 0.583384p 0.585633p 0.0
0.0
rc 0.0 5.72e-06p 0.023221p 0.023221p 0.155833p 0.386465n 0.585629h 0.093703h 0.583384h 0.585633h 0.0 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.237498i 0.0 0.0 2.929818n 0.0 0.0
zp 50.19 ri 4.82e-05p 0.011596p 0.164187p 0.164187p 0.222624p 1.014178n 0.678677o 0.054255p 0.011910p 0.000622p 6.49e-
07p 7.14e-11p
sig0.656 cc 4.85e-05p 0.011717p 0.171076p 0.171076p 0.308995p 1.276591p 2.268521p 0.405722p 2.310929p 2.321156p 5.10e-
07p 5.62e-11p
rc 4.82e-05p 0.011644p 0.170009p 0.170009p 0.307068p 1.268630m 2.254375i 0.414955l 2.310582i 2.321163i 6.49e-07p
7.14e-11p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.266664n 0.0 0.0
zp 49.93 ri 0.0 5.75e-06p 0.014568p 0.014568p 0.064910p 0.158918p 0.013777p 6.79e-07p 2.77e-07p 0.0 0.0 0.0
sig0.350 cc 0.0 5.75e-06p 0.014571p 0.014571p 0.072147p 0.180726p 0.266651p 0.042665p 0.265628p 0.266652p 0.0
0.0
rc 0.0 5.75e-06p 0.014571p 0.014571p 0.072147p 0.180726p 0.266651o 0.042665o 0.265628n 0.266652m 0.0 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.441491l 0.457167k 0.0 0.0 0.0 0.0 0.0
zp 49.86 ri 2.79e-12p 2.04e-05p 0.027246p 0.027246p 0.092735p 0.327487m 0.011767p 3.69e-07p 1.51e-07p 0.0 0.0
0.0

sig0.350 cc 3.51e-12p 2.57e-05p 0.034348p 0.034348p 0.133924p 0.337522p 0.486275p 0.077804p 0.484408p 0.486276p 0.0
0.0
rc 2.79e-12p 2.04e-05p 0.027256p 0.027256p 0.106273p 0.368282l 0.486322j 0.077812j 0.484455j 0.486323j 0.0 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.185592n 0.468863l 0.526013i 0.0 0.0 0.586078l 0.0 0.0
zp 50.68 ri 3.34e-08p 9.02e-05p 0.009322p 0.009322p 0.076907n 0.191797l 0.280980p 0.014404p 0.005883p 0.000277p 2.38e-07p
1.48e-11p
sig0.593 cc 2.54e-08p 6.87e-05p 0.007135p 0.007135p 0.062890p 0.155974p 0.542017p 0.119585p 0.585432p 0.588936p 5.43e-
07p 3.38e-11p
rc 3.34e-08p 9.03e-05p 0.009367p 0.009367p 0.081560o 0.205817n 0.568357i 0.105341n 0.586115j 0.588922j 2.38e-07p
1.48e-11p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.608634j 0.0 0.0 0.0 0.0 0.0
zp 49.87 ri 4.03e-12p 2.85e-05p 0.044916p 0.044916p 0.144369p 0.353387p 0.021279p 6.44e-07p 2.63e-07p 0.0 0.0 0.0
sig0.350 cc 4.03e-12p 2.85e-05p 0.044925p 0.044925p 0.166667p 0.420654p 0.608598p 0.097376p 0.606262p 0.608599p 0.0
0.0
rc 4.03e-12p 2.85e-05p 0.044930p 0.044930p 0.166686p 0.420633n 0.608598j 0.097376j 0.606262j 0.608599j 0.0 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.944833j 0.0 0.0 0.0 0.0 0.0
zp 49.85 ri 9.23e-12p 5.58e-05p 0.076067p 0.076067p 0.221554p 0.542396o 0.029110p 7.58e-07p 3.10e-07p 0.0 0.0 0.0
sig0.350 cc 9.23e-12p 5.58e-05p 0.076093p 0.076093p 0.259342p 0.656296p 0.944747p 0.151160p 0.941120p 0.944748p 0.0
0.0
rc 9.23e-12p 5.58e-05p 0.076095p 0.076095p 0.259350p 0.656287n 0.944747j 0.151160j 0.941120j 0.944748j 0.0 0.0

ag half life from 80eng2; cd, in, sn, sb, te half lives 89wal1.
1

mass number 128 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 46 pd g 47 ag g 48 cd g 49 in g 50 sn d 50 sn g 51 sb m 51 sb g 52 te g 53 i g 54 xe g
half life 0.094s 0.28 s 0.80 s 2.5 s 59.1 m 10.1 m 9.1 h stable 25.00m stable
lambda 0.0 7.374e+00 2.476e+00 8.664e-01 2.773e-01 1.955e-04 1.144e-03 2.116e-05 0.0 4.621e-04 0.0
z - 1 g 100.0000 100.0000 100.0000 99.8780 0.0 99.9390 99.8000 0.2000 100.0000 -6.3000 93.7000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 2.9200 100.0000 0.0 0.0 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.926582n 0.0 0.0

zp 50.26 ri 0.0 0.0 2.81e-07p 0.004963p 0.0 0.840438o 0.050818p 0.029846p 0.000218p 2.40e-11p 0.0
sig0.350 cc 0.0 0.0 2.81e-07p 0.004962p 0.0 0.845410p 0.894530p 0.031532p 0.926281p 2.40e-11p 2.25e-11p
rc 0.0 0.0 2.81e-07p 0.004963p 0.000327o 0.845726n 0.894852n 0.031537p 0.926608m 2.40e-11p 2.25e-11p
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.051942m 0.0 0.0
zp 50.12 ri 0.0 0.0 1.16e-07p 0.000501p 0.0 0.049696p 0.001093p 0.000642p 2.27e-06p 0.0 0.0
sig0.350 cc 0.0 0.0 1.16e-07p 0.000501p 0.0 0.050196p 0.051189p 0.000742p 0.051933p 0.0 0.0
rc 0.0 0.0 1.16e-07p 0.000501p 8.41e-06o 0.050205p 0.051197o 0.000742p 0.051942m 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.529074n 0.0 0.0
zp 50.15 ri 0.0 0.0 6.24e-07p 0.016615p 0.0 0.428300p 0.048728p 0.035286p 3.02e-05p 4.87e-12p 0.0
sig0.350 cc 0.0 0.0 6.24e-07p 0.016614p 0.0 0.444913p 0.492747p 0.036173p 0.528950p 4.87e-12p 4.56e-12p
rc 0.0 0.0 6.24e-07p 0.016616p 0.000131o 0.445036p 0.492874o 0.036176p 0.529081n 4.87e-12p 4.56e-12p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.930046m 0.0 0.0
zp 50.16 ri 0.0 0.0 9.13e-07p 0.026838p 0.0 0.745854o 0.098322p 0.057745p 6.16e-05p 1.10e-11p 0.0
sig0.350 cc 0.0 0.0 9.12e-07p 0.026825p 0.0 0.772758p 0.869484p 0.059260p 0.928806p 1.10e-11p 1.03e-11p
rc 0.0 0.0 9.13e-07p 0.026839p 0.001313o 0.773989o 0.870764n 0.059293p 0.930118m 1.10e-11p 1.03e-11p
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.493486i 0.0 1.181127i 3.270813n 0.0 0.0
zp 50.48 ri 6.97e-10p 2.96e-06p 0.001349p 0.070289p 0.0 0.468175l 0.866094p 1.288651i 0.209536p 0.003653p 7.26e-06p
sig0.656 cc 1.93e-09p 8.19e-06p 0.003738p 0.198004p 0.0 1.493932p 2.024502p 0.710262p 2.904851p 0.002962p 0.002781p
rc 6.97e-10p 2.96e-06p 0.001352p 0.071639p 0.000984o 0.540755i 1.405768n 1.289732h 2.905247l 0.003653p 0.003430p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.314140m 0.0 0.0 0.523567n 0.0 0.0
zp 50.09 ri 0.0 0.0 1.06e-06p 0.017896p 0.0 0.326251m 0.043628p 0.025623p 1.59e-05p 1.59e-12p 0.0
sig0.350 cc 0.0 0.0 1.12e-06p 0.018893p 0.0 0.363506p 0.394208p 0.019185p 0.413404p 1.15e-12p 1.08e-12p
rc 0.0 0.0 1.06e-06p 0.017898p 0.000297o 0.344434l 0.387374l 0.026312p 0.413702l 1.59e-12p 1.49e-12p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.441055l 0.591414j 0.090216k 0.701678n 0.0 0.0
zp 50.02 ri 0.0 0.0 4.40e-06p 0.035753p 0.0 0.553647l 0.039012p 0.022912p 9.84e-06p 0.0 0.0
sig0.350 cc 0.0 0.0 4.77e-06p 0.038744p 0.0 0.604534p 0.632792p 0.018515p 0.651315p 0.0 0.0
rc 0.0 0.0 4.40e-06p 0.035758p 0.000367o 0.589750j 0.627583i 0.024091o 0.651684i 0.0 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.782003i 0.0 0.0
zp 50.85 ri 0.0 5.68e-09p 3.51e-05p 0.007920p 0.0 0.248882p 0.253213p 0.148699p 0.123027p 0.001810p 3.53e-06p

sig0.593 cc 0.0 5.68e-09p 3.51e-05p 0.007955p 0.0 0.256866p 0.509537p 0.149210p 0.781881p 0.001809p 0.001699p
rc 0.0 5.68e-09p 3.51e-05p 0.007955p 0.000120o 0.256952p 0.509651o 0.149213p 0.782005i 0.001810p 0.001699p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.709447n 0.0 0.0
zp 50.01 ri 0.0 0.0 5.87e-06p 0.052415p 0.0 0.600659o 0.035266p 0.020712p 6.87e-06p 0.0 0.0
sig0.350 cc 0.0 0.0 5.87e-06p 0.052406p 0.0 0.653064p 0.687014p 0.022012p 0.709032p 0.0 0.0
rc 0.0 0.0 5.87e-06p 0.052421p 0.000385o 0.653433n 0.687392n 0.022019p 0.709418m 0.0 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.285858n 0.0 0.0
zp 49.94 ri 0.0 2.08e-12p 2.57e-05p 0.136304p 0.0 1.079828n 0.043316p 0.025439p 4.99e-06p 0.0 0.0
sig0.350 cc 0.0 2.08e-12p 2.57e-05p 0.136287p 0.0 1.216095p 1.256965p 0.027864p 1.284834p 0.0 0.0
rc 0.0 2.08e-12p 2.57e-05p 0.136329p 0.001262o 1.217336m 1.258217m 0.027874p 1.286096l 0.0 0.0

ag half life from 80eng2; cd, in, sn, sb half lives from 89wal1.
1

mass number 129 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te m 52 te g 53 i g 54 xe g 55 cs g 56 ba g
half life 0.27 s 1.23 s 0.63s 6.9 m 2.4 m 4.40 h 33.6 d 1.16 h 1.6e7y stable 32.06h 2.1 h
lambda 2.567e+00 5.635e-01 1.100e+00 1.674e-03 4.814e-03 4.376e-05 2.388e-07 1.660e-04 1.374e-15 0.0 6.006e-06
9.169e-05
z - 1 g 100.0000 0.0 100.0000 0.0 97.0800 100.0000 16.6000 83.4000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 100.0000 100.0000 0.0 0.0 36.4000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 1.0400 0.0 0.0 0.0 63.6000 0.0 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.364865m 1.415043l 0.0 0.0 0.0
zp 50.51 ri 7.03e-05p 0.011135p 0.011135p 0.258960p 0.634044p 0.465448p 0.033930p 0.013859p 4.07e-05p 3.39e-09p 0.0
0.0
sig0.507 cc 7.05e-05p 0.011172p 0.011242p 0.259831p 0.658225p 1.380307p 0.263173p 1.332459p 1.428294p 1.428294p 0.0
0.0
rc 7.03e-05p 0.011135p 0.011205p 0.258991p 0.656058o 1.380497n 0.263092n 1.332520l 1.428327k 1.428327k 0.0
0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.118847j 0.0 0.0 0.0 0.118434l 0.0 0.0
zp 50.30 ri 2.08e-08p 0.000288p 0.000288p 0.030207p 0.073955p 0.014032p 2.98e-05p 1.22e-05p 7.29e-12p 0.0 0.0 0.0

sig0.350 cc 2.08e-08p 0.000288p 0.000288p 0.030207p 0.074522p 0.118761p 0.019744p 0.111616p 0.118803p 0.118803p 0.0
0.0
rc 2.08e-08p 0.000288p 0.000288p 0.030247p 0.074522p 0.118801j 0.019751j 0.111653i 0.118843i 0.118843i 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.929324i 0.0 1.148889j 1.013562j 0.0 0.0 0.0
zp 50.33 ri 8.44e-08p 0.004478p 0.004478p 0.179612p 0.511728p 0.333507p 0.000330p 0.000116p 2.98e-10p 0.0 0.0
0.0
sig0.350 cc 8.54e-08p 0.004535p 0.004535p 0.182095p 0.527208p 1.033689p 0.171908p 0.971541p 1.034116p 1.034116p 0.0
0.0
rc 8.44e-08p 0.004478p 0.004478p 0.179948p 0.520553p 1.034007i 0.171975i 0.971854h 1.034453h 1.034453h 0.0
0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.327790i 0.0 1.267436k 1.453215l 0.0 0.0 0.0
zp 50.34 ri 0.000660p 0.044294p 0.044294p 0.214810p 0.526287p 0.504283o 0.019904p 0.008130p 8.32e-05p 1.18e-08p 0.0
0.0
sig0.559 cc 0.000661p 0.044353p 0.045014p 0.215249p 0.615040p 1.335194p 0.240214p 1.273914p 1.361429p 1.361429p 0.0
0.0
rc 0.000660p 0.044294p 0.044954p 0.215113p 0.614222o 1.333617i 0.241284k 1.273823h 1.361734h 1.361734h 0.0
0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.603951n 0.0 0.0 0.0
zp 50.87 ri 0.000552p 0.033151p 0.033151p 0.174604p 0.795753p 1.964456n 0.475754p 0.104434p 0.022950p 0.000107p 5.48e-
08p 2.92e-12p
sig0.656 cc 0.000552p 0.033150p 0.033702p 0.174673p 0.861602p 3.000697p 0.973859p 3.226387p 3.603821p 3.603929p 5.48e-
08p 2.92e-12p
rc 0.000552p 0.033151p 0.033703p 0.174752p 0.861623o 3.000831m 0.973892o 3.226522l 3.603969l 3.604077l 5.48e-08p
2.92e-12p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.663986o 0.0 0.0 1.066658n 0.0 0.0 0.0
zp 50.27 ri 3.05e-07p 0.010161p 0.010161p 0.311661p 0.763560p 0.376000p 0.000188p 7.66e-05p 1.10e-10p 0.0 0.0
0.0
sig0.350 cc 3.05e-07p 0.010159p 0.010159p 0.311811p 0.783420p 1.471190p 0.244446p 1.382533p 1.471511p 1.471511p 0.0
0.0
rc 3.05e-07p 0.010161p 0.010161p 0.312149p 0.783586o 1.471735n 0.244496n 1.383002n 1.471999m 1.471999m 0.0
0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 1.144174k 0.0 1.485017l 0.0 0.0 0.0 0.0
zp 50.21 ri 6.75e-07p 0.012573p 0.012573p 0.290649p 0.712363p 0.242078p 0.000100p 4.10e-05p 3.24e-11p 0.0 0.0
0.0
sig0.350 cc 6.79e-07p 0.012637p 0.012638p 0.292458p 0.740924p 1.269866p 0.210899p 1.193242p 1.270009p 1.270009p 0.0
0.0
rc 6.75e-07p 0.012573p 0.012573p 0.291222p 0.737142o 1.270442k 0.210994k 1.193782j 1.270584j 1.270584j 0.0 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.191711h 0.0 2.139186l 1.621484n 1.406588k 0.0 0.0
zp 51.03 ri 1.57e-05p 0.004099p 0.004099p 0.081518p 0.199580p 0.983233l 0.246887p 0.099281p 0.011420p 2.47e-05p 4.04e-09p
0.0
sig0.593 cc 1.59e-05p 0.004176p 0.004191p 0.083041p 0.211552p 1.296210p 0.444536p 1.457448p 1.630011p 1.630035p 3.87e-
09p 0.0
rc 1.57e-05p 0.004099p 0.004115p 0.081554p 0.207673p 1.272460h 0.458115o 1.451874k 1.630048k 1.630072j 4.04e-09p
0.0
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.929476j 0.0 0.0 0.0 0.0 0.0 0.0
zp 50.17 ri 8.80e-07p 0.013201p 0.013201p 0.215702p 0.529153p 0.157745p 4.51e-05p 1.84e-05p 1.16e-11p 0.0 0.0 0.0
sig0.350 cc 8.80e-07p 0.013193p 0.013194p 0.216014p 0.554864p 0.928617p 0.154195p 0.872553p 0.928681p 0.928681p 0.0
0.0
rc 8.80e-07p 0.013201p 0.013201p 0.216572p 0.555170o 0.929486j 0.154340j 0.873370j 0.929550i 0.929550i 0.0 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.960193j 0.0 0.0 0.0 0.0 0.0 0.0
zp 50.10 ri 4.90e-06p 0.043221p 0.043221p 0.472955p 1.158282n 0.243487p 4.16e-05p 1.70e-05p 6.15e-12p 0.0 0.0 0.0
sig0.350 cc 4.90e-06p 0.043217p 0.043222p 0.473059p 1.243356p 1.959909p 0.325386p 1.841527p 1.959967p 1.959967p 0.0
0.0
rc 4.90e-06p 0.043221p 0.043226p 0.473247p 1.243466m 1.960200j 0.325435j 1.841800j 1.960259j 1.960259j 0.0 0.0

cd, in, sn, sb, te, i half lives 89wal1. sb-te branching to fit data; cs half life 90bur1.

1

mass number 130 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	46 pd g	47 ag g	48 cd g	49 in g	50 sn d	50 sn g	51 sb m	51 sb g	52 te g	53 i m	53 i g	54 xe g
half life		0.20 s	0.29 s	0.28 s	3.7 m	6.5 m	38.4 m	stable	8.9 m	12.36h	stable	
lambda	0.0	0.0	3.466e+00	2.390e+00	2.476e+00	3.122e-03	1.777e-03	3.008e-04	0.0	1.298e-03	1.558e-05	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	0.0	98.9600	90.0000	10.0000	100.0000	0.0	0.0	100.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 15.0000
z - 0 m 0.0 0.0 0.0 0.0 1.8400 100.0000 0.0 0.0 0.0 0.0 85.0000 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.863235n 0.0 0.0 0.0
zp 50.90 ri 0.0 1.03e-11p 3.94e-06p 0.002988p 0.0 0.757158p 0.433348p 0.254506p 0.415256p 0.000244p 0.000569p 5.06e-07p
sig0.507 cc 0.0 1.03e-11p 3.94e-06p 0.002992p 0.0 0.760120p 1.117455p 0.330518p 1.863228p 0.000244p 0.000777p 0.000814p
rc 0.0 1.03e-11p 3.94e-06p 0.002992p 7.29e-06o 0.760126o 1.117461o 0.330518p 1.863235m 0.000244p 0.000777p 0.000814p
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.388815l 0.159688k 0.212923l 0.0 0.0 0.0
zp 50.60 ri 0.0 7.83e-10p 4.18e-05p 0.003775p 0.0 0.291454p 0.060008p 0.035243p 0.026717p 7.34e-06p 1.71e-05p 1.92e-08p
sig0.538 cc 0.0 6.69e-10p 3.57e-05p 0.003259p 0.0 0.302144p 0.323167p 0.060306p 0.417199p 9.27e-06p 2.95e-05p 3.09e-05p
rc 0.0 7.83e-10p 4.18e-05p 0.003817p 2.05e-05o 0.295252o 0.325735m 0.064768n 0.417220k 7.34e-06p 2.34e-05p 2.45e-05p
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.083684n 0.0 0.0 0.0
zp 50.69 ri 0.0 7.69e-09p 7.50e-05p 0.032197p 0.0 0.728508p 0.681931p 0.493814p 0.147404p 0.000293p 0.000793p 3.71e-07p
sig0.552 cc 0.0 7.69e-09p 7.50e-05p 0.032272p 0.0 0.760459p 1.366338p 0.569853p 2.083594p 0.000293p 0.001042p 0.001086p
rc 0.0 7.69e-09p 7.50e-05p 0.032272p 9.68e-05o 0.760541o 1.366418n 0.569868p 2.083691m 0.000293p 0.001042p 0.001086p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.232111n 0.0 0.0 0.0
zp 50.74 ri 0.0 7.22e-09p 6.64e-05p 0.029042p 0.0 0.711447p 0.817232p 0.479963p 0.194574p 0.000560p 0.001306p 9.06e-07p
sig0.559 cc 0.0 7.22e-09p 6.64e-05p 0.029108p 0.0 0.740269p 1.483467p 0.553984p 2.232022p 0.000560p 0.001782p 0.001867p
rc 0.0 7.22e-09p 6.64e-05p 0.029109p 9.50e-05o 0.740349o 1.483546n 0.553998p 2.232117m 0.000560p 0.001782p 0.001867p
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.672520p 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.957279n 0.0 0.673343p 0.0

zp 51.27 ri 0.0 1.87e-08p 4.95e-05p 0.014184p 0.0 0.474713p 0.899311p 1.192112n 1.338472o 0.021636p 0.653505o 0.001338p
sig0.656 cc 0.0 2.12e-08p 5.63e-05p 0.016189p 0.0 0.555944p 1.523179p 1.411437p 4.456921p 0.024608p 0.133018p 0.138231p
rc 0.0 1.87e-08p 4.95e-05p 0.014234p 3.71e-05o 0.488836p 1.339263o 1.240995m 3.918730l 0.021636p 0.671896n 0.676479n
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.693328l 1.813318n 0.0 0.0 0.0
zp 50.59 ri 0.0 3.91e-08p 0.000188p 0.046679p 0.0 0.716979p 0.562201p 0.585168l 0.093240p 0.000189p 0.000442p 2.26e-07p
sig0.565 cc 0.0 4.48e-08p 0.000215p 0.053694p 0.0 0.874614p 1.431246p 0.465739p 2.003805p 0.000217p 0.000691p 0.000724p
rc 0.0 3.91e-08p 0.000188p 0.046867p 0.000241o 0.763600o 1.249441n 0.661528k 2.004209m 0.000189p 0.000603p 0.000632p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.943186k 0.801708i 1.806101n 0.0 0.0 0.0
zp 50.51 ri 2.80e-12p 1.21e-07p 0.000403p 0.054711p 0.0 0.747950p 0.400466p 0.577375j 0.069330p 0.000111p 0.000259p 1.67e-07p
sig0.576 cc 3.44e-12p 1.48e-07p 0.000494p 0.067615p 0.0 0.984591p 1.377433p 0.387001p 1.849449p 0.000136p 0.000434p 0.000455p
rc 2.80e-12p 1.21e-07p 0.000403p 0.055114p 0.000290o 0.802782o 1.122970k 0.657654i 1.849953j 0.000111p 0.000354p 0.000371p
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.030491k 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.983593j 0.786875j 1.912913i 0.0 0.0 0.0
zp 51.22 ri 0.0 3.27e-10p 5.60e-06p 0.003399p 0.0 0.271100p 0.504324n 0.547327j 0.618636p 0.006892p 0.022370p 0.000120p
sig0.593 cc 0.0 3.13e-10p 5.37e-06p 0.003267p 0.0 0.263354p 0.856269p 0.390022p 1.947947p 0.007817p 0.024884p 0.026193p
rc 0.0 3.27e-10p 5.60e-06p 0.003405p 3.14e-05o 0.274501p 0.751374k 0.574778j 1.944788h 0.006892p 0.028229p 0.029383p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.216195n 0.0 0.0 0.0
zp 50.38 ri 3.03e-11p 6.58e-07p 0.000893p 0.082733p 0.0 0.625929p 0.297810p 0.174906p 0.034320p 5.79e-05p 0.000135p 7.19e-08p
sig0.590 cc 3.03e-11p 6.58e-07p 0.000893p 0.083617p 0.0 0.708732p 0.935643p 0.245763p 1.215722p 5.79e-05p 0.000184p 0.000193p

rc 3.03e-11p 6.58e-07p 0.000894p 0.083627p 0.000517o 0.709202o 0.936093o 0.245826p 1.216239m 5.79e-05p 0.000184p 0.000193p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.461538n 0.0 0.0 0.0
zp 50.30 ri 0.0 0.0 3.44e-07p 0.028025p 0.0 1.743079n 0.433877p 0.254816p 0.000711p 1.09e-10p 2.54e-10p 0.0
sig0.350 cc 0.0 0.0 3.44e-07p 0.028021p 0.0 1.770917p 2.027637p 0.431870p 2.460217p 1.09e-10p 3.46e-10p 3.63e-10p
rc 0.0 0.0 3.44e-07p 0.028026p 0.001485o 1.772298m 2.028946n 0.432046p 2.461702m 1.09e-10p 3.46e-10p 3.63e-10p

cd, in, sn, sb half lives from 89wal1; i half life 90bur1.
1

mass number 131 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 48 cd g 49 in g 50 sn d 50 sn g 51 sb g 52 te m 52 te g 53 i g 54 xe m 54 xe g 55 cs g 56 ba g
half life 0.106s 0.28 s 0.12s 39. s 23.0 m 1.35 d 25.0 m 8.040d 11.9 d stable 9.69 d 11.7 d
lambda 6.539e+00 2.476e+00 5.776e+00 1.777e-02 5.023e-04 5.943e-06 4.621e-04 9.978e-07 6.742e-07 0.0 8.279e-07 6.857e-07
z - 1 g 100.0000 100.0000 0.0 98.1600 100.0000 7.0000 93.0000 100.0000 1.4000 98.6000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 82.0000 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 5.3600 100.0000 0.0 0.0 18.0000 0.0 0.0 100.0000 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.623203m 0.0 2.643304n 0.0 0.0
zp 51.29 ri 7.07e-08p 0.000396p 0.0 0.224887p 1.142607n 0.882161p 0.360319p 0.015948p 1.72e-05p 7.01e-06p 2.23e-10p 0.0
sig0.507 cc 7.07e-08p 0.000396p 0.0 0.225276p 1.367883p 0.977913p 1.808474p 2.626311p 0.036785p 2.626335p 2.22e-10p 0.0
rc 7.07e-08p 0.000396p 5.79e-07o 0.225276p 1.367883m 0.977913o 1.808475n 2.626312l 0.036786l 2.626336l 2.23e-10p 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.701624i 0.0 0.431833j 0.585514j 0.0 0.604102g 0.0 0.0
zp 50.99 ri 2.15e-06p 0.001111p 0.0 0.204155p 0.250678o 0.104129p 0.043528p 0.000748p 7.17e-07p 2.93e-07p 7.51e-12p 0.0
sig0.538 cc 2.02e-06p 0.001042p 0.0 0.192079p 0.426672p 0.155379p 0.476039p 0.604331p 0.008462p 0.604332p 1.15e-11p 0.0

rc 2.15e-06p 0.001113p 5.32e-06o 0.205253p 0.455931k 0.136044p 0.492032j 0.604335i 0.008461j 0.604336g 7.51e-12p
0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.669533i 0.0 2.576925n 0.0 0.0
zp 51.09 ri 3.56e-06p 0.005258p 0.0 0.374140p 1.676963n 0.441657p 0.155107p 0.014181p 1.23e-05p 4.31e-06p 8.48e-10p
0.0
sig0.552 cc 3.56e-06p 0.005261p 0.0 0.379302p 2.056216p 0.585578p 2.172857p 2.667213p 0.037353p 2.667230p 8.63e-10p
0.0
rc 3.56e-06p 0.005261p 2.77e-05o 0.379332p 2.056296m 0.585598p 2.172869l 2.667241i 0.037354i 2.667257i 8.48e-10p
0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.480921h 0.0 3.575077f 0.0 0.0
zp 51.16 ri 3.33e-06p 0.005161p 0.0 0.411812p 2.160408n 0.668008p 0.288232p 0.029710p 3.72e-05p 1.52e-05p 4.27e-09p
0.0
sig0.559 cc 3.34e-06p 0.005187p 0.0 0.418696p 2.588468p 0.852095p 2.834683p 3.563240p 0.049922p 3.563292p 4.21e-09p
0.0
rc 3.33e-06p 0.005165p 2.31e-05o 0.416905p 2.577313m 0.848420o 2.837848l 3.563263g 0.049923h 3.563315f 4.27e-09p
0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.464962i 0.0 4.284357n 0.0 0.0
zp 51.68 ri 2.84e-06p 0.002011p 0.0 0.160435p 1.597343n 1.840000n 0.403902p 0.456718p 0.009747p 0.002140p 3.67e-05p
1.22e-08p
sig0.656 cc 2.84e-06p 0.002014p 0.0 0.162404p 1.759653p 1.963066p 2.393708p 4.460113p 0.072403p 4.472298p 3.75e-05p
1.25e-08p
rc 2.84e-06p 0.002014p 5.84e-06o 0.162418p 1.759761m 1.963183m 2.393853m 4.460381i 0.072193l 4.472304i 3.67e-05p
1.22e-08p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.721698m 0.0 0.0 3.257943j 0.0 3.531046i 0.0 0.0
zp 51.01 ri 1.54e-05p 0.013072p 0.0 0.626390p 2.178721m 0.459064p 0.192258p 0.014319p 1.32e-05p 5.40e-06p 1.15e-09p
0.0
sig0.565 cc 1.53e-05p 0.013056p 0.0 0.637745p 2.811308p 0.663800p 2.924751p 3.483599p 0.048783p 3.483617p 1.13e-09p
0.0
rc 1.54e-05p 0.013087p 7.01e-05o 0.639306o 2.818027l 0.656326p 2.931162l 3.483668i 0.048785j 3.483687h 1.15e-09p
0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.242684k 0.931115j 0.0 2.901580g 0.0 0.0 0.0 0.0

zp 50.93 ri 3.30e-05p 0.015752p 0.0 0.588861p 1.464450m 0.709231k 0.129319p 0.008121p 7.99e-06p 3.27e-06p 7.08e-10p
0.0
sig0.576 cc 3.86e-05p 0.018467p 0.0 0.707065p 2.420312p 0.514673p 2.484549p 2.915427p 0.040825p 2.915439p 7.71e-10p
0.0
rc 3.30e-05p 0.015785p 0.000118o 0.604474o 2.068924k 0.854056j 2.207148j 2.915595g 0.040826g 2.915607g 7.08e-10p
0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.150484k 1.269500i 1.517449k 3.172061h 0.0 3.166883h 0.0 0.0
zp 51.57 ri 2.36e-06p 0.001706p 0.0 0.115103p 1.034708k 1.187175j 0.267409p 0.557859n 0.002957p 0.001208p 8.79e-06p
1.63e-09p
sig0.645 cc 3.05e-06p 0.002210p 0.0 0.151141p 1.490223p 1.124592p 2.005067p 3.163925p 0.047250p 3.168096p 8.78e-06p
1.63e-09p
rc 2.36e-06p 0.001708p 2.32e-05o 0.116802p 1.151511j 1.267781h 1.566515j 3.163954g 0.047253j 3.168128g 8.79e-06p
1.63e-09p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.841314i 0.0 0.0 0.0 0.0
zp 50.78 ri 0.000105p 0.027978p 0.0 0.560822p 1.050235n 0.141376p 0.057745p 0.003192p 2.53e-06p 1.03e-06p 2.51e-10p
0.0
sig0.590 cc 0.000105p 0.028080p 0.0 0.588459p 1.638641p 0.256069p 1.627768p 1.840936p 0.025776p 1.840940p 2.51e-10p
0.0
rc 0.000105p 0.028083p 0.000369o 0.588756o 1.638992m 0.256105o 1.628107l 1.841305i 0.025781i 1.841308i 2.51e-10p
0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.794170i 0.0 0.0 0.0 0.0
zp 50.70 ri 0.000372p 0.080334p 0.0 1.321811n 2.064035n 0.230107p 0.093988p 0.004225p 2.69e-06p 1.10e-06p 2.14e-10p
0.0
sig0.590 cc 0.000372p 0.080700p 0.0 1.401173p 3.465094p 0.472645p 3.401593p 3.793387p 0.053110p 3.793390p 2.14e-10p
0.0
rc 0.000372p 0.080707p 0.000789o 1.401822m 3.465857l 0.472717o 3.402324k 3.794176i 0.053121i 3.794180i 2.14e-10p
0.0

cd half life from 80eng2; in, sn, sb, te, i, xe half lives from 89wal1.

```
nuclide       48 cd g   49 in g   50 sn g   51 sb m   51 sb g   52 te g   53 i  g   54 xe g   55 cs g   56 ba g
half life     0.136s    0.20 s     40. s     2.8 m     4.2 m    3.26 d    2.28 h    stable    6.475d    stable
lambda       5.097e+00 3.466e+00 1.733e-02 4.126e-03 2.751e-03 2.461e-06 8.445e-05       0.0 1.239e-06       0.0
 z - 1 g    100.0000  100.0000   94.6400   50.0000   50.0000  100.0000  100.0000  100.0000  -97.8000    2.2000
 z - 1 m         0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0    0.2550       0.0       0.0       0.0       0.0       0.0       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  3.305902i      0.0  3.526295n      0.0       0.0
zp 51.69 ri 7.44e-10p 1.08e-05p 0.044943p 0.199169p 0.275043p 2.790695k 0.077922p 0.000865p 2.07e-08p       0.0
sig0.507 cc 7.45e-10p 1.08e-05p 0.044995p 0.221855p 0.297801p 3.312992p 3.387816p 3.388646p 1.99e-08p 4.37e-10p
         rc 7.44e-10p 1.08e-05p 0.044953p 0.221645p 0.297519p 3.309860i 3.387781i 3.388646i 2.07e-08p 4.56e-10p
 th229t  xi      0.0       0.0       0.0       0.0  0.256587n      0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  0.730287j 1.178963h 1.233593i 1.206135h      0.0       0.0
zp 51.40 ri 8.02e-08p 9.91e-05p 0.105137p 0.103833p 0.586181l 0.399137o 0.009524p 0.000102p 1.85e-09p       0.0
sig0.538 cc 7.73e-08p 9.55e-05p 0.101390p 0.150737p 0.188849p 1.194924p 1.203911p 1.204007p 1.76e-09p 3.87e-11p
         rc 8.02e-08p 9.92e-05p 0.105231p 0.156448p 0.638796j 1.194381g 1.203905g 1.204007f 1.85e-09p 4.07e-11p
 pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  3.475625i      0.0  3.241288n      0.0       0.0
zp 51.50 ri 9.69e-08p 0.000518p 0.124764p 0.784173p 0.884280p 1.671007m 0.119097p 0.000496p 9.32e-08p       0.0
sig0.552 cc 9.67e-08p 0.000517p 0.125034p 0.845314p 0.945245p 3.458633p 3.583786p 3.584308p 9.79e-08p 2.15e-09p
         rc 9.69e-08p 0.000518p 0.125254p 0.846800o 0.946907o 3.464715i 3.583812i 3.584308i 9.32e-08p 2.05e-09p
 am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  4.760871h 4.192412k 4.777445f      0.0       0.0
zp 51.59 ri 7.42e-08p 0.000430p 0.120319p 0.822500p 1.135834n 2.465494l 0.229085p 0.001469p 4.51e-07p 6.23e-12p
sig0.559 cc 7.39e-08p 0.000428p 0.120204p 0.879050p 1.191030p 4.524924p 4.773566p 4.775108p 4.73e-07p 1.04e-08p
         rc 7.42e-08p 0.000430p 0.120726p 0.882863o 1.196196m 4.544553h 4.773638h 4.775108f 4.51e-07p 9.93e-09p
 am241h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.006456m      0.0
         xc      0.0       0.0       0.0       0.0       0.0  2.119276i      0.0  4.630933n 0.007903l      0.0
zp 52.11 ri 5.88e-08p 0.000109p 0.021998p 0.321790p 0.205734p 1.699783l 1.433642n 0.082191p 0.006853m 3.89e-06p
sig0.656 cc 7.15e-08p 0.000132p 0.026883p 0.404852p 0.263688p 2.736081p 3.708524p 3.772085p 0.000497p 1.14e-05p
         rc 5.88e-08p 0.000109p 0.022101p 0.332840p 0.216785p 2.249408i 3.683050k 3.772400k 0.006853k 0.000155k
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0  0.215510n      0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  4.565211i 5.170214j 4.704736i      0.0       0.0
zp 51.45 ri 4.14e-07p 0.001307p 0.216781p 0.968440p 1.337369n 2.044432m 0.244748n 0.000685p 1.61e-07p 1.81e-12p
sig0.565 cc 4.23e-07p 0.001334p 0.222483p 1.099512p 1.475996p 4.661802p 4.813005p 4.813690p 1.61e-07p 3.54e-09p
         rc 4.14e-07p 0.001307p 0.218018p 1.077449o 1.446378m 4.568259i 4.813007i 4.813691h 1.61e-07p 3.54e-09p
```

cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.217759k 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.970104g 4.163525i 0.0 0.0 0.0
zp 51.37 ri 1.42e-06p 0.002201p 0.291792p 0.821815p 1.134887n 1.716117m 0.217429k 0.000487p 1.02e-07p 1.63e-12p
sig0.576 cc 1.46e-06p 0.002271p 0.303008p 0.998857p 1.321658p 4.089959p 4.184118p 4.184607p 1.02e-07p 2.25e-09p
rc 1.42e-06p 0.002202p 0.293876p 0.968753o 1.281825m 3.966695g 4.184124f 4.184611f 1.02e-07p 2.24e-09p
cf249t xi 0.0 0.0 0.0 0.672506l 0.928699l 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.138376o 0.0 0.0 3.378423j 4.082087i 4.192080i 0.0 0.0
zp 51.98 ri 3.34e-07p 0.000433p 0.104597o 0.510336p 0.704750p 2.326119n 0.481007o 0.032213p 0.000120p 8.29e-08p
sig0.645 cc 1.64e-07p 0.000212p 0.051403p 0.343189p 0.464136p 3.429488p 4.117287p 4.159564p 0.000157p 3.56e-06p
rc 3.34e-07p 0.000433p 0.105007o 0.562840p 0.757254p 3.646212j 4.127219i 4.159587h 0.000120p 2.72e-06p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.205073k 0.0 3.014315m 0.0 0.0
zp 51.19 ri 8.47e-06p 0.006839p 0.387074p 0.784676p 1.083600n 0.915428o 0.040073p 0.000136p 2.99e-08p 0.0
sig0.590 cc 8.46e-06p 0.006844p 0.393371p 0.980997p 1.279782p 3.175782p 3.217326p 3.217466p 3.10e-08p 6.83e-10p
rc 8.47e-06p 0.006848p 0.393554p 0.981453o 1.280377m 3.177257j 3.217330j 3.217466j 2.99e-08p 6.58e-10p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.753355j 0.0 0.0 0.0 0.0
zp 51.12 ri 2.20e-05p 0.014706p 0.695748p 1.198001n 1.654382n 1.191282n 0.045424p 0.000128p 2.32e-08p 0.0
sig0.590 cc 2.20e-05p 0.014728p 0.709687p 1.552844p 2.009225p 4.753351p 4.798775p 4.798903p 2.32e-08p 5.10e-10p
rc 2.20e-05p 0.014728p 0.709687o 1.552844m 2.009225m 4.753351j 4.798775j 4.798903j 2.32e-08p 5.10e-10p

cd half life from 80eng2; in, sn, sb, te, i half lives 89wal1; cs half life 90bur1.

1

mass number 133 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 49 in g 50 sn g 51 sb d 51 sb g 52 te m 52 te g 53 i g 54 xe m 54 xe g 55 cs g 56 ba g 57 la g
half life 0.18 s 1.44 s 1.04s 2.5 m 55.4 m 12.4 m 20.8 h 2.19 d 5.243d stable 10.74y 4. h
lambda 3.851e+00 4.814e-01 6.665e-01 4.621e-03 2.085e-04 9.316e-04 9.257e-06 3.663e-06 1.530e-06 0.0 2.047e-09
4.814e-05
z - 1 g 100.0000 100.0000 0.0 99.7450 42.0000 58.0000 100.0000 2.8000 97.2000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 87.0000 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 18.3000 100.0000 0.0 13.0000 0.0 0.0 100.0000 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.817169m 0.0 0.0 4.877384n 0.0 0.0

zp 52.10 ri 4.29e-07p 0.004657p 0.0 0.343926p 2.739524n 1.118959n 0.615441p 0.011715p 0.004785p 3.15e-06p 5.58e-11p
0.0
sig0.507 cc 4.29e-07p 0.004658p 0.0 0.348592p 2.885965p 1.696332p 4.822571p 0.146694p 4.838997p 4.839000p 5.55e-11p
0.0
rc 4.29e-07p 0.004658p 6.52e-05o 0.348637p 2.885951m 1.696343m 4.822562l 0.146747l 4.839062k 4.839065k 5.58e-11p
0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.227968n 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.753972j 0.848712l 1.442795j 3.039551h 0.0 2.956672g 2.954391h 0.0 0.0
zp 51.82 ri 2.13e-05p 0.053948p 0.0 0.694686k 0.815340m 0.872167k 0.526135l 0.002407p 0.000983p 3.99e-07p 1.43e-11p
0.0
sig0.538 cc 1.12e-05p 0.028332p 0.0 0.393160p 1.893053p 1.179902p 2.962208p 0.085361p 2.965615p 2.965615p 1.44e-11p
0.0
rc 2.13e-05p 0.053969p 0.000851o 0.749369i 1.130075j 1.453711i 2.963011g 0.085371h 2.966400f 2.966401f 1.43e-11p
0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.078354i 0.0 0.0 5.214246n 0.0 0.0
zp 51.93 ri 2.70e-05p 0.024228p 0.0 1.083691n 2.379106n 0.835899p 0.757949p 0.008489p 0.002983p 8.30e-06p 2.55e-10p
0.0
sig0.552 cc 2.70e-05p 0.024255p 0.0 1.107990p 2.844474p 1.848322p 5.080977p 0.150654p 5.092310p 5.092319p 2.52e-10p
0.0
rc 2.70e-05p 0.024255p 0.000435o 1.108319m 2.844600m 1.848522n 5.081274i 0.150765j 5.092745i 5.092754i 2.55e-10p
0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.505976f 0.0 0.0 5.483946f 0.0 0.0
zp 52.03 ri 1.60e-05p 0.016682p 0.0 0.918621p 2.456550n 1.003377n 1.088292n 0.016891p 0.006899p 2.79e-05p 1.52e-09p
0.0
sig0.559 cc 1.60e-05p 0.016698p 0.0 0.935312p 2.849305p 1.916239p 5.483397p 0.170496p 5.507286p 5.507314p 1.52e-09p
0.0
rc 1.60e-05p 0.016698p 0.000273o 0.935550o 2.849481m 1.916429m 5.483769f 0.170436k 5.507559f 5.507587e 1.52e-09p
0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.310223i 0.0 4.610937i 4.911650n 0.0 0.0
zp 52.54 ri 8.42e-06p 0.004378p 0.0 0.258997p 1.596903n 0.350539p 2.091654m 0.263905p 0.057951p 0.006567p 1.49e-05p
3.62e-09p
sig0.656 cc 8.42e-06p 0.004386p 0.0 0.263350p 1.707261p 0.725172p 4.301817p 0.385053p 4.624503p 4.630906p 1.45e-05p
3.52e-09p

rc 8.42e-06p 0.004386p 7.87e-05o 0.263451p 1.707553m 0.725322o 4.302547i 0.384376p 4.624403h 4.630985h 1.49e-05p 3.62e-09p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.033180j 0.010759i 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.938357i 0.0 0.0 0.0 0.0 0.0
zp 51.90 ri 6.37e-05p 0.039115p 0.0 1.384480n 2.605435n 1.064187n 0.844313p 0.033176p 0.010758p 1.24e-05p 5.51e-10p 0.0
sig0.565 cc 6.40e-05p 0.039376p 0.0 1.430899p 3.219546p 2.318018p 5.967615p 0.176900p 5.981428p 5.981440p 5.54e-10p 0.0
rc 6.37e-05p 0.039179p 0.000719o 1.424278m 3.203631m 2.306741l 5.938213i 0.199446m 5.982148i 5.982160i 5.51e-10p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.723260j 2.002397j 5.453464h 0.0 5.572912j 0.0 0.0 0.0
zp 51.83 ri 0.000124p 0.054721p 0.0 1.287169n 2.191930k 0.890159n 1.031959m 0.007560p 0.003088p 9.08e-06p 5.20e-10p 0.0
sig0.576 cc 0.000136p 0.060019p 0.0 1.468762p 3.011545p 2.221485p 5.456121p 0.160181p 5.466558p 5.466566p 5.10e-10p 0.0
rc 0.000124p 0.054846p 0.001148o 1.343023m 2.756000i 2.027392j 5.457071g 0.160358i 5.467718g 5.467727g 5.20e-10p 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 1.822254l 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.052152k 1.616629l 4.855180h 0.0 0.0 5.328799h 0.0 0.0
zp 52.41 ri 2.10e-05p 0.009335p 0.0 0.500062p 1.850416k 1.018677m 1.638404l 0.163145p 0.066123p 0.003182p 4.13e-06p 5.94e-10p
sig0.645 cc 1.78e-05p 0.007940p 0.0 0.432323p 1.911477p 1.205819p 5.020028p 0.301136p 5.246190p 5.249349p 4.09e-06p 5.89e-10p
rc 2.10e-05p 0.009356p 0.000134o 0.509528o 2.064418j 1.582578k 5.017026g 0.303621o 5.246293h 5.249479g 4.13e-06p 5.94e-10p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.909144j 0.0 0.0 0.0 0.0 0.0
zp 51.62 ri 0.000652p 0.113598p 0.0 1.534402n 1.418327n 0.579314p 0.259069p 0.001946p 0.000795p 1.98e-06p 8.90e-11p 0.0
sig0.590 cc 0.000652p 0.114217p 0.0 1.648787p 2.110504p 1.809851p 3.905071p 0.111287p 3.907812p 3.907813p 8.90e-11p 0.0
rc 0.000652p 0.114250p 0.003870o 1.652231m 2.112263m 1.812202m 3.908940j 0.111396j 3.911681j 3.911683j 8.90e-11p 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.055563k 0.0 0.0 0.0 0.0 0.0

zp 51.56 ri 0.001237p 0.184024p 0.0 2.148531n 1.734073n 0.708285p 0.274477p 0.001763p 0.000720p 1.52e-06p 5.79e-11p 0.0
sig0.590 cc 0.001237p 0.185209p 0.0 2.333850p 2.713921p 2.414575p 5.050155p 0.143167p 5.052637p 5.052638p 5.79e-11p 0.0
rc 0.001237p 0.185261p 0.005184o 2.338503m 2.716245m 2.417728m 5.055338k 0.143312k 5.057821k 5.057822k 5.79e-11p 0.0

sb-te branching 66str1; in, sn, sb, te, i, xe half lives 89wal1; ba half life 90bur1.

1

mass number 134 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	48 cd g	49 in g	50 sn g	51 sb g	52 te d	52 te g	53 i m	53 i g	54 xe m	54 xe g	55 cs g	56 ba g
half life	0.081s	1.04 s	0.8 s	1.82 s	42. m	3.7 m	52.6 m	0.29 s	stable	2.062y	stable	
lambda	0.0	8.557e+00	6.665e-01	8.664e-01	3.809e-01	2.751e-04	3.122e-03	2.196e-04	2.390e+00	0.0	1.066e-08	0.0
z - 1 g	100.0000	100.0000	100.0000	81.7000	0.0	100.0000	0.0	100.0000	0.0	100.0000	0.0	100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0000	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	17.8700	100.0000	0.0	98.0000	0.0	100.0000	0.0	0.0
th227t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.728834n	0.0	0.0

zp 52.50 ri 0.0 4.24e-09p 0.000356p 0.062767p 0.0 4.228257n 0.513365p 0.708923p 0.149127p 0.063912p 0.000101p 1.40e-08p
sig0.507 cc 0.0 4.24e-09p 0.000356p 0.063048p 0.0 4.291537p 0.513282p 5.503373p 0.159369p 5.726643p 0.000101p 0.000101p
rc 0.0 4.24e-09p 0.000356p 0.063059p 0.002647o 4.293962m 0.513365o 5.505983m 0.159394p 5.729289l 0.000101p 0.000101p

th229t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	5.132472h	0.778659m	6.002139h	0.0	5.867412g	0.0	0.0

zp 52.25 ri 1.31e-11p 2.78e-07p 0.004650p 0.138498p 0.0 4.750419h 0.718935m 0.266581p 0.056992p 0.024425p 2.43e-05p 5.95e-09p
sig0.538 cc 1.42e-11p 3.02e-07p 0.005043p 0.154319p 0.0 5.312151p 0.236403p 5.870287p 0.063920p 5.959575p 2.53e-05p 2.53e-05p
rc 1.31e-11p 2.78e-07p 0.004650p 0.142297p 0.008470o 4.901186g 0.718935l 5.872323h 0.071371p 5.968118f 2.43e-05p 2.43e-05p

pa231f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.373170n	0.0	0.0

zp 52.36 ri 8.37e-12p 6.91e-07p 0.002377p 0.376060p 0.0 3.437104n 1.139807m 1.285197n 0.090267p 0.033386p 0.000337p 4.06e-08p
sig0.552 cc 8.37e-12p 6.91e-07p 0.002376p 0.377785p 0.0 3.816460p 1.139149p 6.217400p 0.112998p 6.363764p 0.000336p 0.000336p
rc 8.37e-12p 6.91e-07p 0.002378p 0.378003p 0.011540o 3.826647m 1.139807m 6.228855l 0.113063p 6.375304k 0.000337p 0.000337p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.238446g 0.0 0.0
zp 52.47 ri 4.18e-12p 3.73e-07p 0.001493p 0.293271p 0.0 3.457456n 1.361509n 1.879639n 0.167015p 0.071578p 0.001040p 2.21e-07p
sig0.559 cc 4.18e-12p 3.73e-07p 0.001493p 0.294381p 0.0 3.752705p 1.361001p 6.965964p 0.194173p 7.231688p 0.001039p 0.001040p
rc 4.18e-12p 3.73e-07p 0.001494p 0.294491p 0.006774o 3.758721m 1.361509m 6.972639j 0.194246p 7.238462g 0.001040p 0.001040p
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.227426m 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.053758n 0.226513i 0.0
zp 52.97 ri 2.46e-11p 3.18e-07p 0.000430p 0.064043p 0.0 1.150008n 1.723181n 1.101687n 0.830992p 0.182413p 0.226554i 0.000803p
sig0.656 cc 2.55e-11p 3.29e-07p 0.000445p 0.066633p 0.0 1.257012p 1.783075p 4.144424p 0.895536p 5.228713p 0.051019p 0.051316p
rc 2.46e-11p 3.18e-07p 0.000430p 0.064395p 0.001173o 1.215575m 1.723181m 4.005980l 0.865455o 5.053848l 0.226554h 0.227357h
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.201653i 0.0 7.830254j 0.0 0.0
zp 52.34 ri 3.69e-11p 1.73e-06p 0.003928p 0.475650p 0.0 3.802461n 1.085586n 1.482399n 0.097960p 0.041983p 0.000461p 7.77e-08p
sig0.565 cc 3.68e-11p 1.73e-06p 0.003918p 0.477462p 0.0 4.272540p 1.082415p 6.828070p 0.119323p 6.989253p 0.000459p 0.000460p
rc 3.69e-11p 1.73e-06p 0.003929p 0.478861o 0.013626o 4.294947m 1.085586m 6.841220i 0.119672p 7.002875i 0.000461p 0.000461p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.270842j 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.375824j 1.121898k 5.809407i 0.0 6.511016n 0.0 0.0
zp 52.28 ri 1.67e-10p 3.65e-06p 0.006267p 0.452843p 0.0 3.474379k 1.003915k 2.034176j 0.077694p 0.033297p 0.000313p 7.22e-08p
sig0.576 cc 2.04e-10p 4.48e-06p 0.007694p 0.561935p 0.0 4.838755p 0.888024p 6.935337p 0.107376p 7.081119p 0.000361p 0.000361p

rc 1.67e-10p 3.65e-06p 0.006271p 0.457966o 0.018972o 3.951317j 1.003915j 6.969330g 0.097772p 7.100399h 0.000313p 0.000313p
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 1.140566k 0.0 0.0 1.065315n 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.725102l 1.140566l 4.512675h 0.0 5.253888g 0.0 0.0
zp 52.84 ri 4.42e-11p 4.26e-07p 0.000731p 0.070463p 0.0 1.414661l 0.983430j 1.418729l 0.560893p 0.918547n 0.019864p 9.87e-05p
sig0.645 cc 5.57e-11p 5.36e-07p 0.000921p 0.089530p 0.0 1.874031p 1.075646p 4.413581p 0.671820p 5.364103p 0.023030p 0.023145p
rc 4.42e-11p 4.26e-07p 0.000731p 0.071060p 0.003291o 1.489012k 0.983430j 3.871503h 0.580562p 5.370611g 0.019864p 0.019963p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.845806n 0.0 0.0
zp 52.05 ri 4.42e-09p 3.82e-05p 0.021115p 0.834970p 0.0 2.898180n 0.434008p 0.599168p 0.023113p 0.009905p 7.67e-05p 1.15e-08p
sig0.590 cc 4.41e-09p 3.82e-05p 0.021111p 0.850573p 0.0 3.752362p 0.433154p 4.775017p 0.031730p 4.816633p 7.66e-05p 7.66e-05p
rc 4.42e-09p 3.82e-05p 0.021153p 0.852252o 0.037508o 3.787939m 0.434008p 4.812436m 0.031793p 4.854134l 7.67e-05p 7.67e-05p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.341255n 0.0 0.0
zp 52.01 ri 7.36e-09p 5.70e-05p 0.028273p 1.010481n 0.0 3.195245n 0.437002p 0.603267p 0.021043p 0.009019p 6.27e-05p 8.39e-09p
sig0.590 cc 7.35e-09p 5.69e-05p 0.028255p 1.030915p 0.0 4.231482p 0.435856p 5.260516p 0.029705p 5.299216p 6.26e-05p 6.26e-05p
rc 7.36e-09p 5.70e-05p 0.028330p 1.033627m 0.055383o 4.284255m 0.437002p 5.315784l 0.029783p 5.354585l 6.27e-05p 6.27e-05p

in half life from 80eng2; sn, sb, te, i half lives 89wal1; cs half life 90bur1.

1

mass number 135 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 50 sn g 51 sb g 52 te d 52 te g 53 i d 53 i g 54 xe m 54 xe g 55 cs g 56 ba g 57 la g 58 ce g
half life 0.418s 1.71 s 0.82s 19.0 s 19.0 s 6.57 h 15.3 m 9.10 h 2.3e6y stable 19.5 h 17.7 h
lambda 1.658e+00 4.053e-01 8.453e-01 3.648e-02 3.648e-02 2.931e-05 7.551e-04 2.116e-05 9.556e-15 0.0 9.874e-06 1.088e-05

z - 1 g 100.0000 100.0000 0.0 82.1300 0.0 100.0000 14.7000 85.3000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 28.9790 100.0000 1.1400 100.0000 0.0 100.0000 0.0 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.774095n 0.0 0.0 0.0
zp 52.90 ri 1.13e-05p 0.014799p 0.0 2.161313n 0.0 3.405469n 0.841521p 0.343753p 0.004029p 1.44e-06p 3.04e-12p
0.0
sig0.507 cc 1.12e-05p 0.014806p 0.0 2.172972p 0.0 5.579150p 1.661535p 6.764221p 6.768248p 6.768250p 3.04e-12p
0.0
rc 1.13e-05p 0.014810p 0.000198o 2.173674m 0.008237o 5.587380l 1.662866n 6.772654l 6.776683l 6.776684l 3.05e-12p
0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.077959f 0.128294p 5.515249h 6.121583i 5.937919g 0.0 0.0
zp 52.67 ri 0.000258p 0.047142p 0.0 3.323933n 0.0 1.745693n 0.385700p 0.293680p 0.001044p 6.42e-07p 1.62e-12p
0.0
sig0.538 cc 0.000264p 0.048438p 0.0 3.436852p 0.0 5.227296p 1.166343p 5.787761p 5.788795p 5.788795p 1.61e-12p
0.0
rc 0.000258p 0.047400p 0.001035o 3.363899m 0.016915o 5.126507f 1.139296m 5.805887g 5.806930g 5.806931f 1.63e-12p
0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.660747i 6.875155n 0.0 0.0 0.0
zp 52.79 ri 0.000110p 0.064467p 0.0 1.932716n 0.0 4.014319n 0.485770p 0.170608p 0.006608p 3.09e-06p 6.07e-11p
0.0
sig0.552 cc 0.000110p 0.064552p 0.0 1.985633p 0.0 6.000297p 1.367678p 6.656559p 6.663063p 6.663066p 5.97e-11p
0.0
rc 0.000110p 0.064577p 0.001922o 1.987675m 0.007937o 6.009931m 1.369230o 6.666309i 6.672917i 6.672920i 6.07e-11p
0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.037269i 0.0 7.064716h 7.047495i 6.763664j 0.0 0.0
zp 52.89 ri 5.52e-05p 0.037854p 0.0 1.405119n 0.0 3.717366k 0.737821p 1.098896o 0.014607p 1.10e-05p 3.86e-10p
0.0
sig0.559 cc 6.46e-05p 0.044311p 0.0 1.679314p 0.0 6.029809p 1.567858p 6.989635p 7.003801p 7.003811p 3.83e-10p
0.0
rc 5.52e-05p 0.037909p 0.001301o 1.437555m 0.006331o 5.161253i 1.496525n 6.997970g 7.012577g 7.012588g 3.86e-10p
0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 1.801368i 0.0 4.511350i 4.993632n 0.0 0.0 0.0
zp 53.39 ri 1.75e-05p 0.006547p 0.0 0.281832p 0.0 1.572601k 1.604164n 1.024183o 0.248641p 0.003288p 5.35e-06p 9.27e-10p
sig0.656 cc 2.54e-05p 0.009498p 0.0 0.415752p 0.0 2.692442p 1.899944p 4.526777p 4.736557p 4.739581p 4.91e-06p 8.51e-10p
rc 1.75e-05p 0.006565p 0.000361o 0.287584p 0.001504o 1.861689i 1.877832m 4.490036i 4.738677j 4.741970j 5.35e-06p 9.27e-10p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.618488j 0.408233k 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.503399i 0.0 0.0 7.791299n 0.0 0.0 0.0
zp 52.77 ri 0.000181p 0.076067p 0.0 1.889960n 0.0 3.638953l 0.629113p 0.415246p 0.008014p 4.91e-06p 1.47e-10p 0.0
sig0.565 cc 0.000194p 0.081578p 0.0 2.089951p 0.0 5.989208p 1.339389p 6.635652p 6.642957p 6.642962p 1.34e-10p 0.0
rc 0.000181p 0.076248p 0.002420o 1.955003m 0.007818o 5.601774i 1.452574n 6.646133k 6.654147k 6.654152k 1.47e-10p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.726446i 0.296717i 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.928299i 1.381654i 6.534486i 0.0 0.0 0.0 0.0
zp 52.72 ri 0.000400p 0.105765p 0.0 2.282325n 0.0 3.433313l 0.689583i 0.291233i 0.006042p 4.59e-06p 1.56e-10p 0.0
sig0.576 cc 0.000424p 0.112422p 0.0 2.510166p 0.0 6.161687p 1.346311p 6.782171p 6.788570p 6.788575p 1.65e-10p 0.0
rc 0.000400p 0.106165p 0.002800o 2.372319m 0.007886o 5.813517h 1.544170g 6.794333g 6.800375g 6.800380g 1.56e-10p 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 1.369359k 0.559316k 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.690861h 1.456173i 5.505381j 5.297817n 5.406541i 0.0 0.0
zp 53.26 ri 5.15e-05p 0.018364p 0.0 0.629567p 0.0 3.004516k 1.063459j 0.558769k 0.145160p 0.001301p 1.35e-06p 1.21e-10p
sig0.645 cc 5.02e-05p 0.017962p 0.0 0.628946p 0.0 3.560682p 1.735935p 5.268449p 5.416663p 5.417980p 1.36e-06p 1.22e-10p
rc 5.15e-05p 0.018416p 0.000404o 0.645096o 0.001973o 3.651585h 1.600243h 5.273814g 5.418974h 5.420276h 1.35e-06p 1.21e-10p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.209825j 0.0 0.0 4.722426n 0.0 0.0 0.0
zp 52.49 ri 0.001684p 0.208239p 0.0 2.048175n 0.0 1.979109m 0.145750p 0.058703p 0.001523p 7.69e-07p 2.40e-11p 0.0
sig0.590 cc 0.001685p 0.210042p 0.0 2.225766p 0.0 4.215431p 0.753715p 4.404229p 4.405648p 4.405649p 2.24e-11p 0.0

rc 0.001684p 0.209923p 0.012308o 2.232893m 0.014444o 4.226446j 0.767037m 4.430899j 4.432422j 4.432423j 2.40e-11p 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.276154k 0.0 0.0 0.0 0.0 0.0 0.0
zp 52.44 ri 0.002831p 0.307093p 0.0 2.679699n 0.0 2.315792n 0.138713p 0.056661p 0.001288p 5.67e-07p 1.54e-11p 0.0
sig0.590 cc 0.002825p 0.309229p 0.0 2.932266p 0.0 5.250586p 0.910248p 5.445533p 5.446818p 5.446818p 1.54e-11p 0.0
rc 0.002831p 0.309924p 0.014702o 2.948941m 0.014899o 5.279632k 0.914819m 5.475007j 5.476295j 5.476295j 1.54e-11p 0.0

xe branching from 74dan1; sn half life from 80eng2; sb, te, i, xe, cs half lives 89wal1.

1

mass number 136 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	48 cd g	49 in g	50 sn g	51 sb g	52 te d	52 te g	53 i m	53 i g	54 xe d	54 xe g	55 cs g	56 ba g
half life		0.717s	0.82 s	0.478s	17.5 s	47. s	1.39 m	24.5 s	stable	13.00d	stable	
lambda	0.0	0.0	9.667e-01	8.453e-01	1.450e+00	3.961e-02	1.475e-02	8.311e-03	2.829e-02	0.0	6.171e-07	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	0.0	71.0210	0.0	98.8600	0.0	100.0000	0.0	100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	18.0320	100.0000	2.6900	0.0	6.9700	100.0000	0.0	0.0
th227t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.100506o	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.542965m	0.0	0.0
zp 53.31 ri	0.0	0.0	1.96e-07p	0.000683p	0.0	0.722061p	1.123846n	1.124841n	0.0	4.494450n	0.099380p	0.000100p
sig0.507 cc	0.0	0.0	1.98e-07p	0.000689p	0.0	0.728602p	1.134265p	1.854561p	0.0	7.520931p	0.035824p	0.035925p
rc	0.0	0.0	1.96e-07p	0.000683p	5.23e-06o	0.722552o	1.125861m	1.839155m	0.107224m	7.566691l	0.099380p	0.099480p
th229t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.043147l	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	1.092731k	2.072437o	0.0	5.943990f	0.0	0.0
zp 53.10 ri	0.0	2.73e-11p	7.78e-06p	0.003565p	0.0	1.481157n	1.015058k	0.719798p	0.0	2.579641n	0.040669p	4.54e-05p
sig0.538 cc	0.0	2.90e-11p	8.28e-06p	0.003802p	0.0	1.579163p	0.807104p	2.368265p	0.0	5.809430p	0.011361p	0.011408p
rc	0.0	2.73e-11p	7.78e-06p	0.003573p	6.45e-05o	1.483759m	1.024039j	2.186643m	0.143509m	5.933832f	0.040669p	0.040715p

pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.242954n 0.0 0.0
zp 53.22 ri 0.0 5.67e-11p 2.99e-06p 0.006629p 0.0 0.691461p 2.176839n 2.178613n 0.0 2.157945n 0.074278p
0.000132p
sig0.552 cc 0.0 5.67e-11p 2.99e-06p 0.006631p 0.0 0.696019p 2.178078p 2.866163p 0.0 7.201652p 0.074260p
0.074391p
rc 0.0 5.67e-11p 2.99e-06p 0.006632p 6.30e-05o 0.696234o 2.180420m 2.866910m 0.196426m 7.401701l 0.074278p
0.074410p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.267110i 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.665900g 0.245449k 0.0
zp 53.31 ri 0.0 3.38e-11p 1.83e-06p 0.004488p 0.0 0.552161p 2.134551n 2.135717n 0.0 2.698223n 0.256594i
0.000501p
sig0.559 cc 0.0 3.44e-11p 1.86e-06p 0.004564p 0.0 0.564557p 2.171083p 2.729204p 0.0 7.643185p 0.130939p
0.131294p
rc 0.0 3.38e-11p 1.83e-06p 0.004490p 3.76e-05o 0.555387o 2.136937m 2.684773m 0.153127m 7.673062g 0.256594i
0.257095i
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.274693n 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.906219n 1.251792i 0.0
zp 53.81 ri 0.0 1.46e-10p 1.31e-06p 0.001243p 0.0 0.131067p 0.848613p 0.848873p 0.0 3.061705n 1.248635i
0.035886p
sig0.656 cc 0.0 1.58e-10p 1.42e-06p 0.001342p 0.0 0.142373p 0.915887p 1.056637p 0.0 5.275930p 0.867782p
0.898081p
rc 0.0 1.46e-10p 1.31e-06p 0.001244p 1.36e-05o 0.131965p 0.849137o 0.979333o 0.042189o 4.932364m 1.248635h
1.284521i
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.406639m 0.012400o 0.0
zp 53.20 ri 0.0 1.82e-10p 5.59e-06p 0.008344p 0.0 0.679731p 1.900957n 1.903090n 0.0 1.838070n 0.040951p 8.96e-
05p
sig0.565 cc 0.0 1.82e-10p 5.56e-06p 0.008311p 0.0 0.682528p 1.894299p 2.569046p 0.0 6.292916p 0.067984p
0.068133p
rc 0.0 1.82e-10p 5.59e-06p 0.008350p 0.000114o 0.685775o 1.905305m 2.581048m 0.188189m 6.512611k 0.040951l
0.041040l
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.127755i 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.535186k 1.806101n 0.0 4.965389j 0.0 0.0
zp 53.14 ri 0.0 5.78e-10p 1.20e-05p 0.009652p 0.0 0.684767p 1.492477k 1.240292n 0.0 1.405257n 0.125826p
0.000112p

sig0.576 cc 0.0 6.14e-10p 1.28e-05p 0.010266p 0.0 0.734784p 1.384797p 2.111205p 0.0 4.905633p 0.041298p 0.041411p
rc 0.0 5.78e-10p 1.20e-05p 0.009664p 9.88e-05o 0.691729o 1.495371j 1.924136m 0.090642m 4.915406j 0.125826p 0.125938p
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.337874i 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.889812k 0.570640p 0.0 5.316575l 0.430398h 0.0
zp 53.68 ri 0.0 1.77e-10p 2.15e-06p 0.001392p 0.0 0.172063p 0.921644k 0.576365p 0.0 3.491382n 0.408515g 0.015134p
sig0.645 cc 0.0 2.20e-10p 2.67e-06p 0.001731p 0.0 0.214928p 0.839639p 1.052116p 0.0 5.107447p 0.461288p 0.476098p
rc 0.0 1.77e-10p 2.15e-06p 0.001394p 3.50e-05o 0.173088p 0.922748j 0.747480n 0.077618m 5.239228k 0.408515g 0.423649i
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.451532n 0.0 0.0
zp 52.93 ri 0.0 1.71e-08p 0.000106p 0.042378p 0.0 1.236326n 1.626346n 1.631987n 0.0 0.878861p 0.020706p 3.48e-05p
sig0.590 cc 0.0 1.71e-08p 0.000106p 0.042438p 0.0 1.265380p 1.630230p 2.881184p 0.0 5.389304p 0.020683p 0.020718p
rc 0.0 1.71e-08p 0.000106p 0.042485p 0.000873o 1.267372m 1.637899m 2.884911l 0.243396m 5.645067l 0.020706p 0.020741p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.945606n 0.0 0.0
zp 52.87 ri 0.0 2.84e-08p 0.000149p 0.050584p 0.0 1.269830n 1.455549n 1.461334n 0.0 0.684643p 0.013842p 1.98e-05p
sig0.590 cc 0.0 2.83e-08p 0.000149p 0.050669p 0.0 1.304559p 1.459542p 2.749229p 0.0 4.892551p 0.013825p 0.013845p
rc 0.0 2.84e-08p 0.000149p 0.050733p 0.001073o 1.306934m 1.467405m 2.753369l 0.215918m 5.121334l 0.013842p 0.013862p

sn half life from 80eng2; sb, te, i half lives from 89wal1.
1

mass number 137 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	50 sn g	51 sb g	52 te g	53 i d	53 i g	54 xe d	54 xe g	55 cs g	56 ba m	56 ba g	57 la g	58 ce g
half life	0.478s	2.5 s	1.6 s	24.5 s	6.50 s	3.82 m	30.17y	2.552m	stable	6.e4y	9.0 h	

lambda 0.0 1.450e+00 2.773e-01 4.332e-01 2.829e-02 1.066e-01 3.024e-03 7.285e-10 4.527e-03 0.0 3.663e-13 2.139e-05
z - 1 g 100.0000 100.0000 81.9680 0.0 97.3100 0.0 93.0300 100.0000 94.6000 5.4000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 6.7800 100.0000 5.3800 100.0000 0.0 0.0 100.0000 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.954788m 0.0 7.015003n 0.0 0.0
zp 53.71 ri 1.07e-09p 2.90e-05p 0.074892p 0.0 1.464983n 0.0 5.256609n 0.260087p 0.001273p 0.000520p 8.03e-08p 0.0
sig0.507 cc 1.07e-09p 2.90e-05p 0.074864p 0.0 1.536965p 0.0 6.687436p 6.947464p 6.573568p 6.949249p 7.99e-08p 0.0
rc 1.07e-09p 2.90e-05p 0.074916p 0.000484o 1.538368m 0.017286o 6.705039m 6.965126l 6.590282l 6.966919k 8.03e-08p 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 6.734820i 5.852961k 0.0 7.424918g 0.0 0.0
zp 53.51 ri 1.25e-07p 0.000358p 0.333572p 0.0 1.730883n 0.0 5.113046k 0.110889p 0.000828p 0.000338p 4.94e-08p 0.0
sig0.538 cc 1.24e-07p 0.000356p 0.332522p 0.0 2.048363p 0.0 7.017908p 7.137004p 6.752408p 7.138133p 4.78e-08p 0.0
rc 1.25e-07p 0.000358p 0.333865p 0.003187o 2.058954m 0.028834o 7.057324h 7.168214h 6.781958h 7.169380g 4.94e-08p 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.010041i 0.0 7.187205n 0.0 0.0
zp 53.65 ri 4.07e-08p 0.000349p 0.132833p 0.0 2.687501n 0.0 3.894380m 0.438867p 0.002164p 0.000760p 8.81e-07p 1.11e-11p
sig0.552 cc 4.05e-08p 0.000348p 0.132538p 0.0 2.805084p 0.0 6.514929p 6.954837p 6.581403p 6.957713p 8.66e-07p 1.09e-11p
rc 4.07e-08p 0.000350p 0.133119p 0.001124o 2.818163m 0.060655m 6.576772k 7.015639i 6.638958i 7.018564i 8.81e-07p 1.11e-11p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.227000i 0.0 6.881876j 0.0 0.0
zp 53.73 ri 2.34e-08p 0.000209p 0.088534p 0.0 2.109822n 0.0 3.778757n 0.540334p 0.003820p 0.001560p 2.53e-06p 5.42e-11p
sig0.559 cc 2.34e-08p 0.000209p 0.088942p 0.0 2.202287p 0.0 5.811985p 6.361981p 6.022073p 6.367109p 2.41e-06p 5.16e-11p

rc 2.34e-08p 0.000209p 0.088705p 0.000811o 2.196952m 0.047683o 5.870264l 6.410598i 6.068245i 6.415980h 2.53e-06p 5.42e-11p
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.264290i 0.0 4.645568n 0.0 0.0
zp 54.22 ri 3.19e-08p 7.57e-05p 0.019444p 0.0 0.586123p 0.0 2.338451n 1.359891n 0.096157p 0.021108p 0.001172p 1.31e-06p
sig0.656 cc 3.20e-08p 7.57e-05p 0.019519p 0.0 0.605545p 0.0 2.906103p 4.268046p 4.128202p 4.379676p 0.001106p 1.23e-06p
rc 3.19e-08p 7.57e-05p 0.019506p 0.000186o 0.605291o 0.010491o 2.912044m 4.271935i 4.137407i 4.390372i 0.001174p 1.31e-06p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.131167j 0.0 0.0 0.0 0.0
zp 53.60 ri 1.27e-07p 0.000630p 0.161131p 0.0 2.541071n 0.0 3.217545n 0.345049p 0.001720p 0.000702p 8.93e-07p 1.59e-11p
sig0.565 cc 1.27e-07p 0.000628p 0.160978p 0.0 2.687676p 0.0 5.727619p 6.073662p 5.747397p 6.076075p 8.90e-07p 1.58e-11p
rc 1.27e-07p 0.000630p 0.161648p 0.001611o 2.699982m 0.060721m 5.790060l 6.135109j 5.805533j 6.137532j 8.93e-07p 1.59e-11p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.202876p 0.0 4.911744m 6.264697i 0.0 0.0 0.0 0.0
zp 53.54 ri 2.00e-07p 0.000548p 0.107128p 0.0 1.193337n 0.0 4.206345l 0.743311p 0.001702p 0.000695p 8.88e-07p 2.17e-11p
sig0.576 cc 4.35e-07p 0.001194p 0.234268p 0.0 2.827414p 0.0 5.768613p 6.047335p 5.722301p 6.049480p 7.94e-07p 1.94e-11p
rc 2.00e-07p 0.000548p 0.107578p 0.002443o 1.300464m 0.057940m 5.474107k 6.217418i 5.883379i 6.219815i 8.88e-07p 2.17e-11p
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.240230l 5.637988i 0.0 5.638937j 0.0 0.0
zp 54.08 ri 8.27e-08p 0.000194p 0.040893p 0.0 1.073264n 0.0 3.157507m 1.417698n 0.053454p 0.021833p 0.000504p 3.06e-07p
sig0.645 cc 8.21e-08p 0.000193p 0.040730p 0.0 1.104588p 0.0 4.166983p 5.610619p 5.361676p 5.687226p 0.000510p 3.09e-07p
rc 8.27e-08p 0.000194p 0.041052p 0.000378o 1.113590m 0.013310o 4.206791k 5.624489i 5.374221i 5.700286h 0.000504p 3.06e-07p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.653441n 0.0 0.0

zp 53.36 ri 3.77e-06p 0.004840p 0.425611p 0.0 3.068933n 0.0 2.204109n 0.153165p 0.000580p 0.000237p 2.88e-07p 6.26e-12p
sig0.590 cc 3.76e-06p 0.004833p 0.428613p 0.0 3.480767p 0.0 5.448834p 5.601653p 5.299742p 5.602468p 2.87e-07p 6.24e-12p
rc 3.77e-06p 0.004844p 0.429582p 0.006028o 3.492987m 0.100035m 5.553669l 5.706834l 5.399245l 5.707651l 2.88e-07p 6.26e-12p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.648870n 0.0 0.0
zp 53.29 ri 5.60e-06p 0.005943p 0.435862p 0.0 2.662415n 0.0 1.632142n 0.095505p 0.000300p 0.000123p 1.23e-07p 2.20e-12p
sig0.590 cc 5.59e-06p 0.005937p 0.439825p 0.0 3.086637p 0.0 4.508527p 4.603834p 4.355527p 4.604256p 1.23e-07p 2.19e-12p
rc 5.60e-06p 0.005949p 0.440739p 0.006517o 3.097815m 0.089572m 4.603611l 4.699116l 4.445664l 4.699539l 1.23e-07p 2.20e-12p

sb half life from 80eng2; te, i, xe, cs, ba half lives 89wal1.
1

mass number 138 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	50 sn g	51 sb g	52 te g	53 i d	53 i g	54 xe d	54 xe g	55 cs m	55 cs g	56 ba g	57 la g	58 ce g
half life		0.173s	1.4 s	0.580s	6.5 s	2.38 s	14.1 m	2.9 m	32.2 m	stable	11.02l	stable
lambda		0.0	4.007e+00	4.951e-01	1.195e+00	1.066e-01	2.912e-01	8.193e-04	3.984e-03	3.588e-04	0.0	2.099e-19
z - 1 g		100.0000	100.0000	100.0000	0.0	93.2200	0.0	94.6200	0.0	100.0000	100.0000	-70.0000
z - 1 m		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0000	0.0	0.0
z - 0 m		0.0	0.0	0.0	7.9620	100.0000	9.8100	100.0000	0.0	75.0000	0.0	0.0
th227t xi		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.246472n	0.0	0.0

zp 54.11 ri 5.12e-12p 3.65e-07p 0.007139p 0.0 0.314609p 0.0 6.307031n 0.298643p 0.298637p 0.028619p 3.26e-06p 1.04e-10p
sig0.507 cc 5.12e-12p 3.65e-07p 0.007135p 0.0 0.321096p 0.0 6.611361p 0.298478p 7.133697p 7.236922p 3.26e-06p 9.79e-07p
rc 5.12e-12p 3.65e-07p 0.007139p 2.97e-05o 0.321294p 0.011632o 6.622671m 0.298643p 7.145290m 7.248572l 3.26e-06p 9.79e-07p
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 7.332570h 0.520162m 7.386877h 8.441778i 0.0 0.0

zp 53.91 ri 1.27e-09p 8.59e-06p 0.046995p 0.0 0.491744p 0.0 6.699789j 0.490988m 0.146919p 0.016839p 1.66e-06p 1.30e-10p
sig0.538 cc 1.32e-09p 8.96e-06p 0.049017p 0.0 0.558623p 0.0 7.534565p 0.154385p 7.804739p 7.859908p 1.63e-06p 4.90e-07p
rc 1.27e-09p 8.59e-06p 0.047004p 0.000386o 0.535947p 0.027160o 7.234062h 0.490988l 7.749222g 7.888810g 1.66e-06p 4.98e-07p
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.446694n 0.0 0.0
zp 54.07 ri 3.66e-10p 1.19e-05p 0.016566p 0.0 1.111864n 0.0 4.723894n 0.799953o 0.799862p 0.035892p 4.01e-05p 1.93e-09p
sig0.552 cc 3.65e-10p 1.19e-05p 0.016561p 0.0 1.126225p 0.0 5.792160p 0.799156p 7.190684p 7.426357p 4.00e-05p 1.20e-05p
rc 3.66e-10p 1.19e-05p 0.016578p 9.07e-05o 1.127409m 0.026242o 5.816890m 0.799953o 7.216717l 7.452625l 4.01e-05p 1.20e-05p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.730250i 6.801492k 0.0 0.0
zp 54.13 ri 2.73e-10p 8.44e-06p 0.011952p 0.0 0.875072p 0.0 4.256508n 0.858951o 0.909146p 0.049903p 7.90e-05p 5.87e-09p
sig0.559 cc 2.75e-10p 8.51e-06p 0.012057p 0.0 0.893387p 0.0 5.130608p 0.865873p 6.645885p 6.912714p 7.96e-05p 2.39e-05p
rc 2.73e-10p 8.44e-06p 0.011961p 7.33e-05o 0.886295o 0.021248o 5.116368m 0.858951o 6.669728i 6.934424i 7.90e-05p 2.37e-05p
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.401464n 0.0 0.0
zp 54.62 ri 7.57e-10p 4.42e-06p 0.002743p 0.0 0.192422p 0.0 1.696793n 1.063046m 1.062970n 0.384416p 0.009012p 2.44e-05p
sig0.656 cc 7.57e-10p 4.42e-06p 0.002746p 0.0 0.194929p 0.0 1.881999p 1.062715p 3.741749p 4.398031p 0.009010p 0.002727p
rc 7.57e-10p 4.42e-06p 0.002747p 2.01e-05o 0.195003p 0.004144o 1.885449m 1.063046m 3.745704l 4.402194l 0.009012p 0.002728p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.968664n 0.0 0.0
zp 54.00 ri 1.73e-09p 2.88e-05p 0.023735p 0.0 1.106320n 0.0 3.745782n 0.554068p 0.553986p 0.023815p 2.89e-05p 1.74e-09p
sig0.565 cc 1.73e-09p 2.87e-05p 0.023732p 0.0 1.127007p 0.0 4.815070p 0.553320p 5.783380p 5.945513p 2.89e-05p 8.67e-06p

rc 1.73e-09p 2.88e-05p 0.023764p 0.000175o 1.128648m 0.030369o 4.844078m 0.554068o 5.813615l 5.975966l 2.89e-05p 8.68e-06p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.399364m 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.814919i 0.0 5.911266h 6.179011n 0.0 0.0
zp 53.94 ri 6.83e-09p 5.53e-05p 0.035974p 0.0 1.042981n 0.0 3.490168k 0.421198p 1.179326m 0.020879p 2.25e-05p 1.93e-09p
sig0.576 cc 7.84e-09p 6.35e-05p 0.041397p 0.0 1.237069p 0.0 5.211675p 0.443794p 5.988315p 6.121236p 2.37e-05p 7.10e-06p
rc 6.83e-09p 5.53e-05p 0.036030p 0.000387o 1.076955m 0.043192o 4.552375i 0.421198p 6.047599h 6.173794h 2.25e-05p 6.75e-06p
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.974558l 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.926694i 0.0 3.904175i 5.454254h 0.0 0.0
zp 54.48 ri 1.79e-09p 7.42e-06p 0.005572p 0.0 0.242138p 0.0 2.297860j 0.857963o 1.693157l 0.301589p 0.003417p 7.48e-06p
sig0.645 cc 2.17e-09p 8.98e-06p 0.006750p 0.0 0.299239p 0.0 3.071232p 0.983414p 4.792207p 5.383984p 0.003888p 0.001175p
rc 1.79e-09p 7.43e-06p 0.005579p 6.30e-05o 0.247402p 0.011829o 2.543781i 0.857963o 4.880410h 5.399247h 0.003417p 0.001032p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.754395n 0.0 0.0
zp 53.78 ri 8.12e-08p 0.000332p 0.088598p 0.0 1.776061n 0.0 3.310158n 0.315281p 0.315203p 0.010107p 1.13e-05p 7.95e-10p
sig0.590 cc 8.10e-08p 0.000331p 0.088684p 0.0 1.854110p 0.0 5.071080p 0.314409p 5.621295p 5.709984p 1.13e-05p 3.38e-06p
rc 8.12e-08p 0.000332p 0.088930p 0.000917o 1.859879m 0.066577o 5.136552m 0.315281p 5.688216l 5.777151l 1.13e-05p 3.39e-06p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.451046n 0.0 0.0
zp 53.70 ri 1.35e-07p 0.000444p 0.095676p 0.0 1.574216n 0.0 2.445072n 0.192995p 0.192952p 0.005031p 4.52e-06p 2.55e-10p
sig0.590 cc 1.35e-07p 0.000442p 0.095831p 0.0 1.659151p 0.0 4.020781p 0.192415p 4.357507p 4.410630p 4.51e-06p 1.35e-06p
rc 1.35e-07p 0.000444p 0.096120p 0.001083o 1.664902m 0.062662o 4.083064l 0.192995p 4.420762l 4.474045l 4.52e-06p 1.36e-06p

sb half life from 80eng2; te, i, xe, cs half lives from 89wal1.

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    mass number    139                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       51 sb g   52 te g   53 i  g   54 xe d   54 xe g   55 cs g   56 ba g   57 la g   58 ce m   58 ce g   59 pr g
half life     0.218s    0.580s    2.30 s    0.86 s    39.7 s     9.3 m    1.396h    stable     56. s    137.7d    4.41 h
lambda       3.180e+00 1.195e+00 3.014e-01 8.060e-01 1.746e-02 1.242e-03 1.379e-04       0.0 1.238e-02 5.826e-08 4.366e-05
 z - 1 g    100.0000  100.0000   92.0380       0.0   90.1900  100.0000  100.0000  100.0000       0.0 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0    9.2700  100.0000       0.0       0.0       0.0       0.0  100.0000       0.0
 th227t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  7.547990n      0.0       0.0       0.0
zp 54.51 ri 7.41e-09p 0.000373p 0.118226p       0.0  4.740374n 2.445835n 0.253694p 0.000216p 1.28e-08p 5.22e-09p       0.0
sig0.507 cc 7.41e-09p 0.000373p 0.118563p       0.0  4.847431p 7.293161p 7.546841p 7.547057p 1.28e-08p 1.80e-08p       0.0
         rc 7.41e-09p 0.000373p 0.118569p 0.001087o 4.848399m 7.294234l 7.547928l 7.548144l 1.28e-08p 1.80e-08p       0.0
 th229t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0  6.988755i 8.506501i 8.504159h 8.365941h      0.0       0.0       0.0
zp 54.30 ri 3.97e-07p 0.004846p 0.272397p       0.0  6.659316i 1.430045n 0.145628p 8.15e-05p 1.04e-08p 4.24e-09p       0.0
sig0.538 cc 4.01e-07p 0.004899p 0.279875p       0.0  6.986483p 8.338445p 8.484386p 8.484469p 1.05e-08p 1.48e-08p       0.0
         rc 3.97e-07p 0.004846p 0.276857p 0.003139o 6.912153h 8.342198h 8.487826g 8.487908g 1.04e-08p 1.46e-08p       0.0
 pa231f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  7.344824n      0.0       0.0       0.0
zp 54.49 ri 2.20e-07p 0.001139p 0.266453p       0.0  3.466015n 3.386313n 0.247221p 0.000999p 1.35e-07p 4.73e-08p 1.37e-12p
sig0.552 cc 2.20e-07p 0.001139p 0.267455p       0.0  3.707760p 7.093635p 7.340814p 7.341813p 1.35e-07p 1.82e-07p 1.37e-12p
         rc 2.20e-07p 0.001140p 0.267502p 0.003469o 3.710744m 7.097057l 7.344278l 7.345277l 1.35e-07p 1.82e-07p 1.37e-12p
 am241t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  6.778168h 6.159586j      0.0       0.0       0.0
zp 54.53 ri 1.91e-07p 0.000921p 0.215751p       0.0  2.986913n 3.191503m 0.290083p 0.001390p 2.52e-07p 1.03e-07p 4.06e-12p
sig0.559 cc 1.90e-07p 0.000915p 0.215157p       0.0  3.161996p 6.385454p 6.663934p 6.665382p 2.62e-07p 3.70e-07p 4.23e-12p
         rc 1.91e-07p 0.000921p 0.216599p 0.002836o 3.185100m 6.376603k 6.666687h 6.668077g 2.52e-07p 3.55e-07p 4.06e-12p
 am241h  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  4.033516i 4.013449n      0.0       0.0       0.0
zp 55.02 ri 1.67e-07p 0.000253p 0.042010p       0.0  0.836176p 2.262609n 0.894272p 0.047826p 0.000254p 5.59e-05p 2.22e-07p
sig0.656 cc 1.67e-07p 0.000253p 0.042235p       0.0  0.874333p 3.136603p 4.030756p 4.079292p 0.000257p 0.000313p 2.23e-07p
         rc 1.67e-07p 0.000253p 0.042242p 0.000624o 0.874898o 3.137507m 4.031779i 4.079916i 0.000254p 0.000311p 2.22e-07p
 a242mt  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0  2.951432k      0.0  5.825756j      0.0       0.0       0.0       0.0
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zp 54.39 ri 8.35e-07p 0.002202p 0.307543p 0.0 2.796071k 2.488475n 0.197193p 0.000573p 7.98e-08p 3.26e-08p 1.05e-12p
sig0.565 cc 8.98e-07p 0.002368p 0.332728p 0.0 3.309104p 5.616015p 5.758685p 5.759229p 7.56e-08p 1.07e-07p 0.0
rc 8.35e-07p 0.002203p 0.309570p 0.005441o 3.080713j 5.569189l 5.766381j 5.766955j 7.98e-08p 1.12e-07p 1.05e-12p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 4.811505l 6.816298o 5.638853j 0.0 0.0 0.0 0.0
zp 54.33 ri 2.65e-06p 0.004855p 0.435818p 0.0 3.499409l 1.829792n 0.108855p 0.000382p 6.69e-08p 2.73e-08p 1.02e-12p
sig0.576 cc 2.52e-06p 0.004614p 0.418170p 0.0 3.704060p 5.709775p 5.837276p 5.837724p 7.84e-08p 1.10e-07p 1.19e-12p
rc 2.65e-06p 0.004858p 0.440289p 0.007760o 3.904265l 5.734057k 5.842913i 5.843295i 6.69e-08p 9.42e-08p 1.02e-12p
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.848256m 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.934995j 5.189163j 6.050323h 6.178092i 0.0 0.0 0.0
zp 54.88 ri 6.04e-07p 0.000791p 0.119851p 0.0 1.823553j 3.292584k 0.845812m 0.036992p 9.94e-05p 4.06e-05p 6.03e-08p
sig0.645 cc 5.15e-07p 0.000675p 0.102856p 0.0 1.648960p 5.122228p 6.072558p 6.109581p 9.91e-05p 0.000140p 6.01e-08p
rc 6.04e-07p 0.000792p 0.120580p 0.001209o 1.933513i 5.226098i 6.071909h 6.109041g 9.94e-05p 0.000140p 6.03e-08p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.653441n 0.0 0.0 0.0
zp 54.20 ri 1.39e-05p 0.011507p 0.668242p 0.0 3.298333n 1.655044n 0.077052p 0.000268p 4.31e-08p 1.76e-08p 0.0
sig0.590 cc 1.39e-05p 0.011513p 0.678382p 0.0 3.911555p 5.565727p 5.642726p 5.642994p 4.31e-08p 6.07e-08p 0.0
rc 1.39e-05p 0.011520p 0.678845o 0.012707o 3.923291m 5.578335l 5.655387l 5.655655l 4.31e-08p 6.07e-08p 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.154309n 0.0 0.0 0.0
zp 54.11 ri 2.09e-05p 0.013580p 0.626235p 0.0 2.504116n 1.023571n 0.038070p 0.000104p 1.30e-08p 5.33e-09p 0.0
sig0.590 cc 2.09e-05p 0.013587p 0.638093p 0.0 3.081146p 4.103884p 4.141914p 4.142018p 1.30e-08p 1.84e-08p 0.0
rc 2.09e-05p 0.013601p 0.638753o 0.015197o 3.095405m 4.118976l 4.157046l 4.157150l 1.30e-08p 1.84e-08p 0.0

sb half life from 80eng2; i, xe, cs, ba half lives from 89wal1; cehalf life 90bur1.

1

mass number 140 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	52 te g	53 i g	54 xe d	54 xe g	55 cs d	55 cs g	56 ba d	56 ba g	57 la g	58 ce g	59 pr g	60 nd g
half life	0.894s	0.86 s	0.46s	13.6 s	1.72 s	1.06 m	24.9 s	12.75d	1.678d	stable	3.39 m	3.37 d
lambda	7.753e-01	8.060e-01	1.507e+00	5.097e-02	4.030e-01	1.090e-02	2.784e-02	6.292e-07	4.781e-06	0.0	3.408e-03	2.381e-06
z - 1 g	100.0000	100.0000	0.0	90.7300	0.0	100.0000	0.0	100.0000	100.0000	100.0000	-100.0000	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	21.3000	100.0000	0.0350	100.0000	0.0470	100.0000	0.0	0.0	0.0	0.0

th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.737578l 0.0 7.817864n 0.0 0.0
zp 54.91 ri 1.49e-05p 0.011716p 0.0 3.072135n 0.0 2.873544n 0.0 1.787469n 0.003643p 2.35e-06p 2.96e-12p 0.0
sig0.507 cc 1.49e-05p 0.011731p 0.0 3.082759p 0.0 5.956259p 0.0 7.743810p 7.747435p 7.747438p 2.95e-12p 0.0
rc 1.49e-05p 0.011731p 0.000194o 3.082973m 0.000202o 5.956719l 0.001779o 7.745967k 7.749610k 7.749613k 2.97e-12p 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 3.750123p 0.0 5.940710i 0.0 7.800513g 7.978881h 8.083090g 0.0 0.0
zp 54.69 ri 0.000278p 0.033582p 0.0 4.112346n 0.0 1.825853n 0.0 1.966279m 0.001251p 1.34e-06p 2.24e-12p 0.0
sig0.538 cc 0.000355p 0.043172p 0.0 5.206130p 0.0 6.984437p 0.0 7.934432p 7.935588p 7.935589p 2.05e-12p 0.0
rc 0.000278p 0.033861p 0.001599o 4.144667m 0.000638n 5.971159i 0.002195o 7.939632g 7.940883f 7.940885f 2.25e-12p 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.700644h 0.0 6.871976n 0.0 0.0
zp 54.90 ri 4.56e-05p 0.037374p 0.0 1.533497n 0.0 4.213884n 0.0 0.918649p 0.012735p 8.39e-06p 2.34e-10p 0.0
sig0.552 cc 4.56e-05p 0.037417p 0.0 1.567598p 0.0 5.781255p 0.0 6.700131p 6.712717p 6.712725p 2.32e-10p 0.0
rc 4.56e-05p 0.037420p 0.000802o 1.568251m 0.000175o 5.782310m 0.002060o 6.703019h 6.715754h 6.715763h 2.34e-10p 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.902626g 6.141816j 5.937630i 0.0 0.0
zp 54.93 ri 3.95e-05p 0.030559p 0.0 1.269059n 0.0 3.715105n 0.0 0.907292p 0.015295p 1.30e-05p 5.20e-10p 0.0
sig0.559 cc 3.95e-05p 0.030598p 0.0 1.296950p 0.0 5.012006p 0.0 5.919503p 5.934514p 5.934527p 5.18e-10p 0.0
rc 3.95e-05p 0.030599p 0.000497o 1.297318m 0.000107o 5.012530m 0.001309o 5.921131g 5.936426g 5.936439g 5.20e-10p 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.355882i 0.0 3.657308n 0.0 0.0
zp 55.40 ri 1.76e-05p 0.006711p 0.0 0.295125p 0.0 1.680244n 0.0 1.379864m 0.167888p 0.002461p 4.09e-06p 7.25e-10p
sig0.656 cc 1.76e-05p 0.006742p 0.0 0.301864p 0.0 1.985345p 0.0 3.367987p 3.529314p 3.531690p 3.95e-06p 6.99e-10p
rc 1.76e-05p 0.006729p 0.000168o 0.301398p 2.81e-05o 1.981670m 0.000504o 3.362038i 3.529926j 3.532391j 4.10e-06p 7.25e-10p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.337777n 0.0 0.0 0.0
xc 0.0 0.0 0.0 1.550291k 0.0 0.0 0.0 5.097364k 5.383963k 0.0 0.0 0.0
zp 54.78 ri 0.000136p 0.058559p 0.0 1.494621k 0.0 3.008058n 0.0 0.513483p 0.336622n 3.85e-06p 1.19e-10p 0.0
sig0.565 cc 0.000146p 0.063322p 0.0 1.670824p 0.0 4.857435p 0.0 5.399309p 5.405608p 5.405612p 1.23e-10p 0.0

rc 0.000136p 0.058695p 0.001335o 1.549210j 0.000161m 4.557429l 0.001738o 5.072649k 5.409271j 5.409275j 1.19e-10p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.033294n 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.438532g 5.634771h 0.0 0.0 0.0
zp 54.73 ri 0.000332p 0.083380p 0.0 2.000973n 0.0 2.864903n 0.0 0.536815p 0.033507n 4.55e-06p 1.47e-10p 0.0
sig0.576 cc 0.000334p 0.084223p 0.0 2.090495p 0.0 4.964351p 0.0 5.506798p 5.512103p 5.512107p 1.45e-10p 0.0
rc 0.000332p 0.083712p 0.002622o 2.079546m 0.000271o 4.944721l 0.001774o 5.483310g 5.516817f 5.516822f 1.47e-10p 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.185261i 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.661646l 0.0 0.0 0.0 5.141819h 5.403473h 5.279122g 0.0 0.0
zp 55.27 ri 5.11e-05p 0.012989p 0.0 0.653469l 0.0 2.368468n 0.0 2.100263m 0.186592i 0.001663p 1.23e-06p 1.62e-10p
sig0.645 cc 5.56e-05p 0.014184p 0.0 0.724081p 0.0 3.135400p 0.0 5.193564p 5.320525p 5.322181p 1.22e-06p 1.61e-10p
rc 5.11e-05p 0.013040p 0.000573o 0.665873j 7.66e-05m 3.034418m 0.001091o 5.135772g 5.322363g 5.324028f 1.23e-06p 1.62e-10p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.491787h 0.0 5.513122n 0.0 0.0
zp 54.61 ri 0.000803p 0.136285p 0.0 1.795638n 0.0 2.290111m 0.0 0.288059p 0.003322p 2.33e-06p 1.02e-10p 0.0
sig0.590 cc 0.000803p 0.137110p 0.0 1.922123p 0.0 4.208889p 0.0 4.498525p 4.501509p 4.501511p 9.17e-11p 0.0
rc 0.000803p 0.137088p 0.005579o 1.925597m 0.000335o 4.216043k 0.001846o 4.505948h 4.509270h 4.509272h 1.02e-10p 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.994108h 0.0 0.0 0.0 0.0
zp 54.53 ri 0.001184p 0.162757p 0.0 1.765548n 0.0 1.874542m 0.0 0.196215p 0.001640p 9.25e-07p 3.24e-11p 0.0
sig0.590 cc 0.001183p 0.163773p 0.0 1.914516p 0.0 3.789046p 0.0 3.985066p 3.986704p 3.986705p 3.23e-11p 0.0
rc 0.001184p 0.163941p 0.006926o 1.921218m 0.000359n 3.796118k 0.001779o 3.994112h 3.995753h 3.995753h 3.24e-11p 0.0

te half life from 80eng2; i, xe, cs, ba, la half lives from 89wal1.

1

mass number 141 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	53 i g	54 xe d	54 xe g	55 cs d	55 cs g	56 ba d	56 ba g	57 la g	58 ce g	59 pr g	60 nd g	61 pm g
half life	0.45s	0.20 s	1.72 s	1.22s	24.9 s	1.69 s	18.3 m	3.90 h	32.50d	stable	2.46 h	20.9 m

lambda 1.540e+00 3.466e+00 4.030e-01 5.682e-01 2.784e-02 4.101e-01 6.313e-04 4.937e-05 2.468e-07 0.0 7.827e-05 5.527e-04
z - 1 g 100.0000 0.0 78.7000 0.0 99.9650 0.0 99.9530 100.0000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 13.8610 100.0000 0.4040 100.0000 0.0950 100.0000 0.0 0.0 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.639273j 7.669349n 0.0 0.0
zp 55.32 ri 0.000911p 0.0 0.575436p 0.0 3.209121n 0.0 3.802035n 0.053900p 9.08e-05p 9.41e-10p 0.0 0.0
sig0.507 cc 0.000911p 0.0 0.576151p 0.0 3.785149p 0.0 7.585328p 7.639228p 7.639319p 7.639319p 0.0 0.0
rc 0.000911p 2.26e-06o 0.576155o 0.000317o 3.785391m 0.000971o 7.586618l 7.640518k 7.640609j 7.640609j 0.0 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 7.238238i 8.240402i 7.356435g 7.964078l 0.0 0.0
zp 55.08 ri 0.007508p 0.0 1.817812n 0.0 2.844528n 0.0 2.773472m 0.019180p 4.37e-05p 4.52e-10p 0.0 0.0
sig0.538 cc 0.007555p 0.0 1.835208p 0.0 4.697329p 0.0 7.440059p 7.458042p 7.458084p 7.458084p 0.0 0.0
rc 0.007508p 4.66e-05o 1.823768m 0.001800o 4.669457l 0.001636o 7.442370h 7.461550g 7.461594f 7.461594f 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.833884i 7.026147n 0.0 0.0
zp 55.30 ri 0.003767p 0.0 0.498275p 0.0 3.882341n 0.0 2.353354n 0.101490p 0.000230p 2.33e-08p 0.0 0.0
sig0.552 cc 0.003767p 0.0 0.501261p 0.0 4.383636p 0.0 6.734720p 6.836189p 6.836419p 6.836419p 0.0 0.0
rc 0.003767p 2.86e-05o 0.501268p 0.000370o 4.383804m 0.002109o 6.737208l 6.838697k 6.838927i 6.838927i 0.0 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.231485j 4.819262h 5.091086k 0.0 0.0
zp 55.33 ri 0.002332p 0.0 0.304108p 0.0 2.478776n 0.0 1.923625m 0.082939p 0.000264p 3.83e-08p 0.0 0.0
sig0.559 cc 0.002476p 0.0 0.324823p 0.0 2.956479p 0.0 4.701705p 4.789761p 4.790014p 4.790014p 0.0 0.0
rc 0.002332p 2.26e-05o 0.305966p 0.000272o 2.784907m 0.001544o 4.708766j 4.791706h 4.791970g 4.791970g 0.0 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.240860i 3.331163n 0.0 0.0
zp 55.79 ri 0.000790p 0.0 0.079745p 0.0 0.991774p 0.0 1.721134n 0.435478p 0.014560p 5.80e-05p 2.47e-08p 1.10e-12p
sig0.656 cc 0.000790p 0.0 0.080385p 0.0 1.072380p 0.0 2.793351p 3.228217p 3.242779p 3.242837p 2.44e-08p 1.08e-12p

rc 0.000790p 8.79e-06o 0.080375p 6.19e-05o 1.072183o 0.000425n 2.793238m 3.228715k 3.243275i 3.243333i 2.47e-08p
1.10e-12p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.440179k 0.0 0.0 0.0 0.0 0.0 5.271370j 0.0 0.0 0.0
zp 55.16 ri 0.006269p 0.0 0.456342k 0.0 3.235542n 0.0 1.498185n 0.048826p 9.50e-05p 9.29e-09p 0.0 0.0
sig0.565 cc 0.008613p 0.0 0.633800p 0.0 3.807118p 0.0 5.194999p 5.241323p 5.241413p 5.241413p 0.0 0.0
rc 0.006269p 6.90e-05o 0.461344j 0.000460l 3.697184m 0.001884o 5.195515l 5.244341k 5.244436j 5.244436j 0.0 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.159744h 0.0 0.0 0.0
zp 55.12 ri 0.012310p 0.0 0.763658p 0.0 3.001130n 0.0 1.343822n 0.040488p 9.62e-05p 1.05e-08p 0.0 0.0
sig0.576 cc 0.012309p 0.0 0.773323p 0.0 3.774140p 0.0 5.116257p 5.156741p 5.156838p 5.156838p 0.0 0.0
rc 0.012310p 0.000140o 0.773486o 0.000800o 3.775146m 0.001974o 5.119168k 5.159655j 5.159751h 5.159751h 0.0
0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.214746j 0.0 0.0 0.0 4.437910l 0.0 5.508517h 5.339882i 0.0 0.0
zp 55.65 ri 0.002690p 0.0 0.216623j 0.0 2.102271n 0.0 2.417787n 0.682156p 0.011009p 2.74e-05p 6.12e-09p 0.0
sig0.645 cc 0.002446p 0.0 0.198869p 0.0 2.287822p 0.0 4.911320p 5.420216p 5.430871p 5.430898p 6.03e-09p 0.0
rc 0.002690p 2.02e-05o 0.218761i 0.000159l 2.321114m 0.000637o 4.738448k 5.420604j 5.431613h 5.431640h 6.12e-09p
0.0
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.918577j 0.0 0.0 0.0
zp 55.01 ri 0.026194p 0.0 0.935533p 0.0 2.969641n 0.0 0.962409p 0.027795p 5.80e-05p 7.75e-09p 0.0 0.0
sig0.590 cc 0.026190p 0.0 0.956174p 0.0 3.925465p 0.0 4.886023p 4.913814p 4.913872p 4.913872p 0.0 0.0
rc 0.026194p 0.000464o 0.956612o 0.001367o 3.927286m 0.002913o 4.890763m 4.918557l 4.918615j 4.918615j 0.0
0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.594649i 4.183846n 0.0 0.0
zp 54.95 ri 0.032517p 0.0 0.998319n 0.0 2.760597n 0.0 0.777785p 0.019327p 3.43e-05p 3.71e-09p 0.0 0.0
sig0.590 cc 0.032504p 0.0 1.023655p 0.0 3.783141p 0.0 4.560166p 4.579485p 4.579519p 4.579520p 0.0 0.0
rc 0.032517p 0.000465o 1.024375m 0.001267o 3.785881m 0.002533o 4.564420l 4.583747k 4.583781i 4.583781i 0.0
0.0

i, xe, cs, ba, la, ce half lives from 89wal1.
1

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nuclide       52 te g   53 i  g   54 xe g   55 cs d   55 cs g   56 ba d   56 ba g   57 la g   58 ce g   59 pr g   60 nd g
half life     0.590s     0.2 s    1.22 s    0.96 s     1.8 s    1.78 s    10.7 m    1.54 h    5.e16y    19.16h    stable
lambda       1.175e+00 3.466e+00 5.682e-01 7.220e-01 3.851e-01 3.894e-01 1.080e-03 1.250e-04 4.396e-25 1.005e-05        0.0
 z - 1 g    100.0000  100.0000   86.1390       0.0   99.5960       0.0   99.9050  100.0000  100.0000        0.0  100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0    3.0560  100.0000    1.6000  100.0000       0.0       0.0       0.0       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  7.447484n       0.0       0.0
zp 55.73 ri 9.64e-10p 1.63e-05p 0.078377p       0.0  0.944346p       0.0  6.228888n 0.188940p 0.002415p 6.72e-08p       0.0
sig0.507 cc 9.64e-10p 1.63e-05p 0.078368p       0.0  1.022169p       0.0  7.250391p 7.439278p 7.441692p 6.71e-08p 6.71e-08p
         rc 9.64e-10p 1.63e-05p 0.078391p 0.000157o 1.022578o 0.007074o 7.257568m 7.446508m 7.448923l 6.72e-08p 6.72e-08p
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  7.222674h 7.310423h 7.115424l       0.0       0.0
zp 55.47 ri 2.16e-07p 0.000336p 0.445156p       0.0  1.276764n       0.0  5.491525j 0.070916p 0.000943p 2.16e-08p       0.0
sig0.538 cc 2.15e-07p 0.000336p 0.444656p       0.0  1.717776p       0.0  7.210509p 7.281213p 7.282165p 2.19e-08p 2.19e-08p
         rc 2.16e-07p 0.000336p 0.445446p 0.001996o 1.722406m 0.016196o 7.228491h 7.299407g 7.300350g 2.16e-08p 2.16e-08p
 pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.203880n       0.0       0.0
zp 55.70 ri 2.05e-08p 0.000207p 0.091484p       0.0  2.128755n       0.0  3.520637n 0.453634p 0.003442p 1.21e-06p 1.79e-11p
sig0.552 cc 2.05e-08p 0.000207p 0.091621p       0.0  2.219148p       0.0  5.738752p 6.192210p 6.195651p 1.21e-06p 1.21e-06p
         rc 2.05e-08p 0.000207p 0.091662p 0.000321o 2.220368m 0.012133o 5.751027l 6.204661m 6.208104l 1.21e-06p 1.21e-06p
 am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.719849k       0.0       0.0
zp 55.72 ri 1.89e-08p 0.000163p 0.067171p       0.0  1.557524n       0.0  2.701184n 0.384714p 0.003484p 1.59e-06p 3.30e-11p
sig0.559 cc 1.88e-08p 0.000163p 0.067287p       0.0  1.624024p       0.0  4.324192p 4.708921p 4.712404p 1.59e-06p 1.59e-06p
         rc 1.89e-08p 0.000163p 0.067312p 0.000217o 1.624781m 0.007961o 4.332382l 4.717096l 4.720580k 1.59e-06p 1.59e-06p
 am241h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.969952i 3.030154n       0.0       0.0
zp 56.19 ri 2.86e-08p 6.34e-05p 0.015264p       0.0  0.432246p       0.0  1.627592n 0.892999o 0.068124p 0.000638p 6.66e-07p
sig0.656 cc 2.86e-08p 6.34e-05p 0.015314p       0.0  0.447372p       0.0  2.074504p 2.967601p 3.035793p 0.000639p 0.000640p
         rc 2.86e-08p 6.35e-05p 0.015319p 5.71e-05o 0.447560p 0.002041o 2.076767m 2.969767i 3.037891i 0.000638p 0.000639p
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0  0.110317l       0.0       0.0       0.0       0.0  4.401338l 4.708408l       0.0       0.0
zp 55.56 ri 1.13e-07p 0.000498p 0.113320l       0.0  1.868953n       0.0  2.273829n 0.220869p 0.001396p 4.57e-07p 7.18e-12p
sig0.565 cc 1.35e-07p 0.000592p 0.135357p       0.0  2.048342p       0.0  4.260915p 4.474959p 4.476289p 4.35e-07p 4.35e-07p
         rc 1.13e-07p 0.000498p 0.113749k 0.000471n 1.982713m 0.013787o 4.268445l 4.489314k 4.490711j 4.57e-07p 4.57e-07p
```

cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.247186k 4.746517h 0.0 0.0 0.0
zp 55.51 ri 4.36e-07p 0.001012p 0.197264p 0.0 1.879462n 0.0 2.368480m 0.269091p 0.001436p 4.50e-07p 1.09e-11p
sig0.576 cc 4.52e-07p 0.001050p 0.205603p 0.0 2.155403p 0.0 4.531625p 4.712334p 4.713721p 4.35e-07p 4.35e-07p
rc 4.36e-07p 0.001012p 0.198135p 0.001067o 2.077864m 0.016334o 4.460703j 4.729794h 4.731230h 4.50e-07p 4.50e-07p
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.263635j 0.0 0.0 0.0
xc 0.0 0.0 0.039216k 0.0 0.0 0.0 3.008448i 4.434108h 4.275377i 0.0 0.0
zp 56.03 ri 9.99e-08p 0.000145p 0.039301p 0.0 0.631296p 0.0 2.358542k 1.303471j 0.054458p 0.000227p 1.76e-07p
sig0.645 cc 1.12e-07p 0.000163p 0.044085p 0.0 0.765520p 0.0 3.530287p 4.331699p 4.386285p 0.000227p 0.000228p
rc 9.99e-08p 0.000146p 0.039426k 0.000276o 0.670840o 0.006698o 3.035442i 4.338914g 4.393372g 0.000227p 0.000227p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.451532n 0.0 0.0
zp 55.41 ri 2.27e-06p 0.003349p 0.335627p 0.0 2.728065n 0.0 2.202318n 0.172286p 0.001049p 4.25e-07p 1.06e-11p
sig0.590 cc 2.27e-06p 0.003349p 0.338277p 0.0 3.063664p 0.0 5.264727p 5.436906p 5.437954p 4.24e-07p 4.24e-07p
rc 2.27e-06p 0.003351p 0.338514p 0.002079o 3.067290m 0.024574m 5.291268l 5.463554l 5.464602l 4.25e-07p 4.25e-07p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.579631n 0.0 0.0
zp 55.38 ri 2.47e-06p 0.003352p 0.310780p 0.0 2.352321n 0.0 1.774661n 0.129102p 0.000726p 2.71e-07p 6.23e-12p
sig0.590 cc 2.47e-06p 0.003352p 0.313434p 0.0 2.663306p 0.0 4.436944p 4.565959p 4.566684p 2.71e-07p 2.71e-07p
rc 2.47e-06p 0.003355p 0.313670p 0.002062o 2.666786m 0.023810m 4.462723l 4.591825l 4.592551l 2.71e-07p 2.71e-07p

te half life from 80eng2; i, xe, cs, ba, la half lives 89wal1.
1

mass number 143 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 54 xe g 55 cs d 55 cs g 56 ba d 56 ba g 57 la g 58 ce g 59 pr g 60 nd g 61 pm g 62 sm m 62 sm g
half life 0.30 s 1.1 s 1.78 s 1.001s 14.3 s 14.1 m 1.38 d 13.57d stable 265. d 64. s 8.83 m
lambda 2.310e+00 6.301e-01 3.894e-01 6.925e-01 4.847e-02 8.193e-04 5.813e-06 5.912e-07 0.0 3.027e-08 1.083e-02
1.308e-03
z - 1 g 100.0000 0.0 96.9440 0.0 98.4000 100.0000 100.0000 100.0000 100.0000 -100.0000 0.0 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 4.6120 100.0000 3.1300 100.0000 0.0 0.0 0.0 0.0 0.0 0.0 100.0000
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 6.987629j 0.0 7.017705n 0.0 0.0 0.0
zp 56.14 ri 0.005147p 0.0 0.437119p 0.0 5.530842n 0.991259p 0.030305p 6.71e-06p 1.38e-10p 0.0 0.0 0.0
sig0.507 cc 0.005147p 0.0 0.442089p 0.0 5.966071p 6.957138p 6.987441p 6.987447p 6.987447p 0.0 0.0 0.0

rc 0.005147p 1.17e-05o 0.442121p 0.001676o 5.967565m 6.958823l 6.989128j 6.989135j 6.989135j 0.0 0.0 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 8.575347g 0.0 7.660696i 0.0 0.0 0.0
zp 55.86 ri 0.065309p 0.0 0.948579p 0.0 6.863416l 0.427679p 0.012437p 1.59e-06p 6.50e-11p 0.0 0.0 0.0
sig0.538 cc 0.063940p 0.0 0.990777p 0.0 7.860154p 8.287438p 8.299614p 8.299616p 8.299616p 0.0 0.0 0.0
rc 0.065309p 0.000365o 1.012257o 0.007839o 7.867315k 8.294995i 8.307432g 8.307434g 8.307434g 0.0 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.317514h 0.0 5.776881n 0.0 0.0 0.0
zp 56.09 ri 0.010513p 0.0 0.748069p 0.0 3.351473n 1.194426n 0.028355p 3.51e-05p 1.80e-09p 0.0 0.0 0.0
sig0.552 cc 0.010512p 0.0 0.758218p 0.0 4.098799p 5.292032p 5.320385p 5.320418p 5.320418p 0.0 0.0 0.0
rc 0.010513p 3.35e-05o 0.758294o 0.005337o 4.102972m 5.297398j 5.325753h 5.325788h 5.325788h 0.0 0.0 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.630072h 3.696286j 3.969248k 0.0 0.0 0.0
zp 56.11 ri 0.007096p 0.0 0.490635p 0.0 2.263635n 0.890101o 0.023917p 3.60e-05p 2.61e-09p 0.0 0.0 0.0
sig0.559 cc 0.007131p 0.0 0.500035p 0.0 2.768140p 3.643128p 3.667166p 3.667202p 3.667202p 0.0 0.0 0.0
rc 0.007096p 2.52e-05o 0.497539p 0.003800o 2.757013m 3.647114j 3.671032h 3.671068g 3.671068g 0.0 0.0 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.699045i 0.0 2.709078n 0.0 0.0 0.0
zp 56.60 ri 0.001870p 0.0 0.125717p 0.0 1.065519n 1.284160n 0.223155p 0.005021p 1.30e-05p 3.62e-09p 0.0 0.0
sig0.656 cc 0.001870p 0.0 0.127516p 0.0 1.191119p 2.475167p 2.698328p 2.703344p 2.703357p 3.61e-09p 0.0 0.0
rc 0.001870p 7.68e-06o 0.127537p 0.000852o 1.191867m 2.476027l 2.699182i 2.704203i 2.704216i 3.62e-09p 0.0 0.0
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.015191k 0.0 0.0 0.0 0.0 0.0 4.641576j 0.0 0.0 0.0 0.0 0.0
zp 55.97 ri 0.015428p 0.0 0.846607p 0.0 2.939301n 0.826316p 0.015978p 1.78e-05p 9.75e-10p 0.0 0.0 0.0
sig0.565 cc 0.021417p 0.0 0.939698p 0.0 3.819144p 4.612255p 4.627941p 4.627958p 4.627958p 0.0 0.0 0.0
rc 0.015428k 0.000136n 0.861700o 0.008268o 3.795481m 4.621798l 4.637776j 4.637793j 4.637793j 0.0 0.0 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.417239g 0.0 0.0 0.0 0.0 0.0
zp 55.90 ri 0.034904p 0.0 0.986808p 0.0 2.787620n 0.602341p 0.012364p 1.29e-05p 9.06e-10p 0.0 0.0 0.0
sig0.576 cc 0.034873p 0.0 1.019828p 0.0 3.791855p 4.394300p 4.406653p 4.406665p 4.406665p 0.0 0.0 0.0
rc 0.034904p 0.000204o 1.020849o 0.010405o 3.802540l 4.404881i 4.417244g 4.417257g 4.417257g 0.0 0.0 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.010265n 0.0 0.0 0.0 0.0 0.0 4.723229h 0.0 4.598847i 0.0 0.0 0.0
zp 56.40 ri 0.009044p 0.0 0.409825p 0.0 2.307787n 1.773867n 0.205810p 0.002344p 2.97e-06p 4.18e-10p 0.0 0.0
sig0.645 cc 0.007473p 0.0 0.398917p 0.0 2.595700p 4.502974p 4.699385p 4.702065p 4.702068p 4.78e-10p 0.0 0.0

rc 0.009044n 4.41e-05o 0.418637p 0.002555o 2.722281m 4.496148k 4.701957h 4.704301h 4.704304g 4.18e-10p 0.0
0.0
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.080395i 0.0 0.0 0.0 0.0 0.0
zp 55.81 ri 0.068036p 0.0 1.469658n 0.0 2.942606n 0.598298p 0.010383p 1.26e-05p 9.64e-10p 0.0 0.0 0.0
sig0.590 cc 0.067959p 0.0 1.534022p 0.0 4.453123p 5.051989p 5.062361p 5.062373p 5.062373p 0.0 0.0 0.0
rc 0.068036p 0.000421o 1.536037m 0.017763o 4.471829m 5.070127k 5.080510i 5.080523i 5.080523i 0.0 0.0 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.827198j 0.0 0.0 0.0 0.0 0.0
zp 55.80 ri 0.067471p 0.0 1.422390n 0.0 2.786234n 0.553793p 0.009364p 1.11e-05p 8.24e-10p 0.0 0.0 0.0
sig0.590 cc 0.067420p 0.0 1.486774p 0.0 4.249946p 4.804046p 4.813403p 4.813415p 4.813415p 0.0 0.0 0.0
rc 0.067471p 0.000324o 1.488124m 0.013676o 4.264224m 4.818017k 4.827381i 4.827392i 4.827392i 0.0 0.0 0.0

xe, cs, ba, la, ce, pr half lives from 89wal1.
1

mass number 144 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 54 xe g 55 cs g 56 ba d 56 ba g 57 la g 58 ce g 59 pr m 59 pr g 60 nd g 61 pm g 62 sm g
half life 1.2 s 1.01 s 0.59 s 11.4 s 40.7 s 284.6d 7.2 m 17.28m 15.32l 363. d stable
lambda 5.776e-01 6.863e-01 1.175e+00 6.080e-02 1.703e-02 2.819e-08 1.605e-03 6.685e-04 1.052e-23 2.210e-08 0.0
z - 1 g 100.0000 95.3880 0.0 96.8700 100.0000 100.0000 0.5000 99.5000 100.0000 -100.0000 0.0
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0500 0.0 0.0
z - 0 m 0.0 0.0 13.5900 100.0000 0.0 0.0 0.0 99.9500 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.965049j 0.0 0.0 5.985100n 0.0 0.0
zp 56.55 ri 0.000253p 0.053313p 0.0 4.220268n 1.405764n 0.287468p 0.000147p 1.63e-05p 2.74e-08p 0.0 0.0
sig0.507 cc 0.000253p 0.053552p 0.0 4.272226p 5.677884p 5.965379p 0.029974p 5.965526p 5.965541p 0.0 0.0
rc 0.000253p 0.053554p 0.000683o 4.272829m 5.678593l 5.966061j 0.029977j 5.966209j 5.966224j 0.0 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 10.178368i 8.902968k 0.0 0.0 8.738102j 0.0 0.0
zp 56.26 ri 0.007903p 0.242896p 0.0 8.349500m 1.021664p 0.138273p 3.75e-05p 4.17e-06p 1.06e-08p 0.0 0.0
sig0.538 cc 0.007764p 0.246012p 0.0 8.662363p 9.606122p 9.752173p 0.048801p 9.752194p 9.752218p 0.0 0.0
rc 0.007903p 0.250435p 0.005948o 8.598044l 9.619707i 9.757980h 0.048827h 9.757997h 9.758022h 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.689802i 0.0 0.0 4.841800n 0.0 0.0
zp 56.49 ri 0.000726p 0.169822p 0.0 2.208893n 2.159653n 0.157411p 0.000589p 5.82e-05p 1.18e-07p 0.0 0.0

sig0.552 cc 0.000726p 0.170525p 0.0 2.375091p 4.533570p 4.691145p 0.024035p 4.691770p 4.691782p 0.0 0.0
rc 0.000726p 0.170515p 0.002694o 2.376765m 4.536418k 4.693829i 0.024058i 4.694464i 4.694476i 0.0 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.471119h 0.0 0.0 3.742914l 0.0 0.0
zp 56.51 ri 0.000547p 0.120877p 0.0 1.585748n 1.648200m 0.133455p 0.000616p 6.85e-05p 1.64e-07p 1.77e-12p 0.0
sig0.559 cc 0.000548p 0.121607p 0.0 1.707147p 3.350421p 3.485020p 0.018019p 3.485671p 3.485680p 1.70e-12p 0.0
rc 0.000547p 0.121399p 0.002719o 1.706067m 3.354267k 3.487721h 0.018055i 3.488397h 3.488406h 1.77e-12p 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.498372i 0.0 0.0 2.468271n 0.0 0.0
zp 57.01 ri 0.000166p 0.027052p 0.0 0.527430p 1.399862n 0.542666p 0.026638p 0.001700p 0.000180p 1.26e-07p 9.20e-12p
sig0.656 cc 0.000166p 0.027204p 0.0 0.553832p 1.953417p 2.495987p 0.039426p 2.524633p 2.524835p 1.27e-07p 9.31e-12p
rc 0.000166p 0.027210p 0.000504o 0.554293o 1.954155m 2.496821i 0.039122p 2.525140i 2.525339i 1.26e-07p 9.20e-12p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.005436l 0.0 0.0 0.0 0.0 3.858848j 0.0 0.0 0.0 0.0 0.0
zp 56.38 ri 0.002946p 0.261351p 0.0 2.321667n 1.738050n 0.104674p 0.000348p 3.87e-05p 7.37e-08p 0.0 0.0
sig0.565 cc 0.001929p 0.263643p 0.0 2.577815p 4.315683p 4.420346p 0.022450p 4.420722p 4.420733p 0.0 0.0
rc 0.002946m 0.264161p 0.005094o 2.582654o 4.320704m 4.425377j 0.022475j 4.425753j 4.425765j 0.0 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 4.324609j 3.311186m 0.0 0.0 0.0 0.0 0.0
zp 56.29 ri 0.004420p 0.328214p 0.0 2.586895n 1.310022n 0.071313p 0.000186p 2.07e-05p 4.91e-08p 0.0 0.0
sig0.576 cc 0.004406p 0.331400p 0.0 2.902404p 4.209069p 4.290260p 0.021663p 4.290484p 4.290495p 0.0 0.0
rc 0.004420p 0.332431p 0.008432o 2.917352m 4.227373j 4.298687j 0.021679j 4.298883j 4.298894j 0.0 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 3.321020j 4.362790i 0.0 0.0 4.158254j 0.0 0.0
zp 56.78 ri 0.000957p 0.080721p 0.0 1.429722n 1.822826m 0.969652n 0.012489p 0.001388p 6.02e-05p 1.43e-08p 0.0
sig0.645 cc 0.001050p 0.089588p 0.0 1.656736p 3.657668p 4.300891p 0.034115p 4.314885p 4.314963p 1.44e-08p 0.0
rc 0.000957p 0.081634p 0.002518o 1.511319m 3.334145j 4.303797h 0.034008o 4.317657h 4.317734h 1.43e-08p 0.0
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.047715n 0.0 0.0
zp 56.22 ri 0.009140p 0.558939p 0.0 2.889597n 1.518570n 0.074314p 0.000245p 2.73e-05p 6.53e-08p 0.0 0.0
sig0.590 cc 0.009130p 0.567030p 0.0 3.440876p 4.958160p 5.032391p 0.025407p 5.032651p 5.032663p 0.0 0.0
rc 0.009140p 0.567658o 0.018235o 3.457722m 4.976292l 5.050606l 0.025498l 5.050866l 5.050878l 0.0 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.889035j 0.0 0.0 0.0 0.0 0.0
zp 56.22 ri 0.007032p 0.430237p 0.0 2.225551n 1.169626n 0.057288p 0.000189p 2.10e-05p 5.04e-08p 0.0 0.0
sig0.590 cc 0.007024p 0.436439p 0.0 2.649538p 3.818528p 3.875749p 0.019568p 3.875949p 3.875959p 0.0 0.0

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        rc 0.007032p 0.436944p 0.013642o 2.662462m 3.832087k 3.889375j 0.019636j 3.889576j 3.889585j      0.0       0.0

  xe, cs, ba, la, ce, pr, half lives from 89wal1.
1

    mass number    145                    LA-UR-94-3106 (ENDF-349)                        percent yields
nuclide      54 xe g   55 cs g   56 ba d   56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g
half life     0.9 s    0.59 s    0.340s     4.0 s     24. s    3.00 m    5.98 h    stable    17.7 y    340. d
lambda      7.702e-01 1.175e+00 2.039e+00 1.733e-01 2.888e-02 3.851e-03 3.220e-05       0.0 1.242e-09 2.360e-08
 z - 1 g    100.0000  100.0000       0.0   86.4100  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0   13.3000  100.0000       0.0       0.0       0.0       0.0       0.0       0.0
 th227t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.105631n      0.0       0.0
zp 56.95 ri 3.17e-06p 0.005021p      0.0  0.870012p 1.587345n 0.641330p 0.002593p 1.12e-06p 2.85e-12p      0.0
sig0.507 cc 3.17e-06p 0.005025p      0.0  0.874356p 2.461699p 3.103029p 3.105622p 3.105623p 2.85e-12p      0.0
        rc 3.17e-06p 0.005025p 8.33e-06o 0.874362o 2.461707m 3.103037m 3.105630m 3.105632l 2.85e-12p      0.0
 th229t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc     0.0       0.0       0.0       0.0       0.0  4.960740k 5.116490l 5.059640l      0.0       0.0
zp 56.66 ri 0.000246p 0.043523p      0.0  2.980280n 1.530312n 0.467034p 0.000846p 5.02e-07p 1.23e-12p      0.0
sig0.538 cc 0.000246p 0.043779p      0.0  3.018910p 4.549573p 5.015458p 5.016291p 5.016291p 1.21e-12p      0.0
        rc 0.000246p 0.043770p 0.000375o 3.018476m 4.548787l 5.015821k 5.016667j 5.016667j 1.23e-12p      0.0
 pa231f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc     0.0       0.0       0.0       0.0       0.0       0.0  3.204639j 3.300574n      0.0       0.0
zp 56.88 ri 2.57e-05p 0.019799p      0.0  0.767171p 2.003155n 0.415653p 0.005356p 3.37e-06p 8.82e-11p      0.0
sig0.552 cc 2.57e-05p 0.019830p      0.0  0.784607p 2.788345p 3.203106p 3.208464p 3.208467p 8.69e-11p      0.0
        rc 2.57e-05p 0.019824p 0.000217o 0.784518o 2.787673m 3.203326l 3.208682j 3.208685j 8.82e-11p      0.0
 am241t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc     0.0       0.0       0.0       0.0       0.0       0.0  3.372444j 2.999929l      0.0       0.0
zp 56.90 ri 2.83e-05p 0.019982p      0.0  0.762911p 2.071586n 0.453987p 0.007120p 5.31e-06p 1.93e-10p      0.0
sig0.559 cc 2.82e-05p 0.019920p      0.0  0.776775p 2.839073p 3.305818p 3.312906p 3.312911p 2.04e-10p      0.0
        rc 2.83e-05p 0.020010p 0.000234o 0.780435o 2.852021m 3.306008l 3.313128j 3.313133i 1.93e-10p      0.0
 am241h  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.249857n      0.0       0.0
zp 57.43 ri 9.07e-06p 0.003700p      0.0  0.173372p 1.047405n 0.911156p 0.112899p 0.001770p 3.15e-06p 5.96e-10p
sig0.656 cc 9.07e-06p 0.003709p      0.0  0.176593p 1.223992p 2.135140p 2.248037p 2.249810p 3.15e-06p 5.96e-10p
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        rc 9.07e-06p 0.003709p 4.93e-05o 0.176627p 1.224032m 2.135188n 2.248087n 2.249859m 3.15e-06p 5.96e-10p
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.350829n      0.0       0.0
zp 56.79 ri 8.41e-05p 0.037403p       0.0  0.981215p 1.986216n 0.346426p 0.004142p 2.70e-06p 8.56e-11p       0.0
sig0.565 cc 8.41e-05p 0.037485p       0.0  1.013710p 2.999844p 3.346250p 3.350392p 3.350395p 8.56e-11p       0.0
        rc 8.41e-05p 0.037487p 0.000471o 1.014079o 3.000296m 3.346721m 3.350863m 3.350866l 8.56e-11p       0.0
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  3.050304k      0.0  2.809491n      0.0       0.0
zp 56.67 ri 0.000269p 0.061773p       0.0  1.171773n 1.570472n 0.237010p 0.002041p 1.34e-06p 3.94e-11p       0.0
sig0.576 cc 0.000268p 0.061993p       0.0  1.224797p 2.796767p 3.032789p 3.034913p 3.034914p 4.10e-11p       0.0
        rc 0.000269p 0.062042p 0.001167o 1.226550m 2.797022l 3.034032j 3.036073j 3.036074j 3.94e-11p       0.0
 cf249t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  3.443184l      0.0  3.571920l      0.0       0.0
zp 57.16 ri 6.49e-05p 0.018461p       0.0  0.510107p 1.990845n 0.951571p 0.068133p 0.000484p 3.98e-07p 2.83e-11p
sig0.645 cc 6.49e-05p 0.018532p       0.0  0.526364p 2.517823p 3.469689p 3.536671p 3.537147p 3.91e-07p 2.78e-11p
        rc 6.49e-05p 0.018526p 0.000270o 0.526385o 2.517230m 3.468801l 3.536934l 3.537418k 3.98e-07p 2.83e-11p
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.946761n      0.0       0.0
zp 56.64 ri 0.000726p 0.133491p       0.0  1.893870n 2.579759n 0.351038p 0.003912p 2.98e-06p 1.42e-10p       0.0
sig0.590 cc 0.000726p 0.134191p       0.0  2.010270p 4.589676p 4.940648p 4.944559p 4.944562p 1.42e-10p       0.0
        rc 0.000726p 0.134217p 0.002470o 2.012318m 4.592076l 4.943114l 4.947026l 4.947029l 1.42e-10p       0.0
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.560837n      0.0       0.0
zp 56.63 ri 0.000557p 0.099828p       0.0  1.382676n 1.842105n 0.244876p 0.002660p 1.97e-06p 9.14e-11p       0.0
sig0.590 cc 0.000557p 0.100364p       0.0  1.469756p 3.311579p 3.556404p 3.559063p 3.559065p 9.14e-11p       0.0
        rc 0.000557p 0.100386p 0.001997o 1.471417m 3.313522l 3.558398l 3.561058l 3.561060l 9.14e-11p       0.0

  xe, cs, ba, la, ce, pr half lives from 89wal1; pm, sm half lives 90bur1.

1

    mass number    146                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       54 xe g   55 cs g   56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g
half life     0.563s    0.322s    2.20 s     6.3 s    13.5 m    24.2 m    stable    5.53 y    1.0e8y
lambda       1.231e+00 2.153e+00 3.151e-01 1.100e-01 8.557e-04 4.774e-04       0.0 3.975e-09 2.198e-16
 z - 1 g    100.0000  100.0000   86.7000  100.0000  100.0000  100.0000  100.0000  -65.0000   35.0000
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 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.037369n      0.0       0.0
zp 57.36 ri 1.49e-08p 6.26e-05p 0.079115p 0.288140p 0.663850p 0.006188p 2.09e-05p 1.45e-10p       0.0
sig0.507 cc 1.49e-08p 6.26e-05p 0.079170p 0.367309p 1.031159p 1.037348p 1.037369p 1.45e-10p 5.07e-11p
         rc 1.49e-08p 6.26e-05p 0.079170p 0.367309p 1.031159n 1.037348n 1.037369m 1.45e-10p 5.07e-11p
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  3.357383i 3.466547j 3.341564j      0.0       0.0
zp 57.06 ri 6.99e-06p 0.002809p 1.031998n 0.948156p 1.391371n 0.005398p 1.90e-05p 1.11e-10p       0.0
sig0.538 cc 6.99e-06p 0.002817p 1.034644p 1.982987p 3.374049p 3.379365p 3.379384p 1.11e-10p 3.88e-11p
         rc 6.99e-06p 0.002816p 1.034440m 1.982596n 3.373967i 3.379365h 3.379384h 1.11e-10p 3.88e-11p
 pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.607171n      0.0       0.0
zp 57.28 ri 6.10e-07p 0.001631p 0.203278p 1.501705n 0.865417p 0.035280p 7.52e-05p 7.05e-09p       0.0
sig0.552 cc 6.10e-07p 0.001632p 0.204693p 1.706398p 2.571815p 2.607095p 2.607171p 7.05e-09p 2.47e-09p
         rc 6.10e-07p 0.001632p 0.204693p 1.706398m 2.571815m 2.607095m 2.607171m 7.05e-09p 2.47e-09p
 am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.645464n      0.0       0.0
zp 57.29 ri 7.62e-07p 0.001758p 0.204056p 1.498266n 0.900801p 0.040713p 0.000104p 1.27e-08p       0.0
sig0.559 cc 7.62e-07p 0.001758p 0.205581p 1.703846p 2.604647p 2.645360p 2.645464p 1.27e-08p 4.44e-09p
         rc 7.62e-07p 0.001758p 0.205581p 1.703846m 2.604647m 2.645360m 2.645464m 1.27e-08p 4.44e-09p
 am241h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.026899n      0.0       0.0
zp 57.84 ri 3.66e-07p 0.000370p 0.041635p 0.573237p 1.095237n 0.305080p 0.011338p 4.97e-05p 2.37e-08p
sig0.656 cc 3.66e-07p 0.000370p 0.041956p 0.615193p 1.710430p 2.015510p 2.026881p 4.97e-05p 1.74e-05p
         rc 3.66e-07p 0.000370p 0.041956p 0.615193o 1.710430m 2.015510m 2.026881m 4.97e-05p 1.74e-05p
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.879976n      0.0       0.0
zp 57.21 ri 2.30e-06p 0.003542p 0.296788p 1.704404n 0.843438p 0.032201p 7.26e-05p 8.26e-09p       0.0
sig0.565 cc 2.30e-06p 0.003544p 0.299860p 2.004264p 2.847702p 2.879903p 2.879976p 8.26e-09p 2.89e-09p
         rc 2.30e-06p 0.003544p 0.299860p 2.004264m 2.847702m 2.879903m 2.879976m 8.26e-09p 2.89e-09p
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  2.825841k 2.669016k 2.709152n      0.0       0.0
zp 57.06 ri 1.37e-05p 0.008760p 0.501428p 1.572427n 0.657649p 0.015192p 3.28e-05p 2.78e-09p       0.0
sig0.576 cc 1.37e-05p 0.008760p 0.508282p 2.078384p 2.738637p 2.754303p 2.754337p 2.89e-09p 1.01e-09p
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        rc 1.37e-05p 0.008773p 0.509035o 2.081462m 2.739110k 2.754302j 2.754335j 2.78e-09p 9.74e-10p
 cf249t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  3.109338k 3.241948k 3.372983h      0.0       0.0
zp 57.56 ri 4.12e-06p 0.002027p 0.192214p 1.178112n 1.780855m 0.193303p 0.004977p 7.14e-06p 1.86e-09p
sig0.645 cc 4.11e-06p 0.002027p 0.193587p 1.369345p 3.146643p 3.346289p 3.351227p 7.08e-06p 2.48e-06p
        rc 4.12e-06p 0.002031p 0.193975p 1.372086m 3.152941j 3.346245i 3.351226h 7.14e-06p 2.50e-06p
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  4.240081n      0.0       0.0
zp 57.05 ri 3.36e-05p 0.018546p 0.733389p 2.553794n 0.907638p 0.029001p 6.74e-05p 1.01e-08p      0.0
sig0.590 cc 3.36e-05p 0.018580p 0.749497p 3.303291p 4.210929p 4.239930p 4.239998p 1.01e-08p 3.52e-09p
        rc 3.36e-05p 0.018580p 0.749497o 3.303291m 4.210929m 4.239930m 4.239998l 1.01e-08p 3.52e-09p
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.264100n      0.0       0.0
zp 57.04 ri 2.79e-05p 0.014988p 0.578089p 1.967844n 0.683786p 0.021315p 4.82e-05p 7.02e-09p      0.0
sig0.590 cc 2.79e-05p 0.015015p 0.591108p 2.558951p 3.242737p 3.264052p 3.264100p 7.02e-09p 2.46e-09p
        rc 2.79e-05p 0.015015p 0.591108o 2.558951m 3.242737m 3.264052m 3.264100l 7.02e-09p 2.46e-09p

  xe half life from 80eng2; cs, ba, la, ce, pr half lives 89wal1.
1

    mass number    147                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide      56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g
half life     0.892s    4.02 s     56. s    13.4 m    10.98d    2.623y    11.03l    24.3 d    38.0 h
lambda      7.771e-01 1.724e-01 1.238e-02 8.621e-04 7.306e-07 8.380e-09 2.051e-19 3.301e-07 5.067e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.181288n      0.0  0.186323n      0.0       0.0
zp 57.76 ri 0.001460p 0.033730p 0.140071p 0.008067p 6.61e-05p 3.62e-09p      0.0       0.0       0.0
sig0.507 cc 0.001462p 0.035246p 0.175247p 0.183327p 0.183393p 0.183393p 0.183393p      0.0       0.0
        rc 0.001460p 0.035190p 0.175260p 0.183327o 0.183393n 0.183393m 0.183393m      0.0       0.0
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0  1.927960i 2.271382i      0.0  2.044873l      0.0       0.0
zp 57.47 ri 0.110284p 0.510568p 1.464908m 0.028315p 0.000260p 9.45e-09p      0.0       0.0       0.0
sig0.538 cc 0.115836p 0.652102p 2.084347p 2.114087p 2.114336p 2.114336p 2.114336p      0.0       0.0
```

rc 0.110284p 0.620853p 2.085760k 2.114075i 2.114336h 2.114336h 2.114336h 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.026345h 0.0 2.079677n 0.0 0.0
zp 57.67 ri 0.034262p 0.733085p 1.125251n 0.133760p 0.000928p 3.02e-07p 4.04e-12p 0.0 0.0
sig0.552 cc 0.034267p 0.767461p 1.892638p 2.026358p 2.027286p 2.027286p 2.027286p 0.0 0.0
rc 0.034262p 0.767347o 1.892599l 2.026358j 2.027286h 2.027286h 2.027286h 0.0 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.041195i 0.0 1.972727l 0.0 0.0
zp 57.68 ri 0.034672p 0.720618p 1.131266n 0.144655p 0.001171p 4.66e-07p 8.52e-12p 0.0 0.0
sig0.559 cc 0.034636p 0.754511p 1.886035p 2.031212p 2.032382p 2.032382p 2.032382p 0.0 0.0
rc 0.034672p 0.755290o 1.886556l 2.031211k 2.032382i 2.032382i 2.032382h 0.0 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.816086i 0.0 1.785985n 0.0 0.0
zp 58.26 ri 0.006673p 0.218711p 0.944814p 0.592828p 0.052201p 0.000564p 6.88e-07p 8.88e-11p 0.0
sig0.656 cc 0.006672p 0.225342p 1.169982p 1.763031p 1.815222p 1.815791p 1.815791p 8.95e-11p 0.0
rc 0.006673p 0.225384p 1.170198o 1.763026k 1.815227i 1.815791i 1.815791i 8.88e-11p 0.0
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.466797j 0.0 0.0 0.0 0.0
zp 57.61 ri 0.060607p 0.981657p 1.282411n 0.141110p 0.001012p 3.85e-07p 7.05e-12p 0.0 0.0
sig0.565 cc 0.060607p 1.042264p 2.324675p 2.465784p 2.466797p 2.466797p 2.466797p 0.0 0.0
rc 0.060607p 1.042264o 2.324675m 2.465784l 2.466797j 2.466797j 2.466797j 0.0 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.449548i 2.033440n 0.0 0.0 0.0
zp 57.45 ri 0.127364p 1.130677n 1.101448n 0.078135p 0.000468p 1.22e-07p 2.30e-12p 0.0 0.0
sig0.576 cc 0.127197p 1.256398p 2.359591p 2.437624p 2.438092p 2.438092p 2.438092p 0.0 0.0
rc 0.127364p 1.258041m 2.359488k 2.437624j 2.438092h 2.438092h 2.438092h 0.0 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.989260i 0.0 2.589827j 0.0 0.0
zp 57.95 ri 0.034850p 0.693568p 1.577618n 0.527914p 0.022388p 0.000104p 4.68e-08p 2.29e-12p 0.0
sig0.645 cc 0.034464p 0.720343p 2.280472p 2.834191p 2.856332p 2.856442p 2.856442p 2.43e-12p 0.0
rc 0.034850p 0.728418o 2.306036m 2.833950k 2.856338i 2.856442i 2.856442h 2.29e-12p 0.0
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 3.513550k 0.0 0.0 0.0 0.0
zp 57.46 ri 0.182962p 1.677225n 1.518423n 0.133966p 0.000931p 4.32e-07p 1.24e-11p 0.0 0.0
sig0.590 cc 0.182962p 1.860183p 3.378602p 3.512576p 3.513507p 3.513508p 3.513508p 0.0 0.0
rc 0.182962p 1.860187m 3.378610l 3.512576l 3.513507k 3.513508k 3.513508k 0.0 0.0

es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.967364n 0.0 0.0
zp 57.44 ri 0.165334p 1.445192n 1.250952n 0.105192p 0.000693p 3.05e-07p 8.30e-12p 0.0 0.0
sig0.590 cc 0.165334p 1.610526p 2.861478p 2.966670p 2.967363p 2.967364p 2.967364p 0.0 0.0
rc 0.165334p 1.610526m 2.861478l 2.966670l 2.967363l 2.967364l 2.967364l 0.0 0.0

cs, ba, la, ce, pr, nd, pm half lives from 89wal1.
1

mass number 148 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 54 xe g 55 cs g 56 ba g 57 la d 57 la g 58 ce d 58 ce g 59 pr g 60 nd g 61 pm m 61 pm g 62 sm g
half life 0.15 s 0.64 s 0.695s 1.1 s 2.41 s 56. s 2.27 m stable 41.3 d 5.37 d 8.e15y
lambda 0.0 4.621e+00 1.083e+00 9.973e-01 6.301e-01 2.876e-01 1.238e-02 5.089e-03 0.0 1.943e-07 1.494e-06 2.747e-24
z - 1 g 100.0000 100.0000 100.0000 0.0 100.0000 0.0 100.0000 100.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 95.4000
z - 0 m 0.0 0.0 0.0 0.5750 100.0000 1.0600 100.0000 0.0 0.0 0.0 4.6000 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.031314n 0.0 0.0 0.0
zp 58.15 ri 0.0 1.04e-09p 2.36e-05p 0.0 0.001196p 0.0 0.027059p 0.002876p 0.000158p 1.46e-08p 6.26e-09p 0.0
sig0.507 cc 0.0 1.04e-09p 2.36e-05p 0.0 0.001219p 0.0 0.028278p 0.031154p 0.031312p 1.46e-08p 6.93e-09p 2.09e-08p
rc 0.0 1.04e-09p 2.36e-05p 2.26e-09o 0.001219p 1.47e-06o 0.028279p 0.031156o 0.031314n 1.46e-08p 6.93e-09p 2.09e-08p
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.856899o 1.324299m 1.018675h 0.0 0.0 0.0
zp 57.87 ri 2.46e-10p 1.46e-06p 0.007009p 0.0 0.065023p 0.0 0.900400m 0.047079p 0.001744p 1.05e-07p 4.52e-08p 1.03e-11p
sig0.538 cc 2.78e-10p 1.65e-06p 0.007922p 0.0 0.081398p 0.0 0.983894p 1.019565p 1.021256p 1.02e-07p 4.85e-08p 1.46e-07p
rc 2.46e-10p 1.46e-06p 0.007011p 2.29e-06o 0.072036p 0.000227o 0.972664k 1.019742j 1.021486h 1.05e-07p 5.00e-08p 1.51e-07p
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.560197n 0.0 0.0 0.0
zp 58.07 ri 7.61e-11p 2.48e-06p 0.003448p 0.0 0.231404p 0.0 0.984545p 0.332956p 0.007470p 6.09e-06p 2.25e-06p 4.01e-10p

sig0.552 cc 7.61e-11p 2.48e-06p 0.003450p 0.0 0.234837p 0.0 1.219413p 1.552356p 1.559825p 6.09e-06p 2.53e-06p 8.34e-06p
rc 7.61e-11p 2.48e-06p 0.003450p 1.01e-06o 0.234856p 0.000399o 1.219799o 1.552755n 1.560225m 6.09e-06p 2.53e-06p 8.34e-06p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.829091n 0.0 0.0 0.0
zp 58.07 ri 1.47e-10p 3.76e-06p 0.004444p 0.0 0.274165p 0.0 1.142692n 0.397466p 0.009763p 9.03e-06p 3.87e-06p 7.95e-10p
sig0.559 cc 1.47e-10p 3.76e-06p 0.004447p 0.0 0.278587p 0.0 1.421335p 1.818771p 1.828534p 9.03e-06p 4.29e-06p 1.29e-05p
rc 1.47e-10p 3.76e-06p 0.004448p 1.87e-06o 0.278614p 0.000641o 1.421947m 1.819413n 1.829176m 9.03e-06p 4.29e-06p 1.29e-05p
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.591115n 0.0 0.0 0.0
zp 58.68 ri 1.51e-10p 1.01e-06p 0.000716p 0.0 0.057074p 0.0 0.568210p 0.797904p 0.162474p 0.003544p 0.000778p 1.33e-05p
sig0.656 cc 1.51e-10p 1.01e-06p 0.000716p 0.0 0.057777p 0.0 0.625884p 1.423945p 1.586380p 0.003543p 0.000941p 0.004334p
rc 1.51e-10p 1.01e-06p 0.000717p 2.99e-07o 0.057791p 0.000107o 0.626108o 1.424012n 1.586486m 0.003544p 0.000941p 0.004335p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.133315n 0.0 0.0 0.0
zp 58.02 ri 4.89e-10p 8.65e-06p 0.007572p 0.0 0.373044p 0.0 1.329886n 0.412604p 0.009371p 8.45e-06p 3.62e-06p 7.72e-10p
sig0.565 cc 4.89e-10p 8.65e-06p 0.007580p 0.0 0.380582p 0.0 1.710549p 2.123116p 2.132486p 8.45e-06p 4.01e-06p 1.21e-05p
rc 4.89e-10p 8.65e-06p 0.007580p 3.56e-06o 0.380628p 0.000976o 1.711490m 2.124094n 2.133465m 8.45e-06p 4.01e-06p 1.21e-05p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.315592n 0.0 0.0 0.0
zp 57.83 ri 9.31e-09p 5.47e-05p 0.026099p 0.0 0.566598p 0.0 1.469505n 0.247153p 0.004549p 2.51e-06p 1.07e-06p 2.22e-10p
sig0.576 cc 9.31e-09p 5.47e-05p 0.026149p 0.0 0.592635p 0.0 2.062296p 2.309410p 2.313958p 2.51e-06p 1.19e-06p 3.58e-06p
rc 9.31e-09p 5.47e-05p 0.026154p 1.66e-05o 0.592768o 0.002072o 2.064346m 2.311498m 2.316047l 2.51e-06p 1.19e-06p 3.58e-06p

cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.255490m 0.0 0.0 0.0
zp 58.35 ri 3.14e-09p 9.61e-06p 0.005364p 0.0 0.175481p 0.0 1.280638n 0.699342p 0.093283p 0.000555p 0.000238p 1.29e-06p
sig0.645 cc 3.14e-09p 9.62e-06p 0.005373p 0.0 0.180838p 0.0 1.461536p 2.160843p 2.254117p 0.000555p 0.000264p 0.000794p
rc 3.14e-09p 9.62e-06p 0.005373p 2.97e-06o 0.180857p 0.000613o 1.462108m 2.161450m 2.254733l 0.000555p 0.000264p 0.000795p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.344536n 0.0 0.0 0.0
zp 57.86 ri 2.12e-08p 0.000108p 0.035815p 0.0 0.876601p 0.0 1.969846n 0.450685p 0.008877p 8.63e-06p 3.70e-06p 1.09e-09p
sig0.590 cc 2.12e-08p 0.000108p 0.035916p 0.0 0.912341p 0.0 2.882448p 3.333057p 3.341932p 8.63e-06p 4.09e-06p 1.23e-05p
rc 2.12e-08p 0.000108p 0.035923p 2.67e-05o 0.912551o 0.003298o 2.885695m 3.336380m 3.345257m 8.63e-06p 4.10e-06p 1.23e-05p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.658461n 0.0 0.0 0.0
zp 57.85 ri 1.86e-08p 9.23e-05p 0.029739p 0.0 0.710275p 0.0 1.560764n 0.348998p 0.006703p 6.35e-06p 2.72e-06p 7.77e-10p
sig0.590 cc 1.86e-08p 9.23e-05p 0.029825p 0.0 0.739972p 0.0 2.300924p 2.649870p 2.656572p 6.34e-06p 3.01e-06p 9.06e-06p
rc 1.86e-08p 9.23e-05p 0.029831p 1.89e-05o 0.740125o 0.002400o 2.303289m 2.652287m 2.658991m 6.35e-06p 3.01e-06p 9.07e-06p

cs, ba, la, ce, pr half lives 89wal1.
1

mass number 149 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	56 ba g	57 la d	57 la g	58 ce d	58 ce g	59 pr g	60 nd g	61 pm g	62 sm g	63 eu g	64 gd g
half life	0.36 s	0.962s	1.10 s	0.608s	5.2 s	2.3 m	1.72 h	2.212d	1.e16y	93. d	9.3 d
lambda	1.925e+00	7.205e-01	6.301e-01	1.140e+00	1.333e-01	5.023e-03	1.119e-04	3.627e-06	2.198e-24	8.626e-08	8.626e-07
z - 1 g	100.0000	0.0	99.4250	0.0	98.9400	100.0000	100.0000	100.0000	100.0000	-100.0000	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	10.9280	100.0000	0.3990	100.0000	0.0	0.0	0.0	0.0	0.0	0.0
th227t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

```
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.010101n      0.0       0.0
zp 58.54 ri 3.93e-07p      0.0  0.000139p      0.0  0.006128p 0.003442p 0.000393p 3.73e-07p 3.48e-11p      0.0       0.0
sig0.507 cc 3.93e-07p      0.0  0.000139p      0.0  0.006265p 0.009708p 0.010101p 0.010101p 0.010101p      0.0       0.0
        rc 3.93e-07p 3.50e-10o 0.000139p 1.08e-08o 0.006265p 0.009708p 0.010101o 0.010101o 0.010101n      0.0       0.0
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.624959i 0.691362l 0.529330i      0.0       0.0
zp 58.28 ri 0.000399p      0.0  0.021047p      0.0  0.464821o 0.092745p 0.009437p 5.27e-06p 7.79e-10p      0.0       0.0
sig0.538 cc 0.000384p      0.0  0.020671p      0.0  0.489727p 0.579131p 0.588228p 0.588233p 0.588233p      0.0       0.0
        rc 0.000399p 9.39e-07o 0.021444p 4.03e-06o 0.486042n 0.578787k 0.588224i 0.588230i 0.588230h      0.0       0.0
 pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.920043i 0.983459n      0.0       0.0
zp 58.46 ri 0.000175p      0.0  0.037461p      0.0  0.449166p 0.407878p 0.027360p 0.000101p 1.73e-08p      0.0       0.0
sig0.552 cc 0.000176p      0.0  0.037675p      0.0  0.486908p 0.894251p 0.921639p 0.921740p 0.921740p      0.0       0.0
        rc 0.000175p 5.68e-07o 0.037636p 1.50e-05o 0.486418p 0.894296m 0.921655k 0.921756i 0.921756i      0.0       0.0
 am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.330414j 1.526366j 1.256017m      0.0       0.0
zp 58.45 ri 0.000325p      0.0  0.060122p      0.0  0.672481p 0.658164o 0.041844p 0.000186p 3.49e-08p      0.0       0.0
sig0.559 cc 0.000338p      0.0  0.063008p      0.0  0.763350p 1.388654p 1.432273p 1.432452p 1.432452p      0.0       0.0
        rc 0.000325p 1.72e-06o 0.060446p 3.71e-05o 0.732324o 1.390488l 1.432332j 1.432518i 1.432518i      0.0       0.0
 am241h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.304371i 1.354539n      0.0       0.0
zp 59.09 ri 5.21e-05p      0.0  0.010072p      0.0  0.231717p 0.718216p 0.325532p 0.020234p 0.000156p 1.30e-07p 1.14e-11p
sig0.656 cc 5.21e-05p      0.0  0.010128p      0.0  0.241851p 0.960338p 1.285473p 1.305717p 1.305870p 1.28e-07p 1.12e-11p
        rc 5.21e-05p 3.06e-07o 0.010124p 5.44e-06o 0.241738p 0.959954o 1.285486k 1.305720i 1.305875i 1.30e-07p 1.14e-11p
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.719593j      0.0       0.0       0.0
zp 58.41 ri 0.000618p      0.0  0.091451p      0.0  0.876705p 0.705538p 0.046009p 0.000186p 3.87e-08p      0.0       0.0
sig0.565 cc 0.000618p      0.0  0.092065p      0.0  0.967800p 1.673334p 1.719342p 1.719527p 1.719527p      0.0       0.0
        rc 0.000618p 3.49e-06o 0.092069p 6.20e-05o 0.967860o 1.673398m 1.719407l 1.719593j 1.719593j      0.0       0.0
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.946576j 1.976678m      0.0       0.0       0.0
zp 58.22 ri 0.002895p      0.0  0.192604p      0.0  1.180240n 0.550191p 0.026233p 6.82e-05p 1.22e-08p      0.0       0.0
sig0.576 cc 0.002897p      0.0  0.195637p      0.0  1.374733p 1.923821p 1.950074p 1.950141p 1.950141p      0.0       0.0
        rc 0.002895p 2.57e-05o 0.195508p 0.000174o 1.373850m 1.924041l 1.950274j 1.950343j 1.950343j      0.0       0.0
 cf249t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.944378i 2.332621j 2.054599j      0.0       0.0
```

zp 58.74 ri 0.000517p 0.0 0.057347p 0.0 0.650646p 1.121144n 0.217658p 0.007163p 1.89e-05p 5.88e-09p 0.0
sig0.645 cc 0.000520p 0.0 0.058184p 0.0 0.711856p 1.818826p 2.047300p 2.053857p 2.053875p 5.62e-09p 0.0
rc 0.000517p 5.26e-06o 0.057867p 3.57e-05o 0.707935o 1.829080l 2.046738h 2.053901h 2.053920h 5.88e-09p 0.0
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.020244k 0.0 0.0 0.0
zp 58.25 ri 0.004639p 0.0 0.306560p 0.0 1.703957n 0.957391p 0.050463p 0.000201p 5.22e-08p 0.0 0.0
sig0.590 cc 0.004639p 0.0 0.311171p 0.0 2.011825p 2.969225p 3.019686p 3.019887p 3.019887p 0.0 0.0
rc 0.004639p 3.88e-05o 0.311212p 0.000261o 2.012131m 2.969523m 3.019986l 3.020187k 3.020187k 0.0 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.264615n 0.0 0.0
zp 58.26 ri 0.003288p 0.0 0.223093p 0.0 1.270259n 0.730543p 0.039491p 0.000161p 4.32e-08p 0.0 0.0
sig0.590 cc 0.003288p 0.0 0.226364p 0.0 1.494240p 2.224766p 2.264256p 2.264417p 2.264417p 0.0 0.0
rc 0.003288p 2.77e-05o 0.226390p 0.000197o 1.494447m 2.224989m 2.264480m 2.264642m 2.264642m 0.0 0.0

ba, la, ce, pr, nd, pm half lives from 89wal1.
1

mass number 150 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 54 xe g 55 cs g 56 ba g 57 la g 58 ce g 59 pr g 60 nd g 61 pm g 62 sm g
half life 0.124s 0.962s 0.608s 4.4 s 6.2 s stable 2.68 h stable
lambda 0.0 5.590e+00 7.205e-01 1.140e+00 1.575e-01 1.118e-01 0.0 7.184e-05 0.0
z - 1 g 100.0000 100.0000 100.0000 89.0720 99.6010 100.0000 100.0000 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.002020n 0.0 0.0
zp 58.93 ri 0.0 0.0 3.21e-09p 2.72e-06p 0.000762p 0.000756p 0.000499p 1.09e-06p 7.55e-10p
sig0.507 cc 0.0 0.0 3.21e-09p 2.72e-06p 0.000765p 0.001521p 0.002020p 1.09e-06p 1.09e-06p
rc 0.0 0.0 3.21e-09p 2.72e-06p 0.000765p 0.001521p 0.002020n 1.09e-06p 1.09e-06p
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.178431i 0.0 0.0
zp 58.68 ri 0.0 1.23e-10p 8.59e-06p 0.001003p 0.117543p 0.039410p 0.020472p 2.41e-05p 2.47e-08p
sig0.538 cc 0.0 1.23e-10p 8.59e-06p 0.001011p 0.118549p 0.157959p 0.178431p 2.41e-05p 2.42e-05p
rc 0.0 1.23e-10p 8.59e-06p 0.001011p 0.118549p 0.157959m 0.178431i 2.41e-05p 2.42e-05p
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.549822n 0.0 0.0

zp 58.86 ri 0.0 3.11e-10p 5.19e-06p 0.003760p 0.137597p 0.341404p 0.067071p 0.000817p 4.75e-07p
sig0.552 cc 0.0 3.11e-10p 5.19e-06p 0.003764p 0.141346p 0.482750p 0.549822p 0.000817p 0.000817p
rc 0.0 3.11e-10p 5.19e-06p 0.003764p 0.141346p 0.482750o 0.549822n 0.000817p 0.000817p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.147057n 0.0 0.0
zp 58.84 ri 0.0 1.26e-09p 1.58e-05p 0.009292p 0.300124p 0.701481p 0.136183p 0.001742p 1.15e-06p
sig0.559 cc 0.0 1.26e-09p 1.58e-05p 0.009306p 0.309392p 1.010873p 1.147056p 0.001742p 0.001743p
rc 0.0 1.26e-09p 1.58e-05p 0.009306p 0.309392p 1.010873n 1.147056m 0.001742p 0.001743p
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.155332n 0.0 0.0
zp 59.51 ri 0.0 6.15e-10p 2.80e-06p 0.001362p 0.075604p 0.535424p 0.542945p 0.078922p 0.001466p
sig0.656 cc 0.0 6.15e-10p 2.80e-06p 0.001364p 0.076963p 0.612387p 1.155332p 0.078922p 0.080389p
rc 0.0 6.15e-10p 2.80e-06p 0.001364p 0.076963p 0.612387o 1.155332n 0.078922p 0.080389p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.599987n 0.0 0.0
zp 58.82 ri 0.0 3.32e-09p 3.20e-05p 0.015517p 0.441642p 0.961873p 0.180987p 0.002355p 1.68e-06p
sig0.565 cc 0.0 3.32e-09p 3.20e-05p 0.015546p 0.457126p 1.418999p 1.599986p 0.002355p 0.002356p
rc 0.0 3.32e-09p 3.20e-05p 0.015546p 0.457126p 1.418999n 1.599986m 0.002355p 0.002356p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.817257n 0.0 0.0
zp 58.62 ri 0.0 5.14e-08p 0.000235p 0.043412p 0.785223p 0.864392p 0.124195p 0.000899p 5.56e-07p
sig0.576 cc 0.0 5.14e-08p 0.000235p 0.043622p 0.828672p 1.693063p 1.817258p 0.000899p 0.000900p
rc 0.0 5.14e-08p 0.000235p 0.043622p 0.828671o 1.693063n 1.817258m 0.000899p 0.000900p
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.018118k 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.733164m 0.0 0.0
zp 59.13 ri 0.0 1.43e-08p 4.81e-05p 0.008905p 0.331475p 0.847719p 0.548502p 0.018154p 0.000241p
sig0.645 cc 0.0 1.43e-08p 4.80e-05p 0.008912p 0.339022p 1.183341p 1.729644p 0.025120p 0.025360p
rc 0.0 1.43e-08p 4.81e-05p 0.008947p 0.340387p 1.188106o 1.736608l 0.018154p 0.018395p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.422903n 0.0 0.0
zp 58.64 ri 2.84e-12p 1.28e-07p 0.000355p 0.065218p 0.925663p 1.260390n 0.171504p 0.001911p 1.46e-06p
sig0.590 cc 2.84e-12p 1.28e-07p 0.000355p 0.065533p 0.990918p 2.251330p 2.422831p 0.001911p 0.001913p
rc 2.84e-12p 1.28e-07p 0.000355p 0.065534p 0.990936o 2.251327m 2.422830l 0.001911p 0.001913p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.978243n 0.0 0.0
zp 58.66 ri 1.81e-12p 8.65e-08p 0.000254p 0.049194p 0.733706p 1.045970n 0.149344p 0.001754p 1.41e-06p

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sig0.590 cc 1.81e-12p 8.65e-08p 0.000254p 0.049420p 0.782928p 1.828898p 1.978243p 0.001754p 0.001756p
         rc 1.81e-12p 8.65e-08p 0.000254p 0.049420p 0.782928o 1.828898m 1.978243l 0.001754p 0.001756p

  cs, ba, la half lives from 80eng2; ce, pr half lives from 89wal1.
1

     mass number    151                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g
half life     0.719s     1.0 s    22.4 s    12.4 m    1.183d     90. y    stable    120. d    17.6 h
lambda       9.640e-01 6.931e-01 3.094e-02 9.316e-04 6.782e-06 2.442e-10       0.0 6.685e-08 1.094e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 th227t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.000505n      0.0       0.0
zp 59.32 ri 6.02e-08p 3.80e-05p 0.000212p 0.000251p 3.56e-06p 6.00e-09p      0.0       0.0       0.0
sig0.507 cc 6.02e-08p 3.81e-05p 0.000250p 0.000501p 0.000505p 0.000505p 0.000505p      0.0       0.0
         rc 6.02e-08p 3.81e-05p 0.000250p 0.000501p 0.000505o 0.000505o 0.000505n      0.0       0.0
 th229t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0  0.042585l      0.0  0.035335l      0.0       0.0
zp 59.08 ri 3.85e-05p 0.009314p 0.014577p 0.013977p 9.16e-05p 1.97e-07p 1.99e-12p      0.0       0.0
sig0.538 cc 3.85e-05p 0.009353p 0.023929p 0.037906p 0.037997p 0.037998p 0.037998p      0.0       0.0
         rc 3.85e-05p 0.009353p 0.023929p 0.037906n 0.037997l 0.037998l 0.037998k      0.0       0.0
 pa231f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.316407n      0.0       0.0
zp 59.26 ri 0.000225p 0.026367p 0.184703p 0.101205p 0.003900p 7.82e-06p 6.88e-10p      0.0       0.0
sig0.552 cc 0.000225p 0.026591p 0.211294p 0.312499p 0.316399p 0.316407p 0.316407p      0.0       0.0
         rc 0.000225p 0.026591p 0.211294p 0.312499o 0.316399o 0.316407o 0.316407n      0.0       0.0
 am241t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0  0.838240j      0.0  0.848060m      0.0       0.0
zp 59.22 ri 0.000855p 0.081106p 0.496705p 0.251429p 0.009360p 1.95e-05p 1.92e-09p      0.0       0.0
sig0.559 cc 0.000856p 0.082010p 0.578894p 0.830090p 0.839456p 0.839475p 0.839475p      0.0       0.0
         rc 0.000855p 0.081961p 0.578666p 0.830095l 0.839456j 0.839475j 0.839475j      0.0       0.0
 am241h  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0  0.887976i      0.0  0.963228n      0.0       0.0
zp 59.92 ri 0.000102p 0.013654p 0.221357p 0.494380p 0.160385p 0.007317p 3.82e-05p 2.18e-08p 1.30e-12p
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sig0.656 cc 0.000102p 0.013770p 0.235350p 0.729330p 0.890140p 0.897196p 0.897233p 2.10e-08p 1.25e-12p
        rc 0.000102p 0.013756p 0.235113p 0.729492n 0.889877i 0.897195i 0.897233i 2.18e-08p 1.30e-12p
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  1.218045j      0.0       0.0       0.0       0.0
zp 59.22 ri 0.001412p 0.121732p 0.717037p 0.363601p 0.014262p 3.31e-05p 3.88e-09p      0.0       0.0
sig0.565 cc 0.001412p 0.123145p 0.840181p 1.203782p 1.218045p 1.218078p 1.218078p      0.0       0.0
        rc 0.001412p 0.123145p 0.840181o 1.203782l 1.218045j 1.218078j 1.218078j      0.0       0.0
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0  1.111713i 1.192899j      0.0       0.0       0.0       0.0
zp 59.02 ri 0.004598p 0.218266p 0.678969o 0.235291p 0.005683p 1.02e-05p 8.32e-10p      0.0       0.0
sig0.576 cc 0.004612p 0.223532p 0.899117p 1.137298p 1.142807p 1.142816p 1.142816p      0.0       0.0
        rc 0.004598p 0.222864p 0.901833n 1.137123i 1.142806h 1.142816h 1.142816h      0.0       0.0
 cf249t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  1.649627i      0.0  1.464530j      0.0       0.0
zp 59.51 ri 0.001555p 0.091967p 0.730604p 0.674075o 0.105038p 0.001475p 2.71e-06p 4.38e-10p      0.0
sig0.645 cc 0.001537p 0.092422p 0.814434p 1.502889p 1.603170p 1.604716p 1.604719p 4.59e-10p      0.0
        rc 0.001555p 0.093522p 0.824127o 1.498202l 1.603240i 1.604716i 1.604719h 4.38e-10p      0.0
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  2.019086m      0.0       0.0       0.0       0.0
zp 59.03 ri 0.009744p 0.366197p 1.217417n 0.413115p 0.012551p 2.76e-05p 3.91e-09p      0.0       0.0
sig0.590 cc 0.009743p 0.375927p 1.593302p 2.006473p 2.019024p 2.019051p 2.019051p      0.0       0.0
        rc 0.009744p 0.375940p 1.593357m 2.006472m 2.019024l 2.019051l 2.019051l      0.0       0.0
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  1.700211l      0.0       0.0       0.0       0.0
zp 59.06 ri 0.007064p 0.286703p 1.022279n 0.371969p 0.012196p 2.91e-05p 4.48e-09p      0.0       0.0
sig0.590 cc 0.007064p 0.293767p 1.316046p 1.688015p 1.700211p 1.700240p 1.700240p      0.0       0.0
        rc 0.007064p 0.293767p 1.316046m 1.688015m 1.700211k 1.700240k 1.700240k      0.0       0.0

  la half life from 80eng2; ce, pr, nd, pm, sm half lives 89wal1.
1

    mass number    152                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide      56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm m   61 pm g   62 sm g   63 eu m   63 eu g   64 gd g
half life     0.420s    0.285s     3.1 s     3.2 s    11.4 m     7.5 m     4.1 m    stable     9.3 h     13. y    14.04l
lambda      1.650e+00 2.432e+00 2.236e-01 2.166e-01 1.013e-03 1.540e-03 2.818e-03       0.0 2.070e-05 1.691e-09 2.005e-22
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000  -23.0000  -72.0000   28.0000
```

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 77.0000
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000202n 0.0 0.0 0.0
zp 59.70 ri 0.0 5.86e-10p 2.53e-06p 2.76e-05p 0.000167p 2.31e-06p 2.31e-06p 5.31e-08p 0.0 0.0 0.0
sig0.507 cc 0.0 5.86e-10p 2.53e-06p 3.01e-05p 0.000197p 2.31e-06p 0.000200p 0.000202p 0.0 0.0 0.0
rc 0.0 5.86e-10p 2.53e-06p 3.01e-05p 0.000197p 2.31e-06p 0.000200o 0.000202n 0.0 0.0 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.009755l 0.0 0.0 0.0
zp 59.48 ri 2.58e-10p 4.15e-07p 0.000568p 0.001676p 0.007412p 4.91e-05p 4.91e-05p 1.36e-06p 1.62e-11p 1.62e-11p 0.0
sig0.538 cc 2.58e-10p 4.15e-07p 0.000568p 0.002244p 0.009656p 4.91e-05p 0.009705p 0.009755p 1.62e-11p 1.62e-11p 1.70e-11p
rc 2.58e-10p 4.15e-07p 0.000568p 0.002244p 0.009656p 4.91e-05p 0.009705n 0.009755l 1.62e-11p 1.62e-11p 1.70e-11p
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.179470n 0.0 0.0 0.0
zp 59.66 ri 9.14e-10p 8.10e-06p 0.003172p 0.066006p 0.098778p 0.005714p 0.005714p 7.70e-05p 1.20e-08p 1.20e-08p 0.0
sig0.552 cc 9.14e-10p 8.10e-06p 0.003180p 0.069186p 0.167964p 0.005714p 0.173679p 0.179470p 1.20e-08p 1.20e-08p 1.26e-08p
rc 9.14e-10p 8.10e-06p 0.003180p 0.069186p 0.167964p 0.005714p 0.173679o 0.179470n 1.20e-08p 1.20e-08p 1.26e-08p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.722577n 0.0 0.0 0.0
zp 59.61 ri 9.11e-09p 5.61e-05p 0.016669p 0.286384p 0.378760p 0.020221p 0.020221p 0.000266p 4.34e-08p 4.34e-08p 1.28e-12p
sig0.559 cc 9.11e-09p 5.62e-05p 0.016725p 0.303109p 0.681869p 0.020221p 0.702090p 0.722576p 4.34e-08p 4.34e-08p 4.55e-08p
rc 9.11e-09p 5.62e-05p 0.016725p 0.303109p 0.681869p 0.020221p 0.702090o 0.722576n 4.34e-08p 4.34e-08p 4.55e-08p
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.815216n 0.0 0.0 0.0
zp 60.34 ri 1.99e-09p 6.18e-06p 0.002068p 0.080147p 0.405234p 0.148321p 0.148322p 0.030681p 0.000198p 0.000198p 5.78e-07p
sig0.656 cc 1.99e-09p 6.18e-06p 0.002074p 0.082221p 0.487455p 0.148321p 0.635777p 0.815065p 0.000198p 0.000198p 0.000209p
rc 1.99e-09p 6.18e-06p 0.002074p 0.082221p 0.487455p 0.148321p 0.635777o 0.814968n 0.000198p 0.000198p 0.000209p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.023991n 0.0 0.0 0.0
zp 59.62 ri 1.69e-08p 8.91e-05p 0.024133p 0.401403p 0.537254p 0.030332p 0.030332p 0.000448p 8.77e-08p 8.77e-08p 3.31e-12p
sig0.565 cc 1.69e-08p 8.91e-05p 0.024223p 0.425626p 0.962879p 0.030332p 0.993211p 1.023991p 8.77e-08p 8.77e-08p 9.21e-08p
rc 1.69e-08p 8.91e-05p 0.024223p 0.425626p 0.962879n 0.030332p 0.993211n 1.023991m 8.77e-08p 8.77e-08p 9.21e-08p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.676424p 1.261984n 0.0 0.0 0.0

zp 59.43 ri 2.47e-07p 0.000456p 0.071267p 0.555212p 0.560821p 0.017394p 0.017394p 0.000214p 2.66e-08p 2.66e-08p 1.02e-12p
sig0.576 cc 2.47e-07p 0.000456p 0.071723p 0.626935p 1.187756p 0.017394p 1.205150p 1.222758p 2.66e-08p 2.66e-08p 2.79e-08p
rc 2.47e-07p 0.000456p 0.071723p 0.626935o 1.187756n 0.017394p 1.205150n 1.222758m 2.66e-08p 2.66e-08p 2.79e-08p
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.255873m 0.0 0.0 0.0
zp 59.90 ri 9.79e-08p 0.000105p 0.021283p 0.265226p 0.784761p 0.087708p 0.087708p 0.009054p 1.41e-05p 1.41e-05p 1.62e-08p
sig0.645 cc 9.79e-08p 0.000106p 0.021388p 0.286615p 1.071376p 0.087709p 1.159084p 1.255868p 1.41e-05p 1.41e-05p 1.48e-05p
rc 9.79e-08p 0.000106p 0.021388p 0.286615p 1.071376o 0.087708p 1.159084n 1.255860l 1.41e-05p 1.41e-05p 1.48e-05p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.520244n 0.0 0.0 0.0
zp 59.42 ri 5.82e-07p 0.000881p 0.090614p 0.754562p 0.623887p 0.024971p 0.024971p 0.000312p 6.50e-08p 6.50e-08p 3.34e-12p
sig0.590 cc 5.82e-07p 0.000881p 0.091495p 0.846057p 1.469944p 0.024971p 1.494915p 1.520199p 6.50e-08p 6.50e-08p 6.82e-08p
rc 5.82e-07p 0.000881p 0.091495p 0.846057o 1.469944n 0.024971p 1.494915n 1.520199m 6.50e-08p 6.50e-08p 6.82e-08p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.624615n 0.0 0.0 0.0
zp 59.46 ri 4.37e-07p 0.000739p 0.084500p 0.775011p 0.701966p 0.030984p 0.030984p 0.000431p 1.00e-07p 1.00e-07p 5.76e-12p
sig0.590 cc 4.37e-07p 0.000740p 0.085240p 0.860250p 1.562216p 0.030984p 1.593200p 1.624615p 1.00e-07p 1.00e-07p 1.05e-07p
rc 4.37e-07p 0.000740p 0.085240p 0.860250o 1.562216n 0.030984p 1.593200n 1.624615m 1.00e-07p 1.00e-07p 1.05e-07p

ba, la half lives from 80eng2; ce, pr, nd, pm half lives 89wal1.
1

mass number 153 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 57 la g 58 ce g 59 pr g 60 nd g 61 pm g 62 sm g 63 eu g 64 gd g 65 tb g
half life 0.326s 1.47 s 4.3 s 28.9 s 5.4 m 1.929d stable 241.6d 2.34 d
lambda 2.126e+00 4.715e-01 1.612e-01 2.398e-02 2.139e-03 4.159e-06 0.0 3.321e-08 3.428e-06
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000101n 0.0 0.0
zp 60.09 ri 9.92e-12p 1.04e-07p 7.41e-06p 8.07e-05p 1.25e-05p 3.22e-07p 5.93e-11p 0.0 0.0

sig0.507 cc 9.92e-12p 1.04e-07p 7.51e-06p 8.82e-05p 0.000101p 0.000101p 0.000101p 0.0 0.0
rc 9.92e-12p 1.04e-07p 7.51e-06p 8.82e-05p 0.000101p 0.000101o 0.000101n 0.0 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.002058l 0.0 0.0
zp 59.87 ri 5.03e-09p 1.50e-05p 0.000224p 0.001707p 0.000109p 3.20e-06p 4.46e-10p 0.0 0.0
sig0.538 cc 5.03e-09p 1.50e-05p 0.000239p 0.001946p 0.002055p 0.002058p 0.002058p 0.0 0.0
rc 5.03e-09p 1.50e-05p 0.000239p 0.001946p 0.002055o 0.002058n 0.002058l 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.076794j 0.080748n 0.0 0.0
zp 60.07 ri 1.23e-07p 0.000170p 0.011417p 0.048582p 0.016428p 0.000369p 4.22e-07p 2.03e-11p 0.0
sig0.552 cc 1.23e-07p 0.000170p 0.011588p 0.060170p 0.076598p 0.076967p 0.076967p 1.98e-11p 0.0
rc 1.23e-07p 0.000170p 0.011588p 0.060170p 0.076598l 0.076967j 0.076967j 2.03e-11p 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.611004j 0.525667m 0.0 0.0
zp 60.00 ri 2.26e-06p 0.002160p 0.109278p 0.378265p 0.110436p 0.002244p 2.23e-06p 1.11e-10p 0.0
sig0.559 cc 2.25e-06p 0.002148p 0.110696p 0.489640p 0.600157p 0.602386p 0.602388p 1.18e-10p 0.0
rc 2.26e-06p 0.002163p 0.111441p 0.489706o 0.600142l 0.602386j 0.602388i 1.11e-10p 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.670246i 0.632118n 0.0 0.0
zp 60.75 ri 2.48e-07p 0.000205p 0.019023p 0.218158p 0.349896p 0.081877p 0.002446p 8.81e-06p 3.43e-09p
sig0.656 cc 2.47e-07p 0.000205p 0.019207p 0.237127p 0.587297p 0.669085p 0.671613p 9.07e-06p 3.54e-09p
rc 2.48e-07p 0.000205p 0.019228p 0.237386p 0.587282m 0.669159i 0.671614i 8.81e-06p 3.43e-09p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.829089j 0.0 0.0 0.0
zp 60.02 ri 3.36e-06p 0.002944p 0.145019p 0.517078p 0.160402p 0.003643p 4.69e-06p 3.00e-10p 0.0
sig0.565 cc 3.36e-06p 0.002947p 0.147966p 0.665044p 0.825446p 0.829089p 0.829094p 3.00e-10p 0.0
rc 3.36e-06p 0.002947p 0.147966p 0.665045n 0.825446l 0.829089j 0.829094j 3.00e-10p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.413422p 1.211505n 0.0 0.0 0.0
zp 59.84 ri 3.01e-05p 0.013615p 0.328824p 0.801043p 0.149282p 0.002414p 2.12e-06p 1.25e-10p 0.0
sig0.576 cc 2.99e-05p 0.013577p 0.340759p 1.142831p 1.292596p 1.295209p 1.295211p 1.35e-10p 0.0
rc 3.01e-05p 0.013645p 0.342470p 1.143513o 1.292795n 1.295209m 1.295211m 1.25e-10p 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.200641h 1.254864j 0.0 0.0
zp 60.28 ri 1.04e-05p 0.003432p 0.138571p 0.610838p 0.423552p 0.033495p 0.000358p 3.45e-07p 3.66e-11p
sig0.645 cc 1.04e-05p 0.003460p 0.142744p 0.756726p 1.176237p 1.209905p 1.210257p 3.39e-07p 3.60e-11p

rc 1.04e-05p 0.003443p 0.142013p 0.752851o 1.176403k 1.209899h 1.210257g 3.45e-07p 3.66e-11p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.216195n 0.0 0.0
zp 59.81 ri 5.61e-05p 0.016240p 0.350835p 0.703412p 0.143109p 0.002478p 3.00e-06p 2.30e-10p 0.0
sig0.590 cc 5.61e-05p 0.016296p 0.367126p 1.070546p 1.213652p 1.216131p 1.216134p 2.30e-10p 0.0
rc 5.61e-05p 0.016296p 0.367132p 1.070543o 1.213652n 1.216131n 1.216134m 2.30e-10p 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.591970l 0.0 0.0 0.0
zp 59.85 ri 5.53e-05p 0.017818p 0.425560p 0.935412p 0.209108p 0.004016p 5.43e-06p 4.65e-10p 0.0
sig0.590 cc 5.53e-05p 0.017873p 0.443433p 1.378846p 1.587954p 1.591970p 1.591976p 4.65e-10p 0.0
rc 5.53e-05p 0.017873p 0.443433p 1.378846n 1.587954m 1.591970l 1.591976l 4.65e-10p 0.0

la, ce half lives from 80eng2; pr, nd, pm, sm half lives 89wal1; gd half life 90bur1.

1

mass number 154 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	56 ba g	57 la g	58 ce g	59 pr g	60 nd g	61 pm m	61 pm g	62 sm g	63 eu g	64 gd g
half life		0.149s	2.02 s	2.3 s	25.9 s	2.7 m	1.7 m	stable	8.8 y	stable
lambda	0.0	4.652e+00	3.431e-01	3.014e-01	2.676e-02	4.279e-03	6.796e-03	0.0	2.498e-09	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	0.0	100.0000	100.0000	0.0	100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
th227t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.04e-05n	0.0	0.0
zp 60.47 ri	0.0	0.0	3.16e-09p	4.99e-07p	3.05e-05p	4.05e-06p	4.05e-06p	1.28e-06p	5.44e-10p	0.0
sig0.507 cc	0.0	0.0	3.16e-09p	5.02e-07p	3.10e-05p	4.05e-06p	3.51e-05p	4.04e-05p	5.44e-10p	5.44e-10p
rc	0.0	0.0	3.16e-09p	5.02e-07p	3.10e-05p	4.05e-06p	3.51e-05p	4.04e-05n	5.44e-10p	5.44e-10p
th229t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000483l	0.0	0.0
zp 60.26 ri	0.0	2.23e-11p	3.84e-07p	1.18e-05p	0.000417p	2.34e-05p	2.34e-05p	7.23e-06p	2.23e-09p	0.0
sig0.538 cc	0.0	2.23e-11p	3.84e-07p	1.22e-05p	0.000429p	2.34e-05p	0.000453p	0.000483p	2.23e-09p	2.23e-09p
rc	0.0	2.23e-11p	3.84e-07p	1.22e-05p	0.000429p	2.34e-05p	0.000453n	0.000483l	2.23e-09p	2.23e-09p
pa231f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.041496n	0.0	0.0
zp 60.46 ri	0.0	1.68e-09p	7.90e-06p	0.001688p	0.020236p	0.009166p	0.009166p	0.001233p	4.55e-06p	7.53e-10p

sig0.552 cc 0.0 1.68e-09p 7.90e-06p 0.001696p 0.021931p 0.009166p 0.031097p 0.041496p 4.55e-06p 4.55e-06p
rc 0.0 1.68e-09p 7.90e-06p 0.001696p 0.021931p 0.009166p 0.031097p 0.041496n 4.55e-06p 4.55e-06p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.376997n 0.0 0.0
zp 60.38 ri 0.0 4.65e-08p 0.000141p 0.021320p 0.198167p 0.074388p 0.074388p 0.008592p 2.87e-05p 4.62e-09p
sig0.559 cc 0.0 4.65e-08p 0.000141p 0.021462p 0.219629p 0.074388p 0.294017p 0.376997p 2.87e-05p 2.87e-05p
rc 0.0 4.65e-08p 0.000141p 0.021462p 0.219629p 0.074388p 0.294017o 0.376997n 2.87e-05p 2.87e-05p
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.519700n 0.0 0.0
zp 61.15 ri 0.0 7.10e-09p 1.44e-05p 0.003170p 0.082600p 0.143866p 0.143866p 0.146183p 0.010289p 8.85e-05p
sig0.656 cc 0.0 7.10e-09p 1.44e-05p 0.003184p 0.085785p 0.143866p 0.229651p 0.519700p 0.010289p 0.010377p
rc 0.0 7.10e-09p 1.44e-05p 0.003184p 0.085785p 0.143866p 0.229651p 0.519700n 0.010289p 0.010377p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.547134n 0.0 0.0
zp 60.41 ri 1.21e-12p 7.03e-08p 0.000197p 0.029085p 0.278831p 0.112195p 0.112195p 0.014632p 5.90e-05p 1.23e-08p
sig0.565 cc 1.21e-12p 7.03e-08p 0.000197p 0.029282p 0.308112p 0.112195p 0.420307p 0.547134p 5.90e-05p 5.90e-05p
rc 1.21e-12p 7.03e-08p 0.000197p 0.029282p 0.308112p 0.112195p 0.420307o 0.547134n 5.90e-05p 5.90e-05p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.892475n 0.0 0.0
zp 60.26 ri 3.25e-11p 6.71e-07p 0.001087p 0.074405p 0.545144p 0.128530p 0.128530p 0.014779p 3.94e-05p 8.58e-09p
sig0.576 cc 3.25e-11p 6.71e-07p 0.001088p 0.075493p 0.620636p 0.128530p 0.749166p 0.892476p 3.94e-05p 3.94e-05p
rc 3.25e-11p 6.71e-07p 0.001088p 0.075493p 0.620636o 0.128530p 0.749166n 0.892476m 3.94e-05p 3.94e-05p
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.486333o 0.0 0.830049l 0.0 0.0
zp 60.67 ri 4.17e-11p 2.70e-07p 0.000313p 0.020673p 0.291238p 0.353059o 0.149364p 0.076862p 0.001319p 4.45e-06p
sig0.645 cc 5.41e-11p 3.49e-07p 0.000406p 0.027189p 0.404510p 0.193513p 0.598024p 0.891118p 0.001709p 0.001715p
rc 4.17e-11p 2.70e-07p 0.000313p 0.020986p 0.312224p 0.353059o 0.461588p 0.891509l 0.001319p 0.001324p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.912146n 0.0 0.0
zp 60.19 ri 1.88e-10p 2.40e-06p 0.001938p 0.109674p 0.529362p 0.129690p 0.129681p 0.011777p 3.99e-05p 8.79e-09p
sig0.590 cc 1.88e-10p 2.40e-06p 0.001940p 0.111614p 0.640970p 0.129688p 0.770658p 0.912123p 3.99e-05p 3.99e-05p
rc 1.88e-10p 2.40e-06p 0.001940p 0.111615p 0.640976o 0.129690p 0.770657n 0.912123m 3.99e-05p 3.99e-05p
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.280000n 0.0 0.0
zp 60.25 ri 1.36e-10p 2.06e-06p 0.001962p 0.129723p 0.721400p 0.202764p 0.202764p 0.021385p 8.51e-05p 2.22e-08p
sig0.590 cc 1.36e-10p 2.06e-06p 0.001964p 0.131687p 0.853088p 0.202764p 1.055851p 1.280000p 8.51e-05p 8.51e-05p

rc 1.36e-10p 2.06e-06p 0.001964p 0.131687p 0.853088o 0.202764p 1.055851n 1.280000m 8.51e-05p 8.51e-05p

la, ce half lives 80eng2; pr, nd, pm half lives 89wal1; eu half life 90bur1.

1

mass number 155 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 58 ce g 59 pr g 60 nd g 61 pm g 62 sm g 63 eu g 64 gd g 65 tb g 66 dy g
half life 0.528s 1.12 s 8.9 s 48. s 22.2 m 4.71 y stable 5.3 d 9.6 h
lambda 1.313e+00 6.189e-01 7.788e-02 1.444e-02 5.204e-04 4.667e-09 0.0 1.514e-06 2.006e-05
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.01e-05n 0.0 0.0
zp 60.85 ri 2.69e-11p 2.95e-08p 3.63e-06p 4.95e-06p 1.48e-06p 4.23e-09p 1.26e-12p 0.0 0.0
sig0.507 cc 2.69e-11p 2.95e-08p 3.66e-06p 8.61e-06p 1.01e-05p 1.01e-05p 1.01e-05p 0.0 0.0
rc 2.69e-11p 2.95e-08p 3.66e-06p 8.61e-06p 1.01e-05o 1.01e-05o 1.01e-05n 0.0 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 9.84e-05l 0.0 0.0
zp 60.65 ri 5.20e-09p 8.90e-07p 5.92e-05p 2.96e-05p 8.76e-06p 1.52e-08p 8.72e-12p 0.0 0.0
sig0.538 cc 5.20e-09p 8.95e-07p 6.01e-05p 8.97e-05p 9.84e-05p 9.84e-05p 9.84e-05p 0.0 0.0
rc 5.20e-09p 8.95e-07p 6.01e-05p 8.97e-05p 9.84e-05o 9.84e-05n 9.84e-05l 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.020748n 0.0 0.0
zp 60.86 ri 1.96e-07p 0.000142p 0.005184p 0.012864p 0.002527p 3.08e-05p 1.79e-08p 0.0 0.0
sig0.552 cc 1.96e-07p 0.000142p 0.005326p 0.018190p 0.020717p 0.020748p 0.020748p 0.0 0.0
rc 1.96e-07p 0.000142p 0.005326p 0.018190p 0.020717p 0.020748o 0.020748n 0.0 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.311959k 0.274507n 0.0 0.0
zp 60.77 ri 7.32e-06p 0.003500p 0.093129p 0.181123p 0.029651p 0.000310p 1.55e-07p 3.76e-12p 0.0
sig0.559 cc 7.28e-06p 0.003487p 0.096080p 0.277932p 0.307413p 0.307721p 0.307721p 3.98e-12p 0.0
rc 7.32e-06p 0.003507p 0.096636p 0.277759o 0.307411m 0.307721k 0.307721k 3.76e-12p 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.340140i 0.381278n 0.0 0.0
zp 61.55 ri 5.76e-07p 0.000306p 0.018502p 0.141915p 0.156053p 0.024455p 0.000524p 1.22e-06p 3.02e-10p

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sig0.656 cc 5.77e-07p 0.000307p 0.018848p 0.161058p 0.316754p 0.341260p 0.341757p 1.15e-06p 2.86e-10p
        rc 5.76e-07p 0.000307p 0.018809p 0.160724p 0.316777l 0.341231i 0.341757i 1.22e-06p 3.02e-10p
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.361109n      0.0       0.0
zp 60.80 ri 8.39e-06p 0.003842p 0.103566p 0.214796p 0.038424p 0.000473p 3.17e-07p 1.04e-11p       0.0
sig0.565 cc 8.39e-06p 0.003850p 0.107416p 0.322212p 0.360636p 0.361108p 0.361109p 1.04e-11p       0.0
        rc 8.39e-06p 0.003850p 0.107416p 0.322212p 0.360636o 0.361108o 0.361109n 1.04e-11p       0.0
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.696315n      0.0       0.0
zp 60.68 ri 5.73e-05p 0.013551p 0.263833p 0.362555p 0.055803p 0.000516p 3.50e-07p 1.06e-11p       0.0
sig0.576 cc 5.73e-05p 0.013608p 0.277441p 0.639996p 0.695799p 0.696315p 0.696315p 1.06e-11p       0.0
        rc 5.73e-05p 0.013608p 0.277441p 0.639996p 0.695799o 0.696315o 0.696315n 1.06e-11p       0.0
 cf249t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.609828j      0.0  0.614610j      0.0       0.0
zp 61.06 ri 2.19e-05p 0.004969p 0.110831p 0.353414p 0.138931p 0.007883p 4.47e-05p 2.92e-08p 1.64e-12p
sig0.645 cc 2.19e-05p 0.004988p 0.115756p 0.469503p 0.608150p 0.616049p 0.616094p 2.93e-08p 1.65e-12p
        rc 2.19e-05p 0.004991p 0.115821p 0.469236o 0.608166j 0.616049j 0.616094i 2.92e-08p 1.64e-12p
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.713360n      0.0       0.0
zp 60.58 ri 0.000154p 0.024128p 0.295764p 0.351470p 0.041429p 0.000395p 2.55e-07p 1.03e-11p       0.0
sig0.590 cc 0.000154p 0.024282p 0.320045p 0.671517p 0.712946p 0.713340p 0.713341p 1.03e-11p       0.0
        rc 0.000154p 0.024282p 0.320046p 0.671516p 0.712946o 0.713340o 0.713341n 1.03e-11p       0.0
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.984615n      0.0       0.0
zp 60.64 ri 0.000144p 0.026458p 0.375716p 0.511840p 0.069680p 0.000777p 5.92e-07p 2.82e-11p       0.0
sig0.590 cc 0.000144p 0.026602p 0.402318p 0.914158p 0.983838p 0.984615p 0.984615p 2.82e-11p       0.0
        rc 0.000144p 0.026602p 0.402318p 0.914158o 0.983838n 0.984615n 0.984615m 2.82e-11p       0.0

  ce, pr half lives from 80eng2; nd, pm, sm, eu half lives 89wal1.
1

    mass number    156                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb m   65 tb g   66 dy g
half life     0.596s    0.379s     5.5 s    26.7 s     9.4 h    15.2 d    stable     5.0 h     5.1 d    2.e14y
lambda       1.163e+00 1.829e+00 1.260e-01 2.596e-02 2.048e-05 5.278e-07       0.0 3.851e-05 1.573e-06 1.099e-22
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  -50.0000 -100.0000       0.0
```

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 50.0000 0.0
th227t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.05e-06n 0.0 0.0 0.0
zp 61.24 ri 0.0 8.01e-10p 6.61e-07p 1.66e-06p 2.71e-06p 1.70e-08p 3.71e-11p 0.0 0.0 0.0
sig0.507 cc 0.0 8.01e-10p 6.62e-07p 2.32e-06p 5.03e-06p 5.05e-06p 5.05e-06p 0.0 0.0 0.0
rc 0.0 8.01e-10p 6.62e-07p 2.32e-06p 5.03e-06p 5.05e-06o 5.05e-06n 0.0 0.0 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.60e-05l 0.0 0.0 0.0
zp 61.04 ri 6.46e-11p 2.43e-08p 8.40e-06p 7.32e-06p 1.02e-05p 3.66e-08p 1.23e-10p 0.0 0.0 0.0
sig0.538 cc 6.46e-11p 2.44e-08p 8.43e-06p 1.57e-05p 2.59e-05p 2.60e-05p 2.60e-05p 0.0 0.0 0.0
rc 6.46e-11p 2.44e-08p 8.43e-06p 1.57e-05p 2.59e-05o 2.60e-05n 2.60e-05l 0.0 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.010374n 0.0 0.0 0.0
zp 61.25 ri 3.22e-09p 7.84e-06p 0.000893p 0.006094p 0.003256p 0.000122p 2.37e-07p 1.82e-12p 1.84e-11p 0.0
sig0.552 cc 3.22e-09p 7.84e-06p 0.000901p 0.006996p 0.010252p 0.010374p 0.010374p 1.82e-12p 1.93e-11p 0.0
rc 3.22e-09p 7.84e-06p 0.000901p 0.006996p 0.010252p 0.010374o 0.010374n 1.82e-12p 1.93e-11p 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.125822j 0.250613j 0.194792m 0.0 0.0 0.0
zp 61.17 ri 1.63e-07p 0.000261p 0.021440p 0.115401p 0.051524p 0.002512p 4.54e-06p 3.81e-11p 3.43e-10p 0.0
sig0.559 cc 1.64e-07p 0.000262p 0.021797p 0.137708p 0.189460p 0.191140p 0.191143p 2.52e-11p 2.40e-10p 0.0
rc 1.63e-07p 0.000261p 0.021701p 0.137102o 0.188626i 0.191139i 0.191143i 3.81e-11p 3.62e-10p 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.220740i 0.270908i 0.282948n 0.0 0.0 0.0
zp 61.95 ri 2.01e-08p 2.61e-05p 0.003718p 0.064101p 0.151433n 0.052024p 0.002461p 8.23e-07p 1.29e-05p 8.37e-09p
sig0.656 cc 2.01e-08p 2.61e-05p 0.003741p 0.067793p 0.219109p 0.271325p 0.273777p 8.15e-07p 1.32e-05p 8.29e-09p
rc 2.01e-08p 2.61e-05p 0.003744p 0.067845p 0.219278i 0.271302i 0.273777i 8.23e-07p 1.33e-05p 8.37e-09p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.327541j 0.0 0.0 0.0 0.0
zp 61.19 ri 3.12e-07p 0.000453p 0.035844p 0.195690p 0.092219p 0.003335p 7.09e-06p 7.59e-11p 6.83e-10p 0.0
sig0.565 cc 3.12e-07p 0.000453p 0.036297p 0.231987p 0.324206p 0.327541p 0.327549p 7.59e-11p 7.21e-10p 0.0
rc 3.12e-07p 0.000453p 0.036297p 0.231987p 0.324206l 0.327541j 0.327549j 7.59e-11p 7.21e-10p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.395518l 0.493354l 0.0 0.0 0.0
zp 61.10 ri 1.50e-06p 0.001073p 0.068356p 0.240401p 0.120165p 0.002881p 7.91e-06p 7.54e-11p 6.78e-10p 0.0
sig0.576 cc 1.55e-06p 0.001113p 0.071951p 0.316665p 0.429893p 0.432879p 0.432886p 6.93e-11p 6.58e-10p 0.0

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        rc 1.50e-06p 0.001074p 0.069430p 0.309832p 0.429997m 0.432878k 0.432886k 7.54e-11p 7.16e-10p       0.0
 cf249t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.746734j 0.626973i 0.632223k      0.0       0.0       0.0
zp 61.45 ri 1.92e-06p 0.000736p 0.054832p 0.268106p 0.326334p 0.026371p 0.000479p 5.35e-08p 4.82e-07p 1.08e-10p
sig0.645 cc 1.91e-06p 0.000735p 0.055328p 0.322265p 0.647178p 0.676295p 0.676861p 6.31e-08p 5.99e-07p 1.27e-10p
        rc 1.92e-06p 0.000738p 0.055570p 0.323676p 0.650010j 0.676381i 0.676861h 5.35e-08p 5.08e-07p 1.08e-10p
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.563779k      0.0       0.0       0.0       0.0       0.0
zp 60.97 ri 8.21e-06p 0.003654p 0.117946p 0.341304p 0.100863p 0.002631p 4.92e-06p 5.89e-11p 5.30e-10p       0.0
sig0.590 cc 8.21e-06p 0.003662p 0.121600p 0.462932p 0.563775p 0.566406p 0.566411p 5.89e-11p 5.60e-10p       0.0
        rc 8.21e-06p 0.003662p 0.121608p 0.462912n 0.563775k 0.566406k 0.566411k 5.89e-11p 5.60e-10p       0.0
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.791297l      0.0       0.0       0.0       0.0       0.0
zp 61.03 ri 7.33e-06p 0.003839p 0.144340p 0.480091p 0.163019p 0.004955p 1.09e-05p 1.54e-10p 1.39e-09p       0.0
sig0.590 cc 7.33e-06p 0.003846p 0.148186p 0.628278p 0.791297p 0.796252p 0.796263p 1.54e-10p 1.47e-09p       0.0
        rc 7.33e-06p 0.003846p 0.148186p 0.628278o 0.791297l 0.796252l 0.796263l 1.54e-10p 1.47e-09p       0.0

  ce, pr half lives from 80eng2; nd, pm, sm, eu half lives 89wal1.
1

    mass number    157                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g
half life     0.214s    0.380s    2.48 s    10.9 s    8.0 m     15.13h    stable    160. y    8.1 h
lambda       3.239e+00 1.824e+00 2.795e-01 6.359e-02 1.444e-03 1.273e-05       0.0 1.374e-10 2.377e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.52e-06n      0.0       0.0
zp 61.62 ri      0.0  1.42e-11p 2.64e-08p 3.83e-07p 1.07e-06p 3.98e-08p 1.98e-10p       0.0       0.0
sig0.507 cc      0.0  1.42e-11p 2.64e-08p 4.10e-07p 1.48e-06p 1.51e-06p 1.52e-06p       0.0       0.0
        rc      0.0  1.42e-11p 2.64e-08p 4.10e-07p 1.48e-06p 1.51e-06o 1.52e-06n       0.0       0.0
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  7.16e-06l      0.0       0.0
zp 61.43 ri      0.0  6.49e-10p 4.69e-07p 1.94e-06p 4.66e-06p 8.63e-08p 6.34e-10p       0.0       0.0
sig0.538 cc      0.0  6.49e-10p 4.70e-07p 2.41e-06p 7.07e-06p 7.16e-06p 7.16e-06p       0.0       0.0
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rc 0.0 6.49e-10p 4.70e-07p 2.41e-06p 7.07e-06o 7.16e-06n 7.16e-06l 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.005187n 0.0 0.0
zp 61.64 ri 3.27e-11p 2.72e-07p 0.000100p 0.001971p 0.002806p 0.000308p 1.95e-06p 5.70e-10p 0.0
sig0.552 cc 3.27e-11p 2.72e-07p 0.000100p 0.002072p 0.004877p 0.005185p 0.005187p 5.70e-10p 0.0
rc 3.27e-11p 2.72e-07p 0.000100p 0.002072p 0.004877p 0.005185o 0.005187n 5.70e-10p 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.166613j 0.140850m 0.0 0.0
zp 61.57 ri 3.12e-09p 1.70e-05p 0.004477p 0.069037p 0.082739p 0.007949p 4.29e-05p 1.24e-08p 0.0
sig0.559 cc 3.12e-09p 1.70e-05p 0.004494p 0.073530p 0.156267p 0.164215p 0.164262p 1.34e-08p 0.0
rc 3.12e-09p 1.70e-05p 0.004494p 0.073531p 0.156270m 0.164219j 0.164262j 1.24e-08p 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.169804i 0.206980n 0.0 0.0
zp 62.35 ri 3.97e-10p 1.26e-06p 0.000431p 0.017055p 0.087951p 0.065630p 0.008110p 0.000107p 1.60e-07p
sig0.656 cc 4.00e-10p 1.27e-06p 0.000435p 0.017605p 0.106148p 0.172220p 0.179285p 9.23e-05p 1.37e-07p
rc 3.97e-10p 1.26e-06p 0.000432p 0.017487p 0.105438p 0.171068i 0.179284j 0.000107p 1.60e-07p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.154999k 0.0 0.0 0.0
zp 61.58 ri 3.83e-09p 1.79e-05p 0.004307p 0.064434p 0.078272p 0.007969p 5.25e-05p 1.82e-08p 0.0
sig0.565 cc 3.83e-09p 1.79e-05p 0.004325p 0.068759p 0.147031p 0.154999p 0.155052p 1.82e-08p 0.0
rc 3.83e-09p 1.79e-05p 0.004325p 0.068759p 0.147031m 0.154999k 0.155052k 1.82e-08p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.447993n 0.0 0.0
zp 61.50 ri 4.55e-08p 0.000111p 0.019449p 0.195835p 0.215201p 0.017279p 0.000119p 3.93e-08p 0.0
sig0.576 cc 4.55e-08p 0.000111p 0.019560p 0.215395p 0.430595p 0.447874p 0.447993p 3.93e-08p 0.0
rc 4.55e-08p 0.000111p 0.019560p 0.215395p 0.430595p 0.447874o 0.447993n 3.93e-08p 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.412782j 0.430710k 0.0 0.0
zp 61.84 ri 4.67e-08p 6.29e-05p 0.007724p 0.121850p 0.226174p 0.063435p 0.002044p 7.97e-06p 2.77e-09p
sig0.645 cc 4.70e-08p 6.34e-05p 0.007850p 0.130692p 0.355319p 0.419270p 0.421298p 7.88e-06p 2.74e-09p
rc 4.67e-08p 6.29e-05p 0.007787p 0.129637p 0.355810n 0.419246j 0.421298i 7.97e-06p 2.77e-09p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.407634n 0.0 0.0
zp 61.35 ri 2.85e-07p 0.000356p 0.030505p 0.214899p 0.151581p 0.010225p 5.31e-05p 1.82e-08p 0.0
sig0.590 cc 2.85e-07p 0.000356p 0.030861p 0.245758p 0.397341p 0.407566p 0.407619p 1.82e-08p 0.0
rc 2.85e-07p 0.000356p 0.030861p 0.245760p 0.397341o 0.407566o 0.407619n 1.82e-08p 0.0

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 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.754154k      0.0       0.0       0.0
zp 61.42 ri 2.88e-07p 0.000437p 0.044930p 0.374333p 0.309653p 0.024801p 0.000155p 6.46e-08p 1.66e-12p
sig0.590 cc 2.88e-07p 0.000437p 0.045367p 0.419700p 0.729353p 0.754154p 0.754309p 6.46e-08p 1.66e-12p
         rc 2.88e-07p 0.000437p 0.045367p 0.419700p 0.729353m 0.754154k 0.754309k 6.46e-08p 1.66e-12p

  ce, pr, nd half lives from 80eng2; pm, sm, eu half lives 89wal1.
1

    mass number    158                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb m   65 tb g   66 dy g
half life              0.169s    2.69 s     4.8 s     5.5 m    45.9 m    stable    10.9 s    150. y    stable
lambda            0.0 4.101e+00 2.577e-01 1.444e-01 2.100e-03 2.517e-04       0.0 6.359e-02 1.465e-10       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  -84.0000   16.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  5.76e-07n      0.0       0.0       0.0
zp 62.00 ri      0.0       0.0  1.16e-09p 3.49e-08p 5.04e-07p 3.45e-08p 1.14e-09p      0.0       0.0       0.0
sig0.507 cc      0.0       0.0  1.16e-09p 3.60e-08p 5.40e-07p 5.75e-07p 5.76e-07p      0.0       0.0       0.0
         rc      0.0       0.0  1.16e-09p 3.60e-08p 5.40e-07p 5.75e-07o 5.76e-07n      0.0       0.0       0.0
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.79e-06l      0.0       0.0       0.0
zp 61.81 ri      0.0  4.88e-12p 1.93e-08p 1.49e-07p 1.57e-06p 5.25e-08p 2.07e-09p      0.0       0.0       0.0
sig0.538 cc      0.0  4.88e-12p 1.93e-08p 1.69e-07p 1.74e-06p 1.79e-06p 1.79e-06p      0.0       0.0       0.0
         rc      0.0  4.88e-12p 1.93e-08p 1.69e-07p 1.74e-06p 1.79e-06n 1.79e-06l      0.0       0.0       0.0
 pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.003216n      0.0       0.0       0.0
zp 62.02 ri      0.0  7.92e-09p 9.41e-06p 0.000546p 0.002041p 0.000607p 1.18e-05p 1.02e-09p 1.03e-08p       0.0
sig0.552 cc      0.0  7.92e-09p 9.42e-06p 0.000555p 0.002597p 0.003204p 0.003216p 1.02e-09p 1.13e-08p 1.81e-09p
         rc      0.0  7.92e-09p 9.42e-06p 0.000555p 0.002597p 0.003204o 0.003216n 1.02e-09p 1.13e-08p 1.81e-09p
 am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.085871n      0.0       0.0       0.0
zp 61.97 ri 2.19e-11p 4.11e-07p 0.000359p 0.016676p 0.053974p 0.014592p 0.000270p 2.64e-08p 2.38e-07p 1.19e-11p
sig0.559 cc 2.19e-11p 4.11e-07p 0.000359p 0.017035p 0.071009p 0.085601p 0.085871p 2.64e-08p 2.64e-07p 4.23e-08p
         rc 2.19e-11p 4.11e-07p 0.000359p 0.017035p 0.071009p 0.085601o 0.085871n 2.64e-08p 2.64e-07p 4.23e-08p
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 am241h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.153872n      0.0       0.0       0.0
zp 62.74 ri 8.02e-12p 6.14e-08p 4.97e-05p 0.004510p 0.050687p 0.079897p 0.018299p 3.31e-05p 0.000519p 1.94e-06p
sig0.656 cc 8.02e-12p 6.14e-08p 4.98e-05p 0.004560p 0.055247p 0.135144p 0.153906p 3.31e-05p 0.000552p 9.03e-05p
         rc 8.02e-12p 6.14e-08p 4.98e-05p 0.004560p 0.055247p 0.135144p 0.153906n 3.31e-05p 0.000552p 9.03e-05p
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.087541n      0.0       0.0       0.0
zp 61.96 ri 3.93e-11p 5.80e-07p 0.000425p 0.017743p 0.054521p 0.014572p 0.000280p 3.02e-08p 2.72e-07p 1.61e-11p
sig0.565 cc 3.93e-11p 5.80e-07p 0.000426p 0.018168p 0.072689p 0.087261p 0.087541p 3.02e-08p 3.02e-07p 4.84e-08p
         rc 3.93e-11p 5.80e-07p 0.000426p 0.018168p 0.072689p 0.087261o 0.087541n 3.02e-08p 3.02e-07p 4.84e-08p
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.328393n      0.0       0.0       0.0
zp 61.90 ri 6.36e-10p 4.58e-06p 0.002662p 0.069463p 0.212879p 0.042441p 0.000943p 9.07e-08p 8.16e-07p 6.91e-11p
sig0.576 cc 6.36e-10p 4.58e-06p 0.002667p 0.072130p 0.285009p 0.327449p 0.328393p 9.07e-08p 9.07e-07p 1.45e-07p
         rc 6.36e-10p 4.58e-06p 0.002667p 0.072130p 0.285009p 0.327449o 0.328393n 9.07e-08p 9.07e-07p 1.45e-07p
 cf249t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.381016m      0.0       0.0       0.0
zp 62.22 ri 1.77e-09p 4.01e-06p 0.001666p 0.041135p 0.230766p 0.097484p 0.009914p 6.32e-06p 5.69e-05p 7.61e-08p
sig0.645 cc 1.77e-09p 4.02e-06p 0.001671p 0.042805p 0.273571p 0.371055p 0.381023p 6.32e-06p 6.32e-05p 1.02e-05p
         rc 1.77e-09p 4.02e-06p 0.001671p 0.042805p 0.273571p 0.371055n 0.381022l 6.32e-06p 6.32e-05p 1.02e-05p
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.305726n      0.0       0.0       0.0
zp 61.73 ri 6.89e-09p 2.45e-05p 0.005728p 0.101468p 0.169526p 0.028564p 0.000402p 3.92e-08p 3.53e-07p 2.40e-11p
sig0.590 cc 6.89e-09p 2.45e-05p 0.005753p 0.107221p 0.276746p 0.305310p 0.305713p 3.92e-08p 3.92e-07p 6.28e-08p
         rc 6.89e-09p 2.45e-05p 0.005753p 0.107221p 0.276746p 0.305310o 0.305713n 3.92e-08p 3.92e-07p 6.28e-08p
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.684770n      0.0       0.0       0.0
zp 61.81 ri 7.10e-09p 3.16e-05p 0.009136p 0.197466p 0.396112p 0.080626p 0.001397p 1.69e-07p 1.53e-06p 1.30e-10p
sig0.590 cc 7.10e-09p 3.16e-05p 0.009167p 0.206633p 0.602745p 0.683371p 0.684770p 1.69e-07p 1.69e-06p 2.71e-07p
         rc 7.10e-09p 3.16e-05p 0.009167p 0.206633p 0.602745p 0.683371o 0.684770n 1.69e-07p 1.69e-06p 2.71e-07p

  pr, nd half lives from 80eng2; pm, sm, eu half lives from 89wal1.
1

    mass number    159                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g
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half life     0.181s    0.642s     3.0 s    11.3 s    18.1 m    18.6 h    stable    144.4d     8.3 s     33. m
lambda       3.830e+00 1.080e+00 2.310e-01 6.134e-02 6.383e-04 1.035e-05       0.0 5.556e-08 8.351e-02 3.501e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000       0.0 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000
 th227t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  2.02e-07n      0.0       0.0       0.0
zp 62.39 ri     0.0  2.51e-11p 5.16e-09p 1.41e-07p 5.19e-08p 3.65e-09p 2.01e-12p      0.0       0.0       0.0
sig0.507 cc     0.0  2.51e-11p 5.19e-09p 1.47e-07p 1.98e-07p 2.02e-07p 2.02e-07p      0.0       0.0       0.0
         rc     0.0  2.51e-11p 5.19e-09p 1.47e-07p 1.98e-07p 2.02e-07o 2.02e-07n      0.0       0.0       0.0
 th229t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  5.28e-07l      0.0       0.0       0.0
zp 62.19 ri     0.0  6.03e-10p 2.40e-08p 4.33e-07p 6.51e-08p 5.07e-09p 2.01e-12p      0.0       0.0       0.0
sig0.538 cc     0.0  6.03e-10p 2.46e-08p 4.58e-07p 5.23e-07p 5.28e-07p 5.28e-07p      0.0       0.0       0.0
         rc     0.0  6.03e-10p 2.46e-08p 4.58e-07p 5.23e-07o 5.28e-07n 5.28e-07l      0.0       0.0       0.0
 pa231f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.001556n      0.0       0.0       0.0
zp 62.41 ri 1.03e-10p 4.16e-07p 7.65e-05p 0.000801p 0.000640p 3.75e-05p 1.19e-07p 1.68e-11p      0.0       0.0
sig0.552 cc 1.03e-10p 4.17e-07p 7.69e-05p 0.000878p 0.001518p 0.001556p 0.001556p 1.68e-11p      0.0       0.0
         rc 1.03e-10p 4.17e-07p 7.69e-05p 0.000878p 0.001518p 0.001556o 0.001556n 1.68e-11p      0.0       0.0
 am241t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0  0.073475j 0.062732n      0.0       0.0       0.0
zp 62.37 ri 9.91e-09p 2.92e-05p 0.004278p 0.038730p 0.028369p 0.001595p 4.79e-06p 7.47e-10p      0.0       0.0
sig0.559 cc 9.91e-09p 2.92e-05p 0.004307p 0.043037p 0.071405p 0.073000p 0.073005p 8.06e-10p      0.0       0.0
         rc 9.91e-09p 2.92e-05p 0.004307p 0.043037p 0.071406l 0.073000j 0.073005j 7.47e-10p      0.0       0.0
 am241h  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0  0.131440i 0.113380n      0.0       0.0       0.0
zp 63.13 ri 2.13e-09p 4.11e-06p 0.000868p 0.021709p 0.072729p 0.035553p 0.002218p 1.83e-05p 1.17e-09p 1.55e-08p
sig0.656 cc 2.12e-09p 4.11e-06p 0.000871p 0.022550p 0.095178p 0.130681p 0.133100p 1.98e-05p 1.26e-09p 1.80e-08p
         rc 2.13e-09p 4.12e-06p 0.000873p 0.022582p 0.095311p 0.130863i 0.133100i 1.83e-05p 1.17e-09p 1.67e-08p
 a242mt  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.054713n      0.0       0.0       0.0
zp 62.34 ri 1.35e-08p 3.07e-05p 0.003712p 0.029704p 0.020171p 0.001092p 3.60e-06p 6.06e-10p      0.0       0.0
sig0.565 cc 1.35e-08p 3.07e-05p 0.003743p 0.033446p 0.053618p 0.054710p 0.054713p 6.06e-10p      0.0       0.0
         rc 1.35e-08p 3.07e-05p 0.003743p 0.033446p 0.053618p 0.054710o 0.054713n 6.06e-10p      0.0       0.0
 cm245t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.229064n      0.0       0.0       0.0
zp 62.29 ri 1.39e-07p 0.000227p 0.018302p 0.133239p 0.073091p 0.004191p 1.32e-05p 2.89e-09p       0.0       0.0
sig0.576 cc 1.39e-07p 0.000228p 0.018530p 0.151769p 0.224860p 0.229051p 0.229064p 2.89e-09p       0.0       0.0
        rc 1.39e-07p 0.000228p 0.018530p 0.151769p 0.224860o 0.229051o 0.229064n 2.89e-09p       0.0       0.0
 cf249t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.365231j 0.362122j      0.0       0.0       0.0
zp 62.61 ri 2.73e-07p 0.000192p 0.015987p 0.138433p 0.180114p 0.028728p 0.000618p 1.27e-06p 3.78e-11p 2.53e-10p
sig0.645 cc 2.73e-07p 0.000192p 0.016130p 0.154136p 0.334814p 0.363454p 0.364075p 1.27e-06p 3.79e-11p 2.92e-10p
        rc 2.73e-07p 0.000193p 0.016180p 0.154613p 0.334727m 0.363456j 0.364075i 1.27e-06p 3.78e-11p 2.91e-10p
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.203817n      0.0       0.0       0.0
zp 62.12 ri 9.36e-07p 0.000625p 0.029560p 0.121128p 0.050564p 0.001927p 5.41e-06p 9.81e-10p       0.0       0.0
sig0.590 cc 9.36e-07p 0.000626p 0.030186p 0.151314p 0.201878p 0.203805p 0.203810p 9.81e-10p       0.0       0.0
        rc 9.36e-07p 0.000626p 0.030186p 0.151314p 0.201878o 0.203805o 0.203810n 9.81e-10p       0.0       0.0
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.489121n      0.0       0.0       0.0
zp 62.19 ri 1.28e-06p 0.001038p 0.058775p 0.283827p 0.139138p 0.006321p 2.14e-05p 4.72e-09p       0.0       0.0
sig0.590 cc 1.28e-06p 0.001039p 0.059814p 0.343641p 0.482779p 0.489100p 0.489121p 4.72e-09p       0.0       0.0
        rc 1.28e-06p 0.001039p 0.059814p 0.343641p 0.482779o 0.489100o 0.489121n 4.72e-09p       0.0       0.0

  pr, nd, pm half lives from 80eng2; sm, eu, gd half lives 89wal1; dy half life 90bur1.

1

    mass number    160                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g
half life                     0.789s    0.729s     9.6 s     38. s    stable    72.3 d    stable
lambda            0.0       0.0 8.785e-01 9.508e-01 7.220e-02 1.824e-02       0.0 1.110e-07       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.01e-08n      0.0       0.0
zp 62.77 ri      0.0       0.0       0.0  3.28e-11p 5.36e-09p 3.34e-09p 1.36e-09p 1.69e-12p       0.0
sig0.507 cc      0.0       0.0       0.0  3.29e-11p 5.40e-09p 8.74e-09p 1.01e-08p 1.69e-12p 1.69e-12p
        rc      0.0       0.0       0.0  3.29e-11p 5.40e-09p 8.74e-09o 1.01e-08n 1.69e-12p 1.69e-12p
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 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.34e-07l      0.0       0.0
zp 62.57 ri      0.0       0.0  1.42e-11p 1.16e-09p 9.88e-08p 2.48e-08p 9.46e-09p 7.88e-12p       0.0
sig0.538 cc      0.0       0.0  1.42e-11p 1.18e-09p 9.99e-08p 1.25e-07p 1.34e-07p 7.88e-12p 7.89e-12p
         rc      0.0       0.0  1.42e-11p 1.18e-09p 9.99e-08p 1.25e-07n 1.34e-07l 7.88e-12p 7.89e-12p
 pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000737n      0.0       0.0
zp 62.79 ri      0.0       0.0  1.22e-08p 7.12e-06p 0.000213p 0.000443p 7.25e-05p 7.18e-07p 3.36e-10p
sig0.552 cc      0.0       0.0  1.22e-08p 7.13e-06p 0.000221p 0.000664p 0.000737p 7.18e-07p 7.19e-07p
         rc      0.0       0.0  1.22e-08p 7.13e-06p 0.000221p 0.000664p 0.000737n 7.18e-07p 7.19e-07p
 am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.034558n      0.0       0.0
zp 62.78 ri      0.0  7.27e-11p 7.58e-07p 0.000373p 0.010209p 0.020555p 0.003419p 3.68e-05p 2.02e-08p
sig0.559 cc      0.0  7.27e-11p 7.58e-07p 0.000374p 0.010583p 0.031139p 0.034558p 3.68e-05p 3.68e-05p
         rc      0.0  7.27e-11p 7.58e-07p 0.000374p 0.010583p 0.031139p 0.034558n 3.68e-05p 3.68e-05p
 am241h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.003032o      0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.084579n 0.002976i      0.0
zp 63.52 ri      0.0  4.10e-11p 1.91e-07p 9.49e-05p 0.005381p 0.038873p 0.040181p 0.003030o 8.48e-05p
sig0.656 cc      0.0  3.96e-11p 1.85e-07p 9.20e-05p 0.005297p 0.042902p 0.081772p 0.005764p 0.005873p
         rc      0.0  4.10e-11p 1.91e-07p 9.51e-05p 0.005476p 0.044349p 0.084530n 0.003030i 0.003115i
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.038299n      0.0       0.0
zp 62.72 ri      0.0  2.28e-10p 1.62e-06p 0.000587p 0.012759p 0.021773p 0.003178p 3.12e-05p 1.65e-08p
sig0.565 cc      0.0  2.28e-10p 1.62e-06p 0.000589p 0.013348p 0.035121p 0.038299p 3.12e-05p 3.12e-05p
         rc      0.0  2.28e-10p 1.62e-06p 0.000589p 0.013348p 0.035121p 0.038299n 3.12e-05p 3.12e-05p
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.179400n      0.0       0.0
zp 62.68 ri      0.0  2.83e-09p 1.54e-05p 0.003364p 0.070990p 0.090016p 0.015015p 0.000128p 9.41e-08p
sig0.576 cc      0.0  2.83e-09p 1.54e-05p 0.003380p 0.074369p 0.164385p 0.179400p 0.000128p 0.000128p
         rc      0.0  2.83e-09p 1.54e-05p 0.003380p 0.074369p 0.164385o 0.179400n 0.000128p 0.000128p
 cf249t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.231035m      0.0       0.0
zp 62.99 ri      0.0  6.52e-09p 1.58e-05p 0.002137p 0.058989p 0.114037p 0.055856p 0.001909p 1.33e-05p
sig0.645 cc      0.0  6.52e-09p 1.58e-05p 0.002153p 0.061142p 0.175179p 0.231035p 0.001909p 0.001922p
         rc      0.0  6.52e-09p 1.58e-05p 0.002153p 0.061142p 0.175179o 0.231035l 0.001909p 0.001922p
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.152863n      0.0       0.0
zp 62.50 ri       0.0  2.89e-08p 5.45e-05p 0.006922p 0.069879p 0.069267p 0.006734p 5.20e-05p 2.70e-08p
sig0.590 cc       0.0  2.89e-08p 5.46e-05p 0.006976p 0.076855p 0.146122p 0.152855p 5.20e-05p 5.20e-05p
        rc      0.0  2.89e-08p 5.46e-05p 0.006976p 0.076855p 0.146122o 0.152855n 5.20e-05p 5.20e-05p
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.391297n      0.0       0.0
zp 62.57 ri 1.06e-12p 3.93e-08p 8.99e-05p 0.013735p 0.164398p 0.191074p 0.022000p 0.000204p 1.29e-07p
sig0.590 cc 1.06e-12p 3.93e-08p 9.00e-05p 0.013825p 0.178223p 0.369297p 0.391297p 0.000204p 0.000204p
        rc 1.06e-12p 3.93e-08p 9.00e-05p 0.013825p 0.178223p 0.369297o 0.391297n 0.000204p 0.000204p

  nd, pm half lives from 80eng2; sm, eu half lives from 89wal1.
1

    mass number    161                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g
half life     0.311s    0.790s    4.78 s     27. s    3.66 m    6.91 d    stable     6.8 s     2.5 h     3.1 h
lambda      2.229e+00 8.774e-01 1.450e-01 2.567e-02 3.156e-03 1.161e-06       0.0 1.019e-01 7.702e-05 6.211e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000  -73.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  -27.0000
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  6.06e-09n      0.0       0.0       0.0
zp 63.16 ri       0.0  2.42e-12p 8.67e-10p 2.96e-09p 2.21e-09p 1.84e-11p       0.0       0.0       0.0       0.0
sig0.507 cc       0.0  2.42e-12p 8.70e-10p 3.83e-09p 6.04e-09p 6.06e-09p 6.06e-09p       0.0       0.0       0.0
        rc      0.0  2.42e-12p 8.70e-10p 3.83e-09p 6.04e-09o 6.06e-09o 6.06e-09n       0.0       0.0       0.0
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.58e-08l      0.0       0.0       0.0
zp 62.96 ri       0.0  7.28e-11p 1.22e-08p 1.38e-08p 9.62e-09p 4.37e-11p       0.0       0.0       0.0       0.0
sig0.538 cc       0.0  7.30e-11p 1.23e-08p 2.61e-08p 3.58e-08p 3.58e-08p 3.58e-08p       0.0       0.0       0.0
        rc      0.0  7.30e-11p 1.23e-08p 2.61e-08p 3.58e-08o 3.58e-08n 3.58e-08l       0.0       0.0       0.0
 pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000373n      0.0       0.0       0.0
zp 63.17 ri 2.43e-10p 4.60e-07p 4.14e-05p 0.000229p 9.98e-05p 2.98e-06p 4.53e-09p       0.0       0.0       0.0
sig0.552 cc 2.43e-10p 4.60e-07p 4.19e-05p 0.000271p 0.000370p 0.000373p 0.000373p       0.0       0.0       0.0
        rc 2.43e-10p 4.60e-07p 4.19e-05p 0.000271p 0.000370p 0.000373o 0.000373n       0.0       0.0       0.0
 am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0  0.022560j 0.012142n      0.0       0.0       0.0
zp 63.19 ri 1.59e-08p 2.70e-05p 0.002344p 0.013284p 0.006233p 0.000214p 3.12e-07p 3.62e-12p 2.43e-11p       0.0
sig0.559 cc 1.59e-08p 2.70e-05p 0.002371p 0.015655p 0.021888p 0.022102p 0.022102p 4.71e-12p 3.63e-11p       0.0
        rc 1.59e-08p 2.70e-05p 0.002371p 0.015655p 0.021888l 0.022102j 0.022102j 3.62e-12p 2.79e-11p       0.0
 am241h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.060302i 0.060202n      0.0       0.0       0.0
zp 63.90 ri 6.74e-09p 7.79e-06p 0.000998p 0.015533p 0.033317p 0.010432p 0.000437p 1.53e-07p 2.03e-06p 1.19e-09p
sig0.656 cc 6.74e-09p 7.80e-06p 0.001006p 0.016538p 0.049854p 0.060286p 0.060727p 1.54e-07p 2.20e-06p 1.20e-09p
        rc 6.74e-09p 7.80e-06p 0.001006p 0.016539p 0.049856o 0.060288i 0.060727i 1.53e-07p 2.19e-06p 1.19e-09p
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.020150k      0.0       0.0       0.0       0.0
zp 63.10 ri 4.18e-08p 4.64e-05p 0.002854p 0.012422p 0.004695p 0.000133p 2.17e-07p 2.30e-12p 1.54e-11p       0.0
sig0.565 cc 4.18e-08p 4.64e-05p 0.002900p 0.015322p 0.020017p 0.020150p 0.020150p 2.30e-12p 1.77e-11p       0.0
        rc 4.18e-08p 4.64e-05p 0.002900p 0.015322p 0.020017m 0.020150k 0.020150k 2.30e-12p 1.77e-11p       0.0
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.119600n      0.0       0.0       0.0
zp 63.06 ri 5.68e-07p 0.000392p 0.020728p 0.070442p 0.027333p 0.000703p 1.41e-06p 1.69e-11p 1.13e-10p       0.0
sig0.576 cc 5.68e-07p 0.000393p 0.021121p 0.091562p 0.118896p 0.119599p 0.119600p 1.69e-11p 1.30e-10p       0.0
        rc 5.68e-07p 0.000393p 0.021121p 0.091562p 0.118896o 0.119599o 0.119600n 1.69e-11p 1.30e-10p       0.0
 cf249t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.192038k 0.194285k      0.0       0.0       0.0
zp 63.36 ri 8.83e-07p 0.000395p 0.016842p 0.098462p 0.069866p 0.007467p 8.32e-05p 1.41e-08p 9.44e-08p 1.23e-11p
sig0.645 cc 8.83e-07p 0.000396p 0.017238p 0.115700p 0.185566p 0.193034p 0.193116p 1.40e-08p 1.08e-07p 1.22e-11p
        rc 8.83e-07p 0.000396p 0.017238p 0.115700p 0.185566m 0.193033k 0.193116j 1.41e-08p 1.09e-07p 1.23e-11p
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.101909n      0.0       0.0       0.0
zp 62.89 ri 2.66e-06p 0.000954p 0.025167p 0.060598p 0.014866p 0.000316p 4.76e-07p 5.93e-12p 3.97e-11p       0.0
sig0.590 cc 2.66e-06p 0.000956p 0.026123p 0.086721p 0.101587p 0.101903p 0.101904p 5.93e-12p 4.56e-11p       0.0
        rc 2.66e-06p 0.000956p 0.026123p 0.086721p 0.101587o 0.101903o 0.101904n 5.93e-12p 4.56e-11p       0.0
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.293473n      0.0       0.0       0.0
zp 62.95 ri 4.93e-06p 0.002079p 0.063833p 0.176509p 0.049809p 0.001236p 2.19e-06p 3.23e-11p 2.16e-10p       0.0
sig0.590 cc 4.93e-06p 0.002084p 0.065917p 0.242426p 0.292235p 0.293471p 0.293473p 3.23e-11p 2.48e-10p       0.0
        rc 4.93e-06p 0.002084p 0.065917p 0.242426p 0.292235o 0.293471o 0.293473n 3.23e-11p 2.48e-10p       0.0

  nd, pm, sm half lives from 80eng2; eu, gd, tb half lives 89wal1.
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    mass number    162                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb m   65 tb g   66 dy g   67 ho m   67 ho g   68 er g
half life              0.324s    5.26 s     11. s     8.4 m    2.23 h     7.6 m    stable     66. m     13. m    stable
lambda            0.0 2.139e+00 1.318e-01 6.301e-02 1.375e-03 8.634e-05 1.520e-03       0.0 1.750e-04 8.887e-04       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000    2.0000   98.0000  100.0000  -37.0000 -100.0000       0.0
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   63.0000       0.0
 th227t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.03e-09n      0.0       0.0       0.0
zp 63.54 ri     0.0       0.0  9.27e-11p 5.99e-10p 2.30e-09p 1.92e-11p 1.92e-11p      0.0       0.0       0.0       0.0
sig0.507 cc     0.0       0.0  9.27e-11p 6.92e-10p 2.99e-09p 7.90e-11p 2.95e-09p 3.03e-09p      0.0       0.0       0.0
         rc     0.0       0.0  9.27e-11p 6.92e-10p 2.99e-09p 7.90e-11p 2.95e-09o 3.03e-09n      0.0       0.0       0.0
 th229t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  8.86e-09l      0.0       0.0       0.0
zp 63.34 ri     0.0  1.10e-12p 9.70e-10p 1.93e-09p 5.91e-09p 2.61e-11p 2.61e-11p      0.0       0.0       0.0       0.0
sig0.538 cc     0.0  1.11e-12p 9.71e-10p 2.90e-09p 8.81e-09p 2.02e-10p 8.66e-09p 8.86e-09p      0.0       0.0       0.0
         rc     0.0  1.11e-12p 9.71e-10p 2.90e-09p 8.81e-09o 2.02e-10p 8.66e-09n 8.86e-09l      0.0       0.0       0.0
 pa231f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000197n      0.0       0.0       0.0
zp 63.55 ri 3.19e-12p 1.99e-08p 5.59e-06p 8.57e-05p 9.73e-05p 4.19e-06p 4.19e-06p 4.05e-08p 6.51e-12p 2.41e-12p       0.0
sig0.552 cc 3.19e-12p 1.99e-08p 5.61e-06p 9.14e-05p 0.000189p 7.96e-06p 0.000189p 0.000197p 6.51e-12p 6.51e-12p       0.0
         rc 3.19e-12p 1.99e-08p 5.61e-06p 9.14e-05p 0.000189p 7.96e-06p 0.000189o 0.000197n 6.51e-12p 6.51e-12p       0.0
 am241t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.010472n      0.0       0.0       0.0
zp 63.60 ri 1.46e-10p 8.74e-07p 0.000252p 0.004213p 0.005437p 0.000283p 0.000283p 3.61e-06p 7.99e-10p 3.43e-10p       0.0
sig0.559 cc 1.46e-10p 8.74e-07p 0.000253p 0.004466p 0.009903p 0.000481p 0.009988p 0.010472p 7.99e-10p 8.46e-10p       0.0
         rc 1.46e-10p 8.74e-07p 0.000253p 0.004466p 0.009903p 0.000481p 0.009988o 0.010472n 7.99e-10p 8.46e-10p       0.0
 am241h  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.034647n      0.0       0.0       0.0
zp 64.28 ri 1.46e-10p 3.96e-07p 0.000116p 0.003971p 0.017841p 0.005820p 0.005820p 0.001067p 9.95e-06p 2.18e-06p 1.55e-08p
sig0.656 cc 1.46e-10p 3.96e-07p 0.000117p 0.004088p 0.021929p 0.006258p 0.027310p 0.034647p 9.95e-06p 8.45e-06p 1.55e-08p
         rc 1.46e-10p 3.96e-07p 0.000117p 0.004088p 0.021929p 0.006258p 0.027310o 0.034647n 9.95e-06p 8.45e-06p 1.55e-08p
 a242mt  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.013131n      0.0       0.0       0.0
```

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zp 63.48 ri 8.64e-10p 2.98e-06p 0.000540p 0.006206p 0.005917p 0.000232p 0.000232p 2.29e-06p 4.13e-10p 1.77e-10p       0.0
sig0.565 cc 8.64e-10p 2.99e-06p 0.000542p 0.006748p 0.012665p 0.000485p 0.012644p 0.013131p 4.13e-10p 4.37e-10p       0.0
         rc 8.64e-10p 2.99e-06p 0.000542p 0.006748p 0.012665p 0.000485p 0.012644o 0.013131n 4.13e-10p 4.37e-10p       0.0
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.079666n      0.0       0.0       0.0
zp 63.44 ri 1.47e-08p 2.79e-05p 0.004479p 0.035783p 0.037005p 0.001177p 0.001177p 1.49e-05p 2.67e-09p 1.14e-09p       0.0
sig0.576 cc 1.47e-08p 2.79e-05p 0.004507p 0.040291p 0.077296p 0.002723p 0.076928p 0.079666p 2.67e-09p 2.82e-09p       0.0
         rc 1.47e-08p 2.79e-05p 0.004507p 0.040291p 0.077296p 0.002723p 0.076928o 0.079666n 2.67e-09p 2.82e-09p       0.0
 cf249t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.110677n      0.0       0.0       0.0
zp 63.73 ri 3.53e-08p 2.57e-05p 0.003548p 0.030945p 0.065403p 0.005191p 0.005191p 0.000372p 5.50e-07p 2.36e-07p 3.04e-10p
sig0.645 cc 3.53e-08p 2.57e-05p 0.003574p 0.034520p 0.099923p 0.007190p 0.103116p 0.110678p 5.50e-07p 5.82e-07p 3.04e-10p
         rc 3.53e-08p 2.57e-05p 0.003574p 0.034520p 0.099923p 0.007190p 0.103116o 0.110678n 5.50e-07p 5.82e-07p 3.04e-10p
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.081527n      0.0       0.0       0.0
zp 63.27 ri 1.11e-07p 0.000112p 0.007795p 0.045420p 0.026710p 0.000740p 0.000740p 6.20e-06p 1.19e-09p 5.12e-10p       0.0
sig0.590 cc 1.11e-07p 0.000112p 0.007907p 0.053327p 0.080037p 0.002340p 0.079176p 0.081523p 1.19e-09p 1.26e-09p       0.0
         rc 1.11e-07p 0.000112p 0.007907p 0.053327p 0.080037p 0.002340o 0.079176o 0.081523n 1.19e-09p 1.26e-09p       0.0
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.195649n      0.0       0.0       0.0
zp 63.33 ri 1.62e-07p 0.000191p 0.015580p 0.104707p 0.070611p 0.002268p 0.002268p 2.23e-05p 5.08e-09p 2.18e-09p       0.0
sig0.590 cc 1.62e-07p 0.000192p 0.015771p 0.120479p 0.191089p 0.006090p 0.189536p 0.195649p 5.08e-09p 5.38e-09p       0.0
         rc 1.62e-07p 0.000192p 0.015771p 0.120479p 0.191089o 0.006090o 0.189536o 0.195649n 5.08e-09p 5.38e-09p       0.0

  pm, sm half lives from 80eng2; eu, gd, tb half lives from 89wal1.
1

    mass number    163                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g
half life                     1.27 s    7.60 s    1.13 m    19.5 m    stable    1.07 s     33. y     75. m
lambda            0.0       0.0 5.458e-01 9.120e-02 1.022e-02 5.924e-04       0.0 6.478e-01 6.660e-10 1.540e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.01e-09n      0.0       0.0       0.0
```

zp 63.92 ri 0.0 0.0 3.09e-12p 1.23e-10p 8.08e-10p 7.57e-11p 1.09e-12p 0.0 0.0 0.0
sig0.507 cc 0.0 0.0 3.09e-12p 1.26e-10p 9.33e-10p 1.01e-09p 1.01e-09p 0.0 0.0 0.0
rc 0.0 0.0 3.09e-12p 1.26e-10p 9.33e-10p 1.01e-09o 1.01e-09n 0.0 0.0 0.0
th229t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.68e-09l 0.0 0.0 0.0
zp 63.71 ri 0.0 0.0 4.58e-11p 4.25e-10p 2.13e-09p 8.72e-11p 1.56e-12p 0.0 0.0 0.0
sig0.538 cc 0.0 0.0 4.58e-11p 4.71e-10p 2.60e-09p 2.68e-09p 2.68e-09p 0.0 0.0 0.0
rc 0.0 0.0 4.58e-11p 4.71e-10p 2.60e-09p 2.68e-09n 2.68e-09l 0.0 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000104n 0.0 0.0 0.0
zp 63.93 ri 0.0 5.49e-10p 4.94e-07p 2.21e-05p 6.55e-05p 1.54e-05p 2.31e-07p 2.00e-11p 1.47e-10p 0.0
sig0.552 cc 0.0 5.49e-10p 4.94e-07p 2.26e-05p 8.81e-05p 0.000104p 0.000104p 2.00e-11p 1.67e-10p 0.0
rc 0.0 5.49e-10p 4.94e-07p 2.26e-05p 8.81e-05p 0.000104o 0.000104n 2.00e-11p 1.67e-10p 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.002827n 0.0 0.0 0.0
zp 64.00 ri 0.0 1.05e-08p 1.01e-05p 0.000509p 0.001779p 0.000519p 1.05e-05p 1.46e-09p 9.74e-09p 0.0
sig0.559 cc 0.0 1.05e-08p 1.01e-05p 0.000520p 0.002298p 0.002817p 0.002827p 1.46e-09p 1.12e-08p 0.0
rc 0.0 1.05e-08p 1.01e-05p 0.000520p 0.002298p 0.002817o 0.002827n 1.46e-09p 1.12e-08p 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.024456n 0.0 0.0 0.0
zp 64.67 ri 2.56e-12p 1.68e-08p 1.16e-05p 0.000907p 0.008850p 0.012196p 0.002434p 4.44e-06p 5.90e-05p 1.91e-07p
sig0.656 cc 2.56e-12p 1.68e-08p 1.16e-05p 0.000919p 0.009768p 0.021964p 0.024461p 4.44e-06p 6.36e-05p 1.91e-07p
rc 2.56e-12p 1.68e-08p 1.16e-05p 0.000919p 0.009768p 0.021964p 0.024462n 4.44e-06p 6.36e-05p 1.91e-07p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.006566n 0.0 0.0 0.0
zp 63.86 ri 8.83e-12p 9.61e-08p 5.25e-05p 0.001666p 0.004002p 0.000833p 1.21e-05p 1.26e-09p 8.46e-09p 0.0
sig0.565 cc 8.83e-12p 9.62e-08p 5.26e-05p 0.001719p 0.005721p 0.006553p 0.006566p 1.26e-09p 9.72e-09p 0.0
rc 8.83e-12p 9.62e-08p 5.26e-05p 0.001719p 0.005721p 0.006553o 0.006566n 1.26e-09p 9.72e-09p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.054732n 0.0 0.0 0.0
zp 63.82 ri 2.37e-10p 1.47e-06p 0.000628p 0.014388p 0.033635p 0.005981p 9.89e-05p 1.07e-08p 7.13e-08p 4.56e-12p
sig0.576 cc 2.37e-10p 1.47e-06p 0.000629p 0.015017p 0.048652p 0.054633p 0.054732p 1.07e-08p 8.20e-08p 4.56e-12p
rc 2.37e-10p 1.47e-06p 0.000629p 0.015017p 0.048652p 0.054633o 0.054732n 1.07e-08p 8.20e-08p 4.56e-12p
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.066860n 0.0 0.0 0.0
zp 64.10 ri 7.97e-10p 1.96e-06p 0.000432p 0.011825p 0.036281p 0.017360p 0.000955p 8.69e-07p 5.81e-06p 4.25e-09p

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sig0.645 cc 7.97e-10p 1.96e-06p 0.000434p 0.012258p 0.048540p 0.065900p 0.066861p 8.69e-07p 6.69e-06p 4.25e-09p
         rc 7.97e-10p 1.96e-06p 0.000434p 0.012258p 0.048540p 0.065900o 0.066861n 8.69e-07p 6.69e-06p 4.25e-09p
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.061145n      0.0       0.0       0.0
zp 63.65 ri 2.94e-09p 8.38e-06p 0.001581p 0.023000p 0.032037p 0.004464p 5.11e-05p 5.20e-09p 3.48e-08p 1.96e-12p
sig0.590 cc 2.94e-09p 8.38e-06p 0.001590p 0.024589p 0.056626p 0.061091p 0.061142p 5.20e-09p 4.00e-08p 1.96e-12p
         rc 2.94e-09p 8.38e-06p 0.001590p 0.024589p 0.056626p 0.061091o 0.061142n 5.20e-09p 4.00e-08p 1.96e-12p
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.097824n      0.0       0.0       0.0
zp 63.71 ri 2.66e-09p 8.97e-06p 0.001988p 0.033536p 0.053563p 0.008612p 0.000115p 1.38e-08p 9.25e-08p 6.17e-12p
sig0.590 cc 2.66e-09p 8.98e-06p 0.001997p 0.035534p 0.089097p 0.097709p 0.097824p 1.38e-08p 1.06e-07p 6.17e-12p
         rc 2.66e-09p 8.98e-06p 0.001997p 0.035534p 0.089097p 0.097709o 0.097824n 1.38e-08p 1.06e-07p 6.17e-12p

  sm, eu half lives from 80eng2; gd, tb half lives from 89wal1.
1

    mass number    164                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g
half life                     1.39 s    1.58 s     45. s     3.0 m    stable     37. m     24. m    stable
lambda            0.0       0.0 4.987e-01 4.387e-01 1.540e-02 3.851e-03       0.0 3.122e-04 4.814e-04       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  -47.0000   53.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  6.06e-10n      0.0       0.0       0.0
zp 64.31 ri      0.0       0.0       0.0  1.35e-11p 5.00e-10p 8.42e-11p 7.90e-12p      0.0       0.0       0.0
sig0.507 cc      0.0       0.0       0.0  1.37e-11p 5.14e-10p 5.98e-10p 6.06e-10p      0.0       0.0       0.0
         rc      0.0       0.0       0.0  1.37e-11p 5.14e-10p 5.98e-10o 6.06e-10n      0.0       0.0       0.0
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  8.95e-10l      0.0       0.0       0.0
zp 64.10 ri      0.0       0.0  1.87e-12p 3.49e-11p 7.94e-10p 5.83e-11p 5.59e-12p      0.0       0.0       0.0
sig0.538 cc      0.0       0.0  1.87e-12p 3.68e-11p 8.31e-10p 8.89e-10p 8.95e-10p      0.0       0.0       0.0
         rc      0.0       0.0  1.87e-12p 3.68e-11p 8.31e-10p 8.89e-10n 8.95e-10l      0.0       0.0       0.0
 pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  4.15e-05n      0.0       0.0       0.0
zp 64.31 ri      0.0  7.30e-12p 2.14e-08p 2.92e-06p 2.34e-05p 1.45e-05p 6.44e-07p 1.10e-09p 4.07e-10p       0.0
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sig0.552 cc 0.0 7.30e-12p 2.14e-08p 2.94e-06p 2.63e-05p 4.09e-05p 4.15e-05p 1.10e-09p 1.51e-09p 7.98e-10p
rc 0.0 7.30e-12p 2.14e-08p 2.94e-06p 2.63e-05p 4.09e-05o 4.15e-05n 1.10e-09p 1.51e-09p 7.98e-10o
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000325n 0.0 0.0 0.0
zp 64.39 ri 0.0 3.64e-11p 1.14e-07p 1.77e-05p 0.000169p 0.000130p 7.72e-06p 1.86e-08p 7.96e-09p 4.40e-12p
sig0.559 cc 0.0 3.64e-11p 1.14e-07p 1.78e-05p 0.000187p 0.000317p 0.000325p 1.86e-08p 2.65e-08p 1.41e-08p
rc 0.0 3.64e-11p 1.14e-07p 1.78e-05p 0.000187p 0.000317o 0.000325n 1.86e-08p 2.65e-08p 1.41e-08o
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.017323n 0.0 0.0 0.0
zp 65.05 ri 0.0 5.54e-10p 8.96e-07p 0.000159p 0.003365p 0.009650p 0.004042p 0.000190p 4.17e-05p 1.61e-06p
sig0.656 cc 0.0 5.54e-10p 8.97e-07p 0.000160p 0.003525p 0.013175p 0.017325p 0.000190p 0.000232p 0.000124p
rc 0.0 5.54e-10p 8.97e-07p 0.000160p 0.003525p 0.013175p 0.017325n 0.000190p 0.000232p 0.000124p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.002189n 0.0 0.0 0.0
zp 64.24 ri 0.0 1.34e-09p 2.25e-06p 0.000206p 0.001274p 0.000678p 2.81e-05p 4.84e-08p 2.07e-08p 8.61e-12p
sig0.565 cc 0.0 1.34e-09p 2.26e-06p 0.000208p 0.001482p 0.002160p 0.002189p 4.84e-08p 6.91e-08p 3.66e-08p
rc 0.0 1.34e-09p 2.26e-06p 0.000208p 0.001482p 0.002160o 0.002189n 4.84e-08p 6.91e-08p 3.66e-08o
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.024934n 0.0 0.0 0.0
zp 64.19 ri 2.02e-12p 3.40e-08p 4.51e-05p 0.002552p 0.015745p 0.006290p 0.000301p 4.62e-07p 1.98e-07p 1.17e-10p
sig0.576 cc 2.02e-12p 3.40e-08p 4.51e-05p 0.002597p 0.018342p 0.024632p 0.024934p 4.62e-07p 6.59e-07p 3.50e-07p
rc 2.02e-12p 3.40e-08p 4.51e-05p 0.002597p 0.018342p 0.024632o 0.024934n 4.62e-07p 6.59e-07p 3.50e-07o
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.043454n 0.0 0.0 0.0
zp 64.47 ri 1.92e-11p 7.78e-08p 5.71e-05p 0.002427p 0.022630p 0.015653p 0.002676p 2.08e-05p 8.90e-06p 6.34e-08p
sig0.645 cc 1.92e-11p 7.78e-08p 5.72e-05p 0.002484p 0.025114p 0.040766p 0.043456p 2.08e-05p 2.97e-05p 1.58e-05p
rc 1.92e-11p 7.78e-08p 5.72e-05p 0.002484p 0.025114p 0.040766o 0.043456n 2.08e-05p 2.97e-05p 1.58e-05o
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.040763n 0.0 0.0 0.0
zp 64.04 ri 4.14e-11p 3.48e-07p 0.000187p 0.007218p 0.024560p 0.008530p 0.000266p 4.21e-07p 1.80e-07p 8.74e-11p
sig0.590 cc 4.14e-11p 3.48e-07p 0.000188p 0.007406p 0.031965p 0.040495p 0.040761p 4.21e-07p 6.01e-07p 3.19e-07p
rc 4.14e-11p 3.48e-07p 0.000188p 0.007406p 0.031965p 0.040495o 0.040761n 4.21e-07p 6.01e-07p 3.19e-07o
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.047934n 0.0 0.0 0.0
zp 64.09 ri 2.87e-11p 2.78e-07p 0.000171p 0.007502p 0.028682p 0.011182p 0.000395p 7.17e-07p 3.07e-07p 1.71e-10p
sig0.590 cc 2.87e-11p 2.78e-07p 0.000172p 0.007674p 0.036356p 0.047538p 0.047934p 7.17e-07p 1.02e-06p 5.43e-07p

rc 2.87e-11p 2.78e-07p 0.000172p 0.007674p 0.036356p 0.047538o 0.047934n 7.17e-07p 1.02e-06p 5.43e-07o

sm, eu half lives from 80eng2; gd, tb half lives from 89wal1.
1

mass number 165 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	61 pm g	62 sm g	63 eu g	64 gd g	65 tb g	66 dy m	66 dy g	67 ho g	68 er g	69 tm g
half life	0.454s	1.35 s	0.705m	2.1 m	1.26 m	2.33 h	stable	10.36h	30.06h	
lambda	0.0	1.527e+00	5.134e-01	1.639e-02	5.501e-03	9.169e-03	8.264e-05	0.0	1.859e-05	6.405e-06
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	50.0000	50.0000	100.0000	-100.0000	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5000	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.0	0.0	97.5000	0.0	0.0	0.0
th227t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.02e-10n	0.0	0.0
zp 64.69 ri	0.0	0.0	2.06e-12p	1.49e-10p	1.28e-10p	3.05e-12p	2.04e-11p	0.0	0.0	0.0
sig0.507 cc	0.0	0.0	2.06e-12p	1.51e-10p	2.79e-10p	1.42e-10p	2.99e-10p	3.02e-10p	0.0	0.0
rc	0.0	0.0	2.06e-12p	1.51e-10p	2.79e-10p	1.42e-10o	2.99e-10n	3.02e-10m	0.0	0.0
th229t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.68e-10l	0.0	0.0
zp 64.48 ri	0.0	0.0	4.70e-12p	1.91e-10p	6.14e-11p	1.46e-12p	9.74e-12p	0.0	0.0	0.0
sig0.538 cc	0.0	0.0	4.75e-12p	1.96e-10p	2.57e-10p	1.30e-10p	2.65e-10p	2.68e-10p	0.0	0.0
rc	0.0	0.0	4.75e-12p	1.96e-10p	2.57e-10o	1.30e-10o	2.65e-10m	2.68e-10l	0.0	0.0
pa231f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.05e-05n	0.0	0.0
zp 64.69 ri	0.0	7.38e-10p	3.17e-07p	7.17e-06p	1.16e-05p	1.74e-07p	1.28e-06p	1.07e-08p	3.65e-12p	0.0
sig0.552 cc	0.0	7.38e-10p	3.18e-07p	7.49e-06p	1.91e-05p	9.71e-06p	2.03e-05p	2.05e-05p	3.65e-12p	0.0
rc	0.0	7.38e-10p	3.18e-07p	7.49e-06p	1.91e-05p	9.71e-06p	2.03e-05n	2.05e-05m	3.65e-12p	0.0
am241t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000100n	0.0	0.0
zp 64.77 ri	0.0	2.37e-09p	1.13e-06p	3.02e-05p	5.92e-05p	1.25e-06p	8.35e-06p	1.00e-07p	5.34e-11p	0.0
sig0.559 cc	0.0	2.37e-09p	1.14e-06p	3.13e-05p	9.05e-05p	4.65e-05p	9.90e-05p	0.000100p	5.34e-11p	0.0
rc	0.0	2.37e-09p	1.14e-06p	3.13e-05p	9.05e-05p	4.65e-05p	9.90e-05n	0.000100m	5.34e-11p	0.0
am241h xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.010190n	0.0	0.0
zp 65.43 ri	1.08e-11p	4.11e-08p	1.68e-05p	0.000785p	0.004743p	0.000289p	0.003837p	0.000511p	8.01e-06p	1.43e-08p
sig0.656 cc	1.08e-11p	4.11e-08p	1.68e-05p	0.000802p	0.005545p	0.003061p	0.009595p	0.010190p	8.03e-06p	1.43e-08p

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        rc 1.08e-11p 4.11e-08p 1.68e-05p 0.000802p 0.005545p 0.003061p 0.009595o 0.010190n 8.03e-06p 1.43e-08p
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001067n      0.0       0.0
zp 64.62 ri 1.76e-11p 9.28e-08p 2.51e-05p 0.000418p 0.000560p 8.21e-06p 5.50e-05p 4.66e-07p 1.83e-10p       0.0
sig0.565 cc 1.76e-11p 9.28e-08p 2.52e-05p 0.000443p 0.001003p 0.000510p 0.001053p 0.001067p 1.83e-10p       0.0
        rc 1.76e-11p 9.28e-08p 2.52e-05p 0.000443p 0.001003p 0.000510p 0.001053n 0.001067m 1.83e-10p       0.0
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.010904n      0.0       0.0
zp 64.58 ri 4.71e-10p 1.77e-06p 0.000317p 0.004775p 0.005184p 8.08e-05p 0.000541p 4.37e-06p 2.22e-09p       0.0
sig0.576 cc 4.71e-10p 1.77e-06p 0.000319p 0.005093p 0.010277p 0.005219p 0.010769p 0.010904p 2.22e-09p       0.0
        rc 4.71e-10p 1.77e-06p 0.000319p 0.005093p 0.010277p 0.005219p 0.010769n 0.010904m 2.22e-09p       0.0
 cf249t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.028031n      0.0       0.0
zp 64.83 ri 3.58e-09p 4.18e-06p 0.000566p 0.007759p 0.015684p 0.000505p 0.003377p 0.000135p 4.57e-07p 1.75e-10p
sig0.645 cc 3.58e-09p 4.18e-06p 0.000571p 0.008330p 0.024014p 0.012512p 0.027583p 0.028031p 4.57e-07p 1.75e-10p
        rc 3.58e-09p 4.18e-06p 0.000571p 0.008330p 0.024014p 0.012512p 0.027583n 0.028031m 4.57e-07p 1.75e-10p
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.030405n      0.0       0.0
zp 64.42 ri 1.16e-08p 1.76e-05p 0.001812p 0.015091p 0.012477p 0.000130p 0.000869p 6.24e-06p 2.60e-09p       0.0
sig0.590 cc 1.16e-08p 1.76e-05p 0.001830p 0.016921p 0.029398p 0.014829p 0.030026p 0.030403p 2.60e-09p       0.0
        rc 1.16e-08p 1.76e-05p 0.001830p 0.016921p 0.029398p 0.014829o 0.030026n 0.030403m 2.60e-09p       0.0
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.019692n      0.0       0.0
zp 64.47 ri 4.85e-09p 8.43e-06p 0.000989p 0.009296p 0.008613p 0.000101p 0.000678p 5.56e-06p 2.66e-09p       0.0
sig0.590 cc 4.85e-09p 8.44e-06p 0.000998p 0.010294p 0.018908p 0.009555p 0.019448p 0.019692p 2.66e-09p       0.0
        rc 4.85e-09p 8.44e-06p 0.000998p 0.010294p 0.018908p 0.009555o 0.019448n 0.019692m 2.66e-09p       0.0

  sm, eu, gd half lives from 80eng2; tb, dy half lives from 89wal1.
1

    mass number    166                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide      62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g   69 tm g   70 yb g
half life                                   3.400d    1.2e3y    1.117d    stable    7.70 h    56.7 h
lambda          0.0       0.0       0.0       0.0 2.360e-06 1.832e-11 7.182e-06       0.0 2.501e-05 3.396e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
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 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.01e-10n      0.0       0.0
zp 65.07 ri      0.0       0.0  2.52e-11p 3.78e-11p 3.78e-11p      0.0       0.0       0.0       0.0       0.0
sig0.507 cc      0.0       0.0  2.53e-11p 6.31e-11p 1.01e-10p      0.0  1.01e-10p 1.01e-10p      0.0       0.0
         rc      0.0       0.0  2.53e-11p 6.31e-11p 1.01e-10o      0.0  1.01e-10o 1.01e-10n      0.0       0.0
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  7.16e-11l      0.0       0.0
zp 64.86 ri      0.0       0.0  3.57e-11p 1.92e-11p 1.64e-11p      0.0       0.0       0.0       0.0       0.0
sig0.538 cc      0.0       0.0  3.59e-11p 5.51e-11p 7.16e-11p      0.0  7.16e-11p 7.16e-11p      0.0       0.0
         rc      0.0       0.0  3.59e-11p 5.51e-11p 7.16e-11o      0.0  7.16e-11n 7.16e-11l      0.0       0.0
 pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.34e-06n      0.0       0.0
zp 65.07 ri 1.49e-11p 2.06e-08p 1.38e-06p 5.89e-06p 1.99e-06p 3.26e-08p 1.21e-08p 4.99e-11p      0.0       0.0
sig0.552 cc 1.49e-11p 2.06e-08p 1.41e-06p 7.30e-06p 9.29e-06p 3.26e-08p 9.30e-06p 9.34e-06p      0.0       0.0
         rc 1.49e-11p 2.06e-08p 1.41e-06p 7.30e-06p 9.29e-06p 3.26e-08p 9.30e-06o 9.34e-06n      0.0       0.0
 am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.81e-05n      0.0       0.0
zp 65.16 ri 6.38e-11p 9.90e-08p 7.90e-06p 4.14e-05p 1.81e-05p 3.99e-07p 1.71e-07p 9.87e-10p      0.0       0.0
sig0.559 cc 6.38e-11p 9.91e-08p 8.00e-06p 4.94e-05p 6.75e-05p 3.99e-07p 6.77e-05p 6.81e-05p      0.0       0.0
         rc 6.38e-11p 9.91e-08p 8.00e-06p 4.94e-05p 6.75e-05p 3.99e-07p 6.77e-05o 6.81e-05n      0.0       0.0
 am241h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.007133n      0.0       0.0
zp 65.81 ri 1.64e-09p 1.55e-06p 0.000163p 0.002116p 0.003815p 0.000822p 0.000180p 3.50e-05p 1.44e-07p 6.41e-11p
sig0.656 cc 1.64e-09p 1.55e-06p 0.000165p 0.002280p 0.006096p 0.000822p 0.006276p 0.007133p 1.44e-07p 6.41e-11p
         rc 1.64e-09p 1.55e-06p 0.000165p 0.002280p 0.006096p 0.000822p 0.006276o 0.007133n 1.44e-07p 6.41e-11p
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000547n      0.0       0.0
zp 65.00 ri 2.62e-09p 2.16e-06p 0.000101p 0.000341p 0.000101p 1.52e-06p 6.50e-07p 2.63e-09p      0.0       0.0
sig0.565 cc 2.62e-09p 2.16e-06p 0.000103p 0.000444p 0.000545p 1.52e-06p 0.000546p 0.000547p      0.0       0.0
         rc 2.62e-09p 2.16e-06p 0.000103p 0.000444p 0.000545o 1.52e-06p 0.000546o 0.000547n      0.0       0.0
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.004460n      0.0       0.0
zp 64.95 ri 5.30e-08p 2.47e-05p 0.001056p 0.002543p 0.000821p 1.02e-05p 4.36e-06p 2.31e-08p 1.42e-12p      0.0
sig0.576 cc 5.30e-08p 2.48e-05p 0.001081p 0.003624p 0.004445p 1.02e-05p 0.004449p 0.004460p 1.42e-12p      0.0
         rc 5.30e-08p 2.48e-05p 0.001081p 0.003624p 0.004445o 1.02e-05p 0.004449o 0.004460n 1.42e-12p      0.0
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 cf249t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.016692n      0.0       0.0
zp 65.19 ri 3.04e-07p 6.44e-05p 0.002727p 0.007866p 0.005732p 0.000209p 8.97e-05p 3.26e-06p 2.00e-09p       0.0
sig0.645 cc 3.04e-07p 6.47e-05p 0.002791p 0.010658p 0.016390p 0.000209p 0.016480p 0.016692p 2.00e-09p       0.0
         rc 3.04e-07p 6.47e-05p 0.002791p 0.010658p 0.016390o 0.000209p 0.016480o 0.016692n 2.00e-09p       0.0
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.020382n      0.0       0.0
zp 64.81 ri 9.41e-07p 0.000272p 0.005879p 0.011788p 0.002398p 2.91e-05p 1.25e-05p 5.03e-08p 3.86e-12p       0.0
sig0.590 cc 9.41e-07p 0.000273p 0.006153p 0.017941p 0.020339p 2.91e-05p 0.020352p 0.020381p 3.86e-12p       0.0
         rc 9.41e-07p 0.000273p 0.006153p 0.017941p 0.020339o 2.91e-05p 0.020352o 0.020381n 3.86e-12p       0.0
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.008804n      0.0       0.0
zp 64.85 ri 3.06e-07p 9.85e-05p 0.002353p 0.005173p 0.001156p 1.55e-05p 6.66e-06p 3.00e-08p 2.57e-12p       0.0
sig0.590 cc 3.06e-07p 9.88e-05p 0.002452p 0.007625p 0.008782p 1.55e-05p 0.008789p 0.008804p 2.57e-12p       0.0
         rc 3.06e-07p 9.88e-05p 0.002452p 0.007625p 0.008782o 1.55e-05p 0.008789o 0.008804n 2.57e-12p       0.0

  dy, ho half lives from 89wal1.
1

    mass number    167                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho g   68 er m   68 er g   69 tm g   70 yb g
half life                                   6.2 m     3.1 h     2.28 s    stable    9.24 d    17.5 m
lambda          0.0       0.0       0.0       0.0 1.863e-03 6.211e-05 3.040e-01       0.0 8.682e-07 6.601e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000   10.0000   90.0000   -2.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  -98.0000       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.06e-11n      0.0       0.0
zp 65.46 ri      0.0       0.0  2.39e-12p 2.08e-11p 3.66e-11p      0.0       0.0       0.0       0.0       0.0
sig0.507 cc      0.0       0.0  2.40e-12p 2.32e-11p 5.98e-11p 6.06e-11p 6.06e-12p 6.06e-11p      0.0       0.0
         rc      0.0       0.0  2.40e-12p 2.32e-11p 5.98e-11p 6.06e-11o 6.06e-12o 6.06e-11n      0.0       0.0
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.79e-11l      0.0       0.0
zp 65.24 ri      0.0       0.0  2.55e-12p 6.19e-12p 9.06e-12p      0.0       0.0       0.0       0.0       0.0
sig0.538 cc      0.0       0.0  2.56e-12p 8.75e-12p 1.78e-11p 1.79e-11p 1.79e-12p 1.79e-11p      0.0       0.0
         rc      0.0       0.0  2.56e-12p 8.74e-12p 1.78e-11o 1.79e-11n 1.79e-12o 1.79e-11l      0.0       0.0
```

pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.63e-06n 0.0 0.0
zp 65.46 ri 0.0 6.91e-10p 1.48e-07p 1.77e-06p 1.60e-06p 1.08e-07p 4.77e-11p 3.50e-10p 0.0 0.0
sig0.552 cc 0.0 6.91e-10p 1.48e-07p 1.92e-06p 3.52e-06p 3.63e-06p 3.63e-07p 3.63e-06p 0.0 0.0
rc 0.0 6.91e-10p 1.48e-07p 1.92e-06p 3.52e-06p 3.63e-06o 3.63e-07o 3.63e-06n 0.0 0.0
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.04e-05n 0.0 0.0
zp 65.54 ri 0.0 3.87e-09p 9.35e-07p 1.33e-05p 1.48e-05p 1.31e-06p 9.15e-10p 6.12e-09p 1.85e-12p 0.0
sig0.559 cc 0.0 3.88e-09p 9.39e-07p 1.42e-05p 2.90e-05p 3.04e-05p 3.04e-06p 3.04e-05p 1.85e-12p 0.0
rc 0.0 3.88e-09p 9.39e-07p 1.42e-05p 2.90e-05p 3.04e-05o 3.04e-06o 3.04e-05n 1.85e-12p 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.004076n 0.0 0.0
zp 66.19 ri 3.84e-11p 8.51e-08p 2.05e-05p 0.000580p 0.002185p 0.001199p 6.41e-06p 8.51e-05p 8.58e-07p 8.95e-10p
sig0.656 cc 3.84e-11p 8.51e-08p 2.06e-05p 0.000601p 0.002785p 0.003984p 0.000406p 0.004076p 8.59e-07p 8.95e-10p
rc 3.84e-11p 8.51e-08p 2.06e-05p 0.000601p 0.002785p 0.003984o 0.000406o 0.004076n 8.59e-07p 8.95e-10p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000219n 0.0 0.0
zp 65.38 ri 3.73e-11p 9.53e-08p 1.29e-05p 0.000115p 8.59e-05p 5.17e-06p 2.49e-09p 1.66e-08p 3.64e-12p 0.0
sig0.565 cc 3.73e-11p 9.53e-08p 1.30e-05p 0.000128p 0.000214p 0.000219p 2.19e-05p 0.000219p 3.64e-12p 0.0
rc 3.73e-11p 9.53e-08p 1.30e-05p 0.000128p 0.000214p 0.000219o 2.19e-05o 0.000219n 3.64e-12p 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.002230n 0.0 0.0
zp 65.33 ri 1.07e-09p 1.60e-06p 0.000176p 0.001156p 0.000852p 4.43e-05p 2.47e-08p 1.65e-07p 3.84e-11p 0.0
sig0.576 cc 1.07e-09p 1.60e-06p 0.000177p 0.001334p 0.002185p 0.002230p 0.000223p 0.002230p 3.84e-11p 0.0
rc 1.07e-09p 1.60e-06p 0.000177p 0.001334p 0.002185p 0.002230o 0.000223o 0.002230n 3.84e-11p 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.007394n 0.0 0.0
zp 65.56 ri 7.68e-09p 5.44e-06p 0.000359p 0.003159p 0.003324p 0.000536p 1.20e-06p 8.03e-06p 1.90e-08p 3.45e-12p
sig0.645 cc 7.68e-09p 5.44e-06p 0.000364p 0.003524p 0.006848p 0.007384p 0.000740p 0.007394p 1.90e-08p 3.45e-12p
rc 7.68e-09p 5.44e-06p 0.000364p 0.003524p 0.006848p 0.007384o 0.000740o 0.007394n 1.90e-08p 3.45e-12p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.015286n 0.0 0.0
zp 65.20 ri 3.71e-08p 3.08e-05p 0.001787p 0.008833p 0.004428p 0.000206p 9.32e-08p 6.24e-07p 1.62e-10p 0.0
sig0.590 cc 3.71e-08p 3.08e-05p 0.001818p 0.010651p 0.015079p 0.015285p 0.001529p 0.015285p 1.62e-10p 0.0
rc 3.71e-08p 3.08e-05p 0.001818p 0.010651p 0.015079p 0.015285o 0.001529o 0.015285n 1.62e-10p 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

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        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.003913n      0.0       0.0
zp 65.22 ri 8.06e-09p 7.07e-06p 0.000432p 0.002240p 0.001176p 5.76e-05p 2.75e-08p 1.84e-07p 5.06e-11p       0.0
sig0.590 cc 8.06e-09p 7.07e-06p 0.000439p 0.002679p 0.003855p 0.003913p 0.000391p 0.003913p 5.06e-11p       0.0
        rc 8.06e-09p 7.07e-06p 0.000439p 0.002679p 0.003855p 0.003913o 0.000391o 0.003913n 5.06e-11p       0.0

  dy, ho half lives from 89wal1; er, tm half life 90bur1.
1

    mass number    168                    LA-UR-94-3106 (ENDF-349)                        percent yields
nuclide       62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb g
half life                                   8.5 m     3.0 m    stable    93.1 d    stable
lambda           0.0       0.0       0.0       0.0 1.359e-03 3.851e-03       0.0 8.617e-08       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000       0.0
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.03e-11n      0.0       0.0
zp 65.84 ri      0.0       0.0       0.0  2.88e-12p 2.61e-11p 1.11e-12p       0.0       0.0       0.0
sig0.507 cc      0.0       0.0       0.0  3.05e-12p 2.92e-11p 3.03e-11p 3.03e-11p       0.0       0.0
        rc      0.0       0.0       0.0  3.05e-12p 2.92e-11p 3.03e-11o 3.03e-11n       0.0       0.0
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  6.26e-12l      0.0       0.0
zp 65.62 ri      0.0       0.0       0.0       0.0  5.16e-12p      0.0       0.0       0.0       0.0
sig0.538 cc      0.0       0.0       0.0       0.0  6.16e-12p 6.26e-12p 6.27e-12p       0.0       0.0
        rc      0.0       0.0       0.0       0.0  6.16e-12p 6.26e-12n 6.27e-12l       0.0       0.0
 pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.56e-06n      0.0       0.0
zp 65.84 ri      0.0  1.73e-11p 1.17e-08p 4.06e-07p 9.58e-07p 1.79e-07p 2.05e-09p 1.12e-12p       0.0
sig0.552 cc      0.0  1.73e-11p 1.18e-08p 4.18e-07p 1.38e-06p 1.55e-06p 1.56e-06p 1.12e-12p       0.0
        rc      0.0  1.73e-11p 1.18e-08p 4.18e-07p 1.38e-06p 1.55e-06o 1.56e-06n 1.12e-12p       0.0
 am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.36e-05n      0.0       0.0
zp 65.92 ri      0.0  9.83e-11p 7.38e-08p 2.98e-06p 8.50e-06p 2.03e-06p 3.26e-08p 2.73e-11p       0.0
sig0.559 cc      0.0  9.83e-11p 7.39e-08p 3.05e-06p 1.16e-05p 1.36e-05p 1.36e-05p 2.73e-11p       0.0
        rc      0.0  9.83e-11p 7.39e-08p 3.05e-06p 1.16e-05p 1.36e-05o 1.36e-05n 2.73e-11p       0.0
 am241h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.002955n      0.0       0.0
zp 66.57 ri       0.0  4.30e-09p 2.39e-06p 0.000151p 0.001204p 0.001370p 0.000224p 4.73e-06p 1.15e-08p
sig0.656 cc       0.0  4.30e-09p 2.40e-06p 0.000153p 0.001357p 0.002727p 0.002956p 4.73e-06p 1.15e-08p
        rc      0.0  4.30e-09p 2.40e-06p 0.000153p 0.001357p 0.002727o 0.002956n 4.73e-06p 1.15e-08p
 a242mt  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000109n      0.0       0.0
zp 65.76 ri       0.0  3.44e-09p 1.40e-06p 3.39e-05p 6.37e-05p 1.03e-05p 1.13e-07p 6.74e-11p       0.0
sig0.565 cc       0.0  3.44e-09p 1.40e-06p 3.53e-05p 9.90e-05p 0.000109p 0.000109p 6.74e-11p       0.0
        rc      0.0  3.44e-09p 1.40e-06p 3.53e-05p 9.90e-05p 0.000109o 0.000109n 6.74e-11p       0.0
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001318n      0.0       0.0
zp 65.71 ri 1.80e-11p 7.46e-08p 2.54e-05p 0.000404p 0.000788p 9.87e-05p 1.31e-06p 7.32e-10p       0.0
sig0.576 cc 1.80e-11p 7.47e-08p 2.55e-05p 0.000429p 0.001218p 0.001316p 0.001318p 7.32e-10p       0.0
        rc 1.80e-11p 7.47e-08p 2.55e-05p 0.000429p 0.001218p 0.001316o 0.001318n 7.32e-10p       0.0
 cf249t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.004182n      0.0       0.0
zp 65.92 ri 2.75e-10p 3.10e-07p 6.55e-05p 0.000852p 0.002622p 0.000610p 3.29e-05p 1.07e-07p 6.43e-11p
sig0.645 cc 2.75e-10p 3.11e-07p 6.58e-05p 0.000917p 0.003539p 0.004149p 0.004182p 1.07e-07p 6.43e-11p
        rc 2.75e-10p 3.11e-07p 6.58e-05p 0.000917p 0.003539p 0.004149o 0.004182n 1.07e-07p 6.43e-11p
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.010191n      0.0       0.0
zp 65.59 ri 8.53e-10p 2.06e-06p 0.000332p 0.004170p 0.005069p 0.000612p 5.98e-06p 3.98e-09p       0.0
sig0.590 cc 8.53e-10p 2.06e-06p 0.000334p 0.004504p 0.009572p 0.010184p 0.010190p 3.98e-09p       0.0
        rc 8.53e-10p 2.06e-06p 0.000334p 0.004504p 0.009572p 0.010184o 0.010190n 3.98e-09p       0.0
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001956n      0.0       0.0
zp 65.60 ri 1.49e-10p 3.71e-07p 6.13e-05p 0.000790p 0.000982p 0.000122p 1.22e-06p 8.34e-10p       0.0
sig0.590 cc 1.49e-10p 3.71e-07p 6.17e-05p 0.000851p 0.001834p 0.001955p 0.001956p 8.34e-10p       0.0
        rc 1.49e-10p 3.71e-07p 6.17e-05p 0.000851p 0.001834p 0.001955o 0.001956n 8.34e-10p       0.0

  dy, ho half lives from 89wal1.
1

    mass number    169                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       63 eu g   64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb m   70 yb g   71 lu m   71 lu g
half life                                   4.7 m    9.40 d    stable     46. s    32.02d     2.7 m    1.42 d
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lambda          0.0       0.0       0.0       0.0 2.458e-03 8.535e-07       0.0 1.507e-02 2.505e-07 4.279e-03 5.650e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000       0.0 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0  100.0000
 th227t  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc     0.0       0.0       0.0       0.0       0.0       0.0  1.01e-11n      0.0       0.0       0.0       0.0
zp 66.22 ri    0.0       0.0       0.0  7.78e-12p 1.76e-12p      0.0       0.0       0.0       0.0       0.0       0.0
sig0.507 cc    0.0       0.0       0.0  8.27e-12p 1.00e-11p 1.01e-11p 1.01e-11p      0.0       0.0       0.0       0.0
        rc     0.0       0.0       0.0  8.27e-12p 1.00e-11p 1.01e-11o 1.01e-11n      0.0       0.0       0.0       0.0
 th229t  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc     0.0       0.0       0.0       0.0       0.0       0.0  1.79e-12l      0.0       0.0       0.0       0.0
zp 66.00 ri    0.0       0.0       0.0  1.50e-12p      0.0       0.0       0.0       0.0       0.0       0.0       0.0
sig0.538 cc    0.0       0.0       0.0  1.65e-12p 1.78e-12p 1.79e-12p 1.79e-12p      0.0       0.0       0.0       0.0
        rc     0.0       0.0       0.0  1.64e-12p 1.78e-12o 1.79e-12n 1.79e-12l      0.0       0.0       0.0       0.0
 pa231f  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc     0.0       0.0       0.0       0.0       0.0       0.0  6.22e-07n      0.0       0.0       0.0       0.0
zp 66.22 ri    0.0  5.66e-10p 5.91e-08p 3.72e-07p 1.84e-07p 6.34e-09p 1.13e-11p      0.0       0.0       0.0       0.0
sig0.552 cc    0.0  5.66e-10p 5.96e-08p 4.32e-07p 6.16e-07p 6.22e-07p 6.22e-07p      0.0       0.0       0.0       0.0
        rc     0.0  5.66e-10p 5.96e-08p 4.32e-07p 6.16e-07p 6.22e-07o 6.22e-07n      0.0       0.0       0.0       0.0
 am241t  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc     0.0       0.0       0.0       0.0       0.0       0.0  5.86e-06n      0.0       0.0       0.0       0.0
zp 66.30 ri 1.54e-12p 3.66e-09p 4.37e-07p 3.30e-06p 2.03e-06p 9.44e-08p 2.48e-10p      0.0       0.0       0.0       0.0
sig0.559 cc 1.54e-12p 3.66e-09p 4.41e-07p 3.74e-06p 5.77e-06p 5.86e-06p 5.86e-06p      0.0       0.0       0.0       0.0
        rc 1.54e-12p 3.66e-09p 4.41e-07p 3.74e-06p 5.77e-06p 5.86e-06o 5.86e-06n      0.0       0.0       0.0       0.0
 am241h  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc     0.0       0.0       0.0       0.0       0.0       0.0  0.001936n      0.0       0.0       0.0       0.0
zp 66.96 ri 1.31e-10p 1.73e-07p 2.53e-05p 0.000445p 0.001071p 0.000377p 1.80e-05p 7.16e-09p 9.51e-08p 4.47e-12p 5.94e-11p
sig0.656 cc 1.31e-10p 1.73e-07p 2.54e-05p 0.000470p 0.001541p 0.001918p 0.001936p 7.16e-09p 1.02e-07p 4.47e-12p 6.39e-11p
        rc 1.31e-10p 1.73e-07p 2.54e-05p 0.000470p 0.001541p 0.001918o 0.001936n 7.16e-09p 1.02e-07p 4.47e-12p 6.39e-11p
 a242mt  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc     0.0       0.0       0.0       0.0       0.0       0.0  8.75e-05n      0.0       0.0       0.0       0.0
zp 66.14 ri 1.29e-10p 1.61e-07p 1.11e-05p 5.33e-05p 2.22e-05p 7.02e-07p 1.29e-09p      0.0       0.0       0.0       0.0
sig0.565 cc 1.29e-10p 1.61e-07p 1.12e-05p 6.46e-05p 8.68e-05p 8.75e-05p 8.75e-05p      0.0       0.0       0.0       0.0
        rc 1.29e-10p 1.61e-07p 1.12e-05p 6.46e-05p 8.68e-05p 8.75e-05o 8.75e-05n      0.0       0.0       0.0       0.0
 cm245t  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc     0.0       0.0       0.0       0.0       0.0       0.0  0.000598n      0.0       0.0       0.0       0.0
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zp 66.09 ri 1.96e-09p 1.81e-06p 8.47e-05p 0.000378p 0.000129p 4.39e-06p 7.84e-09p      0.0       0.0       0.0       0.0
sig0.576 cc 1.96e-09p 1.81e-06p 8.65e-05p 0.000465p 0.000594p 0.000598p 0.000598p      0.0       0.0       0.0       0.0
        rc 1.96e-09p 1.81e-06p 8.65e-05p 0.000465p 0.000594p 0.000598o 0.000598n      0.0       0.0       0.0       0.0
 cf249t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001687n      0.0       0.0       0.0       0.0
zp 66.28 ri 1.45e-08p 4.81e-06p 0.000194p 0.000856p 0.000585p 4.69e-05p 4.91e-07p 6.14e-11p 4.11e-10p      0.0       0.0
sig0.645 cc 1.45e-08p 4.82e-06p 0.000199p 0.001055p 0.001640p 0.001687p 0.001687p 6.14e-11p 4.73e-10p      0.0       0.0
        rc 1.45e-08p 4.82e-06p 0.000199p 0.001055p 0.001640p 0.001687o 0.001687n 6.14e-11p 4.73e-10p      0.0       0.0
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.008153n      0.0       0.0       0.0       0.0
zp 65.99 ri 1.02e-07p 4.78e-05p 0.001623p 0.004918p 0.001522p 4.18e-05p 8.25e-08p 1.36e-12p 9.08e-12p      0.0       0.0
sig0.590 cc 1.02e-07p 4.79e-05p 0.001671p 0.006589p 0.008110p 0.008152p 0.008152p 1.36e-12p 1.04e-11p      0.0       0.0
        rc 1.02e-07p 4.79e-05p 0.001671p 0.006589p 0.008110o 0.008152o 0.008152n 1.36e-12p 1.04e-11p      0.0       0.0
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000978n      0.0       0.0       0.0       0.0
zp 65.98 ri 1.31e-08p 6.01e-06p 0.000199p 0.000590p 0.000178p 4.78e-06p 9.19e-09p      0.0       0.0       0.0       0.0
sig0.590 cc 1.31e-08p 6.02e-06p 0.000205p 0.000795p 0.000973p 0.000978p 0.000978p      0.0  1.13e-12p      0.0       0.0
        rc 1.31e-08p 6.02e-06p 0.000205p 0.000795p 0.000973o 0.000978o 0.000978n      0.0  1.13e-12p      0.0       0.0

  ho, er half lives from 89wal1; yb half life 90bur1.
1

    mass number    170                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide      62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g   69 tm g   70 yb g
half life                                                    43. s     2.8 m    stable    128.6d    stable
lambda          0.0       0.0       0.0       0.0       0.0 1.612e-02 4.126e-03       0.0 6.238e-08       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000   -0.2000   99.8000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.06e-12n      0.0       0.0
zp 66.61 ri      0.0       0.0       0.0       0.0  4.03e-12p      0.0       0.0       0.0       0.0       0.0
sig0.507 cc      0.0       0.0       0.0       0.0  4.08e-12p      0.0  4.87e-12p 6.06e-12p      0.0       0.0
        rc      0.0       0.0       0.0       0.0  4.08e-12p      0.0  4.87e-12p 6.06e-12n      0.0       0.0
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.61e-12l      0.0       0.0
```

zp 66.38 ri 0.0 0.0 0.0 0.0 1.33e-12p 0.0 0.0 0.0 0.0 0.0
sig0.538 cc 0.0 0.0 0.0 0.0 1.36e-12p 0.0 1.47e-12p 1.61e-12p 0.0 0.0
rc 0.0 0.0 0.0 0.0 1.36e-12p 0.0 1.46e-12n 1.61e-12l 0.0 0.0
pa231f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.11e-07n 0.0 0.0
zp 66.60 ri 0.0 0.0 2.19e-11p 7.15e-09p 1.26e-07p 8.11e-08p 8.11e-08p 1.60e-08p 8.98e-11p 0.0
sig0.552 cc 0.0 0.0 2.19e-11p 7.17e-09p 1.33e-07p 8.11e-08p 2.14e-07p 3.11e-07p 8.98e-11p 8.97e-11p
rc 0.0 0.0 2.19e-11p 7.17e-09p 1.33e-07p 8.11e-08p 2.14e-07p 3.11e-07n 8.98e-11p 8.97e-11p
am241t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.68e-06n 0.0 0.0
zp 66.68 ri 0.0 0.0 7.82e-11p 2.86e-08p 5.94e-07p 4.67e-07p 4.67e-07p 1.20e-07p 9.65e-10p 0.0
sig0.559 cc 0.0 0.0 7.82e-11p 2.86e-08p 6.22e-07p 4.67e-07p 1.09e-06p 1.68e-06p 9.65e-10p 9.64e-10p
rc 0.0 0.0 7.82e-11p 2.86e-08p 6.22e-07p 4.67e-07p 1.09e-06p 1.68e-06n 9.65e-10p 9.64e-10p
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.001121n 0.0 0.0
zp 67.34 ri 0.0 2.85e-12p 8.84e-09p 2.96e-06p 0.000115p 0.000290p 0.000290p 0.000424p 4.39e-05p 5.67e-07p
sig0.656 cc 0.0 2.85e-12p 8.84e-09p 2.96e-06p 0.000118p 0.000290p 0.000407p 0.001121p 4.39e-05p 4.43e-05p
rc 0.0 2.85e-12p 8.84e-09p 2.96e-06p 0.000118p 0.000290p 0.000407p 0.001121n 4.39e-05p 4.43e-05p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.38e-05n 0.0 0.0
zp 66.52 ri 0.0 1.95e-12p 7.61e-09p 1.54e-06p 1.97e-05p 1.04e-05p 1.04e-05p 1.80e-06p 9.99e-09p 2.90e-12p
sig0.565 cc 0.0 1.95e-12p 7.61e-09p 1.55e-06p 2.13e-05p 1.04e-05p 3.16e-05p 4.38e-05p 9.99e-09p 9.98e-09p
rc 0.0 1.95e-12p 7.61e-09p 1.55e-06p 2.13e-05p 1.04e-05p 3.16e-05p 4.38e-05n 9.99e-09p 9.98e-09p
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000294n 0.0 0.0
zp 66.47 ri 0.0 3.41e-11p 1.01e-07p 1.23e-05p 0.000152p 5.89e-05p 5.89e-05p 1.16e-05p 5.55e-08p 2.22e-11p
sig0.576 cc 0.0 3.41e-11p 1.01e-07p 1.24e-05p 0.000165p 5.89e-05p 0.000223p 0.000294p 5.55e-08p 5.54e-08p
rc 0.0 3.41e-11p 1.01e-07p 1.24e-05p 0.000165p 5.89e-05p 0.000223p 0.000294n 5.55e-08p 5.54e-08p
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000862n 0.0 0.0
zp 66.65 ri 0.0 3.95e-10p 4.38e-07p 2.77e-05p 0.000374p 0.000184p 0.000184p 9.11e-05p 1.50e-06p 4.83e-09p
sig0.645 cc 0.0 3.95e-10p 4.38e-07p 2.81e-05p 0.000402p 0.000184p 0.000586p 0.000862p 1.50e-06p 1.50e-06p
rc 0.0 3.95e-10p 4.38e-07p 2.81e-05p 0.000402p 0.000184p 0.000586p 0.000862n 1.50e-06p 1.50e-06p
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.006115n 0.0 0.0
zp 66.39 ri 0.0 3.03e-09p 4.23e-06p 0.000402p 0.003119p 0.001205p 0.001205p 0.000179p 1.03e-06p 3.96e-10p

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sig0.590 cc       0.0  3.03e-09p 4.23e-06p 0.000407p 0.003526p 0.001205p 0.004730p 0.006114p 1.03e-06p 1.03e-06p
         rc       0.0  3.03e-09p 4.23e-06p 0.000407p 0.003526p 0.001205p 0.004730p 0.006114n 1.03e-06p 1.03e-06p
 es254t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000489n      0.0       0.0
zp 66.36 ri       0.0  3.13e-10p 4.03e-07p 3.54e-05p 0.000256p 9.23e-05p 9.23e-05p 1.28e-05p 6.81e-08p 2.40e-11p
sig0.590 cc       0.0  3.13e-10p 4.03e-07p 3.58e-05p 0.000292p 9.23e-05p 0.000384p 0.000489p 6.81e-08p 6.80e-08p
         rc       0.0  3.13e-10p 4.03e-07p 3.58e-05p 0.000292p 9.23e-05p 0.000384p 0.000489n 6.81e-08p 6.80e-08p

  ho half life from 89wal1; tm half life 90bur1.
1

    mass number    171                    LA-UR-94-3106 (ENDF-349)                    percent yields
nuclide       64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb g   71 lu m   71 lu g   72 hf g
half life                                   7.52 h    1.92 y    stable     78. s    8.24 d    12.2 h
lambda            0.0       0.0       0.0       0.0 2.560e-05 1.145e-08       0.0 8.887e-03 9.736e-07 1.578e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 th227t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  3.02e-12l      0.0       0.0       0.0
zp 66.99 ri      0.0       0.0       0.0  1.55e-12p      0.0       0.0       0.0       0.0       0.0       0.0
sig0.507 cc      0.0       0.0       0.0  2.31e-12p 3.01e-12p 3.02e-12p 3.02e-12p      0.0       0.0       0.0
         rc      0.0       0.0       0.0  2.30e-12p 3.01e-12o 3.01e-12n 3.02e-12l      0.0       0.0       0.0
 th229t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.34e-12l      0.0       0.0       0.0
zp 66.76 ri      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
sig0.538 cc      0.0       0.0       0.0  1.16e-12p 1.34e-12p 1.34e-12p 1.34e-12p      0.0       0.0       0.0
         rc      0.0       0.0       0.0  1.15e-12p 1.34e-12o 1.34e-12n 1.34e-12l      0.0       0.0       0.0
 pa231f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.56e-07n      0.0       0.0       0.0
zp 66.98 ri      0.0  5.67e-10p 2.93e-08p 9.88e-08p 2.65e-08p 4.58e-10p      0.0       0.0       0.0       0.0
sig0.552 cc      0.0  5.67e-10p 2.99e-08p 1.29e-07p 1.55e-07p 1.56e-07p 1.56e-07p      0.0       0.0       0.0
         rc      0.0  5.67e-10p 2.99e-08p 1.29e-07p 1.55e-07p 1.56e-07o 1.56e-07n      0.0       0.0       0.0
 am241t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  3.25e-07n      0.0       0.0       0.0
zp 67.07 ri      0.0  7.89e-10p 4.87e-08p 2.03e-07p 7.06e-08p 1.73e-09p 2.29e-12p      0.0       0.0       0.0
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sig0.559 cc 0.0 7.90e-10p 4.95e-08p 2.52e-07p 3.23e-07p 3.25e-07p 3.25e-07p 0.0 0.0 0.0
rc 0.0 7.90e-10p 4.95e-08p 2.52e-07p 3.23e-07p 3.25e-07o 3.25e-07n 0.0 0.0 0.0
am241h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000774n 0.0 0.0 0.0
zp 67.72 ri 3.61e-10p 2.79e-07p 2.43e-05p 0.000262p 0.000398p 8.76e-05p 2.53e-06p 4.27e-09p 4.27e-09p 3.11e-12p
sig0.656 cc 3.61e-10p 2.80e-07p 2.46e-05p 0.000287p 0.000684p 0.000772p 0.000774p 4.27e-09p 8.54e-09p 3.11e-12p
rc 3.61e-10p 2.80e-07p 2.46e-05p 0.000287p 0.000684p 0.000772o 0.000774n 4.27e-09p 8.54e-09p 3.11e-12p
a242mt xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.19e-05n 0.0 0.0 0.0
zp 66.90 ri 2.34e-10p 1.44e-07p 5.09e-06p 1.35e-05p 3.10e-06p 5.05e-08p 4.56e-11p 0.0 0.0 0.0
sig0.565 cc 2.34e-10p 1.44e-07p 5.24e-06p 1.87e-05p 2.18e-05p 2.19e-05p 2.19e-05p 0.0 0.0 0.0
rc 2.34e-10p 1.44e-07p 5.24e-06p 1.87e-05p 2.18e-05p 2.19e-05o 2.19e-05n 0.0 0.0 0.0
cm245t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000172n 0.0 0.0 0.0
zp 66.85 ri 4.17e-09p 1.59e-06p 4.82e-05p 9.90e-05p 2.31e-05p 3.40e-07p 3.75e-10p 0.0 0.0 0.0
sig0.576 cc 4.17e-09p 1.60e-06p 4.98e-05p 0.000149p 0.000172p 0.000172p 0.000172p 0.0 0.0 0.0
rc 4.17e-09p 1.60e-06p 4.98e-05p 0.000149p 0.000172o 0.000172o 0.000172n 0.0 0.0 0.0
cf249t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000481n 0.0 0.0 0.0
zp 67.01 ri 2.36e-08p 4.78e-06p 9.58e-05p 0.000277p 9.82e-05p 5.03e-06p 2.55e-08p 7.43e-12p 7.43e-12p 0.0
sig0.645 cc 2.36e-08p 4.80e-06p 0.000101p 0.000378p 0.000476p 0.000481p 0.000481p 7.43e-12p 1.49e-11p 0.0
rc 2.36e-08p 4.80e-06p 0.000101p 0.000378p 0.000476o 0.000481o 0.000481n 7.43e-12p 1.49e-11p 0.0
cf251t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.004076n 0.0 0.0 0.0
zp 66.79 ri 2.16e-07p 5.93e-05p 0.001220p 0.002336p 0.000453p 7.46e-06p 8.56e-09p 0.0 0.0 0.0
sig0.590 cc 2.16e-07p 5.96e-05p 0.001279p 0.003615p 0.004069p 0.004076p 0.004076p 0.0 0.0 0.0
rc 2.16e-07p 5.96e-05p 0.001279p 0.003615p 0.004069o 0.004076o 0.004076n 0.0 0.0 0.0
es254t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000196n 0.0 0.0 0.0
zp 66.73 ri 1.57e-08p 3.66e-06p 6.49e-05p 0.000109p 1.83e-05p 2.58e-07p 2.51e-10p 0.0 0.0 0.0
sig0.590 cc 1.57e-08p 3.68e-06p 6.86e-05p 0.000177p 0.000195p 0.000196p 0.000196p 0.0 0.0 0.0
rc 1.57e-08p 3.68e-06p 6.86e-05p 0.000177p 0.000195o 0.000196o 0.000196n 0.0 0.0 0.0

er, tm half lives from 89wal1.

mass number 172 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	64 gd g	65 tb g	66 dy g	67 ho g	68 er g	69 tm g	70 yb g	71 lu m	71 lu g	72 hf g
half life				2.05 d	2.65 d	stable	4. m	6.70 d	1.87 y	
lambda	0.0	0.0	0.0	0.0	3.913e-06	3.027e-06	0.0	2.888e-03	1.197e-06	1.175e-08
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	0.0	-100.0000	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0
th227t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	1.11e-12l	0.0	0.0	0.0
zp 67.38 ri	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
sig0.507 cc	0.0	0.0	0.0	0.0	1.10e-12p	1.11e-12p	1.11e-12p	0.0	0.0	0.0
rc	0.0	0.0	0.0	0.0	1.09e-12o	1.10e-12n	1.11e-12l	0.0	0.0	0.0
th229t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	1.16e-12l	0.0	0.0	0.0
zp 67.14 ri	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
sig0.538 cc	0.0	0.0	0.0	0.0	1.16e-12p	1.16e-12p	1.16e-12p	0.0	0.0	0.0
rc	0.0	0.0	0.0	0.0	1.16e-12o	1.16e-12n	1.16e-12l	0.0	0.0	0.0
pa231f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	1.04e-07n	0.0	0.0	0.0
zp 67.36 ri	0.0	3.87e-11p	6.13e-09p	5.60e-08p	3.95e-08p	2.01e-09p	5.48e-12p	0.0	0.0	0.0
sig0.552 cc	0.0	3.87e-11p	6.16e-09p	6.22e-08p	1.02e-07p	1.04e-07p	1.04e-07p	0.0	0.0	0.0
rc	0.0	3.87e-11p	6.16e-09p	6.22e-08p	1.02e-07p	1.04e-07o	1.04e-07n	0.0	0.0	0.0
am241t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	1.05e-07n	0.0	0.0	0.0
zp 67.45 ri	0.0	2.47e-11p	4.58e-09p	5.12e-08p	4.57e-08p	3.19e-09p	1.31e-11p	0.0	0.0	0.0
sig0.559 cc	0.0	2.47e-11p	4.60e-09p	5.58e-08p	1.02e-07p	1.05e-07p	1.05e-07p	0.0	0.0	0.0
rc	0.0	2.47e-11p	4.60e-09p	5.58e-08p	1.02e-07p	1.05e-07o	1.05e-07n	0.0	0.0	0.0
am241h xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.000510n	0.0	0.0	0.0
zp 68.10 ri	1.05e-11p	1.91e-08p	3.77e-06p	8.85e-05p	0.000280p	0.000129p	8.20e-06p	3.17e-08p	3.17e-08p	5.41e-11p
sig0.656 cc	1.05e-11p	1.91e-08p	3.79e-06p	9.23e-05p	0.000372p	0.000501p	0.000510p	3.17e-08p	6.34e-08p	5.41e-11p
rc	1.05e-11p	1.91e-08p	3.79e-06p	9.23e-05p	0.000372p	0.000501o	0.000510n	3.17e-08p	6.34e-08p	5.41e-11p
a242mt xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	1.09e-05n	0.0	0.0	0.0
zp 67.28 ri	4.67e-12p	8.87e-09p	9.05e-07p	6.21e-06p	3.65e-06p	1.68e-07p	4.65e-10p	0.0	0.0	0.0
sig0.565 cc	4.67e-12p	8.87e-09p	9.14e-07p	7.13e-06p	1.08e-05p	1.09e-05p	1.09e-05p	0.0	0.0	0.0

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        rc 4.67e-12p 8.87e-09p 9.14e-07p 7.13e-06p 1.08e-05p 1.09e-05o 1.09e-05n      0.0       0.0       0.0
 cm245t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  8.01e-05n      0.0       0.0       0.0
zp 67.23 ri 9.64e-11p 9.99e-08p 9.04e-06p 4.29e-05p 2.70e-05p 1.00e-06p 3.52e-09p      0.0       0.0       0.0
sig0.576 cc 9.64e-11p 1.00e-07p 9.14e-06p 5.20e-05p 7.91e-05p 8.01e-05p 8.01e-05p      0.0       0.0       0.0
        rc 9.64e-11p 1.00e-07p 9.14e-06p 5.20e-05p 7.91e-05p 8.01e-05o 8.01e-05n      0.0       0.0       0.0
 cf249t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000363n      0.0       0.0       0.0
zp 67.37 ri 1.85e-09p 5.91e-07p 3.70e-05p 0.000153p 0.000160p 1.21e-05p 1.97e-07p 9.16e-11p 9.16e-11p      0.0
sig0.645 cc 1.85e-09p 5.93e-07p 3.75e-05p 0.000191p 0.000351p 0.000363p 0.000363p 9.16e-11p 1.83e-10p      0.0
        rc 1.85e-09p 5.93e-07p 3.75e-05p 0.000191p 0.000351p 0.000363o 0.000363n 9.16e-11p 1.83e-10p      0.0
 cf251t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.003057n      0.0       0.0       0.0
zp 67.18 ri 8.71e-09p 6.85e-06p 0.000378p 0.001781p 0.000853p 3.78e-05p 1.25e-07p 1.33e-11p 1.33e-11p      0.0
sig0.590 cc 8.71e-09p 6.86e-06p 0.000385p 0.002166p 0.003019p 0.003057p 0.003057p 1.33e-11p 2.67e-11p      0.0
        rc 8.71e-09p 6.86e-06p 0.000385p 0.002166p 0.003019p 0.003057o 0.003057n 1.33e-11p 2.67e-11p      0.0
 es254t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  9.78e-05n      0.0       0.0       0.0
zp 67.11 ri 4.85e-10p 3.16e-07p 1.46e-05p 5.83e-05p 2.38e-05p 8.85e-07p 2.42e-09p      0.0       0.0       0.0
sig0.590 cc 4.85e-10p 3.16e-07p 1.49e-05p 7.31e-05p 9.69e-05p 9.78e-05p 9.78e-05p      0.0       0.0       0.0
        rc 4.85e-10p 3.16e-07p 1.49e-05p 7.31e-05p 9.69e-05o 9.78e-05o 9.78e-05n      0.0       0.0       0.0

  er, tm half lives from 89wal1.
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type          value   err.     value                nuclide     material       value      no.   treatment

 66        th227t   es    cu        0.0000001 30.0   0.0000001  0.0000000     0                    0.0000000   75mee1      0
 66        th229t   es    cu        0.0000000 15.0   0.0000000 15.0000000%    0                    0.0000000   75mee1      0
 66        pa231f   es    cu        0.0000985 30.0   0.0001000  0.0000000     0                    0.0000000   75mee1      0
 66        am241t   es    cu        0.0000001 30.0   0.0000001  0.0000000     0                    0.0000000   75mee1      0
 66        am241h   es    cu        0.0003390 30.0   0.0003500  0.0000000     0                    0.0000000   75mee1      0
 66        a242mt   es    cu        0.0000096 30.0   0.0000100  0.0000000     0                    0.0000000   75mee1      0
 66        cm245t   es    cu        0.0000010 30.0   0.0000010  0.0000000     0                    0.0000000   75mee1      0
 66        cf249t   es    cu        0.0000003 34.0   0.0000003  0.0000000    88          cf249t      0.5200000   92eng3      0
 66        cf251t   es    cu        0.0000935 30.0   0.0001000  0.0000000     0                    0.0000000   75mee1      0
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66	es254t	es	cu	0.0000000	30.0	0.0000000	0.0000000	0			0.0000000	75mee1	0
67	th227t	es	cu	0.0000002	30.0	0.0000002	0.0000000	0			0.0000000	75mee1	0
67	th229t	es	cu	0.0000001	15.0	0.0000001	15.0000000%	0			0.0000000	75mee1	0
67	pa231f	es	cu	0.0001773	30.0	0.0001800	0.0000000	0			0.0000000	75mee1	0
67	am241t	es	cu	0.0000003	30.0	0.0000003	0.0000000	0			0.0000000	75mee1	0
67	am241h	es	cu	0.0007264	30.0	0.0007500	0.0000000	0			0.0000000	75mee1	0
67	a242mt	es	cu	0.0000191	30.0	0.0000200	0.0000000	0			0.0000000	75mee1	0
67	cm245t	es	cu	0.0000021	30.0	0.0000020	0.0000000	0			0.0000000	75mee1	0
67	cf249t	es	cu	0.0000005	34.0	0.0000005	0.0000000	88	cf249t	0.5200000	92eng3		0
67	cf251t	es	cu	0.0001403	30.0	0.0001500	0.0000000	0			0.0000000	75mee1	0
67	es254t	es	cu	0.0000000	30.0	0.0000000	0.0000000	0			0.0000000	75mee1	0
68	th227t	es	cu	0.0000008	30.0	0.0000008	0.0000000	0			0.0000000	75mee1	0
68	th229t	es	cu	0.0000003	15.0	0.0000003	15.0000000%	0			0.0000000	75mee1	0
68	pa231f	es	cu	0.0003447	30.0	0.0003500	0.0000000	0			0.0000000	75mee1	0
68	am241t	es	cu	0.0000006	30.0	0.0000006	0.0000000	0			0.0000000	75mee1	0
68	am241h	es	cu	0.0011622	30.0	0.0012000	0.0000000	0			0.0000000	75mee1	0
68	a242mt	es	cu	0.0000287	30.0	0.0000300	0.0000000	0			0.0000000	75mee1	0
68	cm245t	es	cu	0.0000042	30.0	0.0000040	0.0000000	0			0.0000000	75mee1	0
68	cf249t	es	cu	0.0000030	34.0	0.0000030	0.0000000	88	cf249t	0.5200000	92eng3		0
68	cf251t	es	cu	0.0001870	30.0	0.0002000	0.0000000	0			0.0000000	75mee1	0
68	es254t	es	cu	0.0000000	30.0	0.0000000	0.0000000	0			0.0000000	75mee1	0
69	th227t	es	cu	0.0000024	30.0	0.0000024	0.0000000	0			0.0000000	75mee1	0
69	th229t	es	cu	0.0000011	15.0	0.0000011	15.0000000%	0			0.0000000	75mee1	0
69	pa231f	es	cu	0.0006894	30.0	0.0007000	0.0000000	0			0.0000000	75mee1	0
69	am241t	es	cu	0.0000013	30.0	0.0000013	0.0000000	0			0.0000000	75mee1	0
69	am241h	es	cu	0.0019370	30.0	0.0020000	0.0000000	0			0.0000000	75mee1	0
69	a242mt	es	cu	0.0000574	30.0	0.0000600	0.0000000	0			0.0000000	75mee1	0
69	cm245t	es	cu	0.0000104	30.0	0.0000100	0.0000000	0			0.0000000	75mee1	0
69	cf249t	sp	cu	0.0000057	41.8	0.0000057	0.0000022	88	cf249t	0.5200000	91hen1		0
69	cf251t	es	cu	0.0002806	30.0	0.0003000	0.0000000	0			0.0000000	75mee1	0
69	es254t	es	cu	0.0000001	30.0	0.0000001	0.0000000	0			0.0000000	75mee1	0
70	th227t	es	cu	0.0000052	30.0	0.0000053	0.0000000	0			0.0000000	75mee1	0
70	th229t	es	cu	0.0000036	15.0	0.0000035	15.0000000%	0			0.0000000	75mee1	0
70	pa231f	es	cu	0.0012803	30.0	0.0013000	0.0000000	0			0.0000000	75mee1	0
70	am241t	es	cu	0.0000045	30.0	0.0000046	0.0000000	0			0.0000000	75mee1	0
70	am241h	es	cu	0.0031960	30.0	0.0033000	0.0000000	0			0.0000000	75mee1	0

70	a242mt	es	cu	0.0000957	30.0	0.0001000	0.0000000	0			0.0000000	75mee1	0
70	cm245t	es	cu	0.0000261	30.0	0.0000250	0.0000000	0			0.0000000	75mee1	0
70	cf249t	sp	cu	0.0000302	29.8	0.0000302	0.0000076	88	cf249t	0.5200000	91hen1	0	
70	cf251t	es	cu	0.0003741	30.0	0.0004000	0.0000000	0			0.0000000	75mee1	0
70	es254t	es	cu	0.0000001	30.0	0.0000002	0.0000000	0			0.0000000	75mee1	0
71	th227t	es	cu	0.0000127	30.0	0.0000130	0.0000000	0			0.0000000	75mee1	0
71	th229t	es	cu	0.0000156	15.0	0.0000150	15.0000000%	0			0.0000000	75mee1	0
71	pa231f	es	cu	0.0024620	30.0	0.0025000	0.0000000	0			0.0000000	75mee1	0
71	am241t	es	cu	0.0000068	30.0	0.0000068	0.0000000	0			0.0000000	75mee1	0
71	am241h	es	cu	0.0048424	30.0	0.0050000	0.0000000	0			0.0000000	75mee1	0
71	a242mt	es	cu	0.0001914	30.0	0.0002000	0.0000000	0			0.0000000	75mee1	0
71	cm245t	es	cu	0.0000575	30.0	0.0000550	0.0000000	0			0.0000000	75mee1	0
71	cf249t	sp	cu	0.0000536	29.1	0.0000535	0.0000130	88	cf249t	0.5200000	91hen1	0	
71	cf251t	es	cu	0.0004676	30.0	0.0005000	0.0000000	0			0.0000000	75mee1	0
71	es254t	es	cu	0.0000002	30.0	0.0000002	0.0000000	0			0.0000000	75mee1	0
72	th227t	es	cu	0.0000568	30.0	0.0000580	0.0000000	0			0.0000000	75mee1	0
72	th229t	es	cu	0.0000718	15.0	0.0000690	15.0000000%	0			0.0000000	75mee1	0
72	pa231f	es	cu	0.0044317	30.0	0.0045000	0.0000000	0			0.0000000	75mee1	0
72	am241t	es	cu	0.0000099	30.0	0.0000100	0.0000000	0			0.0000000	72sid1	0
72	am241h	es	cu	0.0087164	30.0	0.0090000	0.0000000	0			0.0000000	75mee1	0
72	a242mt	es	cu	0.0004784	30.0	0.0005000	0.0000000	0			0.0000000	75mee1	0
72	cm245t	es	cu	0.0001045	30.0	0.0001000	0.0000000	0			0.0000000	75mee1	0
72	cf249t	sp	cu	0.0001091	27.2	0.0001090	0.0000240	88	cf249t	0.5200000	91hen1	0	
72	cf251t	es	cu	0.0006546	30.0	0.0007000	0.0000000	0			0.0000000	75mee1	0
72	es254t	es	cu	0.0000001	15.0	0.0000002	15.0000000%	0			0.0000000	75mee1	0
73	th227t	es	cu	0.0000937	30.0	0.0000950	0.0000000	0			0.0000000	75mee1	0
73	th229t	es	cu	0.0002602	15.0	0.0002500	15.0000000%	0			0.0000000	75mee1	0
73	pa231f	es	cu	0.0089034	30.0	0.0090000	0.0000000	0			0.0000000	75mee1	0
73	am241t	es	cu	0.0000398	30.0	0.0000400	0.0000000	0			0.0000000	72sid1	0
73	am241h	es	cu	0.0135588	30.0	0.0140000	0.0000000	0			0.0000000	75mee1	0
73	a242mt	es	cu	0.0009569	30.0	0.0010000	0.0000000	0			0.0000000	75mee1	0
73	cm245t	es	cu	0.0002090	30.0	0.0002000	0.0000000	0			0.0000000	75mee1	0
73	cf249t	sp	cu	0.0002134	31.2	0.0002130	0.0000570	88	cf249t	0.5200000	91hen1	0	
73	cf251t	es	cu	0.0009542	30.0	0.0010000	0.0000000	0			0.0000000	75mee1	0
73	es254t	es	cu	0.0000010	15.0	0.0000010	15.0000000%	0			0.0000000	75mee1	0
74	th227t	es	cu	0.0002646	30.0	0.0002700	0.0000000	0			0.0000000	75mee1	0

74		th229t	es	cu	0.0010410	15.0	0.0010000	15.0000000%	0		0.0000000	75mee1	0
74		pa231f	es	cu	0.0167419	30.0	0.0170000	0.0000000	0		0.0000000	75mee1	0
74		am241t	es	cu	0.0000894	30.0	0.0000900	0.0000000	0		0.0000000	72sid1	0
74		am241h	es	cu	0.0213067	30.0	0.0220000	0.0000000	0		0.0000000	75mee1	0
74		a242mt	es	cu	0.0017223	30.0	0.0018000	0.0000000	0		0.0000000	75mee1	0
74		cm245t	es	cu	0.0004597	30.0	0.0004400	0.0000000	0		0.0000000	75mee1	0
74		cf249t	sp	cu	0.0005330	23.1	0.0005320	0.0000890	88	cf249t	0.5200000	91hen1	0
74		cf251t	es	cu	0.0012157	30.0	0.0013000	0.0000000	0		0.0000000	75mee1	0
74		es254t	es	cu	0.0000019	30.0	0.0000020	0.0000000	0		0.0000000	75mee1	0
75		th227t	es	cu	0.0007841	30.0	0.0008000	0.0000000	0		0.0000000	75mee1	0
75		th229t	es	cu	0.0033832	15.0	0.0032500	15.0000000%	0		0.0000000	89rid1	0
75		pa231f	es	cu	0.0315141	30.0	0.0320000	0.0000000	0		0.0000000	75mee1	0
75		am241t	es	cu	0.0002482	30.0	0.0002500	0.0000000	0		0.0000000	72sid1	0
75		am241h	es	cu	0.0271176	30.0	0.0280000	0.0000000	0		0.0000000	75mee1	0
75		a242mt	es	cu	0.0028706	30.0	0.0030000	0.0000000	0		0.0000000	75mee1	0
75		cm245t	es	cu	0.0007731	30.0	0.0007400	0.0000000	0		0.0000000	75mee1	0
75		cf249t	sp	cu	0.0009558	23.9	0.0009540	0.0001700	88	cf249t	0.5200000	91hen1	0
75		cf251t	es	cu	0.0017768	30.0	0.0019000	0.0000000	0		0.0000000	75mee1	0
75		es254t	es	cu	0.0000033	30.0	0.0000035	0.0000000	0		0.0000000	75mee1	0
76		th227t	es	cu	0.0022543	30.0	0.0023000	0.0000000	0		0.0000000	75mee1	0
76		th229t	es	cu	0.0119713	15.0	0.0115000	15.0000000%	0		0.0000000	89rid1	0
76		pa231f	es	cu	0.0590890	30.0	0.0600000	0.0000000	0		0.0000000	75mee1	0
76		am241t	es	cu	0.0005163	30.0	0.0005200	0.0000000	0		0.0000000	72sid1	0
76		am241h	es	cu	0.0387395	30.0	0.0400000	0.0000000	0		0.0000000	75mee1	0
76		a242mt	es	cu	0.0057411	30.0	0.0060000	0.0000000	0		0.0000000	75mee1	0
76		cm245t	es	cu	0.0020895	30.0	0.0020000	0.0000000	0		0.0000000	75mee1	0
76		cf249t	sp	cu	0.0018636	17.9	0.0018600	0.0001500	88	cf249t	0.5200000	91hen1	0
76		cf251t	es	cu	0.0023380	30.0	0.0025000	0.0000000	0		0.0000000	75mee1	0
76		es254t	es	cu	0.0000066	30.0	0.0000070	0.0000000	0		0.0000000	75mee1	0
77		th227t	es	cu	0.0108906	15.0	0.0110000	15.0000000%	0		0.0000000	75mee1	0
77	as g	th227t	rc	cu	ul 0.0000000	0.0	1.4000000	0.0000000	0		0.0000000	69fly2	0
77	as g	th227t	cm	cu	0.0000000	0.0	1.4000000	15.0000000%	0		0.0000000	77cro1	0
77		th229t	es	cu	0.0678628	15.0	0.0665000	15.0000000%	0		0.0000000	75mee1	0
77		th229t	rc	cu	0.0092865	11.0	0.0091000	0.0010000	0		0.0000000	82sin1	0
77	as g	th229t	rc	cu	0.1071518	15.0	0.1050000	15.0000000%	0		0.0000000	66rav1	0
77	as g	th229t	rc	cu	0.0214304	14.3	0.0210000	0.0030000	0		0.0000000	81gin1	0

77	as g	th229t	cm	cu		0.0000000	0.0	0.0933000	15.0000000%	0			0.0000000	77cro1	0
77	ge g	th229t	rc	cu		0.0112254	15.0	0.0110000	0.0000000	0			0.0000000	68bor1	0
77		pa231f	es	cu		0.0989264	30.0	0.1000000	0.0000000	0			0.0000000	75mee1	0
1															
0measured		fissile	meas.	meas.	note	updated	pct.	published	error	normalizing	normalizing	normalizing	ref.	special	
nuclide		material	tech.	type		value	err.	value		nuclide	material	value	no.	treatment	
77		am241t	es	cu		0.0033827	30.0	0.0034000	0.0000000	0			0.0000000	72sid1	0
77		am241h	es	cu		0.0586630	30.0	0.0600000	0.0000000	0			0.0000000	75mee1	0
77		a242mt	es	cu		0.0096949	30.0	0.0100000	0.0000000	0			0.0000000	75mee1	0
77	as g	cm245t	rc	cu		0.0051582	24.0	0.0050000	0.0012000	0			0.0000000	67gun1	0
77	as g	cm245t	cm	cu		0.0000000	0.0	0.0045900	24.0000000%	0			0.0000000	77cro1	0
77		cf249t	sp	cu		0.0046189	20.1	0.0046100	0.0005600	88	cf249t	0.5200000	91hen1	0	
77		cf251t	es	cu		0.0033396	30.0	0.0035000	0.0000000	0			0.0000000	75mee1	0
77		es254t	es	cu		0.0000136	15.0	0.0000140	15.0000000%	0			0.0000000	75mee1	0
78		th227t	es	cu		0.0372443	30.0	0.0380000	0.0000000	0			0.0000000	75mee1	0
78		th229t	sp	cu		0.1131880	45.5	0.1100000	0.0500000	0			0.0000000	90boc1	0
78	as g	th229t	es	fc		0.2643803	11.3	0.9999000	0.0001000	78	th229t	1.0000000	89rid1	0	
78	as g	th229t	rc	cu	x1	0.0000000	0.0	0.3200000	0.0600000	0			0.0000000	81gin1	0
78	as g	th229t	rc	cu	x1	0.0000000	0.0	0.2030000	0.0300000	0			0.0000000	87had1	0
78	ge g	th229t	rc	cu	x1	0.0000000	0.0	0.0520000	0.0000000	0			0.0000000	68bor1	0
78	ge g	th229t	cm	cu	x3	0.0000000	0.0	0.0520000	15.0000000%	0			0.0000000	77cro1	0
78	ge g	th229t	sp	fi		0.1927525	16.7	72.9000000	9.0000000	78	th229t	100.0000000	90boc1	0	
78	ga g	th229t	sp	fi		0.0716542	23.6	27.1000000	5.6000000	78	th229t	100.0000000	90boc1	0	
78		pa231f	es	cu		0.1969634	30.0	0.2000000	0.0000000	0			0.0000000	75mee1	0
78		am241t	es	cu		0.0071481	30.0	0.0072000	0.0000000	0			0.0000000	72sid1	0
78		am241h	es	cu		0.0774790	30.0	0.0800000	0.0000000	0			0.0000000	75mee1	0
78		a242mt	es	cu		0.0191371	30.0	0.0200000	0.0000000	0			0.0000000	75mee1	0
78		cm245t	es	cu		0.0104475	30.0	0.0100000	0.0000000	0			0.0000000	75mee1	0
78		cf249t	sp	cu		0.0081702	16.8	0.0081500	0.0002300	88	cf249t	0.5200000	91hen1	0	
78		cf251t	es	cu		0.0046759	30.0	0.0050000	0.0000000	0			0.0000000	75mee1	0
78		es254t	es	cu		0.0000242	15.0	0.0000250	15.0000000%	0			0.0000000	75mee1	0
79		th227t	es	cu		0.6435366	15.0	0.6500000	15.0000000%	0			0.0000000	75mee1	0
79		th229t	es	cu		0.4826932	15.0	0.4730000	15.0000000%	0			0.0000000	75mee1	0
79		th229t	cm	cu	x3	0.0000000	0.0	0.6100000	0.0800000	0			0.0000000	83dic1	0
79		th229t	sp	cu		0.3571726	14.3	0.3500000	0.0500000	0			0.0000000	90boc1	0

79	as g	th229t	sp	fi		0.0159638	33.4	3.7000000	1.2000000	79	th229t	100.0000000	90boc1	0
79	ge g	th229t	rc	cu		0.4388120	18.6	0.4300000	0.0800000	0		0.0000000	82dic1	0
79	ge g	th229t	sp	fi		0.3391228	13.6	78.6000000	8.6000000	79	th229t	100.0000000	90boc1	0
79	ge g	th229t	es	fc		0.3921917	17.0	0.9090000	15.0000000%	79	th229t	1.0000000	89rid1	0
79	ga g	th229t	sp	fi		0.0759359	23.6	17.6000000	3.9000000	79	th229t	100.0000000	90boc1	0
79		pa231f	es	cu		0.3969634	15.0	0.4000000	15.0000000%	0		0.0000000	75mee1	0
79		am241t	cm	cu	x3	0.0000000	0.0	0.0073000	0.0000000	0		0.0000000	72sid1	0
79		am241t	es	cu		0.0119388	20.0	0.0120000	20.0000000%	0		0.0000000	89rid1	0
79		am241h	es	cu		0.1065336	30.0	0.1100000	0.0000000	0		0.0000000	75mee1	0
79		a242mt	es	cu		0.0293528	15.0	0.0300000	15.0000000%	0		0.0000000	75mee1	0
79		cm245t	es	cu		0.0204475	15.0	0.0200000	15.0000000%	0		0.0000000	75mee1	0
79		cf249t	sp	cu		0.0184456	17.7	0.0184000	0.0014000	88	cf249t	0.5200000	91hen1	0
79		cf251t	es	cu		0.0058055	15.0	0.0060000	15.0000000%	0		0.0000000	75mee1	0
79		es254t	es	cu		0.0000485	15.0	0.0000500	15.0000000%	0		0.0000000	75mee1	0
80		th227t	es	cu		1.8831405	30.0	1.9100000	0.0000000	0		0.0000000	75mee1	0
80		th229t	es	cu		1.4710116	15.0	1.4500000	15.0000000%	0		0.0000000	75mee1	0
80		th229t	es	cu		1.1666644	20.0	1.1500000	0.2300000	0		0.0000000	83dic1	0
80		th229t	sp	cu		1.6840546	5.0	1.6600000	0.0700000	0		0.0000000	90boc1	0
80	as g	th229t	rc	cu	x1	0.0000000	0.0	2.7800000	0.7800000	0		0.0000000	82dic1	0
80	as g	th229t	sp	fi		0.0514655	51.9	3.1000000	1.6000000	80	th229t	100.0000000	90boc1	0
80	ge g	th229t	sp	fi		1.5738479	7.5	94.8000000	3.7000000	80	th229t	100.0000000	90boc1	0
80	ga g	th229t	sp	fi		0.0348637	48.0	2.1000000	1.0000000	80	th229t	100.0000000	90boc1	0
80		pa231f	es	cu		0.6893718	30.0	0.7000000	0.0000000	0		0.0000000	75mee1	0
80		am241t	es	cu		0.0218414	30.0	0.0220000	0.0000000	0		0.0000000	72sid1	0
80		am241h	es	cu		0.2053206	30.0	0.0021000	0.0000000	0		0.0100000	79pri1	0
80		am241h	es	cu		0.1564347	30.0	0.1600000	0.0000000	0		0.0000000	75mee1	0
80		a242mt	es	cu		0.0478427	30.0	0.0500000	0.0000000	0		0.0000000	75mee1	0
80		cm245t	es	cu		0.0365664	30.0	0.0350000	0.0000000	0		0.0000000	75mee1	0
80		cf249t	sp	cu		0.0301745	16.8	0.0301000	0.0015000	88	cf249t	0.5200000	91hen1	0
80		cf251t	es	cu		0.0084166	30.0	0.0090000	0.0000000	0		0.0000000	75mee1	0
80		es254t	es	cu		0.0000939	30.0	0.0001000	0.0000000	0		0.0000000	75mee1	0
81		th227t	es	cu		3.4849981	30.0	3.5200000	0.0000000	0		0.0000000	75mee1	0
81		th229t	es	cu		1.9579671	15.0	1.9300000	15.0000000%	0		0.0000000	75mee1	0
81		th229t	es	cu		2.1811551	10.2	2.1500000	0.2200000	0		0.0000000	83dic1	0
81		th229t	sp	cu		2.3637634	5.0	2.3300000	0.0800000	0		0.0000000	90boc1	0
81	se g	th229t	sp	fi		0.0078801	42.7	0.3380000	0.1430000	81	th229t	100.0000000	90boc1	40

81	se m	th229t	sp	fi		0.0527361	42.7	2.2620000	0.9570000	81	th229t	100.0000000	90boc1	40
81	as g	th229t	sp	fi		0.5781851	8.9	24.8000000	1.7000000	81	th229t	100.0000000	90boc1	0
81	ge g	th229t	sp	fi		1.6646136	7.5	71.4000000	2.6000000	81	th229t	100.0000000	90boc1	0
81	ga g	th229t	sp	fi		0.0279767	83.5	1.2000000	1.0000000	81	th229t	100.0000000	90boc1	0
81		pa231f	es	cu		0.9892639	30.0	1.0000000	0.0000000	0		0.0000000	75mee1	0
81		am241t	es	cu		0.0436828	30.0	0.0440000	0.0000000	0		0.0000000	72sid1	0
81		am241h	es	cu		0.2737608	30.0	0.0028000	0.0000000	0		0.0100000	79pri1	0
81		am241h	es	cu		0.2248749	30.0	0.2300000	0.0000000	0		0.0000000	75mee1	0
81		a242mt	es	cu		0.0669797	30.0	0.0700000	0.0000000	0		0.0000000	75mee1	0
81		cm245t	es	cu		0.0626852	30.0	0.0600000	0.0000000	0		0.0000000	75mee1	0
81		cf249t	sp	cu		0.0480186	16.8	0.0479000	0.0013000	88	cf249t	0.5200000	91hen1	0
81		cf251t	es	cu		0.0112222	30.0	0.0120000	0.0000000	0		0.0000000	75mee1	0
81		es254t	es	cu		0.0002347	30.0	0.0002500	0.0000000	0		0.0000000	75mee1	0
82		th227t	es	cu		4.8606716	30.0	4.9300000	0.0000000	0		0.0000000	75mee1	0
82	br g	th229t	sp	fi	ul	0.0000000	0.0	1.7500000	0.7000000	82	th229t	100.0000000	90boc1	40
82	br m	th229t	sp	fi	ul	0.0000000	0.0	0.7500000	0.3000000	82	th229t	100.0000000	90boc1	40
82		th229t	es	cu		2.7451262	15.0	2.6900000	15.0000000%	0		0.0000000	75mee1	0
82		th229t	es	cu		4.1636115	10.0	4.0800000	0.4100000	0		0.0000000	83dic1	0
82		th229t	sp	cu		3.3574220	5.0	3.2900000	0.1000000	0		0.0000000	90boc1	0
82	se g	th229t	sp	fi		0.8384558	10.7	23.8000000	1.7000000	82	th229t	100.0000000	90boc1	0
82	as g	th229t	sp	fi		0.7045847	9.4	40.0000000	2.0000000	82	th229t	100.0000000	90boc1	37
82	as m	th229t	sp	fi		0.7045847	9.4	40.0000000	2.0000000	82	th229t	100.0000000	90boc1	37
82	ge g	th229t	sp	fi		1.1837022	9.4	33.6000000	1.6000000	82	th229t	100.0000000	90boc1	0
82		pa231f	es	cu		1.6817486	30.0	1.7000000	0.0000000	0		0.0000000	75mee1	0
82		am241t	es	cu		0.0635387	30.0	0.0640000	0.0000000	0		0.0000000	72sid1	0
82		am241h	es	cu		0.3715325	30.0	0.0038000	0.0000000	0		0.0100000	79pri1	0
82		am241h	es	cu		0.3226466	30.0	0.3300000	0.0000000	0		0.0000000	75mee1	0
82		a242mt	es	cu		0.1148224	30.0	0.1200000	0.0000000	0		0.0000000	75mee1	0
82		cm245t	es	cu		0.1044754	30.0	0.1000000	0.0000000	0		0.0000000	75mee1	0
82	br g	cf249t	rc	cu		0.0014980	8.0	0.0015000	0.0001200	0		0.0000000	72kur1	0
82		cf249t	sp	cu		0.0738825	16.8	0.0737000	0.0016000	88	cf249t	0.5200000	91hen1	0
82		cf251t	es	cu		0.0154814	15.0	0.0160000	15.0000000%	0		0.0000000	75mee1	0
82		es254t	es	cu		0.0004224	30.0	0.0004500	0.0000000	0		0.0000000	75mee1	0
83		th227t	es	cu		5.6532213	30.0	5.7100000	0.0000000	0		0.0000000	75mee1	0
83	br g	th227t	rc	cu	x1	0.0000000	0.0	1.1000000	0.3500000	0		0.0000000	69fly2	0
83	br g	th227t	cm	cu		0.0000000	0.0	1.1000000	35.0000000%	0		0.0000000	77cro1	0

83 th229t es cu 5.6808639 15.0 5.6400000 15.0000000% 0 0.0000000 75mee1 0
83 kr g th229t ms re 5.1363886 2.1 0.6140000 0.0030000 86 kr g th229t 1.0000000 66har1 0
83 th229t rc cu 4.5426766 5.0 4.5100000 0.0500000 0 0.0000000 82sin1 0
83 th229t es cu 5.8722405 14.6 5.8300000 0.8500000 0 0.0000000 83dic1 0
83 th229t sp cu 5.4995597 5.0 5.4600000 0.1700000 0 0.0000000 90boc1 0
83 br g th229t rc cu x1 0.0000000 0.0 8.0000000 15.0000000% 0 0.0000000 66rav1 0
83 br g th229t rc cu x1 0.0000000 0.0 6.4000000 0.2500000 0 0.0000000 68bor1 0
83 br g th229t cm cu 0.0000000 0.0 6.3200000 8.5000000% 0 0.0000000 77cro1 0
83 br g th229t sp fi ul 0.0000000 0.0 1.8000000 1.1000000 83 th229t 100.0000000 90boc1 0
83 se g th229t rc cu 2.5584032 13.0 2.5400000 0.3300000 0 0.0000000 81gin1 0
83 se g th229t rc cu 3.3138373 5.0 3.2900000 0.1500000 0 0.0000000 82dic1 0
83 se g th229t rc cu 3.4447792 5.0 3.4200000 0.0900000 0 0.0000000 83dic1 0
83 se g th229t rc cu 3.1728229 5.0 3.1500000 0.0800000 0 0.0000000 87had1 0
83 se g th229t sp fi 2.6554357 5.7 50.7050000 1.7010000 83 th229t 100.0000000 90boc1 40
83 se m th229t rc cu 2.0044183 7.0 1.9900000 0.1400000 0 0.0000000 87had1 0
83 se m th229t sp fi 0.6228923 5.7 11.8940000 0.3990000 83 th229t 100.0000000 90boc1 40
83 as g th229t sp fi 1.7072715 5.7 32.6000000 1.6000000 83 th229t 100.0000000 90boc1 0
83 ge g th229t sp fi 0.1571109 33.5 3.0000000 1.0000000 83 th229t 100.0000000 90boc1 0
83 br g pa231f rc cu 2.1778875 7.4 2.2700000 0.1400000 140 ba g pa231f 6.9600000 68nam1 0
1
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nuclide material tech. type value err. value nuclide material value no. treatment

83 br g pa231f rc cu 2.5342508 10.1 2.5800000 0.2400000 99 mo g pa231f 2.5700000 69bir2 0
83 br g pa231f cm cu 0.0000000 0.0 2.2700000 15.0000000% 0 0.0000000 77cro1 0
83 am241t es cu 0.1696936 30.0 0.1700000 0.0000000 0 0.0000000 72sid1 0
83 am241t ms re 0.1802180 10.1 0.6500000 0.0400000 84 am241t 1.0000000 73tra1 0
83 am241t es cu 0.1726882 15.0 0.1730000 15.0000000% 0 0.0000000 75mee1 0
83 kr g am241t cm cu 0.0000000 0.0 0.1800000 10.0000000% 0 0.0000000 77cro1 0
83 am241h es cu 0.4986357 30.0 0.0051000 0.0000000 0 0.0100000 79pri1 0
83 am241h es cu 0.4301955 30.0 0.4400000 0.0000000 0 0.0000000 75mee1 0
83 a242mt ms re 0.2512824 12.2 0.6500000 0.0600000 84 a242mt 1.0000000 73tra1 0
83 kr g a242mt cm cu x3 0.0000000 0.0 0.2450000 6.7000000% 0 0.0000000 77cro1 0
83 br g a242mt rc cu x5 0.0000000 0.0 0.5360000 0.0120000 140 ba g u235t 0.0000000 71wol1 7
83 br g a242mt rc cu 0.2468087 7.3 0.2495000 7.3000000% 0 0.0000000 71wol1 0
83 cm245t es cu 0.1625316 15.0 0.1600000 15.0000000% 0 0.0000000 75mee1 0

83 br g cm245t rc cu 0.2336392 21.7 0.2300000 0.0500000 0 0.0000000 67gun1 0
83 br g cm245t cm cu 0.0000000 0.0 0.2360000 22.0000000% 0 0.0000000 77cro1 0
83 cf249t sp cu 0.1224075 16.8 0.1220000 0.0030000 88 cf249t 0.5200000 91hen1 0
83 cf249t cm cu x3 0.0000000 0.0 0.1300000 0.0100000 0 0.0000000 81dic3 0
83 br g cf249t rc cu 0.1299388 5.0 0.1300000 0.0030000 0 0.0000000 72kur1 0
83 br g cf249t cm cu x3 0.0000000 0.0 0.1300000 5.0000000% 0 0.0000000 77cro1 0
83 cf251t es cu 0.0219458 30.0 0.0230000 0.0000000 0 0.0000000 75mee1 0
83 es254t es cu 0.0008724 15.0 0.0009000 15.0000000% 0 0.0000000 75mee1 0
84 th227t es cu 6.1383489 30.0 6.2000000 0.0000000 0 0.0000000 75mee1 0
84 th229t es cu 9.6290807 15.0 9.5800000 15.0000000% 0 0.0000000 75mee1 0
84 kr g th229t ms re 9.0991336 2.5 1.0900000 0.0160000 86 kr g th229t 1.0000000 66har1 0
84 th229t es cu 9.7697980 5.8 9.7200000 0.5600000 0 0.0000000 83dic1 0
84 th229t sp cu 9.4582098 5.0 9.4100000 0.2300000 0 0.0000000 90boc1 0
84 br g th229t rc cu x1 0.0000000 0.0 10.9000000 0.4000000 0 0.0000000 68bor1 0
84 br g th229t rc cu x1 0.0000000 0.0 10.0100000 0.7200000 0 0.0000000 81gin1 0
84 br g th229t cm cu x3 0.0000000 0.0 10.9000000 3.5000000% 0 0.0000000 77cro1 0
84 br g th229t rc cu x1 0.0000000 0.0 9.7200000 0.5600000 0 0.0000000 83dic1 0
84 br g th229t rc cu 10.1718473 5.0 10.1200000 0.3200000 0 0.0000000 87had1 0
84 br g th229t sp fi 0.1218131 30.6 1.2960000 0.3960000 84 th229t 100.0000000 90boc1 40
84 br m th229t rc cu 0.3196292 6.3 0.3180000 0.0200000 0 0.0000000 87had1 0
84 br m th229t sp fi 0.2165567 30.6 2.3040000 0.7040000 84 th229t 100.0000000 90boc1 40
84 se g th229t rc cu 8.3224205 5.0 8.2800000 0.3500000 0 0.0000000 82dic1 0
84 se g th229t rc cu 8.4329840 5.0 8.3900000 0.0300000 0 0.0000000 87had1 0
84 se g th229t sp fi 8.2994588 5.4 88.3000000 1.9000000 84 th229t 100.0000000 90boc1 0
84 as g th229t sp fi 0.7237354 13.1 7.7000000 1.0000000 84 th229t 100.0000000 90boc1 0
84 ge g th229t sp fi ul 0.0000000 0.0 0.5000000 1.0000000 84 th229t 100.0000000 90boc1 0
84 pa231f es cu 3.9748548 30.0 3.9900000 0.0000000 0 0.0000000 75mee1 0
84 br g pa231f rc cu 3.8406670 6.4 3.9100000 0.1400000 99 mo g pa231f 2.5700000 69bir2 0
84 am241t es cu 0.2994594 30.0 0.3000000 0.0000000 0 0.0000000 72sid1 0
84 am241t ms re rp 0.2773724 16.1 1.0000000 0.0000000 no. relative values = 3 73tra1
84 kr g am241t es cu cm 0.2755026 10.0 0.2760000 10.0000000% 0 0.0000000 77cro1 0
84 am241h es cu 0.6159617 30.0 0.0063000 0.0000000 0 0.0100000 79pri1 0
84 am241h es cu 0.5670759 30.0 0.5800000 0.0000000 0 0.0000000 75mee1 0
84 a242mt ms re rp 0.3821853 24.9 1.0000000 0.0000000 no. relative values = 3 73tra1
84 a242mt es cu 0.3462247 30.0 0.3500000 0.0000000 0 0.0000000 75mee1 0
84 br g a242mt rc cu x5 0.0000000 0.0 0.4450000 0.0100000 140 ba g u235t 0.0000000 71wol1 7

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84 br g   a242mt   rc    cu        0.3660089  7.3   0.3700000  7.3000000%    0                    0.0000000   71wol1      0
84        cm245t   cm    cu        0.0000000  0.0   0.2900000  0.0900000     0                    0.0000000   80dic2      0
84        cm245t   es    cu        0.2372785 30.0   0.2300000  0.0000000     0                    0.0000000   74mee1      0
84 br g   cm245t   rc    cu        0.2991772 31.0   0.2900000  0.0900000     0                    0.0000000   80dic2      0
84        cf249t   sp    cu        0.1894680 16.8   0.1890000  0.0040000    88          cf249t      0.5200000   91hen1      0
84        cf251t   es    cu        0.0280554 30.0   0.0300000  0.0000000     0                    0.0000000   75mee1      0
84        es254t   es    cu        0.0016895 30.0   0.0018000  0.0000000     0                    0.0000000   75mee1      0
85        th227t   es    cu        6.7223983 30.0   6.7700000  0.0000000     0                    0.0000000   75mee1      0
85        th229t   es    cu        9.4883635 15.0   9.4400000 15.0000000%    0                    0.0000000   75mee1      0
85        th229t   cm    cu    x3  0.0000000  0.0  10.8000000  5.0000000%    0                    0.0000000   77cro1      0
85        th229t   rc    cu        9.8803615 15.0   9.8300000  1.4700000     0                    0.0000000   82sin1      0
85        th229t   sp    cu        9.7999517  5.0   9.7500000  0.2800000     0                    0.0000000   90boc1      0
85 kr m   th229t   rc    cu        9.2672363  5.0   9.2200000  0.3000000     0                    0.0000000   81gin1      0
85 kr m   th229t   ms    re        9.0240031  2.2   1.0810000  0.0090000    86 kr g      th229t      1.0000000   66har1      0
85 kr m   th229t   rc    cu        9.2471339  7.3   9.2000000  0.6700000     0                    0.0000000   83dic1      0
85 kr m   th229t   rc    cu        8.8350333  5.0   8.7900000  0.3000000     0                    0.0000000   87had1      0
85 br g   th229t   sp    fi        1.6846302 10.6  18.2000000  1.9000000    85          th229t    100.0000000   90boc1      0
85 se g   th229t   rc    cu        7.5384244 16.0   7.5000000  1.2000000     0                    0.0000000   82dic1      0
85 se g   th229t   sp    fi        3.6515748  5.4  78.9000000  1.7000000    85          th229t    100.0000000   90boc1     37
85 se m   th229t   sp    fi        3.6515748  5.4  78.9000000  1.7000000    85          th229t    100.0000000   90boc1     37
85 as g   th229t   sp    fi        0.2776863 43.4   3.0000000  1.3000000    85          th229t    100.0000000   90boc1      0
85        pa231f   es    cu        4.4679756 30.0   4.4800000  0.0000000     0                    0.0000000   75mee1      0
85 kr m   pa231f   rc    cu        4.4111286  5.0   4.4230000  0.1300000     0                    0.0000000   70kem1      0
85 kr m   pa231f   cm    cu        0.0000000  0.0   4.4700000 10.0000000%    0                    0.0000000   77cro1      0
85        am241t   es    cu        0.3693332 30.0   0.3700000  0.0000000     0                    0.0000000   72sid1      0
85        am241t   ms    re        0.3133022 12.6   1.1300000  0.1100000    84          am241t      1.0000000   73tra1      0
85 kr m   am241t   es    cu    cm  0.3114377 10.0   0.3120000 10.0000000%    0                    0.0000000   77cro1      0
85        am241h   es    cu        0.7821736 30.0   0.0080000  0.0000000     0                    0.0100000   79pri1      0
85        a242mt   ms    re        0.4233264 19.9   1.1000000  0.2000000    84          a242mt      1.0000000   73tra1      0
85        a242mt   ms    re    rp  0.4989743 18.7   1.0000000  0.0000000  no. relative values =    1            73tra1
85 kr m   a242mt   es    cu    cm  0.4195015 20.0   0.4260000 20.0000000%    0                    0.0000000   77cro1      0
85        cm245t   cm    cu        0.0000000  0.0   0.3100000  0.0400000     0                    0.0000000   80dic2      0
85        cm245t   es    cu        0.2922943 30.0   0.2900000  0.0000000     0                    0.0000000   75mee1      0
85 kr m   cm245t   rc    cu        0.2922943  6.9   0.2900000  0.0200000     0                    0.0000000   72har2      0
85 kr m   cm245t   cm    cu        0.0000000  0.0   0.2950000  7.0000000%    0                    0.0000000   77cro1      0
85        cf249t   sp    cu        0.2476116 16.8   0.2470000  0.0060000    88          cf249t      0.5200000   91hen1      0
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85 cf249t sp cu 0.2606438 30.6 0.2260000 0.0590000 88 cf249t 0.4520000 85ake1 0
85 kr m cf249t rc cu x1 0.0000000 0.0 0.1500000 0.0300000 0 0.0000000 81gin4 0
85 cf251t es cu 0.0429375 30.0 0.0450000 0.0000000 0 0.0000000 75mee1 0
85 es254t es cu 0.0033481 30.0 0.0035000 0.0000000 0 0.0000000 75mee1 0
86 th227t es cu 7.0004295 30.0 7.0500000 0.0000000 0 0.0000000 75mee1 0
86 th229t es cu 8.7546235 15.0 8.7100000 15.0000000% 0 0.0000000 75mee1 0
86 kr g th229t ms re rp 8.4078145 1.9 1.0000000 0.0000000 no. relative values = 5 66har1
86 th229t es cu 7.4580145 10.1 7.4200000 0.7500000 0 0.0000000 83dic1 0
86 th229t sp cu 7.7394490 5.0 7.7000000 0.2100000 0 0.0000000 90boc1 0
86 kr g th229t sp fi 0.5760002 16.1 6.9000000 1.1000000 86 th229t 100.0000000 90boc1 0
86 br g th229t rc cu 5.3472557 10.2 5.3200000 0.5400000 0 0.0000000 82dic1 0
86 br g th229t rc cu 7.0861189 6.5 7.0500000 0.4600000 0 0.0000000 87had1 0
86 br g th229t sp fi 0.9316177 5.5 11.1600000 0.5760000 86 th229t 100.0000000 90boc1 40
86 br m th229t sp fi 1.6562093 5.5 19.8400000 1.0240000 86 th229t 100.0000000 90boc1 40
86 se g th229t sp fi 5.1339148 5.4 61.5000000 1.7000000 86 th229t 100.0000000 90boc1 0
86 as g th229t sp fi ul 0.0000000 0.0 0.6000000 1.0000000 86 th229t 100.0000000 90boc1 0
86 pa231f es cu 5.0612830 30.0 5.1000000 0.0000000 0 0.0000000 75mee1 0
86 am241t es cu 0.5380537 30.0 0.5400000 0.0000000 0 0.0000000 72sid1 0
86 am241t ms re 0.4206722 14.3 1.5200000 0.1800000 84 am241t 1.0000000 73tra1 0
86 rb g am241h rc fi le 0.0019438 27.1 0.0021000 0.0000000 86 am241h 1.0000000 79pri1 0
86 am241h es cu 0.9386084 30.0 0.0096000 0.0000000 0 0.0100000 79pri1 0
86 a242mt ms re 0.5683209 21.5 1.5000000 0.3000000 84 a242mt 1.0000000 73tra1 0
86 kr g a242mt cm cu 0.0000000 0.0 0.5670000 21.0000000% 0 0.0000000 77cro1 0
86 rb g cm245t rc in 0.0000648 24.2 0.0000620 0.0000150 0 0.0000000 67gun1 0
86 cm245t es cu 0.4701391 30.0 0.4500000 0.0000000 0 0.0000000 67gun1 0
86 cm245t cm cu 0.0000000 0.0 0.3700000 0.1000000 0 0.0000000 80dic2 0
86 cf249t sp cu 0.3438494 16.9 0.3430000 0.0190000 88 cf249t 0.5200000 91hen1 0
86 cf249t sp cu 0.3021623 29.2 0.2620000 0.0640000 88 cf249t 0.4520000 85ake1 0
86 cf251t es cu 0.0561109 30.0 0.0600000 0.0000000 0 0.0000000 75mee1 0
86 es254t es cu 0.0070396 30.0 0.0075000 0.0000000 0 0.0000000 75mee1 0
87 sr m th227t es cu 0.0000167 30.0 0.0000169 0.0000000 0 0.0000000 75mee1 0
87 rb g th227t es cu 6.9995988 30.0 7.0699000 0.0000000 0 0.0000000 75mee1 0
87 th229t cm cu 0.0000000 0.0 8.7500000 5.0000000% 0 0.0000000 77cro1 0
87 th229t sp cu 7.7658618 5.0 7.7100000 0.2300000 0 0.0000000 90boc1 0
87 sr m th229t es cu 0.0000188 30.0 0.0000187 0.0000000 0 0.0000000 75mee1 0

0measured nuclide	fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
87 rb g	th229t	es	cu		7.5845576	15.0	7.5300000	15.0000000%	0		0.0000000	75mee1	0
87 kr g	th229t	rc	cu		7.2622391	5.0	7.2100000	0.3300000	0		0.0000000	81gin1	0
87 kr g	th229t	ms	re		7.3198906	2.1	0.8750000	0.0060000	86 kr g	th229t	1.0000000	66har1	0
87 kr g	th229t	rc	cu		6.5068051	5.4	6.4600000	0.3500000	0		0.0000000	82dic1	0
87 kr g	th229t	rc	cu		6.4262255	5.0	6.3800000	0.2700000	0		0.0000000	83dic1	0
87 kr g	th229t	rc	cu		6.3154285	5.0	6.2700000	0.3000000	0		0.0000000	87had1	0
87 kr g	th229t	sp	fi		2.3763466	6.5	32.6000000	1.9000000	87	th229t	100.0000000	90boc1	0
87 br g	th229t	sp	fi		3.4989152	5.7	48.0000000	1.9000000	87	th229t	100.0000000	90boc1	0
87 se g	th229t	sp	fi		1.4141449	6.3	19.4000000	1.1000000	87	th229t	100.0000000	90boc1	0
87 sr m	pa231f	es	cu		0.0000082	30.0	0.0000083	0.0000000	0		0.0000000	75mee1	0
87 rb g	pa231f	es	cu		5.8551105	30.0	5.8999000	0.0000000	0		0.0000000	75mee1	0
87 sr m	am241t	es	cu		0.0000013	30.0	0.0000013	0.0000000	0		0.0000000	75mee1	0
87 rb g	am241t	es	cu		0.6964320	30.0	0.7000000	0.0000000	0		0.0000000	72sid1	0
87 rb g	am241t	es	cu		0.6963325	30.0	0.6999000	0.0000000	0		0.0000000	75mee1	0
87 sr m	am241h	es	cu		0.0000063	30.0	0.0000063	0.0000000	0		0.0000000	75mee1	0
87 rb g	am241h	es	cu		1.1336494	30.0	0.0114000	0.0000000	0		0.0100000	79pri1	0
87 kr g	am241h	rc	cu		1.0441507	5.0	0.0105000	4.1000000%	0		0.0100000	79pri1	0
87 sr m	a242mt	es	cu		0.0000004	30.0	0.0000004	0.0000000	0		0.0000000	75mee1	0
87 rb g	a242mt	es	cu		0.6697017	30.0	0.6999000	0.0000000	0		0.0000000	75mee1	0
87	cm245t	cm	cu		0.0000000	0.0	0.5000000	0.0400000	0		0.0000000	80dic2	0
87 sr m	cm245t	es	cu		0.0000005	30.0	0.0000005	0.0000000	0		0.0000000	75mee1	0
87 rb g	cm245t	es	cu		0.5359298	30.0	0.5300000	0.0000000	0		0.0000000	75mee1	0
87 kr g	cm245t	rc	cu		0.5055942	8.0	0.5000000	0.0400000	0		0.0000000	80dic2	0
87	cf249t	sp	cu		0.4209513	26.0	0.3650000	0.0750000	88	cf249t	0.4520000	85ake1	0
87 sr m	cf249t	es	cu		0.0000399	30.0	0.0000400	0.0000000	0		0.0000000	89rid1	0
87 rb g	cf249t	sp	cu		0.4220425	16.8	0.4210000	0.0080000	88	cf249t	0.5200000	91hen1	0
87 sr m	cf251t	es	cu		0.0000001	30.0	0.0000001	0.0000000	0		0.0000000	75mee1	0
87 rb g	cf251t	es	cu		0.0747210	30.0	0.0799000	0.0000000	0		0.0000000	75mee1	0
87 sr m	es254t	es	cu		0.0000000	30.0	0.0000000	0.0000000	0		0.0000000	75mee1	0
87 rb g	es254t	es	cu		0.0140699	30.0	0.0149900	0.0000000	0		0.0000000	75mee1	0
88	th227t	es	cu		7.0591012	30.0	7.1300000	0.0000000	0		0.0000000	75mee1	0
88	th229t	es	cu		8.1687599	15.0	8.1100000	15.0000000%	0		0.0000000	75mee1	0
88	th229t	cm	cu		0.0000000	0.0	8.6000000	11.4000000%	0		0.0000000	77cro1	0

88	sr g	th229t	ms	re	x1	0.0000000	0.0	0.3600000	0.0700000	90	sr g	th229t	1.0000000	66har1	0
88		th229t	rc	cu		9.2968748	6.5	9.2300000	0.6000000	0			0.0000000	82sin1	0
88		th229t	es	cu		7.7457169	6.1	7.6900000	0.4700000	0			0.0000000	83dic1	0
88		th229t	sp	cu		8.7932521	5.0	8.7300000	0.3200000	0			0.0000000	90boc1	0
88	rb g	th229t	rc	cu		7.7154995	5.7	7.6600000	0.4400000	0			0.0000000	68bor1	0
88	rb g	th229t	rc	cu		7.7457169	6.1	7.6900000	0.4700000	0			0.0000000	83dic1	0
88	rb g	th229t	sp	fi		0.3629494	50.1	4.4000000	2.2000000	88		th229t	100.0000000	90boc1	0
88	kr g	th229t	rc	cu		7.5644127	5.0	7.5100000	0.3000000	0			0.0000000	81gin1	0
88	kr g	th229t	ms	re		8.0644281	2.1	0.9640000	0.0040000	86	kr g	th229t	1.0000000	66har1	0
88	kr g	th229t	rc	cu		7.5644127	5.0	7.5100000	0.3000000	0			0.0000000	81gin1	0
88	kr g	th229t	rc	cu		7.2924565	8.8	7.2400000	0.6400000	0			0.0000000	83dic1	0
88	kr g	th229t	rc	cu		6.6276745	5.0	6.5800000	0.2500000	0			0.0000000	87had1	0
88	kr g	th229t	sp	fi		5.2215222	5.7	63.3000000	2.1000000	88		th229t	100.0000000	90boc1	0
88	br g	th229t	rc	cu		3.1526780	15.7	3.1300000	0.4900000	0			0.0000000	82dic1	0
88	br g	th229t	sp	fi		2.4086643	6.8	29.2000000	1.8000000	88		th229t	100.0000000	90boc1	0
88	se g	th229t	sp	fi		0.2639632	31.4	3.2000000	1.0000000	88		th229t	100.0000000	90boc1	0
88		pa231f	es	cu		6.5498956	30.0	6.6000000	0.0000000	0			0.0000000	75mee1	0
88		am241t	es	cu		0.8867922	30.0	0.8900000	0.0000000	0			0.0000000	72sid1	0
88		am241t	rc	cu		0.7399074	14.7	0.7600000	0.1100000	140	ba g	am241t	6.0600000	72wei1	0
88		am241t	cm	cu		0.0000000	0.0	0.7190000	12.0000000%	0			0.0000000	77cro1	0
88		am241h	es	cu		1.3349590	30.0	0.0135000	0.0000000	0			0.0100000	79pri1	0
88	kr g	am241h	rc	cu		1.0580786	5.0	0.0107000	3.0000000%	0			0.0100000	79pri1	0
88		a242mt	es	cu		0.8725417	30.0	0.9000000	0.0000000	0			0.0000000	75mee1	0
88	kr g	a242mt	rc	cu		0.9210162	30.5	0.9500000	0.2900000	0			0.0000000	85gud1	0
88		cm245t	cm	cu		0.0000000	0.0	0.5800000	0.0600000	0			0.0000000	80dic2	0
88	kr g	cm245t	rc	cu		0.6148259	6.6	0.6100000	0.0400000	0			0.0000000	72har2	0
88	kr g	cm245t	rc	cu		0.5845886	10.3	0.5800000	0.0600000	0			0.0000000	80dic2	0
88	kr g	cm245t	cm	cu		0.0000000	0.0	0.6080000	7.0000000%	0			0.0000000	77cro1	0
88		cf249t	sp	cu		0.5193076	23.1	0.5200000	0.1200000	0			0.0000000	89dje1	0
88		cf249t	cm	cu	x3	0.0000000	0.0	0.3700000	0.0200000	0			0.0000000	81dic3	0
88		cf249t	sp	cu		0.5212877	24.4	0.4520000	0.0830000	88		cf249t	0.4520000	85ake1	0
88	rb g	cf249t	sp	fi	ul	0.0000000	0.0	2.5000000	0.3000000	88		cf249t	100.0000000	89dje1	0
88	kr g	cf249t	rc	cu	x1	0.0000000	0.0	0.3700000	0.0200000	0			0.0000000	81gin4	0
88	kr g	cf249t	sp	fi		0.2960914	16.8	56.8000000	2.8000000	88		cf249t	100.0000000	89dje1	0
88	br g	cf249t	sp	fi		0.1944403	16.8	37.3000000	1.4000000	88		cf249t	100.0000000	89dje1	0
88	se g	cf249t	sp	fi		0.0182451	18.2	3.5000000	0.3000000	88		cf249t	100.0000000	89dje1	0

88		cf251t	es	cu		0.1028699	30.0	0.1100000	0.0000000	0			0.0000000	75mee1	0
88		es254t	es	cu		0.0281585	30.0	0.0300000	0.0000000	0			0.0000000	75mee1	0
89		th227t	es	cu		7.3018030	5.0	7.3200000	5.0000000%	0			0.0000000	75mee1	0
89	sr g	th227t	rc	cu		7.9801126	5.4	8.0000000	0.4300000	0			0.0000000	69fly2	0
89	sr g	th227t	cm	cu	x3	0.0000000	0.0	8.0000000	6.0000000%	0			0.0000000	77cro1	0
89		th229t	es	cu		8.9254944	15.0	8.8800000	15.0000000%	0			0.0000000	75mee1	0
89		th229t	cm	cu		0.0000000	0.0	8.8900000	14.9000000%	0			0.0000000	77cro1	0
89		th229t	rc	cu		8.6440599	24.4	8.6000000	2.1000000	0			0.0000000	82sin1	0
89		th229t	sp	cu		9.1466216	5.0	9.1000000	0.2800000	0			0.0000000	90boc1	0
89	sr g	th229t	rc	cu		7.2368874	15.0	7.2000000	15.0000000%	0			0.0000000	66rav1	0
89	sr g	th229t	rc	cu		9.3476462	5.0	9.3000000	0.2300000	0			0.0000000	68bor1	0
89	rb g	th229t	rc	cu		7.6992441	7.2	7.6600000	0.5500000	0			0.0000000	82dic1	0
89	rb g	th229t	rc	cu		9.0360580	5.0	8.9900000	0.1800000	0			0.0000000	87had1	0
89	rb g	th229t	sp	fi		0.5369494	20.4	5.9000000	1.2000000	89		th229t	100.0000000	90boc1	0
89	kr g	th229t	rc	cu		8.5133939	7.7	8.4700000	0.6500000	0			0.0000000	82dic1	0
89	kr g	th229t	rc	cu		8.9556481	5.0	8.9100000	0.2000000	0			0.0000000	87had1	0
89	kr g	th229t	sp	fi		7.2442659	5.4	79.6000000	2.4000000	89		th229t	100.0000000	90boc1	0
89	br g	th229t	sp	fi		1.2195121	9.9	13.4000000	1.3000000	89		th229t	100.0000000	90boc1	0
89	se g	th229t	sp	fi		0.1001092	90.9	1.1000000	1.0000000	89		th229t	100.0000000	90boc1	0
89	sr g	pa231f	rc	re		7.0898666	20.4	6.8300000	20.0000000%	140	ba g	pa231f	6.4400000	65iye1	0
89	sr g	pa231f	rc	cu		6.9731757	6.4	7.2600000	0.1440000	140	ba g	pa231f	6.9600000	68nam1	0
89	sr g	pa231f	cm	cu		0.0000000	0.0	7.0000000	8.3000000%	0			0.0000000	77cro1	0
89		am241t	es	cu		0.9088404	30.0	0.9100000	0.0000000	0			0.0000000	72sid1	0
89		am241t	rc	cu		0.9758390	20.2	1.0000000	0.2000000	140	ba g	am241t	6.0600000	72wei1	0
89	sr g	am241t	rc	cu		1.0686365	6.5	1.0700000	0.0700000	0			0.0000000	73sko2	0
89	sr g	am241t	rc	cu	nr	0.7983339	10.4	0.8100000	0.0500000	140	ba g	am241t	6.0000000	57cun2	0
89	sr g	am241t	cm	cu		0.0000000	0.0	1.0800000	8.2000000%	0			0.0000000	77cro1	0
89	sr g	am241t	rc	cu	x4	0.0000000	0.0	1.2000000	0.1000000	139	ba g	am241t	6.2200000	65ric1	0
89		am241h	es	cu		1.5350158	30.0	0.0157000	0.0000000	0			0.0100000	79pri1	0
89	sr g	a242mt	rc	cu	x5	0.0000000	0.0	0.2910000	0.0040000	140	ba g	u235t	0.0000000	71wol1	7
89	sr g	a242mt	rc	cu		1.1969482	7.3	1.2100000	7.3000000%	0			0.0000000	71wol1	0
89	sr g	a242mt	cm	cu		0.0000000	0.0	1.1800000	7.0000000%	0			0.0000000	77cro1	0
89	kr g	a242mt	rc	fc		1.0259824	9.4	0.8700000	0.0100000	89		a242mt	1.0000000	71wol1	0
89		cm245t	cm	cu		0.0000000	0.0	0.8200000	0.0900000	0			0.0000000	80dic2	0
89	sr g	cm245t	rc	cu		0.8567247	11.8	0.8500000	0.1000000	0			0.0000000	67gun1	0
89	sr g	cm245t	cm	cu		0.0000000	0.0	0.8330000	12.0000000%	0			0.0000000	77cro1	0

89 sr g cm245t rc cu 0.8620920 5.7 0.8390000 0.0200000 99 mo g cm245t 4.0900000 79ram2 0
89 rb g cm245t rc cu 0.8264873 11.0 0.8200000 0.0900000 0 0.0000000 80dic2 0
89 cf249t cm cu x3 0.0000000 0.0 0.5000000 0.0800000 0 0.0000000 81dic3 0
89 cf249t sp cu 0.6373211 23.1 0.5530000 0.0920000 88 cf249t 0.4520000 85ake1 0
89 sr g cf249t rc cu x1 0.0000000 0.0 0.3200000 0.0130000 0 0.0000000 72kur1 0
89 sr g cf249t cm cu x3 0.0000000 0.0 0.3420000 57.0000000% 0 0.0000000 77cro1 0
89 rb g cf249t rc cu x1 0.0000000 0.0 0.7200000 0.0500000 0 0.0000000 81gud1 0
89 rb g cf249t rc cu 0.4997646 16.0 0.5000000 0.0800000 0 0.0000000 81dic3 0
89 rb g cf249t sp fi 0.0665311 7.5 14.7000000 0.4000000 89 cf249t 100.0000000 89dje1 0
89 kr g cf249t rc fc su 0.0000000 0.0 77.6000000 1.5000000 89 sr g cf249t 100.0000000 77mei1 0
89 kr g cf249t rc fc 0.3512115 7.5 77.6000000 1.0000000 89 cf249t 100.0000000 80mei1 0
89 kr g cf249t sp fi 0.3068575 7.5 67.8000000 2.2000000 89 cf249t 100.0000000 89dje1 0
89 br g cf249t sp fi 0.0787510 7.5 17.4000000 0.7000000 89 cf249t 100.0000000 89dje1 0
89 cf251t es cu 0.1496290 30.0 0.1600000 0.0000000 0 0.0000000 75mee1 0
89 sr g es254t rc cu 0.0518498 15.1 0.0530000 0.0080000 0 0.0000000 76fly1 0
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0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

89 sr g es254t rc cu 0.0518498 18.9 0.0530000 0.0100000 0 0.0000000 73uni1 0
90 th227t es cu 7.4038788 5.0 7.4300000 5.0000000% 0 0.0000000 75mee1 0
90 sr g th227t rc cu 8.6893437 10.0 8.7200000 0.8700000 0 0.0000000 69fly2 0
90 sr g th227t cm cu x3 0.0000000 0.0 8.7200000 10.0000000% 0 0.0000000 77cro1 0
90 th229t es cu 8.1627917 15.0 8.0800000 15.0000000% 0 0.0000000 75mee1 0
90 th229t sp cu 8.3648410 5.0 8.2800000 0.3800000 0 0.0000000 90boc1 0
90 sr g th229t rc cu x4 0.0000000 0.0 6.7000000 15.0000000% 0 0.0000000 66rav1 0
90 sr g th229t rc cu 8.5264805 5.0 8.4400000 0.3600000 0 0.0000000 68bor1 0
90 sr g th229t cm cu 0.0000000 0.0 8.1400000 12.7000000% 0 0.0000000 77cro1 0
90 sr g th229t sp fi ul 0.0000000 0.0 0.6000000 1.0000000 90 th229t 100.0000000 90boc1 0
90 rb g th229t sp fi 0.3375063 13.0 3.9900000 0.4940000 90 th229t 100.0000000 90boc1 40
90 rb m th229t rc cu 2.0912103 6.8 2.0700000 0.1400000 0 0.0000000 82dic1 0
90 rb m th229t sp fi 1.4388428 13.0 17.0100000 2.1060000 90 th229t 100.0000000 90boc1 40
90 kr g th229t rc cu 6.0210692 10.4 5.9600000 0.6200000 0 0.0000000 82dic1 0
90 kr g th229t rc cu 6.0210692 10.4 5.9600000 0.6200000 0 0.0000000 82dic1 0
90 kr g th229t sp fi 6.3187277 6.4 74.7000000 1.8000000 90 th229t 100.0000000 90boc1 0
90 br g th229t sp fi ul 0.0000000 0.0 3.7000000 3.2000000 90 th229t 100.0000000 90boc1 0

90		pa231f	es	cu		6.8476181	30.0	6.9000000	0.0000000	0				0.0000000	75mee1	0			
90		am241t	es	cu		1.3475671	30.0	1.3500000	0.0000000	0				0.0000000	72sid1	0			
90	sr g	am241t	rc	cu		1.3675311	7.3	1.3700000	0.1000000	0				0.0000000	73sko2	0			
90	sr g	am241t	cm	cu	x3	0.0000000	0.0	1.3700000	7.0000000%	0				0.0000000	77cro1	0			
90		am241h	es	cu		1.7403364	30.0	0.0178000	0.0000000	0				0.0100000	79pri1	0			
90	sr g	a242mt	rc	cu	x5	0.0000000	0.0	0.2830000	0.0050000	140	ba g	u235t		0.0000000	71wol1	7			
90	sr g	a242mt	rc	cu		1.3848987	7.3	1.4000000	7.3000000%	0				0.0000000	71wol1	0			
90	sr g	a242mt	cm	cu		0.0000000	0.0	1.4000000	7.0000000%	0				0.0000000	77cro1	0			
90	kr g	a242mt	rc	fc		0.9005980	9.4	0.6600000	0.0100000	90		a242mt		1.0000000	71wol1	0			
90		cm245t	cm	cu		0.0000000	0.0	1.1500000	0.2800000	0				0.0000000	80dic2	0			
90	sr g	cm245t	rc	cu		1.0970886	13.9	1.0800000	0.1500000	0				0.0000000	67gun1	0			
90	sr g	cm245t	cm	cu	x3	0.0000000	0.0	1.0800000	14.0000000%	0				0.0000000	77cro1	0			
90	kr g	cm245t	rc	cu		0.8431329	25.3	0.8300000	0.2100000	0				0.0000000	80dic2	0			
90		cf249t	es	cu		0.5167566	30.0	0.5170000	0.0000000	0				0.0000000	75mee1	0			
90		cf249t	es	cu		0.5397458	20.4	0.5400000	0.1100000	0				0.0000000	81dic3	0			
90		cf249t	sp	cu		0.5957194	5.9	0.5960000	0.0350000	0				0.0000000	85ake1	0			
90	sr g	cf249t	sp	fi		0.0241401	9.2	4.1000000	0.3000000	90		cf249t		100.0000000	89dje1	0			
90	rb g	cf249t	sp	fi	sm	0.0000000	0.0	37.0000000	1.1000000	90		cf249t		100.0000000	89dje1	0			
90	kr g	cf249t	sp	fi		0.3385503	7.5	57.5000000	2.1000000	90		cf249t		100.0000000	89dje1	0			
90	br g	cf249t	sp	fi	ul	0.0000000	0.0	1.4000000	0.3000000	90		cf249t		100.0000000	89dje1	0			
90		cf251t	es	cu		0.2957915	30.0	0.3100000	0.0000000	0				0.0000000	89rid1	0			
90		es254t	es	cu		0.1126340	30.0	0.1200000	0.0000000	0				0.0000000	75mee1	0			
91		th227t	es	cu		6.1564061	30.0	6.2000000	0.0000000	0				0.0000000	75mee1	0			
91	sr g	th227t	rc	cu		6.1663358	15.6	6.2100000	0.9700000	0				0.0000000	69fly2	0			
91	sr g	th227t	cm	cu	x3	0.0000000	0.0	6.2100000	16.0000000%	0				0.0000000	77cro1	0			
91		th229t	es	cu		6.7041721	15.0	6.6700000	15.0000000%	0				0.0000000	75mee1	0			
91		th229t	cm	cu		0.0000000	0.0	7.1000000	14.1000000%	0				0.0000000	77cro1	0			
91		th229t	rc	cu		7.1464263	5.0	7.1100000	0.1500000	0				0.0000000	82sin1	0			
91		th229t	es	cu		6.3825326	3.0	6.3500000	0.1900000	0				0.0000000	83dic1	0			
91		th229t	sp	cu		6.1915592	5.0	6.1600000	0.2000000	0				0.0000000	90boc1	0			
91	y g	th229t	rc	cu		7.4379120	5.0	7.4000000	0.3500000	0				0.0000000	68bor1	0			
91	y m	th229t	rc	cu	x6	0.0000000	0.0	3.7900000	0.0800000	0				0.0000000	83dic1	0			
91	sr g	th229t	rc	cu		5.7292025	15.0	5.7000000	15.0000000%	0				0.0000000	66rav1	0			
91	sr g	th229t	rc	cu		6.3825326	5.0	6.3500000	0.2000000	0				0.0000000	81gin1	0			
91	sr g	th229t	rc	cu		6.2820203	5.0	6.2500000	0.1800000	0				0.0000000	83dic1	0			
91	sr g	th229t	rc	cu		6.6237622	5.0	6.5900000	0.2600000	0				0.0000000	87had1	0			

91	sr	g	th229t	sp	fi		0.6428265	11.5	9.7000000	1.1000000	91	th229t	100.0000000	90boc1	0
91	rb	g	th229t	rc	cu	x1	0.0000000	0.0	4.3500000	0.3600000	0		0.0000000	82dic1	0
91	rb	g	th229t	sp	fi		3.0219473	5.4	45.6000000	2.3000000	91	th229t	100.0000000	90boc1	0
91	kr	g	th229t	sp	fi		2.8098808	5.4	42.4000000	1.6000000	91	th229t	100.0000000	90boc1	0
91	br	g	th229t	sp	fi		0.1457957	54.6	2.2000000	1.2000000	91	th229t	100.0000000	90boc1	0
91	y	m	pa231f	rc	cu		7.1686855	5.0	7.1960000	0.1380000	0		0.0000000	70kem1	0
91	sr	g	pa231f	rc	re		7.0404875	20.4	6.7900000	20.0000000%	140 ba g	pa231f	6.4400000	65iye1	0
91	sr	g	pa231f	rc	cu		7.0421561	6.4	7.3400000	0.2900000	140 ba g	pa231f	6.9600000	68nam1	0
91	sr	g	pa231f	rc	cu		5.7855571	6.4	5.8900000	0.0800000	99 mo g	pa231f	2.5700000	69bir2	0
91	sr	g	pa231f	cm	cu		0.0000000	0.0	6.8600000	6.4000000%	0		0.0000000	77cro1	0
91			am241t	es	cu		1.7284412	30.0	1.7300000	0.0000000	0		0.0000000	72sid1	0
91			am241t	rc	cu		1.6985944	13.0	1.7400000	0.2200000	140 ba g	am241t	6.0600000	72wei1	0
91			am241t	cm	cu		0.0000000	0.0	1.7800000	8.2000000%	0		0.0000000	77cro1	0
91	y	g	am241t	rc	cu		1.7678348	6.4	1.7300000	0.0600000	144 ce g	am241t	3.4100000	73sko2	0
91	y	g	am241t	rc	cu		1.7031610	10.4	1.1600000	0.0800000	97 zr g	am241t	3.5500000	57cun2	0
91	sr	g	am241t	rc	cu		2.0346130	6.4	1.9000000	0.0500000	139 ba g	am241t	6.2200000	65ric1	0
91	sr	g	am241t	rc	cu	nr	1.4195976	29.2	1.4800000	0.4300000	99 mo g	am241t	6.9000000	71nak1	0
91			am241h	es	cu		1.9921218	30.0	0.0200000	0.0000000	0		0.0100000	79pri1	0
91	y	g	am241h	rc	cu		2.0718067	5.0	0.0208000	3.0000000%	0		0.0100000	79pri1	0
91	sr	g	am241h	rc	cu		2.0020824	5.0	0.0201000	3.1000000%	0		0.0100000	79pri1	0
91	y	g	a242mt	rc	cu	x5	0.0000000	0.0	0.3470000	0.0170000	140 ba g	u235t	0.0000000	71wol1	7
91	y	g	a242mt	rc	cu		1.7528468	8.5	1.7800000	8.5000000%	0		0.0000000	71wol1	0
91	y	g	a242mt	cm	cu		0.0000000	0.0	1.7400000	7.0000000%	0		0.0000000	77cro1	0
91	sr	g	a242mt	rc	cu	x1	0.0000000	0.0	2.5700000	0.4500000	0		0.0000000	85gud1	0
91	kr	g	a242mt	rc	fc		0.5685772	12.4	0.3300000	0.0100000	91	a242mt	1.0000000	71wol1	0
91			cm245t	cm	cu		0.0000000	0.0	1.1800000	0.0700000	0		0.0000000	80dic2	0
91	y	g	cm245t	rc	cu		1.2771046	23.6	1.2700000	0.3000000	0		0.0000000	67gun1	0
91	y	g	cm245t	rc	cu		0.6898376	5.0	0.6860000	0.0230000	0		0.0000000	80dic2	0
91	y	g	cm245t	cm	cu		0.0000000	0.0	1.1100000	5.8000000%	0		0.0000000	77cro1	0
91	sr	g	cm245t	rc	cu		1.1162095	5.0	1.1100000	0.0200000	0		0.0000000	72har2	0
91	sr	g	cm245t	rc	cu		0.9769784	5.7	0.9530000	0.0200000	99 mo g	cm245t	4.0900000	79ram2	0
91	sr	g	cm245t	rc	cu		0.9854823	6.9	0.9800000	6.9000000%	0		0.0000000	82ram2	0
91			cf249t	es	cu		0.8328039	30.0	0.8330000	0.0000000	0		0.0000000	75mee1	0
91			cf249t	es	cu		0.8198070	4.9	0.8200000	0.0400000	0		0.0000000	81dic3	0
91			cf249t	sp	cu	x4	0.0000000	0.0	0.7070000	13.0000000%	0		0.0000000	85ake1	36
91	y	g	cf249t	rc	cu		0.8048105	15.0	0.8050000	0.0000000	0		0.0000000	72kur1	0

91 y g cf249t cm cu 0.0000000 0.0 0.8050000 15.0000000% 0 0.0000000 77cro1 0
91 y g cf249t rc cu x4 0.0000000 0.0 0.4400000 0.0300000 0 0.0000000 81dic3 0
91 sr g cf249t rc cu 0.8198070 5.0 0.8200000 0.0400000 0 0.0000000 81gin4 0
91 sr g cf249t rc cu x1 0.0000000 0.0 0.6800000 0.0600000 0 0.0000000 81gud1 0
91 sr g cf249t rc cu 0.8398023 5.0 0.8400000 0.0400000 0 0.0000000 81dic3 0
91 sr g cf249t sp fi 0.1084779 5.7 13.1000000 0.4000000 91 cf249t 100.0000000 89dje1 0
91 rb g cf249t sp fi 0.4579259 5.7 55.3000000 1.6000000 91 cf249t 100.0000000 89dje1 0
91 kr g cf249t rc fc su 0.0000000 0.0 32.0000000 3.0000000 91 sr g cf249t 100.0000000 77mei1 0
91 kr g cf249t rc fc 0.2649842 9.8 32.0000000 3.0000000 91 cf249t 100.0000000 80mei1 0
91 kr g cf249t rc fc 0.2567035 10.4 0.3100000 0.0310000 91 cf249t 1.0000000 83mei1 0
91 kr g cf249t sp fi 0.2500789 5.7 30.2000000 0.8000000 91 cf249t 100.0000000 89dje1 0
91 br g cf249t sp fi 0.0115931 14.6 1.4000000 0.2000000 91 cf249t 100.0000000 89dje1 0
91 sr g cf251t rc cu 0.5041562 7.8 0.5100000 0.0400000 0 0.0000000 75fly3 0
91 sr g cf251t rc cu 0.5338124 7.4 0.5400000 0.0400000 0 0.0000000 73uni1 0
91 sr g es254t rc cu 0.2757032 10.7 0.2800000 0.0300000 0 0.0000000 76fly1 0
91 sr g es254t rc cu 0.2757032 10.7 0.2800000 0.0300000 0 0.0000000 73uni1 0
92 th227t es cu 4.7324690 30.0 4.7800000 0.0000000 0 0.0000000 75mee1 0
92 th229t es cu 5.9830375 15.0 5.9400000 15.0000000% 0 0.0000000 75mee1 0
92 th229t rc cu 6.5773123 5.0 6.5300000 0.2700000 0 0.0000000 82sin1 0
92 th229t sp cu 5.5096322 5.0 5.4700000 0.2000000 0 0.0000000 90boc1 0
92 y g th229t rc cu 6.4463704 8.4 6.4000000 0.5400000 0 0.0000000 68bor1 0
92 y g th229t cm cu 0.0000000 0.0 6.4000000 8.0000000% 0 0.0000000 77cro1 0
92 y g th229t rc cu 6.1240518 7.7 6.0800000 0.4700000 0 0.0000000 83dic1 0
92 sr g th229t rc cu 5.4391250 11.5 5.4000000 0.6200000 0 0.0000000 81gin1 0
92 sr g th229t rc cu 5.4693424 11.2 5.4300000 0.6100000 0 0.0000000 83dic1 0
92 sr g th229t rc cu 5.8218782 5.0 5.7800000 0.2400000 0 0.0000000 87had1 0
92 sr g th229t sp fi 2.5895453 6.0 43.1000000 2.3000000 92 th229t 100.0000000 90boc1 0
92 rb g th229t sp fi 2.2410682 7.3 37.3000000 2.5000000 92 th229t 100.0000000 90boc1 0
92 kr g th229t sp fi 1.1716040 6.8 19.5000000 1.2000000 92 th229t 100.0000000 90boc1 0
92 pa231f es cu 6.7483773 30.0 6.8000000 0.0000000 0 0.0000000 75mee1 0
92 am241t es cu 2.0981078 30.0 2.1000000 0.0000000 0 0.0000000 72sid1 0
1
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nuclide material tech. type value err. value nuclide material value no. treatment

92 am241t rc cu 2.0305036 11.4 2.0800000 0.2300000 140 ba g am241t 6.0600000 72wei1 0

92		am241t	cm	cu		0.0000000	0.0	1.9600000	4.3000000%	0			0.0000000	77cro1	0
92	y g	am241t	rc	cu		1.9824274	6.9	1.9400000	0.1100000	144	ce g	am241t	3.4100000	73sko2	0
92	sr g	am241t	rc	cu		2.0047020	5.7	2.0900000	0.0400000	99	mo g	am241t	6.9000000	71nak1	0
92	sr g	am241t	rc	cu	x4	0.0000000	0.0	2.3000000	0.3700000	0			0.0000000	65ric1	0
92		am241h	es	cu		2.2025104	30.0	0.0222000	0.0000000	0			0.0100000	79pri1	0
92	sr g	am241h	rc	cu		2.1330619	5.0	0.0215000	3.0000000%	0			0.0100000	79pri1	0
92	y g	a242mt	rc	cu		2.2030674	9.9	2.2200000	0.2200000	0			0.0000000	85gud1	0
92	sr g	a242mt	rc	cu	x5	0.0000000	0.0	0.4030000	0.0110000	140	ba g	u235t	0.0000000	71wol1	7
92	sr g	a242mt	rc	cu		2.0542115	7.4	2.0700000	7.4000000%	0			0.0000000	71wol1	0
92	sr g	a242mt	cm	cu		0.0000000	0.0	2.0500000	8.0000000%	0			0.0000000	77cro1	0
92	sr g	a242mt	rc	cu		2.0740589	10.5	2.0900000	0.2200000	0			0.0000000	85gud1	0
92	kr g	a242mt	rc	fc		0.2711289	9.5	0.1300000	0.0100000	92		a242mt	1.0000000	71wol1	0
92		cm245t	cm	cu		0.0000000	0.0	1.3100000	0.1500000	0			0.0000000	80dic2	0
92	sr g	cm245t	rc	cu		1.2639855	8.8	1.2500000	0.1100000	0			0.0000000	72har2	0
92	sr g	cm245t	rc	cu		1.3246568	11.5	1.3100000	0.1500000	0			0.0000000	80dic2	0
92	sr g	cm245t	cm	cu		0.0000000	0.0	1.2500000	9.0000000%	0			0.0000000	77cro1	0
92	sr g	cm245t	rc	cu		1.2943211	14.7	1.2800000	14.7000000%	0			0.0000000	82ram2	0
92		cf249t	es	cu		1.0896372	30.0	1.0900000	0.0000000	0			0.0000000	75mee1	0
92		cf249t	es	cu		0.8897038	11.2	0.8900000	0.1000000	0			0.0000000	81dic3	0
92		cf249t	sp	cu		0.8487174	5.0	0.8490000	0.0420000	0			0.0000000	85ake1	0
92	y g	cf249t	rc	cu		1.0196605	15.0	1.0200000	0.0000000	0			0.0000000	72kur1	0
92	y g	cf249t	cm	cu		0.0000000	0.0	1.0200000	15.0000000%	0			0.0000000	77cro1	0
92	y g	cf249t	rc	fi		0.0561372	25.7	0.0630000	0.0160000	92		cf249t	1.0000000	81pal2	0
92	sr g	cf249t	rc	cu		1.1696105	24.8	1.1700000	0.2900000	0			0.0000000	69fly1	0
92	sr g	cf249t	rc	cu		0.8697104	8.0	0.8700000	0.0700000	0			0.0000000	81gin4	0
92	sr g	cf249t	rc	cu	x1	0.0000000	0.0	0.7200000	0.0600000	0			0.0000000	81gud1	0
92	sr g	cf249t	rc	cu		0.8697104	11.5	0.8700000	0.1000000	0			0.0000000	81dic3	0
92	sr g	cf249t	sp	fi		0.3279127	6.4	36.8000000	1.3000000	92		cf249t	100.0000000	89dje1	0
92	rb g	cf249t	sp	fi		0.4571175	6.5	51.3000000	2.6000000	92		cf249t	100.0000000	89dje1	0
92	kr g	cf249t	rc	fc	su	0.0000000	0.0	9.5000000	1.3000000	92	sr g	cf249t	99.0000000	77mei1	0
92	kr g	cf249t	rc	fc		0.0846514	14.3	9.5000000	1.3000000	92		cf249t	100.0000000	80mei1	0
92	kr g	cf249t	rc	fc		0.0846514	14.3	0.0950000	0.0130000	92		cf249t	1.0000000	83mei1	0
92	kr g	cf249t	sp	fi		0.1069281	7.8	12.0000000	0.8000000	92		cf249t	100.0000000	89dje1	0
92		cf251t	es	cu		0.5798123	30.0	0.6200000	0.0000000	0			0.0000000	75mee1	0
92		es254t	es	cu		0.3566743	30.0	0.3800000	0.0000000	0			0.0000000	75mee1	0
93	nb m	th227t	es	cu		4.0740816	30.0	4.1150000	0.0000000	0			0.0000000	75mee1	0

93	zr	g	th227t	es	cu		4.3859493	30.0	4.4300000	0.0000000	0			0.0000000	75mee1	0
93			th229t	es	cu		5.0563718	6.4	5.0200000	0.3200000	0			0.0000000	83dic1	0
93			th229t	sp	cu		5.2678933	5.9	5.2300000	0.3100000	0			0.0000000	90boc1	0
93	nb	m	th229t	es	cu		4.5315969	30.0	4.4990000	0.0000000	0			0.0000000	75mee1	0
93	zr	g	th229t	es	cu		4.7441257	15.0	4.7100000	15.0000000%	0			0.0000000	75mee1	0
93	y	g	th229t	rc	cu		4.4318796	6.1	4.4000000	0.2700000	0			0.0000000	68bor1	0
93	y	g	th229t	rc	cu		5.1470238	5.0	5.1100000	0.2000000	0			0.0000000	81gin1	0
93	y	g	th229t	cm	cu		0.0000000	0.0	4.4000000	6.0000000%	0			0.0000000	77cro1	0
93	y	g	th229t	rc	cu		5.0563718	6.4	5.0200000	0.3200000	0			0.0000000	83dic1	0
93	y	g	th229t	rc	cu		5.4089076	5.0	5.3700000	0.2500000	0			0.0000000	87had1	0
93	y	g	th229t	sp	fi	ul	0.0000000	0.0	4.7000000	2.3000000	93	th229t		100.0000000	90boc1	0
93	sr	g	th229t	rc	cu		3.6764456	11.8	3.6500000	0.4300000	0			0.0000000	82dic1	0
93	sr	g	th229t	rc	cu		4.3110102	12.1	4.2800000	0.5200000	0			0.0000000	82dic1	0
93	sr	g	th229t	rc	cu		4.5326042	15.6	4.5000000	0.7000000	0			0.0000000	83dic1	0
93	sr	g	th229t	rc	cu		3.6865180	11.5	3.6600000	0.4200000	0			0.0000000	83dic1	0
93	sr	g	th229t	rc	cu		4.4318796	5.0	4.4000000	0.1500000	0			0.0000000	87had1	0
93	sr	g	th229t	sp	fi		3.2446129	5.7	66.5000000	2.8000000	93	th229t		100.0000000	90boc1	0
93	rb	g	th229t	sp	fi		1.2246584	7.7	25.1000000	1.8000000	93	th229t		100.0000000	90boc1	0
93	kr	g	th229t	sp	fi	ul	0.0000000	0.0	3.7000000	4.3000000	93	th229t		100.0000000	90boc1	0
93	nb	m	pa231f	es	cu		6.3395050	30.0	6.3880000	0.0000000	0			0.0000000	75mee1	0
93	zr	g	pa231f	es	cu		6.6590605	30.0	6.7100000	0.0000000	0			0.0000000	75mee1	0
93			am241t	cm	cu		0.0000000	0.0	2.7100000	5.6000000%	0			0.0000000	77cro1	0
93	nb	m	am241t	es	cu		2.6006817	30.0	2.6040000	0.0000000	0			0.0000000	75mee1	0
93	zr	g	am241t	es	cu		2.6965594	30.0	2.7000000	0.0000000	0			0.0000000	72sid1	0
93	y	g	am241t	rc	cu		2.7171582	6.4	2.6600000	0.1000000	144	ce	g	am241t	3.4100000	73sko2	0
93	y	g	am241t	rc	cu		2.5664565	11.8	2.6300000	0.3000000	140	ba	g	am241t	6.0600000	72wei1	0
93	y	g	am241t	rc	cu	x4	0.0000000	0.0	3.0000000	0.5000000	139	ba	g	am241t	6.2200000	65ric1	36
93	nb	m	am241h	es	cu		2.2804924	30.0	2.3170000	0.0000000	0			0.0000000	75mee1	0
93	zr	g	am241h	es	cu		2.4212392	30.0	0.0246000	0.0000000	0			0.0100000	79pri1	0
93	nb	m	a242mt	es	cu		2.4344541	30.0	2.4610000	0.0000000	0			0.0000000	75mee1	0
93	y	g	a242mt	rc	cu	x5	0.0000000	0.0	0.4730000	0.0110000	140	ba	g	u235t	0.0000000	71wol1	7
93	y	g	a242mt	rc	cu		2.5917390	7.3	2.6200000	7.3000000%	0			0.0000000	71wol1	0
93	y	g	a242mt	cm	cu		0.0000000	0.0	2.5800000	8.0000000%	0			0.0000000	77cro1	0
93	kr	g	a242mt	rc	fc		0.0688859	10.9	0.0270000	0.0020000	93	a242mt		1.0000000	71wol1	0
93			cm245t	cm	cu		0.0000000	0.0	1.9300000	0.1900000	0			0.0000000	80dic2	0
93	nb	m	cm245t	es	cu		1.7124414	30.0	1.6990000	0.0000000	0			0.0000000	75mee1	0

93	y	g	cm245t	rc	cu		1.7638449	6.3	1.7500000	0.1100000	0		0.0000000	72har2	0
93	y	g	cm245t	rc	cu		1.9452690	9.8	1.9300000	0.1900000	0		0.0000000	80dic2	0
93	y	g	cm245t	cm	cu		0.0000000	0.0	1.7600000	6.0000000%	0		0.0000000	77cro1	0
93	sr	g	cm245t	rc	cu	x1	0.0000000	0.0	0.9300000	0.2000000	0		0.0000000	80dic2	0
93			cf249t	es	cu		1.0596472	11.3	1.0600000	0.1200000	0		0.0000000	81dic3	0
93			cf249t	sp	cu		1.0696438	5.0	1.0700000	0.0470000	0		0.0000000	85ake1	0
93	nb	m	cf249t	es	cu		0.9456851	30.0	0.9460000	0.0000000	0		0.0000000	75mee1	0
93	y	g	cf249t	rc	cu		1.1796072	15.0	1.1800000	0.0000000	0		0.0000000	72kur1	0
93	y	g	cf249t	rc	cu		0.9496838	8.4	0.9500000	0.0800000	0		0.0000000	81gin4	0
93	y	g	cf249t	cm	cu	x3	0.0000000	0.0	1.1800000	15.0000000%	0		0.0000000	77cro1	0
93	y	g	cf249t	rc	fi		0.2566244	24.3	0.2380000	0.0570000	93	cf249t	1.0000000	81pal2	0
93	y	g	cf249t	sp	fi	ul	0.0000000	0.0	5.9000000	0.4000000	93	cf249t	100.0000000	89dje1	0
93	sr	g	cf249t	rc	cu		0.9696771	16.5	0.9700000	0.1600000	0		0.0000000	81dic3	0
93	sr	g	cf249t	rc	cu		1.0296571	18.4	1.0300000	0.1900000	0		0.0000000	81dic3	0
93	sr	g	cf249t	sp	fi		0.5822571	6.4	54.0000000	2.3000000	93	cf249t	100.0000000	89dje1	0
93	rb	g	cf249t	sp	fi		0.4183625	6.7	38.8000000	2.1000000	93	cf249t	100.0000000	89dje1	0
93	kr	g	cf249t	sp	fi	ul	0.0000000	0.0	1.4000000	0.3000000	93	cf249t	100.0000000	89dje1	0
93	nb	m	cf251t	es	cu		0.6468290	30.0	0.6620000	0.0000000	0		0.0000000	75mee1	0
93	y	g	cf251t	rc	cu		0.7034998	9.7	0.7200000	0.0700000	0		0.0000000	75fly3	0
93			es254t	es	cu		0.4782977	30.0	0.5000000	0.0000000	0		0.0000000	75mee1	0
93	nb	m	es254t	es	cu		0.4247284	30.0	0.4440000	0.0000000	0		0.0000000	75mee1	0
94			th227t	es	cu		3.6632082	30.0	3.7000000	0.0000000	0		0.0000000	75mee1	0
94			th229t	cm	cu	x3	0.0000000	0.0	4.1000000	15.0000000%	0		0.0000000	75mee1	0
94			th229t	es	cu		3.9901277	10.0	3.9100000	0.3900000	0		0.0000000	83dic1	0
94	y	g	th229t	rc	cu		3.9901277	10.0	3.9100000	0.3900000	0		0.0000000	83dic1	0
94	y	g	th229t	rc	cu	x4	0.0000000	0.0	4.5100000	0.4300000	0		0.0000000	81gin1	0
94	y	g	th229t	rc	cu	x4	0.0000000	0.0	3.1500000	0.2600000	0		0.0000000	87had1	0
94	sr	g	th229t	rc	cu	x1	0.0000000	0.0	3.1800000	0.1800000	0		0.0000000	82dic1	0
94	rb	g	th229t	sp	fi		0.3566180	18.3	8.5000000	1.4000000	94	th229t	100.0000000	90boc1	0
94	kr	g	th229t	sp	fi		0.0545416	77.3	1.3000000	1.0000000	94	th229t	100.0000000	90boc1	0
94			pa231f	es	cu		6.3514139	30.0	6.4000000	0.0000000	0		0.0000000	75mee1	0
94			am241t	es	cu		3.1884664	30.0	3.2000000	0.0000000	0		0.0000000	72sid1	0
94			am241h	es	cu		2.6849590	30.0	0.0270000	0.0000000	0		0.0100000	79pri1	0
94	y	g	am241h	rc	cu		2.5357946	5.0	0.0255000	3.0000000%	0		0.0100000	79pri1	0
94			a242mt	es	cu		2.7145740	30.0	2.8000000	0.0000000	0		0.0000000	75mee1	0
94			cm245t	cm	cu		0.0000000	0.0	1.6800000	0.1200000	0		0.0000000	80dic2	0

94		cm245t	es	cu		2.0662183	30.0	2.0500000	0.0000000	0			0.0000000	75mee1	0
94	y g	cm245t	rc	cu		1.6227373	6.8	1.6100000	0.1100000	0			0.0000000	80dic2	0
94	sr g	cm245t	rc	cu		1.5320253	9.2	1.5200000	0.1400000	0			0.0000000	80dic2	0
94		cf249t	es	cu		1.3495506	30.0	1.3500000	0.0000000	0			0.0000000	75mee1	0
94		cf249t	es	cu		1.0896372	11.9	1.0900000	0.1300000	0			0.0000000	81dic3	0
94		cf249t	sp	cu		1.2805736	5.0	1.2810000	0.0510000	0			0.0000000	85ake1	0
94	y g	cf249t	rc	cu		1.0896372	11.9	1.0900000	0.1300000	0			0.0000000	81gin4	0
94	y g	cf249t	rc	cu	x1	0.0000000	0.0	0.8700000	0.0800000	0			0.0000000	81gud1	0
94	y g	cf249t	sp	fi		0.1735552	6.4	14.5000000	0.5000000	94	cf249t	100.0000000		89dje1	0
94	sr g	cf249t	rc	cu		0.6697770	11.9	0.6700000	0.0800000	0			0.0000000	81dic3	0
94	sr g	cf249t	sp	fi		0.8210957	6.4	68.6000000	2.3000000	94	cf249t	100.0000000		89dje1	0

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nuclide	material	tech.	type	value	err.	value		nuclide	material	value	no.	treatment
94	rb g	cf249t	sp	fi		0.2022816	7.1	16.9000000	1.0000000	94	cf249t	100.0000000	89dje1	0
94		cf251t	es	cu		0.7481449	30.0	0.8000000	0.0000000	0		0.0000000	75mee1	0
94		es254t	es	cu		0.5631700	30.0	0.6000000	0.0000000	0		0.0000000	75mee1	0
95		th227t	es	cu		3.3731454	30.0	3.3900000	0.0000000	0		0.0000000	75mee1	0
95	zr g	th227t	rc	cu		3.3830957	8.5	3.4000000	0.2900000	0		0.0000000	69fly2	0
95	zr g	th227t	cm	cu	x3	0.0000000	0.0	3.4000000	9.0000000%	0		0.0000000	77cro1	0
95		th229t	es	cu		2.6434741	15.0	2.6300000	15.0000000%	0		0.0000000	75mee1	0
95		th229t	es	cu		2.7138328	2.6	2.7000000	0.0700000	0		0.0000000	83dic1	0
95		th229t	sp	cu		2.4525007	5.7	2.4400000	0.1400000	0		0.0000000	90boc1	0
95	zr g	th229t	rc	cu		2.6133204	15.0	2.6000000	15.0000000%	0		0.0000000	66rav1	0
95	zr g	th229t	rc	cu		2.6133204	15.0	2.6000000	0.0000000	0		0.0000000	68bor1	0
95	zr g	th229t	rc	cu		2.7841914	5.0	2.7700000	0.0800000	0		0.0000000	81gin1	0
95	zr g	th229t	cm	cu		0.0000000	0.0	2.3700000	10.6000000%	0		0.0000000	77cro1	0
95	zr g	th229t	rc	cu		2.7138328	5.0	2.7000000	0.0700000	0		0.0000000	83dic1	0
95	zr g	th229t	rc	cu		2.5630643	6.3	2.5500000	0.1600000	0		0.0000000	87had1	0
95	zr g	th229t	sp	fi	ul	0.0000000	0.0	3.2000000	1.9000000	95	th229t	100.0000000	90boc1	0
95	y g	th229t	rc	cu		2.3620396	15.3	2.3500000	0.3600000	0		0.0000000	82dic1	0
95	y g	th229t	sp	fi		0.9089023	10.8	33.8000000	3.6000000	95	th229t	100.0000000	90boc1	0
95	sr g	th229t	sp	fi		1.6161251	6.0	60.1000000	3.4000000	95	th229t	100.0000000	90boc1	0
95	rb g	th229t	sp	fi	ul	0.0000000	0.0	2.9000000	1.8000000	95	th229t	100.0000000	90boc1	0
95	nb g	pa231f	cm	cu		0.0000000	0.0	6.3500000	10.0000000%	0		0.0000000	77cro1	0

95	zr g	pa231f	rc	cu		6.3558947	5.0	6.3730000	0.0340000	0			0.0000000	70kem1	0
95		am241t	es	cu		3.9175024	30.0	3.9200000	0.0000000	0			0.0000000	72sid1	0
95		am241t	rc	cu		4.3745476	8.9	4.4800000	0.3800000	140	ba g	am241t	6.0600000	72wei1	0
95	zr g	am241t	rc	cu		4.0274323	5.0	4.0300000	0.1500000	0			0.0000000	73sko2	0
95	zr g	am241t	rc	cu		4.1073813	5.0	4.1100000	0.0800000	0			0.0000000	73sko2	0
95	zr g	am241t	rc	cu		3.7675980	5.0	3.7700000	0.1100000	0			0.0000000	73sko2	0
95	zr g	am241t	rc	cu		3.8462819	13.4	3.9000000	0.5100000	140	ba g	am241t	6.0000000	57cun2	0
95	zr g	am241t	rc	cu	x4	0.0000000	0.0	2.7000000	0.3500000	139	ba g	am241t	6.2200000	65ric1	36
95	zr g	am241t	rc	cu		3.8761414	5.9	4.0400000	0.2100000	99	mo g	am241t	6.9000000	71nak1	0
95	zr g	am241t	cm	cu		0.0000000	0.0	4.0100000	5.1000000%	0			0.0000000	77cro1	0
95		am241h	es	cu		3.0031764	30.0	0.0302000	0.0000000	0			0.0100000	79pri1	0
95	zr g	am241h	rc	cu		3.1225079	5.0	0.0314000	3.0000000%	0			0.0100000	79pri1	0
95	zr g	a242mt	rc	cu	x5	0.0000000	0.0	0.5890000	0.0130000	140	ba g	u235t	0.0000000	71wol1	7
95	zr g	a242mt	rc	cu		3.2940805	7.3	3.3300000	7.3000000%	0			0.0000000	71wol1	0
95	zr g	a242mt	cm	cu		0.0000000	0.0	3.2700000	7.0000000%	0			0.0000000	77cro1	0
95		cm245t	cm	cu		0.0000000	0.0	2.3100000	0.0800000	0			0.0000000	80dic2	0
95	nb g	cm245t	rc	cu		2.2927547	5.0	2.2800000	0.0700000	0			0.0000000	80dic2	0
95	nb g	cm245t	rc	fi		0.0283723	41.9	1.2000000	0.5000000	95	nb g	cm245t	100.0000000	80dic2	0
95	zr g	cm245t	rc	cu		2.4134260	12.5	2.4000000	0.3000000	0			0.0000000	67gun1	0
95	zr g	cm245t	rc	cu		2.3732023	5.0	2.3600000	0.0600000	0			0.0000000	72har2	0
95	zr g	cm245t	rc	cu		2.3631463	8.1	2.3500000	0.1900000	0			0.0000000	80dic2	0
95	zr g	cm245t	cm	cu		0.0000000	0.0	2.4000000	5.4000000%	0			0.0000000	77cro1	0
95	zr g	cm245t	rc	cu		2.2451026	9.1	2.1900000	0.1900000	99	mo g	cm245t	4.0900000	79ram2	0
95		cf249t	es	cu		1.4997504	30.0	1.5000000	0.0000000	0			0.0000000	75mee1	0
95		cf249t	es	cu		1.5197470	2.6	1.5200000	0.0400000	0			0.0000000	81dic3	0
95		cf249t	sp	cu		1.4667558	5.0	1.4670000	0.0550000	0			0.0000000	85ake1	0
95	nb g	cf249t	rc	cu		1.5397437	5.0	1.5400000	0.0500000	0			0.0000000	81dic3	0
95	zr g	cf249t	rc	cu		1.7197137	15.1	1.7200000	0.2600000	0			0.0000000	69fly1	0
95	zr g	cf249t	rc	cu		1.2997836	5.0	1.3000000	0.0200000	0			0.0000000	72kur1	0
95	zr g	cf249t	rc	cu		1.1598069	11.2	1.1600000	0.1300000	0			0.0000000	81gin4	0
95	zr g	cf249t	cm	cu		0.0000000	0.0	1.4500000	13.9000000%	0			0.0000000	77cro1	0
95	zr g	cf249t	rc	cu		1.4897520	5.0	1.4900000	0.0500000	0			0.0000000	81dic3	0
95	zr g	cf249t	sp	fi		0.0858428	5.4	5.7000000	0.2000000	95		cf249t	100.0000000	89dje1	0
95	y g	cf249t	sp	fi		0.6099356	5.4	40.5000000	1.6000000	95		cf249t	100.0000000	89dje1	0
95	sr g	cf249t	sp	fi		0.7198746	5.4	47.8000000	1.6000000	95		cf249t	100.0000000	89dje1	0
95	rb g	cf249t	sp	fi		0.0888548	5.5	5.9000000	0.3000000	95		cf249t	100.0000000	89dje1	0

95	zr	g	cf251t	rc	cu		0.9739573	10.1	0.9900000	0.1000000	0		0.0000000	75fly3	0
95	zr	g	cf251t	rc	cu		0.9837953	10.0	1.0000000	0.1000000	0		0.0000000	73uni1	0
95	zr	g	es254t	rc	cu		0.7089510	9.7	0.7200000	0.0700000	0		0.0000000	76fly1	0
95	zr	g	es254t	rc	cu		0.7089510	9.7	0.7200000	0.0700000	0		0.0000000	73uni1	0
96			th227t	es	cu		2.6127342	30.0	2.6500000	0.0000000	0		0.0000000	75mee1	0
96			th229t	es	cu		1.2041818	15.0	1.1800000	15.0000000%	0		0.0000000	75mee1	0
96			th229t	es	cu		1.1531571	9.7	1.1300000	0.1100000	0		0.0000000	83dic1	0
96			th229t	sp	cu		1.4593050	5.0	1.4300000	0.0500000	0		0.0000000	90boc1	0
96	zr	g	th229t	sp	fi		0.2028044	14.3	14.4000000	1.7000000	96	th229t	100.0000000	90boc1	0
96	y	g	th229t	sp	fi		0.0560529	9.6	3.9800000	0.2100000	96	th229t	100.0000000	90boc1	40
96	y	m	th229t	sp	fi		0.5044760	9.6	35.8200000	1.8900000	96	th229t	100.0000000	90boc1	40
96	sr	g	th229t	sp	fi		0.6295387	9.5	44.7000000	2.3000000	96	th229t	100.0000000	90boc1	0
96	rb	g	th229t	sp	fi	ul	0.0000000	0.0	1.1000000	1.0000000	96	th229t	100.0000000	90boc1	0
96			pa231f	es	cu		4.9620421	30.0	5.0000000	0.0000000	0		0.0000000	75mee1	0
96			am241t	es	cu		4.2546098	30.0	4.2700000	0.0000000	0		0.0000000	72sid1	0
96	nb	g	am241h	rc	fi		0.0152505	23.2	0.0047400	0.0002400	96	am241h	1.0000000	79pri1	0
96	nb	g	am241h	rc	cu		0.0154526	5.0	0.0001570	3.0000000%	0		0.0100000	79pri1	0
96			am241h	es	cu		3.2676887	30.0	0.0332000	0.0000000	0		0.0100000	79pri1	0
96			a242mt	es	cu		3.6201788	30.0	3.7000000	0.0000000	0		0.0000000	75mee1	0
96			cm245t	cm	cu		0.0000000	0.0	2.5500000	0.5100000	0		0.0000000	80dic2	0
96			cm245t	es	cu		2.8217599	30.0	2.7600000	0.0000000	0		0.0000000	75mee1	0
96	nb	g	cf249t	rc	in		0.0043979	13.6	0.0044000	0.0006000	0		0.0000000	78gae1	0
96			cf249t	es	cu		1.7591715	30.0	1.7600000	0.0000000	0		0.0000000	75mee1	0
96			cf249t	es	cu		1.7491762	20.0	1.7500000	0.3500000	0		0.0000000	81dic3	0
96			cf249t	sp	cu		1.6702134	5.0	1.6710000	0.0590000	0		0.0000000	85ake1	0
96	zr	g	cf249t	sp	fi		0.2279572	7.5	13.6000000	0.6000000	96	cf249t	100.0000000	89dje1	0
96	y	g	cf249t	sp	fi	sm	0.0000000	0.0	55.1000000	2.3000000	96	cf249t	100.0000000	89dje1	0
96	sr	g	cf249t	sp	fi		0.5045229	7.5	30.1000000	1.0000000	96	cf249t	100.0000000	89dje1	0
96	rb	g	cf249t	sp	fi	ul	0.0000000	0.0	1.3000000	0.2000000	96	cf249t	100.0000000	89dje1	0
96			cf251t	es	cu		1.4312492	30.0	1.5000000	0.0000000	0		0.0000000	75mee1	0
96			es254t	es	cu		0.7508934	30.0	0.8000000	0.0000000	0		0.0000000	75mee1	0
97			th227t	es	cu		2.3365328	30.0	2.3600000	0.0000000	0		0.0000000	75mee1	0
97	zr	g	th227t	rc	cu		2.3860356	23.7	2.4100000	0.5700000	0		0.0000000	69fly2	0
97	zr	g	th227t	cm	cu	x3	0.0000000	0.0	2.4100000	24.0000000%	0		0.0000000	77cro1	0
97			th229t	es	cu		0.6949993	15.0	0.6900000	15.0000000%	0		0.0000000	75mee1	0
97			th229t	rc	cu		0.8662310	5.8	0.8600000	0.0500000	0		0.0000000	82sin1	0

97 th229t sp cu 0.7856514 6.4 0.7800000 0.0500000 0 0.0000000 90boc1 0
97 nb g th229t rc cu 0.6899631 5.0 0.6850000 0.0310000 0 0.0000000 83dic1 0
97 zr g th229t rc cu 0.6144197 15.0 0.6100000 0.0000000 0 0.0000000 68bor1 0
97 zr g th229t rc cu 0.7352891 5.0 0.7300000 0.0300000 0 0.0000000 81gin1 0
97 zr g th229t cm cu 0.0000000 0.0 0.6100000 15.0000000% 0 0.0000000 77cro1 0
97 zr g th229t rc cu 0.7020500 5.0 0.6970000 0.0150000 0 0.0000000 83dic1 0
97 zr g th229t rc cu 0.7050718 5.0 0.7000000 0.0200000 0 0.0000000 87had1 0
97 zr g th229t sp fi 0.2466701 8.0 33.5000000 2.5000000 97 th229t 100.0000000 90boc1 0
97 y g th229t sp fi 0.3173576 7.9 43.1000000 3.2000000 97 th229t 100.0000000 90boc1 0
97 sr g th229t sp fi 0.1178126 9.2 16.0000000 1.4000000 97 th229t 100.0000000 90boc1 0
97 zr g pa231f rc re 4.3424601 20.4 4.1800000 20.0000000% 140 ba g pa231f 6.4400000 65iye1 0
97 zr g pa231f rc cu 4.3256233 6.4 4.5000000 0.0200000 140 ba g pa231f 6.9600000 68nam1 0
97 zr g pa231f rc cu 3.8971909 6.4 3.9600000 0.1200000 99 mo g pa231f 2.5700000 69bir2 0
97 zr g pa231f rc cu 4.5902716 5.0 4.5990000 0.0880000 0 0.0000000 70kem1 0
97 zr g pa231f cm cu 0.0000000 0.0 4.3800000 6.4000000% 0 0.0000000 77cro1 0
97 am241t es cu 4.5670882 30.0 4.5700000 0.0000000 0 0.0000000 72sid1 0
97 am241t rc cu 5.1752461 6.0 5.3000000 0.2800000 140 ba g am241t 6.0600000 72wei1 0
97 zr g am241t rc cu 5.3665785 5.0 5.3700000 0.2100000 0 0.0000000 73sko2 0
97 zr g am241t rc cu 5.2966231 5.0 5.3000000 0.0600000 0 0.0000000 73sko2 0
97 zr g am241t rc cu 5.2566486 5.0 5.2600000 0.1100000 0 0.0000000 73sko2 0
97 zr g am241t rc cu rp 5.6517466 32.1 3.5500000 0.0000000 no. relative values = 1 57cun2
97 zr g am241t rc cu 4.9507152 5.7 5.1600000 0.0400000 99 mo g am241t 6.9000000 71nak1 0
97 zr g am241t cm cu 0.0000000 0.0 5.1600000 5.8000000% 0 0.0000000 77cro1 0
97 am241h es cu 3.6113233 30.0 0.0364000 0.0000000 0 0.0100000 79pri1 0
97 zr g am241h rc cu 3.3632929 5.0 0.0339000 3.0000000% 0 0.0100000 79pri1 0
97 zr g a242mt rc cu x5 0.0000000 0.0 0.8400000 0.0100000 140 ba g u235t 0.0000000 71wol1 7
97 zr g a242mt rc cu 4.2635096 7.3 4.3100000 7.3000000% 0 0.0000000 71wol1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

97 zr g a242mt cm cu 0.0000000 0.0 4.3200000 7.0000000% 0 0.0000000 77cro1 0
97 cm245t cm cu 0.0000000 0.0 2.9200000 0.1000000 0 0.0000000 80dic2 0
97 zr g cm245t rc cu 3.1173420 11.3 3.1000000 0.3500000 0 0.0000000 67gun1 0
97 zr g cm245t rc cu 3.0167826 5.0 3.0000000 0.0600000 0 0.0000000 72har2 0
97 zr g cm245t rc cu 3.0067266 5.0 2.9900000 0.0900000 0 0.0000000 80dic2 0

97	zr g	cm245t	rc	cu	2.7050484	7.4	2.6900000	0.2000000	0			0.0000000	80dic2	0
97	zr g	cm245t	cm	cu	0.0000000	0.0	3.0900000	5.3000000%	0			0.0000000	77cro1	0
97	zr g	cm245t	rc	cu	3.0344766	5.7	2.9600000	0.0800000	99	mo g	cm245t	4.0900000	79ram2	0
97	zr g	cm245t	rc	cu	2.4134260	6.2	2.4000000	6.2000000%	0			0.0000000	82ram2	0
97		cf249t	es	cu	2.0696555	30.0	2.0700000	0.0000000	0			0.0000000	75mee1	0
97		cf249t	es	cu	2.1096488	2.8	2.1100000	0.0600000	0			0.0000000	81dic3	0
97		cf249t	sp	cu	2.0256628	5.0	2.0260000	0.0650000	0			0.0000000	85ake1	0
97	nb g	cf249t	rc	cu	2.1396438	5.0	2.1400000	0.0700000	0			0.0000000	81dic3	0
97	nb g	cf249t	sp	fi	sm	0.0000000	0.0	4.4000000	0.3000000	97	cf249t	100.0000000	89dje1	0
97	zr g	cf249t	rc	cu	x4	0.0000000	0.0	2.3500000	0.4600000	0		0.0000000	69fly1	0
97	zr g	cf249t	rc	cu	1.8796871	5.0	1.8800000	0.0500000	0			0.0000000	72kur1	0
97	zr g	cf249t	rc	cu	2.0896522	5.0	2.0900000	0.0800000	0			0.0000000	81gin4	0
97	zr g	cf249t	cm	cu	0.0000000	0.0	2.0000000	12.1000000%	0			0.0000000	77cro1	0
97	zr g	cf249t	rc	cu	x1	0.0000000	0.0	2.6200000	0.3400000	0		0.0000000	81gud1	0
97	zr g	cf249t	rc	cu	2.0796538	5.0	2.0800000	0.0800000	0			0.0000000	81dic3	0
97	zr g	cf249t	sp	fi	0.6631942	5.4	31.8000000	1.2000000	97	cf249t	100.0000000	89dje1	0	
97	y g	cf249t	sp	fi	1.1220078	5.4	53.8000000	1.9000000	97	cf249t	100.0000000	89dje1	0	
97	sr g	cf249t	sp	fi	0.2085516	5.4	10.0000000	0.5000000	97	cf249t	100.0000000	89dje1	0	
97	zr g	cf251t	rc	cu	1.5915519	7.5	1.6100000	0.1200000	0			0.0000000	75fly3	0
97	zr g	cf251t	rc	cu	1.6805206	5.9	1.7000000	0.1000000	0			0.0000000	73uni1	0
97	zr g	es254t	rc	cu	0.9748077	10.1	0.9900000	0.1000000	0			0.0000000	76fly1	0
97	zr g	es254t	rc	cu	0.9748077	10.1	0.9900000	0.1000000	0			0.0000000	73uni1	0
98		th227t	es	cu	1.3662777	30.0	1.3800000	0.0000000	0			0.0000000	75mee1	0
98		th229t	es	cu	0.2040986	10.0	0.2000000	0.0200000	0			0.0000000	83dic1	0
98		th229t	sp	cu	0.3877873	13.2	0.3800000	0.0500000	0			0.0000000	90boc1	0
98		pa231f	es	cu	3.1757070	30.0	3.2000000	0.0000000	0			0.0000000	75mee1	0
98		am241t	es	cu	5.8687710	30.0	5.8900000	0.0000000	0			0.0000000	72sid1	0
98		am241h	es	cu	3.9369743	30.0	0.0400000	0.0000000	0			0.0100000	79pri1	0
98		a242mt	es	cu	4.5986055	30.0	4.7000000	0.0000000	0			0.0000000	75mee1	0
98		cm245t	cm	cu	0.0000000	0.0	3.4500000	0.6900000	0			0.0000000	80dic2	0
98		cm245t	es	cu	3.6703326	30.0	3.5900000	0.0000000	0			0.0000000	75mee1	0
98		cf249t	es	cu	2.5887808	30.0	2.5900000	0.0000000	0			0.0000000	75mee1	0
98		cf249t	es	cu	2.3988702	20.0	2.4000000	0.4800000	0			0.0000000	81dic3	0
98		cf249t	sp	cu	2.3049145	5.0	2.3060000	0.0690000	0			0.0000000	85ake1	0
98	nb g	cf249t	rc	in	0.1499294	20.0	0.1500000	0.0300000	0			0.0000000	78gae1	0
98	nb g	cf249t	rc	in	0.3598305	11.1	0.3600000	0.0400000	0			0.0000000	81gud1	0

98 nb g cf249t sp fi sm 0.0000000 0.0 12.3000000 0.7000000 98 cf249t 100.0000000 89dje1 0
98 zr g cf249t sp fi 1.1938230 8.0 51.5000000 2.9000000 98 cf249t 100.0000000 89dje1 0
98 y g cf249t sp fi sm 0.0000000 0.0 32.3000000 1.6000000 98 cf249t 100.0000000 89dje1 0
98 sr g cf249t sp fi 0.0904060 9.5 3.9000000 0.3000000 98 cf249t 100.0000000 89dje1 0
98 cf251t es cu 2.1945821 30.0 2.3000000 0.0000000 0 0.0000000 75mee1 0
98 es254t es cu 1.3392337 30.0 1.4000000 0.0000000 0 0.0000000 75mee1 0
99 tc g th227t es cu 1.4328405 30.0 1.4400000 0.0000000 0 0.0000000 75mee1 0
99 mo g th227t rc cu 1.4328405 9.7 1.4400000 0.1400000 0 0.0000000 69fly2 0
99 mo g th227t cm cu x3 0.0000000 0.0 1.4400000 10.0000000% 0 0.0000000 77cro1 0
99 tc g th229t es cu 0.1495165 15.0 0.1480000 15.0000000% 0 0.0000000 75mee1 0
99 mo g th229t cm cu 0.0000000 0.0 0.1530000 8.3000000% 0 0.0000000 77cro1 0
99 mo g th229t rc cu 0.1515370 5.0 0.1500000 0.0040000 0 0.0000000 68bor1 0
99 mo g th229t rc cu 0.1515370 6.7 0.1500000 0.0100000 0 0.0000000 81gin1 0
99 mo g th229t rc cu 0.1616394 15.0 0.1600000 15.0000000% 0 0.0000000 66rav1 0
99 mo g th229t rc cu x4 0.0000000 0.0 0.3300000 99.0000000% 0 0.0000000 82sin1 36
99 mo g th229t rc cu x4 0.0000000 0.0 0.1050000 0.0100000 0 0.0000000 87had1 0
99 mo g pa231f rc re 2.4932785 20.4 2.4000000 20.0000000% 140 ba g pa231f 6.4400000 65iye1 0
99 mo g pa231f rc cu 2.4896365 7.0 2.5900000 0.1500000 140 ba g pa231f 6.9600000 68nam1 0
99 mo g pa231f rc cu 2.5651224 15.0 2.5700000 0.0000000 0 0.0000000 69bir2 0
99 mo g pa231f rc cu rp 2.6401222 7.4 2.5700000 0.0000000 no. relative values = 6 69bir2
99 mo g pa231f rc cu 2.5072325 5.0 2.5120000 0.0290000 0 0.0000000 70kem1 0
99 mo g pa231f cm cu 0.0000000 0.0 2.4700000 7.3000000% 0 0.0000000 77cro1 0
99 tc g am241t es cu 5.9761899 30.0 5.9800000 0.0000000 0 0.0000000 72sid1 0
99 mo g am241t rc cu 6.5458267 5.0 6.5500000 0.1800000 0 0.0000000 73sko2 0
99 mo g am241t rc cu 6.7556490 10.4 6.8500000 0.4100000 140 ba g am241t 6.0000000 57cun2 0
99 mo g am241t rc cu 6.7481304 6.4 6.3000000 0.3000000 139 ba g am241t 6.2200000 65ric1 0
99 mo g am241t rc cu 6.8956037 5.0 6.9000000 0.2600000 0 0.0000000 71nak1 0
99 mo g am241t rc cu rp 6.5296736 7.3 6.9000000 0.0000000 no. relative values = 5 71nak1
99 mo g am241t rc cu 6.3079414 5.7 6.4600000 0.3000000 140 ba g am241t 6.0600000 72wei1 0
99 mo g am241t cm cu 0.0000000 0.0 6.5100000 2.1000000% 0 0.0000000 77cro1 0
99 tc g am241h es cu 4.3357116 30.0 0.0436000 0.0000000 0 0.0100000 79pri1 0
99 mo g am241h rc cu 4.3357116 5.0 0.0436000 3.0000000% 0 0.0100000 79pri1 0
99 mo g a242mt rc cu x5 0.0000000 0.0 1.0200000 0.0200000 140 ba g u235t 0.0000000 71wol1 7
99 mo g a242mt rc cu 5.3488888 7.3 5.3900000 7.3000000% 0 0.0000000 71wol1 0
99 mo g a242mt cm cu 0.0000000 0.0 5.3700000 8.0000000% 0 0.0000000 77cro1 0
99 cm245t cm cu 0.0000000 0.0 4.1000000 0.1300000 0 0.0000000 80dic2 0

99	tc	m	cm245t	rc	cu		4.1014401	5.0	4.0900000	0.1200000	0		0.0000000	72har2	0
99	mo	g	cm245t	rc	cu		4.1916918	9.6	4.1800000	0.4000000	0		0.0000000	67gun1	0
99	mo	g	cm245t	rc	cu		4.1114681	5.0	4.1000000	0.1300000	0		0.0000000	80dic2	0
99	mo	g	cm245t	es	cu	cm	4.1214960	5.1	4.1100000	5.1000000%	0		0.0000000	77cro1	0
99	mo	g	cm245t	rc	cu	rp	4.0515472	4.5	4.0900000	0.0000000	no. relative values =		15	79ram2	
99	mo	g	cm245t	rc	cu		4.0613282	5.9	4.0500000	5.9000000%	0		0.0000000	82ram2	0
99	nb	g	cm245t	rc	cu		2.3465452	7.7	2.3400000	0.1800000	0		0.0000000	80dic2	0
99			cf249t	es	cu		2.7793457	3.2	2.7800000	0.0900000	0		0.0000000	81dic3	0
99			cf249t	sp	cu		2.7083624	5.0	2.7090000	0.0750000	0		0.0000000	85ake1	0
99	tc	g	cf249t	es	cu		3.3692068	30.0	3.3700000	0.0000000	0		0.0000000	75mee1	0
99	tc	m	cf249t	rc	cu		2.3594445	8.5	2.3600000	0.2000000	0		0.0000000	81gud1	0
99	mo	g	cf249t	rc	cu		3.4191950	7.0	3.4200000	0.2400000	0		0.0000000	69fly1	0
99	mo	g	cf249t	rc	cu		3.0092915	10.0	3.0100000	0.3000000	0		0.0000000	72kur1	0
99	mo	g	cf249t	rc	cu		2.8493292	5.0	2.8500000	0.1200000	0		0.0000000	81gin4	0
99	mo	g	cf249t	cm	cu		0.0000000	0.0	3.2600000	6.4000000%	0		0.0000000	77cro1	0
99	mo	g	cf249t	rc	cu		2.6293810	8.0	2.6300000	0.2100000	0		0.0000000	81gud1	0
99	mo	g	cf249t	rc	cu		2.7793457	5.0	2.7800000	0.0900000	0		0.0000000	81dic3	0
99	mo	g	cf249t	sp	fi	ul	0.0000000	0.0	1.8000000	0.2000000	99	cf249t	100.0000000	89dje1	0
99	nb	g	cf249t	sp	fi	sm	0.0000000	0.0	22.7000000	0.6000000	99	cf249t	100.0000000	89dje1	0
99	zr	g	cf249t	sp	fi		1.4478707	5.7	51.7000000	2.4000000	99	cf249t	100.0000000	89dje1	0
99	y	g	cf249t	sp	fi		0.6329183	5.7	22.6000000	1.0000000	99	cf249t	100.0000000	89dje1	0
99	sr	g	cf249t	sp	fi		0.0308058	18.4	1.1000000	0.2000000	99	cf249t	100.0000000	89dje1	0
99	mo	g	cf251t	rc	cu		3.1939104	6.2	3.2200000	0.2000000	0		0.0000000	75fly3	0
99	mo	g	cf251t	rc	cu		3.3724520	5.9	3.4000000	0.2000000	0		0.0000000	73uni1	0
99	mo	g	es254t	rc	cu		2.3146084	7.7	2.3400000	0.1800000	0		0.0000000	76fly1	0
99	mo	g	es254t	rc	cu		2.2750424	8.7	2.3000000	0.2000000	0		0.0000000	73uni1	0
100			th227t	es	cu		0.9366406	30.0	0.9500000	0.0000000	0		0.0000000	75mee1	0
100			th229t	es	cu		0.0260247	15.0	0.0250000	15.0000000%	0		0.0000000	75mee1	0
100			th229t	es	cu		0.0551723	20.8	0.0530000	0.0110000	0		0.0000000	83dic1	0
100			th229t	sp	cu	ul	0.0000000	0.0	0.1400000	0.0500000	0		0.0000000	90boc1	0
100			pa231f	es	cu		1.9785278	30.0	2.0000000	0.0000000	0		0.0000000	75mee1	0
100			am241t	es	cu		6.2540203	30.0	6.2700000	0.0000000	0		0.0000000	72sid1	0
100			am241h	es	cu		4.5570478	30.0	0.0463000	0.0000000	0		0.0100000	79pri1	0
100			a242mt	es	cu		5.4791895	30.0	5.6000000	0.0000000	0		0.0000000	75mee1	0
100			cm245t	cm	cu		0.0000000	0.0	4.8000000	0.9600000	0		0.0000000	80dic2	0
100			cm245t	es	cu		4.9380798	30.0	4.8300000	0.0000000	0		0.0000000	75mee1	0

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 100        cf249t   es    cu        3.9281500 30.0   3.9300000  0.0000000     0                  0.0000000   75mee1     0
 100        cf249t   es    cu        3.1485172 20.0   3.1500000  0.6300000     0                  0.0000000   81dic3     0
 100        cf249t   sp    cu        3.2184842  5.0   3.2200000  0.0820000     0                  0.0000000   85ake1     0
 100 mo g   cf249t   sp    fi    ul   0.0000000  0.0   6.4000000  0.3000000   100          cf249t    100.0000000   89dje1     0
 100 nb g   cf249t   sp    fi    sm   0.0000000  0.0  28.6000000  1.5000000   100          cf249t    100.0000000   89dje1     0
 100 zr g   cf249t   sp    fi        1.9248518  7.5  59.5000000  2.5000000   100          cf249t    100.0000000   89dje1     0
 100 y  g   cf249t   sp    fi    ul   0.0000000  0.0   5.5000000  0.3000000   100          cf249t    100.0000000   89dje1     0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                 nuclide     material      value      no.   treatment

 100        cf251t   es    cu        3.3865670 30.0   3.5000000  0.0000000     0                  0.0000000   75mee1     0
 100        es254t   es    cu        2.4232709 30.0   2.5000000  0.0000000     0                  0.0000000   75mee1     0
 101        th227t   es    cu        0.7493125 30.0   0.7600000  0.0000000     0                  0.0000000   75mee1     0
 101        th229t   es    cu        0.0096812 15.0   0.0093000 15.0000000%    0                  0.0000000   75mee1     0
 101        th229t   es    cu        0.0197787 21.1   0.0190000  0.0040000     0                  0.0000000   83dic1     0
 101        pa231f   es    cu        1.3849694 30.0   1.4000000  0.0000000     0                  0.0000000   75mee1     0
 101        am241t   es    cu        5.9983024 30.0   6.0200000  0.0000000     0                  0.0000000   72sid1     0
 101        am241h   es    cu        4.7834238 30.0   0.0486000  0.0000000     0                  0.0100000   79pri1     0
 101        a242mt   es    cu        5.8705602 30.0   6.0000000  0.0000000     0                  0.0000000   75mee1     0
 101 tc g   a242mt   rc    cu    x1  0.0000000  0.0   7.7000000  2.7000000     0                  0.0000000   85gud1     0
 101 mo g   a242mt   rc    cu    x1  0.0000000  0.0   8.0000000  1.6000000     0                  0.0000000   85gud1     0
 101        cm245t   cm    cu        0.0000000  0.0   5.7000000  0.5200000     0                  0.0000000   80dic2     0
 101        cm245t   es    cu        5.7132143 30.0   5.6500000  0.0000000     0                  0.0000000   75mee1     0
 101 mo g   cm245t   rc    cu        5.7637737  9.1   5.7000000  0.5200000     0                  0.0000000   80dic2     0
 101        cf249t   es    cu        4.3379570 30.0   4.3400000  0.0000000     0                  0.0000000   75mee1     0
 101        cf249t   es    cu        3.5883100 10.0   3.5900000  0.3600000     0                  0.0000000   81dic3     0
 101        cf249t   sp    cu        3.6352879  5.0   3.6370000  0.0870000     0                  0.0000000   85ake1     0
 101 tc g   cf249t   rc    cu    x1  0.0000000  0.0   3.3200000  0.4000000     0                  0.0000000   81gud1     0
 101 tc g   cf249t   rc    fi    x1  0.0000000  0.0   0.1500000  0.0600000   101          cf249t      1.0000000   81gud1     0
 101 tc g   cf249t   rc    cu    x1  0.0000000  0.0   3.4400000  0.2300000     0                  0.0000000   81dic3     0
 101 mo g   cf249t   rc    cu    x1  0.0000000  0.0   2.7200000  0.2000000     0                  0.0000000   81gud1     0
 101 mo g   cf249t   rc    cu        4.1480464 11.8   4.1500000  0.4900000     0                  0.0000000   81dic3     0
 101 mo g   cf249t   sp    fi    ul  0.0000000  0.0   4.8000000  0.3000000   101          cf249t    100.0000000   89dje1     0
 101 nb g   cf249t   sp    fi        2.3550770  8.0  63.9000000  3.6000000   101          cf249t    100.0000000   89dje1     0
 101 zr g   cf249t   sp    fi        1.1056699  7.5  30.0000000  1.4000000   101          cf249t    100.0000000   89dje1     0
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101 y g cf249t sp fi ul 0.0000000 0.0 1.3000000 0.2000000 101 cf249t 100.0000000 89dje1 0
101 cf251t es cu 3.8703622 30.0 4.0000000 0.0000000 0 0.0000000 75mee1 0
101 es254t es cu 2.4871482 30.0 2.6000000 0.0000000 0 0.0000000 75mee1 0
102 th227t es cu 0.5817031 30.0 0.5900000 0.0000000 0 0.0000000 75mee1 0
102 th229t es cu 0.0063500 15.0 0.0061000 15.0000000% 0 0.0000000 75mee1 0
102 th229t es cu 0.0072869 28.6 0.0070000 0.0020000 0 0.0000000 83dic1 0
102 pa231f es cu 0.6430215 30.0 0.6500000 0.0000000 0 0.0000000 75mee1 0
102 am241t es cu 6.1776536 30.0 6.2000000 0.0000000 0 0.0000000 72sid1 0
102 am241h es cu 4.8916906 30.0 0.0497000 0.0000000 0 0.0100000 79pri1 0
102 a242mt es cu 6.6533015 30.0 6.8000000 0.0000000 0 0.0000000 75mee1 0
102 cm245t cm cu 0.0000000 0.0 5.8000000 1.2000000 0 0.0000000 80dic2 0
102 cm245t es cu 6.2574682 30.0 6.1600000 0.0000000 0 0.0000000 75mee1 0
102 mo g cm245t rc cu 5.8917720 20.7 5.8000000 1.2000000 0 0.0000000 80dic2 0
102 cf249t es cu 4.9676604 30.0 4.9700000 0.0000000 0 0.0000000 75mee1 0
102 cf249t es cu 4.3979287 34.1 4.4000000 1.5000000 0 0.0000000 81dic3 0
102 cf249t sp cu 4.1900266 5.0 4.1920000 0.0930000 0 0.0000000 85ake1 0
102 tc g cf249t rc cu x1 0.0000000 0.0 4.4000000 1.5000000 0 0.0000000 81dic3 0
102 tc g cf249t sp fi sm 0.0000000 0.0 3.8000000 0.2000000 102 cf249t 100.0000000 89dje1 0
102 mo g cf249t sp fi 1.4495117 7.5 34.4000000 1.6000000 102 cf249t 100.0000000 89dje1 0
102 nb g cf249t sp fi 2.0815662 8.0 49.4000000 2.8000000 102 cf249t 100.0000000 89dje1 0
102 zr g cf249t sp fi 0.5267121 7.5 12.5000000 0.5000000 102 cf249t 100.0000000 89dje1 0
102 cf251t es cu 4.2573985 30.0 4.4000000 0.0000000 0 0.0000000 75mee1 0
102 es254t es cu 2.7140634 30.0 2.8000000 0.0000000 0 0.0000000 75mee1 0
103 th227t es cu 0.5544315 30.0 0.5600000 0.0000000 0 0.0000000 75mee1 0
103 ru g th227t rc cu 0.5742326 15.5 0.5800000 0.0900000 0 0.0000000 69fly2 0
103 ru g th227t cm cu x3 0.0000000 0.0 0.5800000 16.0000000% 0 0.0000000 77cro1 0
103 th229t es cu 0.0059189 15.0 0.0058000 15.0000000% 0 0.0000000 75mee1 0
103 ru g th229t rc cu 0.0060209 9.2 0.0059000 0.0005400 0 0.0000000 68bor1 0
103 ru g th229t es cu 0.0063373 75.7 0.0062100 75.7000000% 0 0.0000000 77cro1 0
103 ru g th229t rc cu x4 0.0000000 0.0 0.0260000 0.0040000 0 0.0000000 81gin1 0
103 ru g th229t rc cu x4 0.0000000 0.0 0.0430000 15.0000000% 0 0.0000000 66rav1 0
103 ru g pa231f rc re 0.3114143 20.4 0.3000000 20.0000000% 140 ba g pa231f 6.4400000 65iye1 0
103 ru g pa231f rc cu 0.3150415 11.4 0.3280000 0.0350000 140 ba g pa231f 6.9600000 68nam1 0
103 ru g pa231f rc cu 0.3849640 5.0 0.3860000 0.0050000 0 0.0000000 70kem1 0
103 ru g pa231f cm cu 0.0000000 0.0 0.3460000 8.8000000% 0 0.0000000 77cro1 0
103 am241t es cu 6.2044044 30.0 6.2100000 0.0000000 0 0.0000000 72sid1 0

103		am241t	rc	cu		6.4527062	8.5	6.6100000	0.5300000	140	ba g	am241t	6.0600000	72wei1	0
103	ru g	am241t	cm	cu	x3	0.0000000	0.0	6.8200000	4.5000000%	0			0.0000000	77cro1	0
103	ru g	am241t	rc	cu		7.3377816	5.7	7.6500000	0.2300000	99	mo g	am241t	6.9000000	71nak1	0
103	ru g	am241t	rc	cu		5.3152064	5.0	5.3200000	0.1600000	0			0.0000000	73sko2	0
103	ru g	am241t	rc	cu	x4	0.0000000	0.0	7.7000000	0.2000000	0			0.0000000	65ric1	0
103		am241h	es	cu		4.9920349	30.0	0.0502000	0.0000000	0			0.0100000	79pri1	0
103	ru g	am241h	rc	cu		5.0417564	5.0	0.0507000	3.0000000%	0			0.0100000	79pri1	0
103	ru g	a242mt	rc	cu	x5	0.0000000	0.0	2.7100000	0.1700000	140	ba g	u235t	0.0000000	71wol1	7
103	ru g	a242mt	rc	cu		7.0728755	9.4	7.1500000	9.4000000%	0			0.0000000	71wol1	0
103	ru g	a242mt	cm	cu		0.0000000	0.0	7.1100000	8.0000000%	0			0.0000000	77cro1	0
103		cm245t	cm	cu		0.0000000	0.0	6.1900000	0.1400000	0			0.0000000	80dic2	0
103	ru g	cm245t	rc	cu		6.3050755	14.4	6.2700000	0.9000000	0			0.0000000	67gun1	0
103	ru g	cm245t	rc	cu		5.8827260	7.2	5.8500000	0.4200000	0			0.0000000	72har2	0
103	ru g	cm245t	rc	cu		6.2145721	5.0	6.1800000	0.1900000	0			0.0000000	80dic2	0
103	ru g	cm245t	cm	cu		0.0000000	0.0	6.1000000	6.3000000%	0			0.0000000	77cro1	0
103	ru g	cm245t	rc	cu		6.8685792	6.6	6.7000000	0.4000000	99	mo g	cm245t	4.0900000	79ram2	0
103	tc g	cm245t	rc	cu		7.0391593	22.9	7.0000000	1.6000000	0			0.0000000	80dic2	0
103		cf249t	es	cu		5.5590746	30.0	5.5600000	0.0000000	0			0.0000000	75mee1	0
103		cf249t	es	cu		4.8691895	2.5	4.8700000	0.1200000	0			0.0000000	81dic3	0
103		cf249t	sp	cu		4.6772214	5.0	4.6780000	0.0980000	0			0.0000000	85ake1	0
103	ru g	cf249t	rc	cu		5.2691229	11.8	5.2700000	0.6200000	0			0.0000000	69fly1	0
103	ru g	cf249t	rc	cu		5.5290796	5.0	5.5300000	0.2700000	0			0.0000000	72kur1	0
103	ru g	cf249t	rc	cu		4.9891695	5.0	4.9900000	0.2100000	0			0.0000000	81gin4	0
103	ru g	cf249t	cm	cu		0.0000000	0.0	5.3700000	9.4000000%	0			0.0000000	77cro1	0
103	ru g	cf249t	rc	cu		4.7292128	7.2	4.7300000	0.3400000	0			0.0000000	81gud1	0
103	ru g	cf249t	rc	cu		4.8691895	5.0	4.8700000	0.1200000	0			0.0000000	81dic3	0
103	tc g	cf249t	rc	cu	x1	0.0000000	0.0	3.6700000	0.8600000	0			0.0000000	81dic3	0
103	tc g	cf249t	sp	fi		0.3695296	7.0	7.5000000	0.5000000	103		cf249t	100.0000000	89dje1	0
103	mo g	cf249t	sp	fi		2.4487496	6.7	49.7000000	3.2000000	103		cf249t	100.0000000	89dje1	0
103	nb g	cf249t	sp	fi		1.9708246	6.6	40.0000000	2.5000000	103		cf249t	100.0000000	89dje1	0
103	zr g	cf249t	sp	fi	ul	0.0000000	0.0	2.7000000	0.2000000	103		cf249t	100.0000000	89dje1	0
103		cf251t	es	cu		4.3541575	30.0	4.5000000	0.0000000	0			0.0000000	75mee1	0
103	ru g	es254t	rc	cu		3.1016607	10.2	3.1500000	0.3200000	0			0.0000000	76fly1	0
103	ru g	es254t	rc	cu		3.1508934	9.4	3.2000000	0.3000000	0			0.0000000	73uni1	0
104		th227t	es	cu		0.3136360	30.0	0.3200000	0.0000000	0			0.0000000	75mee1	0
104		th229t	es	cu		0.0052049	15.0	0.0050000	15.0000000%	0			0.0000000	75mee1	0

```
 104        th229t   es    cu        0.0197787 21.1    0.0190000  0.0040000     0                    0.0000000   83dic1      0
 104        pa231f   es    cu        0.1969634 30.0    0.2000000  0.0000000     0                    0.0000000   75mee1      0
 104        am241t   es    cu        6.2175095 30.0    6.2400000  0.0000000     0                    0.0000000   72sid1      0
 104        am241h   es    cu        4.8727034 30.0    0.0490000  0.0000000     0                    0.0100000   79pri1      0
 104 tc g   am241h   rc    cu        4.6042075  5.0    0.0463000  3.0000000%    0                    0.0100000   79pri1      0
 104        a242mt   es    cu        6.9468295 30.0    7.1000000  0.0000000     0                    0.0000000   75mee1      0
 104 tc g   a242mt   rc    cu    x1  0.0000000  0.0    3.5200000  0.4300000     0                    0.0000000   85gud1      0
 104        cm245t   cm    cu    x3  0.0000000  0.0    6.6700000  0.4000000     0                    0.0000000   80dic2      0
 104        cm245t   es    cu        6.7446265 30.0    6.6700000  0.0000000     0                    0.0000000   75mee1      0
 104 tc g   cm245t   rc    cu        6.7446265  6.3    6.6700000  0.4200000     0                    0.0000000   80dic2      0
 104        cf249t   es    cu        5.5881393 30.0    5.5900000  0.0000000     0                    0.0000000   75mee1      0
 104        cf249t   es    cu        5.0483190  7.5    5.0500000  0.3800000     0                    0.0000000   81dic3      0
 104        cf249t   sp    cu        5.1292921  5.0    5.1310000  0.1030000     0                    0.0000000   85ake1      0
 104 tc g   cf249t   rc    cu    x1  0.0000000  0.0    4.5200000  0.3300000     0                    0.0000000   81gud1      0
 104 tc g   cf249t   rc    cu        4.9683457  7.4    4.9700000  0.3700000     0                    0.0000000   81dic3      0
 104 tc g   cf249t   sp    fi        0.6976128  6.5   13.7000000  0.7000000   104          cf249t   100.0000000   89dje1      0
 104 mo g   cf249t   sp    fi        3.3811309  7.5   66.4000000  4.2000000   104          cf249t   100.0000000   89dje1      0
 104 nb g   cf249t   sp    fi        0.9674923  7.0   19.0000000  1.1000000   104          cf249t   100.0000000   89dje1      0
 104 zr g   cf249t   sp    fi        0.0458286 22.6    0.9000000  0.2000000   104          cf249t   100.0000000   89dje1      0
 104        cf251t   es    cu        4.5476756 30.0    4.7000000  0.0000000     0                    0.0000000   75mee1      0
 104        es254t   es    cu        3.3925793 30.0    3.5000000  0.0000000     0                    0.0000000   89rid1      0
 105        th227t   es    cu        0.2681016 30.0    0.2700000  0.0000000     0                    0.0000000   75mee1      0
 105 ru g   th227t   rc    cu        0.2780312 14.3    0.2800000  0.0400000     0                    0.0000000   69fly2      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value       no.   treatment

 105 ru g   th227t   cm    cu    x3  0.0000000  0.0    0.2800000 14.0000000%    0                    0.0000000   77cro1      0
 105        th229t   es    cu        0.0081830 15.0    0.0081000 15.0000000%    0                    0.0000000   75mee1      0
 105 ru g   th229t   rc    cu        0.0080820  5.0    0.0080000  0.0002000     0                    0.0000000   68bor1      0
 105 ru g   th229t   es    cu        0.0082739 53.2    0.0081900 53.2000000%    0                    0.0000000   77cro1      0
 105 ru g   th229t   rc    cu    x4  0.0000000  0.0    0.0130000  0.0020000     0                    0.0000000   81gin1      0
 105 ru g   th229t   rc    cu    x4  0.0000000  0.0    0.0250000 15.0000000%    0                    0.0000000   66rav1      0
 105 rh g   pa231f   rc    cu        0.1475178 16.1    0.1540000  0.0240000   140 ba g      pa231f      6.9600000   68nam1      0
 105 ru g   pa231f   rc    re        0.1449356 20.4    0.1400000 20.0000000%  140 ba g      pa231f      6.4400000   65iye1      0
 105 ru g   pa231f   rc    cu    x4  0.0000000  0.0    0.2400000  0.0200000    99 mo g      pa231f      2.5700000   69bir2      0
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105	ru g	pa231f	cm	cu		0.0000000	0.0	0.1550000	8.3000000%	0			0.0000000	77cro1	0
105		am241t	es	cu		5.9162281	30.0	5.9200000	0.0000000	0			0.0000000	72sid1	0
105		am241t	rc	cu		6.0150030	6.6	6.1600000	0.3700000	140	ba g	am241t	6.0600000	72wei1	0
105	rh g	am241t	rc	cu		6.7057247	5.0	6.7100000	0.1800000	0			0.0000000	73sko2	0
105	ru g	am241t	rc	cu		7.0694700	6.4	6.6000000	0.2000000	139	ba g	am241t	6.2200000	65ric1	0
105	ru g	am241t	rc	cu		6.5721675	5.7	6.8500000	0.2900000	99	mo g	am241t	6.9000000	71nak1	0
105	ru g	am241t	cm	cu		0.0000000	0.0	6.3800000	4.8000000%	0			0.0000000	77cro1	0
105		am241h	es	cu		4.5743746	30.0	0.0460000	0.0000000	0			0.0100000	79pri1	0
105	rh g	am241h	rc	cu		4.7334833	5.0	0.0476000	3.0000000%	0			0.0100000	79pri1	0
105		a242mt	es	cu		6.5288081	30.0	6.6000000	0.0000000	0			0.0000000	75mee1	0
105	rh g	a242mt	rc	cu		7.3201788	14.9	7.4000000	1.1000000	0			0.0000000	85gud1	0
105	ru g	a242mt	rc	cu		6.8948171	11.0	6.9700000	0.7700000	0			0.0000000	85gud1	0
105		cm245t	cm	cu		0.0000000	0.0	6.4300000	0.2100000	0			0.0000000	80dic2	0
105	rh g	cm245t	rc	cu		6.0538528	5.3	6.0300000	0.3200000	0			0.0000000	80dic2	0
105	rh g	cm245t	rc	cu		5.9132990	6.0	5.8900000	6.0000000%	0			0.0000000	82ram2	0
105	ru g	cm245t	rc	cu		5.8028639	20.8	5.7800000	1.2000000	0			0.0000000	67gun1	0
105	ru g	cm245t	rc	cu		6.6662657	5.0	6.6400000	0.3100000	0			0.0000000	80dic2	0
105	ru g	cm245t	rc	cu		6.5558306	5.0	6.5300000	0.2500000	0			0.0000000	80dic2	0
105	ru g	cm245t	cm	cu		0.0000000	0.0	6.2300000	21.0000000%	0			0.0000000	77cro1	0
105	ru g	cm245t	rc	cu		6.4152768	6.3	6.3900000	6.3000000%	0			0.0000000	82ram2	0
105	tc g	cm245t	rc	cu	x1	0.0000000	0.0	8.9000000	0.9000000	0			0.0000000	80dic2	0
105		cf249t	es	cu		5.6790547	30.0	5.6800000	0.0000000	0			0.0000000	75mee1	0
105		cf249t	es	cu		5.3791046	2.8	5.3800000	0.1500000	0			0.0000000	81dic3	0
105		cf249t	sp	cu		5.2921191	5.0	5.2930000	0.1050000	0			0.0000000	85ake1	0
105	rh g	cf249t	rc	cu		6.0789881	8.9	6.0800000	0.5400000	0			0.0000000	81gud1	0
105	rh g	cf249t	rc	cu		5.1591412	5.0	5.1600000	0.2200000	0			0.0000000	81dic3	0
105	ru g	cf249t	rc	cu		5.4890863	12.0	5.4900000	0.6600000	0			0.0000000	69fly1	0
105	ru g	cf249t	rc	cu		5.3991013	5.0	5.4000000	0.2200000	0			0.0000000	81gin4	0
105	ru g	cf249t	cm	cu		0.0000000	0.0	5.4900000	12.0000000%	0			0.0000000	77cro1	0
105	ru g	cf249t	rc	cu		5.5590746	7.6	5.5600000	0.4200000	0			0.0000000	81gud1	0
105	ru g	cf249t	rc	cu		5.4190979	5.0	5.4200000	0.1700000	0			0.0000000	81dic3	0
105	ru g	cf249t	rc	cu		5.7990347	6.0	5.8000000	0.3500000	0			0.0000000	81dic3	0
105	ru g	cf249t	sp	fi		0.2554134	5.4	4.7000000	0.2000000	105		cf249t	100.0000000	89dje1	0
105	tc g	cf249t	rc	cu	x1	0.0000000	0.0	4.0000000	0.6100000	0			0.0000000	81gud1	0
105	tc g	cf249t	sp	fi		2.1845995	5.4	40.2000000	2.0000000	105		cf249t	100.0000000	89dje1	0
105	mo g	cf249t	sp	fi		2.5921740	5.4	47.7000000	2.4000000	105		cf249t	100.0000000	89dje1	0

105	nb	g	cf249t	sp	fi		0.4021402	5.4	7.4000000	0.3000000	105		cf249t	100.0000000	89dje1	0
105	ru	g	cf251t	rc	cu		4.7351140	8.4	4.7900000	0.4000000	0			0.0000000	75fly3	0
105	ru	g	cf251t	rc	cu		4.9427077	8.0	5.0000000	0.4000000	0			0.0000000	73uni1	0
105	ru	g	es254t	rc	cu		4.2434487	10.0	4.2900000	0.4300000	0			0.0000000	76fly1	0
105	ru	g	es254t	rc	cu		4.2533402	9.3	4.3000000	0.4000000	0			0.0000000	73uni1	0
106			th227t	es	cu		0.1577500	30.0	0.1600000	0.0000000	0			0.0000000	75mee1	0
106	ru	g	th227t	rc	cu		0.1873281	31.6	0.1900000	0.0600000	0			0.0000000	69fly2	0
106	ru	g	th227t	cm	cu	x3	0.0000000	0.0	0.1900000	32.0000000%	0			0.0000000	77cro1	0
106			th229t	es	cu		0.0122459	15.0	0.0120000	15.0000000%	0			0.0000000	75mee1	0
106	ru	g	th229t	rc	cu		0.0119398	7.7	0.0117000	0.0009000	0			0.0000000	68bor1	0
106	ru	g	th229t	rc	cu	x4	0.0000000	0.0	0.0200000	15.0000000%	0			0.0000000	66rav1	0
106	ru	g	th229t	cm	cu		0.0000000	0.0	0.0126000	25.9000000%	0			0.0000000	77cro1	0
106	ru	g	pa231f	rc	re		0.1035254	20.4	0.1000000	20.0000000%	140	ba	g	pa231f	6.4400000	65iye1	0
106	ru	g	pa231f	rc	cu		0.1034540	10.1	0.1080000	0.0100000	140	ba	g	pa231f	6.9600000	68nam1	0
106	ru	g	pa231f	cm	cu		0.0000000	0.0	0.1060000	8.3000000%	0			0.0000000	77cro1	0
106			am241t	es	cu		5.9584466	30.0	5.9800000	0.0000000	0			0.0000000	72sid1	0
106			am241h	es	cu		4.2462130	30.0	0.0427000	0.0000000	0			0.0100000	79pri1	0
106	ru	g	am241h	rc	cu		4.0771600	5.0	0.0410000	3.0000000%	0			0.0100000	79pri1	0
106			a242mt	es	cu		6.1640882	30.0	6.3000000	0.0000000	0			0.0000000	75mee1	0
106			cm245t	cm	cu		0.0000000	0.0	5.7000000	0.4000000	0			0.0000000	80dic2	0
106	ru	g	cm245t	rc	cu		5.7954904	24.3	5.7500000	1.4000000	0			0.0000000	67gun1	0
106	ru	g	cm245t	rc	cu		5.7450948	7.0	5.7000000	0.4000000	0			0.0000000	80dic2	0
106	ru	g	cm245t	cm	cu		0.0000000	0.0	5.8800000	24.0000000%	0			0.0000000	77cro1	0
106	tc	g	cm245t	rc	cu		5.3620885	10.0	5.3200000	0.5300000	0			0.0000000	80dic2	0
106			cf249t	es	cu		5.6186772	30.0	5.6200000	0.0000000	0			0.0000000	75mee1	0
106			cf249t	es	cu		5.6386725	7.1	5.6400000	0.4000000	0			0.0000000	81dic3	0
106			cf249t	sp	cu		5.4007285	5.0	5.4020000	0.1060000	0			0.0000000	85ake1	0
106	rh	g	cf249t	rc	cu		5.5986819	7.1	5.6000000	0.4000000	0			0.0000000	81dic3	0
106	rh	g	cf249t	sp	fi	sm	0.0000000	0.0	0.0000000	0.2000000	106		cf249t	100.0000000	89dje1	0
106	ru	g	cf249t	rc	cu		5.0888020	19.8	5.0900000	1.0100000	0			0.0000000	69fly1	0
106	ru	g	cf249t	rc	cu		5.6386725	7.1	5.6400000	0.4000000	0			0.0000000	72kur1	0
106	ru	g	cf249t	cm	cu		0.0000000	0.0	5.4300000	12.2000000%	0			0.0000000	77cro1	0
106	ru	g	cf249t	sp	fi		0.9213229	5.7	16.4000000	0.6000000	106		cf249t	100.0000000	89dje1	0
106	tc	g	cf249t	rc	cu		5.1987761	7.5	5.2000000	0.3900000	0			0.0000000	81dic3	0
106	tc	g	cf249t	sp	fi		2.8257649	5.7	50.3000000	2.5000000	106		cf249t	100.0000000	89dje1	0
106	mo	g	cf249t	sp	fi		1.7920855	5.7	31.9000000	0.9000000	106		cf249t	100.0000000	89dje1	0

106	nb	g	cf249t	sp	fi	ul	0.0000000	0.0	1.3000000	0.2000000	106	cf249t	100.0000000	89dje1	0
106			cf251t	es	cu		4.9347118	30.0	5.1000000	0.0000000	0		0.0000000	75mee1	0
106	ru	g	es254t	rc	cu		4.0075426	10.1	4.0700000	0.4100000	0		0.0000000	76fly1	0
106	ru	g	es254t	rc	cu		4.0370822	9.8	4.1000000	0.4000000	0		0.0000000	73uni1	0
107	pd	g	th227t	es	cu		0.0940908	30.0	0.0960000	0.0000000	0		0.0000000	75mee1	0
107			th229t	es	cu		0.0093689	22.2	0.0090000	0.0020000	0		0.0000000	83dic1	0
107	pd	g	th229t	es	cu		0.0114508	15.0	0.0110000	15.0000000%	0		0.0000000	75mee1	0
107	pd	g	pa231f	es	cu		0.0955272	30.0	0.0970000	0.0000000	0		0.0000000	75mee1	0
107	pd	g	am241t	es	cu		5.2709335	30.0	5.2900000	0.0000000	0		0.0000000	72sid1	0
107	pd	g	am241h	es	cu		3.8981627	30.0	0.0392000	0.0000000	0		0.0100000	79pri1	0
107	rh	g	am241h	rc	cu		3.7788312	5.0	0.0380000	3.0000000%	0		0.0100000	79pri1	0
107	pd	g	a242mt	es	cu		5.3813468	30.0	5.5000000	0.0000000	0		0.0000000	75mee1	0
107			cm245t	cm	cu	x3	0.0000000	0.0	5.5000000	0.5000000	0		0.0000000	80dic2	0
107	pd	g	cm245t	es	cu		5.8143332	30.0	5.7500000	0.0000000	0		0.0000000	75mee1	0
107	rh	g	cm245t	rc	cu		5.5615361	9.1	5.5000000	0.5000000	0		0.0000000	80dic2	0
107			cf249t	cm	cu	x3	0.0000000	0.0	5.6900000	0.6100000	0		0.0000000	81dic3	0
107			cf249t	sp	cu		5.6993158	5.0	5.7020000	0.1090000	0		0.0000000	85ake1	0
107	rh	g	cf249t	rc	cu		5.6873215	10.7	5.6900000	0.6100000	0		0.0000000	81dic3	0
107	rh	g	cf249t	sp	fi	ul	0.0000000	0.0	2.8000000	0.2000000	107	cf249t	100.0000000	89dje1	0
107	ru	g	cf249t	rc	cu	x1	0.0000000	0.0	5.2000000	1.4000000	0		0.0000000	81dic3	0
107	ru	g	cf249t	sp	fi		1.6637024	7.5	29.2000000	1.2000000	107	cf249t	100.0000000	89dje1	0
107	tc	g	cf249t	sp	fi		3.1963598	7.9	56.1000000	3.1000000	107	cf249t	100.0000000	89dje1	0
107	mo	g	cf249t	sp	fi		0.6552253	7.5	11.5000000	0.5000000	107	cf249t	100.0000000	89dje1	0
107	nb	g	cf249t	sp	fi		0.0227904	50.3	0.4000000	0.2000000	107	cf249t	100.0000000	89dje1	0
107	pd	g	cf251t	es	cu		5.2249890	30.0	5.4000000	0.0000000	0		0.0000000	75mee1	0
107	pd	g	es254t	es	cu		3.8772335	30.0	4.0000000	0.0000000	0		0.0000000	75mee1	0
108			th227t	es	cu		0.0539062	30.0	0.0550000	0.0000000	0		0.0000000	75mee1	0
108			th229t	es	cu		0.0124918	15.0	0.0120000	15.0000000%	0		0.0000000	75mee1	0
108			th229t	es	cu		0.0104099	20.0	0.0100000	0.0020000	0		0.0000000	83dic1	0
108			pa231f	es	cu		0.0787853	30.0	0.0800000	0.0000000	0		0.0000000	75mee1	0
108			am241t	es	cu		4.2546098	30.0	4.2700000	0.0000000	0		0.0000000	72sid1	0
108			am241h	es	cu		3.5137496	30.0	0.0357000	0.0000000	0		0.0100000	79pri1	0
108			a242mt	es	cu		4.1093921	30.0	4.2000000	0.0000000	0		0.0000000	75mee1	0
108			cm245t	cm	cu		0.0000000	0.0	5.8000000	1.5000000	0		0.0000000	80dic2	0
108			cm245t	es	cu		5.6741911	30.0	5.5500000	0.0000000	0		0.0000000	75mee1	0
108	ru	g	cm245t	rc	cu		5.6230722	25.5	5.5000000	1.4000000	0		0.0000000	80dic2	0

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 108        cf249t   es    cu        5.5873686 30.0   5.5900000  0.0000000     0                    0.0000000   75mee1      0
 108        cf249t   es    cu        4.7977404 20.8   4.8000000  1.0000000     0                    0.0000000   81dic3      0
 108        cf249t   sp    cu        5.7942711  5.0   5.7970000  0.1100000     0                    0.0000000   85ake1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value      no.   treatment

 108 rh g   cf249t   rc    cu    x4   0.0000000  0.0   3.2800000  1.0600000     0                    0.0000000   81dic3      0
 108 rh g   cf249t   sp    fi    sm   0.0000000  0.0   8.4000000  0.5000000   108          cf249t    100.0000000   89dje1      0
 108 ru g   cf249t   rc    cu        5.0476228 26.3   5.0500000  1.3300000     0                    0.0000000   81dic3      0
 108 ru g   cf249t   sp    fi        2.8855000  7.5  50.4000000  2.5000000   108          cf249t    100.0000000   89dje1      0
 108 tc g   cf249t   sp    fi        1.9293918  7.5  33.7000000  1.6000000   108          cf249t    100.0000000   89dje1      0
 108 mo g   cf249t   sp    fi        0.4293899  7.5   7.5000000  0.3000000   108          cf249t    100.0000000   89dje1      0
 108        cf251t   es    cu        5.3217481 30.0   5.5000000  0.0000000     0                    0.0000000   75mee1      0
 108        es254t   es    cu        3.6833718 30.0   3.8000000  0.0000000     0                    0.0000000   75mee1      0
 109        th227t   es    cu        0.0354937 30.0   0.0360000  0.0000000     0                    0.0000000   75mee1      0
 109 pd g   th227t   rc    cu        0.0325359 33.3   0.0330000  0.0110000     0                    0.0000000   69fly2      0
 109 pd g   th227t   cm    cu    x3   0.0000000  0.0   0.0330000 30.0000000%    0                    0.0000000   77cro1      0
 109        th229t   es    cu        0.0128623 15.0   0.0125000 15.0000000%    0                    0.0000000   75mee1      0
 109 pd g   th229t   rc    cu        0.0133768 15.0   0.0130000 15.0000000%    0                    0.0000000   66rav1      0
 109 pd g   th229t   rc    cu        0.0123478 16.7   0.0120000  0.0020000     0                    0.0000000   81gin1      0
 109 pd g   th229t   rc    cu    x4   0.0000000  0.0   0.0071000  0.0007000     0                    0.0000000   68bor1      0
 109 pd g   th229t   cm    cu    x3   0.0000000  0.0   0.0077700 26.8000000%    0                    0.0000000   77cro1      0
 109 pd g   pa231f   rc    re        0.0798406 20.4   0.0770000 20.0000000%  140 ba g      pa231f       6.4400000   65iye1      0
 109 pd g   pa231f   rc    cu        0.0796320  6.4   0.0830000  0.0028000   140 ba g      pa231f       6.9600000   68nam1      0
 109 pd g   pa231f   cm    cu        0.0000000  0.0   0.0787000  8.3000000%    0                    0.0000000   77cro1      0
 109        am241t   es    cu        3.3357439 30.0   3.3400000  0.0000000     0                    0.0000000   72sid1      0
 109        am241t   rc    cu        2.0199867 13.3   2.0700000  0.2700000   140 ba g      am241t       6.0600000   72wei1      0
 109 pd g   am241t   rc    cu        2.5367633  5.0   2.5400000  0.0800000     0                    0.0000000   73sko2      0
 109 pd g   am241t   cm    cu        0.0000000  0.0   2.4400000 17.3000000%    0                    0.0000000   77cro1      0
 109        am241h   es    cu        3.2219508 30.0   0.0324000  0.0000000     0                    0.0100000   79pri1      0
 109 pd g   am241h   rc    cu        3.2219508  5.0   0.0324000  3.0000000%    0                    0.0100000   79pri1      0
 109 pd g   a242mt   rc    cu    x5   0.0000000  0.0 130.0000000  6.0000000   140 ba g      u235t        0.0000000   71wol1      7
 109 pd g   a242mt   rc    cu        3.7491186  9.1   3.7900000  9.1000000%    0                    0.0000000   71wol1      0
 109 pd g   a242mt   cm    cu        0.0000000  0.0   3.2300000  9.0000000%    0                    0.0000000   77cro1      0
 109        cm245t   cm    cu        0.0000000  0.0   3.7600000  0.5200000     0                    0.0000000   80dic2      0
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109	pd	g	cm245t	rc	cu		5.2885152	11.5	5.2300000	0.6000000	0				0.0000000	67gun1	0		
109	pd	g	cm245t	cm	cu		0.0000000	0.0	5.0700000	12.0000000%	0				0.0000000	77cro1	0		
109	rh	g	cm245t	rc	cu		3.7717326	13.9	3.7300000	0.5200000	0				0.0000000	80dic2	0		
109	rh	g	cm245t	rc	fi		0.9877767	58.3	21.0000000	12.0000000	109	rh	g	cm245t	100.0000000	80dic2	0		
109			cf249t	es	cu		5.0883057	30.0	5.0900000	0.0000000	0				0.0000000	75mee1	0		
109			cf249t	es	cu		5.9980028	16.7	6.0000000	1.0000000	0				0.0000000	81dic3	0		
109			cf249t	sp	cu		5.5511516	5.0	5.5530000	0.1070000	0				0.0000000	85ake1	0		
109	pd	g	cf249t	rc	cu		4.9183623	25.0	4.9200000	1.2300000	0				0.0000000	69fly1	0		
109	pd	g	cf249t	rc	cu		5.5681459	10.2	5.5700000	0.5700000	0				0.0000000	81gin4	0		
109	pd	g	cf249t	cm	cu		0.0000000	0.0	4.9200000	25.0000000%	0				0.0000000	77cro1	0		
109	rh	g	cf249t	rc	cu		5.9980028	16.7	6.0000000	1.0000000	0				0.0000000	81dic3	0		
109	rh	g	cf249t	sp	fi	sm	0.0000000	0.0	20.8000000	1.0000000	109			cf249t	100.0000000	89dje1	0		
109	ru	g	cf249t	sp	fi		2.8898715	7.2	51.8000000	3.1000000	109			cf249t	100.0000000	89dje1	0		
109	tc	g	cf249t	sp	fi		1.3221999	6.4	23.7000000	1.0000000	109			cf249t	100.0000000	89dje1	0		
109	mo	g	cf249t	sp	fi	ul	0.0000000	0.0	0.7000000	0.2000000	109			cf249t	100.0000000	89dje1	0		
109	pd	g	cf251t	rc	cu		5.1008744	7.8	5.1600000	0.4000000	0				0.0000000	75fly3	0		
109	pd	g	cf251t	rc	cu		5.3381243	7.4	5.4000000	0.4000000	0				0.0000000	73uni1	0		
109	pd	g	es254t	rc	cu		3.7022998	14.9	3.7600000	0.5600000	0				0.0000000	76fly1	0		
109	pd	g	es254t	rc	cu		3.7416859	15.8	3.8000000	0.6000000	0				0.0000000	73uni1	0		
110			th227t	es	cu		0.0352841	30.0	0.0360000	0.0000000	0				0.0000000	75mee1	0		
110			th229t	es	cu		0.0164637	15.0	0.0160000	15.0000000%	0				0.0000000	75mee1	0		
110			th229t	es	cu		0.0174927	17.6	0.0170000	0.0030000	0				0.0000000	83dic1	0		
110			pa231f	es	cu		0.0689372	30.0	0.0700000	0.0000000	0				0.0000000	75mee1	0		
110			am241t	cm	cu	x3	0.0000000	0.0	2.4500000	0.0000000	0				0.0000000	72sid1	0		
110			am241t	es	cu		1.4923542	20.0	1.5000000	20.0000000%	0				0.0000000	89rid1	0		
110	ag	m	am241h	rc	fi	ul	0.0000000	0.0	0.0012000	0.0000000	110			am241h	1.0000000	79pri1	0		
110	ag	m	am241h	rc	cu	ul	0.0000000	0.0	0.0000350	0.0000000	0				0.0100000	79pri1	0		
110			am241h	es	cu		2.8739913	30.0	0.0292000	0.0000000	0				0.0100000	79pri1	0		
110			a242mt	es	cu		2.4237268	30.0	2.5000000	0.0000000	0				0.0000000	75mee1	0		
110			cm245t	cm	cu		0.0000000	0.0	3.9500000	0.7900000	0				0.0000000	80dic2	0		
110			cm245t	es	cu		4.7233807	30.0	4.6200000	0.0000000	0				0.0000000	75mee1	0		
110			cf249t	es	cu		5.1675663	30.0	5.1700000	0.0000000	0				0.0000000	75mee1	0		
110			cf249t	es	cu		5.8972226	16.9	5.9000000	1.0000000	0				0.0000000	81dic3	0		
110			cf249t	sp	cu		5.3764679	5.0	5.3790000	0.1060000	0				0.0000000	85ake1	0		
110	pd	g	cf249t	sp	fi	ul	0.0000000	0.0	8.0000000	0.9000000	110			cf249t	100.0000000	89dje1	0		
110	rh	g	cf249t	sp	fi	sm	0.0000000	0.0	28.7000000	1.7000000	110			cf249t	100.0000000	89dje1	0		

110 ru g cf249t sp fi 3.1281885 8.8 57.8000000 3.9000000 110 cf249t 100.0000000 89dje1 0
110 tc g cf249t sp fi ul 0.0000000 0.0 5.5000000 0.4000000 110 cf249t 100.0000000 89dje1 0
110 cf251t es cu 5.2249890 30.0 5.4000000 0.0000000 0 0.0000000 75mee1 0
110 es254t es cu 3.8772335 30.0 4.0000000 0.0000000 0 0.0000000 75mee1 0
111 th227t es cu 0.0267315 30.0 0.0270000 0.0000000 0 0.0000000 75mee1 0
111 ag g th227t rc cu 0.0504929 19.6 0.0510000 0.0100000 0 0.0000000 69fly2 0
111 ag g th227t cm cu x3 0.0000000 0.0 0.0510000 20.0000000% 0 0.0000000 77cro1 0
111 th229t es cu 0.0202898 15.0 0.0200000 15.0000000% 0 0.0000000 75mee1 0
111 th229t rc cu 0.0304347 26.7 0.0300000 0.0080000 0 0.0000000 82sin1 0
111 ag g th229t rc cu 0.0202898 15.0 0.0200000 15.0000000% 0 0.0000000 66rav1 0
111 ag g th229t rc cu 0.0213043 5.0 0.0210000 0.0008000 0 0.0000000 68bor1 0
111 ag g th229t rc cu 0.0233333 13.0 0.0230000 0.0030000 0 0.0000000 81gin1 0
111 ag g th229t cm cu 0.0000000 0.0 0.0209000 4.7000000% 0 0.0000000 77cro1 0
111 pa231f es cu 0.0949219 31.0 1.0030000 0.0000000 111 ag g pa231f 1.0000000 75mee1 0
111 ag g pa231f rc re 0.0953939 20.4 0.0920000 20.0000000% 140 ba g pa231f 6.4400000 65iye1 0
111 ag g pa231f rc cu 0.0949828 6.4 0.0990000 0.0049000 140 ba g pa231f 6.9600000 68nam1 0
111 ag g pa231f cm cu x3 0.0000000 0.0 0.0885000 8.3000000% 0 0.0000000 77cro1 0
111 am241t es cu 0.9891079 30.0 0.9900000 0.0000000 0 0.0000000 72sid1 0
111 am241t rc cu 0.8883453 8.2 0.9100000 0.0700000 140 ba g am241t 6.0600000 72wei1 0
111 ag g am241t rc cu 0.9891079 5.0 0.9900000 0.0300000 0 0.0000000 73sko2 0
111 ag g am241t rc cu 0.8775095 10.4 0.8900000 0.0500000 140 ba g am241t 6.0000000 57cun2 0
111 ag g am241t rc cu x4 0.0000000 0.0 0.2200000 0.0000000 139 ba g am241t 6.2200000 65ric1 0
111 ag g am241t rc cu x4 0.0000000 0.0 1.1900000 0.0400000 0 0.0000000 71nak1 0
111 ag g am241t cm cu 0.0000000 0.0 0.9030000 19.8000000% 0 0.0000000 77cro1 0
111 am241h es cu 2.6054047 30.0 0.0262000 0.0000000 0 0.0100000 79pri1 0
111 ag g am241h rc cu 2.2971316 5.0 0.0231000 3.0000000% 0 0.0100000 79pri1 0
111 pd m am241h rc cu 0.1760140 8.4 0.0017700 8.4000000% 0 0.0100000 79pri1 0
111 a242mt es cu 1.5181795 31.0 1.0030000 0.0000000 111 ag g a242mt 1.0000000 75mee1 0
111 ag g a242mt rc cu x5 0.0000000 0.0 92.0000000 2.0000000 140 ba g u235t 0.0000000 71wol1 7
111 ag g a242mt rc cu 1.5332807 7.3 1.5500000 7.3000000% 0 0.0000000 71wol1 0
111 ag g a242mt cm cu 0.0000000 0.0 1.5600000 8.0000000% 0 0.0000000 77cro1 0
111 cm245t cm cu 0.0000000 0.0 3.7000000 0.9000000 0 0.0000000 80dic2 0
111 cm245t es cu 4.0421497 30.5 1.0030000 0.0000000 111 ag g cm245t 1.0000000 75mee1 0
111 ag g cm245t rc cu 3.6587183 19.3 3.6300000 0.7000000 0 0.0000000 67gun1 0
111 ag g cm245t rc cu 3.7292721 24.3 3.7000000 0.9000000 0 0.0000000 80dic2 0
111 ag g cm245t cm cu 0.0000000 0.0 3.7800000 20.0000000% 0 0.0000000 77cro1 0

111 ag g cm245t rc cu 4.0381668 5.8 3.9300000 0.2000000 99 mo g cm245t 4.0900000 79ram2 0
111 cf249t es cu 5.4381892 30.0 5.4400000 0.0000000 0 0.0000000 75mee1 0
111 cf249t es cu 6.1679462 8.4 6.1700000 0.5200000 0 0.0000000 81dic3 0
111 cf249t sp cu 5.0413214 5.0 5.0430000 0.1020000 0 0.0000000 85ake1 0
111 ag g cf249t rc cu 5.1582824 10.9 5.1600000 0.5600000 0 0.0000000 69fly1 0
111 ag g cf249t rc cu 5.4781759 5.0 5.4800000 0.1600000 0 0.0000000 72kur1 0
111 ag g cf249t rc cu 4.8483856 15.5 4.8500000 0.7500000 0 0.0000000 81gin4 0
111 ag g cf249t cm cu 0.0000000 0.0 5.2600000 8.9000000% 0 0.0000000 77cro1 0
111 ag g cf249t rc cu 6.1679462 8.4 6.1700000 0.5200000 0 0.0000000 81dic3 0
111 pd g cf249t sp fi sm 0.0000000 0.0 14.4000000 0.6000000 111 cf249t 100.0000000 89dje1 0
111 pd m cf249t rc fi 0.4564894 7.2 0.0830000 0.0050000 111 cf249t 1.0000000 73tro1 0
111 pd m cf249t rc cu 0.6297903 11.1 0.6300000 0.0700000 0 0.0000000 81dic3 0
111 rh g cf249t sp fi 3.0359298 6.4 55.2000000 2.5000000 111 cf249t 100.0000000 89dje1 0
111 ru g cf249t sp fi 1.5344645 6.4 27.9000000 0.8000000 111 cf249t 100.0000000 89dje1 0
111 tc g cf249t sp fi 0.1374968 12.6 2.5000000 0.3000000 111 cf249t 100.0000000 89dje1 0
111 cf251t es cu 4.9774244 30.3 1.0030000 0.0000000 111 ag g cf251t 1.0000000 75mee1 0
111 ag g cf251t rc cu 4.8900554 5.1 4.9300000 0.2500000 0 0.0000000 75fly3 0
111 ag g cf251t rc cu 5.1578678 5.8 5.2000000 0.3000000 0 0.0000000 73uni1 0
111 es254t es cu 4.1604452 30.3 1.0030000 0.0000000 111 ag g es254t 1.0000000 75mee1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

111 ag g es254t rc cu 4.1975436 5.0 4.2300000 0.2100000 0 0.0000000 76fly1 0
111 ag g es254t rc cu 4.1677738 5.0 4.2000000 0.2000000 0 0.0000000 73uni1 0
112 th227t es cu 0.0287116 30.0 0.0290000 0.0000000 0 0.0000000 75mee1 0
112 pd g th227t rc cu 0.0287116 20.7 0.0290000 0.0060000 0 0.0000000 69fly2 0
112 pd g th227t cm cu x3 0.0000000 0.0 0.0290000 21.0000000% 0 0.0000000 77cro1 0
112 th229t es cu 0.0202898 15.0 0.0200000 15.0000000% 0 0.0000000 75mee1 0
112 th229t rc cu x4 0.0000000 0.0 0.0330000 0.0120000 0 0.0000000 82sin1 0
112 pd g th229t rc cu 0.0182608 15.0 0.0180000 15.0000000% 0 0.0000000 66rav1 0
112 pd g th229t rc cu 0.0213043 5.0 0.0210000 0.0005000 0 0.0000000 68bor1 0
112 pd g th229t rc cu 0.0202898 15.0 0.0200000 0.0030000 0 0.0000000 81gin1 0
112 pd g th229t cm cu 0.0000000 0.0 0.0203000 12.6000000% 0 0.0000000 77cro1 0
112 pd g th229t rc cu 0.0202898 15.0 0.0200000 0.0030000 0 0.0000000 81gin1 0
112 pd g pa231f rc re 0.0580659 20.4 0.0560000 20.0000000% 140 ba g pa231f 6.4400000 65iye1 0

112	pd	g	pa231f	rc	cu		0.0585247	6.4	0.0610000	0.0020000	140	ba g	pa231f	6.9600000	68nam1	0
112	pd	g	pa231f	cm	cu		0.0000000	0.0	0.0590000	8.3000000%	0			0.0000000	77cro1	0
112			am241t	es	cu		0.3595413	30.0	0.3600000	0.0000000	0			0.0000000	72sid1	0
112			am241t	rc	cu		0.4293691	29.7	0.4400000	0.1300000	140	ba g	am241t	6.0600000	72wei1	0
112	pd	g	am241t	rc	cu		0.5692737	5.0	0.5700000	0.0200000	0			0.0000000	73sko2	0
112	pd	g	am241t	cm	cu		0.0000000	0.0	0.5340000	8.6000000%	0			0.0000000	77cro1	0
112			am241h	es	cu		2.3170202	30.0	0.0233000	0.0000000	0			0.0100000	79pri1	0
112	pd	g	am241h	rc	cu		2.4065188	5.0	0.0242000	3.0000000%	0			0.0100000	79pri1	0
112	ag	g	a242mt	rc	cu	x5	0.0000000	0.0	57.8000000	0.7000000	140	ba g	u235t	0.0000000	71wol1	7
112	ag	g	a242mt	rc	cu		0.6429887	7.3	0.6500000	7.3000000%	0			0.0000000	71wol1	0
112	ag	g	a242mt	cm	cu		0.0000000	0.0	0.4600000	8.0000000%	0			0.0000000	77cro1	0
112			cm245t	cm	cu		0.0000000	0.0	3.4900000	0.4300000	0			0.0000000	80dic2	0
112			cm245t	es	cu		2.4379746	30.0	2.4000000	0.0000000	0			0.0000000	75mee1	0
112	ag	g	cm245t	rc	cu		3.4741138	12.6	3.4200000	0.4300000	0			0.0000000	80dic2	0
112	ag	g	cm245t	rc	fi		0.0732915	63.5	2.4000000	1.5000000	112	ag g	cm245t	100.0000000	80dic2	0
112	pd	g	cm245t	rc	cu		1.6253164	25.0	1.6000000	0.4000000	0			0.0000000	67gun1	0
112	pd	g	cm245t	cm	cu		0.0000000	0.0	1.4800000	25.0000000%	0			0.0000000	77cro1	0
112			cf249t	es	cu		5.1782758	30.0	5.1800000	0.0000000	0			0.0000000	75mee1	0
112			cf249t	es	cu		5.5781426	12.4	5.5800000	0.6900000	0			0.0000000	81dic3	0
112			cf249t	sp	cu		4.6134638	5.0	4.6150000	0.0960000	0			0.0000000	85ake1	0
112	ag	g	cf249t	rc	fi		0.1723804	23.2	0.0350000	0.0080000	112		cf249t	1.0000000	73tro1	0
112	ag	g	cf249t	rc	cu		5.2682458	12.3	5.2700000	0.6500000	0			0.0000000	81dic3	0
112	pd	g	cf249t	rc	cu		3.4788416	16.1	3.4800000	0.5600000	0			0.0000000	69fly1	0
112	pd	g	cf249t	rc	cu		5.4481859	7.0	5.4500000	0.3800000	0			0.0000000	81gin4	0
112	pd	g	cf249t	cm	cu	x3	0.0000000	0.0	3.4800000	16.0000000%	0			0.0000000	77cro1	0
112	pd	g	cf249t	rc	cu		5.4181959	7.6	5.4200000	0.4100000	0			0.0000000	81gud1	0
112	pd	g	cf249t	sp	fi		1.5267982	6.4	31.0000000	1.3000000	112		cf249t	100.0000000	89dje1	0
112	rh	g	cf249t	sp	fi		2.0390143	6.4	41.4000000	1.5000000	112		cf249t	100.0000000	89dje1	0
112	ru	g	cf249t	sp	fi		1.1820373	6.4	24.0000000	0.8000000	112		cf249t	100.0000000	89dje1	0
112	tc	g	cf249t	sp	fi		0.1822307	27.3	3.7000000	1.0000000	112		cf249t	100.0000000	89dje1	0
112	pd	g	cf251t	rc	cu		5.1799577	7.6	5.2400000	0.4000000	0			0.0000000	75fly3	0
112	pd	g	cf251t	rc	cu		5.4369785	7.3	5.5000000	0.4000000	0			0.0000000	73uni1	0
112	pd	g	es254t	rc	cu		4.3324785	10.0	4.4000000	0.4400000	0			0.0000000	76fly1	0
112	pd	g	es254t	rc	cu		4.3324785	9.1	4.4000000	0.4000000	0			0.0000000	73uni1	0
113	in	g	th227t	es	cu		0.0366321	30.0	0.0370000	0.0000000	0			0.0000000	75mee1	0
113	in	m	th227t	es	cu		0.0000000	30.0	0.0000001	0.0000000	0			1000.0000000	75mee1	0

113	cd g	th227t	es	cu		0.0346520	30.0	0.0350000	0.0000000	0		0.0000000	75mee1	0
113	ag g	th227t	rc	cu		0.0336619	20.6	0.0340000	0.0070000	0		0.0000000	69fly2	0
113	ag g	th227t	cm	cu		0.0000000	0.0	0.0340000	21.0000000%	0		0.0000000	77cro1	0
113		th229t	es	cu		0.0163279	12.5	0.0160000	0.0020000	0		0.0000000	83dic1	0
113	in g	th229t	es	cu		0.0168994	30.0	0.0165600	0.0000000	0		0.0000000	75mee1	0
113		th229t	cm	cu		0.0000000	0.0	0.0159000	0.0000000	0		0.0000000	68bor1	0
113	in m	th229t	es	cu		0.0000000	30.0	0.0000001	0.0000000	0		1000.0000000	75mee1	0
113	cd g	th229t	es	cu		0.0173484	15.0	0.0170000	15.0000000%	0		0.0000000	75mee1	0
113	ag g	th229t	rc	cu		0.0163279	15.0	0.0160000	15.0000000%	0		0.0000000	66rav1	0
113	ag g	th229t	rc	cu		0.0146951	11.8	0.0144000	0.0017000	0		0.0000000	68bor1	0
113	ag g	th229t	es	cu		0.0157156	14.8	0.0154000	14.8000000%	0		0.0000000	77cro1	0
113	ag g	th229t	rc	cu	x4	0.0000000	0.0	0.0360000	0.0080000	0		0.0000000	82sin1	0
113	in g	pa231f	es	cu		0.0789990	30.0	0.0793000	0.0000000	0		0.0000000	75mee1	0
113	in m	pa231f	es	cu		0.0000000	30.0	0.0000001	0.0000000	0		1000.0000000	75mee1	0
113	cd g	pa231f	es	cu		0.0724545	31.0	1.0030000	0.0000000	113	ag g	pa231f	1.0000000	75mee1	0
113	ag g	pa231f	rc	re		0.0736192	20.4	0.0710000	20.0000000%	140	ba g	pa231f	6.4400000	65iye1	0
113	ag g	pa231f	rc	cu		0.0738755	8.4	0.0770000	0.0057000	140	ba g	pa231f	6.9600000	68nam1	0
113	ag g	pa231f	rc	cu		0.0707233	14.5	0.0720000	0.0100000	99	mo g	pa231f	2.5700000	69bir2	0
113	ag g	pa231f	cm	cu		0.0000000	0.0	0.0654000	10.8000000%	0		0.0000000	77cro1	0
113	in g	am241t	es	cu		0.1897153	30.0	0.1902000	0.0000000	0		0.0000000	75mee1	0
113	in m	am241t	es	cu		0.0000000	30.0	0.0000000	0.0000000	0		0.0000000	75mee1	0
113	cd g	am241t	es	cu		0.1895158	30.0	0.1900000	0.0000000	0		0.0000000	72sid1	0
113	ag g	am241t	rc	cu		0.1771812	10.4	0.1800000	0.0100000	140	ba g	am241t	6.0000000	57cun2	0
113	ag g	am241t	rc	cu	x1	0.0000000	0.0	0.4870000	0.0110000	0		0.0000000	71nak1	0
113	ag g	am241t	rc	cu		0.1851728	26.5	0.1900000	0.0500000	140	ba g	am241t	6.0600000	72wei1	0
113	ag g	am241t	cm	cu		0.0000000	0.0	0.1800000	36.0000000%	0		0.0000000	77cro1	0
113	in g	am241h	es	cu		2.4254130	30.0	2.4390000	0.0000000	0		0.0000000	75mee1	0
113	in m	am241h	es	cu		0.0000002	30.0	0.0000002	0.0000000	0		0.0000000	75mee1	0
113	cd g	am241h	es	cu		2.0783572	30.0	0.0209000	0.0000000	0		0.0100000	79pri1	0
113	ag g	am241h	rc	cu		2.1976887	5.0	0.0221000	3.0000000%	0		0.0100000	79pri1	0
113	in g	a242mt	es	cu		0.2637984	30.0	0.2721000	0.0000000	0		0.0000000	75mee1	0
113	in m	a242mt	es	cu		0.0000000	30.0	0.0000000	0.0000000	0		0.0000000	75mee1	0
113	cd g	a242mt	es	cu		0.2326778	30.0	0.2400000	0.0000000	0		0.0000000	75mee1	0
113		cm245t	cm	cu		0.0000000	0.0	2.0200000	0.5000000	0		0.0000000	80dic2	0
113	in g	cm245t	es	cu		2.1210379	30.0	2.0880000	0.0000000	0		0.0000000	75mee1	0
113	in m	cm245t	es	cu		0.0000000	30.0	0.0000000	0.0000000	0		0.0000000	75mee1	0

113	cd	g	cm245t	es	cu		1.2189873	30.0	1.2000000	0.0000000	0	0.0000000	75mee1	0
113	ag	g	cm245t	rc	cu		2.0519620	24.8	2.0200000	0.5000000	0	0.0000000	67gun1	0
113	ag	g	cm245t	rc	cu	x2	0.0000000	0.0	2.0000000	0.3000000	0	0.0000000	80dic2	0
113	in	g	cf249t	es	cu		3.6422846	30.0	3.6440000	0.0000000	0	0.0000000	75mee1	0
113			cf249t	es	cu		5.8972226	27.1	5.9000000	1.6000000	0	0.0000000	81dic3	0
113			cf249t	sp	cu		4.2190130	5.0	4.2210000	0.0930000	0	0.0000000	85ake1	0
113	in	m	cf249t	es	cu		0.0000000	30.0	0.0000000	0.0000000	0	0.0000000	75mee1	0
113	cd	g	cf249t	es	cu		3.0185784	30.0	3.0200000	0.0000000	0	0.0000000	75mee1	0
113	ag	g	cf249t	rc	cu		2.9186254	11.0	2.9200000	0.3200000	0	0.0000000	69fly1	0
113	ag	g	cf249t	cm	cu		0.0000000	0.0	2.9200000	11.0000000%	0	0.0000000	77cro1	0
113	ag	g	cf249t	rc	cu	x1	0.0000000	0.0	4.8000000	1.6000000	0	0.0000000	81dic3	0
113	ag	g	cf249t	sp	fi	sm	0.0000000	0.0	6.4000000	1.1000000	113	cf249t	100.0000000	89dje1 0
113	ag	m	cf249t	rc	cu	x1	0.0000000	0.0	1.1500000	0.1300000	0	0.0000000	81dic3	0
113	pd	g	cf249t	sp	fi		1.6326373	7.6	39.2000000	2.0000000	113	cf249t	100.0000000	89dje1 0
113	rh	g	cf249t	sp	fi		1.9533339	7.5	46.9000000	1.9000000	113	cf249t	100.0000000	89dje1 0
113	ru	g	cf249t	sp	fi		0.3123668	12.1	7.5000000	0.8000000	113	cf249t	100.0000000	89dje1 0
113	in	g	cf251t	es	cu		4.3385372	30.0	4.4100000	0.0000000	0	0.0000000	75mee1	0
113	in	m	cf251t	es	cu		0.0000000	30.0	0.0000000	0.0000000	0	10.0000000	75mee1	0
113	cd	g	cf251t	rc	cu		4.8501108	9.9	4.9300000	0.4900000	0	0.0000000	75fly3	0
113	ag	g	cf251t	rc	cu		3.5908528	10.1	3.6500000	0.3700000	0	0.0000000	75fly3	0
113	in	g	es254t	es	cu		3.9189237	30.0	3.9800000	0.0000000	0	0.0000000	75mee1	0
113			es254t	cm	cu	x3	0.0000000	0.0	4.7200000	0.4700000	0	0.0000000	76fly1	0
113	in	m	es254t	es	cu		0.0000000	30.0	0.0000000	0.0000000	0	100.0000000	75mee1	0
113	cd	g	es254t	es	cu		3.8696910	30.0	3.9300000	0.0000000	0	0.0000000	75mee1	0
113	ag	g	es254t	rc	cu		3.4364431	10.0	3.4900000	0.3500000	0	0.0000000	76fly1	0
114			th227t	es	cu		0.0303035	30.0	0.0300000	0.0000000	0	0.0000000	75mee1	0
114			th229t	es	cu		0.0218607	15.0	0.0210000	15.0000000%	0	0.0000000	75mee1	0
114			th229t	es	cu		0.0208197	20.0	0.0200000	0.0040000	0	0.0000000	83dic1	0
114			pa231f	es	cu		0.0610586	30.0	0.0620000	0.0000000	0	0.0000000	75mee1	0
114			am241t	es	cu		0.1489187	30.0	0.1500000	0.0000000	0	0.0000000	72sid1	0
114			am241h	es	cu		1.8381081	30.0	0.0188000	0.0000000	0	0.0100000	79pri1	0
114			a242mt	es	cu		0.1052539	30.0	0.1100000	0.0000000	0	0.0000000	75mee1	0
114	cd	g	cm245t	rc	cu		1.8569620	38.9	1.8000000	0.7000000	0	0.0000000	80dic2	0
114			cm245t	cm	cu		0.0000000	0.0	2.4000000	0.9000000	0	0.0000000	80dic2	0
114			cm245t	es	cu		0.6396202	30.0	0.6200000	0.0000000	0	0.0000000	75mee1	0

0measured nuclide	fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
114	cf249t	es	cu		2.9486113	30.0	2.9500000	0.0000000	0		0.0000000	75mee1	0
114	cf249t	es	cu		4.5978346	20.0	4.6000000	0.9200000	0		0.0000000	81dic3	0
114	cf249t	sp	cu		3.5313369	5.0	3.5330000	0.0860000	0		0.0000000	85ake1	0
114 ag g	cf249t	rc	cu		4.4579005	13.9	4.4600000	0.6200000	0		0.0000000	81dic3	0
114 ag g	cf249t	sp	fi		0.5109279	11.4	14.1000000	1.4000000	114	cf249t	100.0000000	89dje1	0
114 pd g	cf249t	sp	fi		2.0835711	7.5	57.5000000	2.2000000	114	cf249t	100.0000000	89dje1	0
114 rh g	cf249t	sp	fi		0.9385129	7.5	25.9000000	1.2000000	114	cf249t	100.0000000	89dje1	0
114 ru g	cf249t	sp	fi		0.0905900	32.5	2.5000000	0.8000000	114	cf249t	100.0000000	89dje1	0
114	cf251t	es	cu		4.5089720	30.0	4.6600000	0.0000000	0		0.0000000	75mee1	0
114	es254t	es	cu		4.9434727	30.0	5.1000000	0.0000000	0		0.0000000	75mee1	0
115	th227t	es	cu		0.0302146	30.0	0.0300000	0.0000000	0		0.0000000	75mee1	0
115 cd g	th227t	rc	cu	ul	0.0000000	0.0	0.1770000	0.0000000	0		0.0000000	69fly2	0
115 cd g	th227t	cm	cu		0.0000000	0.0	0.1770000	15.0000000%	0		0.0000000	77cro1	0
115	th229t	rc	cu		0.0189686	15.0	0.0197000	0.0000000	0		0.0000000	68bor1	0
115	th229t	es	cu		0.0192575	15.0	0.0200000	15.0000000%	0		0.0000000	75mee1	0
115	th229t	rc	cu		0.0211833	18.2	0.0220000	0.0040000	0		0.0000000	82sin1	0
115 cd g	th229t	rc	cu		0.0202204	15.0	0.0210000	15.0000000%	0		0.0000000	66rav1	0
115 cd g	th229t	rc	cu		0.0177169	5.4	0.0184000	0.0010000	0		0.0000000	68bor1	0
115 cd g	th229t	rc	cu		0.0202204	14.3	0.0210000	0.0030000	0		0.0000000	81gin1	0
115 cd g	th229t	cm	cu		0.0000000	0.0	0.0185000	4.7000000%	0		0.0000000	77cro1	0
115	pa231f	es	cu		0.0796963	30.0	0.0800000	0.0000000	0		0.0000000	75mee1	0
115	pa231f	cm	cu		0.0000000	0.0	0.0800000	15.0000000%	0		0.0000000	77cro1	0
115 cd g	pa231f	rc	re		0.0767299	20.4	0.0740000	20.0000000%	140 ba g	pa231f	6.4400000	65iye1	0
115 cd g	pa231f	rc	cu		0.0767537	6.9	0.0800000	0.0045000	140 ba g	pa231f	6.9600000	68nam1	0
115	am241t	rc	cu		0.0499549	5.0	0.0500000	0.0020000	0		0.0000000	73sko2	0
115	am241t	es	cu		0.1099009	30.0	0.1100000	0.0000000	0		0.0000000	72sid1	0
115	am241t	cm	cu		0.0000000	0.0	0.0514000	6.0000000%	0		0.0000000	77cro1	0
115 cd g	am241t	rc	cu		0.0469577	5.0	0.0470000	0.0020000	0		0.0000000	73sko2	0
115 cd g	am241t	rc	cu		0.0453544	10.4	0.0460000	0.0030000	140 ba g	am241t	6.0000000	57cun2	0
115 cd g	am241t	rc	cu	x4	0.0000000	0.0	0.0750000	0.0080000	0		0.0000000	71nak1	0
115 cd m	am241t	rc	cu		0.0039964	30.0	0.0040000	0.0000000	0		0.0000000	57cun2	0
115	am241h	es	cu		1.7203626	30.0	0.0173000	0.0000000	0		0.0100000	79pri1	0
115 cd g	am241h	rc	cu		1.5910868	5.0	0.0160000	3.0000000%	0		0.0100000	79pri1	0

115 cd m am241h rc cu 0.1292758 5.0 0.0013000 3.0000000% 0 0.0100000 79pri1 0
115 a242mt cm cu 0.0000000 0.0 0.0710000 7.5000000% 0 0.0000000 77cro1 0
115 cd g a242mt rc cu x5 0.0000000 0.0 8.0000000 0.1000000 140 ba g u235t 0.0000000 71wol1 7
115 cd g a242mt rc cu 0.0638043 7.3 0.0645000 7.3000000% 0 0.0000000 71wol1 0
115 cd m a242mt rc cu x5 0.0000000 0.0 7.8000000 0.3000000 140 ba g u235t 0.0000000 71wol1 7
115 cd m a242mt rc cu 0.0098921 7.3 0.0100000 7.3000000% 0 0.0000000 71wol1 0
115 cm245t cm cu 0.0000000 0.0 0.5700000 0.0300000 0 0.0000000 80dic2 0
115 cm245t es cu 0.5990091 30.3 1.1600000 0.0000000 115 cd g cm245t 1.0000000 75mee1 0
115 cd g cm245t rc cu 0.5731887 5.3 0.5700000 0.0300000 0 0.0000000 80dic2 0
115 cd g cm245t rc cu x4 0.0000000 0.0 0.4100000 0.0700000 0 0.0000000 67gun1 0
115 cd g cm245t rc cu nr 0.4387689 5.7 0.4280000 0.0100000 99 mo g cm245t 4.0900000 79ram2 0
115 cf249t rc cu 2.4594210 19.9 2.4600000 0.4900000 0 0.0000000 69fly1 0
115 cf249t es cu 2.9193127 30.0 2.9200000 0.0000000 0 0.0000000 75mee1 0
115 cf249t cm cu 0.0000000 0.0 2.8200000 17.1000000% 0 0.0000000 77cro1 0
115 cf249t es cu 3.0792751 17.9 3.0800000 0.5500000 0 0.0000000 81dic3 0
115 cf249t sp cu 2.8513287 5.0 2.8520000 0.0770000 0 0.0000000 85ake1 0
115 cd g cf249t rc cu 2.6793692 5.0 2.6800000 0.1300000 0 0.0000000 72kur1 0
115 cd g cf249t rc cu 2.8793221 5.0 2.8800000 0.1400000 0 0.0000000 81gin4 0
115 cd g cf249t rc cu x4 0.0000000 0.0 1.3300000 0.1600000 0 0.0000000 81dic3 0
115 cd m cf249t rc cu 0.2699364 5.0 0.2700000 0.0030000 0 0.0000000 72kur1 0
115 cd m cf249t rc cu 0.2599388 15.4 0.2600000 0.0400000 0 0.0000000 81gin4 0
115 cd m cf249t rc cu x4 0.0000000 0.0 1.7500000 0.5300000 0 0.0000000 81dic3 0
115 ag g cf249t rc cu x1 0.0000000 0.0 1.2600000 0.3400000 0 0.0000000 81gud1 0
115 ag g cf249t sp fi sm 0.0000000 0.0 31.6000000 1.4000000 115 cf249t 100.0000000 89dje1 0
115 pd g cf249t sp fi 1.5528114 5.7 52.0000000 1.7000000 115 cf249t 100.0000000 89dje1 0
115 rh g cf249t sp fi 0.4718158 6.4 15.8000000 0.9000000 115 cf249t 100.0000000 89dje1 0
115 ru g cf249t sp fi 0.0179171 33.5 0.6000000 0.2000000 115 cf249t 100.0000000 89dje1 0
115 cf251t rc cu 4.5338747 5.0 4.5600000 0.2300000 0 0.0000000 75fly3 0
115 cf251t rc cu 4.5736456 5.0 4.6000000 0.2000000 0 0.0000000 73uni1 0
115 cd g cf251t rc cu 4.0566248 5.0 4.0800000 0.2000000 0 0.0000000 75fly3 0
115 cd g cf251t rc cu 4.2753643 5.0 4.3000000 0.2000000 0 0.0000000 73uni1 0
115 es254t rc cu 5.5967249 9.9 5.6400000 0.5600000 0 0.0000000 76fly1 0
115 es254t rc cu 5.5570318 5.4 5.6000000 0.3000000 0 0.0000000 73uni1 0
115 cd g es254t rc cu 5.2990267 9.9 5.3400000 0.5300000 0 0.0000000 76fly1 0
115 cd g es254t rc cu 5.2593336 5.7 5.3000000 0.3000000 0 0.0000000 73uni1 0
115 cd m es254t rc cu 0.2976981 10.0 0.3000000 0.0300000 0 0.0000000 76fly1 0

115	cd m	es254t	rc	cu		0.2976981	10.0	0.3000000	0.0300000	0		0.0000000	73uni1	0
116		th227t	es	cu		0.0323237	30.0	0.0320000	0.0000000	0		0.0000000	75mee1	0
116		th229t	es	cu		0.0205849	15.0	0.0230000	15.0000000%	0		0.0000000	75mee1	0
116		th229t	es	cu		0.0178999	20.0	0.0200000	0.0040000	0		0.0000000	83dic1	0
116		pa231f	es	cu		0.0646660	30.0	0.0630000	0.0000000	0		0.0000000	75mee1	0
116		am241t	cm	cu	x3	0.0000000	0.0	0.0700000	0.0000000	0		0.0000000	72sid1	0
116		am241t	es	cu		0.0397961	20.0	0.0400000	20.0000000%	0		0.0000000	89rid1	0
116		am241h	es	cu		1.5447929	30.0	0.0158000	0.0000000	0		0.0100000	79pri1	0
116		a242mt	es	cu		0.0387796	30.0	0.0400000	0.0000000	0		0.0000000	75mee1	0
116		cm245t	es	cu		0.2166456	30.0	0.2100000	0.0000000	0		0.0000000	75mee1	0
116		cf249t	cm	cu	x3	0.0000000	0.0	1.2500000	0.1100000	0		0.0000000	81dic3	0
116		cf249t	sp	cu		2.1919677	5.0	2.1930000	0.0680000	0		0.0000000	85ake1	0
116	cd g	cf249t	sp	fi		0.1425655	13.5	6.5000000	0.8000000	116	cf249t	100.0000000	89dje1	0
116	ag g	cf249t	rc	cu		0.8495999	8.2	0.8500000	0.0700000	0		0.0000000	81dic3	0
116	ag g	cf249t	sp	fi	sm	0.0000000	0.0	42.2000000	1.7000000	116	cf249t	100.0000000	89dje1	0
116	pd g	cf249t	sp	fi		0.9913782	7.5	45.2000000	1.7000000	116	cf249t	100.0000000	89dje1	0
116	rh g	cf249t	sp	fi		0.1337922	14.3	6.1000000	0.8000000	116	cf249t	100.0000000	89dje1	0
116		cf251t	es	cu		3.6258312	30.0	3.8000000	0.0000000	0		0.0000000	75mee1	0
116		es254t	es	cu		5.4784674	30.0	5.6000000	0.0000000	0		0.0000000	75mee1	0
117		th227t	es	cu		0.0382718	30.0	0.0380000	0.0000000	0		0.0000000	75mee1	0
117		th229t	rc	cu		0.0173318	15.0	0.0180000	0.0000000	0		0.0000000	68bor1	0
117		th229t	es	cu		0.0231090	15.0	0.0240000	15.0000000%	0		0.0000000	75mee1	0
117	in g	th229t	rc	cu		0.0159837	6.6	0.0166000	0.0011000	0		0.0000000	68bor1	0
117	cd g	th229t	rc	cu		0.0156949	11.7	0.0163000	0.0019000	0		0.0000000	68bor1	0
117	cd g	th229t	cm	cu		0.0000000	0.0	0.0165000	6.0000000%	0		0.0000000	77cro1	0
117		pa231f	es	cu		0.0656925	30.0	0.0640000	0.0000000	0		0.0000000	75mee1	0
117		am241t	cm	cu	x3	0.0000000	0.0	0.0550000	0.0000000	0		0.0000000	72sid1	0
117		am241t	es	cu		0.0318847	20.0	0.0320000	20.0000000%	0		0.0000000	89rid1	0
117	cd g	am241t	rc	cu	x1	0.0000000	0.0	0.0086000	0.0021000	0		0.0000000	71nak1	0
117		am241h	es	cu		1.4960502	30.0	0.0152000	0.0000000	0		0.0100000	79pri1	0
117		a242mt	es	cu		0.0293528	30.0	0.0300000	0.0000000	0		0.0000000	75mee1	0
117		cm245t	es	cu		0.1431327	30.0	0.1400000	0.0000000	0		0.0000000	75mee1	0
117		cf249t	rc	cu		1.8787484	8.5	1.8800000	0.1600000	0		0.0000000	72kur1	0
117		cf249t	cm	cu	x3	0.0000000	0.0	1.1700000	0.1100000	0		0.0000000	81dic3	0
117		cf249t	sp	cu		1.5789481	36.1	1.5800000	0.5700000	0		0.0000000	85ake1	0
117	cd g	cf249t	cm	cu		0.0000000	0.0	1.8800000	8.0000000%	0		0.0000000	77cro1	0

117 cd g cf249t rc cu x1 0.0000000 0.0 0.5200000 0.0700000 0 0.0000000 81dic3 0
117 cd g cf249t sp fi sm 0.0000000 0.0 11.8000000 1.1000000 117 cf249t 100.0000000 89dje1 0
117 cd m cf249t rc cu x1 0.0000000 0.0 1.3500000 0.1100000 0 0.0000000 81gud1 0
117 cd m cf249t rc cu 0.5596272 12.5 0.5600000 0.0700000 0 0.0000000 81dic3 0
117 ag g cf249t sp fi sm 0.0000000 0.0 69.0000000 2.5000000 117 cf249t 100.0000000 89dje1 0
117 pd g cf249t sp fi 0.3532969 10.8 19.3000000 1.4000000 117 cf249t 100.0000000 89dje1 0
117 cf251t es cu 2.9027717 30.0 3.0000000 0.0000000 0 0.0000000 75mee1 0
117 es254t es cu 5.0871483 30.0 5.2000000 0.0000000 0 0.0000000 75mee1 0
118 th227t es cu 0.0474755 30.0 0.0470000 0.0000000 0 0.0000000 75mee1 0
118 th229t es cu 0.0173318 15.0 0.0180000 15.0000000% 0 0.0000000 75mee1 0
118 cd g th229t rc cu 0.0167540 5.0 0.0174000 0.0008000 0 0.0000000 68bor1 0
118 cd g th229t cm cu x3 0.0000000 0.0 0.0174000 5.0000000% 0 0.0000000 77cro1 0
118 pd g th229t rc cu le 0.0070290 9.6 0.0073000 0.0007000 0 0.0000000 68bor1 0
118 pa231f es cu 0.0667189 30.0 0.0650000 0.0000000 0 0.0000000 75mee1 0
118 am241t es cu 0.0498198 30.0 0.0500000 0.0000000 0 0.0000000 72sid1 0
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0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

118 am241t es cu 0.0298919 20.0 0.0300000 20.0000000% 0 0.0000000 89rid1 0
118 am241h es cu 1.4470212 30.0 0.0148000 0.0000000 0 0.0100000 79pri1 0
118 a242mt es cu 0.0271457 30.0 0.0280000 0.0000000 0 0.0000000 75mee1 0
118 cm245t es cu 0.0845949 30.0 0.0820000 0.0000000 0 0.0000000 75mee1 0
118 cf249t es cu 1.0295151 30.0 1.0300000 0.0000000 0 0.0000000 75mee1 0
118 cf249t es cu 0.7796328 20.5 0.7800000 0.1600000 0 0.0000000 81dic3 0
118 cf249t sp cu 1.0355123 5.0 1.0360000 0.0460000 0 0.0000000 85ake1 0
118 cd g cf249t sp fi 0.2236490 8.9 21.9000000 1.5000000 118 cf249t 100.0000000 89dje1 0
118 ag g cf249t sp fi sm 0.0000000 0.0 51.9000000 2.8000000 118 cf249t 100.0000000 89dje1 0
118 pd g cf249t sp fi 0.2685830 7.5 26.3000000 1.3000000 118 cf249t 100.0000000 89dje1 0
118 cf251t es cu 1.9083322 30.0 2.0000000 0.0000000 0 0.0000000 75mee1 0
118 es254t es cu 4.4588185 30.0 4.6000000 0.0000000 0 0.0000000 75mee1 0
119 th227t es cu 0.0634507 30.0 0.0630000 0.0000000 0 0.0000000 75mee1 0
119 th229t es cu 0.0194408 15.0 0.0210000 15.0000000% 0 0.0000000 75mee1 0
119 th229t es cu 0.0111090 16.7 0.0120000 0.0020000 0 0.0000000 83dic1 0
119 pa231f es cu 0.0687718 30.0 0.0670000 0.0000000 0 0.0000000 75mee1 0
119 am241t cm cu x3 0.0000000 0.0 0.0500000 0.0000000 0 0.0000000 72sid1 0

119		am241t	es	cu		0.0278573	20.0	0.0280000	20.0000000%	0		0.0000000	89rid1	0
119		am241h	es	cu		1.4470212	30.0	0.0148000	0.0000000	0		0.0100000	79pri1	0
119		a242mt	es	cu		0.0232678	30.0	0.0240000	0.0000000	0		0.0000000	75mee1	0
119		cm245t	es	cu		0.0526139	30.0	0.0510000	0.0000000	0		0.0000000	75mee1	0
119		cf249t	es	cu		0.6197081	30.0	0.6200000	0.0000000	0		0.0000000	75mee1	0
119		cf249t	es	cu		0.5497411	20.0	0.5500000	0.1100000	0		0.0000000	81dic3	0
119		cf249t	sp	cu		0.6147105	5.9	0.6150000	0.0360000	0		0.0000000	85ake1	0
119	in g	cf249t	rc	cu	x1	0.0000000	0.0	0.5300000	0.0600000	0		0.0000000	81dic3	0
119	cd g	cf249t	sp	fi	sm	0.0000000	0.0	35.8000000	1.1000000	119	cf249t	100.0000000	89dje1	0
119	ag g	cf249t	sp	fi		0.3552945	7.5	58.3000000	1.6000000	119	cf249t	100.0000000	89dje1	0
119	pd g	cf249t	sp	fi		0.0359560	11.6	5.9000000	0.6000000	119	cf249t	100.0000000	89dje1	0
119		cf251t	es	cu		1.2404159	30.0	1.3000000	0.0000000	0		0.0000000	75mee1	0
119		es254t	es	cu		3.9131910	30.0	4.0000000	0.0000000	0		0.0000000	75mee1	0
120		th227t	es	cu		0.0838397	30.0	0.0830000	0.0000000	0		0.0000000	75mee1	0
120		th229t	es	cu		0.0178999	15.0	0.0200000	15.0000000%	0		0.0000000	75mee1	0
120		th229t	es	cu		0.0089500	20.0	0.0100000	0.0020000	0		0.0000000	83dic1	0
120		pa231f	es	cu		0.0728776	30.0	0.0710000	0.0000000	0		0.0000000	75mee1	0
120		am241t	es	cu		0.0258675	30.0	0.0260000	0.0000000	0		0.0000000	72sid1	0
120		am241h	es	cu		1.5404429	30.0	0.0152000	0.0000000	0		0.0100000	79pri1	0
120		a242mt	es	cu		0.0232678	30.0	0.0240000	0.0000000	0		0.0000000	75mee1	0
120		cm245t	es	cu		0.0371392	30.0	0.0360000	0.0000000	0		0.0000000	75mee1	0
120		cf249t	es	cu		0.3595207	30.0	0.3600000	0.0000000	0		0.0000000	75mee1	0
120		cf249t	es	cu		0.3495340	20.0	0.3500000	0.0700000	0		0.0000000	81dic3	0
120		cf249t	sp	cu		0.4264315	19.0	0.4270000	0.0810000	0		0.0000000	85ake1	0
120	cd g	cf249t	sp	fi		0.1590801	16.8	41.3000000	2.1000000	120	cf249t	100.0000000	89dje1	0
120	ag g	cf249t	sp	fi		0.1999094	16.9	51.9000000	2.8000000	120	cf249t	100.0000000	89dje1	0
120	pd g	cf249t	sp	fi		0.0261924	19.0	6.8000000	0.7000000	120	cf249t	100.0000000	89dje1	0
120		cf251t	es	cu		0.7633329	30.0	0.8000000	0.0000000	0		0.0000000	75mee1	0
120		es254t	es	cu		3.3925793	30.0	3.5000000	0.0000000	0		0.0000000	75mee1	0
121		th227t	es	cu		0.1138084	30.0	0.1130000	0.0000000	0		0.0000000	75mee1	0
121	sn g	th227t	rc	cu		0.1107869	36.4	0.1100000	0.0400000	0		0.0000000	69fly2	0
121	sn g	th227t	cm	cu	x3	0.0000000	0.0	0.1100000	36.0000000%	0		0.0000000	77cro1	0
121		th229t	cm	cu	x3	0.0000000	0.0	0.0077600	0.0000000	0		0.0000000	68bor1	0
121		th229t	es	cu		0.0129605	15.0	0.0140000	15.0000000%	0		0.0000000	75mee1	0
121	sn g	th229t	rc	cu	x1	0.0000000	0.0	0.0074000	0.0013000	0		0.0000000	68bor1	0
121	sn g	th229t	rc	cu	x1	0.0000000	0.0	0.0073000	0.0010000	0		0.0000000	81gin1	0

121 sn g th229t cm cu x3 0.0000000 0.0 0.0074000 5.0000000% 0 0.0000000 77cro1 0
121 sn g th229t rc cu 0.0111090 50.0 0.0120000 50.0000000% 0 0.0000000 82sin1 0
121 sn g th229t es cu 0.0138863 15.0 0.0150000 15.0000000% 0 0.0000000 75mee1 0
121 sn m th229t es cu 0.0000069 30.0 0.0000075 0.0000000 0 0.0000000 89rid1 0
121 pa231f es cu 0.0749785 30.0 0.0740000 0.0000000 0 0.0000000 75mee1 0
121 sn g pa231f rc re 0.0928052 20.4 0.0880000 20.0000000% 140 ba g pa231f 6.4400000 65iye1 0
121 sn g pa231f rc cu 0.0741617 11.4 0.0760000 0.0081000 140 ba g pa231f 6.9600000 68nam1 0
121 sn g pa231f cm cu x3 0.0000000 0.0 0.0731000 8.3000000% 0 0.0000000 77cro1 0
121 am241t es cu 0.0261803 30.0 0.0250000 0.0000000 0 0.0000000 72sid1 0
121 sn g am241t rc cu x1 0.0000000 0.0 0.0450000 0.0060000 140 ba g am241t 6.0000000 57cun2 0
121 sn g am241t cm cu 0.0000000 0.0 0.0450000 13.0000000% 0 0.0000000 77cro1 0
121 am241h es cu 1.6012498 30.0 0.0158000 0.0000000 0 0.0100000 79pri1 0
121 a242mt es cu 0.0198269 31.0 1.0002000 0.0000000 121 sn g a242mt 1.0000000 75mee1 0
121 sn g a242mt rc cu x5 0.0000000 0.0 1.6800000 0.0400000 140 ba g u235t 0.0000000 71wol1 7
121 sn g a242mt rc cu 0.0193454 7.3 0.0189000 7.3000000% 0 0.0000000 71wol1 0
121 sn g a242mt cm cu 0.0000000 0.0 0.0173000 8.0000000% 0 0.0000000 77cro1 0
121 cm245t es cu 0.0386013 30.0 0.0380000 0.0000000 0 0.0000000 75mee1 0
121 sn g cm245t rc cu 0.0477437 25.5 0.0470000 0.0120000 0 0.0000000 67gun1 0
121 sn g cm245t cm cu 0.0000000 0.0 0.0372000 26.0000000% 0 0.0000000 77cro1 0
121 sn g cm245t rc cu 0.0253719 12.6 0.0245000 0.0030000 99 mo g cm245t 4.0900000 79ram2 0
121 cf249t rc cu 0.2099011 19.0 0.2100000 0.0400000 0 0.0000000 81gin4 0
121 cf249t rc cu x4 0.0000000 0.0 0.3400000 0.0900000 0 0.0000000 69fly1 0
121 cf249t es cu 0.2268931 30.0 0.2270000 0.0000000 0 0.0000000 75mee1 0
121 cf249t es cu 0.2099011 19.0 0.2100000 0.0400000 0 0.0000000 81dic3 0
121 cf249t sp cu 0.2658748 24.1 0.2660000 0.0640000 0 0.0000000 85ake1 0
121 sn g cf249t rc cu 0.2039040 5.0 0.2040000 0.0040000 0 0.0000000 72kur1 0
121 sn g cf249t rc cu 0.1799153 16.7 0.1800000 0.0300000 0 0.0000000 81gin4 0
121 sn g cf249t cm cu 0.0000000 0.0 0.2190000 25.0000000% 0 0.0000000 77cro1 0
121 cf251t rc cu 0.5239270 9.4 0.5300000 0.0500000 0 0.0000000 75fly3 0
121 cf251t rc cu 0.5436978 9.1 0.5500000 0.0500000 0 0.0000000 73uni1 0
121 sn g cf251t rc cu 0.4547291 8.7 0.4600000 0.0400000 0 0.0000000 75fly3 0
121 sn g cf251t rc cu 0.4744999 8.3 0.4800000 0.0400000 0 0.0000000 73uni1 0
121 es254t rc cu 2.8883147 9.9 2.9200000 0.2900000 0 0.0000000 76fly1 0
121 es254t rc cu 2.8685318 10.3 2.9000000 0.3000000 0 0.0000000 73uni1 0
121 sn g es254t rc cu 2.5124382 5.9 2.5400000 0.1500000 0 0.0000000 76fly1 0
121 sn g es254t rc cu 2.4728722 8.0 2.5000000 0.2000000 0 0.0000000 73uni1 0

122 th227t es cu 0.1090927 30.0 0.1080000 0.0000000 0 0.0000000 75mee1 0
122 th229t es cu 0.0157378 15.0 0.0170000 15.0000000% 0 0.0000000 75mee1 0
122 th229t es cu 0.0111090 16.7 0.0120000 0.0020000 0 0.0000000 83dic1 0
122 pa231f es cu 0.0871415 30.0 0.0840000 0.0000000 0 0.0000000 75mee1 0
122 am241t es cu 0.0293220 30.0 0.0280000 0.0000000 0 0.0000000 72sid1 0
122 am241h es cu 1.7532672 30.0 0.0173000 0.0000000 0 0.0100000 79pri1 0
122 a242mt es cu 0.0328280 30.0 0.0300000 0.0000000 0 0.0000000 75mee1 0
122 cm245t es cu 0.0532824 30.0 0.0510000 0.0000000 0 0.0000000 75mee1 0
122 sb g cf249t rc cu x1 0.0000000 0.0 0.4200000 0.0300000 0 0.0000000 81gud1 0
122 cf249t es cu 0.1757657 30.0 0.1760000 0.0000000 0 0.0000000 75mee1 0
122 cf249t es cu 0.1897470 21.1 0.1900000 0.0400000 0 0.0000000 81dic3 0
122 cf249t sp cu 0.1647803 30.3 0.1650000 0.0500000 0 0.0000000 85ake1 0
122 cf251t es cu 0.2805543 30.0 0.3000000 0.0000000 0 0.0000000 75mee1 0
122 es254t es cu 2.2958291 30.0 2.4000000 0.0000000 0 0.0000000 75mee1 0
123 th227t es cu 0.2212157 30.0 0.2190000 0.0000000 0 0.0000000 75mee1 0
123 th229t es cu 0.0134249 15.0 0.0150000 15.0000000% 0 0.0000000 75mee1 0
123 th229t es cu 0.0116350 23.1 0.0130000 0.0030000 0 0.0000000 83dic1 0
123 pa231f es cu 0.0985529 30.0 0.0950000 0.0000000 0 0.0000000 75mee1 0
123 am241t es cu 0.0397941 30.0 0.0380000 0.0000000 0 0.0000000 72sid1 0
123 am241h es cu 1.9052846 30.0 0.0188000 0.0000000 0 0.0100000 79pri1 0
123 a242mt es cu 0.0437707 30.0 0.0400000 0.0000000 0 0.0000000 75mee1 0
123 cm245t es cu 0.0552159 37.6 1.1400000 0.0000000 123 sn m cm245t 1.0000000 75mee1 0
123 sn g cm245t cm cu 0.0000000 0.0 0.0649000 22.0000000% 0 0.0000000 77cro1 0
123 sn m cm245t rc cu 0.0545177 22.2 0.0540000 0.0120000 0 0.0000000 67gun1 0
123 cf249t es cu 0.1239416 30.0 0.1240000 0.0000000 0 0.0000000 75mee1 0
123 cf249t es cu 0.1699200 5.9 0.1700000 0.0100000 0 0.0000000 81dic3 0
123 cf249t sp cu 0.1409336 33.3 0.1410000 0.0470000 0 0.0000000 85ake1 0
123 sn g cf249t rc cu 0.0459783 19.6 0.0460000 0.0090000 0 0.0000000 81gin4 0
123 cf251t es cu 0.1963880 30.0 0.2100000 0.0000000 0 0.0000000 75mee1 0
123 es254t es cu 1.9386167 30.0 2.0000000 0.0000000 0 0.0000000 75mee1 0
124 th227t es cu 0.3131363 30.0 0.3100000 0.0000000 0 0.0000000 75mee1 0
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124 th229t es cu 0.0116350 15.0 0.0130000 15.0000000% 0 0.0000000 75mee1 0

124		th229t	es	cu		0.0089500	30.0	0.0100000	0.0030000	0				0.0000000	83dic1	0	
124		pa231f	es	cu		0.1161887	30.0	0.1120000	0.0000000	0				0.0000000	75mee1	0	
124		am241t	es	cu		0.0502662	30.0	0.0480000	0.0000000	0				0.0000000	72sid1	0	
124		am241h	es	cu		2.1181090	30.0	0.0209000	0.0000000	0				0.0100000	79pri1	0	
124		a242mt	es	cu		0.0547134	30.0	0.0500000	0.0000000	0				0.0000000	75mee1	0	
124		cm245t	es	cu		0.0709491	30.0	0.0700000	0.0000000	0				0.0000000	75mee1	0	
124		cf249t	es	cu		0.0928762	30.0	0.0930000	0.0000000	0				0.0000000	75mee1	0	
124		cf249t	es	cu		0.1498003	20.0	0.1500000	0.0300000	0				0.0000000	81dic3	0	
124		cf251t	es	cu		0.1870362	30.0	0.2000000	0.0000000	0				0.0000000	75mee1	0	
124		es254t	es	cu		1.3392337	30.0	1.4000000	0.0000000	0				0.0000000	75mee1	0	
125		th227t	es	cu		0.4415739	15.0	0.4400000	15.0000000%	0				0.0000000	75mee1	0	
125	sn g	th227t	rc	cu		0.4315381	23.3	0.4300000	0.1000000	0				0.0000000	69fly2	0	
125		th229t	rc	cu	x1	0.0000000	0.0	0.0290000	15.0000000%	0				0.0000000	66rav1	0	
125		th229t	rc	cu	x1	0.0000000	0.0	0.0035000	0.0000000	0				0.0000000	68bor1	0	
125		th229t	cm	cu	x3	0.0000000	0.0	0.0371000	14.1000000%	0				0.0000000	77cro1	0	
125		th229t	es	cu		0.0069823	99.9	0.0082000	15.0000000	0				0.0000000	89rid1	0	
125		th229t	rc	cu	x1	0.0000000	0.0	0.0330000	0.0100000	0				0.0000000	82sin1	0	
125	sn g	th229t	rc	cu	x1	0.0000000	0.0	0.0030000	0.0005000	0				0.0000000	81gin1	0	
125	sn g	th229t	rc	cu		0.0030209	26.4	0.0022000	0.0003000	125		th229t		0.0035000	68bor1	0	
125		pa231f	es	cu		0.1457552	30.0	0.1420000	0.0000000	0				0.0000000	75mee1	0	
125		am241t	es	cu		0.0816374	30.0	0.0790000	0.0000000	0				0.0000000	72sid1	0	
125		am241h	es	cu		2.3521584	30.0	0.0233000	0.0000000	0				0.0100000	79pri1	0	
125	sb g	a242mt	rc	cu	x5	0.0000000	0.0	4.8000000	1.4000000	140	ba g	u235t		0.0000000	71wol1	7	
125	sb g	a242mt	rc	cu		0.1267032	30.0	0.1210000	30.0000000%	0				0.0000000	71wol1	0	
125	sb g	a242mt	cm	cu		0.0000000	0.0	0.1170000	12.0000000%	0				0.0000000	77cro1	0	
125	sn g	a242mt	rc	cu	x5	0.0000000	0.0	3.2600000	0.0900000	140	ba g	u235t		0.0000000	71wol1	7	
125	sn g	a242mt	rc	cu		0.0359167	7.5	0.0343000	7.5000000%	0				0.0000000	71wol1	0	
125	sb g	cm245t	rc	cu		0.0713404	21.1	0.0710000	0.0150000	0				0.0000000	67gun1	0	
125	sb g	cm245t	cm	cu		0.0000000	0.0	0.0960000	21.0000000%	0				0.0000000	77cro1	0	
125	sn g	cm245t	rc	cu		0.0602876	25.0	0.0600000	0.0150000	0				0.0000000	67gun1	0	
125	sn g	cm245t	rc	cu		0.0771332	7.2	0.0753000	0.0050000	99	mo g	cm245t		4.0900000	79ram2	0	
125		cf249t	rc	cu		0.2321248	25.0	0.2400000	0.0600000	0				0.0000000	69fly1	0	
125		cf249t	rc	cu		0.2224529	17.4	0.2300000	0.0400000	0				0.0000000	81gin4	0	
125		cf249t	cm	cu		0.0000000	0.0	0.1160000	38.3000000%	0				0.0000000	77cro1	0	
125		cf249t	es	cu		0.1856998	30.0	0.1920000	0.0000000	0				0.0000000	75mee1	0	
125		cf249t	es	cu		0.1354061	35.7	0.1400000	0.0500000	0				0.0000000	81dic3	0	

125	sn	g	cf249t	rc	cu		0.1034890	10.3	0.1070000	0.0110000	0		0.0000000	72kur1	0
125	sn	g	cf249t	rc	cu		0.0909155	14.9	0.0940000	0.0140000	0		0.0000000	81gin4	0
125	sn	g	cf249t	rc	cu		0.1354061	35.7	0.1400000	0.0500000	0		0.0000000	81dic3	0
125			cf251t	rc	cu		0.3908332	10.0	0.4000000	0.0400000	0		0.0000000	75fly3	0
125	sn	g	cf251t	rc	cu		0.1856458	10.5	0.1900000	0.0200000	0		0.0000000	75fly3	0
125	sn	g	cf251t	rc	cu		0.1954166	10.0	0.2000000	0.0200000	0		0.0000000	73uni1	0
125			es254t	rc	cu		0.9195999	10.6	0.9400000	0.1000000	0		0.0000000	76fly1	0
125	sn	g	es254t	rc	cu		0.4372991	11.2	0.4470000	0.0500000	0		0.0000000	76fly1	0
125	sn	g	es254t	rc	cu		0.4402340	6.7	0.4500000	0.0300000	0		0.0000000	73uni1	0
126	sb	m	th227t	es	cu		0.5576065	30.0	0.5548000	0.0000000	0		0.0000000	75mee1	0
126	sn	g	th227t	es	cu		0.5638379	30.0	0.5610000	0.0000000	0		0.0000000	75mee1	0
126			th229t	cm	cu	x3	0.0000000	0.0	0.0070000	0.0020000	0		0.0000000	83dic1	0
126			th229t	es	cu		0.0096834	15.0	0.0102200	15.0000000%	0		0.0000000	89rid1	0
126	sb	m	th229t	rc	cu		0.0521124	20.0	0.0550000	0.0110000	0		0.0000000	82sin1	0
126	sb	m	th229t	es	cu		0.0180025	20.0	0.0190000	20.0000000%	0		0.0000000	75mee1	0
126	sn	g	th229t	es	cu		0.0096361	15.0	0.0101700	15.0000000%	0		0.0000000	75mee1	0
126	sb	m	pa231f	es	cu		0.1957941	30.0	0.1922000	0.0000000	0		0.0000000	75mee1	0
126	sn	g	pa231f	es	cu		0.1864220	30.0	0.1830000	0.0000000	0		0.0000000	75mee1	0
126	sb	m	am241t	es	cu		0.1717612	30.0	0.1678000	0.0000000	0		0.0000000	75mee1	0
126	sn	g	am241t	es	cu		0.1637770	30.0	0.1600000	0.0000000	0		0.0000000	72sid1	0
126	sb	g	am241h	rc	fi		0.5338118	16.2	0.1482000	0.0171000	126	am241h	1.0000000	79pri1	40
126	sb	g	am241h	rc	cu		0.6936333	12.4	0.0068900	12.4000000%	0		0.0100000	79pri1	0
126	sb	m	am241h	rc	fi		0.4027001	16.2	0.1118000	0.0129000	126	am241h	1.0000000	79pri1	40
126	sb	m	am241h	es	cu		3.5631005	30.0	3.5393000	0.0000000	0		0.0000000	75mee1	0
126	sn	g	am241h	es	cu		2.6376185	30.0	0.0262000	0.0000000	0		0.0100000	79pri1	0
126	sb	m	a242mt	es	cu		0.1653425	30.0	0.1579000	0.0000000	0		0.0000000	75mee1	0
126	sn	g	a242mt	es	cu		0.1675415	30.0	0.1600000	0.0000000	0		0.0000000	75mee1	0
126	sb	m	cm245t	es	cu		0.1603799	30.0	0.1593000	0.0000000	0		0.0000000	75mee1	0
126	sn	g	cm245t	es	cu		0.1610847	30.0	0.1600000	0.0000000	0		0.0000000	75mee1	0
126			cf249t	es	cu		0.2860784	20.0	0.3000000	0.0600000	0		0.0000000	81dic3	0
126	sb	m	cf249t	es	cu		0.4068035	30.0	0.4266000	0.0000000	0		0.0000000	75mee1	0
126	sn	g	cf249t	es	cu		0.4396072	30.0	0.4610000	0.0000000	0		0.0000000	75mee1	0
126			cf251t	es	cu		0.5067479	20.0	0.5000000	20.0000000%	0		0.0000000	89rid1	0
126	sb	m	es254t	es	cu		0.8206739	30.0	0.8297000	0.0000000	0		0.0000000	75mee1	0
126	sn	g	es254t	es	cu		0.8407531	30.0	0.8500000	0.0000000	0		0.0000000	75mee1	0
127			th227t	es	cu		0.6995208	30.0	0.6960000	0.0000000	0		0.0000000	75mee1	0

127	te	g	th227t	rc	cu		0.5326810	47.2	0.5300000	0.2500000	0		0.0000000	69fly2	0
127	sb	g	th227t	rc	cu		0.6834398	23.5	0.6800000	0.1600000	0		0.0000000	69fly2	0
127	sb	g	th227t	cm	cu		0.0000000	0.0	0.6300000	24.0000000%	0		0.0000000	77cro1	0
127			th229t	rc	cu		0.0370300	15.0	0.0400000	15.0000000%	0		0.0000000	66rav1	0
127			th229t	cm	cu	x3	0.0000000	0.0	0.0210000	0.0040000	0		0.0000000	83dic1	0
127	sb	g	th229t	cm	cu	x3	0.0000000	0.0	0.0085800	56.9000000%	0		0.0000000	77cro1	0
127	sb	g	th229t	rc	cu	x1	0.0000000	0.0	0.0084000	15.0000000%	0		0.0000000	68bor1	0
127	sb	g	th229t	rc	cu	x1	0.0000000	0.0	0.0092000	0.0020000	0		0.0000000	81gin1	0
127	sb	g	th229t	rc	cu		0.0361043	15.0	0.0390000	15.0000000%	0		0.0000000	66rav1	0
127	sb	g	th229t	rc	cu		0.0462876	20.0	0.0500000	0.0100000	0		0.0000000	82sin1	0
127			pa231f	es	cu		0.2915104	30.0	0.2840000	0.0000000	0		0.0000000	75mee1	0
127	sb	g	pa231f	rc	cu	x4	0.0000000	0.0	0.0800000	0.0045000	140	ba g	pa231f	6.9600000	68nam1	0
127	sb	g	pa231f	rc	re	x4	0.0000000	0.0	1.0000000	20.0000000%	140	ba g	pa231f	6.4400000	65iye1	0
127	sb	g	pa231f	cm	cu		0.0000000	0.0	0.0852000	8.3000000%	0		0.0000000	77cro1	0
127			am241t	es	cu		0.3218885	30.0	0.3200000	0.0000000	0		0.0000000	72sid1	0
127	sb	g	am241t	rc	cu		0.5130098	5.0	0.5100000	0.0200000	0		0.0000000	73sko2	0
127	sb	g	am241t	rc	cu		0.6638951	5.0	0.6600000	0.0300000	0		0.0000000	71nak1	0
127	sb	g	am241t	cm	cu		0.0000000	0.0	0.6790000	3.8000000%	0		0.0000000	77cro1	0
127			am241h	es	cu		2.9298179	30.0	0.0292000	0.0000000	0		0.0100000	79pri1	0
127	sb	g	am241h	rc	cu		2.2374980	5.0	0.0223000	4.6000000%	0		0.0100000	79pri1	0
127			a242mt	es	cu		0.2666644	30.0	0.2500000	0.0000000	0		0.0000000	75mee1	0
127			cm245t	cm	cu		0.0000000	0.0	0.4260000	0.0350000	0		0.0000000	80dic2	0
127	sb	g	cm245t	rc	cu		0.5719321	15.8	0.5700000	0.0900000	0		0.0000000	67gun1	0
127	sb	g	cm245t	rc	cu		0.4274440	8.0	0.4260000	0.0340000	0		0.0000000	80dic2	0
127	sb	g	cm245t	cm	cu		0.0000000	0.0	0.5640000	16.0000000%	0		0.0000000	77cro1	0
127	sb	g	cm245t	rc	cu		0.4603111	22.4	0.4500000	0.1000000	99	mo g	cm245t	4.0900000	79ram2	0
127	sn	g	cm245t	rc	cu		0.4414914	15.9	0.4400000	0.0700000	0		0.0000000	80dic2	0
127			cf249t	es	cu		0.5860784	13.3	0.6000000	0.0800000	0		0.0000000	81dic3	0
127	sb	g	cf249t	rc	cu	x1	0.0000000	0.0	1.2300000	0.2900000	0		0.0000000	69fly1	0
127	sb	g	cf249t	rc	cu	x1	0.0000000	0.0	1.0700000	0.0500000	0		0.0000000	72kur1	0
127	sb	g	cf249t	rc	cu		0.4883987	12.0	0.5000000	0.0600000	0		0.0000000	81gin4	0
127	sb	g	cf249t	cm	cu	x3	0.0000000	0.0	1.1100000	12.7000000%	0		0.0000000	77cro1	0
127	sb	g	cf249t	rc	cu		0.4883987	18.0	0.5000000	0.0900000	0		0.0000000	81gud1	0
127	sb	g	cf249t	rc	cu		0.5372386	5.5	0.5500000	0.0300000	0		0.0000000	81dic3	0
127	sn	g	cf249t	rc	cu		0.4688627	14.6	0.4800000	0.0700000	0		0.0000000	81dic3	0
127	sn	m	cf249t	rc	cu		0.1855915	26.3	0.1900000	0.0500000	0		0.0000000	81dic3	0

127	sb	g	cf251t	rc	cu		0.5928152	10.2	0.5900000	0.0600000	0				0.0000000	75fly3	0
127	sb	g	cf251t	rc	cu		0.6229583	9.7	0.6200000	0.0600000	0				0.0000000	73uni1	0
127	sb	g	es254t	rc	cu		0.9448326	10.5	0.9500000	0.1000000	0				0.0000000	76fly1	0
127	sb	g	es254t	rc	cu		0.9448326	10.5	0.9500000	0.1000000	0				0.0000000	73uni1	0
128			th227t	es	cu		0.9265816	30.0	0.9200000	0.0000000	0				0.0000000	75mee1	0
128			th229t	es	cu		0.0519416	19.7	0.0610000	0.0120000	0				0.0000000	83dic1	0
128			pa231f	es	cu		0.5290735	30.0	0.5100000	0.0000000	0				0.0000000	75mee1	0
128			am241t	cm	cu	x3	0.0000000	0.0	0.5100000	0.0000000	0				0.0000000	72sid1	0
128			am241t	es	cu		0.9300461	20.0	0.9000000	20.0000000%	0				0.0000000	89rid1	0
128			am241h	es	cu		3.2708126	30.0	0.0324000	0.0000000	0				0.0100000	79pri1	0
128	sb	g	am241h	rc	cu		1.1811268	5.0	0.0117000	3.0000000%	0				0.0100000	79pri1	0

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nuclide	material	tech.	type	value	err.	value		nuclide	material	value	no.	treatment
128	sn	g	am241h	rc	fc	0.4457971	16.8	0.1520000	0.0080000	128	am241h	1.0000000	79pri1	0
128	sn	g	am241h	rc	cu	0.4976885	5.0	0.0049300	3.0000000%	0		0.0100000	79pri1	0
128			a242mt	es	cu	0.5235671	30.0	0.5000000	0.0000000	0		0.0000000	75mee1	0
128	sb	g	a242mt	rc	cu	sm	0.0000000	0.0	0.3900000	0.1800000	0		0.0000000	85gud1	0
128	sn	g	a242mt	rc	cu		0.3141402	20.0	0.3000000	0.0600000	0		0.0000000	85gud1	0
128			cm245t	cm	cu		0.0000000	0.0	0.6800000	0.0500000	0		0.0000000	80dic2	0
128			cm245t	es	cu		0.7016778	30.0	0.7000000	0.0000000	0		0.0000000	75mee1	0
128	sb	g	cm245t	rc	cu		0.0902157	11.1	0.0900000	0.0100000	0		0.0000000	80dic2	0
128	sb	m	cm245t	rc	cu		0.5914141	6.8	0.5900000	0.0400000	0		0.0000000	80dic2	0
128	sn	g	cm245t	rc	cu		0.4410546	11.4	0.4400000	0.0500000	0		0.0000000	80dic2	0
128			cf249t	es	cu		1.2885072	30.0	1.3100000	0.0000000	0		0.0000000	75mee1	0
128			cf249t	es	cu		0.7672028	5.1	0.7800000	0.0400000	0		0.0000000	81dic3	0
128	sb	g	cf249t	rc	cu	x1	0.0000000	0.0	0.2440000	0.0130000	0		0.0000000	81dic3	0
128	sb	m	cf249t	rc	cu	x1	0.0000000	0.0	1.6800000	0.2600000	0		0.0000000	81gud1	0
128	sb	m	cf249t	rc	cu	x1	0.0000000	0.0	0.5700000	0.0400000	0		0.0000000	81dic3	0
128	sn	g	cf249t	rc	cu	x1	0.0000000	0.0	0.4700000	0.0600000	0		0.0000000	81gud1	0
128	sn	g	cf249t	rc	cu	x4	0.0000000	0.0	0.4600000	0.0400000	0		0.0000000	81dic3	0
128			cf251t	es	cu		0.7094471	30.0	0.7000000	0.0000000	0		0.0000000	75mee1	0
128			es254t	es	cu		1.2858576	30.0	1.3000000	0.0000000	0		0.0000000	75mee1	0
129	i	g	th227t	es	cu		1.4150435	15.0	1.4100000	15.0000000%	0		0.0000000	75mee1	0
129	te	g	th227t	rc	cu		1.3648646	20.6	1.3600000	0.2800000	0		0.0000000	69fly2	0

129	te g	th227t	cm	cu		0.0000000	0.0	1.3600000	21.0000000%	0		0.0000000	77cro1	0
129		th229t	rc	cu		0.1184337	15.0	0.1230000	15.0000000%	0		0.0000000	66rav1	0
129	sb g	th229t	rc	cu		0.1174708	6.6	0.1220000	0.0080000	0		0.0000000	68bor1	0
129	sb g	th229t	cm	cu	x3	0.0000000	0.0	0.1220000	7.0000000%	0		0.0000000	77cro1	0
129	sb g	th229t	rc	cu	x4	0.0000000	0.0	0.0840000	0.0150000	0		0.0000000	81gin1	0
129	sb g	th229t	rc	cu	x4	0.0000000	0.0	0.1700000	0.0200000	0		0.0000000	87had1	0
129	sb g	th229t	es	cu		0.1245961	13.4	0.1294000	13.4000000%	0		0.0000000	91jam2	0
129	i g	pa231f	es	cu		1.0046749	6.0	1.0000000	0.0600000	0		0.0000000	71bir1	0
129	i g	pa231f	es	cu		1.2357501	30.0	1.2300000	0.0000000	0		0.0000000	75mee1	0
129	te g	pa231f	rc	re		1.2130204	20.4	1.1600000	20.0000000%	140	ba g	pa231f	6.4400000	65iye1 0
129	te g	pa231f	rc	cu		1.1417441	6.8	1.1800000	0.0650000	140	ba g	pa231f	6.9600000	68nam1 0
129	te g	pa231f	cm	cu		0.0000000	0.0	1.2100000	8.3000000%	0		0.0000000	77cro1	0
129	sb g	pa231f	rc	cu	su	0.0000000	0.0	0.8100000	0.0500000	99	mo g	pa231f	2.5700000	69bir2 0
129	sb g	pa231f	rc	cu		0.9293243	5.4	0.9250000	0.0500000	0		0.0000000	71bir1	0
129	i g	am241t	es	cu		1.1869639	30.0	1.1800000	0.0000000	0		0.0000000	72sid1	0
129	i g	am241t	rc	cu		1.5430752	17.4	1.5700000	0.2700000	140	ba g	am241t	6.0600000	72wei1 0
129	te g	am241t	rc	cu		1.2674360	8.7	1.2600000	0.1100000	0		0.0000000	73sko2	0
129	sb g	am241t	rc	cu		1.3277901	5.0	1.3200000	0.0500000	0		0.0000000	71nak1	0
129	sb g	am241t	cm	cu		0.0000000	0.0	1.4000000	13.2000000%	0		0.0000000	77cro1	0
129	i g	am241h	es	cu		3.6039509	30.0	0.0357000	0.0000000	0		0.0100000	79pri1	0
129	i g	a242mt	es	cu		1.0666577	30.0	1.0000000	0.0000000	0		0.0000000	75mee1	0
129	sb g	a242mt	rc	cu		1.6639860	35.9	1.5600000	0.5600000	0		0.0000000	85gud1	0
129		cm245t	cm	cu	x3	0.0000000	0.0	1.0600000	0.1200000	0		0.0000000	80dic2	0
129	te g	cm245t	rc	cu		1.4850167	13.5	1.4800000	0.2000000	0		0.0000000	67gun1	0
129	sb g	cm245t	rc	cu		1.4248133	21.1	1.4200000	0.3000000	0		0.0000000	67gun1	0
129	sb g	cm245t	rc	cu		1.0635930	11.3	1.0600000	0.1200000	0		0.0000000	80dic2	0
129	sb g	cm245t	cm	cu	x3	0.0000000	0.0	1.0600000	11.7000000%	0		0.0000000	77cro1	0
129		cf249t	es	cu		1.4065882	10.4	1.4400000	0.1500000	0		0.0000000	81dic3	0
129	i g	cf249t	es	cu		1.6214837	30.0	1.6600000	0.0000000	0		0.0000000	75mee1	0
129	te g	cf249t	rc	cu		2.1391863	15.1	2.1900000	0.3300000	0		0.0000000	69fly1	0
129	te m	cf249t	cm	cu		0.0000000	0.0	2.1900000	15.0000000%	0		0.0000000	77cro1	0
129	sb g	cf249t	rc	cu		1.2014608	5.0	1.2300000	0.0500000	0		0.0000000	72kur1	0
129	sb g	cf249t	rc	cu		1.1819248	5.0	1.2100000	0.0600000	0		0.0000000	81gin4	0
129	sb g	cf249t	rc	cu		1.1428529	10.3	1.1700000	0.1200000	0		0.0000000	81gud1	0
129	sb g	cf249t	rc	cu		1.2405327	10.2	1.2700000	0.1300000	0		0.0000000	81dic3	0
129	sb g	cf251t	rc	cu		0.9030366	10.0	0.9000000	0.0900000	0		0.0000000	75fly3	0

129	sb	g	cf251t	rc	cu		0.9532053	9.5	0.9500000	0.0900000	0		0.0000000	73uni1	0		
129	sb	g	es254t	rc	cu		1.9294476	10.3	1.9400000	0.2000000	0		0.0000000	76fly1	0		
129	sb	g	es254t	rc	cu		1.9891213	10.0	2.0000000	0.2000000	0		0.0000000	73uni1	0		
130			th227t	es	cu		1.8632347	30.0	1.8500000	0.0000000	0		0.0000000	75mee1	0		
130			th229t	es	cu		0.2129228	15.0	0.2300000	15.0000000%	0		0.0000000	75mee1	0		
130			th229t	es	cu		0.2129228	21.7	0.2300000	0.0500000	0		0.0000000	83dic1	0		
130	sb	g	th229t	rc	cu		0.1388627	40.0	0.1500000	0.0600000	0		0.0000000	82dic1	0		
130	sb	g	th229t	rc	cu		0.1610807	10.3	0.1740000	0.0180000	0		0.0000000	83dic1	0		
130	sb	m	th229t	rc	cu		0.3888155	14.3	0.4200000	0.0600000	0		0.0000000	82dic1	0		
130			pa231f	es	cu		2.0836837	30.0	2.0300000	0.0000000	0		0.0000000	75mee1	0		
130			am241t	es	cu		2.2321106	30.0	2.1600000	0.0000000	0		0.0000000	72sid1	0		
130	i	g	am241h	rc	fi		0.6725196	61.0	0.1700000	0.1000000	130		am241h	1.0000000	79pri1	0	
130	i	g	am241h	rc	cu		0.6733432	50.0	0.0066700	50.0000000%	0		0.0100000	79pri1	36		
130			am241h	es	cu		3.9572794	30.0	0.0392000	0.0000000	0		0.0100000	79pri1	0		
130			a242mt	es	cu		1.8133181	30.0	1.7000000	0.0000000	0		0.0000000	75mee1	0		
130	sb	g	a242mt	rc	cu		0.6933275	12.3	0.6500000	0.0800000	0		0.0000000	85gud1	0		
130			cm245t	cm	cu		0.0000000	0.0	1.9400000	0.1500000	0		0.0000000	80dic2	0		
130			cm245t	es	cu		1.8061013	30.0	1.8000000	0.0000000	0		0.0000000	75mee1	0		
130	sb	g	cm245t	rc	cu		0.8017083	5.3	0.7990000	0.0420000	0		0.0000000	80dic2	0		
130	sb	m	cm245t	rc	cu		0.9431863	10.6	0.9400000	0.1000000	0		0.0000000	80dic2	0		
130	i	g	cf249t	rc	in		0.0304914	9.7	0.0310000	0.0030000	0		0.0000000	78gae1	0		
130			cf249t	es	cu		2.1639052	30.0	2.2000000	0.0000000	0		0.0000000	75mee1	0		
130			cf249t	es	cu		1.9081710	4.1	1.9400000	0.0800000	0		0.0000000	81dic3	0		
130	sb	g	cf249t	rc	cu		0.7868746	6.2	0.8000000	0.0500000	0		0.0000000	81dic3	0		
130	sb	g	cf249t	rc	cu	x1	0.0000000	0.0	0.7800000	0.0300000	0		0.0000000	81dic3	0		
130	sb	m	cf249t	rc	cu		0.9835933	7.0	1.0000000	0.0700000	0		0.0000000	81gud1	0		
130	sb	m	cf249t	rc	cu	x1	0.0000000	0.0	0.6100000	0.0500000	0		0.0000000	81dic3	0		
130			cf251t	es	cu		1.2161950	30.0	1.2000000	0.0000000	0		0.0000000	75mee1	0		
130			es254t	es	cu		2.4615378	30.0	2.5000000	0.0000000	0		0.0000000	75mee1	0		
131			th227t	es	cu		2.6433040	30.0	2.6300000	0.0000000	0		0.0000000	75mee1	0		
131	i	g	th227t	rc	cu		2.6232029	17.6	2.6100000	0.4600000	0		0.0000000	69fly2	0		
131	i	g	th227t	cm	cu	x3	0.0000000	0.0	2.6100000	18.0000000%	0		0.0000000	77cro1	0		
131			th229t	cm	cu		0.0000000	0.0	0.6480000	15.5000000%	0		0.0000000	77cro1	0		
131			th229t	ms	cu		0.6281202	5.0	0.6400000	5.0000000%	0		0.0000000	66har1	0		
131	xe	g	th229t	ms	re		0.6208777	6.0	0.1060000	0.0060000	134	xe	g	th229t	1.0000000	66har1	0
131			th229t	es	cu		0.7458927	15.0	0.7600000	15.0000000%	0		0.0000000	75mee1	0		

131 th229t rc cu 0.5653082 5.0 0.5760000 0.0150000 0 0.0000000 82sin1 0
131 th229t es cu 0.5986771 3.3 0.6100000 0.0200000 0 0.0000000 83dic1 0
131 i g th229t rc cu 0.8538509 15.0 0.8700000 15.0000000% 0 0.0000000 66rav1 0
131 i g th229t rc cu 0.5496052 5.0 0.5600000 0.0200000 0 0.0000000 81gin1 0
131 i g th229t rc cu x4 0.0000000 0.0 0.4300000 0.0450000 0 0.0000000 68bor1 0
131 i g th229t rc cu 0.5976956 5.0 0.6090000 0.0140000 0 0.0000000 83dic1 0
131 i g th229t rc cu 0.5584381 10.5 0.5690000 0.0600000 0 0.0000000 87had1 0
131 te g th229t rc cu 0.4318326 6.8 0.4400000 0.0300000 0 0.0000000 83dic1 0
131 sb g th229t rc cu 0.5692339 24.1 0.5800000 0.1400000 0 0.0000000 82dic1 0
131 sb g th229t rc cu 0.7085981 5.5 0.7220000 0.0400000 0 0.0000000 87had1 0
131 pa231f es cu 2.5769249 30.0 2.5600000 0.0000000 0 0.0000000 75mee1 0
131 i g pa231f rc cu 2.6695331 5.0 2.6520000 0.0340000 0 0.0000000 70kem1 0
131 i g pa231f cm cu 0.0000000 0.0 2.5200000 10.0000000% 0 0.0000000 77cro1 0
131 am241t es cu 3.4200622 30.0 3.4100000 0.0000000 0 0.0000000 72sid1 0
131 am241t ms re 3.5775379 2.1 0.7470000 0.0030000 132 am241t 1.0000000 73tra1 0
131 am241t rc cu 3.5474814 8.2 3.6200000 0.2800000 140 ba g am241t 6.0600000 72wei1 0
131 i g am241t rc cu 3.7008885 5.0 3.6900000 0.1300000 0 0.0000000 73sko2 0
131 i g am241t rc cu 3.4501508 5.5 3.4400000 0.1900000 0 0.0000000 73sko2 0
131 i g am241t rc cu 3.6720353 10.4 3.7100000 0.1900000 140 ba g am241t 6.0000000 57cun2 0
131 i g am241t rc cu x4 0.0000000 0.0 2.1000000 0.1000000 139 ba g am241t 6.2200000 65ric1 0
131 i g am241t rc cu 3.0889749 6.4 4.0100000 0.1400000 139 ba g am241t 8.6800000 71nak1 0
131 i g am241t cm cu 0.0000000 0.0 3.6500000 6.8000000% 0 0.0000000 77cro1 0
131 am241h es cu 4.2843571 30.0 0.0427000 0.0000000 0 0.0100000 79pri1 0
131 i g am241h rc cu 4.4649623 5.0 0.0445000 3.0000000% 0 0.0100000 79pri1 0
131 te m am241h rc cu x1 0.0000000 0.0 0.0140000 7.1000000% 0 0.0100000 79pri1 0
131 a242mt ms re 3.5310464 4.1 0.7250000 0.0050000 132 a242mt 1.0000000 73tra1 0
131 a242mt cm cu 0.0000000 0.0 3.2400000 6.7000000% 0 0.0000000 77cro1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

131 i g a242mt rc cu x5 0.0000000 0.0 1.2800000 0.0400000 140 ba g u235t 0.0000000 71wol1 7
131 i g a242mt rc cu 3.2579429 7.7 3.2200000 7.7000000% 0 0.0000000 71wol1 0
131 sb g a242mt rc cu 2.7216976 18.6 2.6900000 0.5000000 0 0.0000000 85gud1 0
131 cm245t cm cu 0.0000000 0.0 2.8200000 0.0800000 0 0.0000000 80dic2 0
131 i g cm245t rc cu 3.1838110 12.6 3.1800000 0.4000000 0 0.0000000 67gun1 0

131 i g cm245t rc cu 2.9034754 5.0 2.9000000 0.0800000 0 0.0000000 72har2 0
131 i g cm245t rc cu 2.8233795 5.0 2.8200000 0.0800000 0 0.0000000 80dic2 0
131 i g cm245t cm cu 0.0000000 0.0 2.8700000 5.4000000% 0 0.0000000 77cro1 0
131 i g cm245t rc cu 3.0518325 5.7 2.9900000 0.0200000 99 mo g cm245t 4.0900000 79ram2 0
131 i g cm245t rc cu 2.7833316 6.0 2.7800000 6.0000000% 0 0.0000000 82ram2 0
131 te m cm245t rc cu 0.9311145 7.5 0.9300000 0.0700000 0 0.0000000 80dic2 0
131 sb g cm245t rc cu 2.2426845 10.7 2.2400000 0.2400000 0 0.0000000 80dic2 0
131 cf249t es cu 2.7274408 30.0 2.7500000 0.0000000 0 0.0000000 75mee1 0
131 cf249t es cu 3.1737493 3.8 3.2000000 0.1200000 0 0.0000000 81dic3 0
131 i g cf249t rc cu x1 0.0000000 0.0 2.2000000 0.1600000 0 0.0000000 72kur1 0
131 i g cf249t rc cu 2.9853079 15.0 3.0100000 0.4500000 0 0.0000000 69fly1 0
131 i g cf249t rc cu 3.2035032 5.0 3.2300000 0.1500000 0 0.0000000 81gin4 0
131 i g cf249t cm cu x3 0.0000000 0.0 2.4800000 15.5000000% 0 0.0000000 77cro1 0
131 i g cf249t rc cu 3.1439954 7.6 3.1700000 0.2400000 0 0.0000000 81gud1 0
131 i g cf249t rc cu 3.1737493 5.0 3.2000000 0.1200000 0 0.0000000 81dic3 0
131 te g cf249t rc cu 1.5174489 10.5 1.5300000 0.1600000 0 0.0000000 81gud1 0
131 te g cf249t rc fi x1 0.0000000 0.0 0.3300000 0.0200000 131 cf249t 1.0000000 81gud1 0
131 te m cf249t rc cu x1 0.0000000 0.0 0.7500000 0.0700000 0 0.0000000 81gud1 0
131 te m cf249t rc cu 1.2694997 5.5 1.2800000 0.0700000 0 0.0000000 81dic3 0
131 sb g cf249t rc cu 1.1504841 8.6 1.1600000 0.1000000 0 0.0000000 81gud1 0
131 sb g cf249t rc cu x1 0.0000000 0.0 1.7800000 0.1900000 0 0.0000000 81dic3 0
131 i g cf251t rc cu 1.7759719 7.9 1.7700000 0.1400000 0 0.0000000 75fly3 0
131 i g cf251t rc cu 1.9064105 7.9 1.9000000 0.1500000 0 0.0000000 73uni1 0
131 i g es254t rc cu 3.8252306 9.9 3.8400000 0.3800000 0 0.0000000 76fly1 0
131 i g es254t rc cu 3.7853844 5.3 3.8000000 0.2000000 0 0.0000000 73uni1 0
132 th227t es cu 3.5262954 30.0 3.5200000 0.0000000 0 0.0000000 75mee1 0
132 te g th227t rc cu 3.3059020 5.0 3.3000000 0.0600000 0 0.0000000 69fly2 0
132 te g th227t cm cu 0.0000000 0.0 3.3000000 18.0000000% 0 0.0000000 77cro1 0
132 th229t cm cu 0.0000000 0.0 1.2000000 9.6000000% 0 0.0000000 77cro1 0
132 th229t ms cu 1.2039869 5.0 1.2200000 5.0000000% 0 0.0000000 66har1 0
132 xe g th229t ms re 1.1897364 4.9 0.2020000 0.0090000 134 xe g th229t 1.0000000 66har1 0
132 th229t rc cu 1.2730682 9.3 1.2900000 0.1200000 0 0.0000000 82sin1 0
132 th229t cm cu 0.0000000 0.0 1.2500000 0.0300000 0 0.0000000 83dic1 0
132 i g th229t rc cu 1.2335932 5.0 1.2500000 0.0400000 0 0.0000000 83dic1 0
132 te g th229t rc cu 1.2138557 15.0 1.2300000 15.0000000% 0 0.0000000 66rav1 0
132 te g th229t rc cu 1.1743807 5.0 1.1900000 0.0400000 0 0.0000000 81gin1 0

132 te g th229t rc cu x4 0.0000000 0.0 0.8700000 0.0540000 0 0.0000000 68bor1 0
132 te g th229t rc cu 1.1645120 5.0 1.1800000 0.0300000 0 0.0000000 83dic1 0
132 te g th229t rc cu 1.1941182 5.0 1.2100000 0.0300000 0 0.0000000 83dic1 0
132 te g th229t rc cu x4 0.0000000 0.0 1.4400000 0.2000000 0 0.0000000 87had1 0
132 sb g th229t rc cu 0.7302872 6.8 0.7400000 0.0500000 0 0.0000000 82dic1 0
132 sb g th229t rc cu x1 0.0000000 0.0 1.2600000 0.1500000 0 0.0000000 87had1 0
132 sb g th229t es in 0.2565874 30.0 0.2600000 30.0000000% 0 0.0000000 89rid1 0
132 pa231f es cu 3.2412883 30.0 3.2200000 0.0000000 0 0.0000000 75mee1 0
132 te g pa231f rc re 3.3108039 20.4 3.1600000 20.0000000% 140 ba g pa231f 6.4400000 65iye1 0
132 te g pa231f rc cu 3.3155006 11.3 3.4200000 0.3600000 140 ba g pa231f 6.9600000 68nam1 0
132 te g pa231f rc cu 3.5170998 5.0 3.4940000 0.0150000 0 0.0000000 70kem1 0
132 te g pa231f cm cu 0.0000000 0.0 3.1700000 6.4000000% 0 0.0000000 77cro1 0
132 am241t es cu 5.0649015 30.0 5.0500000 0.0000000 0 0.0000000 72sid1 0
132 am241t ms re x4 0.0000000 0.0 9.5000000 35.0000000% 85 am241t 1.0000000 73tra1 36
132 am241t ms re rp 4.7843053 2.1 1.0000000 0.0000000 no. relative values = 4 73tra1
132 am241t rc cu 4.8943999 5.0 4.8800000 0.1900000 0 0.0000000 73sko2 0
132 am241t rc cu 4.4784503 6.7 4.5700000 0.2800000 140 ba g am241t 6.0600000 72wei1 0
132 i g am241t rc cu 4.1924120 8.7 3.9000000 0.3000000 139 ba g am241t 6.2200000 65ric1 0
132 te g am241t rc cu 4.8643114 5.0 4.8500000 0.1400000 0 0.0000000 73sko2 0
132 te g am241t rc cu 4.4341558 10.4 4.4800000 0.3100000 140 ba g am241t 6.0000000 57cun2 0
132 te g am241t cm cu 0.0000000 0.0 4.5200000 5.2000000% 0 0.0000000 77cro1 0
132 te g am241t rc cu 4.7138688 6.5 4.7000000 6.5000000% 0 0.0000000 71nak1 36
132 cs g am241h rc fi 0.0064562 16.3 0.0017000 0.0002000 132 am241h 1.0000000 79pri1 0
132 cs g am241h rc cu 0.0079028 13.4 0.0000785 13.4000000% 0 0.0100000 79pri1 0
132 am241h es cu 4.6309333 30.0 0.0460000 0.0000000 0 0.0100000 79pri1 0
132 te g am241h rc fc 1.7811533 12.4 0.4690000 0.0230000 132 am241h 1.0000000 79pri1 0
132 te g am241h rc cu 2.1745252 5.0 0.0216000 3.0000000% 0 0.0100000 79pri1 0
132 a242mt ms re 4.3284931 12.7 9.5000000 0.5500000 85 a242mt 1.0000000 73tra1 0
132 a242mt ms re rp 4.7585042 4.8 1.0000000 0.0000000 no. relative values = 3 73tra1
132 i g a242mt rc cu 5.1702137 7.8 5.1100000 0.4000000 0 0.0000000 85gud1 0
132 i g a242mt rc in 0.2155099 31.5 0.2130000 0.0670000 0 0.0000000 85gud1 0
132 te g a242mt rc cu x5 0.0000000 0.0 1.1200000 0.0400000 140 ba g u235t 0.0000000 71wol1 7
132 te g a242mt rc cu 4.2292551 7.9 4.1800000 7.9000000% 0 0.0000000 71wol1 0
132 te g a242mt cm cu x3 0.0000000 0.0 4.8200000 7.0000000% 0 0.0000000 77cro1 0
132 te g a242mt rc cu 4.8970322 7.9 4.8400000 0.3800000 0 0.0000000 85gud1 0
132 cm245t cm cu 0.0000000 0.0 4.1900000 0.1200000 0 0.0000000 80dic2 0

132 i g cm245t rc cu 4.1635252 5.0 4.1600000 0.1300000 0 0.0000000 80dic2 0
132 i g cm245t rc fi 0.2177589 8.7 5.2000000 0.4400000 132 i g cm245t 100.0000000 80dic2 0
132 te g cm245t rc cu 4.4137371 18.1 4.4100000 0.8000000 0 0.0000000 67gun1 0
132 te g cm245t rc cu 4.1034744 5.0 4.1000000 0.0900000 0 0.0000000 72har2 0
132 te g cm245t rc cu 4.0133981 5.0 4.0100000 0.1100000 0 0.0000000 80dic2 0
132 te g cm245t rc fc 3.9703740 5.4 0.9480000 0.0050000 132 cm245t 1.0000000 80dic2 0
132 te g cm245t rc fc 3.9368688 5.4 0.9400000 0.0100000 132 cm245t 1.0000000 71tro2 0
132 te g cm245t cm cu 0.0000000 0.0 4.2300000 5.7000000% 0 0.0000000 77cro1 0
132 te g cm245t rc cu 3.8976298 5.7 3.8200000 0.0500000 99 mo g cm245t 4.0900000 79ram2 0
132 te g cm245t rc cu 3.7932117 5.9 3.7900000 5.9000000% 0 0.0000000 82ram2 0
132 sb g cm245t rc cu sm 0.0000000 0.0 1.8300000 0.1500000 0 0.0000000 80dic2 0
132 sb m cm245t rc cu sm 0.0000000 0.0 1.8300000 0.1500000 0 0.0000000 80dic2 0
132 cf249t es cu 3.8745229 30.0 3.9200000 0.0000000 0 0.0000000 75mee1 0
132 cf249t es cu 4.2006945 4.9 4.2500000 0.2100000 0 0.0000000 81dic3 0
132 i g cf249t rc in x1 0.0000000 0.0 1.1700000 0.3300000 0 0.0000000 81gud1 0
132 i g cf249t rc cu 4.0820866 5.1 4.1300000 0.2100000 0 0.0000000 81dic3 0
132 i m cf249t rc cu x6 0.0000000 0.0 0.3900000 0.0700000 0 0.0000000 81dic3 0
132 te g cf249t rc cu 3.9041749 7.1 3.9500000 0.2800000 0 0.0000000 69fly1 0
132 te g cf249t rc cu 3.2715997 5.0 3.3100000 0.1200000 0 0.0000000 81gin4 0
132 te g cf249t rc fc 3.1246286 6.4 0.7600000 0.0200000 132 cf249t 1.0000000 71tro2 0
132 te g cf249t cm cu 0.0000000 0.0 3.9500000 7.0000000% 0 0.0000000 77cro1 0
132 te g cf249t rc cu x1 0.0000000 0.0 2.2300000 0.1900000 0 0.0000000 81gud1 0
132 sb g cf249t rc in sm 0.0000000 0.0 1.6200000 0.2900000 132 sb g u235t 2.0000000 76paf1 15
132 sb g cf249t rc in 0.9286994 12.3 0.9396000 0.1160000 0 0.0000000 76paf1 18
132 sb g cf249t rc cu sm 0.0000000 0.0 1.0600000 0.1000000 0 0.0000000 81dic3 0
132 sb g cf249t rc cu sm 0.0000000 0.0 1.7900000 0.4100000 0 0.0000000 81dic3 0
132 sb m cf249t rc in 0.6725065 12.3 0.6804000 0.0840000 0 0.0000000 76paf1 18
132 sb m cf249t rc re x1 0.0000000 0.0 0.4700000 0.0500000 132 sb g cf249t 1.0000000 76paf1 0
132 sn g cf249t rc cu 0.1383758 42.9 0.1400000 0.0600000 0 0.0000000 76paf1 0
132 cf251t es cu 3.0143145 20.0 3.0000000 20.0000000% 0 0.0000000 89rid1 0
132 te g cf251t rc cu x1 0.0000000 0.0 4.1800000 0.4200000 0 0.0000000 75fly3 0
132 te g cf251t rc cu x1 0.0000000 0.0 4.4000000 0.4000000 0 0.0000000 73uni1 0
132 te g cf251t es fc 3.2050728 8.1 0.9870000 0.0130000 132 cf251t 1.0000000 89rid1 0
132 te g es254t rc cu 4.7341086 10.1 4.7600000 0.4800000 0 0.0000000 76fly1 0
132 te g es254t rc cu 4.7738910 10.4 4.8000000 0.5000000 0 0.0000000 73uni1 0
133 th227t es cu 4.8773840 30.0 4.8600000 0.0000000 0 0.0000000 75mee1 0

133 i g th227t rc cu 4.8171693 21.0 4.8000000 1.0100000 0 0.0000000 69fly2 0
133 i g th227t cm cu x3 0.0000000 0.0 4.8000000 21.0000000% 0 0.0000000 77cro1 0
133 th229t cm cu 0.0000000 0.0 3.0400000 14.0000000% 0 0.0000000 77cro1 0
133 th229t ms cu 2.9803611 5.0 3.0200000 5.0000000% 0 0.0000000 66har1 0
133 th229t es cu 3.4639297 15.0 3.5100000 15.0000000% 0 0.0000000 75mee1 0
133 th229t rc cu 2.8718049 5.0 2.9100000 0.1000000 0 0.0000000 82sin1 0
133 xe g th229t ms re 2.9566717 2.2 0.5020000 0.0040000 134 xe g th229t 1.0000000 66har1 0
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133 i g th229t rc cu 3.9474982 24.0 4.0000000 0.9600000 0 0.0000000 68bor1 0
133 i g th229t rc cu 2.9112799 5.0 2.9500000 0.0900000 0 0.0000000 81gin1 0
133 i g th229t rc cu 3.0395736 5.0 3.0800000 0.0600000 0 0.0000000 83dic1 0
133 i g th229t rc cu 3.1283923 5.0 3.1700000 0.1000000 0 0.0000000 87had1 0
133 i g th229t es in 0.2279680 30.0 0.2310000 0.0000000 0 0.0000000 89rid1 0
133 te g th229t rc cu 1.4704431 8.1 1.4900000 0.1200000 0 0.0000000 82dic1 0
133 te g th229t rc cu 1.4013619 9.9 1.4200000 0.1400000 0 0.0000000 83dic1 0
133 te m th229t rc cu 0.8487121 12.8 0.8600000 0.1100000 0 0.0000000 83dic1 0
133 sb g th229t rc cu 0.7539722 6.5 0.7640000 0.0500000 0 0.0000000 87had1 0
133 pa231f es cu 5.2142464 30.0 5.1800000 0.0000000 0 0.0000000 75mee1 0
133 xe g pa231f cm cu 0.0000000 0.0 5.1000000 10.0000000% 0 0.0000000 77cro1 0
133 i g pa231f rc cu 5.0783539 5.0 5.0450000 0.0650000 0 0.0000000 70kem1 0
133 am241t cm cu x3 0.0000000 0.0 6.9400000 0.0000000 0 0.0000000 72sid1 0
133 am241t ms re 5.5267575 2.3 1.1550000 0.0120000 132 am241t 1.0000000 73tra1 0
133 am241t rc cu 5.7572420 6.7 5.8800000 0.3600000 140 ba g am241t 6.0600000 72wei1 0
133 am241t es cu 5.3361108 3.2 5.3250000 3.2000000% 0 0.0000000 91jam2 0
133 xe g am241t cm cu 0.0000000 0.0 5.3600000 5.5000000% 0 0.0000000 77cro1 0
133 i g am241t es fc 5.4887342 1.7 0.9945000 1.0000000% 133 am241t 1.0000000 89rid1 0
133 i g am241t rc cu 5.7416198 6.4 7.4600000 0.3000000 139 ba g am241t 8.6800000 71nak1 0
133 i g am241t rc cu x4 0.0000000 0.0 4.0000000 0.2000000 139 ba g am241t 6.2200000 65ric1 0
133 i g am241t rc cu x4 0.0000000 0.0 6.4800000 7.0000000% 0 0.0000000 73sko2 36
133 am241h es cu 4.9116498 30.0 0.0490000 0.0000000 0 0.0100000 79pri1 0
133 xe g am241h rc cu 4.6109366 5.0 0.0460000 3.0000000% 0 0.0100000 79pri1 0
133 i g am241h rc cu 4.3102233 5.0 0.0430000 3.0000000% 0 0.0100000 79pri1 0
133 xe g a242mt rc fi 0.0105216 12.9 0.0017300 0.0002000 133 a242mt 1.0000000 70for2 0

133	xe	g	a242mt	rc	fi		0.0113122	7.5	0.0018600	0.0000900	133		a242mt	1.0000000	74wol2	0	
133	xe	g	a242mt	rc	fi		0.0099742	9.7	0.0016400	0.0001300	133		a242mt	1.0000000	84for1	0	
133	xe	m	a242mt	rc	fi		0.0366127	10.0	0.0060200	0.0005000	133		a242mt	1.0000000	70for2	0	
133	xe	m	a242mt	rc	fi		0.0330853	7.5	0.0054400	0.0002500	133		a242mt	1.0000000	74wol2	0	
133	xe	m	a242mt	rc	fi		0.0286455	11.8	0.0047100	0.0004900	133		a242mt	1.0000000	84for1	0	
133	i	g	a242mt	rc	cu	x5	0.0000000	0.0	1.0200000	0.0200000	140	ba	g	u235t	0.0000000	71wol1	7
133	i	g	a242mt	rc	cu		6.0186533	7.3	5.9200000	7.3000000%	0			0.0000000	71wol1	0	
133	i	g	a242mt	es	cu	cm	5.8864869	7.0	5.7900000	7.0000000%	0			0.0000000	77cro1	0	
133	i	g	a242mt	rc	cu		5.8763203	11.8	5.7800000	0.6800000	0			0.0000000	85gud1	0	
133	te	g	a242mt	rc	cu	x1	0.0000000	0.0	4.4600000	0.5900000	0			0.0000000	85gud1	0	
133			cm245t	cm	cu		0.0000000	0.0	5.3900000	0.1600000	0			0.0000000	80dic2	0	
133	xe	g	cm245t	rc	cu		5.5729116	5.7	5.4600000	0.0900000	99	mo	g	cm245t	4.0900000	79ram2	0
133	i	g	cm245t	rc	cu		6.0172025	11.6	6.0100000	0.7000000	0			0.0000000	67gun1	0	
133	i	g	cm245t	rc	cu		5.5266153	5.0	5.5200000	0.0800000	0			0.0000000	72har2	0	
133	i	g	cm245t	rc	cu		5.3964595	5.0	5.3900000	0.1600000	0			0.0000000	80dic2	0	
133	i	g	cm245t	cm	cu		0.0000000	0.0	5.5300000	5.4000000%	0			0.0000000	77cro1	0	
133	i	g	cm245t	rc	cu		5.2863276	5.9	5.2800000	5.9000000%	0			0.0000000	82ram2	0	
133	te	g	cm245t	rc	cu		2.0023968	8.0	2.0000000	0.1600000	0			0.0000000	80dic2	0	
133	te	m	cm245t	rc	cu		2.7232597	5.9	2.7200000	0.1600000	0			0.0000000	80dic2	0	
133			cf249t	es	cu		4.7606239	30.0	4.8000000	0.0000000	0			0.0000000	75mee1	0	
133			cf249t	es	cu		5.3358659	3.3	5.3800000	0.1800000	0			0.0000000	81dic3	0	
133	i	g	cf249t	rc	cu		5.0482449	10.0	5.0900000	0.5100000	0			0.0000000	69fly1	0	
133	i	g	cf249t	rc	cu		4.7308700	5.7	4.7700000	0.2700000	0			0.0000000	72kur1	0	
133	i	g	cf249t	rc	fi		1.8222538	15.3	0.3500000	0.0000000	133		cf249t	1.0000000	73tro3	0	
133	i	g	cf249t	rc	cu		4.6713622	5.0	4.7100000	0.1900000	0			0.0000000	81gin4	0	
133	i	g	cf249t	cm	cu		0.0000000	0.0	4.9800000	8.3000000%	0			0.0000000	77cro1	0	
133	i	g	cf249t	rc	cu	x1	0.0000000	0.0	5.5400000	0.4900000	0			0.0000000	81gud1	0	
133	i	g	cf249t	rc	cu		5.0879168	5.0	5.1300000	0.1700000	0			0.0000000	81dic3	0	
133	te	g	cf249t	rc	fc	x1	0.0000000	0.0	0.1500000	0.0000000	133		cf249t	1.0000000	73tro3	0	
133	te	g	cf249t	rc	cu	x1	0.0000000	0.0	2.2800000	0.4500000	0			0.0000000	81gud1	0	
133	te	g	cf249t	rc	cu		1.6166285	12.9	1.6300000	0.2100000	0			0.0000000	81dic3	0	
133	te	m	cf249t	rc	fc		2.6032197	15.3	0.5000000	0.0000000	133		cf249t	1.0000000	73tro3	0	
133	te	m	cf249t	rc	cu	x1	0.0000000	0.0	2.9700000	0.2100000	0			0.0000000	81gud1	0	
133	te	m	cf249t	rc	cu		1.6265465	13.4	1.6400000	0.2200000	0			0.0000000	81dic3	0	
133	sb	g	cf249t	rc	cu	x1	0.0000000	0.0	1.7900000	0.4100000	0			0.0000000	76paf1	0	
133	i	g	cf251t	rc	cu		3.7980363	10.1	3.7800000	0.3800000	0			0.0000000	75fly3	0	

133 i g cf251t rc cu 4.0190860 10.0 4.0000000 0.4000000 0 0.0000000 73uni1 0
133 i g es254t rc cu 5.0508456 14.9 5.0900000 0.7600000 0 0.0000000 76fly1 0
133 i g es254t rc cu 5.0607686 15.7 5.1000000 0.8000000 0 0.0000000 73uni1 0
134 th227t es cu 5.7288338 30.0 5.7000000 0.0000000 0 0.0000000 75mee1 0
134 th229t cm cu 0.0000000 0.0 5.9100000 6.4000000% 0 0.0000000 77cro1 0
134 th229t ms cu 5.9508535 5.0 6.0300000 5.0000000% 0 0.0000000 66har1 0
134 xe g th229t ms re rp 5.8376877 2.5 1.0000000 0.0000000 no. relative values = 5 66har1
134 th229t es cu 6.0988847 15.0 6.1800000 15.0000000% 0 0.0000000 75mee1 0
134 th229t rc cu 5.8817723 7.0 5.9600000 0.4200000 0 0.0000000 82sin1 0
134 i g th229t rc cu 5.2304351 12.5 5.3000000 0.6600000 0 0.0000000 68bor1 0
134 i g th229t rc cu 5.8719036 5.0 5.9500000 0.1800000 0 0.0000000 83dic1 0
134 i g th229t rc cu 6.2567846 5.0 6.3400000 0.1500000 0 0.0000000 87had1 0
134 i m th229t rc cu 0.9572683 19.6 0.9700000 0.1900000 0 0.0000000 82dic1 0
134 i m th229t rc cu 0.2121780 34.9 0.2150000 0.0750000 0 0.0000000 87had1 36
134 te g th229t rc cu 5.3883350 7.9 5.4600000 0.4300000 0 0.0000000 81gin1 0
134 te g th229t rc cu 5.6449224 8.0 5.7200000 0.4600000 0 0.0000000 82dic1 0
134 te g th229t rc cu 4.9541102 9.2 5.0200000 0.4600000 0 0.0000000 83dic1 0
134 te g th229t rc cu 4.6975228 7.6 4.7600000 0.3600000 0 0.0000000 83dic1 0
134 te g th229t rc cu 5.0527977 5.9 5.1200000 0.3000000 0 0.0000000 87had1 0
134 pa231f es cu 6.3731699 30.0 6.2900000 0.0000000 0 0.0000000 75mee1 0
134 am241t es cu 7.8024247 30.0 7.7700000 0.0000000 0 0.0000000 72sid1 0
134 am241t ms re 7.2884530 2.1 1.5200000 0.0100000 132 am241t 1.0000000 73tra1 0
134 am241t rc cu 5.9948968 10.2 6.1100000 0.6000000 140 ba g am241t 6.0600000 72wei1 0
134 xe g am241t cm cu 0.0000000 0.0 6.5500000 8.4000000% 0 0.0000000 77cro1 0
134 cs g am241h rc fi 0.2274262 17.2 0.0447000 0.0028000 134 am241h 1.0000000 79pri1 0
134 cs g am241h rc cu 0.2265130 5.0 0.0022500 4.9000000% 0 0.0100000 79pri1 0
134 am241h es cu 5.0537576 30.0 0.0502000 0.0000000 0 0.0100000 79pri1 0
134 a242mt ms re 7.8302537 7.4 1.6000000 0.1000000 132 a242mt 1.0000000 73tra1 0
134 xe g a242mt cm cu 0.0000000 0.0 7.7100000 9.0000000% 0 0.0000000 77cro1 0
134 i g a242mt rc cu x5 0.0000000 0.0 0.9000000 0.0200000 140 ba g u235t 0.0000000 71wol1 7
134 i g a242mt rc cu 6.2016529 7.3 6.1000000 7.3000000% 0 0.0000000 71wol1 0
134 i g a242mt rc cu 6.2016529 8.7 6.1000000 0.5300000 0 0.0000000 85gud1 0
134 i g a242mt rc in x1 0.0000000 0.0 2.4000000 1.4000000 0 0.0000000 85gud1 0
134 te g a242mt rc cu x1 0.0000000 0.0 6.2000000 0.6500000 0 0.0000000 85gud1 0
134 cm245t cm cu 0.0000000 0.0 5.8100000 0.2100000 0 0.0000000 80dic2 0
134 cm245t es cu 6.5110163 30.0 6.5000000 0.0000000 0 0.0000000 75mee1 0

134 i g cm245t rc cu 5.9801181 5.0 5.9700000 0.2300000 0 0.0000000 80dic2 0
134 i g cm245t rc cu 5.3189995 8.5 5.3100000 0.4500000 0 0.0000000 80dic2 0
134 i g cm245t rc fi 2.2828350 6.2 32.7000000 1.8000000 134 i g cm245t 100.0000000 80dic2 0
134 i g cm245t rc fi 2.1920801 15.9 31.4000000 4.9000000 134 i g cm245t 100.0000000 80dic2 0
134 i m cm245t rc cu 1.1218982 8.9 1.1200000 0.1000000 0 0.0000000 80dic2 0
134 te g cm245t rc cu 3.9266437 6.9 3.9200000 0.2700000 0 0.0000000 80dic2 0
134 te g cm245t rc fc 4.7471799 5.7 0.6800000 0.0200000 134 i g cm245t 1.0000000 80dic2 0
134 te g cm245t rc fc 3.9829655 14.8 0.5600000 0.0800000 134 cm245t 1.0000000 71tro2 0
134 xe g cf249t rc fi 1.0653152 25.2 20.0000000 5.0000000 134 cf249t 100.0000000 70car1 0
134 cf249t es cu 4.8598036 30.0 4.9000000 0.0000000 0 0.0000000 75mee1 0
134 cf249t es cu 5.2565222 2.5 5.3000000 0.1300000 0 0.0000000 81dic3 0
134 i g cf249t rc cu x1 0.0000000 0.0 2.3200000 0.1900000 0 0.0000000 81gin4 0
134 i g cf249t rc cu x1 0.0000000 0.0 5.0700000 0.3800000 0 0.0000000 81gud1 0
134 i g cf249t rc cu 4.5027568 5.0 4.5400000 0.1000000 0 0.0000000 81dic3 0
134 i g cf249t rc cu 4.5225927 5.0 4.5600000 0.1300000 0 0.0000000 81dic3 0
134 i g cf249t rc fi x1 0.0000000 0.0 0.6600000 0.1000000 134 cf249t 1.0000000 81gud1 0
134 i m cf249t rc in 1.1405661 8.7 1.1500000 0.1000000 0 0.0000000 81gud1 0
134 i m cf249t rc cu 1.1405661 15.7 1.1500000 0.1800000 0 0.0000000 81dic3 0
134 te g cf249t rc cu x1 0.0000000 0.0 3.3000000 0.6000000 0 0.0000000 81gin4 0
134 te g cf249t rc fc 1.5447071 20.9 0.2900000 0.0600000 134 cf249t 1.0000000 71tro2 0
134 te g cf249t rc cu x1 0.0000000 0.0 2.5900000 0.2200000 0 0.0000000 81gud1 0
134 te g cf249t rc cu 1.5769567 8.2 1.5900000 0.1300000 0 0.0000000 81dic3 0
134 te g cf249t rc cu 2.2712143 14.4 2.2900000 0.3300000 0 0.0000000 81gin4 0
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134 sb g cf249t rc cu x1 0.0000000 0.0 0.3100000 0.1800000 134 sb g u235t 0.3800000 76paf1 0
134 cf251t es cu 4.8458065 30.0 4.8000000 0.0000000 0 0.0000000 75mee1 0
134 es254t es cu 5.3412548 30.0 5.4000000 0.0000000 0 0.0000000 75mee1 0
135 cs g th227t es cu 6.7740948 30.0 6.7400000 0.0000000 0 0.0000000 75mee1 0
135 th229t cm cu 0.0000000 0.0 5.5200000 10.3000000% 0 0.0000000 77cro1 0
135 th229t rc cu 6.4146846 9.1 6.5000000 0.5900000 0 0.0000000 82sin1 0
135 th229t es cu 5.9015098 2.5 5.9800000 0.1500000 0 0.0000000 83dic1 0
135 cs g th229t ms cu 6.0199347 5.0 6.1000000 5.0000000% 0 0.0000000 66har1 0
135 cs g th229t es cu 7.0364155 15.0 7.1300000 15.0000000% 0 0.0000000 75mee1 0

135	xe	g	th229t	ms	re	5.7130906	4.6	0.9700000	0.0400000	134	xe	g	th229t	1.0000000	66har1	0
135	xe	g	th229t	rc	cu	5.2797788	5.0	5.3500000	0.1700000	0				0.0000000	87had1	0
135	xe	m	th229t	rc	cu	0.1282937	46.2	0.1300000	0.0600000	0				0.0000000	87had1	0
135	i	g	th229t	rc	cu	4.8948978	5.4	4.9600000	0.2700000	0				0.0000000	68bor1	0
135	i	g	th229t	rc	cu	4.9935852	5.0	5.0600000	0.1600000	0				0.0000000	81gin1	0
135	i	g	th229t	rc	fc	5.3926001	5.4	0.9410000	0.0030000	135			th229t	1.0000000	80rat1	0
135	i	g	th229t	rc	cu	4.9146353	5.0	4.9800000	0.1400000	0				0.0000000	83dic1	0
135	i	g	th229t	rc	cu	4.9639790	5.0	5.0300000	0.1300000	0				0.0000000	83dic1	0
135	i	g	th229t	rc	fc	5.4441766	5.4	0.9500000	0.0150000	135			th229t	1.0000000	83rat1	0
135	i	g	th229t	rc	cu	5.0034540	5.1	5.0700000	0.2600000	0				0.0000000	87had1	0
135	cs	g	pa231f	es	cu	6.8751550	30.0	6.8300000	0.0000000	0				0.0000000	75mee1	0
135	xe	g	pa231f	rc	cu	6.6607468	5.0	6.6170000	0.1030000	0				0.0000000	70kem1	0
135	xe	g	pa231f	cm	cu	0.0000000	0.0	6.7300000	10.0000000%	0				0.0000000	77cro1	0
135			am241t	es	cu	6.5873753	20.0	6.5600000	20.0000000%	0				0.0000000	91jam2	0
135			am241t	rc	cu	6.7798260	6.1	6.9100000	0.3700000	140	ba	g	am241t	6.0600000	72wei1	0
135	cs	g	am241t	es	cu	7.2601712	30.0	7.2300000	0.0000000	0				0.0000000	72sid1	0
135	cs	g	am241t	es	fc	7.0418232	4.9	0.9999960	4.0000000%	135			am241t	1.0000000	89rid1	0
135	xe	g	am241t	cm	cu	x3	0.0000000	0.0	6.4400000	10.3000000%	0			0.0000000	77cro1	0
135	xe	g	am241t	es	fc	7.0172048	4.9	0.9965000	4.0000000%	135			am241t	1.0000000	89rid1	0
135	xe	g	am241t	rc	cu	6.8283768	5.0	6.8000000	0.2800000	0				0.0000000	71nak1	0
135	xe	g	am241t	rc	cu	7.3505468	5.0	7.3200000	0.2000000	0				0.0000000	73sko2	0
135	i	g	am241t	es	fc	5.8060064	11.4	0.8245000	11.0000000%	135			am241t	1.0000000	89rid1	0
135	i	g	am241t	rc	cu	5.1661799	7.4	4.8000000	0.3000000	139	ba	g	am241t	6.2200000	65ric1	0
135	i	g	am241t	rc	cu	4.6969532	6.4	6.0900000	0.3000000	139	ba	g	am241t	8.6800000	71nak1	0
135	cs	g	am241h	es	cu	4.9936325	30.0	0.0497000	0.0000000	0				0.0100000	79pri1	0
135	xe	g	am241h	rc	cu	4.5113501	5.0	0.0449000	3.0000000%	0				0.0100000	79pri1	0
135	i	g	am241h	rc	fc	1.7342848	9.9	0.3640000	0.0210000	135			am241h	1.0000000	79pri1	0
135	i	g	am241h	rc	cu	1.8186066	5.0	0.0181000	4.1000000%	0				0.0100000	79pri1	0
135	cs	g	a242mt	es	cu	7.7912994	30.0	7.5400000	0.0000000	0				0.0000000	75mee1	0
135	xe	g	a242mt	rc	fi	0.3706123	17.4	0.0539000	0.0071000	135			a242mt	1.0000000	70for2	0
135	xe	g	a242mt	rc	fi	0.4263073	12.4	0.0620000	0.0020000	135			a242mt	1.0000000	74wol2	0
135	xe	g	a242mt	rc	fi	0.3437962	18.8	0.0500000	0.0075000	135			a242mt	1.0000000	84for1	0
135	xe	g	a242mt	rc	cu	x4	0.0000000	0.0	4.4100000	0.3700000	0			0.0000000	85gud1	0
135	xe	g	a242mt	rc	in	0.5683309	29.1	0.5500000	0.1600000	0				0.0000000	85gud1	0
135	xe	m	a242mt	rc	fi	0.6511501	12.4	0.0947000	0.0043000	135			a242mt	1.0000000	70for2	0
135	xe	m	a242mt	rc	fi	0.6050814	12.4	0.0880000	0.0030000	135			a242mt	1.0000000	74wol2	0

135	xe	m	a242mt	rc	fi		0.5975179	12.9	0.0869000	0.0054000	135		a242mt	1.0000000	84for1	0	
135	i	g	a242mt	rc	cu	x5	0.0000000	0.0	1.1800000	0.0400000	140	ba	g	u235t	0.0000000	71wol1	7
135	i	g	a242mt	rc	cu		6.6546377	7.8	6.4400000	7.8000000%	0			0.0000000	71wol1	0	
135	i	g	a242mt	cm	cu		0.0000000	0.0	6.6000000	8.0000000%	0			0.0000000	77cro1	0	
135	i	g	a242mt	rc	cu		4.3296478	7.9	4.1900000	0.3300000	0			0.0000000	85gud1	0	
135			cm245t	cm	cu		0.0000000	0.0	6.3400000	0.1600000	0			0.0000000	80dic2	0	
135			cm245t	cm	cu		0.0000000	0.0	6.3900000	6.0000000%	0			0.0000000	77cro1	0	
135	xe	g	cm245t	rc	fi	su	0.0000000	0.0	0.1700000	0.0200000	135		cm245t	1.0000000	73har2	39	
135	xe	g	cm245t	rc	fi		0.3356607	12.1	0.1700000	0.0200000	135		cm245t	1.0000000	74har1	39	
135	xe	g	cm245t	rc	cu		6.0672624	5.0	6.0600000	0.2400000	0			0.0000000	80dic2	0	
135	xe	g	cm245t	rc	fi		0.2880170	5.7	14.6000000	0.6000000	135	xe	g	cm245t	100.0000000	80dic2	39
135	xe	g	cm245t	rc	fi		0.2961712	15.3	0.1500000	0.0000000	135		cm245t	1.0000000	70har1	39	
135	xe	g	cm245t	rc	cu		7.2059992	5.7	7.0600000	0.0130000	99	mo	g	cm245t	4.0900000	79ram2	0
135	xe	g	cm245t	rc	cu		6.4577298	6.8	6.4500000	6.8000000%	0			0.0000000	82ram2	0	
135	xe	m	cm245t	rc	fi	su	0.0000000	0.0	0.1700000	0.0200000	135		cm245t	1.0000000	73har2	39	
135	xe	m	cm245t	rc	fi		0.8217899	12.1	0.1700000	0.0200000	135		cm245t	1.0000000	74har1	39	
135	xe	m	cm245t	rc	cu		1.3816538	5.1	1.3800000	0.0700000	0			0.0000000	80dic2	0	
135	xe	m	cm245t	rc	fi		0.7051450	5.7	14.6000000	0.6000000	135	xe	g	cm245t	100.0000000	80dic2	39
135	xe	m	cm245t	rc	fi		0.7251087	15.3	0.1500000	0.0000000	135		cm245t	1.0000000	70har1	39	
135	i	g	cm245t	rc	cu		6.2775141	5.0	6.2700000	0.3000000	0			0.0000000	72har2	0	
135	i	g	cm245t	rc	fc		6.4749145	5.7	0.9510000	0.0140000	135		cm245t	1.0000000	80dat1	0	
135	i	g	cm245t	rc	cu		5.4865673	5.0	5.4800000	0.2200000	0			0.0000000	80dic2	0	
135	i	g	cm245t	rc	cu		5.6067111	5.0	5.6000000	0.1900000	0			0.0000000	80dic2	0	
135			cf249t	es	cu		5.4065409	4.9	5.4700000	0.2700000	0			0.0000000	81dic3	0	
135	cs	g	cf249t	es	cu		5.2978170	30.0	5.3600000	0.0000000	0			0.0000000	75mee1	0	
135	xe	g	cf249t	rc	fi	su	0.0000000	0.0	0.3600000	0.0300000	135		cf249t	1.0000000	73har2	39	
135	xe	g	cf249t	rc	fi		0.5593157	9.2	0.3600000	0.0300000	135		cf249t	1.0000000	74har1	39	
135	xe	g	cf249t	rc	cu	x1	0.0000000	0.0	1.9100000	0.1400000	0			0.0000000	81gin4	0	
135	xe	g	cf249t	rc	cu		5.5053808	7.9	5.5700000	0.4400000	0			0.0000000	81gud1	0	
135	xe	g	cf249t	rc	fi	x1	0.0000000	0.0	0.2700000	0.0400000	135		cf249t	1.0000000	81gud1	0	
135	xe	m	cf249t	rc	fi		1.3693591	9.2	0.3600000	0.0300000	135		cf249t	1.0000000	74har1	39	
135	xe	m	cf249t	rc	fi	su	0.0000000	0.0	0.3600000	0.0300000	135		cf249t	1.0000000	73har2	39	
135	xe	m	cf249t	rc	cu		1.6901618	11.7	1.7100000	0.2000000	0			0.0000000	81gud1	0	
135	xe	m	cf249t	rc	cu		1.4134101	5.0	1.4300000	0.0600000	0			0.0000000	81dic3	0	
135	i	g	cf249t	rc	cu		3.2617157	6.1	3.3000000	0.2000000	0			0.0000000	78gae1	0	
135	i	g	cf249t	rc	cu		4.0030147	5.0	4.0500000	0.1600000	0			0.0000000	81gin4	0	

135 i g cf249t rc cu 3.8745229 8.9 3.9200000 0.3500000 0 0.0000000 81gud1 0
135 i g cf249t rc cu 3.5483513 5.3 3.5900000 0.1900000 0 0.0000000 81dic3 0
135 i g cf249t rc cu 3.7460311 5.3 3.7900000 0.2000000 0 0.0000000 81dic3 0
135 te m cf249t rc cu x6 0.0000000 0.0 1.2800000 0.0700000 0 0.0000000 81dic3 0
135 cs g cf251t es cu 4.7224261 30.0 4.7000000 0.0000000 0 0.0000000 75mee1 0
135 i g cf251t rc cu 4.0793723 10.1 4.0600000 0.4100000 0 0.0000000 75fly3 0
135 i g cf251t rc cu 4.3205175 9.3 4.3000000 0.4000000 0 0.0000000 73uni1 0
135 i g es254t rc cu 5.2811170 15.1 5.3100000 0.8000000 0 0.0000000 76fly1 0
135 i g es254t rc cu 5.2711714 15.1 5.3000000 0.8000000 0 0.0000000 73uni1 0
136 cs g th227t rc in 0.1005059 40.0 0.1000000 0.0400000 0 0.0000000 69fly2 0
136 th227t es cu 7.3369276 30.0 7.3000000 0.0000000 0 0.0000000 69fly2 0
136 th227t es cu 7.7490016 30.0 7.7100000 0.0000000 0 0.0000000 75mee1 0
136 cs g th229t rc in 0.0431467 15.5 0.0460000 15.0000000% 99 mo g th229t 0.1600000 66rav1 0
136 th229t cm cu 0.0000000 0.0 6.0300000 5.0000000% 0 0.0000000 77cro1 0
136 th229t ms cu 5.9508535 5.0 6.0300000 5.0000000% 0 0.0000000 66har1 0
136 xe g th229t ms re 5.9015637 2.2 1.0020000 0.0080000 134 xe g th229t 1.0000000 66har1 0
136 th229t es cu 6.0298035 3.1 6.1100000 0.1900000 0 0.0000000 83dic1 0
136 i g th229t rc cu 2.0724366 41.4 2.1000000 0.8700000 0 0.0000000 82dic1 0
136 i m th229t rc cu 1.1250370 11.4 1.1400000 0.1300000 0 0.0000000 82dic1 0
136 i m th229t rc cu 1.0263495 16.3 1.0400000 0.1700000 0 0.0000000 82dic1 0
136 pa231f es cu 7.2429537 30.0 7.1100000 0.0000000 0 0.0000000 75mee1 0
136 cs g am241t rc in 0.2671100 5.3 0.2660000 0.0140000 0 0.0000000 73sko2 0
136 cs g am241t rc cu 0.2854003 11.5 0.2880000 0.0320000 140 ba g am241t 6.0000000 57cun2 0
136 cs g am241t rc cu 0.1722060 15.5 0.1600000 0.0000000 139 ba g am241t 6.2200000 65ric1 0
136 am241t es cu 6.9287941 30.0 6.9000000 0.0000000 0 0.0000000 77sid1 0
136 am241t ms re 7.6720558 2.7 1.6000000 0.0300000 132 am241t 1.0000000 73tra1 0
136 xe g am241t cm cu 0.0000000 0.0 7.2300000 5.0000000% 0 0.0000000 77cro1 0
136 cs g am241h rc fi 1.2746934 23.2 0.2560000 0.0130000 136 am241h 1.0000000 79pri1 0
136 cs g am241h rc cu 1.2517925 5.0 0.0124000 3.0000000% 0 0.0100000 79pri1 0
136 am241h es cu 4.9062189 30.0 0.0486000 0.0000000 0 0.0100000 79pri1 0
136 cs g a242mt rc cu x5 0.0000000 0.0 2.4000000 0.9000000 140 ba g u235t 0.0000000 71wol1 7
136 cs g a242mt rc cu 0.0123999 38.0 0.0120000 38.0000000% 0 0.0000000 71wol1 0
136 a242mt ms re x1 0.0000000 0.0 1.9000000 0.1000000 132 a242mt 1.0000000 73tra1 0
136 xe g a242mt cm cu x3 0.0000000 0.0 9.1600000 9.0000000% 0 0.0000000 77cro1 0
136 a242mt es cu 6.4066388 20.0 6.2000000 20.0000000% 0 0.0000000 89rid1 0
136 cs g cm245t rc in 0.1605423 18.7 0.1600000 0.0300000 0 0.0000000 67gun1 0

136	cs g	cm245t	rc	in	0.1254237	5.0	0.1250000	0.0060000	0			0.0000000	80dic2	0
136		cm245t	es	cu	7.0237274	30.0	7.0000000	0.0000000	0			0.0000000	67gun1	0
136		cm245t	cm	cu	0.0000000	0.0	6.3000000	0.3000000	0			0.0000000	80dic2	0

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0measured nuclide	fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
136	xe g	cm245t	es	fc	4.8186344	8.0	0.9770000	0.0040000	136	cm245t	1.0000000	71tro2	0
136	i g	cm245t	rc	cu	1.8061013	27.8	1.8000000	0.5000000	0		0.0000000	80dic2	0
136	i m	cm245t	rc	cu	1.5351861	9.2	1.5300000	0.1400000	0		0.0000000	80dic2	0
136	cs g	cf249t	rc	in	0.3094997	18.7	0.3200000	0.0600000	0		0.0000000	69fly1	0
136	cs g	cf249t	rc	cu	0.4062183	5.0	0.4200000	0.0160000	0		0.0000000	72kur1	0
136	cs g	cf249t	rc	fi	0.4003241	12.4	0.0790000	0.0030000	136	cf249t	1.0000000	72kur1	0
136	cs g	cf249t	rc	in	0.3288434	5.0	0.3400000	0.0002000	0		0.0000000	78gae1	0
136	cs g	cf249t	rc	in	0.3578590	24.3	0.3700000	0.0900000	0		0.0000000	81gud1	0
136	cs g	cf249t	rc	cu	0.4545777	5.0	0.4700000	0.0200000	0		0.0000000	81dic3	0
136		cf249t	es	cu	5.3001822	30.0	5.4800000	0.0000000	0		0.0000000	75mee1	0
136		cf249t	es	cu	5.3195259	12.7	5.5000000	0.7000000	0		0.0000000	81dic3	0
136	i g	cf249t	rc	cu	0.5706401	61.0	0.5900000	0.3600000	0		0.0000000	81dic3	0
136	i m	cf249t	rc	cu	0.8898116	8.7	0.9200000	0.0800000	0		0.0000000	81dic3	0
136		cf251t	es	cu	5.4515323	30.0	5.4000000	0.0000000	0		0.0000000	75mee1	0
136		es254t	es	cu	4.9456063	30.0	5.0000000	0.0000000	0		0.0000000	75mee1	0
137		th227t	es	cu	7.0150029	30.0	6.9900000	0.0000000	0		0.0000000	75mee1	0
137	cs g	th227t	rc	cu	6.9547882	17.9	6.9300000	1.2400000	0		0.0000000	69fly2	0
137	cs g	th227t	cm	cu	x3 0.0000000	0.0	6.9300000	18.0000000%	0		0.0000000	77cro1	0
137		th229t	ms	cu	7.4589273	5.0	7.6000000	5.0000000%	0		0.0000000	66har1	0
137		th229t	es	cu	7.1939391	15.0	7.3300000	15.0000000%	0		0.0000000	75mee1	0
137		th229t	es	cu	6.9191365	9.0	7.0500000	9.0000000%	0		0.0000000	77cro1	0
137		th229t	es	cu	7.4883704	3.3	7.6300000	0.2500000	0		0.0000000	83dic1	0
137	cs g	th229t	rc	cu	5.7904830	15.0	5.9000000	15.0000000%	0		0.0000000	66rav1	0
137	cs g	th229t	rc	cu	5.8886268	11.3	6.0000000	0.6800000	0		0.0000000	68bor1	0
137	cs g	th229t	ms	re	x1 0.0000000	0.0	2.4300000	0.0400000	145 nd g	th229t	1.0000000	66har1	0
137	xe g	th229t	rc	cu	5.1819916	11.0	5.2800000	0.5800000	0		0.0000000	82dic1	0
137	xe g	th229t	rc	cu	7.0565378	5.0	7.1900000	0.2400000	0		0.0000000	87had1	0
137		pa231f	es	cu	7.1872045	30.0	7.1400000	0.0000000	0		0.0000000	75mee1	0
137	cs g	pa231f	rc	cu	7.0100410	5.0	6.9640000	0.1560000	0		0.0000000	70kem1	0

137	cs	g	pa231f	cm	cu		0.0000000	0.0	7.0300000	10.0000000%	0				0.0000000	77cro1	0		
137			am241t	es	cu		6.5685375	30.0	6.5300000	0.0000000	0				0.0000000	72sid1	0		
137			am241t	rc	cu		6.8996100	7.1	7.0200000	0.4600000	140	ba	g	am241t	6.0600000	72wei1	0		
137	cs	g	am241t	rc	cu		6.2466490	5.0	6.2100000	0.2700000	0				0.0000000	73sko2	0		
137	cs	g	am241t	rc	cu	x4	0.0000000	0.0	9.2000000	1.8400000	140	ba	g	am241t	6.0000000	57cun2	0		
137	cs	g	am241t	rc	cu		6.0375848	15.5	5.6000000	0.0000000	139	ba	g	am241t	6.2200000	65ric1	0		
137	cs	g	am241t	cm	cu		0.0000000	0.0	6.5500000	11.1000000%	0				0.0000000	77cro1	0		
137			am241h	es	cu		4.6455675	30.0	0.0463000	0.0000000	0				0.0100000	79pri1	0		
137	cs	g	am241h	rc	cu		4.2642898	5.0	0.0425000	3.0000000%	0				0.0100000	79pri1	0		
137	cs	g	a242mt	rc	cu	x5	0.0000000	0.0	1.1100000	0.0300000	140	ba	g	u235t	0.0000000	71wol1	7		
137	cs	g	a242mt	rc	cu		6.1311666	7.3	5.9900000	7.3000000%	0				0.0000000	71wol1	0		
137	cs	g	a242mt	cm	cu		0.0000000	0.0	5.8100000	12.0000000%	0				0.0000000	77cro1	0		
137			cm245t	cm	cu		0.0000000	0.0	5.3000000	1.2000000	0				0.0000000	80dic2	0		
137	cs	g	cm245t	rc	cu		7.9089110	20.3	7.8900000	1.6000000	0				0.0000000	67gun1	0		
137	cs	g	cm245t	rc	cu		6.1647405	5.0	6.1500000	0.1700000	0				0.0000000	72har2	0		
137	cs	g	cm245t	cm	cu		0.0000000	0.0	6.1800000	12.8000000%	0				0.0000000	77cro1	0		
137	xe	g	cm245t	rc	cu		4.9117445	18.4	4.9000000	0.9000000	0				0.0000000	80dic2	0		
137	i	g	cm245t	rc	cu		1.2028762	58.3	1.2000000	0.7000000	0				0.0000000	80dic2	0		
137			cf249t	es	cu		5.5548007	30.0	5.6200000	0.0000000	0				0.0000000	75mee1	0		
137			cf249t	es	cu		5.6437566	7.2	5.7100000	0.4100000	0				0.0000000	81dic3	0		
137	cs	g	cf249t	rc	cu		6.8199510	14.9	6.9000000	1.0300000	0				0.0000000	69fly1	0		
137	cs	g	cf249t	rc	cu		5.5053808	5.0	5.5700000	0.2100000	0				0.0000000	72kur1	0		
137	cs	g	cf249t	cm	cu		0.0000000	0.0	6.0900000	10.7000000%	0				0.0000000	77cro1	0		
137	xe	g	cf249t	rc	cu		4.2402304	14.5	4.2900000	0.6200000	0				0.0000000	81dic3	0		
137			cf251t	es	cu		5.6534409	30.0	5.6000000	0.0000000	0				0.0000000	75mee1	0		
137			es254t	es	cu		4.6488699	30.0	4.7000000	0.0000000	0				0.0000000	75mee1	0		
138			th227t	es	cu		7.2464723	30.0	7.2100000	0.0000000	0				0.0000000	75mee1	0		
138			th229t	cm	cu		0.0000000	0.0	8.0000000	5.0000000%	0				0.0000000	77cro1	0		
138			th229t	es	cu	x4	0.0000000	0.0	10.7800000	5.0000000%	0				0.0000000	66har1	0		
138			th229t	es	cu		8.2538919	15.0	8.4100000	15.0000000%	0				0.0000000	75mee1	0		
138			th229t	rc	cu		8.4698082	5.8	8.6300000	0.5000000	0				0.0000000	82sin1	0		
138	cs	g	th229t	rc	cu		7.8515024	5.0	8.0000000	0.2000000	0				0.0000000	68bor1	0		
138	cs	g	th229t	rc	cu		6.8995078	5.1	7.0300000	0.3600000	0				0.0000000	87had1	0		
138	cs	m	th229t	rc	cu		0.5201620	18.9	0.5300000	0.1000000	0				0.0000000	87had1	0		
138	xe	g	th229t	rc	cu		7.9398318	6.1	8.0900000	0.4900000	0				0.0000000	82dic1	0		
138	xe	g	th229t	rc	cu		6.6835914	6.5	6.8100000	0.4400000	0				0.0000000	82dic1	0		

138	xe g	th229t	rc	cu		7.0761666	11.0	7.2100000	0.7900000	0			0.0000000	83dic1	0
138	xe g	th229t	rc	cu		7.3607835	5.0	7.5000000	0.1200000	0			0.0000000	87had1	0
138		pa231f	es	cu		7.4466936	30.0	7.3100000	0.0000000	0			0.0000000	75mee1	0
138		am241t	es	cu		6.5945837	30.0	6.5400000	0.0000000	0			0.0000000	72sid1	0
138		am241t	rc	cu		6.8178534	8.4	6.9200000	0.5500000	140	ba g	am241t	6.0600000	72wei1	0
138	cs g	am241t	rc	cu		6.9168654	7.4	6.4000000	0.4000000	139	ba g	am241t	6.2200000	65ric1	0
138	cs g	am241t	rc	cu		6.5674362	6.9	8.4800000	0.4800000	139	ba g	am241t	8.6800000	71nak1	0
138	cs g	am241t	cm	cu		0.0000000	0.0	6.3100000	4.0000000%	0			0.0000000	77cro1	0
138		am241h	es	cu		4.4014639	30.0	0.0436000	0.0000000	0			0.0100000	79pri1	0
138		a242mt	es	cu		5.9686644	30.0	5.7000000	0.0000000	0			0.0000000	75mee1	0
138	xe g	a242mt	rc	cu	x1	0.0000000	0.0	6.0000000	2.4000000	0			0.0000000	85gud1	0
138		cm245t	cm	cu		0.0000000	0.0	6.0000000	0.2000000	0			0.0000000	80dic2	0
138		cm245t	es	cu		6.1790107	30.3	1.0200000	0.0000000	138	cs g	cm245t	1.0000000	75mee1	0
138	cs g	cm245t	rc	cu		6.0201858	5.0	6.0100000	0.2200000	0			0.0000000	72har2	0
138	cs g	cm245t	rc	cu		5.7196774	6.7	5.7100000	0.3800000	0			0.0000000	80dic2	0
138	cs g	cm245t	rc	fi		1.3993642	21.2	23.1000000	4.8000000	138	cs g	cm245t	100.0000000	80dic2	0
138	cs g	cm245t	cm	cu		0.0000000	0.0	6.0800000	6.0000000%	0			0.0000000	77cro1	0
138	cs g	cm245t	rc	cu		5.9099994	6.4	5.9000000	6.4000000%	0			0.0000000	82ram2	0
138	xe g	cm245t	rc	cu		4.8381860	6.6	4.8300000	0.3200000	0			0.0000000	80dic2	0
138	xe g	cm245t	rc	cu		4.7881012	7.1	4.7800000	0.3400000	0			0.0000000	80dic2	0
138		cf249t	es	cu		5.7821324	5.0	5.8500000	5.0000000%	0			0.0000000	75mee1	0
138		cf249t	es	cu		4.9914134	5.9	5.0500000	0.3000000	0			0.0000000	81dic3	0
138	cs g	cf249t	rc	cu	x1	0.0000000	0.0	4.8000000	0.4200000	0			0.0000000	81gud1	0
138	cs g	cf249t	rc	fi	x1	0.0000000	0.0	0.4000000	0.0800000	138		cf249t	1.0000000	81gud1	0
138	cs g	cf249t	rc	cu		3.9041749	5.3	3.9500000	0.2100000	0			0.0000000	81dic3	0
138	cs g	cf249t	rc	fi		1.9745577	11.5	0.3700000	0.0400000	138		cf249t	1.0000000	72eic1	0
138	cs m	cf249t	rc	cu	x1	0.0000000	0.0	2.0300000	0.7600000	0			0.0000000	81dic3	0
138	xe g	cf249t	rc	fc		3.2019855	6.4	60.0000000	3.0000000	138		cf249t	100.0000000	74eic1	0
138	xe g	cf249t	rc	cu	x1	0.0000000	0.0	2.9500000	0.3300000	0			0.0000000	81gud1	0
138	xe g	cf249t	rc	cu		2.4413448	8.5	2.4700000	0.2100000	0			0.0000000	81dic3	0
138		cf251t	es	cu		5.7543952	30.0	5.7000000	0.0000000	0			0.0000000	75mee1	0
138		es254t	es	cu		4.4510457	30.0	4.5000000	0.0000000	0			0.0000000	75mee1	0
139		th227t	es	cu		7.5479899	30.0	7.5100000	0.0000000	0			0.0000000	75mee1	0
139		th229t	cm	cu	x3	0.0000000	0.0	8.9600000	5.0000000%	0			0.0000000	77cro1	0
139		th229t	es	cu	x4	0.0000000	0.0	11.8500000	5.0000000%	0			0.0000000	66har1	0
139		th229t	es	cu		8.9310840	15.0	9.1000000	15.0000000%	0			0.0000000	75mee1	0

139 th229t rc cu 8.6268383 6.8 8.7900000 0.6000000 0 0.0000000 82sin1 0
139 th229t es cu 8.2244488 4.2 8.3800000 0.3500000 0 0.0000000 83dic1 0
139 ba g th229t rc cu 8.7936827 5.0 8.9600000 0.2300000 0 0.0000000 68bor1 0
139 ba g th229t rc cu 8.2146344 5.0 8.3700000 0.3500000 0 0.0000000 83dic1 0
139 cs g th229t rc cu 7.0663522 40.3 7.2000000 2.9000000 0 0.0000000 82dic1 0
139 cs g th229t rc cu 8.5286945 5.0 8.6900000 0.3000000 0 0.0000000 87had1 0
139 xe g th229t rc cu 7.5570711 14.3 7.7000000 1.1000000 0 0.0000000 82dic1 0
139 xe g th229t rc cu 6.9191365 5.0 7.0500000 0.2500000 0 0.0000000 87had1 0
139 pa231f es cu 7.3448237 30.0 7.2100000 0.0000000 0 0.0000000 75mee1 0
139 am241t es cu 6.2961651 30.0 6.2700000 0.0000000 0 0.0000000 72sid1 0
139 am241t rc cu 6.1518826 7.1 6.2700000 0.4100000 140 ba g am241t 6.0600000 72wei1 0
139 ba g am241t rc cu 6.6074587 5.0 6.5800000 0.2100000 0 0.0000000 73sko2 0
139 ba g am241t rc cu 6.1638528 10.4 6.2200000 0.3100000 140 ba g am241t 6.0000000 57cun2 0
139 ba g am241t rc cu rp 6.8488054 5.3 6.2200000 0.0000000 no. relative values = 12 65ric1
139 ba g am241t rc cu x4 0.0000000 0.0 8.6800000 0.2700000 0 0.0000000 71nak1 0
139 ba g am241t rc cu rp 7.4885543 8.4 8.6800000 0.0000000 no. relative values = 4 71nak1
139 ba g am241t cm cu 0.0000000 0.0 6.2300000 9.1000000% 0 0.0000000 77cro1 0
139 am241h es cu 4.0134492 30.0 0.0400000 0.0000000 0 0.0100000 79pri1 0
139 ba g am241h rc cu 4.0335165 5.0 0.0402000 3.0000000% 0 0.0100000 79pri1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

139 ba g a242mt rc cu x5 0.0000000 0.0 1.0200000 0.0200000 140 ba g u235t 0.0000000 71wol1 7
139 ba g a242mt rc cu 5.7626824 7.3 5.6300000 7.3000000% 0 0.0000000 71wol1 0
139 ba g a242mt cm cu 0.0000000 0.0 5.5800000 7.0000000% 0 0.0000000 77cro1 0
139 ba g a242mt rc cu 6.3461156 21.0 6.2000000 1.3000000 0 0.0000000 85gud1 0
139 xe g a242mt rc fc 2.9514319 9.4 0.5000000 0.0100000 139 a242mt 1.0000000 71wol1 0
139 cm245t cm cu 0.0000000 0.0 6.6000000 1.2000000 0 0.0000000 80dic2 0
139 ba g cm245t rc cu 5.5332305 6.0 5.5200000 0.3300000 0 0.0000000 72har2 0
139 ba g cm245t rc cu 6.6158191 18.2 6.6000000 1.2000000 0 0.0000000 80dic2 0
139 ba g cm245t cm cu 0.0000000 0.0 5.6800000 6.0000000% 0 0.0000000 77cro1 0
139 cs g cm245t rc cu 6.8162985 41.2 6.8000000 2.8000000 0 0.0000000 80dic2 0
139 xe g cm245t rc cu 4.8115048 14.6 4.8000000 0.7000000 0 0.0000000 80dic2 0
139 cf249t es cu 5.8714361 30.0 5.9200000 0.0000000 0 0.0000000 75mee1 0
139 cf249t es cu 6.1888111 5.6 6.2400000 0.3500000 0 0.0000000 81dic3 0

139	ba g	cf249t	rc	cu		5.6334049	5.0	5.6800000	0.1600000	0			0.0000000	72kur1	0
139	ba g	cf249t	rc	fi	su	0.0000000	0.0	0.1100000	0.0300000	139	cf249t		1.0000000	78mon1	0
139	ba g	cf249t	rc	fi		0.8482559	21.6	0.1400000	0.0300000	139	cf249t		1.0000000	79mon1	0
139	ba g	cf249t	rc	cu		6.7640531	7.3	6.8200000	0.5000000	0			0.0000000	81gin4	0
139	ba g	cf249t	cm	cu		0.0000000	0.0	5.6800000	5.0000000%	0			0.0000000	77cro1	0
139	ba g	cf249t	rc	cu		6.0896314	8.0	6.1400000	0.4900000	0			0.0000000	81gud1	0
139	ba g	cf249t	rc	fi	x1	0.0000000	0.0	0.1400000	0.0300000	139	cf249t		1.0000000	81gud1	0
139	ba g	cf249t	rc	cu		6.1392212	5.7	6.1900000	0.3500000	0			0.0000000	81dic3	0
139	cs g	cf249t	rc	fc		5.2107149	5.7	86.0000000	3.0000000	139	cf249t		100.0000000	79mon1	0
139	cs g	cf249t	rc	cu		4.0663662	41.5	4.1000000	1.7000000	0			0.0000000	81dic3	0
139	xe g	cf249t	rc	fc	su	0.0000000	0.0	32.0000000	4.0000000	139	ba g	cf249t	100.0000000	77mei1	0
139	xe g	cf249t	rc	fc		1.9388707	11.3	32.0000000	3.5000000	139	cf249t		100.0000000	80mei1	0
139	xe g	cf249t	rc	cu		1.9240855	13.4	1.9400000	0.2600000	0			0.0000000	81dic3	0
139	xe g	cf249t	rc	fc		1.9388707	11.3	0.3200000	0.0350000	139	cf249t		1.0000000	83mei1	0
139		cf251t	es	cu		5.6534409	30.0	5.6000000	0.0000000	0			0.0000000	75mee1	0
139		es254t	es	cu		4.1543093	30.0	4.2000000	0.0000000	0			0.0000000	75mee1	0
140		th227t	es	cu		7.8178644	30.0	7.7900000	0.0000000	0			0.0000000	75mee1	0
140	ba g	th227t	rc	cu		7.7375783	15.0	7.7100000	1.1600000	0			0.0000000	69fly2	0
140	ba g	th227t	cm	cu	x3	0.0000000	0.0	7.7100000	15.0000000%	0			0.0000000	77cro1	0
140		th229t	cm	cu		0.0000000	0.0	10.4000000	17.0000000%	0			0.0000000	77cro1	0
140		th229t	ms	cu	x4	0.0000000	0.0	12.2500000	5.0000000%	0			0.0000000	66har1	0
140		th229t	es	cu		8.4476461	15.0	8.5600000	15.0000000%	0			0.0000000	75mee1	0
140		th229t	rc	cu		9.0989833	14.2	9.2200000	1.3100000	0			0.0000000	82sin1	0
140		th229t	es	cu		8.0430276	2.5	8.1500000	0.2000000	0			0.0000000	83dic1	0
140	la g	th229t	rc	cu		7.9048651	5.0	8.0100000	0.3400000	0			0.0000000	83dic1	0
140	la g	th229t	rc	cu		8.0528963	5.0	8.1600000	0.1800000	0			0.0000000	83dic1	0
140	ba g	th229t	rc	cu		7.1054967	15.0	7.2000000	15.0000000%	0			0.0000000	66rav1	0
140	ba g	th229t	rc	cu		8.5858086	15.0	8.7000000	0.0000000	0			0.0000000	68bor1	0
140	ba g	th229t	rc	cu		8.4575149	5.0	8.5700000	0.2500000	0			0.0000000	81gin1	0
140	ba g	th229t	rc	fc		7.2253976	5.4	0.9220000	0.0140000	140	th229t		1.0000000	80rat1	0
140	ba g	th229t	rc	cu		7.8752589	5.0	7.9800000	0.2000000	0			0.0000000	83dic1	0
140	ba g	th229t	rc	fc		7.2567443	5.4	0.9260000	0.0190000	140	th229t		1.0000000	83rat1	0
140	ba g	th229t	rc	cu		8.0232901	5.0	8.1300000	0.3000000	0			0.0000000	87had1	0
140	cs g	th229t	rc	cu		6.0396722	11.3	6.1200000	0.6900000	0			0.0000000	82dic1	0
140	cs g	th229t	rc	cu		5.9212473	5.0	6.0000000	0.2000000	0			0.0000000	87had1	0
140	xe g	th229t	rc	cu		3.7501233	63.2	3.8000000	2.4000000	0			0.0000000	82dic1	0

140 pa231f es cu 6.8719762 30.0 6.8400000 0.0000000 0 0.0000000 75mee1 0
140 ba g pa231f rc cu 6.4701062 20.0 6.4400000 20.0000000% 0 0.0000000 65iye1 0
140 ba g pa231f rc re rp 6.4127892 24.0 6.4400000 0.0000000 no. relative values = 7 65iye1
140 ba g pa231f rc cu rp 6.4716984 6.5 6.9600000 0.0000000 no. relative values = 8 68nam1
140 ba g pa231f rc cu 7.0086120 5.0 6.9760000 0.0420000 0 0.0000000 70kem1 0
140 ba g pa231f rc cu rp 5.7590899 12.6 6.9600000 0.0000000 no. relative values = 2 68nam1
140 ba g pa231f cm cu 0.0000000 0.0 6.7400000 6.4000000% 0 0.0000000 77cro1 0
140 am241t es cu 5.7137447 30.0 5.6900000 0.0000000 0 0.0000000 72sid1 0
140 am241t rc cu 5.9458387 5.7 6.0600000 0.2700000 140 ba g am241t 6.0600000 72wei1 0
140 la g am241t rc cu 6.1418162 7.5 5.9800000 0.3800000 144 ce g am241t 3.4100000 73sko2 0
140 ba g am241t cm cu 0.0000000 0.0 5.7900000 2.4000000% 0 0.0000000 77cro1 0
140 ba g am241t rc cu 5.5966940 6.4 5.2000000 0.1000000 139 ba g am241t 6.2200000 65ric1 0
140 ba g am241t rc cu 5.6534943 5.0 5.6300000 0.1100000 0 0.0000000 71nak1 0
140 ba g am241t rc cu 6.0451218 5.0 6.0200000 0.1700000 0 0.0000000 73sko2 0
140 ba g am241t rc cu 6.0752470 5.0 6.0500000 0.1600000 0 0.0000000 73sko2 0
140 ba g am241t rc cu rp 6.1617126 11.5 6.0000000 0.0000000 no. relative values = 10 57cun2
140 ba g am241t rc cu rp 5.9669692 4.7 6.0600000 0.0000000 no. relative values = 29 72wei1
140 am241h es cu 3.6573083 30.0 0.0364000 0.0000000 0 0.0100000 79pri1 0
140 ba g am241h rc cu 3.3558818 5.0 0.0334000 3.0000000% 0 0.0100000 79pri1 0
140 la g a242mt rc cu 5.3839626 9.7 5.2600000 0.5100000 0 0.0000000 85gud1 0
140 la g a242mt rc in 0.3377771 30.3 0.3300000 0.1000000 0 0.0000000 85gud1 0
140 ba g a242mt cm cu 0.0000000 0.0 5.3900000 7.0000000% 0 0.0000000 77cro1 0
140 ba g a242mt rc cu 5.0973639 10.4 4.9800000 0.5200000 0 0.0000000 85gud1 0
140 xe g a242mt rc fc 1.5502914 9.4 0.2800000 0.0100000 140 a242mt 1.0000000 71wol1 0
140 cm245t cm cu 0.0000000 0.0 5.5100000 0.1400000 0 0.0000000 80dic2 0
140 la g cm245t rc cu 5.6848133 5.0 5.6800000 0.2500000 0 0.0000000 80dic2 0
140 la g cm245t rc cu 5.5847285 5.0 5.5800000 0.1700000 0 0.0000000 80dic2 0
140 la g cm245t rc fi 0.0276075 60.0 0.5000000 0.3000000 140 la g cm245t 100.0000000 80dic2 0
140 la g cm245t rc fi 0.0353376 36.0 0.6400000 0.2300000 140 la g cm245t 100.0000000 80dic2 0
140 ba g cm245t rc cu 5.7048302 12.3 5.7000000 0.7000000 0 0.0000000 67gun1 0
140 ba g cm245t rc cu 5.3645421 5.0 5.3600000 0.0800000 0 0.0000000 72har2 0
140 ba g cm245t rc fc 5.3503319 5.4 0.9690000 0.0060000 140 cm245t 1.0000000 80dat1 0
140 ba g cm245t rc cu 5.3945675 5.0 5.3900000 0.1600000 0 0.0000000 80dic2 0
140 ba g cm245t rc fc 5.4883693 5.4 0.9940000 0.0030000 140 cm245t 1.0000000 80dic2 0
140 ba g cm245t cm cu 0.0000000 0.0 5.4000000 5.4000000% 0 0.0000000 77cro1 0
140 ba g cm245t rc cu 5.6015675 5.7 5.4900000 0.2200000 99 mo g cm245t 4.0900000 79ram2 0

140 ba g cm245t rc cu 5.4145845 6.0 5.4100000 6.0000000% 0 0.0000000 82ram2 0
140 cs g cm245t rc cu x2 0.0000000 0.0 3.4700000 0.2500000 0 0.0000000 80dic2 0
140 cf249t es cu 5.2692566 30.0 5.3000000 0.0000000 0 0.0000000 75mee1 0
140 cf249t es cu 5.2791986 2.6 5.3100000 0.1400000 0 0.0000000 81dic3 0
140 la g cf249t rc fi 0.1852608 5.4 0.0350000 0.0010000 140 cf249t 1.0000000 72tro1 0
140 la g cf249t rc cu x1 0.0000000 0.0 6.3000000 0.4800000 0 0.0000000 81gud1 0
140 la g cf249t rc cu 5.1698366 5.0 5.2000000 0.1700000 0 0.0000000 81dic3 0
140 la g cf249t rc cu 5.6371103 5.0 5.6700000 0.2600000 0 0.0000000 81dic3 0
140 ba g cf249t rc cu 4.8119249 25.0 4.8400000 1.2100000 0 0.0000000 69fly1 0
140 ba g cf249t rc cu 5.3289085 15.0 5.3600000 0.0000000 0 0.0000000 72kur1 0
140 ba g cf249t rc fc 5.1026109 5.4 0.9640000 0.0010000 140 cf249t 1.0000000 72tro1 0
140 ba g cf249t rc cu 5.2195466 5.0 5.2500000 0.2100000 0 0.0000000 81gin4 0
140 ba g cf249t cm cu 0.0000000 0.0 5.1100000 13.1000000% 0 0.0000000 77cro1 0
140 ba g cf249t rc cu x1 0.0000000 0.0 4.2200000 0.3200000 0 0.0000000 81gud1 0
140 ba g cf249t rc cu 5.0903007 5.0 5.1200000 0.1300000 0 0.0000000 81dic3 0
140 cs g cf249t rc cu x1 0.0000000 0.0 2.1500000 0.1700000 0 0.0000000 81dic3 0
140 xe g cf249t rc fc su 0.0000000 0.0 12.5000000 2.0000000 140 ba g cf249t 99.0000000 77mei1 0
140 xe g cf249t rc fc 0.6616456 16.1 12.5000000 2.0000000 140 cf249t 100.0000000 80mei1 0
140 xe g cf249t rc fc 0.6616456 16.1 0.1250000 0.0200000 140 cf249t 1.0000000 83mei1 0
140 cf251t es cu 5.5131216 30.0 5.5000000 0.0000000 0 0.0000000 75mee1 0
140 ba g cf251t rc cu 4.3704019 5.0 4.3600000 0.2200000 0 0.0000000 75fly3 0
140 ba g cf251t rc cu 4.6109745 5.0 4.6000000 0.2000000 0 0.0000000 73uni1 0
140 ba g es254t rc cu 3.9990941 5.0 4.0100000 0.2000000 0 0.0000000 76fly1 0
140 ba g es254t rc cu 3.9891213 5.0 4.0000000 0.2000000 0 0.0000000 73uni1 0
141 th227t es cu 7.6693490 30.0 7.6500000 0.0000000 0 0.0000000 75mee1 0
141 ce g th227t rc cu 7.6392731 6.7 7.6200000 0.5100000 0 0.0000000 69fly2 0
141 ce g th227t cm cu x3 0.0000000 0.0 7.6200000 7.0000000% 0 0.0000000 77cro1 0
141 th229t cm cu 0.0000000 0.0 8.0700000 3.4000000% 0 0.0000000 77cro1 0
141 th229t es cu x4 0.0000000 0.0 9.2800000 5.0000000% 0 0.0000000 66har1 0
141 th229t es cu 7.9640776 15.0 8.0700000 15.0000000% 0 0.0000000 75mee1 0
141 ce g th229t rc cu 7.6976215 15.0 7.8000000 15.0000000% 0 0.0000000 66rav1 0
141 ce g th229t rc cu 7.7272277 5.0 7.8300000 0.3600000 0 0.0000000 68bor1 0
141 ce g th229t rc cu 7.4114279 5.1 7.5100000 0.3800000 0 0.0000000 81gin1 0
141 ce g th229t rc cu 7.1449717 5.0 7.2400000 0.2500000 0 0.0000000 83dic1 0
141 ce g th229t rc cu 7.1054967 5.0 7.2000000 0.3000000 0 0.0000000 87had1 0

0measured nuclide	fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
141 la g	th229t	rc	cu		8.2404025	5.0	8.3500000	0.3000000	0		0.0000000	68bor1	0
141 ba g	th229t	rc	cu		7.1943155	9.9	7.2900000	0.7200000	0		0.0000000	82dic1	0
141 ba g	th229t	rc	cu		7.4311653	7.2	7.5300000	0.5400000	0		0.0000000	83dic1	0
141 ba g	th229t	rc	cu		6.9081218	10.0	7.0000000	0.7000000	0		0.0000000	83dic1	0
141	pa231f	es	cu		7.0261467	30.0	6.9800000	0.0000000	0		0.0000000	75mee1	0
141 ce g	pa231f	rc	cu		6.8338840	5.0	6.7890000	0.0800000	0		0.0000000	70kem1	0
141 ce g	pa231f	cm	cu		0.0000000	0.0	6.8700000	10.0000000%	0		0.0000000	77cro1	0
141	am241t	es	cu		4.9505732	30.0	4.9300000	0.0000000	0		0.0000000	72sid1	0
141	am241t	rc	cu		5.1020413	8.4	5.2000000	0.4100000	140 ba g	am241t	6.0600000	72wei1	0
141 ce g	am241t	rc	cu		4.7142034	6.4	4.5900000	0.1500000	144 ce g	am241t	3.4100000	73sko2	0
141 ce g	am241t	rc	cu		4.6694047	15.0	4.6500000	0.0000000	0		0.0000000	73sko2	0
141 ce g	am241t	rc	cu		5.0585503	6.4	4.7000000	0.2000000	139 ba g	am241t	6.2200000	65ric1	0
141 ce g	am241t	rc	cu		4.7296551	5.0	4.7100000	0.1600000	0		0.0000000	73sko2	0
141 ce g	am241t	rc	cu		4.9945060	13.4	5.0400000	0.6600000	140 ba g	am241t	6.0000000	57cun2	0
141 ce g	am241t	rc	cu	x4	0.0000000	0.0	6.2900000	0.3100000	143 ce g	am241t	3.4800000	71nak1	0
141 la g	am241t	rc	cu		4.2314854	6.4	4.1200000	0.2000000	144 ce g	am241t	3.4100000	73sko2	0
141 la g	am241t	cm	cu		0.0000000	0.0	4.6900000	2.5000000%	0		0.0000000	77cro1	0
141	am241h	es	cu		3.3311629	30.0	0.0332000	0.0000000	0		0.0100000	79pri1	0
141 ce g	am241h	rc	cu		3.2408603	5.0	0.0323000	3.0000000%	0		0.0100000	79pri1	0
141 ce g	a242mt	rc	cu	x5	0.0000000	0.0	1.0300000	0.0300000	140 ba g	u235t	0.0000000	71wol1	7
141 ce g	a242mt	rc	cu		5.2713703	7.6	5.1500000	7.6000000%	0		0.0000000	71wol1	0
141 ce g	a242mt	cm	cu		0.0000000	0.0	5.0100000	8.0000000%	0		0.0000000	77cro1	0
141 xe g	a242mt	rc	fc		0.4401786	9.4	0.0820000	0.0030000	141	a242mt	1.0000000	71wol1	0
141	cm245t	cm	cu		0.0000000	0.0	5.3800000	0.1600000	0		0.0000000	80dic2	0
141 ce g	cm245t	rc	cu		5.2088130	13.5	5.2000000	0.7000000	0		0.0000000	67gun1	0
141 ce g	cm245t	rc	cu		5.1086436	5.0	5.1000000	0.1300000	0		0.0000000	72har2	0
141 ce g	cm245t	rc	cu	x2	0.0000000	0.0	5.3800000	0.1600000	0		0.0000000	80dic2	0
141 ce g	cm245t	cm	cu		0.0000000	0.0	4.9800000	5.5000000%	0		0.0000000	77cro1	0
141 ce g	cm245t	rc	cu		5.2182596	5.7	5.1100000	0.0600000	99 mo g	cm245t	4.0900000	79ram2	0
141 ba g	cm245t	rc	cu	x4	0.0000000	0.0	4.0100000	0.4500000	0		0.0000000	80dic2	0
141	cf249t	es	cu		5.4460768	30.0	5.5100000	0.0000000	0		0.0000000	75mee1	0
141	cf249t	es	cu		5.3373530	4.6	5.4000000	0.2500000	0		0.0000000	81dic3	0
141 ce g	cf249t	rc	cu		6.2664477	6.0	6.3400000	0.3800000	0		0.0000000	69fly1	0

141	ce	g	cf249t	rc	cu		5.0902533	5.0	5.1500000	0.1600000	0			0.0000000	72kur1	0			
141	ce	g	cf249t	rc	cu		5.8315523	10.2	5.9000000	0.6000000	0			0.0000000	77gae1	0			
141	ce	g	cf249t	rc	cu		5.1989772	5.3	5.2600000	0.2800000	0			0.0000000	81gin4	0			
141	ce	g	cf249t	cm	cu		0.0000000	0.0	5.5200000	10.4000000%	0			0.0000000	77cro1	0			
141	ce	g	cf249t	rc	cu		5.5943366	5.0	5.6600000	0.2000000	0			0.0000000	81dic3	0			
141	ba	g	cf249t	rc	cu	x1	0.0000000	0.0	4.3000000	0.5800000	0			0.0000000	81gud1	0			
141	ba	g	cf249t	rc	cu		4.4379102	12.7	4.4900000	0.5700000	0			0.0000000	81dic3	0			
141	ba	g	cf249t	rc	cu	x1	0.0000000	0.0	4.3800000	0.4200000	0			0.0000000	81dic3	0			
141	xe	g	cf249t	rc	fc	su	0.0000000	0.0	4.0000000	0.3000000	141	ba	g	cf249t	97.0000000	77mei1	0		
141	xe	g	cf249t	rc	fc		0.2147463	8.5	4.0000000	0.3000000	141			cf249t	100.0000000	80mei1	0		
141	xe	g	cf249t	rc	fc		0.2147463	8.5	0.0400000	0.0030000	141			cf249t	1.0000000	83mei1	0		
141	ce	g	cf251t	rc	cu		4.8128555	10.0	4.7900000	0.4800000	0			0.0000000	75fly3	0			
141	ce	g	cf251t	rc	cu		5.0238575	10.0	5.0000000	0.5000000	0			0.0000000	73uni1	0			
141			es254t	es	cu		4.1838459	30.0	4.2000000	0.0000000	0			0.0000000	75mee1	0			
141	ce	g	es254t	rc	cu		4.6121920	7.8	4.6300000	0.3600000	0			0.0000000	76fly1	0			
141	ce	g	es254t	rc	cu		4.5823074	6.5	4.6000000	0.3000000	0			0.0000000	73uni1	0			
142			th227t	es	cu		7.4474840	30.0	7.4100000	0.0000000	0			0.0000000	75mee1	0			
142			th229t	cm	cu	x3	0.0000000	0.0	5.7200000	22.5000000%	0			0.0000000	77cro1	0			
142			th229t	ms	cu	x1	0.0000000	0.0	5.3800000	5.0000000%	0			0.0000000	66har1	0			
142	ce	g	th229t	ms	re	x1	0.0000000	0.0	0.4380000	0.0140000	140	ce	g	th229t	1.0000000	66har1	0		
142			th229t	es	cu		7.1154241	15.0	7.2500000	15.0000000%	0			0.0000000	75mee1	0			
142	la	g	th229t	rc	cu		7.3411548	5.3	7.4800000	0.4000000	0			0.0000000	82sin1	0			
142	la	g	th229t	rc	cu	x4	0.0000000	0.0	8.5000000	0.7000000	0			0.0000000	68bor1	0			
142	la	g	th229t	rc	cu		7.1448672	5.0	7.2800000	0.2500000	0			0.0000000	81gin1	0			
142	la	g	th229t	rc	cu		7.4491129	5.0	7.5900000	0.2400000	0			0.0000000	87had1	0			
142	ba	g	th229t	rc	cu		7.1154241	7.2	7.2500000	0.5200000	0			0.0000000	82dic1	0			
142	ba	g	th229t	rc	cu		7.1350528	7.7	7.2700000	0.5600000	0			0.0000000	83dic1	0			
142	ba	g	th229t	rc	cu		7.3117116	5.0	7.4500000	0.2900000	0			0.0000000	87had1	0			
142			pa231f	es	cu		6.2038802	30.0	6.0900000	0.0000000	0			0.0000000	75mee1	0			
142			am241t	es	cu		4.7276191	30.0	4.6500000	0.0000000	0			0.0000000	72sid1	0			
142			am241t	rc	cu		4.7186220	11.9	4.7500000	0.5500000	140	ba	g	am241t	6.0600000	72wei1	0		
142			am241t	cm	cu		0.0000000	0.0	4.8000000	10.0000000%	0			0.0000000	77cro1	0			
142			am241h	es	cu		3.0301542	30.0	0.0302000	0.0000000	0			0.0100000	79pri1	0			
142	la	g	am241h	rc	cu		2.9699524	5.0	0.0296000	3.3000000%	0			0.0100000	79pri1	0			
142			a242mt	es	cu		4.7084084	15.0	4.6000000	15.0000000%	0			0.0000000	75mee1	0			
142	la	g	a242mt	rc	cu		4.4013383	12.3	4.3000000	0.5300000	0			0.0000000	85gud1	0			

142	xe	g	a242mt	rc	fc		0.1103170	13.1	0.0240000	0.0025000	142		a242mt	1.0000000	71wol1	0
142			cm245t	cm	cu		0.0000000	0.0	4.6700000	0.2600000	0			0.0000000	80dic2	0
142	la	g	cm245t	rc	cu		4.8482029	5.0	4.8400000	0.0800000	0			0.0000000	72har2	0
142	la	g	cm245t	rc	cu		4.6779148	6.0	4.6700000	0.2800000	0			0.0000000	80dic2	0
142	la	g	cm245t	cm	cu		0.0000000	0.0	4.8400000	6.0000000%	0			0.0000000	77cro1	0
142	la	g	cm245t	rc	cu		4.5977792	8.3	4.5900000	8.3000000%	0			0.0000000	82ram2	0
142	ba	g	cm245t	rc	cu		4.2471860	10.8	4.2400000	0.4600000	0			0.0000000	80dic2	0
142			cf249t	es	cu		4.6416083	30.0	4.6800000	0.0000000	0			0.0000000	75mee1	0
142			cf249t	es	cu		4.2647256	5.1	4.3000000	0.2200000	0			0.0000000	81dic3	0
142	la	g	cf249t	rc	cu		4.2647256	9.3	4.3000000	0.4000000	0			0.0000000	77gae1	0
142	la	g	cf249t	rc	fi	su	0.0000000	0.0	0.3000000	0.0200000	142		cf249t	1.0000000	78mon1	0
142	la	g	cf249t	rc	fi		1.2636346	7.5	0.2900000	0.0200000	142		cf249t	1.0000000	79mon1	0
142	la	g	cf249t	rc	cu		4.7308700	5.0	4.7700000	0.2200000	0			0.0000000	81gin4	0
142	la	g	cf249t	rc	cu		4.2944795	17.8	4.3300000	0.7700000	0			0.0000000	81gud1	0
142	la	g	cf249t	rc	cu		4.1754639	5.2	4.2100000	0.2200000	0			0.0000000	81dic3	0
142	ba	g	cf249t	rc	fc		3.0937261	5.7	71.0000000	2.0000000	142		cf249t	100.0000000	79mon1	0
142	ba	g	cf249t	rc	cu	x1	0.0000000	0.0	1.5300000	0.4600000	0			0.0000000	81gud1	0
142	ba	g	cf249t	rc	cu		2.8067845	8.8	2.8300000	0.2500000	0			0.0000000	81dic3	0
142	xe	g	cf249t	rc	fc	su	0.0000000	0.0	1.2000000	0.3000000	142	ba g	cf249t	91.0000000	77mei1	0
142	xe	g	cf249t	rc	fc		0.0392162	33.5	0.9000000	0.3000000	142		cf249t	100.0000000	80mei1	0
142	xe	g	cf249t	rc	fc		0.0392162	11.5	0.0090000	0.0010000	142		cf249t	1.0000000	83mei1	0
142			cf251t	es	cu		5.4515323	30.0	5.4000000	0.0000000	0			0.0000000	75mee1	0
142			es254t	es	cu		4.5796314	30.0	4.6300000	0.0000000	0			0.0000000	75mee1	0
143			th227t	es	cu		7.0177050	30.0	7.0000000	0.0000000	0			0.0000000	75mee1	0
143	ce	g	th227t	rc	cu		6.9876291	6.9	6.9700000	0.4800000	0			0.0000000	69fly2	0
143	ce	g	th227t	cm	cu	x3	0.0000000	0.0	6.9700000	7.0000000%	0			0.0000000	77cro1	0
143			th229t	cm	cu	x3	0.0000000	0.0	6.1300000	26.2000000%	0			0.0000000	77cro1	0
143	nd	g	th229t	ms	cu	x1	0.0000000	0.0	5.1900000	5.0000000%	0			0.0000000	66har1	0
143	nd	g	th229t	ms	re		8.1730878	8.1	1.6600000	0.0170000	145	nd g	th229t	1.0000000	66har1	0
143			th229t	es	cu		8.1459338	15.0	8.3000000	15.0000000%	0			0.0000000	75mee1	0
143			th229t	rc	cu		7.4098554	5.0	7.5500000	0.1000000	0			0.0000000	83sin1	0
143	ce	g	th229t	rc	cu		8.7053533	5.0	8.8700000	0.2700000	0			0.0000000	68bor1	0
143	ce	g	th229t	rc	cu		8.0674187	5.0	8.2200000	0.2500000	0			0.0000000	81gin1	0
143	ce	g	th229t	rc	cu		7.5570711	11.7	7.7000000	0.9000000	0			0.0000000	83dic1	0
143	ce	g	th229t	rc	cu		8.5188801	5.0	8.6800000	0.4300000	0			0.0000000	83dic1	0
143	ce	g	th229t	rc	cu		9.1960722	5.0	9.3700000	0.3000000	0			0.0000000	87had1	0

143 pa231f es cu 5.7768806 30.0 5.7500000 0.0000000 0 0.0000000 75mee1 0
143 ce g pa231f rc re 5.9187032 20.4 5.6600000 20.0000000% 140 ba g pa231f 6.4400000 65iye1 0
143 ce g pa231f rc cu 5.9215879 6.8 6.1200000 0.3400000 140 ba g pa231f 6.9600000 68nam1 0
143 ce g pa231f rc cu 5.1413174 6.4 5.1900000 0.0900000 99 mo g pa231f 2.5700000 69bir2 0
143 ce g pa231f rc cu 5.0665754 5.0 5.0430000 0.0650000 0 0.0000000 70kem1 0
143 ce g pa231f cm cu 0.0000000 0.0 5.6600000 6.4000000% 0 0.0000000 77cro1 0
143 am241t es cu 4.3982780 30.0 4.3800000 0.0000000 0 0.0000000 72sid1 0
143 am241t rc cu 3.9246472 9.7 4.0000000 0.3700000 140 ba g am241t 6.0600000 72wei1 0
143 pr g am241t rc cu 3.7795792 6.4 3.6800000 0.1200000 144 ce g am241t 3.4100000 73sko2 0
143 pr g am241t rc cu 3.2900317 14.1 3.3200000 0.4600000 140 ba g am241t 6.0000000 57cun2 0
143 ce g am241t cm cu 0.0000000 0.0 3.5300000 6.0000000% 0 0.0000000 77cro1 0
143 ce g am241t rc cu 3.6593768 6.4 3.4000000 0.1000000 139 ba g am241t 6.2200000 65ric1 0
143 ce g am241t rc cu 3.4945223 5.0 3.4800000 0.1500000 0 0.0000000 71nak1 0
143 ce g am241t rc cu 3.7254821 5.0 3.7100000 0.1000000 0 0.0000000 73sko2 0
143 ce g am241t rc cu x4 0.0000000 0.0 3.4800000 0.1500000 139 ba g am241t 8.6800000 71nak1 0
1
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nuclide material tech. type value err. value nuclide material value no. treatment

143 ce g am241t rc cu rp 3.8809805 16.8 3.4800000 0.0000000 no. relative values = 1 71nak1
143 am241h es cu 2.7090782 30.0 0.0270000 0.0000000 0 0.0100000 79pri1 0
143 ce g am241h rc cu 2.6990446 5.0 0.0269000 3.0000000% 0 0.0100000 79pri1 0
143 ce g a242mt rc cu x5 0.0000000 0.0 0.8600000 0.0200000 140 ba g u235t 0.0000000 71wol1 7
143 ce g a242mt rc cu 4.5344020 7.4 4.4300000 7.4000000% 0 0.0000000 71wol1 0
143 ce g a242mt cm cu 0.0000000 0.0 4.3000000 7.0000000% 0 0.0000000 77cro1 0
143 ce g a242mt rc cu 5.1075995 15.4 4.9900000 0.7700000 0 0.0000000 85gud1 0
143 xe g a242mt rc fc 0.0151907 10.2 0.0032000 0.0002000 143 a242mt 1.0000000 71wol1 0
143 cm245t cm cu 0.0000000 0.0 4.4000000 0.2400000 0 0.0000000 80dic2 0
143 ce g cm245t rc cu 3.8546139 15.6 3.8500000 0.6000000 0 0.0000000 67gun1 0
143 ce g cm245t rc cu 4.3952610 5.0 4.3900000 0.0700000 0 0.0000000 72har2 0
143 ce g cm245t rc cu 4.4052730 5.5 4.4000000 0.2400000 0 0.0000000 80dic2 0
143 ce g cm245t cm cu 0.0000000 0.0 4.3200000 7.0000000% 0 0.0000000 77cro1 0
143 ce g cm245t rc cu 4.6134726 5.7 4.5200000 0.0300000 99 mo g cm245t 4.0900000 79ram2 0
143 ce g cm245t rc cu 4.2851292 7.5 4.2800000 7.5000000% 0 0.0000000 82ram2 0
143 cf249t es cu 5.1573425 30.0 5.2000000 0.0000000 0 0.0000000 75mee1 0
143 cf249t es cu 4.5821005 5.2 4.6200000 0.2400000 0 0.0000000 81dic3 0

143 ce g cf249t rc cu 4.8598036 5.7 4.9000000 0.2800000 0 0.0000000 69fly1 0
143 ce g cf249t rc cu 5.2069324 5.1 5.2500000 0.2700000 0 0.0000000 72kur1 0
143 ce g cf249t rc cu 4.5126747 5.0 4.5500000 0.1700000 0 0.0000000 77gae1 0
143 ce g cf249t rc cu 4.5027568 5.0 4.5400000 0.1900000 0 0.0000000 81gin4 0
143 ce g cf249t cm cu 0.0000000 0.0 5.0900000 3.8000000% 0 0.0000000 77cro1 0
143 ce g cf249t rc cu x1 0.0000000 0.0 4.0400000 0.4700000 0 0.0000000 81gud1 0
143 ce g cf249t rc cu 4.5821005 5.2 4.6200000 0.2400000 0 0.0000000 81dic3 0
143 xe g cf249t rc fc 0.0102646 36.5 0.2200000 0.0800000 143 cf249t 100.0000000 80mei1 0
143 xe g cf249t rc fc 0.0102646 36.5 0.0022000 0.0008000 143 cf249t 1.0000000 83mei1 0
143 ce g cf251t rc cu 4.9265662 6.1 4.9100000 0.3000000 0 0.0000000 75fly3 0
143 ce g cf251t rc cu 5.2175446 5.8 5.2000000 0.3000000 0 0.0000000 73uni1 0
143 ce g es254t rc cu 4.8711920 8.2 4.8900000 0.4000000 0 0.0000000 76fly1 0
143 ce g es254t rc cu 4.7815382 8.3 4.8000000 0.4000000 0 0.0000000 73uni1 0
144 th227t es cu 5.9850998 30.0 5.9700000 0.0000000 0 0.0000000 75mee1 0
144 ce g th227t rc cu 5.9650492 7.4 5.9500000 0.4400000 0 0.0000000 69fly2 0
144 ce g th227t cm cu x3 0.0000000 0.0 5.9500000 7.0000000% 0 0.0000000 77cro1 0
144 th229t cm cu x3 0.0000000 0.0 6.3800000 16.9000000% 0 0.0000000 77cro1 0
144 nd g th229t ms cu x1 0.0000000 0.0 5.6000000 5.0000000% 0 0.0000000 66har1 0
144 nd g th229t ms re 8.7587604 8.0 1.7930000 0.0160000 145 nd g th229t 1.0000000 66har1 0
144 th229t es cu 8.6663668 15.0 8.9000000 15.0000000% 0 0.0000000 75mee1 0
144 ce g th229t rc cu 8.3742421 15.0 8.6000000 15.0000000% 0 0.0000000 66rav1 0
144 ce g th229t rc cu 9.3187787 30.0 9.5700000 2.8700000 0 0.0000000 68bor1 36
144 ce g th229t rc cu 9.1435039 11.3 9.3900000 1.0600000 0 0.0000000 81gin1 0
144 ce g th229t ms re x1 0.0000000 0.0 0.4570000 0.0190000 140 ce g th229t 1.0000000 66har1 0
144 la g th229t rc cu 9.3285162 7.4 9.5800000 0.7100000 0 0.0000000 82dic1 0
144 la g th229t rc cu 10.5651775 5.0 10.8500000 0.5000000 0 0.0000000 87had1 0
144 pa231f es cu 4.8418003 30.0 4.8100000 0.0000000 0 0.0000000 75mee1 0
144 ce g pa231f rc cu 4.6898020 5.0 4.6590000 0.1350000 0 0.0000000 70kem1 0
144 ce g pa231f cm cu 0.0000000 0.0 4.7300000 10.0000000% 0 0.0000000 77cro1 0
144 am241t es cu 3.8425441 30.0 3.8200000 0.0000000 0 0.0000000 72sid1 0
144 am241t rc cu 3.7250042 12.7 3.7900000 0.4700000 140 ba g am241t 6.0600000 72wei1 0
144 ce g am241t rc cu 3.4301245 5.0 3.4100000 0.0900000 0 0.0000000 73sko2 0
144 ce g am241t rc cu rp 3.5579826 4.7 3.4100000 0.0000000 no. relative values = 14 73sko2
144 ce g am241t rc cu 3.1269396 13.3 3.1500000 0.4100000 140 ba g am241t 6.0000000 57cun2 0
144 ce g am241t rc cu 3.4500479 7.4 3.2000000 0.2000000 139 ba g am241t 6.2200000 65ric1 0
144 ce g am241t cm cu 0.0000000 0.0 3.3700000 3.4000000% 0 0.0000000 77cro1 0

144		am241h	es	cu		2.4682713	30.0	0.0246000	0.0000000	0				0.0100000	79pri1	0
144	ce g	am241h	rc	cu		2.4983722	5.0	0.0249000	3.0000000%	0				0.0100000	79pri1	0
144	ce g	a242mt	rc	cu	x5	0.0000000	0.0	0.7900000	0.0200000	140	ba g	u235t		0.0000000	71wol1	7
144	ce g	a242mt	rc	cu		3.8588477	7.4	3.7700000	7.4000000%	0				0.0000000	71wol1	0
144	ce g	a242mt	cm	cu		0.0000000	0.0	3.5800000	8.0000000%	0				0.0000000	77cro1	0
144	xe g	a242mt	rc	fc		0.0054361	11.6	0.0012000	0.0001000	144		a242mt		1.0000000	71wol1	0
144		cm245t	cm	cu		0.0000000	0.0	4.5600000	0.3300000	0				0.0000000	80dic2	0
144	ce g	cm245t	rc	cu		3.3111858	21.2	3.3000000	0.7000000	0				0.0000000	67gun1	0
144	ce g	cm245t	cm	cu		0.0000000	0.0	2.9200000	21.0000000%	0				0.0000000	77cro1	0
144	la g	cm245t	rc	cu		4.3246093	7.2	4.3100000	0.3100000	0				0.0000000	80dic2	0
144		cf249t	es	cu		4.2599984	30.0	4.3100000	0.0000000	0				0.0000000	75mee1	0
144		cf249t	es	cu		4.1512745	7.9	4.2000000	0.3300000	0				0.0000000	81dic3	0
144	ce g	cf249t	rc	cu		4.5664020	6.1	4.6200000	0.2800000	0				0.0000000	69fly1	0
144	ce g	cf249t	rc	cu		4.1315066	6.5	4.1800000	0.2700000	0				0.0000000	72kur1	0
144	ce g	cf249t	cm	cu		0.0000000	0.0	4.4100000	5.0000000%	0				0.0000000	77cro1	0
144	la g	cf249t	rc	cu		3.3210196	7.7	3.3600000	0.2600000	0				0.0000000	81dic3	0
144		cf251t	es	cu		5.0477151	30.0	5.0000000	0.0000000	0				0.0000000	75mee1	0
144	ce g	es254t	rc	cu		3.8986777	9.9	3.9200000	0.3900000	0				0.0000000	76fly1	0
144	ce g	es254t	rc	cu		3.8787865	10.3	3.9000000	0.4000000	0				0.0000000	73uni1	0
145		th227t	es	cu		3.1056310	30.0	3.0900000	0.0000000	0				0.0000000	75mee1	0
145	nd g	th229t	ms	cu	x1	0.0000000	0.0	3.1300000	5.0000000%	0				0.0000000	66har1	0
145		th229t	es	cu		5.0596400	15.0	5.3400000	15.0000000%	0				0.0000000	75mee1	0
145		th229t	cm	cu	x3	0.0000000	0.0	3.2100000	26.6000000%	0				0.0000000	77cro1	0
145	pr g	th229t	rc	cu		5.1164899	15.0	5.4000000	0.0000000	0				0.0000000	68bor1	0
145	ce g	th229t	es	fc		4.7504309	17.0	0.9994000	15.0000000%	145		th229t		1.0000000	89rid1	0
145	ce g	th229t	rc	cu		5.1164899	14.6	5.4000000	0.7900000	0				0.0000000	82dic1	0
145	ce g	th229t	rc	cu	x4	0.0000000	0.0	5.7500000	0.1800000	0				0.0000000	87had1	0
145		pa231f	es	cu		3.3005737	30.0	3.2700000	0.0000000	0				0.0000000	75mee1	0
145	pr g	pa231f	rc	cu		3.2046387	6.4	3.2200000	0.0200000	99	mo g	pa231f		2.5700000	69bir2	0
145		am241t	es	cu		3.0452053	30.0	3.0200000	0.0000000	0				0.0000000	72sid1	0
145		am241t	rc	cu		2.9852749	17.1	3.0300000	0.5100000	140	ba g	am241t		6.0600000	72wei1	0
145	pr g	am241t	rc	cu		3.3724444	6.4	3.2700000	0.1300000	144	ce g	am241t		3.4100000	73sko2	0
145	pr g	am241t	cm	cu		0.0000000	0.0	3.2100000	5.7000000%	0				0.0000000	77cro1	0
145		am241h	es	cu		2.2498574	30.0	0.0222000	0.0000000	0				0.0100000	79pri1	0
145		a242mt	es	cu		3.3508291	30.0	3.2000000	0.0000000	0				0.0000000	75mee1	0
145		cm245t	cm	cu		0.0000000	0.0	3.0400000	0.2700000	0				0.0000000	80dic2	0

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 145        cm245t   es    cu        2.8094910 30.0   2.8000000  0.0000000     0                    0.0000000   75mee1      0
 145 ce g   cm245t   rc    cu        3.0503045  8.9   3.0400000  0.2700000     0                    0.0000000   80dic2      0
 145        cf249t   es    cu        3.4721997 30.0   3.5900000  0.0000000     0                    0.0000000   75mee1      0
 145        cf249t   es    cu        3.5979339 15.3   3.7200000  0.5700000     0                    0.0000000   81dic3      0
 145 ce g   cf249t   rc    cu        3.4431841 15.2   3.5600000  0.5400000     0                    0.0000000   81dic3      0
 145        cf251t   es    cu        4.9467608 30.0   4.9000000  0.0000000     0                    0.0000000   75mee1      0
 145        es254t   es    cu        3.5608365 30.0   3.6000000  0.0000000     0                    0.0000000   75mee1      0
 146        th227t   es    cu        1.0373685 30.0   1.0300000  0.0000000     0                    0.0000000   75mee1      0
 146        th229t   cm    cu    x3   0.0000000  0.0   2.1400000  5.0000000%    0                    0.0000000   77cro1      0
 146        th229t   ms    cu    x1   0.0000000  0.0   2.1400000  5.0000000%    0                    0.0000000   66har1      0
 146 nd g   th229t   ms    re        3.3364380  8.0   0.6830000  0.0050000   145 nd g      th229t      1.0000000   66har1      0
 146        th229t   es    cu        3.3594343 15.0   3.4500000 15.0000000%    0                    0.0000000   75mee1      0
 146 pr g   th229t   rc    cu        3.4665467  7.6   3.5600000  0.2700000     0                    0.0000000   82dic1      0
 146 ce g   th229t   rc    cu        3.9436838 20.7   4.0500000  0.8400000     0                    0.0000000   82dic1      0
 146 ce g   th229t   rc    cu        3.8365714 11.7   3.9400000  0.4600000     0                    0.0000000   82dic1      0
 146 ce g   th229t   rc    cu        3.6028716 16.2   3.7000000  0.6000000     0                    0.0000000   83dic1      0
 146 ce g   th229t   rc    cu        3.3496968 11.3   3.4400000  0.3900000     0                    0.0000000   83dic1      0
 146 ce g   th229t   rc    cu        3.1354720  6.2   3.2200000  0.2000000     0                    0.0000000   87had1      0
 146        pa231f   es    cu        2.6071707 30.0   2.5400000  0.0000000     0                    0.0000000   75mee1      0
 146        am241t   es    cu        2.6454645 30.0   2.5600000  0.0000000     0                    0.0000000   72sid1      0
 146        am241h   es    cu        2.0268985 30.0   0.0200000  0.0000000     0                    0.0100000   79pri1      0
 146        a242mt   es    cu        2.8799758 30.0   2.7000000  0.0000000     0                    0.0000000   75mee1      0
 146        cm245t   cm    cu        0.0000000  0.0   2.7900000  0.1200000     0                    0.0000000   80dic2      0
 146        cm245t   es    cu        2.7091520 30.0   2.7000000  0.0000000     0                    0.0000000   75mee1      0
 146 pr g   cm245t   rc    cu        2.6690164  9.4   2.6600000  0.2500000     0                    0.0000000   80dic2      0
 146 pr g   cm245t   rc    cu    x4   0.0000000  0.0   1.9700000  0.3500000     0                    0.0000000   80dic2      0
 146 ce g   cm245t   rc    cu        2.6890842 18.3   2.6800000  0.4900000     0                    0.0000000   80dic2      0
 146 ce g   cm245t   rc    cu        2.8897621 12.5   2.8800000  0.3600000     0                    0.0000000   80dic2      0
 146        cf249t   es    cu        2.9157762 30.0   2.9500000  0.0000000     0                    0.0000000   75mee1      0
 146        cf249t   es    cu        3.3803235  3.8   3.4200000  0.1300000     0                    0.0000000   81dic3      0
 146 pr g   cf249t   rc    cu        3.2419477  8.2   3.2800000  0.2700000     0                    0.0000000   81dic3      0
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0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type        value   err.     value                nuclide     material       value       no.   treatment

 146 ce g   cf249t   rc    cu    x1   0.0000000  0.0   1.5700000  0.2600000     0                    0.0000000   81gud1      0
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146	ce g	cf249t	rc	cu		3.0838039	16.7	3.1200000	0.5200000	0		0.0000000	81dic3	0
146	ce g	cf249t	rc	cu		3.1233399	12.3	3.1600000	0.3900000	0		0.0000000	81dic3	0
146		cf251t	es	cu		4.2400807	30.0	4.2000000	0.0000000	0		0.0000000	75mee1	0
146		es254t	es	cu		3.2641002	30.0	3.3000000	0.0000000	0		0.0000000	75mee1	0
147		th227t	es	cu		0.1863235	30.0	0.1850000	0.0000000	0		0.0000000	75mee1	0
147	nd g	th227t	rc	cu		0.1812877	27.8	0.1800000	0.0500000	0		0.0000000	69fly2	0
147	nd g	th227t	cm	cu	x3	0.0000000	0.0	0.1800000	28.0000000%	0		0.0000000	77cro1	0
147		th229t	ms	cu	x4	0.0000000	0.0	1.4700000	5.0000000%	0		0.0000000	66har1	0
147		th229t	es	cu		2.0448731	15.0	2.1000000	15.0000000%	0		0.0000000	75mee1	0
147	nd g	th229t	rc	cu		2.4927976	5.1	2.5600000	0.1300000	0		0.0000000	82sin1	0
147	nd g	th229t	rc	cu		1.7819608	14.8	1.8300000	0.2700000	0		0.0000000	68bor1	0
147	nd g	th229t	rc	cu		2.3369978	5.0	2.4000000	0.0700000	0		0.0000000	81gin1	0
147	nd g	th229t	rc	cu		1.8793357	6.7	1.9300000	0.1300000	0		0.0000000	83dic1	0
147	nd g	th229t	rc	cu		2.1617230	18.5	2.2200000	0.4100000	0		0.0000000	87had1	0
147	pr g	th229t	cm	cu		0.0000000	0.0	1.8300000	15.0000000%	0		0.0000000	77cro1	0
147	pr g	th229t	rc	cu		1.9669731	7.4	2.0200000	0.1500000	0		0.0000000	83dic1	0
147	pr g	th229t	rc	cu		1.8793357	8.3	1.9300000	0.1600000	0		0.0000000	83dic1	0
147		pa231f	es	cu		2.0796770	30.0	2.0700000	0.0000000	0		0.0000000	75mee1	0
147	nd g	pa231f	rc	cu		2.3705703	6.4	2.4500000	0.0710000	140 ba g	pa231f	6.9600000	68nam1	0
147	nd g	pa231f	rc	cu		1.8164522	5.0	1.8080000	0.0350000	0		0.0000000	70kem1	0
147	nd g	pa231f	cm	cu		0.0000000	0.0	2.0400000	11.9000000%	0		0.0000000	77cro1	0
147		am241t	es	cu		2.1828065	30.0	2.1700000	0.0000000	0		0.0000000	72sid1	0
147		am241t	rc	cu		1.9362159	12.5	1.9700000	0.2400000	140 ba g	am241t	6.0600000	72wei1	0
147	nd g	am241t	rc	cu		2.1399629	6.4	2.0800000	0.0700000	144 ce g	am241t	3.4100000	73sko2	0
147	nd g	am241t	rc	cu		2.0449192	16.3	2.0600000	0.3300000	140 ba g	am241t	6.0000000	57cun2	0
147	nd g	am241t	rc	cu	x4	0.0000000	0.0	1.8100000	0.2000000	139 ba g	am241t	8.6800000	71nak1	0
147	nd g	am241t	rc	cu		1.9418490	6.4	1.8300000	0.0700000	143 ce g	am241t	3.4800000	71nak1	0
147	nd g	am241t	cm	cu		0.0000000	0.0	2.0300000	9.9000000%	0		0.0000000	77cro1	0
147		am241h	es	cu		1.7859849	30.0	0.0178000	0.0000000	0		0.0100000	79pri1	0
147	nd g	am241h	rc	cu		1.8160858	5.0	0.0181000	3.0000000%	0		0.0100000	79pri1	0
147	nd g	a242mt	rc	cu	x5	0.0000000	0.0	1.2400000	0.0400000	140 ba g	u235t	0.0000000	71wol1	7
147	nd g	a242mt	rc	cu		2.4667966	7.7	2.4100000	7.7000000%	0		0.0000000	71wol1	0
147	nd g	a242mt	cm	cu		0.0000000	0.0	2.4300000	8.0000000%	0		0.0000000	77cro1	0
147		cm245t	cm	cu		0.0000000	0.0	2.5700000	0.1300000	0		0.0000000	80dic2	0
147	pm g	cm245t	rc	cu		2.0334405	24.6	2.0300000	0.5000000	0		0.0000000	67gun1	0
147	nd g	cm245t	rc	cu		2.6044065	19.2	2.6000000	0.5000000	0		0.0000000	67gun1	0

147	nd	g	cm245t	rc	cu		2.1836947	5.0	2.1800000	0.0500000	0		0.0000000	72har2	0
147	nd	g	cm245t	rc	cu		2.6344574	5.0	2.6300000	0.1000000	0		0.0000000	80dic2	0
147	nd	g	cm245t	rc	cu		2.3339489	7.3	2.3300000	0.1700000	0		0.0000000	80dic2	0
147	nd	g	cm245t	cm	cu		0.0000000	0.0	2.3900000	6.1000000%	0		0.0000000	77cro1	0
147	nd	g	cm245t	rc	cu		2.6142357	5.7	2.5600000	0.0300000	99	mo g	cm245t	4.0900000	79ram2	0
147			cf249t	es	cu		2.9651961	30.0	3.0000000	0.0000000	0		0.0000000	75mee1	0
147			cf249t	es	cu		2.5698366	6.9	2.6000000	0.1800000	0		0.0000000	81dic3	0
147	nd	g	cf249t	rc	cu		2.5896046	14.9	2.6200000	0.3900000	0		0.0000000	69fly1	0
147	nd	g	cf249t	rc	cu		3.2320637	5.0	3.2700000	0.1600000	0		0.0000000	72kur1	0
147	nd	g	cf249t	rc	cu		3.2320637	5.0	3.2700000	0.1600000	0		0.0000000	77gae1	0
147	nd	g	cf249t	rc	cu		2.7675164	5.0	2.8000000	0.1300000	0		0.0000000	81gin4	0
147	nd	g	cf249t	cm	cu		0.0000000	0.0	2.8700000	11.0000000%	0		0.0000000	77cro1	0
147	nd	g	cf249t	rc	cu		2.5698366	6.9	2.6000000	0.1800000	0		0.0000000	81dic3	0
147	nd	g	cf251t	rc	cu		3.5135503	10.0	3.4900000	0.3500000	0		0.0000000	75fly3	0
147			es254t	es	cu		2.9673638	30.0	3.0000000	0.0000000	0		0.0000000	75mee1	0
148			th227t	es	cu		0.0313136	30.0	0.0310000	0.0000000	0		0.0000000	75mee1	0
148			th229t	es	cu		1.0419115	5.0	1.0700000	5.0000000%	0		0.0000000	77cro1	0
148			th229t	ms	cu		0.9834866	5.0	1.0100000	5.0000000%	0		0.0000000	66har1	0
148			th229t	es	cu		1.0126990	20.2	1.0400000	0.2100000	0		0.0000000	83dic1	0
148			th229t	es	cu		1.1295489	15.0	1.1600000	15.0000000%	0		0.0000000	75mee1	0
148	pr	g	th229t	rc	cu		1.3242987	17.6	1.3600000	0.2400000	0		0.0000000	82dic1	0
148	ce	g	th229t	rc	cu		0.8568992	39.8	0.8800000	0.3500000	0		0.0000000	82dic1	0
148			pa231f	es	cu		1.5601966	30.0	1.5200000	0.0000000	0		0.0000000	75mee1	0
148			am241t	es	cu		1.8290907	30.0	1.7700000	0.0000000	0		0.0000000	72sid1	0
148			am241h	es	cu		1.5911153	30.0	0.0157000	0.0000000	0		0.0100000	79pri1	0
148			a242mt	es	cu		2.1333154	30.0	2.0000000	0.0000000	0		0.0000000	75mee1	0
148			cm245t	cm	cu		0.0000000	0.0	2.1500000	0.4300000	0		0.0000000	80dic2	0
148			cm245t	es	cu		2.3155923	30.0	2.3000000	0.0000000	0		0.0000000	75mee1	0
148			cf249t	es	cu		2.1360522	30.0	2.2400000	0.0000000	0		0.0000000	75mee1	0
148	nd	g	cf249t	rc	cu	x1	0.0000000	0.0	2.7800000	0.2000000	0		0.0000000	81gud1	0
148			cf249t	es	cu		2.3076993	19.8	2.4200000	0.4800000	0		0.0000000	81dic3	0
148			cf251t	es	cu		3.3445364	30.0	3.3000000	0.0000000	0		0.0000000	75mee1	0
148			es254t	es	cu		2.6584609	30.0	2.7000000	0.0000000	0		0.0000000	75mee1	0
149			th227t	es	cu		0.0101012	30.0	0.0100000	0.0000000	0		0.0000000	75mee1	0
149			th229t	cm	cu		0.0000000	0.0	0.7100000	15.0000000%	0		0.0000000	77cro1	0
149			th229t	es	cu		0.5160870	5.0	0.5300000	5.0000000%	0		0.0000000	66har1	0

149		th229t	es	cu		0.6485169	15.0	0.6660000	15.0000000%	0		0.0000000	75mee1	0
149	pm g	th229t	rc	cu		0.6913618	15.0	0.7100000	0.0000000	0		0.0000000	68bor1	0
149	nd g	th229t	rc	cu		0.6329369	5.0	0.6500000	0.0300000	0		0.0000000	81gin1	0
149	nd g	th229t	rc	cu		0.5842494	11.7	0.6000000	0.0700000	0		0.0000000	83dic1	0
149	nd g	th229t	rc	cu		0.6231994	9.4	0.6400000	0.0600000	0		0.0000000	87had1	0
149		pa231f	es	cu		0.9834592	30.0	0.9770000	0.0000000	0		0.0000000	75mee1	0
149	pm g	pa231f	rc	cu		0.9200427	5.0	0.9140000	0.0280000	0		0.0000000	70kem1	0
149	pm g	pa231f	cm	cu		0.0000000	0.0	0.9620000	10.0000000%	0		0.0000000	77cro1	0
149		am241t	es	cu		1.4116846	30.0	1.4000000	0.0000000	0		0.0000000	72sid1	0
149		am241t	rc	cu		1.1921395	19.2	1.2100000	0.2300000	140 ba g	am241t	6.0600000	72wei1	0
149	pm g	am241t	rc	cu		1.5263663	6.4	1.4800000	0.0700000	144 ce g	am241t	3.4100000	73sko2	0
149	nd g	am241t	rc	cu		1.3304138	7.4	1.2900000	0.0800000	144 ce g	am241t	3.4100000	73sko2	0
149	nd g	am241t	cm	cu		0.0000000	0.0	1.3800000	7.4000000%	0		0.0000000	77cro1	0
149		am241h	es	cu		1.3545391	30.0	0.0135000	0.0000000	0		0.0100000	79pri1	0
149	pm g	am241h	rc	cu		1.3043710	5.0	0.0130000	3.0000000%	0		0.0100000	79pri1	0
149	pm g	a242mt	rc	cu	x5	0.0000000	0.0	1.8200000	0.0400000	140 ba g	u235t	0.0000000	71wol1	7
149	pm g	a242mt	rc	cu		1.7195926	7.3	1.6800000	7.3000000%	0		0.0000000	71wol1	0
149	pm g	a242mt	cm	cu		0.0000000	0.0	1.7300000	8.0000000%	0		0.0000000	77cro1	0
149		cm245t	cm	cu		0.0000000	0.0	1.9400000	0.1500000	0		0.0000000	80dic2	0
149	pm g	cm245t	rc	cu		1.9766776	20.3	1.9700000	0.4000000	0		0.0000000	67gun1	0
149	pm g	cm245t	cm	cu		0.0000000	0.0	2.1000000	20.0000000%	0		0.0000000	77cro1	0
149	nd g	cm245t	rc	cu		1.9465759	7.7	1.9400000	0.1500000	0		0.0000000	80dic2	0
149		cf249t	es	cu		2.1843611	30.0	2.2100000	0.0000000	0		0.0000000	75mee1	0
149		cf249t	es	cu		2.0459853	7.7	2.0700000	0.1600000	0		0.0000000	81dic3	0
149	pm g	cf249t	rc	cu		2.3326209	6.8	2.3600000	0.1600000	0		0.0000000	72kur1	0
149	pm g	cf249t	cm	cu		0.0000000	0.0	2.3600000	7.0000000%	0		0.0000000	77cro1	0
149	nd g	cf249t	rc	cu	x4	0.0000000	0.0	2.5900000	0.1600000	0		0.0000000	77gae1	0
149	nd g	cf249t	rc	cu		1.9174935	5.2	1.9400000	0.1000000	0		0.0000000	81gin4	0
149	nd g	cf249t	rc	cu		1.8977255	17.2	1.9200000	0.3300000	0		0.0000000	81gud1	0
149	nd g	cf249t	rc	cu		2.0163333	7.8	2.0400000	0.1600000	0		0.0000000	81dic3	0
149	pm g	cf251t	rc	cu		3.0202438	10.0	3.0000000	0.3000000	0		0.0000000	75fly3	0
149		es254t	es	cu		2.2646148	30.0	2.3000000	0.0000000	0		0.0000000	75mee1	0
150		th227t	es	cu		0.0020202	30.0	0.0020000	0.0000000	0		0.0000000	75mee1	0
150		th229t	cm	cu		0.0000000	0.0	0.1800000	5.0000000%	0		0.0000000	77cro1	0
150		th229t	ms	cu		0.1733176	5.0	0.1800000	5.0000000%	0		0.0000000	66har1	0
150		th229t	es	cu		0.2099069	15.0	0.2180000	15.0000000%	0		0.0000000	75mee1	0

150		th229t	es	cu		0.2118326	22.7	0.2200000	0.0500000	0			0.0000000	83dic1	0
150		pa231f	es	cu		0.5498215	30.0	0.5300000	0.0000000	0			0.0000000	75mee1	0
150		am241t	es	cu		1.1470569	30.0	1.1100000	0.0000000	0			0.0000000	72sid1	0
150		am241h	es	cu		1.1553322	30.0	0.0114000	0.0000000	0			0.0100000	79pri1	0
150		a242mt	es	cu		1.5999866	30.0	1.5000000	0.0000000	0			0.0000000	75mee1	0
150		cm245t	cm	cu		0.0000000	0.0	1.5000000	0.3000000	0			0.0000000	80dic2	0
150		cm245t	es	cu		1.8172572	30.0	1.8000000	0.0000000	0			0.0000000	75mee1	0
150	pm g	cf249t	rc	in		0.0181183	10.5	0.0190000	0.0020000	0			0.0000000	76gae1	0
150	pm g	cf249t	rc	cu	x1	0.0000000	0.0	0.7500000	0.1600000	0			0.0000000	81gud1	0
150		cf249t	es	cu		1.7069346	30.0	1.7900000	0.0000000	0			0.0000000	75mee1	0
150		cf249t	es	cu		1.7450784	20.2	1.8300000	0.3700000	0			0.0000000	81dic3	0

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0measured nuclide	fissile material	meas. tech.	meas. type	note	value	updated err.	pct.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
150		cf251t	es	cu		2.4229032	30.0	2.4000000	0.0000000	0			0.0000000	75mee1	0
150		es254t	es	cu		1.9782425	30.0	2.0000000	0.0000000	0			0.0000000	75mee1	0
151		th227t	es	cu		0.0005051	30.0	0.0005000	0.0000000	0			0.0000000	75mee1	0
151		th229t	cm	cu	x3	0.0000000	0.0	0.0460000	15.0000000%	0			0.0000000	77cro1	0
151		th229t	es	cu		0.0443435	15.0	0.0479000	15.0000000%	0			0.0000000	75mee1	0
151		th229t	es	cu		0.0175893	21.1	0.0190000	0.0040000	0			0.0000000	83dic1	0
151	pm g	th229t	rc	cu		0.0425846	15.0	0.0460000	0.0000000	0			0.0000000	68bor1	0
151		pa231f	es	cu		0.3164067	30.0	0.3050000	0.0000000	0			0.0000000	75mee1	0
151		am241t	es	cu		0.9106229	30.0	0.9000000	0.0000000	0			0.0000000	72sid1	0
151		am241t	rc	cu		0.8007798	26.1	0.8100000	0.2100000	140 ba g	am241t	6.0600000	72wei1	0
151	pm g	am241t	rc	cu		0.8382402	7.4	0.8100000	0.0500000	144 ce g	am241t	3.4100000	73sko2	0
151	pm g	am241t	cm	cu		0.0000000	0.0	0.8030000	4.9000000%	0			0.0000000	77cro1	0
151		am241h	es	cu		0.9632278	30.0	0.0096000	0.0000000	0			0.0100000	79pri1	0
151	pm g	am241h	rc	cu		0.8879756	5.0	0.0088500	3.0000000%	0			0.0100000	79pri1	0
151	sm g	a242mt	cm	cu		0.0000000	0.0	1.1800000	8.0000000%	0			0.0000000	77cro1	0
151	pm g	a242mt	rc	cu	x5	0.0000000	0.0	3.2800000	0.0700000	140 ba g	u235t	0.0000000	71wol1	7
151	pm g	a242mt	rc	cu		1.2180448	7.3	1.1900000	7.3000000%	0			0.0000000	71wol1	0
151		cm245t	cm	cu		0.0000000	0.0	1.1600000	0.0600000	0			0.0000000	80dic2	0
151	pm g	cm245t	rc	cu		1.3522880	25.9	1.3500000	0.3500000	0			0.0000000	67gun1	0
151	pm g	cm245t	rc	cu		1.1819999	6.8	1.1800000	0.0800000	0			0.0000000	80dic2	0
151	pm g	cm245t	cm	cu		0.0000000	0.0	1.2900000	26.0000000%	0			0.0000000	77cro1	0

151	nd	g	cm245t	rc	cu		0.9215592	10.9	0.9200000	0.1000000	0		0.0000000	80dic2	0
151	nd	g	cm245t	rc	cu		1.1519490	5.0	1.1500000	0.0500000	0		0.0000000	80dic2	0
151			cf249t	es	cu		1.6209739	30.0	1.6400000	0.0000000	0		0.0000000	75mee1	0
151			cf249t	es	cu		1.4529461	8.2	1.4700000	0.1200000	0		0.0000000	81dic3	0
151	pm	g	cf249t	rc	cu		1.8581896	15.0	1.8800000	0.0000000	0		0.0000000	72kur1	0
151	pm	g	cf249t	rc	cu		1.9570294	12.6	1.9800000	0.2500000	0		0.0000000	77gae1	0
151	pm	g	cf249t	rc	cu		1.5913219	5.0	1.6100000	0.0800000	0		0.0000000	81gin4	0
151	pm	g	cf249t	cm	cu		0.0000000	0.0	1.8800000	15.0000000%	0		0.0000000	77cro1	0
151	pm	g	cf249t	rc	cu	x1	0.0000000	0.0	1.0500000	0.1100000	0		0.0000000	81gud1	0
151	pm	g	cf249t	rc	cu		1.5913219	10.6	1.6100000	0.1700000	0		0.0000000	81dic3	0
151	nd	g	cf249t	rc	cu	x1	0.0000000	0.0	0.8400000	0.0800000	0		0.0000000	81gud1	0
151	nd	g	cf249t	rc	cu	x1	0.0000000	0.0	1.1400000	0.1200000	0		0.0000000	81dic3	0
151	pm	g	cf251t	rc	cu	x1	0.0000000	0.0	1.2400000	0.1800000	0		0.0000000	75fly3	0
151	pm	g	cf251t	es	cu		2.0190860	20.0	2.0000000	20.0000000%	0		0.0000000	89rid1	0
151	pm	g	es254t	rc	cu		1.7166921	19.7	1.7300000	0.3400000	0		0.0000000	76fly1	0
151	pm	g	es254t	rc	cu		1.6869229	17.6	1.7000000	0.3000000	0		0.0000000	73uni1	0
152			th227t	es	cu		0.0002020	30.0	0.0002000	0.0000000	0		0.0000000	75mee1	0
152			th229t	es	cu		0.0097555	15.0	0.0109000	15.0000000%	0		0.0000000	75mee1	0
152			pa231f	es	cu		0.1794700	30.0	0.1730000	0.0000000	0		0.0000000	75mee1	0
152			am241t	es	cu		0.7225769	30.0	0.6900000	0.0000000	0		0.0000000	72sid1	0
152			am241h	es	cu		0.8152161	30.0	0.0080000	0.0000000	0		0.0100000	79pri1	0
152			a242mt	es	cu		1.0239914	30.0	0.9600000	0.0000000	0		0.0000000	75mee1	0
152			cm245t	cm	cu		0.0000000	0.0	1.4000000	0.7000000	0		0.0000000	80dic2	0
152			cm245t	es	cu		1.2619842	30.0	1.2500000	0.0000000	0		0.0000000	75mee1	0
152	pm	g	cm245t	rc	cu		0.6764235	80.6	0.6700000	0.5400000	0		0.0000000	80dic2	0
152			cf249t	es	cu		1.2492091	30.0	1.3100000	0.0000000	0		0.0000000	75mee1	0
152			cf249t	es	cu		1.2587451	19.7	1.3200000	0.2600000	0		0.0000000	81dic3	0
152			cf251t	es	cu		1.5202438	30.0	1.5000000	0.0000000	0		0.0000000	75mee1	0
152			es254t	es	cu		1.6246150	30.0	1.6500000	0.0000000	0		0.0000000	75mee1	0
153			th227t	es	cu		0.0001010	30.0	0.0001000	0.0000000	0		0.0000000	75mee1	0
153			th229t	es	cu		0.0020585	15.0	0.0023000	15.0000000%	0		0.0000000	75mee1	0
153			pa231f	es	cu		0.0807480	30.0	0.0800000	0.0000000	0		0.0000000	75mee1	0
153	sm	g	pa231f	rc	cu		0.0767945	6.4	0.0790000	0.0025000	140	ba g	pa231f	6.9600000	68nam1	0
153	sm	g	pa231f	cm	cu		0.0000000	0.0	0.0790000	15.0000000%	0		0.0000000	77cro1	0
153			am241t	es	cu		0.5142565	30.0	0.5100000	0.0000000	0		0.0000000	72sid1	0
153			am241t	rc	cu		0.5320292	22.4	0.5400000	0.1200000	140	ba g	am241t	6.0600000	72wei1	0

153	sm	g	am241t	rc	cu		0.5878573	6.4	0.5700000	0.0200000		144	ce	g	am241t	3.4100000	73sko2	0	
153	sm	g	am241t	rc	cu	nr	0.7562696	16.0	0.7600000	0.1200000		140	ba	g	am241t	6.0000000	57cun2	0	
153	sm	g	am241t	cm	cu		0.0000000	0.0	0.5720000	12.0000000%	0					0.0000000	77cro1	0	
153			am241h	es	cu		0.6321183	30.0	0.0063000	0.0000000	0					0.0100000	79pri1	0	
153	sm	g	am241h	rc	cu		0.6702460	5.0	0.0066800	3.0000000%	0					0.0100000	79pri1	0	
153	sm	g	a242mt	rc	cu	x5	0.0000000	0.0	5.7900000	0.1400000		140	ba	g	u235t	0.0000000	71wol1	7	
153	sm	g	a242mt	rc	cu		0.8290893	7.4	0.8100000	7.4000000%	0					0.0000000	71wol1	0	
153	sm	g	a242mt	cm	cu		0.0000000	0.0	0.7850000	8.0000000%	0					0.0000000	77cro1	0	
153			cm245t	cm	cu		0.0000000	0.0	0.7700000	0.6200000	0					0.0000000	80dic2	0	
153	sm	g	cm245t	rc	cu		1.2115048	25.0	1.2000000	0.3000000	0					0.0000000	67gun1	0	
153	sm	g	cm245t	cm	cu		0.0000000	0.0	1.1900000	25.0000000%	0					0.0000000	77cro1	0	
153	pm	g	cm245t	rc	cu		1.4134223	50.0	1.4000000	0.7000000	0					0.0000000	80dic2	0	
153			cf249t	es	cu		1.1703200	30.0	1.1800000	0.0000000	0					0.0000000	75mee1	0	
153			cf249t	es	cu		1.2595817	7.1	1.2700000	0.0900000	0					0.0000000	81dic3	0	
153	sm	g	cf249t	rc	cu		1.2496638	5.0	1.2600000	0.0100000	0					0.0000000	72kur1	0	
153	sm	g	cf249t	rc	cu		1.2099919	12.3	1.2200000	0.1500000	0					0.0000000	77gae1	0	
153	sm	g	cf249t	rc	cu		1.1207302	5.0	1.1300000	0.0500000	0					0.0000000	81gin4	0	
153	sm	g	cf249t	cm	cu		0.0000000	0.0	1.2600000	5.0000000%	0					0.0000000	77cro1	0	
153	sm	g	cf249t	rc	cu		1.2595817	7.1	1.2700000	0.0900000	0					0.0000000	81dic3	0	
153			cf251t	es	cu		1.2161950	30.0	1.2000000	0.0000000	0					0.0000000	75mee1	0	
153	sm	g	es254t	rc	cu		1.6023764	19.8	1.6200000	0.3200000	0					0.0000000	76fly1	0	
153	sm	g	es254t	rc	cu		1.5825940	18.7	1.6000000	0.3000000	0					0.0000000	73uni1	0	
154			th227t	es	cu		0.0000404	30.0	0.0000400	0.0000000	0					0.0000000	75mee1	0	
154			th229t	es	cu		0.0004833	15.0	0.0005400	15.0000000%	0					0.0000000	75mee1	0	
154			pa231f	es	cu		0.0414960	30.0	0.0400000	0.0000000	0					0.0000000	75mee1	0	
154			am241t	es	cu		0.3769966	30.0	0.3600000	0.0000000	0					0.0000000	72sid1	0	
154			am241h	es	cu		0.5197003	30.0	0.0051000	0.0000000	0					0.0100000	79pri1	0	
154			a242mt	es	cu		0.5471341	30.0	0.5000000	0.0000000	0					0.0000000	75mee1	0	
154			cm245t	cm	cu		0.0000000	0.0	0.6500000	0.1300000	0					0.0000000	80dic2	0	
154			cm245t	es	cu		0.8924752	30.0	0.8840000	0.0000000	0					0.0000000	75mee1	0	
154			cf249t	es	cu		0.7914836	20.0	0.8300000	20.0000000%	0					0.0000000	89rid1	0	
154			cf249t	es	cu		0.8677712	19.8	0.9100000	0.1800000	0					0.0000000	81dic3	0	
154	pm	m	cf249t	rc	cu		0.4863333	39.2	0.5100000	0.2000000	0					0.0000000	81dic3	0	
154			cf251t	es	cu		0.9121463	30.0	0.9000000	0.0000000	0					0.0000000	75mee1	0	
154			es254t	es	cu		1.2799997	30.0	1.3000000	0.0000000	0					0.0000000	75mee1	0	
155			th227t	es	cu		0.0000101	30.0	0.0000100	0.0000000	0					0.0000000	75mee1	0	

155 th229t es cu 0.0000984 15.0 0.0001100 15.0000000% 0 0.0000000 75mee1 0
155 pa231f es cu 0.0207480 30.0 0.0200000 0.0000000 0 0.0000000 75mee1 0
155 am241t es cu 0.2745069 30.0 0.2700000 0.0000000 0 0.0000000 72sid1 0
155 eu g am241t rc cu 0.3119595 10.8 0.3000000 0.0300000 144 ce g am241t 3.4100000 73sko2 0
155 eu g am241t cm cu 0.0000000 0.0 0.2980000 10.0000000% 0 0.0000000 77cro1 0
155 am241h es cu 0.3812777 30.0 0.0038000 0.0000000 0 0.0100000 79pri1 0
155 eu g am241h rc cu 0.3401398 5.0 0.0033900 3.0000000% 0 0.0100000 79pri1 0
155 a242mt es cu 0.3611085 30.0 0.3300000 0.0000000 0 0.0000000 75mee1 0
155 cm245t cm cu 0.0000000 0.0 0.5300000 0.1100000 0 0.0000000 80dic2 0
155 cm245t es cu 0.6963147 30.0 0.6870000 0.0000000 0 0.0000000 75mee1 0
155 cf249t es cu 0.7180231 30.0 0.7300000 0.0000000 0 0.0000000 89rid1 0
155 cf249t es cu 0.6098278 6.5 0.6200000 0.0400000 0 0.0000000 81dic3 0
155 sm g cf249t rc cu 0.6098278 6.5 0.6200000 0.0400000 0 0.0000000 81gin4 0
155 cf251t es cu 0.7133602 30.0 0.7000000 0.0000000 0 0.0000000 75mee1 0
155 es254t es cu 0.9846151 30.0 1.0000000 0.0000000 0 0.0000000 75mee1 0
156 th227t es cu 0.0000051 30.0 0.0000050 0.0000000 0 0.0000000 75mee1 0
156 th229t es cu 0.0000260 15.0 0.0000290 15.0000000% 0 0.0000000 75mee1 0
156 pa231f es cu 0.0103740 30.0 0.0100000 0.0000000 0 0.0000000 75mee1 0
156 am241t es cu 0.1915858 30.0 0.1900000 0.0000000 0 0.0000000 72sid1 0
156 am241t rc cu 0.1970478 25.2 0.2000000 0.0500000 140 ba g am241t 6.0600000 72wei1 0
156 eu g am241t rc cu 0.2506128 6.4 0.2430000 0.0090000 144 ce g am241t 3.4100000 73sko2 0
156 sm g am241t rc cu 0.1258221 6.4 0.1220000 0.0050000 144 ce g am241t 3.4100000 73sko2 0
156 sm g am241t cm cu 0.0000000 0.0 0.1220000 18.9000000% 0 0.0000000 77cro1 0
156 am241h es cu 0.2829482 30.0 0.0028200 0.0000000 0 0.0100000 79pri1 0
156 eu g am241h rc cu 0.2709078 5.0 0.0027000 3.0000000% 0 0.0100000 79pri1 0
156 sm g am241h rc cu 0.2207397 5.0 0.0022000 4.9000000% 0 0.0100000 79pri1 0
156 eu g a242mt rc cu x5 0.0000000 0.0 24.9000000 0.8000000 140 ba g u235t 0.0000000 71wol1 7
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0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

156 eu g a242mt rc cu 0.3275415 7.7 0.3200000 7.7000000% 0 0.0000000 71wol1 0
156 eu g a242mt cm cu 0.0000000 0.0 0.2260000 7.0000000% 0 0.0000000 77cro1 0
156 cm245t cm cu 0.0000000 0.0 0.4400000 0.0600000 0 0.0000000 80dic2 0
156 cm245t es cu 0.4933537 15.0 0.4910000 15.0000000% 0 0.0000000 75mee1 0
156 eu g cm245t rc cu 0.2511984 24.0 0.2500000 0.0600000 0 0.0000000 67gun1 0

156	eu	g	cm245t	rc	cu		0.4421092	13.6	0.4400000	0.0600000	0				0.0000000	80dic2	0
156	eu	g	cm245t	cm	cu		0.0000000	0.0	0.2290000	24.0000000%	0				0.0000000	77cro1	0
156			cf249t	es	cu		0.6286216	30.0	0.6360000	0.0000000	0				0.0000000	89rid1	0
156			cf249t	es	cu		0.6325752	9.4	0.6400000	0.0600000	0				0.0000000	81dic3	0
156	eu	g	cf249t	rc	cu		0.6325752	7.8	0.6400000	0.0500000	0				0.0000000	72kur1	0
156	eu	g	cf249t	rc	cu		0.5930392	15.0	0.6000000	0.0900000	0				0.0000000	77gae1	0
156	eu	g	cf249t	cm	cu		0.0000000	0.0	0.6400000	15.0000000%	0				0.0000000	77cro1	0
156	eu	g	cf249t	rc	cu		0.6226912	30.2	0.6300000	0.1900000	0				0.0000000	81gud1	0
156	eu	g	cf249t	rc	cu		0.6325752	9.4	0.6400000	0.0600000	0				0.0000000	81dic3	0
156	sm	g	cf249t	rc	cu		0.8302549	10.7	0.8400000	0.0900000	0				0.0000000	77gae1	0
156	sm	g	cf249t	rc	cu		0.7116471	6.9	0.7200000	0.0500000	0				0.0000000	81gin4	0
156	sm	g	cf251t	rc	cu		0.5637788	10.7	0.5600000	0.0600000	0				0.0000000	75fly3	0
156	sm	g	es254t	rc	cu		0.7912970	20.0	0.8000000	0.1600000	0				0.0000000	76fly1	0
156	sm	g	es254t	rc	cu		0.7912970	20.0	0.8000000	0.1600000	0				0.0000000	73uni1	0
157			th227t	es	cu		0.0000015	30.0	0.0000015	0.0000000	0				0.0000000	75mee1	0
157			th229t	es	cu		0.0000072	15.0	0.0000080	15.0000000%	0				0.0000000	75mee1	0
157			pa231f	es	cu		0.0051870	30.0	0.0050000	0.0000000	0				0.0000000	75mee1	0
157			am241t	es	cu		0.1315344	30.0	0.1300000	0.0000000	0				0.0000000	72sid1	0
157			am241t	rc	cu		0.1482926	26.8	0.1500000	0.0400000	140	ba	g	am241t	6.0600000	72wei1	0
157	eu	g	am241t	rc	cu		0.1666132	6.4	0.1610000	0.0080000	144	ce	g	am241t	3.4100000	73sko2	0
157	eu	g	am241t	cm	cu		0.0000000	0.0	0.1590000	5.3000000%	0				0.0000000	77cro1	0
157			am241h	es	cu		0.2069795	30.0	0.0020600	0.0000000	0				0.0100000	79pri1	0
157	eu	g	am241h	rc	cu		0.1698036	5.0	0.0016900	3.0000000%	0				0.0100000	79pri1	0
157	eu	g	a242mt	rc	cu	x5	0.0000000	0.0	28.3000000	1.6000000	140	ba	g	u235t	0.0000000	71wol1	7
157	eu	g	a242mt	rc	cu		0.1549993	9.0	0.1500000	9.0000000%	0				0.0000000	71wol1	0
157	eu	g	a242mt	cm	cu		0.0000000	0.0	0.1520000	9.0000000%	0				0.0000000	77cro1	0
157			cm245t	es	cu		0.4479929	30.0	0.4420000	0.0000000	0				0.0000000	75mee1	0
157			cf249t	es	cu		0.5114685	30.0	0.5200000	0.0000000	0				0.0000000	89rid1	0
157			cf249t	es	cu		0.4229451	9.3	0.4300000	0.0400000	0				0.0000000	81dic3	0
157	eu	g	cf249t	rc	cu		0.5114685	15.0	0.5200000	0.0000000	0				0.0000000	72kur1	0
157	eu	g	cf249t	rc	cu		0.4229451	5.0	0.4300000	0.0200000	0				0.0000000	77gae1	0
157	eu	g	cf249t	rc	cu		0.3540936	8.3	0.3600000	0.0300000	0				0.0000000	81gin4	0
157	eu	g	cf249t	cm	cu		0.0000000	0.0	0.5200000	15.0000000%	0				0.0000000	77cro1	0
157			cf251t	es	cu		0.4076344	30.0	0.4000000	0.0000000	0				0.0000000	75mee1	0
157	eu	g	es254t	rc	cu		0.7541538	14.5	0.7600000	0.1100000	0				0.0000000	76fly1	0
157	eu	g	es254t	rc	cu		0.7541538	14.5	0.7600000	0.1100000	0				0.0000000	73uni1	0

158		th227t	es	cu	0.0000006	30.0	0.0000006	0.0000000	0			0.0000000	75mee1	0
158		th229t	es	cu	0.0000018	15.0	0.0000020	15.0000000%	0			0.0000000	75mee1	0
158		pa231f	es	cu	0.0032159	30.0	0.0031000	0.0000000	0			0.0000000	75mee1	0
158		am241t	es	cu	0.0858715	30.0	0.0820000	0.0000000	0			0.0000000	72sid1	0
158		am241h	es	cu	0.1538720	30.0	0.0015100	0.0000000	0			0.0100000	79pri1	0
158		a242mt	es	cu	0.0875415	30.0	0.0800000	0.0000000	0			0.0000000	75mee1	0
158		cm245t	es	cu	0.3283930	30.0	0.3240000	0.0000000	0			0.0000000	75mee1	0
158		cf249t	es	cu	0.4005098	30.0	0.4200000	0.0000000	0			0.0000000	89rid1	0
158		cf249t	es	cu	0.3719019	20.5	0.3900000	0.0800000	0			0.0000000	81dic3	0
158		cf251t	es	cu	0.3057258	30.0	0.3000000	0.0000000	0			0.0000000	75mee1	0
158		es254t	es	cu	0.6847698	30.0	0.7000000	0.0000000	0			0.0000000	75mee1	0
159		th227t	es	cu	0.0000002	30.0	0.0000002	0.0000000	0			0.0000000	75mee1	0
159		th229t	es	cu	0.0000005	15.0	0.0000006	15.0000000%	0			0.0000000	75mee1	0
159		pa231f	es	cu	0.0015561	30.0	0.0015000	0.0000000	0			0.0000000	75mee1	0
159		am241t	es	cu	0.0627318	30.0	0.0620000	0.0000000	0			0.0000000	72sid1	0
159	gd g	am241t	rc	cu	0.0734754	6.5	0.0710000	0.0036000	144	ce g	am241t	3.4100000	73sko2	0
159	gd g	am241t	cm	cu	0.0000000	0.0	0.0706000	5.0000000%	0			0.0000000	77cro1	0
159		am241h	es	cu	0.1133799	30.0	0.0011300	0.0000000	0			0.0100000	79pri1	0
159	gd g	am241h	rc	cu	0.1314405	5.0	0.0013100	4.2000000%	0			0.0100000	79pri1	0
159		a242mt	es	cu	0.0547134	30.0	0.0500000	0.0000000	0			0.0000000	75mee1	0
159		cm245t	es	cu	0.2290642	30.0	0.2260000	0.0000000	0			0.0000000	75mee1	0
159		cf249t	es	cu	0.3373725	30.0	0.3430000	0.0000000	0			0.0000000	89rid1	0
159		cf249t	es	cu	0.3639295	8.1	0.3700000	0.0300000	0			0.0000000	81dic3	0
159	gd g	cf249t	rc	cu	0.3344217	15.0	0.3400000	0.0000000	0			0.0000000	72kur1	0
159	gd g	cf249t	rc	cu	0.3737654	7.9	0.3800000	0.0300000	0			0.0000000	77gae1	0
159	gd g	cf249t	cm	cu	0.0000000	0.0	0.3400000	15.0000000%	0			0.0000000	77cro1	0
159		cf251t	es	cu	0.2038172	30.0	0.2000000	0.0000000	0			0.0000000	75mee1	0
159		es254t	es	cu	0.4891213	30.0	0.5000000	0.0000000	0			0.0000000	75mee1	0
160		th227t	es	cu	0.0000000	30.0	0.0000000	0.0000000	0			0.0000000	75mee1	0
160		th229t	es	cu	0.0000001	15.0	0.0000002	15.0000000%	0			0.0000000	75mee1	0
160		pa231f	es	cu	0.0007366	30.0	0.0007100	0.0000000	0			0.0000000	75mee1	0
160		am241t	es	cu	0.0345580	30.0	0.0330000	0.0000000	0			0.0000000	72sid1	0
160	tb g	am241h	rc	fi	0.0030321	32.4	0.0352000	0.0018000	160		am241h	1.0000000	79pri1	0
160	tb g	am241h	rc	cu	0.0029755	5.1	0.0000292	5.1000000%	0			0.0100000	79pri1	0
160		am241h	es	cu	0.0845787	30.0	0.0008300	0.0000000	0			0.0100000	79pri1	0
160		a242mt	es	cu	0.0382994	30.0	0.0350000	0.0000000	0			0.0000000	75mee1	0

160		cm245t	es	cu		0.1793999	30.0	0.1770000	0.0000000	0			0.0000000	75mee1	0
160		cf249t	es	cu		0.2355379	30.0	0.2470000	0.0000000	0			0.0000000	89rid1	0
160		cf249t	es	cu		0.2288627	20.8	0.2400000	0.0500000	0			0.0000000	81dic3	0
160		cf251t	es	cu		0.1528629	30.0	0.1500000	0.0000000	0			0.0000000	75mee1	0
160		es254t	es	cu		0.3912970	30.0	0.4000000	0.0000000	0			0.0000000	75mee1	0
161		th227t	es	cu		0.0000000	30.0	0.0000000	0.0000000	0			0.0000000	75mee1	0
161		th229t	es	cu		0.0000000	15.0	0.0000000	15.0000000%	0			0.0000000	75mee1	0
161		pa231f	es	cu		0.0003735	30.0	0.0003600	0.0000000	0			0.0000000	75mee1	0
161		am241t	es	cu		0.0121416	30.0	0.0120000	0.0000000	0			0.0000000	72sid1	0
161	tb g	am241t	rc	cu		0.0225600	6.4	0.0218000	0.0011000	144	ce g	am241t	3.4100000	73sko2	0
161	tb g	am241t	cm	cu		0.0000000	0.0	0.0216000	5.0000000%	0			0.0000000	77cro1	0
161		am241h	es	cu		0.0602017	30.0	0.0006000	0.0000000	0			0.0100000	79pri1	0
161	tb g	am241h	rc	cu		0.0603021	5.0	0.0006010	3.0000000%	0			0.0100000	79pri1	0
161	tb g	a242mt	rc	cu	x5	0.0000000	0.0	265.0000000	11.0000000	140	ba g	u235t	0.0000000	71wol1	7
161	tb g	a242mt	rc	cu		0.0201499	8.6	0.0195000	8.6000000%	0			0.0000000	71wol1	0
161	tb g	a242mt	cm	cu		0.0000000	0.0	0.0180000	8.0000000%	0			0.0000000	77cro1	0
161		cm245t	es	cu		0.1195999	30.0	0.1180000	0.0000000	0			0.0000000	75mee1	0
161		cf249t	es	cu		0.1846147	30.0	0.1890000	0.0000000	0			0.0000000	89rid1	0
161		cf249t	es	cu		0.1953595	10.0	0.2000000	0.0200000	0			0.0000000	81dic3	0
161	tb g	cf249t	rc	cu		0.2051275	15.0	0.2100000	0.0000000	0			0.0000000	72kur1	0
161	tb g	cf249t	rc	cu		0.1855915	10.5	0.1900000	0.0200000	0			0.0000000	77gae1	0
161	tb g	cf249t	cm	cu		0.0000000	0.0	0.2100000	15.0000000%	0			0.0000000	77cro1	0
161		cf251t	es	cu		0.1019086	30.0	0.1000000	0.0000000	0			0.0000000	75mee1	0
161		es254t	es	cu		0.2934728	30.0	0.3000000	0.0000000	0			0.0000000	75mee1	0
162		th227t	es	cu		0.0000000	30.0	0.0000000	0.0000000	0			0.0000000	75mee1	0
162		th229t	es	cu		0.0000000	15.0	0.0000000	15.0000000%	0			0.0000000	75mee1	0
162		pa231f	es	cu		0.0001971	30.0	0.0001900	0.0000000	0			0.0000000	75mee1	0
162		am241t	es	cu		0.0104721	30.0	0.0100000	0.0000000	0			0.0000000	75mee1	0
162		am241h	es	cu		0.0346467	30.0	0.0340000	0.0000000	0			0.0000000	75mee1	0
162		a242mt	es	cu		0.0131312	30.0	0.0120000	0.0000000	0			0.0000000	75mee1	0
162		cm245t	es	cu		0.0796657	30.0	0.0786000	0.0000000	0			0.0000000	75mee1	0
162		cf249t	es	cu		0.1106771	30.0	0.1220000	0.0000000	0			0.0000000	89rid1	0
162		cf251t	es	cu		0.0815269	30.0	0.0800000	0.0000000	0			0.0000000	75mee1	0
162		es254t	es	cu		0.1956485	30.0	0.2000000	0.0000000	0			0.0000000	75mee1	0
163		th227t	es	cu		0.0000000	30.0	0.0000000	0.0000000	0			0.0000000	75mee1	0
163		th229t	es	cu		0.0000000	15.0	0.0000000	15.0000000%	0			0.0000000	75mee1	0

163	pa231f	es	cu	0.0001037	30.0	0.0001000	0.0000000	0			0.0000000	75mee1	0
163	am241t	es	cu	0.0028275	30.0	0.0027000	0.0000000	0			0.0000000	75mee1	0
163	am241h	es	cu	0.0244565	30.0	0.0240000	0.0000000	0			0.0000000	75mee1	0
163	a242mt	es	cu	0.0065656	30.0	0.0060000	0.0000000	0			0.0000000	75mee1	0
163	cm245t	es	cu	0.0547322	30.0	0.0540000	0.0000000	0			0.0000000	75mee1	0
163	cf249t	es	cu	0.0668599	30.0	0.0737000	0.0000000	0			0.0000000	89rid1	0
163	cf251t	es	cu	0.0611452	30.0	0.0600000	0.0000000	0			0.0000000	75mee1	0

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0measured nuclide	fissile material	meas. tech.	meas. type	note value	updated err.	pct. value	published	error nuclide	normalizing material	normalizing value	normalizing no.	ref. treatment	special
163	es254t	es	cu	0.0978243	30.0	0.1000000	0.0000000	0			0.0000000	75mee1	0
164	th227t	es	cu	0.0000000	30.0	0.0000000	0.0000000	0			10.0000000	75mee1	0
164	th229t	es	cu	0.0000000	15.0	0.0000000	15.0000000%	0			0.0000000	75mee1	0
164	pa231f	es	cu	0.0000415	30.0	0.0000400	0.0000000	0			0.0000000	75mee1	0
164	am241t	es	cu	0.0003246	30.0	0.0003100	0.0000000	0			0.0000000	75mee1	0
164	am241h	es	cu	0.0173233	30.0	0.0170000	0.0000000	0			0.0000000	75mee1	0
164	a242mt	es	cu	0.0021885	30.0	0.0020000	0.0000000	0			0.0000000	75mee1	0
164	cm245t	es	cu	0.0249335	30.0	0.0246000	0.0000000	0			0.0000000	75mee1	0
164	cf249t	es	cu	0.0434544	30.0	0.0479000	0.0000000	0			0.0000000	89rid1	0
164	cf251t	es	cu	0.0407634	30.0	0.0400000	0.0000000	0			0.0000000	75mee1	0
164	es254t	es	cu	0.0479339	30.0	0.0490000	0.0000000	0			0.0000000	89rid1	0
165	th227t	es	cu	0.0000000	30.0	0.0000000	0.0000000	0			10.0000000	75mee1	0
165	th229t	es	cu	0.0000000	15.0	0.0000000	15.0000000%	0			10.0000000	75mee1	0
165	pa231f	es	cu	0.0000205	30.0	0.0000200	0.0000000	0			0.0000000	75mee1	0
165	am241t	es	cu	0.0001002	30.0	0.0000970	0.0000000	0			0.0000000	75mee1	0
165	am241h	es	cu	0.0101902	30.0	0.0100000	0.0000000	0			0.0000000	75mee1	0
165	a242mt	es	cu	0.0010667	30.0	0.0010000	0.0000000	0			0.0000000	75mee1	0
165	cm245t	es	cu	0.0109035	30.0	0.0108000	0.0000000	0			0.0000000	75mee1	0
165	cf249t	es	cu	0.0280312	30.0	0.0300000	0.0000000	0			0.0000000	89rid1	0
165	cf251t	es	cu	0.0304049	30.0	0.0300000	0.0000000	0			0.0000000	75mee1	0
165	es254t	es	cu	0.0196923	30.0	0.0200000	0.0000000	0			0.0000000	89rid1	0
166	th227t	es	cu	0.0000000	30.0	0.0000000	0.0000000	0			10.0000000	75mee1	0
166	th229t	es	cu	0.0000000	15.0	0.0000000	15.0000000%	0			100.0000000	75mee1	0
166	pa231f	es	cu	0.0000093	30.0	0.0000090	0.0000000	0			0.0000000	75mee1	0
166	am241t	es	cu	0.0000681	30.0	0.0000650	0.0000000	0			0.0000000	75mee1	0

166		am241h	es	cu	0.0071331	30.0	0.0070000	0.0000000	0	0.0000000	75mee1	0
166		a242mt	es	cu	0.0005471	30.0	0.0005000	0.0000000	0	0.0000000	75mee1	0
166		cm245t	es	cu	0.0044597	30.0	0.0044000	0.0000000	0	0.0000000	75mee1	0
166		cf249t	es	cu	0.0166923	30.0	0.0184000	0.0000000	0	0.0000000	89rid1	0
166		cf251t	es	cu	0.0203817	30.0	0.0200000	0.0000000	0	0.0000000	77mee1	0
166		es254t	es	cu	0.0088042	30.0	0.0090000	0.0000000	0	0.0000000	75mee1	0
167		th227t	es	cu	0.0000000	30.0	0.0000000	0.0000000	0	100.0000000	75mee1	0
167		th229t	es	cu	0.0000000	15.0	0.0000000	15.0000000%	0	100.0000000	75mee1	0
167		pa231f	es	cu	0.0000036	30.0	0.0000035	0.0000000	0	0.0000000	75mee1	0
167		am241t	es	cu	0.0000304	30.0	0.0000290	0.0000000	0	0.0000000	75mee1	0
167		am241h	es	cu	0.0040761	30.0	0.0040000	0.0000000	0	0.0000000	75mee1	0
167		a242mt	es	cu	0.0002189	30.0	0.0002000	0.0000000	0	0.0000000	75mee1	0
167		cm245t	es	cu	0.0022298	30.0	0.0022000	0.0000000	0	0.0000000	75mee1	0
167		cf249t	es	cu	0.0073936	30.0	0.0081500	0.0000000	0	0.0000000	89rid1	0
167	ho g	cf249t	rc	cu	ul 0.0000000	0.0	0.0210000	0.0000000	0	0.0000000	77gae1	0
167		cf251t	es	cu	0.0152863	30.0	0.0150000	0.0000000	0	0.0000000	75mee1	0
167		es254t	es	cu	0.0039130	30.0	0.0040000	0.0000000	0	0.0000000	75mee1	0
168		th227t	es	cu	0.0000000	30.0	0.0000000	0.0000000	0	100.0000000	75mee1	0
168		th229t	es	cu	0.0000000	15.0	0.0000000	15.0000000%	0	1000.0000000	75mee1	0
168		pa231f	es	cu	0.0000016	30.0	0.0000015	0.0000000	0	0.0000000	75mee1	0
168		am241t	es	cu	0.0000136	30.0	0.0000130	0.0000000	0	0.0000000	75mee1	0
168		am241h	es	cu	0.0029552	30.0	0.0029000	0.0000000	0	0.0000000	75mee1	0
168		a242mt	es	cu	0.0001094	30.0	0.0001000	0.0000000	0	0.0000000	75mee1	0
168		cm245t	es	cu	0.0013176	30.0	0.0013000	0.0000000	0	0.0000000	75mee1	0
168		cf249t	es	cu	0.0041821	30.0	0.0046100	0.0000000	0	0.0000000	89rid1	0
168		cf251t	es	cu	0.0101909	30.0	0.0100000	0.0000000	0	0.0000000	75mee1	0
168		es254t	es	cu	0.0019565	30.0	0.0020000	0.0000000	0	0.0000000	75mee1	0
169		th227t	es	cu	0.0000000	30.0	0.0000000	0.0000000	0	100.0000000	75mee1	0
169		th229t	es	cu	0.0000000	15.0	0.0000000	15.0000000%	0	1000.0000000	75mee1	0
169		pa231f	es	cu	0.0000006	30.0	0.0000006	0.0000000	0	0.0000000	75mee1	0
169		am241t	es	cu	0.0000059	30.0	0.0000056	0.0000000	0	0.0000000	75mee1	0
169		am241h	es	cu	0.0019361	30.0	0.0019000	0.0000000	0	0.0000000	75mee1	0
169		a242mt	es	cu	0.0000875	30.0	0.0000800	0.0000000	0	0.0000000	75mee1	0
169		cm245t	es	cu	0.0005980	30.0	0.0005900	0.0000000	0	0.0000000	75mee1	0
169		cf249t	es	cu	0.0016874	30.0	0.0018600	0.0000000	0	0.0000000	89rid1	0
169		cf251t	es	cu	0.0081527	30.0	0.0080000	0.0000000	0	0.0000000	75mee1	0

169		es254t	es	cu	0.0009782	30.0	0.0010000	0.0000000	0	0.0000000	75mee1	0
170		th227t	es	cu	0.0000000	30.0	0.0000000	0.0000000	0	1000.0000000	75mee1	0
170		th229t	es	cu	0.0000000	15.0	0.0000002	15.0000000%	0	100000.0000000	75mee1	0
170		pa231f	es	cu	0.0000003	30.0	0.0000003	0.0000000	0	0.0000000	75mee1	0
170		am241t	es	cu	0.0000017	30.0	0.0000016	0.0000000	0	0.0000000	75mee1	0
170		am241h	es	cu	0.0011209	30.0	0.0011000	0.0000000	0	0.0000000	75mee1	0
170		a242mt	es	cu	0.0000438	30.0	0.0000400	0.0000000	0	0.0000000	75mee1	0
170		cm245t	es	cu	0.0002939	30.0	0.0002900	0.0000000	0	0.0000000	75mee1	0
170		cf249t	es	cu	0.0008618	30.0	0.0009500	0.0000000	0	0.0000000	89rid1	0
170		cf251t	es	cu	0.0061145	30.0	0.0060000	0.0000000	0	0.0000000	75mee1	0
170		es254t	es	cu	0.0004891	30.0	0.0005000	0.0000000	0	0.0000000	75mee1	0
171		th227t	es	cu	0.0000000	15.0	0.0000000	15.0000000%	0	1000.0000000	75mee1	0
171		th229t	es	cu	0.0000000	15.0	0.0000002	15.0000000%	0	100000.0000000	75mee1	0
171		pa231f	es	cu	0.0000002	30.0	0.0000002	0.0000000	0	0.0000000	75mee1	0
171		am241t	es	cu	0.0000003	30.0	0.0000003	0.0000000	0	0.0000000	75mee1	0
171		am241h	es	cu	0.0007745	30.0	0.0007600	0.0000000	0	0.0000000	75mee1	0
171		a242mt	es	cu	0.0000219	30.0	0.0000200	0.0000000	0	0.0000000	75mee1	0
171		cm245t	es	cu	0.0001723	30.0	0.0001700	0.0000000	0	0.0000000	75mee1	0
171		cf249t	es	cu	0.0004808	30.0	0.0005300	0.0000000	0	0.0000000	89rid1	0
171	er g	cf249t	rc	cu	ul 0.0000000	0.0	0.0013000	0.0000000	0	0.0000000	77gae1	0
171		cf251t	es	cu	0.0040763	30.0	0.0040000	0.0000000	0	0.0000000	75mee1	0
171		es254t	es	cu	0.0001956	30.0	0.0002000	0.0000000	0	0.0000000	75mee1	0
172		th227t	es	cu	0.0000000	15.0	0.0000000	15.0000000%	0	1000.0000000	75mee1	0
172		th229t	es	cu	0.0000000	15.0	0.0000001	15.0000000%	0	100000.0000000	75mee1	0
172		pa231f	es	cu	0.0000001	30.0	0.0000001	0.0000000	0	0.0000000	75mee1	0
172		am241t	es	cu	0.0000001	30.0	0.0000001	0.0000000	0	0.0000000	75mee1	0
172		am241h	es	cu	0.0005095	30.0	0.0005000	0.0000000	0	0.0000000	75mee1	0
172		a242mt	es	cu	0.0000109	30.0	0.0000100	0.0000000	0	0.0000000	75mee1	0
172		cm245t	es	cu	0.0000801	30.0	0.0000790	0.0000000	0	0.0000000	75mee1	0
172		cf249t	es	cu	0.0003629	30.0	0.0004000	0.0000000	0	0.0000000	89rid1	0
172		cf251t	es	cu	0.0030573	30.0	0.0030000	0.0000000	0	0.0000000	75mee1	0
172		es254t	es	cu	0.0000978	30.0	0.0001000	0.0000000	0	0.0000000	75mee1	0

1 Appendix E

Set E Yields Evaluated and Compiled
for
Los Alamos report LA-UR-94-3106 (ENDF-349)

T. R. England and B. F. Rider
October, 1994

Set E Contains yields for:
cf250s, cm244s, cm248s, es253s, fm254s, fm255t, fm256s, np237h, u232t, u238s

Note: print landscape with page control parameter set
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    mass number     66              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g
half life                           0.23s    54.6 h    5.10 m    stable     9.49h     2.27h
lambda            0.0       0.0       0.0 3.014e+00 3.526e-06 2.265e-03       0.0 2.029e-05 8.482e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cf250s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.001965n      0.0       0.0
zp 27.13 ri 5.23e-09p 4.38e-06p 0.000280p 0.001136p 0.000529p 1.67e-05p 4.24e-08p 5.00e-12p       0.0
sig0.577 cc 5.23e-09p 4.39e-06p 0.000284p 0.001420p 0.001949p 0.001965p 0.001965p 5.00e-12p       0.0
         rc 5.23e-09p 4.39e-06p 0.000284p 0.001420p 0.001949o 0.001965o 0.001965n 5.00e-12p       0.0
 cm244s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  3.98e-05n      0.0       0.0
zp 27.08 ri 7.34e-11p 6.74e-08p 7.53e-06p 2.07e-05p 1.14e-05p 1.63e-07p 2.93e-10p       0.0       0.0
sig0.551 cc 7.34e-11p 6.74e-08p 7.60e-06p 2.83e-05p 3.97e-05p 3.98e-05p 3.98e-05p       0.0       0.0
         rc 7.34e-11p 6.74e-08p 7.60e-06p 2.83e-05p 3.97e-05o 3.98e-05o 3.98e-05n       0.0       0.0
 cm248s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.000439n      0.0       0.0
zp 26.70 ri 3.25e-08p 8.48e-06p 0.000153p 0.000242p 3.58e-05p 4.02e-07p 2.79e-10p       0.0       0.0
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sig0.579 cc 3.25e-08p 8.51e-06p 0.000161p 0.000403p 0.000439p 0.000439p 0.000439p       0.0        0.0
         rc 3.25e-08p 8.51e-06p 0.000161p 0.000403p 0.000439o 0.000439o 0.000439n       0.0        0.0
 es253s  xi      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
         xc      0.0        0.0        0.0        0.0        0.0        0.0  0.000267n      0.0        0.0
zp 27.16 ri 3.00e-09p 1.09e-06p 3.82e-05p 0.000150p 7.36e-05p 4.26e-06p 2.47e-08p 1.28e-11p       0.0
sig0.627 cc 3.00e-09p 1.10e-06p 3.93e-05p 0.000189p 0.000262p 0.000267p 0.000267p 1.28e-11p       0.0
         rc 3.00e-09p 1.10e-06p 3.93e-05p 0.000189p 0.000262o 0.000267o 0.000267n 1.28e-11p       0.0
 fm254s  xi      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
         xc      0.0        0.0        0.0        0.0        0.0        0.0  2.83e-05n      0.0        0.0
zp 27.40 ri 4.03e-11p 3.07e-08p 2.05e-06p 1.39e-05p 1.12e-05p 1.05e-06p 9.58e-09p 7.53e-12p       0.0
sig0.619 cc 4.03e-11p 3.08e-08p 2.08e-06p 1.60e-05p 2.72e-05p 2.83e-05p 2.83e-05p 7.53e-12p       0.0
         rc 4.03e-11p 3.08e-08p 2.08e-06p 1.60e-05p 2.72e-05p 2.83e-05o 2.83e-05n 7.53e-12p       0.0
 fm255t  xi      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
         xc      0.0        0.0        0.0        0.0        0.0        0.0  0.000158n      0.0        0.0
zp 27.17 ri 6.94e-11p 1.66e-07p 1.71e-05p 9.83e-05p 4.19e-05p 1.13e-06p 1.39e-09p       0.0        0.0
sig0.543 cc 6.94e-11p 1.67e-07p 1.72e-05p 0.000115p 0.000157p 0.000158p 0.000158p       0.0        0.0
         rc 6.94e-11p 1.67e-07p 1.72e-05p 0.000115p 0.000157p 0.000158o 0.000158n       0.0        0.0
 fm256s  xi      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
         xc      0.0        0.0        0.0        0.0        0.0        0.0  0.000101n      0.0        0.0
zp 27.14 ri 1.04e-09p 4.10e-07p 1.48e-05p 5.73e-05p 2.71e-05p 1.45e-06p 7.41e-09p 3.23e-12p       0.0
sig0.621 cc 1.04e-09p 4.11e-07p 1.52e-05p 7.24e-05p 9.95e-05p 0.000101p 0.000101p 3.23e-12p       0.0
         rc 1.04e-09p 4.11e-07p 1.52e-05p 7.24e-05p 9.95e-05o 0.000101o 0.000101n 3.23e-12p       0.0
 np237h  xi      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
         xc      0.0        0.0        0.0        0.0        0.0        0.0  0.005000n      0.0        0.0
zp 26.82 ri 2.59e-07p 6.81e-05p 0.001420p 0.002880p 0.000619p 1.20e-05p 1.73e-08p 1.69e-12p       0.0
sig0.597 cc 2.59e-07p 6.84e-05p 0.001488p 0.004369p 0.004988p 0.004999p 0.005000p 1.69e-12p       0.0
         rc 2.59e-07p 6.84e-05p 0.001488p 0.004369p 0.004988o 0.004999o 0.005000n 1.70e-12p       0.0
 u232t   xi      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
         xc      0.0        0.0        0.0        0.0        0.0        0.0  0.006995n      0.0        0.0
zp 27.10 ri 3.72e-08p 1.69e-05p 0.001361p 0.003384p 0.002187p 4.59e-05p 1.76e-07p 1.53e-11p       0.0
sig0.583 cc 3.72e-08p 1.69e-05p 0.001378p 0.004762p 0.006949p 0.006995p 0.006995p 1.53e-11p       0.0
         rc 3.72e-08p 1.69e-05p 0.001378p 0.004762p 0.006949o 0.006995o 0.006995n 1.54e-11p       0.0
 u238s   xi      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
         xc      0.0        0.0        0.0        0.0        0.0        0.0  8.13e-11n      0.0        0.0
zp 26.41 ri      0.0  2.52e-12p 4.71e-11p 3.05e-11p 1.21e-12p       0.0        0.0        0.0        0.0
sig0.497 cc      0.0  2.52e-12p 4.96e-11p 8.01e-11p 8.13e-11p 8.13e-11p 8.13e-11p       0.0        0.0
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        rc      0.0  2.52e-12p 4.96e-11p 8.01e-11p 8.13e-11o 8.13e-11o 8.13e-11n      0.0       0.0

  co, ni, cu half lives from 89wal1; ga half life 90bur1.
1

    mass number     67              LA-UR-94-3106 (ENDF-349)                                percent yields
nuclide       24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g
half life                                          21. s    2.580d    stable    3.261d    19.0 m
lambda            0.0       0.0       0.0       0.0 3.301e-02 3.110e-06       0.0 2.460e-06 6.080e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.002457n      0.0       0.0
zp 27.51 ri 2.27e-10p 5.64e-07p 0.000101p 0.001053p 0.001200p 0.000101p 7.36e-07p 2.61e-10p       0.0
sig0.577 cc 2.27e-10p 5.64e-07p 0.000102p 0.001155p 0.002355p 0.002456p 0.002457p 2.61e-10p       0.0
        rc 2.27e-10p 5.64e-07p 0.000102p 0.001155p 0.002355p 0.002456o 0.002457n 2.61e-10p       0.0
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  6.57e-05n      0.0       0.0
zp 27.47 ri 2.59e-12p 9.96e-09p 2.90e-06p 2.77e-05p 3.34e-05p 1.76e-06p 8.52e-09p 1.09e-12p       0.0
sig0.551 cc 2.59e-12p 9.97e-09p 2.91e-06p 3.06e-05p 6.40e-05p 6.57e-05p 6.57e-05p 1.09e-12p       0.0
        rc 2.59e-12p 9.97e-09p 2.91e-06p 3.06e-05p 6.40e-05p 6.57e-05o 6.57e-05n 1.09e-12p       0.0
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000549n      0.0       0.0
zp 27.07 ri 2.55e-09p 1.87e-06p 8.82e-05p 0.000334p 0.000121p 3.63e-06p 7.17e-09p       0.0       0.0
sig0.579 cc 2.55e-09p 1.87e-06p 9.00e-05p 0.000425p 0.000545p 0.000549p 0.000549p       0.0       0.0
        rc 2.55e-09p 1.87e-06p 9.00e-05p 0.000425p 0.000545o 0.000549o 0.000549n       0.0       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000359n      0.0       0.0
zp 27.54 ri 2.28e-10p 2.08e-07p 1.74e-05p 0.000154p 0.000166p 2.20e-05p 3.11e-07p 4.08e-10p       0.0
sig0.627 cc 2.28e-10p 2.08e-07p 1.76e-05p 0.000171p 0.000337p 0.000359p 0.000359p 4.08e-10p       0.0
        rc 2.28e-10p 2.08e-07p 1.76e-05p 0.000171p 0.000337p 0.000359o 0.000359n 4.08e-10p       0.0
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.84e-05n      0.0       0.0
zp 27.78 ri 2.28e-12p 4.49e-09p 7.46e-07p 1.18e-05p 2.12e-05p 4.56e-06p 1.03e-07p 2.08e-10p       0.0
sig0.619 cc 2.28e-12p 4.49e-09p 7.50e-07p 1.26e-05p 3.37e-05p 3.83e-05p 3.84e-05p 2.08e-10p       0.0
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        rc 2.28e-12p 4.49e-09p 7.50e-07p 1.26e-05p 3.37e-05p 3.83e-05o 3.84e-05n 2.08e-10p       0.0
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000205n      0.0       0.0
zp 27.55 ri 1.98e-12p 1.64e-08p 5.44e-06p 8.96e-05p 0.000102p 8.16e-06p 3.34e-08p 5.59e-12p       0.0
sig0.543 cc 1.98e-12p 1.64e-08p 5.46e-06p 9.51e-05p 0.000197p 0.000205p 0.000205p 5.59e-12p       0.0
        rc 1.98e-12p 1.64e-08p 5.46e-06p 9.51e-05p 0.000197p 0.000205o 0.000205n 5.59e-12p       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000162n      0.0       0.0
zp 27.52 ri 9.04e-11p 9.04e-08p 7.94e-06p 7.04e-05p 7.38e-05p 9.22e-06p 1.17e-07p 1.31e-10p       0.0
sig0.621 cc 9.04e-11p 9.04e-08p 8.03e-06p 7.84e-05p 0.000152p 0.000161p 0.000162p 1.31e-10p       0.0
        rc 9.04e-11p 9.04e-08p 8.03e-06p 7.84e-05p 0.000152p 0.000161o 0.000162n 1.31e-10p       0.0
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.006999n      0.0       0.0
zp 27.21 ri 2.01e-08p 1.48e-05p 0.000812p 0.003991p 0.002076p 0.000105p 4.27e-07p 1.20e-10p       0.0
sig0.597 cc 2.01e-08p 1.48e-05p 0.000827p 0.004818p 0.006893p 0.006999p 0.006999p 1.20e-10p       0.0
        rc 2.01e-08p 1.48e-05p 0.000827p 0.004818p 0.006893p 0.006999o 0.006999n 1.20e-10p       0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.008994n      0.0       0.0
zp 27.49 ri 1.48e-09p 2.46e-06p 0.000454p 0.003575p 0.004639p 0.000320p 2.90e-06p 9.39e-10p       0.0
sig0.583 cc 1.48e-09p 2.46e-06p 0.000457p 0.004032p 0.008671p 0.008991p 0.008994p 9.39e-10p       0.0
        rc 1.48e-09p 2.46e-06p 0.000457p 0.004032p 0.008671p 0.008991o 0.008994n 9.39e-10p       0.0
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.45e-10n      0.0       0.0
zp 26.79 ri      0.0  1.11e-12p 7.51e-11p 1.48e-10p 2.04e-11p      0.0       0.0       0.0       0.0
sig0.497 cc      0.0  1.11e-12p 7.62e-11p 2.24e-10p 2.45e-10p 2.45e-10p 2.45e-10p      0.0       0.0
        rc      0.0  1.11e-12p 7.62e-11p 2.24e-10p 2.45e-10p 2.45e-10o 2.45e-10n      0.0       0.0

  ni, cu half lives from 89wal1; ga half life from 90bur1.
1

    mass number     68              LA-UR-94-3106 (ENDF-349)                                percent yields
nuclide       24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu m   29 cu g   30 zn g   31 ga g   32 ge g
half life                                          19. s     3.79m     31. s    stable    68.06m    287. d
lambda           0.0       0.0       0.0       0.0 3.648e-02 3.048e-03 2.236e-02       0.0 1.697e-04 2.795e-08
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0   50.0000       0.0       0.0
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 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0   50.0000       0.0       0.0       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.002948n      0.0       0.0
zp 27.89 ri 6.20e-12p 4.64e-08p 2.40e-05p 0.000665p 0.001854p 0.000278p 0.000119p 8.15e-06p 8.56e-09p       0.0
sig0.577 cc 6.20e-12p 4.64e-08p 2.41e-05p 0.000689p 0.002542p 0.000278p 0.002801p 0.002948p 8.56e-09p       0.0
         rc 6.20e-12p 4.64e-08p 2.41e-05p 0.000689p 0.002542p 0.000278p 0.002801o 0.002948n 8.56e-09p       0.0
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.96e-05n      0.0       0.0
zp 27.85 ri       0.0  7.17e-10p 8.22e-07p 1.85e-05p 7.16e-05p 5.97e-06p 2.56e-06p 1.59e-07p 5.45e-11p       0.0
sig0.551 cc       0.0  7.18e-10p 8.23e-07p 1.93e-05p 9.09e-05p 5.97e-06p 9.64e-05p 9.96e-05p 5.45e-11p       0.0
         rc       0.0  7.18e-10p 8.23e-07p 1.93e-05p 9.09e-05p 5.97e-06p 9.64e-05o 9.96e-05n 5.45e-11p       0.0
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000769n      0.0       0.0
zp 27.45 ri 1.38e-10p 2.97e-07p 3.89e-05p 0.000374p 0.000329p 1.84e-05p 7.87e-06p 1.49e-07p 5.08e-11p       0.0
sig0.579 cc 1.38e-10p 2.97e-07p 3.92e-05p 0.000413p 0.000742p 1.84e-05p 0.000759p 0.000769p 5.08e-11p       0.0
         rc 1.38e-10p 2.97e-07p 3.92e-05p 0.000413p 0.000742p 1.84e-05p 0.000759o 0.000769n 5.08e-11p       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000513n      0.0       0.0
zp 27.92 ri 1.29e-11p 2.96e-08p 6.08e-06p 0.000124p 0.000293p 6.11e-05p 2.62e-05p 2.95e-06p 9.67e-09p 2.79e-12p
sig0.627 cc 1.29e-11p 2.96e-08p 6.11e-06p 0.000130p 0.000423p 6.11e-05p 0.000479p 0.000513p 9.67e-09p 2.79e-12p
         rc 1.29e-11p 2.96e-08p 6.11e-06p 0.000130p 0.000423p 6.11e-05p 0.000479o 0.000513n 9.67e-09p 2.79e-12p
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.26e-05n      0.0       0.0
zp 28.17 ri       0.0  4.29e-10p 1.85e-07p 7.20e-06p 2.97e-05p 1.03e-05p 4.41e-06p 8.16e-07p 4.29e-09p 1.89e-12p
sig0.619 cc       0.0  4.30e-10p 1.86e-07p 7.39e-06p 3.70e-05p 1.03e-05p 4.66e-05p 5.26e-05p 4.29e-09p 1.89e-12p
         rc       0.0  4.30e-10p 1.86e-07p 7.39e-06p 3.70e-05p 1.03e-05p 4.66e-05o 5.26e-05n 4.29e-09p 1.89e-12p
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000252n      0.0       0.0
zp 27.93 ri       0.0  9.59e-10p 1.06e-06p 5.29e-05p 0.000161p 2.55e-05p 1.09e-05p 4.79e-07p 2.75e-10p       0.0
sig0.543 cc       0.0  9.59e-10p 1.06e-06p 5.40e-05p 0.000215p 2.55e-05p 0.000238p 0.000252p 2.75e-10p       0.0
         rc       0.0  9.59e-10p 1.06e-06p 5.40e-05p 0.000215p 2.55e-05p 0.000238o 0.000252n 2.75e-10p       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000222n      0.0       0.0
zp 27.90 ri 4.69e-12p 1.21e-08p 2.63e-06p 5.47e-05p 0.000127p 2.54e-05p 1.09e-05p 1.12e-06p 3.19e-09p       0.0
sig0.621 cc 4.69e-12p 1.21e-08p 2.65e-06p 5.73e-05p 0.000185p 2.54e-05p 0.000208p 0.000222p 3.20e-09p       0.0
         rc 4.69e-12p 1.21e-08p 2.65e-06p 5.73e-05p 0.000185p 2.54e-05p 0.000208o 0.000222n 3.20e-09p       0.0
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 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.008999n      0.0       0.0
zp 27.58 ri 1.14e-09p 2.26e-06p 0.000318p 0.003718p 0.004412p 0.000445p 9.77e-05p 5.72e-06p 4.36e-09p       0.0
sig0.597 cc 1.14e-09p 2.26e-06p 0.000320p 0.004038p 0.008450p 0.000445p 0.008771p 0.008999p 4.36e-09p       0.0
         rc 1.14e-09p 2.26e-06p 0.000320p 0.004038p 0.008450p 0.000445p 0.008771o 0.008999n 4.36e-09p       0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.012991n      0.0       0.0
zp 27.88 ri 5.05e-11p 2.07e-07p 0.000136p 0.002324p 0.009165p 0.000927p 0.000397p 4.17e-05p 3.27e-08p 4.05e-12p
sig0.583 cc 5.05e-11p 2.07e-07p 0.000136p 0.002460p 0.011625p 0.000927p 0.012486p 0.012991p 3.27e-08p 4.05e-12p
         rc 5.05e-11p 2.07e-07p 0.000136p 0.002460p 0.011625p 0.000927p 0.012486o 0.012991n 3.27e-08p 4.05e-12p
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  8.13e-10n      0.0       0.0
zp 27.16 ri      0.0       0.0  8.37e-11p 5.09e-10p 2.18e-10p 1.84e-12p      0.0       0.0       0.0       0.0
sig0.497 cc      0.0       0.0  8.40e-11p 5.93e-10p 8.11e-10p 1.84e-12p 8.12e-10p 8.13e-10p      0.0       0.0
         rc      0.0       0.0  8.40e-11p 5.93e-10p 8.11e-10p 1.84e-12p 8.12e-10o 8.13e-10n      0.0       0.0

  ni, cu half lives from 89wal1; ga, ge half lives from 90bur1.
1

    mass number     69              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn m   30 zn g   31 ga g   32 ge g   33 as g
half life                                 10. s     2.8 m    13.76h     56. m    stable    39.2 h     15. m
lambda            0.0       0.0       0.0 6.931e-02 4.126e-03 1.399e-05 2.063e-04       0.0 4.912e-06 7.702e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.003734n      0.0       0.0
zp 28.27 ri 2.69e-09p 4.11e-06p 0.000314p 0.002190p 0.001162p 5.24e-05p 1.23e-05p 1.99e-07p 4.30e-11p       0.0
sig0.577 cc 2.69e-09p 4.12e-06p 0.000318p 0.002507p 0.003669p 5.24e-05p 0.003734p 0.003734p 4.30e-11p       0.0
         rc 2.69e-09p 4.12e-06p 0.000318p 0.002507p 0.003669p 5.24e-05p 0.003734o 0.003734n 4.30e-11p       0.0
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000149n      0.0       0.0
zp 28.23 ri 4.53e-11p 1.38e-07p 1.16e-05p 9.78e-05p 3.81e-05p 1.40e-06p 3.30e-07p 2.39e-09p       0.0       0.0
sig0.551 cc 4.53e-11p 1.38e-07p 1.17e-05p 0.000109p 0.000148p 1.40e-06p 0.000149p 0.000149p       0.0       0.0
         rc 4.53e-11p 1.38e-07p 1.17e-05p 0.000109p 0.000148p 1.40e-06p 0.000149o 0.000149n       0.0       0.0
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 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000988n      0.0       0.0
zp 27.83 ri 2.89e-08p 1.08e-05p 0.000272p 0.000584p 0.000119p 1.53e-06p 3.59e-07p 1.90e-09p       0.0       0.0
sig0.579 cc 2.89e-08p 1.08e-05p 0.000283p 0.000868p 0.000986p 1.53e-06p 0.000988p 0.000988p       0.0       0.0
         rc 2.89e-08p 1.08e-05p 0.000283p 0.000868p 0.000986o 1.53e-06p 0.000988o 0.000988n       0.0       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000677n      0.0       0.0
zp 28.30 ri 2.75e-09p 1.40e-06p 6.76e-05p 0.000356p 0.000234p 1.49e-05p 3.50e-06p 1.49e-07p 1.09e-10p       0.0
sig0.627 cc 2.75e-09p 1.41e-06p 6.90e-05p 0.000425p 0.000659p 1.49e-05p 0.000677p 0.000677p 1.09e-10p       0.0
         rc 2.75e-09p 1.41e-06p 6.90e-05p 0.000425p 0.000659p 1.49e-05p 0.000677o 0.000677n 1.09e-10p       0.0
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  7.48e-05n      0.0       0.0
zp 28.55 ri 3.17e-11p 3.51e-08p 3.36e-06p 3.17e-05p 3.50e-05p 3.69e-06p 8.66e-07p 5.97e-08p 6.82e-11p       0.0
sig0.619 cc 3.17e-11p 3.52e-08p 3.39e-06p 3.51e-05p 7.02e-05p 3.69e-06p 7.47e-05p 7.48e-05p 6.82e-11p       0.0
         rc 3.17e-11p 3.52e-08p 3.39e-06p 3.51e-05p 7.02e-05p 3.69e-06p 7.47e-05o 7.48e-05n 6.82e-11p       0.0
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000326n      0.0       0.0
zp 28.31 ri 3.70e-11p 1.40e-07p 2.20e-05p 0.000186p 0.000114p 3.73e-06p 8.75e-07p 8.88e-09p       0.0       0.0
sig0.543 cc 3.70e-11p 1.40e-07p 2.22e-05p 0.000208p 0.000322p 3.73e-06p 0.000326p 0.000326p       0.0       0.0
         rc 3.70e-11p 1.40e-07p 2.22e-05p 0.000208p 0.000322p 3.73e-06p 0.000326o 0.000326n       0.0       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000303n      0.0       0.0
zp 28.28 ri 1.12e-09p 6.17e-07p 3.08e-05p 0.000161p 0.000103p 6.09e-06p 1.43e-06p 5.38e-08p 3.33e-11p       0.0
sig0.621 cc 1.12e-09p 6.18e-07p 3.14e-05p 0.000193p 0.000295p 6.09e-06p 0.000303p 0.000303p 3.33e-11p       0.0
         rc 1.12e-09p 6.18e-07p 3.14e-05p 0.000193p 0.000295p 6.09e-06p 0.000303o 0.000303n 3.33e-11p       0.0
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.011999n      0.0       0.0
zp 27.96 ri 2.31e-07p 8.76e-05p 0.002575p 0.007159p 0.002118p 5.18e-05p 6.40e-06p 1.22e-07p 1.75e-11p       0.0
sig0.597 cc 2.31e-07p 8.78e-05p 0.002663p 0.009822p 0.011940p 5.18e-05p 0.011999p 0.011999p 1.75e-11p       0.0
         rc 2.31e-07p 8.78e-05p 0.002663p 0.009822p 0.011940o 5.18e-05p 0.011999o 0.011999n 1.75e-11p       0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.017988n      0.0       0.0
zp 28.28 ri 1.39e-08p 2.26e-05p 0.001349p 0.011173p 0.005077p 0.000295p 6.92e-05p 1.06e-06p 3.33e-10p       0.0
sig0.583 cc 1.39e-08p 2.26e-05p 0.001372p 0.012545p 0.017622p 0.000295p 0.017987p 0.017988p 3.33e-10p       0.0
         rc 1.39e-08p 2.26e-05p 0.001372p 0.012545p 0.017622p 0.000295p 0.017987o 0.017988n 3.33e-10p       0.0
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.45e-09n      0.0       0.0
zp 27.54 ri      0.0  4.86e-11p 1.02e-09p 1.33e-09p 5.88e-11p      0.0       0.0       0.0       0.0       0.0
sig0.497 cc      0.0  4.86e-11p 1.06e-09p 2.39e-09p 2.45e-09p      0.0  2.45e-09p 2.45e-09p      0.0       0.0
        rc      0.0  4.86e-11p 1.06e-09p 2.39e-09p 2.45e-09p      0.0  2.45e-09o 2.45e-09n      0.0       0.0

  ni, cu, zn half lives from 89wal1.
1

    mass number     70              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide      24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu m   29 cu g   30 zn g   31 ga g   32 ge g
half life                                                   47. s      5. s    stable    21.1 m    stable
lambda          0.0       0.0       0.0       0.0       0.0 1.475e-02 1.386e-01       0.0 5.475e-04       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000   50.0000   50.0000  100.0000       0.0  100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.004913n      0.0       0.0
zp 28.65 ri      0.0  1.08e-10p 4.93e-07p 0.000107p 0.001935p 0.001880p 0.000627p 0.000365p 3.20e-06p 2.07e-09p
sig0.577 cc      0.0  1.08e-10p 4.93e-07p 0.000107p 0.002042p 0.002901p 0.001648p 0.004913p 3.20e-06p 3.20e-06p
        rc      0.0  1.08e-10p 4.93e-07p 0.000107p 0.002042p 0.002901p 0.001648p 0.004913n 3.20e-06p 3.20e-06p
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000249n      0.0       0.0
zp 28.61 ri      0.0  1.60e-12p 2.00e-08p 4.28e-06p 0.000125p 7.74e-05p 2.58e-05p 1.65e-05p 5.90e-08p 2.43e-11p
sig0.551 cc      0.0  1.60e-12p 2.00e-08p 4.30e-06p 0.000129p 0.000142p 9.04e-05p 0.000249p 5.90e-08p 5.90e-08p
        rc      0.0  1.60e-12p 2.00e-08p 4.30e-06p 0.000129p 0.000142p 9.04e-05p 0.000249n 5.90e-08p 5.90e-08p
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001390n      0.0       0.0
zp 28.20 ri      0.0  2.22e-09p 2.35e-06p 0.000157p 0.000814p 0.000300p 1.00e-04p 1.68e-05p 4.79e-08p 7.95e-12p
sig0.579 cc      0.0  2.22e-09p 2.35e-06p 0.000159p 0.000973p 0.000787p 0.000587p 0.001390p 4.79e-08p 4.79e-08p
        rc      0.0  2.22e-09p 2.35e-06p 0.000159p 0.000973p 0.000787p 0.000587p 0.001390m 4.79e-08p 4.79e-08p
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000944n      0.0       0.0
zp 28.68 ri      0.0  1.90e-10p 2.43e-07p 2.84e-05p 0.000339p 0.000366p 0.000122p 8.77e-05p 1.71e-06p 3.15e-09p
sig0.627 cc      0.0  1.90e-10p 2.44e-07p 2.86e-05p 0.000368p 0.000550p 0.000306p 0.000944p 1.71e-06p 1.72e-06p
        rc      0.0  1.90e-10p 2.44e-07p 2.86e-05p 0.000368p 0.000550p 0.000306p 0.000944n 1.71e-06p 1.72e-06p
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000101n      0.0       0.0
zp 28.93 ri      0.0  1.56e-12p 4.46e-09p 1.07e-06p 2.38e-05p 4.40e-05p 1.47e-05p 1.75e-05p 5.59e-07p 1.63e-09p
sig0.619 cc      0.0  1.56e-12p 4.46e-09p 1.07e-06p 2.49e-05p 5.65e-05p 2.71e-05p 0.000101p 5.59e-07p 5.60e-07p
        rc      0.0  1.56e-12p 4.46e-09p 1.07e-06p 2.49e-05p 5.65e-05p 2.71e-05p 0.000101n 5.59e-07p 5.60e-07p
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000438n      0.0       0.0
zp 28.69 ri      0.0       0.0  1.20e-08p 6.22e-06p 0.000153p 0.000187p 6.23e-05p 2.95e-05p 1.86e-07p 4.92e-11p
sig0.543 cc      0.0       0.0  1.20e-08p 6.23e-06p 0.000159p 0.000267p 0.000142p 0.000438p 1.86e-07p 1.87e-07p
        rc      0.0       0.0  1.20e-08p 6.23e-06p 0.000159p 0.000267p 0.000142p 0.000438n 1.86e-07p 1.87e-07p
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000404n      0.0       0.0
zp 28.66 ri      0.0  7.06e-11p 9.98e-08p 1.22e-05p 0.000148p 0.000156p 5.21e-05p 3.53e-05p 6.24e-07p 9.88e-10p
sig0.621 cc      0.0  7.06e-11p 9.99e-08p 1.23e-05p 0.000160p 0.000236p 0.000132p 0.000404p 6.24e-07p 6.25e-07p
        rc      0.0  7.06e-11p 9.99e-08p 1.23e-05p 0.000160p 0.000236p 0.000132p 0.000404n 6.24e-07p 6.25e-07p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.014999n      0.0       0.0
zp 28.34 ri      0.0  1.50e-08p 1.56e-05p 0.001191p 0.007909p 0.004675p 0.000825p 0.000383p 2.17e-06p 8.69e-10p
sig0.597 cc      0.0  1.50e-08p 1.56e-05p 0.001206p 0.009116p 0.009233p 0.005383p 0.014999p 2.17e-06p 2.17e-06p
        rc      0.0  1.50e-08p 1.56e-05p 0.001206p 0.009116p 0.009233p 0.005383p 0.014999n 2.17e-06p 2.17e-06p
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.024984n      0.0       0.0
zp 28.68 ri      0.0  4.74e-10p 2.92e-06p 0.000418p 0.011414p 0.007966p 0.002655p 0.002527p 1.76e-05p 2.10e-08p
sig0.583 cc      0.0  4.74e-10p 2.92e-06p 0.000420p 0.011835p 0.013884p 0.008573p 0.024984p 1.76e-05p 1.76e-05p
        rc      0.0  4.74e-10p 2.92e-06p 0.000420p 0.011835p 0.013884p 0.008573p 0.024984n 1.76e-05p 1.76e-05p
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  8.13e-09n      0.0       0.0
zp 27.91 ri      0.0       0.0  1.98e-11p 1.49e-09p 5.78e-09p 6.30e-10p 2.10e-10p 5.72e-12p      0.0       0.0
sig0.497 cc      0.0       0.0  1.98e-11p 1.50e-09p 7.29e-09p 4.27e-09p 3.85e-09p 8.13e-09p      0.0       0.0
        rc      0.0       0.0  1.98e-11p 1.50e-09p 7.29e-09p 4.27e-09p 3.85e-09p 8.13e-09n      0.0       0.0

  cu half life from 89wal1.
1

    mass number     71              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide      25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn m   30 zn g   31 ga g   32 ge m   32 ge g   33 as g
half life                                   20. s    3.97 h     2.4 m    stable    11.8 d    0.020s     64. h
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lambda          0.0       0.0       0.0       0.0 3.466e-02 4.850e-05 4.814e-03       0.0 6.799e-07 3.466e+01 3.008e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000       0.0 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0   99.9500       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0    0.0500       0.0       0.0  100.0000       0.0
 cf250s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.005896n      0.0       0.0       0.0
zp 29.03 ri 2.58e-12p 3.54e-08p 2.23e-05p 0.001090p 0.003477p 0.001033p 0.000242p 3.11e-05p 2.96e-08p 2.96e-08p 5.23e-12p
sig0.577 cc 2.58e-12p 3.54e-08p 2.23e-05p 0.001112p 0.004589p 0.001033p 0.004832p 0.005896p 2.96e-08p 5.93e-08p 5.23e-12p
         rc 2.58e-12p 3.54e-08p 2.23e-05p 0.001112p 0.004589p 0.001033p 0.004832p 0.005896n 2.96e-08p 5.93e-08p 5.23e-12p
 cm244s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000398n      0.0       0.0       0.0
zp 29.00 ri      0.0  1.32e-09p 1.16e-06p 8.35e-05p 0.000229p 6.77e-05p 1.59e-05p 1.16e-06p 6.63e-10p 6.63e-10p       0.0
sig0.551 cc      0.0  1.32e-09p 1.16e-06p 8.46e-05p 0.000314p 6.77e-05p 0.000329p 0.000398p 6.63e-10p 1.33e-09p       0.0
         rc      0.0  1.32e-09p 1.16e-06p 8.46e-05p 0.000314p 6.77e-05p 0.000329p 0.000398n 6.63e-10p 1.33e-09p       0.0
 cm248s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001867n      0.0       0.0       0.0
zp 28.58 ri 9.98e-11p 3.12e-07p 5.85e-05p 0.000777p 0.000928p 8.29e-05p 1.94e-05p 8.29e-07p 2.05e-10p 2.05e-10p       0.0
sig0.579 cc 9.98e-11p 3.12e-07p 5.88e-05p 0.000836p 0.001764p 8.29e-05p 0.001783p 0.001867p 2.05e-10p 4.10e-10p       0.0
         rc 9.98e-11p 3.12e-07p 5.88e-05p 0.000836p 0.001764p 8.29e-05p 0.001783o 0.001867n 2.05e-10p 4.10e-10p       0.0
 es253s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001334n      0.0       0.0       0.0
zp 29.06 ri 9.29e-12p 3.02e-08p 8.65e-06p 0.000241p 0.000764p 0.000247p 5.81e-05p 1.41e-05p 3.24e-08p 3.24e-08p 2.63e-11p
sig0.627 cc 9.29e-12p 3.02e-08p 8.68e-06p 0.000250p 0.001014p 0.000247p 0.001072p 0.001334p 3.24e-08p 6.47e-08p 2.63e-11p
         rc 9.29e-12p 3.02e-08p 8.68e-06p 0.000250p 0.001014p 0.000247p 0.001072p 0.001334n 3.24e-08p 6.47e-08p 2.63e-11p
 fm254s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000152n      0.0       0.0       0.0
zp 29.31 ri      0.0  4.35e-10p 2.65e-07p 1.43e-05p 7.98e-05p 4.31e-05p 1.01e-05p 4.05e-06p 1.49e-08p 1.49e-08p 1.87e-11p
sig0.619 cc      0.0  4.35e-10p 2.65e-07p 1.46e-05p 9.44e-05p 4.31e-05p 0.000104p 0.000152p 1.49e-08p 2.99e-08p 1.87e-11p
         rc      0.0  4.35e-10p 2.65e-07p 1.46e-05p 9.44e-05p 4.31e-05p 0.000104p 0.000152n 1.49e-08p 2.99e-08p 1.87e-11p
 fm255t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000578n      0.0       0.0       0.0
zp 29.07 ri      0.0  6.38e-10p 1.11e-06p 8.39e-05p 0.000369p 9.81e-05p 2.30e-05p 2.43e-06p 1.09e-09p 1.09e-09p       0.0
sig0.543 cc      0.0  6.38e-10p 1.11e-06p 8.50e-05p 0.000454p 9.81e-05p 0.000477p 0.000578p 1.09e-09p 2.18e-09p       0.0
         rc      0.0  6.38e-10p 1.11e-06p 8.50e-05p 0.000454p 9.81e-05p 0.000477p 0.000578n 1.09e-09p 2.18e-09p       0.0
 fm256s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000525n      0.0       0.0       0.0
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zp 29.04 ri 3.02e-12p 1.10e-08p 3.39e-06p 9.68e-05p 0.000304p 9.42e-05p 2.21e-05p 4.95e-06p 9.94e-09p 9.94e-09p 6.75e-12p
sig0.621 cc 3.02e-12p 1.10e-08p 3.40e-06p 0.000100p 0.000404p 9.42e-05p 0.000426p 0.000525p 9.94e-09p 1.99e-08p 6.75e-12p
        rc 3.02e-12p 1.10e-08p 3.40e-06p 0.000100p 0.000404p 9.42e-05p 0.000426p 0.000525n 9.94e-09p 1.99e-08p 6.75e-12p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.019998n      0.0       0.0       0.0
zp 28.72 ri 7.04e-10p 2.04e-06p 0.000412p 0.006748p 0.010941p 0.001661p 0.000205p 2.81e-05p 1.56e-08p 1.56e-08p 2.32e-12p
sig0.597 cc 7.04e-10p 2.04e-06p 0.000414p 0.007162p 0.018103p 0.001661p 0.018309p 0.019998p 1.56e-08p 3.11e-08p 2.32e-12p
        rc 7.04e-10p 2.04e-06p 0.000414p 0.007162p 0.018103p 0.001661p 0.018309o 0.019998n 1.56e-08p 3.11e-08p 2.32e-12p
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.034977n      0.0       0.0       0.0
zp 29.07 ri 1.40e-11p 2.12e-07p 0.000109p 0.006603p 0.018828p 0.007464p 0.001751p 0.000220p 3.16e-07p 3.16e-07p 6.23e-11p
sig0.583 cc 1.40e-11p 2.12e-07p 0.000109p 0.006713p 0.025541p 0.007464p 0.027295p 0.034977p 3.16e-07p 6.33e-07p 6.23e-11p
        rc 1.40e-11p 2.12e-07p 0.000109p 0.006713p 0.025541p 0.007464p 0.027295p 0.034977n 3.16e-07p 6.33e-07p 6.23e-11p
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.45e-08n      0.0       0.0       0.0
zp 28.29 ri      0.0  4.19e-12p 1.25e-09p 1.58e-08p 7.22e-09p 1.53e-10p 3.59e-11p      0.0       0.0       0.0       0.0
sig0.497 cc      0.0  4.19e-12p 1.25e-09p 1.71e-08p 2.43e-08p 1.53e-10p 2.43e-08p 2.45e-08p      0.0       0.0       0.0
        rc      0.0  4.19e-12p 1.25e-09p 1.71e-08p 2.43e-08p 1.53e-10p 2.43e-08o 2.45e-08n      0.0       0.0       0.0

  cu, zn half lives from 89wal1.
1

    mass number     72              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g   33 as g   34 se g
half life              0.124s    3.83 s     6.6 s    46.5 h    14.10h    stable    26.0 h    8.40 d
lambda           0.0 5.590e+00 1.810e-01 1.050e-01 4.141e-06 1.366e-05       0.0 7.405e-06 9.551e-07
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.007861n      0.0       0.0
zp 29.41 ri 1.83e-09p 3.42e-06p 0.000466p 0.003771p 0.003397p 0.000222p 1.23e-06p 3.26e-10p       0.0
sig0.577 cc 1.83e-09p 3.42e-06p 0.000470p 0.004241p 0.007638p 0.007860p 0.007861p 3.26e-10p       0.0
        rc 1.83e-09p 3.42e-06p 0.000470p 0.004241p 0.007638p 0.007860o 0.007861n 3.26e-10p       0.0
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000657n      0.0       0.0
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zp 29.38 ri 7.05e-11p 1.66e-07p 4.53e-05p 0.000275p 0.000325p 1.09e-05p 4.93e-08p 3.84e-12p       0.0
sig0.551 cc 7.05e-11p 1.66e-07p 4.55e-05p 0.000321p 0.000646p 0.000657p 0.000657p 3.84e-12p       0.0
         rc 7.05e-11p 1.66e-07p 4.55e-05p 0.000321p 0.000646p 0.000657o 0.000657n 3.84e-12p       0.0
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.002416n      0.0       0.0
zp 28.96 ri 2.66e-08p 1.43e-05p 0.000506p 0.001476p 0.000410p 9.23e-06p 1.34e-08p 1.11e-12p       0.0
sig0.579 cc 2.66e-08p 1.43e-05p 0.000520p 0.001996p 0.002407p 0.002416p 0.002416p 1.11e-12p       0.0
         rc 2.66e-08p 1.43e-05p 0.000520p 0.001996p 0.002407o 0.002416o 0.002416n 1.11e-12p       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001847n      0.0       0.0
zp 29.44 ri 2.58e-09p 1.85e-06p 0.000123p 0.000873p 0.000766p 8.20e-05p 9.19e-07p 9.46e-10p       0.0
sig0.627 cc 2.58e-09p 1.85e-06p 0.000125p 0.000998p 0.001764p 0.001846p 0.001847p 9.46e-10p       0.0
         rc 2.58e-09p 1.85e-06p 0.000125p 0.000998p 0.001764p 0.001846o 0.001847n 9.46e-10p       0.0
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000202n      0.0       0.0
zp 29.70 ri 2.42e-11p 3.89e-08p 5.33e-06p 7.05e-05p 0.000107p 1.93e-05p 3.61e-07p 5.97e-10p       0.0
sig0.619 cc 2.42e-11p 3.89e-08p 5.36e-06p 7.58e-05p 0.000182p 0.000202p 0.000202p 5.97e-10p       0.0
         rc 2.42e-11p 3.89e-08p 5.36e-06p 7.58e-05p 0.000182p 0.000202o 0.000202n 5.97e-10p       0.0
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000746n      0.0       0.0
zp 29.45 ri 2.06e-11p 1.23e-07p 2.98e-05p 0.000371p 0.000325p 1.97e-05p 5.90e-08p 7.12e-12p       0.0
sig0.543 cc 2.06e-11p 1.23e-07p 2.99e-05p 0.000401p 0.000726p 0.000746p 0.000746p 7.12e-12p       0.0
         rc 2.06e-11p 1.23e-07p 2.99e-05p 0.000401p 0.000726p 0.000746o 0.000746n 7.12e-12p       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000707n      0.0       0.0
zp 29.42 ri 8.83e-10p 6.89e-07p 4.78e-05p 0.000340p 0.000289p 2.90e-05p 2.90e-07p 2.54e-10p       0.0
sig0.621 cc 8.83e-10p 6.90e-07p 4.84e-05p 0.000388p 0.000678p 0.000707p 0.000707p 2.54e-10p       0.0
         rc 8.83e-10p 6.90e-07p 4.84e-05p 0.000388p 0.000678p 0.000707o 0.000707n 2.54e-10p       0.0
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.024998n      0.0       0.0
zp 29.10 ri 1.69e-07p 9.30e-05p 0.003872p 0.014790p 0.006008p 0.000233p 7.08e-07p 1.48e-10p       0.0
sig0.597 cc 1.69e-07p 9.32e-05p 0.003965p 0.018755p 0.024763p 0.024997p 0.024998p 1.48e-10p       0.0
         rc 1.69e-07p 9.32e-05p 0.003965p 0.018755p 0.024763o 0.024997o 0.024998n 1.48e-10p       0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.046969n      0.0       0.0
zp 29.48 ri 9.20e-09p 1.21e-05p 0.002681p 0.016727p 0.026102p 0.001429p 1.55e-05p 3.96e-09p       0.0
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sig0.583 cc 9.20e-09p 1.21e-05p 0.002693p 0.019421p 0.045523p 0.046952p 0.046967p 3.96e-09p       0.0
         rc 9.20e-09p 1.21e-05p 0.002693p 0.019421p 0.045523p 0.046952o 0.046967n 3.96e-09p       0.0
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  8.13e-08n      0.0       0.0
zp 28.66 ri      0.0  7.55e-10p 3.26e-08p 4.39e-08p 3.98e-09p 7.84e-12p       0.0       0.0       0.0
sig0.497 cc      0.0  7.55e-10p 3.34e-08p 7.73e-08p 8.13e-08p 8.13e-08p 8.13e-08p       0.0       0.0
         rc      0.0  7.55e-10p 3.34e-08p 7.73e-08p 8.13e-08o 8.13e-08o 8.13e-08n       0.0       0.0

  co, ni half lives from 80eng2; cu, zn, ga half lives from 89wal1; as, se half lives 90bur1.

1

    mass number     73              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge m   32 ge g   33 as g   34 se m   34 se g
half life              0.129s    0.491s     3.9 s     24. s    4.87 h    0.53 s    stable    80.30d    39.8 m    7.15 h
lambda            0.0 5.373e+00 1.412e+00 1.777e-01 2.888e-02 3.954e-05 1.308e+00       0.0 9.991e-08 2.903e-04 2.693e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000 -100.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.009877n      0.0       0.0       0.0
zp 29.80 ri 5.28e-11p 3.04e-07p 0.000122p 0.002674p 0.006025p 0.001038p 3.17e-06p 1.35e-05p 1.36e-08p       0.0       0.0
sig0.577 cc 5.28e-11p 3.04e-07p 0.000123p 0.002797p 0.008822p 0.009861p 0.009864p 0.009877p 1.36e-08p       0.0       0.0
         rc 5.28e-11p 3.04e-07p 0.000123p 0.002797p 0.008822p 0.009861o 0.009864n 0.009877m 1.36e-08p       0.0       0.0
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000997n      0.0       0.0       0.0
zp 29.76 ri 1.78e-12p 1.72e-08p 1.21e-05p 0.000259p 0.000650p 7.51e-05p 1.65e-07p 7.05e-07p 2.77e-10p       0.0       0.0
sig0.551 cc 1.78e-12p 1.72e-08p 1.21e-05p 0.000272p 0.000921p 0.000996p 0.000996p 0.000997p 2.77e-10p       0.0       0.0
         rc 1.78e-12p 1.72e-08p 1.21e-05p 0.000272p 0.000921p 0.000996p 0.000996n 0.000997m 2.77e-10p       0.0       0.0
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.003208n      0.0       0.0       0.0
zp 29.35 ri 1.41e-09p 2.28e-06p 0.000228p 0.001710p 0.001194p 7.38e-05p 6.05e-08p 2.58e-07p 8.14e-11p       0.0       0.0
sig0.579 cc 1.41e-09p 2.29e-06p 0.000231p 0.001940p 0.003134p 0.003208p 0.003208p 0.003208p 8.14e-11p       0.0       0.0
         rc 1.41e-09p 2.29e-06p 0.000231p 0.001940p 0.003134p 0.003208o 0.003208n 0.003208m 8.14e-11p       0.0       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.002342n      0.0       0.0       0.0
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zp 29.82 ri 1.42e-10p 2.56e-07p 4.15e-05p 0.000676p 0.001301p 0.000314p 1.61e-06p 6.86e-06p 2.18e-08p       0.0  3.99e-12p
sig0.627 cc 1.42e-10p 2.57e-07p 4.18e-05p 0.000718p 0.002019p 0.002334p 0.002335p 0.002342p 2.18e-08p       0.0  3.99e-12p
         rc 1.42e-10p 2.57e-07p 4.18e-05p 0.000718p 0.002019p 0.002334o 0.002335n 0.002342m 2.18e-08p       0.0  3.99e-12p
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000282n      0.0       0.0       0.0
zp 30.08 ri 1.05e-12p 4.40e-09p 1.52e-06p 4.80e-05p 0.000163p 6.67e-05p 5.73e-07p 2.44e-06p 1.27e-08p       0.0  3.63e-12p
sig0.619 cc 1.05e-12p 4.41e-09p 1.53e-06p 4.95e-05p 0.000212p 0.000279p 0.000280p 0.000282p 1.27e-08p       0.0  3.63e-12p
         rc 1.05e-12p 4.41e-09p 1.53e-06p 4.95e-05p 0.000212p 0.000279o 0.000280n 0.000282m 1.27e-08p       0.0  3.63e-12p
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000952n      0.0       0.0       0.0
zp 29.83 ri      0.0  8.45e-09p 6.81e-06p 0.000252p 0.000590p 0.000102p 1.89e-07p 8.04e-07p 4.12e-10p       0.0       0.0
sig0.543 cc      0.0  8.45e-09p 6.82e-06p 0.000259p 0.000849p 0.000951p 0.000951p 0.000952p 4.12e-10p       0.0       0.0
         rc      0.0  8.45e-09p 6.82e-06p 0.000259p 0.000849p 0.000951p 0.000951n 0.000952m 4.12e-10p       0.0       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001007n      0.0       0.0       0.0
zp 29.80 ri 5.21e-11p 1.04e-07p 1.79e-05p 0.000297p 0.000560p 0.000129p 5.98e-07p 2.55e-06p 7.04e-09p       0.0  1.06e-12p
sig0.621 cc 5.21e-11p 1.05e-07p 1.80e-05p 0.000315p 0.000875p 0.001004p 0.001004p 0.001007p 7.04e-09p       0.0  1.06e-12p
         rc 5.21e-11p 1.05e-07p 1.80e-05p 0.000315p 0.000875p 0.001004o 0.001004n 0.001007m 7.04e-09p       0.0  1.06e-12p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.032998n      0.0       0.0       0.0
zp 29.48 ri 1.01e-08p 1.53e-05p 0.001662p 0.015330p 0.014562p 0.001415p 1.27e-06p 1.03e-05p 6.73e-09p       0.0       0.0
sig0.597 cc 1.01e-08p 1.53e-05p 0.001677p 0.017007p 0.031570p 0.032985p 0.032986p 0.032997p 6.73e-09p       0.0       0.0
         rc 1.01e-08p 1.53e-05p 0.001677p 0.017007p 0.031570p 0.032985o 0.032986n 0.032997m 6.73e-09p       0.0       0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.067968n      0.0       0.0       0.0
zp 29.88 ri 2.48e-10p 1.25e-06p 0.000669p 0.014053p 0.045027p 0.008007p 3.89e-05p 0.000166p 1.98e-07p 3.78e-12p 1.61e-11p
sig0.583 cc 2.48e-10p 1.25e-06p 0.000670p 0.014723p 0.059750p 0.067757p 0.067796p 0.067962p 1.98e-07p 3.78e-12p 1.61e-11p
         rc 2.48e-10p 1.25e-06p 0.000670p 0.014723p 0.059750p 0.067757p 0.067796n 0.067962m 1.98e-07p 3.78e-12p 1.61e-11p
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.55e-07n      0.0       0.0       0.0
zp 29.04 ri      0.0  2.40e-10p 3.95e-08p 1.66e-07p 4.94e-08p 3.90e-10p      0.0       0.0       0.0       0.0       0.0
sig0.497 cc      0.0  2.40e-10p 3.97e-08p 2.05e-07p 2.55e-07p 2.55e-07p 2.55e-07p 2.55e-07p      0.0       0.0       0.0
         rc      0.0  2.40e-10p 3.97e-08p 2.05e-07p 2.55e-07p 2.55e-07o 2.55e-07n 2.55e-07m      0.0       0.0       0.0
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co, ni half lives from 80eng2; cu, zn, ga half lives from 89wal1; as half life 73bro1; se half life 90bur1.

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    mass number     74              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g   33 as m   33 as g   34 se g
half life              0.092s    0.900s    0.648s    1.60 m     8.1 m    stable    8.0  s    17.76d    stable
lambda            0.0 7.534e+00 7.702e-01 1.070e+00 7.220e-03 1.426e-03       0.0 8.664e-02 4.517e-07       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  -67.3000   32.7000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.012775n      0.0       0.0       0.0
zp 30.18 ri 1.14e-12p 1.98e-08p 2.34e-05p 0.001399p 0.007840p 0.003363p 0.000148p 2.48e-07p 1.06e-07p 5.90e-11p
sig0.577 cc 1.14e-12p 1.98e-08p 2.34e-05p 0.001423p 0.009263p 0.012626p 0.012775p 2.48e-07p 3.54e-07p 1.16e-07p
         rc 1.14e-12p 1.98e-08p 2.34e-05p 0.001423p 0.009263p 0.012626o 0.012775n 2.48e-07p 3.54e-07p 1.16e-07o
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001494n      0.0       0.0       0.0
zp 30.14 ri       0.0  8.90e-10p 2.51e-06p 0.000131p 0.001076p 0.000272p 1.18e-05p 6.98e-09p 2.99e-09p       0.0
sig0.551 cc       0.0  8.90e-10p 2.52e-06p 0.000134p 0.001210p 0.001482p 0.001494p 6.98e-09p 9.97e-09p 3.26e-09p
         rc       0.0  8.90e-10p 2.52e-06p 0.000134p 0.001210p 0.001482o 0.001494n 6.98e-09p 9.97e-09p 3.26e-09o
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.004392n      0.0       0.0       0.0
zp 29.74 ri 4.96e-11p 2.46e-07p 7.16e-05p 0.001429p 0.002481p 0.000406p 5.07e-06p 2.76e-09p 1.18e-09p       0.0
sig0.579 cc 4.96e-11p 2.46e-07p 7.18e-05p 0.001501p 0.003982p 0.004387p 0.004392p 2.76e-09p 3.95e-09p 1.29e-09p
         rc 4.96e-11p 2.46e-07p 7.18e-05p 0.001501p 0.003982p 0.004387o 0.004392n 2.76e-09p 3.95e-09p 1.29e-09o
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.003386n      0.0       0.0       0.0
zp 30.20 ri 6.25e-12p 2.86e-08p 1.15e-05p 0.000439p 0.001871p 0.001000p 6.33e-05p 2.82e-07p 1.21e-07p 2.31e-10p
sig0.627 cc 6.25e-12p 2.86e-08p 1.15e-05p 0.000451p 0.002322p 0.003322p 0.003386p 2.82e-07p 4.03e-07p 1.32e-07p
         rc 6.25e-12p 2.86e-08p 1.15e-05p 0.000451p 0.002322p 0.003322o 0.003386n 2.82e-07p 4.03e-07p 1.32e-07o
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000384n      0.0       0.0       0.0
zp 30.46 ri       0.0  3.39e-10p 3.00e-07p 2.31e-05p 0.000179p 0.000164p 1.75e-05p 1.29e-07p 5.54e-08p 1.68e-10p
sig0.619 cc       0.0  3.39e-10p 3.01e-07p 2.34e-05p 0.000203p 0.000366p 0.000384p 1.29e-07p 1.85e-07p 6.05e-08p
         rc       0.0  3.39e-10p 3.01e-07p 2.34e-05p 0.000203p 0.000366o 0.000384n 1.29e-07p 1.85e-07p 6.05e-08o
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001305n      0.0       0.0       0.0
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zp 30.21 ri       0.0  3.91e-10p 1.07e-06p 0.000124p 0.000794p 0.000375p 1.14e-05p 1.12e-08p 4.78e-09p       0.0
sig0.543 cc       0.0  3.91e-10p 1.07e-06p 0.000125p 0.000918p 0.001294p 0.001305p 1.12e-08p 1.59e-08p 5.22e-09p
         rc       0.0  3.91e-10p 1.07e-06p 0.000125p 0.000918p 0.001294o 0.001305n 1.12e-08p 1.59e-08p 5.22e-09o
 fm256s  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.001313n      0.0       0.0       0.0
zp 30.18 ri 1.96e-12p 1.02e-08p 4.39e-06p 0.000174p 0.000735p 0.000378p 2.21e-05p 8.72e-08p 3.74e-08p 6.01e-11p
sig0.621 cc 1.96e-12p 1.02e-08p 4.40e-06p 0.000178p 0.000913p 0.001291p 0.001313p 8.72e-08p 1.25e-07p 4.08e-08p
         rc 1.96e-12p 1.02e-08p 4.40e-06p 0.000178p 0.000913p 0.001291o 0.001313n 8.72e-08p 1.25e-07p 4.08e-08o
 np237h  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.042997n      0.0       0.0       0.0
zp 29.86 ri 4.00e-10p 1.69e-06p 0.000493p 0.011326p 0.025129p 0.005919p 0.000127p 1.67e-07p 3.67e-08p 2.22e-11p
sig0.597 cc 4.00e-10p 1.69e-06p 0.000494p 0.011820p 0.036950p 0.042869p 0.042996p 1.67e-07p 2.04e-07p 6.67e-08p
         rc 4.00e-10p 1.69e-06p 0.000494p 0.011820p 0.036950p 0.042869o 0.042996n 1.67e-07p 2.04e-07p 6.67e-08p
 u232t   xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.089941n      0.0       0.0       0.0
zp 30.28 ri 4.71e-12p 6.04e-08p 0.000121p 0.005875p 0.059881p 0.022105p 0.001953p 3.24e-06p 1.39e-06p 1.79e-09p
sig0.583 cc 4.71e-12p 6.04e-08p 0.000121p 0.005996p 0.065877p 0.087982p 0.089938p 3.24e-06p 4.62e-06p 1.51e-06p
         rc 4.71e-12p 6.04e-08p 0.000121p 0.005996p 0.065877p 0.087982o 0.089938n 3.24e-06p 4.62e-06p 1.51e-06o
 u238s   xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  8.13e-07n      0.0       0.0       0.0
zp 29.42 ri       0.0  4.31e-11p 2.87e-08p 4.03e-07p 3.71e-07p 1.10e-08p 1.21e-11p       0.0       0.0       0.0
sig0.497 cc       0.0  4.31e-11p 2.88e-08p 4.32e-07p 8.02e-07p 8.13e-07p 8.13e-07p       0.0       0.0       0.0
         rc       0.0  4.31e-11p 2.88e-08p 4.32e-07p 8.02e-07p 8.13e-07o 8.13e-07n       0.0       0.0       0.0

  co, ni, cu half lives 80eng2; zn, ga half lives 89wal1.
1

    mass number     75              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge m   32 ge g   33 as g   34 se g   35 br g
half life     0.082s    0.231s     1.3 s    10.2 s    2.10 m    48.9 s    1.380h    stable    119.8d     97. m
lambda      8.453e+00 3.001e+00 5.332e-01 6.796e-02 5.501e-03 1.417e-02 1.395e-04       0.0 6.697e-08 1.191e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000    4.0000   96.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 cf250s  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.016705n      0.0       0.0
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zp 30.56 ri 8.73e-10p 3.06e-06p 0.000517p 0.007454p 0.007815p 0.000791p 0.000118p 6.23e-06p 3.11e-09p 0.0
sig0.577 cc 8.73e-10p 3.07e-06p 0.000520p 0.007975p 0.015790p 0.001423p 0.016699p 0.016705p 3.11e-09p 0.0
rc 8.73e-10p 3.07e-06p 0.000520p 0.007975p 0.015790p 0.001423p 0.016699o 0.016705n 3.11e-09p 0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.002569n 0.0 0.0
zp 30.53 ri 4.22e-11p 3.32e-07p 6.86e-05p 0.001303p 0.001083p 9.88e-05p 1.48e-05p 3.91e-07p 1.02e-10p 0.0
sig0.551 cc 4.22e-11p 3.32e-07p 6.89e-05p 0.001372p 0.002455p 0.000197p 0.002569p 0.002569p 1.02e-10p 0.0
rc 4.22e-11p 3.32e-07p 6.89e-05p 0.001372p 0.002455p 0.000197p 0.002569o 0.002569n 1.02e-10p 0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.005930n 0.0 0.0
zp 30.14 ri 1.56e-08p 1.39e-05p 0.000792p 0.003554p 0.001516p 4.75e-05p 7.10e-06p 1.31e-07p 1.84e-11p 0.0
sig0.579 cc 1.56e-08p 1.39e-05p 0.000806p 0.004359p 0.005875p 0.000283p 0.005930p 0.005930p 1.84e-11p 0.0
rc 1.56e-08p 1.39e-05p 0.000806p 0.004359p 0.005875o 0.000283o 0.005930o 0.005930n 1.84e-11p 0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.004617n 0.0 0.0
zp 30.58 ri 2.12e-09p 2.13e-06p 0.000196p 0.001885p 0.002208p 0.000278p 4.16e-05p 4.96e-06p 7.17e-09p 0.0
sig0.627 cc 2.12e-09p 2.13e-06p 0.000198p 0.002083p 0.004292p 0.000450p 0.004612p 0.004617p 7.18e-09p 0.0
rc 2.12e-09p 2.13e-06p 0.000198p 0.002083p 0.004292p 0.000450p 0.004612o 0.004617n 7.18e-09p 0.0
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000505n 0.0 0.0
zp 30.85 ri 1.61e-11p 3.77e-08p 7.42e-06p 0.000138p 0.000286p 6.24e-05p 9.32e-06p 1.91e-06p 4.57e-09p 0.0
sig0.619 cc 1.61e-11p 3.77e-08p 7.46e-06p 0.000145p 0.000432p 7.96e-05p 0.000503p 0.000505p 4.57e-09p 0.0
rc 1.61e-11p 3.77e-08p 7.46e-06p 0.000145p 0.000432p 7.96e-05p 0.000503o 0.000505n 4.57e-09p 0.0
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.001585n 0.0 0.0
zp 30.59 ri 9.98e-12p 9.39e-08p 3.54e-05p 0.000653p 0.000822p 6.41e-05p 9.58e-06p 3.42e-07p 6.52e-11p 0.0
sig0.543 cc 9.98e-12p 9.39e-08p 3.55e-05p 0.000689p 0.001511p 0.000125p 0.001584p 0.001585p 6.52e-11p 0.0
rc 9.98e-12p 9.39e-08p 3.55e-05p 0.000689p 0.001511p 0.000125p 0.001584o 0.001585n 6.52e-11p 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.001818n 0.0 0.0
zp 30.56 ri 7.33e-10p 8.09e-07p 7.81e-05p 0.000756p 0.000863p 0.000102p 1.53e-05p 1.64e-06p 2.03e-09p 0.0
sig0.621 cc 7.33e-10p 8.09e-07p 7.89e-05p 0.000835p 0.001698p 0.000170p 0.001816p 0.001818p 2.03e-09p 0.0
rc 7.33e-10p 8.09e-07p 7.89e-05p 0.000835p 0.001698p 0.000170p 0.001816o 0.001818n 2.03e-09p 0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.052996n 0.0 0.0
zp 30.24 ri 1.20e-07p 9.56e-05p 0.005653p 0.029776p 0.016562p 0.000833p 7.24e-05p 3.96e-06p 1.21e-09p 0.0

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sig0.597 cc 1.20e-07p 9.57e-05p 0.005748p 0.035524p 0.052086p 0.002916p 0.052991p 0.052995p 1.21e-09p       0.0
         rc 1.20e-07p 9.57e-05p 0.005748p 0.035524p 0.052086p 0.002916o 0.052991o 0.052995n 1.21e-09p       0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.129915n      0.0       0.0
zp 30.68 ri 2.75e-09p 1.38e-05p 0.002423p 0.053817p 0.061641p 0.010365p 0.001549p 0.000102p 9.92e-08p 3.21e-12p
sig0.583 cc 2.75e-09p 1.38e-05p 0.002437p 0.056254p 0.117895p 0.015080p 0.129809p 0.129911p 9.92e-08p 3.21e-12p
         rc 2.75e-09p 1.38e-05p 0.002437p 0.056254p 0.117895p 0.015080p 0.129809o 0.129911n 9.92e-08p 3.21e-12p
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.45e-06n      0.0       0.0
zp 29.79 ri 4.59e-12p 1.24e-08p 6.10e-07p 1.66e-06p 1.66e-07p 6.32e-10p 9.45e-11p       0.0       0.0       0.0
sig0.497 cc 4.59e-12p 1.24e-08p 6.22e-07p 2.28e-06p 2.45e-06p 9.85e-08p 2.45e-06p 2.45e-06p       0.0       0.0
         rc 4.59e-12p 1.24e-08p 6.22e-07p 2.28e-06p 2.45e-06p 9.85e-08o 2.45e-06o 2.45e-06n       0.0       0.0

  co, ni half lives 80eng2; cu, zn, ga, ge half lives 89wal1; se, br half lives 90bur1.

1

    mass number     76              LA-UR-94-3106 (ENDF-349)                                percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g   33 as g   34 se g
half life                     0.305s     0.6 s     5.7 s     29. s    stable    26.3 h    stable
lambda            0.0       0.0 2.273e+00 1.155e+00 1.216e-01 2.390e-02       0.0 7.321e-06       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.019653n      0.0       0.0
zp 30.94 ri       0.0  2.27e-11p 2.40e-07p 0.000117p 0.004509p 0.011598p 0.003428p 6.57e-05p 9.73e-08p
sig0.577 cc       0.0  2.27e-11p 2.40e-07p 0.000117p 0.004627p 0.016225p 0.019653p 6.57e-05p 6.58e-05p
         rc       0.0  2.27e-11p 2.40e-07p 0.000117p 0.004627p 0.016225p 0.019653n 6.57e-05p 6.58e-05p
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.003983n      0.0       0.0
zp 30.91 ri       0.0       0.0  3.17e-08p 1.71e-05p 0.001167p 0.002064p 0.000734p 6.39e-06p 6.76e-09p
sig0.551 cc       0.0       0.0  3.17e-08p 1.71e-05p 0.001185p 0.003249p 0.003983p 6.39e-06p 6.40e-06p
         rc       0.0       0.0  3.17e-08p 1.71e-05p 0.001185p 0.003249p 0.003983n 6.39e-06p 6.40e-06p
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.007687n      0.0       0.0
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zp 30.54 ri 0.0 5.99e-10p 1.67e-06p 0.000281p 0.003371p 0.003668p 0.000366p 2.66e-06p 1.17e-09p
sig0.579 cc 0.0 5.99e-10p 1.67e-06p 0.000282p 0.003653p 0.007321p 0.007687p 2.66e-06p 2.66e-06p
rc 0.0 5.99e-10p 1.67e-06p 0.000282p 0.003653p 0.007321o 0.007687n 2.66e-06p 2.66e-06p
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.006156n 0.0 0.0
zp 30.96 ri 0.0 1.08e-10p 2.75e-07p 6.21e-05p 0.001383p 0.003557p 0.001154p 4.27e-05p 1.54e-07p
sig0.627 cc 0.0 1.08e-10p 2.75e-07p 6.24e-05p 0.001445p 0.005002p 0.006156p 4.27e-05p 4.28e-05p
rc 0.0 1.08e-10p 2.75e-07p 6.24e-05p 0.001445p 0.005002p 0.006156n 4.27e-05p 4.28e-05p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000707n 0.0 0.0
zp 31.23 ri 0.0 0.0 3.79e-09p 1.89e-06p 8.48e-05p 0.000397p 0.000224p 1.42e-05p 8.64e-08p
sig0.619 cc 0.0 0.0 3.79e-09p 1.90e-06p 8.66e-05p 0.000484p 0.000707p 1.42e-05p 1.43e-05p
rc 0.0 0.0 3.79e-09p 1.90e-06p 8.66e-05p 0.000484p 0.000707n 1.42e-05p 1.43e-05p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.002144n 0.0 0.0
zp 30.97 ri 0.0 0.0 5.78e-09p 7.29e-06p 0.000409p 0.001380p 0.000348p 5.16e-06p 3.36e-09p
sig0.543 cc 0.0 0.0 5.78e-09p 7.30e-06p 0.000416p 0.001796p 0.002144p 5.16e-06p 5.16e-06p
rc 0.0 0.0 5.78e-09p 7.30e-06p 0.000416p 0.001796p 0.002144n 5.16e-06p 5.16e-06p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.002524n 0.0 0.0
zp 30.94 ri 0.0 3.71e-11p 1.06e-07p 2.54e-05p 0.000578p 0.001467p 0.000454p 1.54e-05p 4.84e-08p
sig0.621 cc 0.0 3.72e-11p 1.06e-07p 2.55e-05p 0.000604p 0.002070p 0.002524p 1.54e-05p 1.54e-05p
rc 0.0 3.72e-11p 1.06e-07p 2.55e-05p 0.000604p 0.002070p 0.002524n 1.54e-05p 1.54e-05p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.069994n 0.0 0.0
zp 30.63 ri 0.0 5.65e-09p 1.28e-05p 0.002054p 0.027061p 0.035898p 0.004967p 5.94e-05p 5.18e-08p
sig0.597 cc 0.0 5.65e-09p 1.28e-05p 0.002067p 0.029128p 0.065027p 0.069993p 5.94e-05p 5.95e-05p
rc 0.0 5.65e-09p 1.28e-05p 0.002067p 0.029128p 0.065027o 0.069993n 5.94e-05p 5.95e-05p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.169888n 0.0 0.0
zp 31.09 ri 0.0 4.97e-11p 9.85e-07p 0.000436p 0.034146p 0.082943p 0.052363p 0.001070p 4.00e-06p
sig0.583 cc 0.0 4.97e-11p 9.85e-07p 0.000437p 0.034582p 0.117525p 0.169888p 0.001070p 0.001074p
rc 0.0 4.97e-11p 9.85e-07p 0.000437p 0.034582p 0.117525p 0.169888n 0.001070p 0.001074p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 8.13e-06n 0.0 0.0
zp 30.17 ri 0.0 0.0 3.40e-09p 6.52e-07p 5.64e-06p 1.80e-06p 3.11e-08p 9.63e-12p 0.0

sig0.497 cc 0.0 0.0 3.40e-09p 6.56e-07p 6.30e-06p 8.10e-06p 8.13e-06p 9.63e-12p 9.63e-12p
rc 0.0 0.0 3.40e-09p 6.56e-07p 6.30e-06p 8.10e-06o 8.13e-06n 9.63e-12p 9.63e-12p

ni half lives 80eng2; cu, zn, ga half lives 89wal1.
1

mass number 77 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 28 ni g 29 cu g 30 zn g 31 ga g 32 ge m 32 ge g 33 as g 34 se m 34 se g 35 br m 35 br g 36 kr g
half life 0.103s 0.305s 2.1 s 13.0 s 53. s 11.30h 38.8 h 17.45s stable 4.3 m 57.04h 74.4 m
lambda 6.730e+00 2.273e+00 3.301e-01 5.332e-02 1.308e-02 1.704e-05 4.962e-06 3.972e-02 0.0 2.687e-03 3.376e-06
1.553e-04
z - 1 g 100.0000 100.0000 100.0000 100.0000 88.0000 12.0000 100.0000 0.3000 99.7000 0.0 -99.0000 -80.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 79.0000 0.0 0.0 0.0 -1.0000 -20.0000
z - 0 m 0.0 0.0 0.0 0.0 0.0 21.0000 0.0 0.0 100.0000 0.0 100.0000 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.025549n 0.0 0.0 0.0
zp 31.32 ri 1.34e-08p 1.93e-05p 0.002054p 0.013285p 0.001259p 0.008427p 0.000502p 1.88e-06p 2.81e-07p 3.41e-10p 1.02e-10p
0.0
sig0.577 cc 1.34e-08p 1.93e-05p 0.002074p 0.015359p 0.014775p 0.013373p 0.025547p 7.85e-05p 0.025549p 3.41e-10p 4.43e-10p
0.0
rc 1.34e-08p 1.93e-05p 0.002074p 0.015359p 0.014775p 0.013373p 0.025547o 7.85e-05o 0.025549n 3.41e-10p 4.43e-10p
0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.002493o 0.0 0.006979n 0.0 0.0 0.0
zp 31.30 ri 1.01e-09p 2.28e-06p 0.000398p 0.002401p 0.000245p 0.001641p 6.20e-05p 3.11e-07p 4.64e-08p 2.04e-11p 6.11e-12p
0.0
sig0.551 cc 1.01e-09p 2.28e-06p 0.000400p 0.002801p 0.002710p 0.002546p 0.004749p 1.44e-05p 0.004749p 1.02e-11p 1.33e-11p
0.0
rc 1.01e-09o 2.28e-06o 0.000400o 0.002801o 0.002710n 0.002546o 0.004749l 1.46e-05m 0.004749m 2.04e-11o 2.66e-11n
0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.010694n 0.0 0.0 0.0
zp 30.93 ri 1.48e-07p 7.33e-05p 0.002394p 0.006507p 0.000219p 0.001465p 3.50e-05p 4.06e-08p 6.06e-09p 2.74e-12p 0.0
0.0
sig0.579 cc 1.48e-07p 7.35e-05p 0.002468p 0.008975p 0.008117p 0.004247p 0.010694p 3.21e-05p 0.010694p 2.74e-12p 3.55e-12p
0.0

rc 1.48e-07p 7.35e-05p 0.002468p 0.008975p 0.008117p 0.004247o 0.010694n 3.21e-05n 0.010694m 2.74e-12p 3.55e-12p
0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.008147n 0.0 0.0 0.0
zp 31.34 ri 2.45e-08p 1.38e-05p 0.000727p 0.004169p 0.000387p 0.002591p 0.000256p 1.98e-06p 2.95e-07p 1.41e-09p 4.22e-10p
0.0
sig0.627 cc 2.45e-08p 1.38e-05p 0.000741p 0.004910p 0.004708p 0.004169p 0.008144p 2.64e-05p 0.008147p 1.41e-09p 1.83e-09p
0.0
rc 2.45e-08p 1.38e-05p 0.000741p 0.004910p 0.004708p 0.004169p 0.008144n 2.64e-05n 0.008147m 1.41e-09p 1.83e-09p
0.0
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.001011n 0.0 0.0 0.0
zp 31.61 ri 2.60e-10p 3.34e-07p 3.69e-05p 0.000399p 6.49e-05p 0.000434p 7.42e-05p 9.75e-07p 1.46e-07p 1.14e-09p 3.42e-10p
0.0
sig0.619 cc 2.60e-10p 3.35e-07p 3.72e-05p 0.000436p 0.000449p 0.000581p 0.001010p 4.00e-06p 0.001011p 1.14e-09p 1.49e-09p
0.0
rc 2.60e-10p 3.35e-07p 3.72e-05p 0.000436p 0.000449p 0.000581p 0.001010o 4.00e-06o 0.001011n 1.14e-09p 1.49e-09p
0.0
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.002796n 0.0 0.0 0.0
zp 31.35 ri 2.13e-10p 9.18e-07p 0.000164p 0.001539p 0.000136p 0.000909p 4.75e-05p 9.04e-08p 1.35e-08p 6.96e-12p 2.08e-12p
0.0
sig0.543 cc 2.13e-10p 9.18e-07p 0.000164p 0.001704p 0.001635p 0.001457p 0.002796p 8.48e-06p 0.002796p 6.96e-12p 9.04e-12p
0.0
rc 2.13e-10p 9.18e-07p 0.000164p 0.001704p 0.001635p 0.001457p 0.002796o 8.48e-06o 0.002796n 6.96e-12p 9.04e-12p
0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.003424n 0.0 0.0 0.0
zp 31.32 ri 9.31e-09p 5.67e-06p 0.000311p 0.001779p 0.000160p 0.001069p 9.85e-05p 6.76e-07p 1.01e-07p 4.09e-10p 1.22e-10p
0.0
sig0.621 cc 9.31e-09p 5.68e-06p 0.000317p 0.002096p 0.002004p 0.001741p 0.003423p 1.09e-05p 0.003424p 4.09e-10p 5.31e-10p
0.0
rc 9.31e-09p 5.68e-06p 0.000317p 0.002096p 0.002004p 0.001741p 0.003423n 1.09e-05n 0.003424m 4.09e-10p 5.31e-10p
0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.094995n 0.0 0.0 0.0

zp 31.01 ri 1.27e-06p 0.000548p 0.018244p 0.056787p 0.001318p 0.017507p 0.000586p 1.29e-06p 1.12e-07p 1.97e-10p 3.21e-11p 0.0
sig0.597 cc 1.27e-06p 0.000550p 0.018794p 0.075581p 0.067829p 0.040821p 0.094991p 0.000286p 0.094992p 1.97e-10p 2.30e-10p 0.0
rc 1.27e-06p 0.000550p 0.018794p 0.075581p 0.067829p 0.040821o 0.094991n 0.000286n 0.094992m 1.97e-10p 2.30e-10p 0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.249884n 0.0 0.0 0.0
zp 31.50 ri 3.74e-08p 6.42e-05p 0.012160p 0.098098p 0.016932p 0.113315p 0.009220p 7.46e-05p 1.12e-05p 2.20e-08p 6.57e-09p 0.0
sig0.583 cc 3.74e-08p 6.42e-05p 0.012224p 0.110322p 0.114015p 0.150497p 0.249789p 0.000824p 0.249875p 2.20e-08p 2.86e-08p 0.0
rc 3.74e-08p 6.42e-05p 0.012224p 0.110322p 0.114015p 0.150497p 0.249789n 0.000824n 0.249875m 2.20e-08p 2.86e-08p 0.0
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.55e-05n 0.0 0.0 0.0
zp 30.54 ri 5.72e-10p 4.34e-07p 1.25e-05p 1.19e-05p 9.42e-08p 6.30e-07p 9.12e-10p 0.0 0.0 0.0 0.0 0.0
sig0.497 cc 5.72e-10p 4.35e-07p 1.29e-05p 2.48e-05p 2.19e-05p 8.21e-06p 2.55e-05p 7.65e-08p 2.55e-05p 0.0 0.0 0.0
rc 5.72e-10p 4.35e-07p 1.29e-05p 2.48e-05p 2.19e-05o 8.21e-06n 2.55e-05n 7.65e-08n 2.55e-05m 0.0 0.0 0.0

ni, cu half lives from 80eng2; zn, ga, ge, as half lives from 89wal1; kr, br, se half lives 90bur1.

1

mass number 78 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 28 ni g 29 cu g 30 zn g 31 ga d 31 ga g 32 ge d 32 ge g 33 as g 34 se g 35 br g 36 kr g
half life 0.132s 0.118s 1.5 s 0.313s 5.09 s 3.0 s 1.45 h 1.512h stable 6.4 m stable
lambda 5.251e+00 5.874e+00 4.621e-01 2.215e+00 1.362e-01 2.310e-01 1.328e-04 1.273e-04 0.0 1.805e-03 0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 100.0000 0.0 100.0000 100.0000 100.0000 -100.0000 0.0
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 1.1460 100.0000 0.0890 100.0000 0.0 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.032428n 0.0 0.0
zp 31.70 ri 4.76e-10p 2.05e-06p 0.000624p 0.0 0.010520p 0.0 0.018721p 0.002524p 3.10e-05p 1.89e-08p 0.0
sig0.577 cc 4.76e-10p 2.05e-06p 0.000626p 0.0 0.011145p 0.0 0.029866p 0.032390p 0.032421p 1.89e-08p 0.0
rc 4.76e-10p 2.05e-06p 0.000626p 1.52e-06o 0.011147p 5.52e-06o 0.029873p 0.032397o 0.032428n 1.89e-08p 0.0

```
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.009958n      0.0       0.0
zp 31.70 ri 3.68e-11p 2.39e-07p 0.000172p      0.0  0.002535p      0.0  0.006705p 0.000537p 6.40e-06p 1.37e-09p      0.0
sig0.551 cc 3.68e-11p 2.39e-07p 0.000173p      0.0  0.002707p      0.0  0.009412p 0.009949p 0.009956p 1.37e-09p      0.0
         rc 3.68e-11p 2.39e-07p 0.000173p 3.88e-07o 0.002708p 1.75e-06o 0.009415p 0.009951o 0.009958n 1.37e-09p      0.0
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.014275n      0.0       0.0
zp 31.33 ri 7.46e-09p 1.14e-05p 0.001083p      0.0  0.007722p      0.0  0.005146p 0.000302p 1.23e-06p 2.98e-10p      0.0
sig0.579 cc 7.46e-09p 1.14e-05p 0.001095p      0.0  0.008817p      0.0  0.013963p 0.014266p 0.014267p 2.98e-10p      0.0
         rc 7.46e-09p 1.14e-05p 0.001095p 3.65e-06o 0.008821p 5.77e-06o 0.013973p 0.014275o 0.014276n 2.98e-10p      0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.011285n      0.0       0.0
zp 31.72 ri 1.62e-09p 2.29e-06p 0.000292p      0.0  0.003821p      0.0  0.005974p 0.001168p 2.50e-05p 5.07e-08p 8.94e-12p
sig0.627 cc 1.62e-09p 2.29e-06p 0.000295p      0.0  0.004115p      0.0  0.010089p 0.011257p 0.011282p 5.07e-08p 8.94e-12p
         rc 1.62e-09p 2.29e-06p 0.000295p 9.57e-07o 0.004116p 2.33e-06o 0.010093p 0.011261o 0.011286n 5.07e-08p 8.94e-12p
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001516n      0.0       0.0
zp 31.99 ri 1.33e-11p 4.43e-08p 1.23e-05p      0.0  0.000315p      0.0  0.000880p 0.000298p 1.09e-05p 3.70e-08p 1.04e-11p
sig0.619 cc 1.33e-11p 4.43e-08p 1.23e-05p      0.0  0.000327p      0.0  0.001207p 0.001505p 0.001516p 3.70e-08p 1.04e-11p
         rc 1.33e-11p 4.43e-08p 1.23e-05p 3.22e-08o 0.000327p 1.62e-07o 0.001207p 0.001505o 0.001516n 3.70e-08p 1.04e-11p
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.003729n      0.0       0.0
zp 31.73 ri 5.02e-12p 7.47e-08p 4.38e-05p      0.0  0.001210p      0.0  0.002184p 0.000288p 2.06e-06p 6.19e-10p      0.0
sig0.543 cc 5.02e-12p 7.47e-08p 4.38e-05p      0.0  0.001254p      0.0  0.003438p 0.003726p 0.003728p 6.19e-10p      0.0
         rc 5.02e-12p 7.47e-08p 4.38e-05p 8.08e-08o 0.001254p 5.42e-07o 0.003438p 0.003727o 0.003729n 6.19e-10p      0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.004645n      0.0       0.0
zp 31.71 ri 5.28e-10p 8.45e-07p 0.000117p      0.0  0.001581p      0.0  0.002469p 0.000467p 9.27e-06p 1.66e-08p 2.47e-12p
sig0.621 cc 5.28e-10p 8.46e-07p 0.000118p      0.0  0.001698p      0.0  0.004168p 0.004634p 0.004644p 1.66e-08p 2.47e-12p
         rc 5.28e-10p 8.46e-07p 0.000118p 4.17e-07o 0.001699p 1.07e-06o 0.004169p 0.004636o 0.004645n 1.66e-08p 2.47e-12p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.119990n      0.0       0.0
zp 31.40 ri 7.26e-08p 8.87e-05p 0.007879p      0.0  0.060215p      0.0  0.047866p 0.003846p 2.55e-05p 1.20e-08p      0.0
sig0.597 cc 7.26e-08p 8.88e-05p 0.007968p      0.0  0.068183p      0.0  0.116050p 0.119896p 0.119921p 1.20e-08p      0.0
         rc 7.26e-08p 8.88e-05p 0.007968p 2.84e-05o 0.068212p 4.48e-05o 0.116123p 0.119969o 0.119994n 1.20e-08p      0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.349770n 0.0 0.0
zp 31.91 ri 9.98e-10p 4.45e-06p 0.003179p 0.0 0.058646p 0.0 0.248088p 0.038496p 0.001312p 1.12e-06p 1.51e-10p
sig0.583 cc 9.98e-10p 4.45e-06p 0.003183p 0.0 0.061827p 0.0 0.309920p 0.348414p 0.349727p 1.12e-06p 1.51e-10p
rc 9.98e-10p 4.45e-06p 0.003183p 5.18e-06o 0.061835p 2.79e-05o 0.309951p 0.348447o 0.349760n 1.12e-06p 1.51e-10p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 8.13e-05n 0.0 0.0
zp 30.92 ri 5.17e-11p 1.67e-07p 1.79e-05p 0.0 5.21e-05p 0.0 1.08e-05p 5.51e-08p 8.96e-12p 0.0 0.0
sig0.497 cc 5.17e-11p 1.67e-07p 1.81e-05p 0.0 7.01e-05p 0.0 8.09e-05p 8.09e-05p 8.09e-05p 0.0 0.0
rc 5.17e-11p 1.67e-07p 1.81e-05p 2.30e-07o 7.04e-05p 1.87e-07o 8.13e-05p 8.14e-05o 8.14e-05n 0.0 0.0

ni, cu half lives from 80eng2; zn, ga, ge, as half lives from 89wal1.

1

mass number 79 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 29 cu g 30 zn g 31 ga g 32 ge d 32 ge g 33 as g 34 se m 34 se g 35 br m 35 br g 36 kr g 37 rb g
half life 0.135s 1.0 s 2.85 s 1.66s 19.1s 9.0 m 3.89 m 6.5e4y 4.86 s stable 35.04h 22.9 m
lambda 5.134e+00 6.931e-01 2.432e-01 4.176e-01 3.629e-02 1.284e-03 2.970e-03 3.381e-13 1.426e-01 0.0 5.495e-06
5.045e-04
z - 1 g 100.0000 100.0000 98.8540 0.0 99.9110 100.0000 100.0000 0.0 0.0 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.8300 100.0000 0.0 0.0 100.0000 0.0 100.0000 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.042255n 0.0 0.0
zp 32.08 ri 1.50e-07p 0.000133p 0.006073p 0.0 0.026699p 0.009033p 3.98e-05p 0.000267p 4.25e-07p 1.27e-07p 6.88e-11p
0.0
sig0.577 cc 1.50e-07p 0.000133p 0.006204p 0.0 0.032897p 0.041930p 0.041970p 0.042237p 4.25e-07p 0.042237p 6.88e-11p
0.0
rc 1.50e-07p 0.000133p 0.006204p 1.88e-05o 0.032916p 0.041949p 0.041989o 0.042255o 4.25e-07p 0.042256n 6.88e-11p
0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.016928n 0.0 0.0
zp 32.10 ri 1.67e-08p 3.39e-05p 0.001935p 0.0 0.011604p 0.003250p 1.33e-05p 8.87e-05p 7.23e-08p 2.16e-08p 6.22e-12p
0.0
sig0.551 cc 1.67e-08p 3.39e-05p 0.001969p 0.0 0.013570p 0.016821p 0.016834p 0.016923p 7.23e-08p 0.016923p 6.22e-12p
0.0

rc 1.67e-08p 3.39e-05p 0.001969p 5.53e-06o 0.013576p 0.016826p 0.016840o 0.016928o 7.23e-08p 0.016928n 6.23e-12p
0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.018668n 0.0 0.0
zp 31.73 ri 1.12e-06p 0.000317p 0.006172p 0.0 0.010471p 0.001670p 2.64e-06p 1.77e-05p 1.18e-08p 3.54e-09p 0.0 0.0
sig0.579 cc 1.12e-06p 0.000318p 0.006487p 0.0 0.016951p 0.018622p 0.018624p 0.018642p 1.18e-08p 0.018642p 0.0
0.0
rc 1.12e-06p 0.000318p 0.006487p 2.84e-05o 0.016980p 0.018650o 0.018653o 0.018670o 1.18e-08p 0.018670n 0.0
0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.015389n 0.0 0.0
zp 32.10 ri 2.64e-07p 8.32e-05p 0.002540p 0.0 0.008759p 0.003806p 2.50e-05p 0.000168p 7.46e-07p 2.23e-07p 4.35e-10p
0.0
sig0.627 cc 2.64e-07p 8.35e-05p 0.002622p 0.0 0.011379p 0.015185p 0.015210p 0.015378p 7.46e-07p 0.015379p 4.35e-10p
0.0
rc 2.64e-07p 8.35e-05p 0.002622p 1.12e-05o 0.011391p 0.015196o 0.015221o 0.015389o 7.46e-07p 0.015390n 4.35e-10p
0.0
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.002325n 0.0 0.0
zp 32.38 ri 3.87e-09p 2.81e-06p 0.000179p 0.0 0.001163p 0.000898p 1.04e-05p 6.97e-05p 5.38e-07p 1.61e-07p 5.23e-10p
0.0
sig0.619 cc 3.87e-09p 2.81e-06p 0.000182p 0.0 0.001345p 0.002243p 0.002254p 0.002323p 5.38e-07p 0.002324p 5.23e-10p
0.0
rc 3.87e-09p 2.81e-06p 0.000182p 6.21e-07o 0.001346p 0.002244p 0.002254o 0.002324o 5.38e-07p 0.002325n 5.23e-10p
0.0
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.004661n 0.0 0.0
zp 32.11 ri 3.57e-09p 7.05e-06p 0.000602p 0.0 0.002951p 0.001075p 3.15e-06p 2.11e-05p 1.91e-08p 5.69e-09p 0.0 0.0
sig0.543 cc 3.57e-09p 7.05e-06p 0.000609p 0.0 0.003560p 0.004635p 0.004638p 0.004659p 1.91e-08p 0.004659p 0.0
0.0
rc 3.57e-09p 7.05e-06p 0.000609p 1.80e-06o 0.003562p 0.004637p 0.004640o 0.004661o 1.91e-08p 0.004661n 0.0 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.007069n 0.0 0.0
zp 32.09 ri 1.04e-07p 3.62e-05p 0.001163p 0.0 0.004057p 0.001727p 1.07e-05p 7.17e-05p 2.88e-07p 8.59e-08p 1.44e-10p
0.0

sig0.621 cc 1.04e-07p 3.63e-05p 0.001199p 0.0 0.005255p 0.006982p 0.006992p 0.007064p 2.88e-07p 0.007065p 1.44e-10p
0.0
rc 1.04e-07p 3.63e-05p 0.001199p 4.27e-06o 0.005259p 0.006986o 0.006997o 0.007068o 2.88e-07p 0.007069n 1.44e-10p
0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.159987n 0.0 0.0
zp 31.79 ri 1.02e-05p 0.002473p 0.047931p 0.0 0.090893p 0.018230p 2.29e-05p 0.000304p 3.76e-07p 6.12e-08p 3.94e-11p
0.0
sig0.597 cc 1.02e-05p 0.002483p 0.050385p 0.0 0.141233p 0.159463p 0.159486p 0.159790p 3.76e-07p 0.159791p 3.94e-11p
0.0
rc 1.02e-05p 0.002483p 0.050385p 0.000212o 0.141446p 0.159675o 0.159698o 0.160003o 3.76e-07p 0.160003n 3.94e-11p
0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.479777n 0.0 0.0
zp 32.33 ri 2.42e-07p 0.000452p 0.030913p 0.0 0.288913p 0.147397p 0.001560p 0.010441p 3.09e-05p 9.22e-06p 1.45e-08p
0.0
sig0.583 cc 2.42e-07p 0.000453p 0.031358p 0.0 0.320250p 0.467643p 0.469203p 0.479644p 3.09e-05p 0.479684p 1.45e-08p
0.0
rc 2.42e-07p 0.000453p 0.031360p 7.01e-05o 0.320316p 0.467713o 0.469273o 0.479714n 3.09e-05p 0.479754m 1.45e-08p
0.0
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000337n 0.0 0.0
zp 31.30 ri 4.70e-08p 2.00e-05p 0.000190p 0.0 0.000123p 2.42e-06p 2.21e-10p 1.48e-09p 0.0 0.0 0.0 0.0
sig0.497 cc 4.70e-08p 2.01e-05p 0.000210p 0.0 0.000333p 0.000335p 0.000335p 0.000335p 0.0 0.000335p 0.0 0.0
rc 4.70e-08p 2.01e-05p 0.000210p 2.13e-06o 0.000335p 0.000337o 0.000337o 0.000337n 0.0 0.000337m 0.0 0.0

cu half life 80eng2; zn, ga, ge, as, se half lives 89wal1; kr, rb half lives 90bur1.

1

mass number 80 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	28 ni g	29 cu g	30 zn g	31 ga g	32 ge d	32 ge g	33 as g	34 se g	35 br m	35 br g	36 kr g
half life	0.090s	0.55 s	1.68 s	1.23s	29.5 s	16.0 s	stable	4.42 h	17.68m	stable	
lambda	0.0	7.702e+00	1.260e+00	4.126e-01	5.635e-01	2.350e-02	4.332e-02	0.0	4.356e-05	6.534e-04	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	0.0	99.1700	100.0000	100.0000	0.0	0.0	100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

```
 z - 0 m        0.0       0.0       0.0       0.0   11.9000  100.0000       0.0       0.0       0.0  100.0000       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.050116n      0.0       0.0       0.0
zp 32.46 ri      0.0  6.65e-09p 1.75e-05p 0.002242p       0.0  0.025103p 0.020815p 0.001883p 7.35e-06p 2.45e-06p 3.67e-09p
sig0.577 cc      0.0  6.65e-09p 1.75e-05p 0.002260p       0.0  0.027344p 0.048159p 0.050042p 7.35e-06p 9.80e-06p 9.80e-06p
         rc      0.0  6.65e-09p 1.75e-05p 0.002260p 7.84e-05o 0.027422p 0.048237o 0.050121n 7.35e-06p 9.80e-06p 9.80e-06o
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.026886n      0.0       0.0       0.0
zp 32.52 ri      0.0  4.33e-10p 4.06e-06p 0.000662p       0.0  0.015047p 0.009914p 0.001244p 2.54e-06p 8.45e-07p 1.05e-09p
sig0.551 cc      0.0  4.33e-10p 4.06e-06p 0.000666p       0.0  0.015707p 0.025621p 0.026865p 2.54e-06p 3.38e-06p 3.38e-06p
         rc      0.0  4.33e-10p 4.06e-06p 0.000666p 2.15e-05o 0.015729p 0.025643o 0.026887n 2.54e-06p 3.38e-06p 3.38e-06o
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.025257n      0.0       0.0       0.0
zp 32.14 ri 4.20e-12p 6.60e-08p 5.90e-05p 0.003357p       0.0  0.015068p 0.006426p 0.000232p 4.18e-07p 1.39e-07p 7.78e-11p
sig0.579 cc 4.20e-12p 6.60e-08p 5.91e-05p 0.003416p       0.0  0.018456p 0.024882p 0.025114p 4.18e-07p 5.57e-07p 5.57e-07p
         rc 4.20e-12p 6.60e-08p 5.91e-05p 0.003416p 0.000154o 0.018610p 0.025036o 0.025268n 4.18e-07p 5.57e-07p 5.57e-07p
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.022571n      0.0       0.0       0.0
zp 32.48 ri 2.52e-12p 2.31e-08p 1.82e-05p 0.001325p       0.0  0.010263p 0.009783p 0.001142p 1.05e-05p 3.51e-06p 1.59e-08p
sig0.627 cc 2.52e-12p 2.31e-08p 1.82e-05p 0.001343p       0.0  0.011595p 0.021378p 0.022521p 1.05e-05p 1.41e-05p 1.41e-05p
         rc 2.52e-12p 2.31e-08p 1.82e-05p 0.001343p 5.36e-05o 0.011649p 0.021432o 0.022574n 1.05e-05p 1.41e-05p 1.41e-05o
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.003537n      0.0       0.0       0.0
zp 32.76 ri      0.0  2.51e-10p 4.70e-07p 7.44e-05p       0.0  0.001127p 0.001936p 0.000399p 6.44e-06p 2.15e-06p 1.65e-08p
sig0.619 cc      0.0  2.51e-10p 4.70e-07p 7.48e-05p       0.0  0.001201p 0.003136p 0.003535p 6.44e-06p 8.58e-06p 8.60e-06p
         rc      0.0  2.51e-10p 4.70e-07p 7.48e-05p 2.45e-06o 0.001203p 0.003139p 0.003538n 6.44e-06p 8.58e-06p 8.60e-06o
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.006339n      0.0       0.0       0.0
zp 32.49 ri      0.0  1.15e-10p 7.83e-07p 0.000216p       0.0  0.003001p 0.002920p 0.000198p 5.04e-07p 1.68e-07p 9.24e-11p
sig0.543 cc      0.0  1.15e-10p 7.84e-07p 0.000217p       0.0  0.003215p 0.006135p 0.006333p 5.04e-07p 6.72e-07p 6.72e-07p
         rc      0.0  1.15e-10p 7.84e-07p 0.000217p 5.85e-06o 0.003221p 0.006141o 0.006339n 5.04e-07p 6.72e-07p 6.72e-07o
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.009088n      0.0       0.0       0.0
zp 32.48 ri      0.0  7.03e-09p 6.36e-06p 0.000508p       0.0  0.004124p 0.003980p 0.000455p 3.94e-06p 1.31e-06p 5.34e-09p
sig0.621 cc      0.0  7.03e-09p 6.37e-06p 0.000514p       0.0  0.004634p 0.008615p 0.009070p 3.94e-06p 5.26e-06p 5.26e-06p
         rc      0.0  7.03e-09p 6.37e-06p 0.000514p 1.95e-05o 0.004654p 0.008634o 0.009089n 3.94e-06p 5.26e-06p 5.26e-06o
```

```
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.199984n      0.0       0.0       0.0
zp 32.18 ri 7.22e-11p 7.26e-07p 0.000494p 0.025110p       0.0  0.114893p 0.056017p 0.002646p 8.41e-06p 1.48e-06p 2.57e-09p
sig0.597 cc 7.21e-11p 7.25e-07p 0.000494p 0.025565p       0.0  0.140376p 0.196308p 0.198950p 8.40e-06p 9.88e-06p 9.88e-06p
         rc 7.22e-11p 7.26e-07p 0.000495p 0.025605p 0.001104o 0.141390p 0.197407o 0.200054n 8.41e-06p 9.90e-06p 9.90e-06p
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.639580n      0.0       0.0       0.0
zp 32.74 ri       0.0  6.82e-09p 4.99e-05p 0.008394p       0.0  0.266947p 0.285511p 0.078536p 0.000482p 0.000161p 9.08e-07p
sig0.583 cc       0.0  6.82e-09p 4.99e-05p 0.008443p       0.0  0.275345p 0.560845p 0.639368p 0.000482p 0.000642p 0.000643p
         rc       0.0  6.82e-09p 4.99e-05p 0.008444p 0.000206o 0.275527p 0.561038o 0.639574n 0.000482p 0.000642p 0.000643o
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000813n      0.0       0.0       0.0
zp 31.67 ri       0.0  4.48e-09p 7.66e-06p 0.000249p       0.0  0.000475p 3.23e-05p 9.09e-08p 3.05e-12p 1.02e-12p       0.0
sig0.497 cc       0.0  4.48e-09p 7.66e-06p 0.000256p       0.0  0.000729p 0.000762p 0.000762p 3.05e-12p 4.06e-12p 4.06e-12p
         rc       0.0  4.48e-09p 7.66e-06p 0.000256p 5.61e-05o 0.000785p 0.000818o 0.000818n 3.05e-12p 4.06e-12p 4.06e-12p

  ga, cu half lives 80eng2; zn, ga, ge, as half lives 89wal1; br half life 90bur1.

1

    mass number     81              LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       29 cu g   30 zn g   31 ga g   32 ge d   32 ge g   33 as g   34 se m   34 se g   35 br g   36 kr m   36 kr g   37 rb g
 half life     0.074s    0.123s    1.22 s     0.60s     7.6 s     33. s    57.3 m    18.5 m    stable     13. s    2.3e5y    4.576h
 lambda       9.367e+00 5.635e+00 5.682e-01 1.155e+00 9.120e-02 2.100e-02 2.016e-04 6.245e-04       0.0 5.332e-02 9.556e-14
4.208e-05
  z - 1 g    100.0000  100.0000  100.0000       0.0   88.1000  100.0000       0.0  100.0000  100.0000       0.0 -100.0000  -25.0000
  z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  -75.0000
  z - 0 m        0.0       0.0       0.0   21.1000  100.0000       0.0       0.0  100.0000       0.0       0.0  100.0000       0.0
  cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.068787n      0.0       0.0       0.0
zp 32.84 ri 2.26e-10p 1.78e-06p 0.000657p       0.0  0.019453p 0.039443p 0.007963p 0.001190p 0.000134p 1.94e-08p 1.30e-07p
7.58e-12p
sig0.577 cc 2.26e-10p 1.78e-06p 0.000659p       0.0  0.020033p 0.059476p 0.007963p 0.068629p 0.068764p 1.94e-08p 1.50e-07p
7.58e-12p
         rc 2.26e-10p 1.78e-06p 0.000659p 2.42e-05o 0.020057p 0.059500p 0.007963p 0.068653o 0.068788n 1.94e-08p 1.50e-07p
7.58e-12p
```

cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.044810n 0.0 0.0 0.0
zp 32.94 ri 8.53e-12p 2.47e-07p 0.000180p 0.0 0.010911p 0.025626p 0.006973p 0.001042p 9.37e-05p 1.15e-08p 7.70e-08p 2.08e-12p
sig0.551 cc 8.53e-12p 2.47e-07p 0.000181p 0.0 0.011070p 0.036696p 0.006973p 0.044711p 0.044805p 1.15e-08p 8.85e-08p 2.08e-12p
rc 8.53e-12p 2.47e-07p 0.000181p 4.63e-06o 0.011075p 0.036701p 0.006973p 0.044716o 0.044810n 1.15e-08p 8.85e-08p 2.08e-12p
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.035140n 0.0 0.0 0.0
zp 32.54 ri 2.75e-09p 7.66e-06p 0.001286p 0.0 0.015445p 0.016806p 0.001459p 0.000218p 1.22e-05p 6.98e-10p 4.67e-09p 0.0
sig0.579 cc 2.75e-09p 7.66e-06p 0.001293p 0.0 0.016584p 0.033390p 0.001459p 0.035067p 0.035079p 6.98e-10p 5.37e-09p 0.0
rc 2.75e-09p 7.66e-06p 0.001293p 6.40e-05o 0.016648p 0.033454p 0.001459p 0.035131o 0.035143n 6.98e-10p 5.37e-09p 0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.030779n 0.0 0.0 0.0
zp 32.87 ri 1.21e-09p 2.46e-06p 0.000448p 0.0 0.008153p 0.017393p 0.004064p 0.000607p 0.000141p 5.32e-08p 3.56e-07p 1.04e-10p
sig0.627 cc 1.21e-09p 2.46e-06p 0.000450p 0.0 0.008550p 0.025943p 0.004064p 0.030614p 0.030755p 5.33e-08p 4.10e-07p 1.04e-10p
rc 1.21e-09p 2.46e-06p 0.000450p 2.48e-05o 0.008574p 0.025968p 0.004064p 0.030638o 0.030780n 5.33e-08p 4.10e-07p 1.04e-10p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.005053n 0.0 0.0 0.0
zp 33.14 ri 1.05e-11p 5.14e-08p 2.06e-05p 0.0 0.000746p 0.002879p 0.001165p 0.000174p 6.95e-05p 4.41e-08p 2.95e-07p 1.39e-10p
sig0.619 cc 1.05e-11p 5.14e-08p 2.06e-05p 0.0 0.000764p 0.003644p 0.001165p 0.004983p 0.005052p 4.42e-08p 3.39e-07p 1.39e-10p
rc 1.05e-11p 5.14e-08p 2.06e-05p 1.01e-06o 0.000765p 0.003645p 0.001165p 0.004984o 0.005054n 4.42e-08p 3.39e-07p 1.39e-10p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.008017n 0.0 0.0 0.0
zp 32.86 ri 2.43e-12p 5.54e-08p 4.91e-05p 0.0 0.001988p 0.005030p 0.000821p 0.000123p 1.01e-05p 5.98e-10p 4.00e-09p 0.0

sig0.543 cc 2.43e-12p 5.54e-08p 4.92e-05p 0.0 0.002031p 0.007061p 0.000821p 0.008005p 0.008015p 5.98e-10p 4.60e-09p 0.0
rc 2.43e-12p 5.54e-08p 4.92e-05p 1.39e-06o 0.002033p 0.007062p 0.000821p 0.008007o 0.008017n 5.98e-10p 4.60e-09p 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.012117n 0.0 0.0 0.0
zp 32.87 ri 3.36e-10p 8.01e-07p 0.000163p 0.0 0.003159p 0.006911p 0.001603p 0.000240p 5.31e-05p 1.83e-08p 1.23e-07p 3.13e-11p
sig0.621 cc 3.36e-10p 8.02e-07p 0.000164p 0.0 0.003304p 0.010214p 0.001603p 0.012057p 0.012110p 1.83e-08p 1.41e-07p 3.13e-11p
rc 3.36e-10p 8.02e-07p 0.000164p 7.88e-06o 0.003311p 0.010222p 0.001603p 0.012065o 0.012118n 1.83e-08p 1.41e-07p 3.13e-11p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.259979n 0.0 0.0 0.0
zp 32.58 ri 3.30e-08p 6.54e-05p 0.009215p 0.0 0.107585p 0.127838p 0.014476p 0.001259p 0.000166p 8.85e-09p 1.18e-07p 6.42e-12p
sig0.597 cc 3.30e-08p 6.54e-05p 0.009273p 0.0 0.115838p 0.243611p 0.014466p 0.259335p 0.259501p 8.85e-09p 1.26e-07p 6.41e-12p
rc 3.30e-08p 6.54e-05p 0.009280p 0.000495o 0.116256p 0.244095p 0.014476p 0.259830o 0.259996n 8.85e-09p 1.26e-07p 6.42e-12p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.799475n 0.0 0.0 0.0
zp 33.14 ri 1.49e-10p 2.76e-06p 0.001727p 0.0 0.125353p 0.422174p 0.211749p 0.031641p 0.006961p 3.15e-06p 2.11e-05p 2.91e-09p
sig0.583 cc 1.49e-10p 2.76e-06p 0.001729p 0.0 0.126888p 0.549056p 0.211745p 0.792441p 0.799426p 3.16e-06p 2.43e-05p 2.91e-09p
rc 1.49e-10p 2.76e-06p 0.001729p 3.94e-05o 0.126916p 0.549091p 0.211749p 0.792481o 0.799466n 3.16e-06p 2.43e-05p 2.91e-09p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.004022n 0.0 0.0 0.0
zp 32.06 ri 4.77e-10p 3.64e-06p 0.000468p 0.0 0.002877p 0.000661p 6.72e-06p 1.00e-06p 1.57e-09p 0.0 0.0 0.0
sig0.497 cc 4.77e-10p 3.64e-06p 0.000472p 0.0 0.003293p 0.003954p 6.72e-06p 0.003962p 0.003962p 0.0 0.0 0.0
rc 4.77e-10p 3.64e-06p 0.000472p 6.42e-05o 0.003357p 0.004018p 6.72e-06p 0.004026o 0.004026n 0.0 0.0 0.0

cu, zn half lives 80eng2; ga, ge, as, se half lives 89wal1; kr, rb half lives 90bur1.

mass number 82 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	28 ni g	29 cu g	30 zn g	31 ga g	32 ge d	32 ge g	33 as m	33 as g	34 se g	35 br m	35 br g	36 kr g
half life		0.127s	0.607s	0.31 s	4.6 s	13.7 s	19. s	stable	6.1 m	35.3 h	stable	
lambda	0.0	0.0	5.458e+00	1.142e+00	2.236e+00	1.507e-01	5.059e-02	3.648e-02	0.0	1.894e-03	5.454e-06	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	0.0	78.9000	0.0	100.0000	100.0000	0.0	0.0	100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	0.0	2.4000
z - 0 m	0.0	0.0	0.0	0.0	56.2000	100.0000	0.0240	0.0	0.0	0.0	97.6000	0.0
cf250s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.088440n	0.0	0.0	0.0
zp 33.23 ri	0.0	4.17e-12p	1.03e-07p	0.000114p	0.0	0.009562p	0.024777p	0.024777p	0.029227p	0.000360p	0.000841p	4.03e-06p
sig0.577 cc	0.0	4.17e-12p	1.03e-07p	0.000115p	0.0	0.009652p	0.024777p	0.034430p	0.088433p	0.000360p	0.001193p	0.001205p
rc	0.0	4.18e-12p	1.03e-07p	0.000115p	6.40e-06o	0.009659p	0.024778p	0.034436p	0.088441n	0.000360p	0.001193p	0.001205p
cm244s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.069704n	0.0	0.0	0.0
zp 33.35 ri	0.0	0.0	1.02e-08p	2.19e-05p	0.0	0.005464p	0.015319p	0.015319p	0.033582p	0.000310p	0.000723p	4.26e-06p
sig0.551 cc	0.0	0.0	1.02e-08p	2.19e-05p	0.0	0.005481p	0.015319p	0.020801p	0.069702p	0.000310p	0.001025p	0.001036p
rc	0.0	0.0	1.02e-08p	2.19e-05p	1.21e-06o	0.005483p	0.015320p	0.020802p	0.069704n	0.000310p	0.001025p	0.001036p
cm248s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.046121n	0.0	0.0	0.0
zp 32.94 ri	0.0	6.74e-11p	5.94e-07p	0.000303p	0.0	0.010145p	0.014117p	0.014117p	0.007485p	4.79e-05p	0.000112p	2.19e-07p
sig0.579 cc	0.0	6.74e-11p	5.94e-07p	0.000303p	0.0	0.010385p	0.014117p	0.024501p	0.046102p	4.79e-05p	0.000158p	0.000160p
rc	0.0	6.74e-11p	5.94e-07p	0.000303p	1.94e-05o	0.010404p	0.014117p	0.024521p	0.046123n	4.79e-05p	0.000158p	0.000160p
es253s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.041038n	0.0	0.0	0.0

zp 33.24 ri 0.0 5.25e-11p 2.66e-07p 0.000117p 0.0 0.004916p 0.011391p 0.011391p 0.013234p 0.000274p 0.000640p 6.41e-06p
sig0.627 cc 0.0 5.25e-11p 2.66e-07p 0.000117p 0.0 0.005009p 0.011391p 0.016400p 0.041026p 0.000274p 0.000908p 0.000921p
rc 0.0 5.25e-11p 2.66e-07p 0.000117p 1.27e-05o 0.005021p 0.011392p 0.016413p 0.041039n 0.000274p 0.000908p 0.000921p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.008086n 0.0 0.0 0.0
zp 33.52 ri 0.0 0.0 4.65e-09p 4.78e-06p 0.0 0.000425p 0.001880p 0.001880p 0.003897p 0.000142p 0.000332p 5.79e-06p
sig0.619 cc 0.0 0.0 4.65e-09p 4.78e-06p 0.0 0.000429p 0.001880p 0.002309p 0.008085p 0.000142p 0.000471p 0.000480p
rc 0.0 0.0 4.65e-09p 4.78e-06p 3.41e-07o 0.000429p 0.001880p 0.002309p 0.008086n 0.000142p 0.000471p 0.000480p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.010254n 0.0 0.0 0.0
zp 33.25 ri 0.0 0.0 2.12e-09p 6.58e-06p 0.0 0.000861p 0.003079p 0.003079p 0.003229p 3.29e-05p 7.69e-05p 1.75e-07p
sig0.543 cc 0.0 0.0 2.12e-09p 6.58e-06p 0.0 0.000866p 0.003079p 0.003945p 0.010253p 3.29e-05p 0.000109p 0.000110p
rc 0.0 0.0 2.12e-09p 6.58e-06p 3.28e-07o 0.000867p 0.003079p 0.003946p 0.010254n 3.29e-05p 0.000109p 0.000110p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.016157n 0.0 0.0 0.0
zp 33.26 ri 0.0 1.12e-11p 7.08e-08p 3.73e-05p 0.0 0.001775p 0.004460p 0.004460p 0.005430p 0.000114p 0.000266p 2.60e-06p
sig0.621 cc 0.0 1.12e-11p 7.09e-08p 3.73e-05p 0.0 0.001804p 0.004460p 0.006264p 0.016154p 0.000114p 0.000378p 0.000383p
rc 0.0 1.12e-11p 7.09e-08p 3.73e-05p 3.07e-06o 0.001807p 0.004460p 0.006267p 0.016157n 0.000114p 0.000378p 0.000383p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.349972n 0.0 0.0 0.0
zp 32.98 ri 0.0 1.00e-09p 5.85e-06p 0.002343p 0.0 0.072358p 0.105210p 0.105196p 0.065167p 0.000339p 0.001543p 4.16e-06p
sig0.597 cc 0.0 1.00e-09p 5.85e-06p 0.002349p 0.0 0.074207p 0.105207p 0.179414p 0.349785p 0.000339p 0.001874p 0.001886p

rc 0.0 1.00e-09p 5.85e-06p 0.002349p 0.000198o 0.074409p 0.105217p 0.179606p 0.349990n 0.000339p 0.001874p 0.001886p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.099278n 0.0 0.0 0.0
zp 33.55 ri 0.0 1.57e-12p 1.16e-07p 0.000187p 0.0 0.049901p 0.185099p 0.185099p 0.679021p 0.013252p 0.030922p 0.000579p
sig0.583 cc 0.0 1.57e-12p 1.16e-07p 0.000187p 0.0 0.050048p 0.185100p 0.235148p 1.099267p 0.013252p 0.043856p 0.044753p
rc 0.0 1.57e-12p 1.16e-07p 0.000187p 9.16e-06o 0.050058p 0.185101p 0.235156p 1.099279n 0.013252p 0.043856p 0.044753p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.012242n 0.0 0.0 0.0
zp 32.46 ri 0.0 1.49e-11p 5.41e-07p 0.000304p 0.0 0.006694p 0.002512p 0.002512p 0.000235p 6.57e-08p 1.53e-07p 5.93e-12p
sig0.497 cc 0.0 1.49e-11p 5.41e-07p 0.000304p 0.0 0.006934p 0.002512p 0.009446p 0.012193p 6.57e-08p 2.18e-07p 2.19e-07p
rc 0.0 1.49e-11p 5.41e-07p 0.000304p 5.14e-05o 0.006986p 0.002514p 0.009498p 0.012246n 6.57e-08p 2.18e-07p 2.19e-07p

zn half life estimated by 80eng2; ga, ge, as half lives from 89wal1; br half life 90bur1.

1

mass number 83 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 30 zn g 31 ga g 32 ge g 33 as d 33 as g 34 se m 34 se g 35 br g 36 kr m 36 kr g 37 rb g 38 sr g
half life 0.084s 0.31s 1.9 s 1.2 s 13.4 s 1.17m 22.3m 2.40h 1.83 h stable 86.2 d 32.4 h
lambda 8.252e+00 2.236e+00 3.648e-01 5.776e-01 5.173e-02 9.874e-03 5.180e-04 8.023e-05 1.052e-04 0.0 9.307e-08 5.943e-06
z - 1 g 100.0000 100.0000 43.8000 0.0 99.9760 64.0000 36.0000 100.0000 100.0000 0.0 -23.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 -77.0000 0.0
z - 0 m 0.0 0.0 0.0 5.2060 100.0000 0.0860 0.0 0.0 0.0 100.0000 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.102554k 0.0 0.087367l 0.0 0.0
zp 33.61 ri 3.43e-09p 1.14e-05p 0.002697p 0.0 0.036121p 0.009884p 0.042138p 0.005613p 9.48e-06p 4.04e-05p 2.36e-08p 0.0

sig0.577 cc 3.43e-09p 1.14e-05p 0.002702p 0.0 0.038821p 0.034729p 0.056112p 0.096454p 0.096465p 0.096508p 2.55e-08p 0.0
rc 3.43e-09p 1.14e-05p 0.002702p 3.98e-05o 0.038863p 0.034756p 0.056129p 0.096498k 0.096508k 0.096548j 2.36e-08p 0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.115826k 0.0 0.114995n 0.0 0.0
zp 33.75 ri 2.30e-10p 2.16e-06p 0.001477p 0.0 0.030739p 0.014256p 0.060777p 0.008443p 1.80e-05p 7.66e-05p 2.92e-08p 0.0
sig0.551 cc 2.30e-10p 2.16e-06p 0.001478p 0.0 0.032216p 0.034875p 0.072375p 0.115692p 0.115710p 0.115787p 2.93e-08p 0.0
rc 2.30e-10p 2.16e-06p 0.001478p 9.32e-06o 0.032225p 0.034881p 0.072379p 0.115702k 0.115720k 0.115797k 2.92e-08p 0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.052251k 0.0 0.036883k 0.0 0.0
zp 33.34 ri 2.18e-08p 3.44e-05p 0.003351p 0.0 0.024483p 0.003173p 0.013528p 0.001007p 6.84e-07p 2.92e-06p 8.95e-10p 0.0
sig0.579 cc 2.18e-08p 3.45e-05p 0.003366p 0.0 0.027848p 0.020996p 0.023553p 0.045555p 0.045556p 0.045560p 1.05e-09p 0.0
rc 2.18e-08p 3.45e-05p 0.003366p 5.90e-05o 0.027907p 0.021034p 0.023574p 0.045615k 0.045616k 0.045619j 8.95e-10p 0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.061560k 0.0 0.0 0.0 0.0
zp 33.62 ri 2.04e-08p 2.26e-05p 0.002282p 0.0 0.023948p 0.005788p 0.024675p 0.004810p 1.56e-05p 6.63e-05p 1.30e-07p 1.80e-11p
sig0.627 cc 2.04e-08p 2.26e-05p 0.002292p 0.0 0.026239p 0.022581p 0.034121p 0.061513p 0.061529p 0.061595p 1.30e-07p 1.80e-11p
rc 2.04e-08p 2.26e-05p 0.002292p 3.30e-05o 0.026272p 0.022602p 0.034133p 0.061546k 0.061562k 0.061628k 1.30e-07p 1.80e-11p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.012091n 0.0 0.0
zp 33.91 ri 2.22e-10p 6.07e-07p 0.000138p 0.0 0.002948p 0.001322p 0.005636p 0.001982p 1.15e-05p 4.90e-05p 1.68e-07p 3.86e-11p
sig0.619 cc 2.22e-10p 6.07e-07p 0.000139p 0.0 0.003087p 0.003297p 0.006747p 0.012026p 0.012038p 0.012087p 1.68e-07p 3.86e-11p
rc 2.22e-10p 6.07e-07p 0.000139p 1.70e-06o 0.003088p 0.003299p 0.006748p 0.012028o 0.012040n 0.012089m 1.68e-07p 3.86e-11p

fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.013328n 0.0 0.0
zp 33.63 ri 5.43e-11p 5.83e-07p 0.000249p 0.0 0.005157p 0.001367p 0.005826p 0.000721p 7.20e-07p 3.07e-06p 8.22e-10p
0.0
sig0.543 cc 5.43e-11p 5.83e-07p 0.000249p 0.0 0.005406p 0.004827p 0.007772p 0.013320p 0.013320p 0.013324p 8.22e-10p
0.0
rc 5.43e-11p 5.83e-07p 0.000249p 2.17e-06o 0.005409p 0.004828p 0.007773p 0.013322o 0.013323n 0.013326m 8.22e-10p
0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.022152n 0.0 0.0
zp 33.66 ri 3.86e-09p 5.46e-06p 0.000670p 0.0 0.008102p 0.002166p 0.009232p 0.001932p 6.48e-06p 2.76e-05p 5.41e-08p
7.08e-12p
sig0.621 cc 3.86e-09p 5.47e-06p 0.000672p 0.0 0.008774p 0.007781p 0.012391p 0.022104p 0.022111p 0.022138p 5.41e-08p
7.08e-12p
rc 3.86e-09p 5.47e-06p 0.000672p 8.97e-06o 0.008783p 0.007787p 0.012394p 0.022113o 0.022120n 0.022147m 5.41e-08p
7.08e-12p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.449975n 0.0 0.0
zp 33.39 ri 2.96e-07p 0.000353p 0.030514p 0.0 0.227668p 0.019480p 0.157599p 0.013892p 9.87e-06p 7.99e-05p 4.11e-08p
1.24e-12p
sig0.597 cc 2.96e-07p 0.000353p 0.030659p 0.0 0.258377p 0.184835p 0.250578p 0.449301p 0.449311p 0.449391p 4.11e-08p
1.24e-12p
rc 2.96e-07p 0.000353p 0.030669p 0.000441o 0.258770p 0.185093p 0.250757p 0.449742n 0.449752n 0.449832m 4.11e-08p
1.24e-12p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.499303n 0.0 0.0
zp 33.95 ri 2.65e-09p 1.63e-05p 0.010573p 0.0 0.266160p 0.190926p 0.813955p 0.210993p 0.001233p 0.005255p 7.61e-06p
9.35e-10p
sig0.583 cc 2.65e-09p 1.63e-05p 0.010580p 0.0 0.276760p 0.368050p 0.913573p 1.492612p 1.493851p 1.499107p 7.61e-06p
9.35e-10p
rc 2.65e-09p 1.63e-05p 0.010580p 8.92e-05o 0.276827p 0.368095p 0.913613o 1.492701n 1.493939n 1.499196m 7.61e-06p
9.35e-10p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.029151k 0.0 0.0
zp 32.85 ri 3.70e-08p 9.14e-05p 0.007646p 0.0 0.018046p 0.000569p 0.002427p 1.19e-05p 2.80e-10p 1.20e-09p 0.0 0.0

sig0.497 cc 3.70e-08p 9.14e-05p 0.007686p 0.0 0.025730p 0.017037p 0.011690p 0.028738p 0.028738p 0.028738p 0.0 0.0
rc 3.70e-08p 9.14e-05p 0.007686p 0.000351o 0.026081p 0.017261p 0.011816p 0.029089o 0.029089l 0.029089j 0.0 0.0

as-to-se branching to fit data; zn half life from 80eng2; ga, ge, as, se half lives 89wal1; kr, rb, sr 90bur1.

1

mass number 84 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 30 zn g 31 ga g 32 ge g 33 as d 33 as g 34 se d 34 se g 35 br m 35 br g 36 kr g 37 rb g 38 sr g
half life 0.098s 1.2 s 0.250s 5.5 s 2.03 s 3.3 m 6.0 m 31.8 m stable 32.87d stable
lambda 0.0 7.073e+00 5.776e-01 2.773e+00 1.260e-01 3.415e-01 3.501e-03 1.925e-03 3.633e-04 0.0 2.441e-07 0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 94.7940 0.0 99.8700 0.0 100.0000 100.0000 -97.0000 3.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 16.4540 100.0000 50.0000 100.0000 0.0 0.0 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.159680l 0.0 0.0
zp 33.99 ri 1.11e-10p 1.11e-06p 0.000763p 0.0 0.027457p 0.0 0.097224p 0.016977p 0.009550p 0.000710p 9.91e-07p 9.50e-11p
sig0.577 cc 1.11e-10p 1.11e-06p 0.000764p 0.0 0.028181p 0.0 0.125369p 0.016977p 0.134918p 0.152606p 9.91e-07p 2.98e-08p
rc 1.11e-10p 1.11e-06p 0.000764p 2.31e-05o 0.028204p 0.007084o 0.132476p 0.016977p 0.142026n 0.159713l 9.91e-07p 2.98e-08p
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.115450n 0.0 0.0
zp 34.15 ri 2.24e-12p 6.13e-08p 0.000179p 0.0 0.009632p 0.0 0.080977p 0.013412p 0.007544p 0.000933p 8.16e-07p 7.80e-11p
sig0.551 cc 2.24e-12p 6.13e-08p 0.000179p 0.0 0.009802p 0.0 0.090767p 0.013412p 0.098311p 0.112658p 8.16e-07p 2.46e-08p
rc 2.24e-12p 6.13e-08p 0.000179p 4.43e-06o 0.009807p 0.002880o 0.093652p 0.013412p 0.101196o 0.115542m 8.16e-07p 2.46e-08p
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.076714k 0.0 0.0
zp 33.74 ri 7.82e-10p 3.87e-06p 0.001129p 0.0 0.022535p 0.0 0.039138p 0.004094p 0.002303p 7.99e-05p 6.23e-08p 2.74e-12p

sig0.579 cc 7.82e-10p 3.87e-06p 0.001133p 0.0 0.023609p 0.0 0.062717p 0.004094p 0.065020p 0.069194p 6.23e-08p 1.87e-09p
rc 7.82e-10p 3.87e-06p 0.001133p 4.39e-05o 0.023653p 0.007486o 0.070246o 0.004094p 0.072549m 0.076723k 6.23e-08p 1.87e-09p
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.082076n 0.0 0.0
zp 34.01 ri 8.64e-10p 2.48e-06p 0.000631p 0.0 0.015706p 0.0 0.044854p 0.010339p 0.005816p 0.000669p 2.72e-06p 9.78e-10p
sig0.627 cc 8.64e-10p 2.48e-06p 0.000633p 0.0 0.016306p 0.0 0.061139p 0.010339p 0.066955p 0.077965p 2.72e-06p 8.24e-08p
rc 8.64e-10p 2.48e-06p 0.000633p 2.50e-05o 0.016331p 0.004561o 0.065725p 0.010339p 0.071541o 0.082551n 2.72e-06p 8.24e-08p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.017182n 0.0 0.0
zp 34.29 ri 7.90e-12p 5.62e-08p 3.26e-05p 0.0 0.001680p 0.0 0.008970p 0.003666p 0.002062p 0.000418p 2.93e-06p 1.75e-09p
sig0.619 cc 7.90e-12p 5.62e-08p 3.27e-05p 0.0 0.001711p 0.0 0.010679p 0.003666p 0.012741p 0.016828p 2.93e-06p 8.97e-08p
rc 7.90e-12p 5.62e-08p 3.27e-05p 1.01e-06o 0.001712p 0.000395o 0.011075p 0.003666p 0.013137p 0.017224n 2.93e-06p 8.97e-08p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.016779n 0.0 0.0
zp 34.02 ri 0.0 2.81e-08p 4.16e-05p 0.0 0.002711p 0.0 0.010450p 0.001923p 0.001082p 5.18e-05p 3.97e-08p 1.17e-12p
sig0.543 cc 0.0 2.81e-08p 4.17e-05p 0.0 0.002751p 0.0 0.013197p 0.001923p 0.014278p 0.016253p 3.97e-08p 1.19e-09p
rc 0.0 2.81e-08p 4.17e-05p 8.72e-07o 0.002752p 0.000571o 0.013769p 0.001923p 0.014850o 0.016825n 3.97e-08p 1.19e-09p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.030294n 0.0 0.0
zp 34.06 ri 1.39e-10p 5.33e-07p 0.000172p 0.0 0.005145p 0.0 0.016837p 0.004304p 0.002421p 0.000300p 1.26e-06p 4.51e-10p
sig0.621 cc 1.39e-10p 5.33e-07p 0.000172p 0.0 0.005308p 0.0 0.022139p 0.004304p 0.024559p 0.029164p 1.26e-06p 3.84e-08p
rc 1.39e-10p 5.33e-07p 0.000172p 5.35e-06o 0.005314p 0.001251o 0.023395p 0.004304p 0.025815o 0.030420n 1.26e-06p 3.84e-08p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.579954n 0.0 0.0
zp 33.79 ri 9.93e-09p 3.47e-05p 0.008435p 0.0 0.163405p 0.0 0.301945p 0.048502p 0.013680p 0.001116p 1.49e-06p 1.34e-10p
sig0.597 cc 9.78e-09p 3.42e-05p 0.008342p 0.0 0.168949p 0.0 0.474116p 0.047774p 0.487591p 0.536465p 1.47e-06p 4.42e-08p
rc 9.93e-09p 3.47e-05p 0.008470p 0.000301o 0.171735p 0.048415o 0.521872p 0.048502p 0.535552o 0.585172n 1.49e-06p 4.49e-08p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.799164n 0.0 0.0
zp 34.34 ri 4.75e-11p 7.24e-07p 0.001713p 0.0 0.097683p 0.0 1.145418n 0.312584p 0.175759p 0.050191p 0.000140p 6.41e-08p
sig0.583 cc 4.74e-11p 7.21e-07p 0.001708p 0.0 0.098970p 0.0 1.246359p 0.311522p 1.421590p 1.783271p 0.000139p 4.25e-06p
rc 4.75e-11p 7.24e-07p 0.001714p 3.04e-05o 0.099338p 0.019225o 1.263851m 0.312584p 1.439610m 1.802522m 0.000140p 4.26e-06p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.107045k 0.0 0.0
zp 33.25 ri 1.64e-09p 1.89e-05p 0.006715p 0.0 0.054294p 0.0 0.030335p 0.000321p 0.000181p 2.91e-07p 2.50e-12p 0.0
sig0.497 cc 1.64e-09p 1.89e-05p 0.006734p 0.0 0.060677p 0.0 0.090934p 0.000321p 0.091114p 0.091436p 2.50e-12p 0.0
rc 1.64e-09p 1.89e-05p 0.006734p 0.000168o 0.060845p 0.015423o 0.106524n 0.000321p 0.106705l 0.107026j 2.50e-12p 0.0

ga half life from 80eng2; ge, as, se, br half lives from 89wal1; rb half life 90bur1.

1

mass number 85 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 31 ga g 32 ge g 33 as d 33 as g 34 se m 34 se g 35 br g 36 kr m 36 kr g 37 rb g 38 sr g 39 y g
half life 0.087s 0.250s 0.247s 2.03 s 19. s 39. s 2.87m 4.48 h 10.73y stable 64.84d 5.0 h
lambda 7.967e+00 2.773e+00 2.806e+00 3.415e-01 3.648e-02 1.777e-02 4.025e-03 4.298e-05 2.048e-09 0.0 1.237e-07 3.851e-05
z - 1 g 100.0000 100.0000 0.0 83.5460 0.0 50.0000 100.0000 100.0000 0.0 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 80.0210 0.0 0.0
z - 0 m 0.0 0.0 15.2150 100.0000 8.5030 0.0 0.0 0.0 19.9790 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.226002l 0.0 0.178897n 0.0 0.0
zp 34.37 ri 6.90e-08p 0.000140p 0.0 0.014048p 0.062810p 0.062810p 0.084327p 0.001153p 0.004917p 2.46e-05p 7.11e-09p
0.0
sig0.577 cc 6.90e-08p 0.000140p 0.0 0.014166p 0.062810p 0.069893p 0.217030p 0.218184p 0.048507p 0.223125p 7.11e-09p
0.0
rc 6.90e-08p 0.000140p 1.99e-06o 0.014168p 0.063139p 0.069894p 0.217360n 0.218513l 0.048573l 0.223454k 7.11e-09p
0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.213833l 0.0 0.214269o 0.0 0.0
zp 34.54 ri 3.32e-09p 2.69e-05p 0.0 0.005738p 0.056019p 0.056019p 0.095465p 0.001955p 0.008336p 3.65e-05p 9.81e-09p
0.0
sig0.551 cc 3.32e-09p 2.69e-05p 0.0 0.005760p 0.056019p 0.058899p 0.210383p 0.212338p 0.050759p 0.220711p 9.81e-09p
0.0
rc 3.32e-09p 2.69e-05p 2.01e-07o 0.005761p 0.056083p 0.058899p 0.210447n 0.212403l 0.050772m 0.220776k 9.81e-09p
0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.099330l 0.0 0.103469n 0.0 0.0
zp 34.13 ri 3.06e-07p 0.000266p 0.0 0.014742p 0.032301p 0.032301p 0.026909p 0.000179p 0.000765p 2.21e-06p 3.00e-10p
0.0
sig0.579 cc 3.06e-07p 0.000267p 0.0 0.014965p 0.032301p 0.039784p 0.098995p 0.099174p 0.020579p 0.099942p 3.00e-10p
0.0
rc 3.06e-07p 0.000267p 6.06e-06o 0.014971p 0.032842p 0.039787p 0.099538m 0.099718k 0.020688k 0.100485k 3.00e-10p
0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.112019n 0.0 0.0
zp 34.39 ri 2.40e-07p 0.000152p 0.0 0.008992p 0.028687p 0.028687p 0.045430p 0.000829p 0.003534p 4.35e-05p 3.96e-08p
3.09e-12p
sig0.627 cc 2.40e-07p 0.000152p 0.0 0.009119p 0.028687p 0.033247p 0.107364p 0.108193p 0.025150p 0.111770p 3.96e-08p
3.09e-12p
rc 2.40e-07p 0.000152p 3.45e-06o 0.009122p 0.028966p 0.033248p 0.107645o 0.108474o 0.025206n 0.112051m 3.96e-08p
3.09e-12p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.026278n 0.0 0.0
zp 34.67 ri 4.12e-09p 6.16e-06p 0.0 0.000785p 0.004851p 0.004851p 0.013787p 0.000444p 0.001891p 4.07e-05p 6.26e-08p
7.82e-12p

sig0.619 cc 4.12e-09p 6.16e-06p 0.0 0.000790p 0.004851p 0.005246p 0.023884p 0.024328p 0.006752p 0.026260p 6.26e-08p 7.82e-12p
rc 4.12e-09p 6.16e-06p 1.10e-07o 0.000790p 0.004871p 0.005246p 0.023904p 0.024348o 0.006756o 0.026280n 6.26e-08p 7.82e-12p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.023801n 0.0 0.0
zp 34.41 ri 1.01e-09p 5.30e-06p 0.0 0.001138p 0.006324p 0.006324p 0.010021p 0.000103p 0.000438p 1.43e-06p 1.51e-10p 0.0
sig0.543 cc 1.01e-09p 5.30e-06p 0.0 0.001142p 0.006324p 0.006895p 0.023240p 0.023343p 0.005102p 0.023782p 1.51e-10p 0.0
rc 1.01e-09p 5.30e-06p 5.07e-08o 0.001142p 0.006345p 0.006895p 0.023261p 0.023364o 0.005106n 0.023803m 1.51e-10p 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.040277n 0.0 0.0
zp 34.46 ri 3.77e-08p 3.25e-05p 0.0 0.002474p 0.009608p 0.009608p 0.017786p 0.000370p 0.001576p 2.14e-05p 2.07e-08p 1.64e-12p
sig0.621 cc 3.77e-08p 3.25e-05p 0.0 0.002501p 0.009608p 0.010858p 0.038252p 0.038622p 0.009292p 0.040219p 2.07e-08p 1.64e-12p
rc 3.77e-08p 3.25e-05p 5.78e-07o 0.002501p 0.009672p 0.010859p 0.038317p 0.038686o 0.009305o 0.040284m 2.07e-08p 1.64e-12p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.729959n 0.0 0.0
zp 34.19 ri 2.62e-06p 0.001827p 0.0 0.095284p 0.222362p 0.223651p 0.222332p 0.001184p 0.009583p 4.13e-05p 1.10e-08p 0.0
sig0.597 cc 2.61e-06p 0.001827p 0.0 0.096639p 0.223250p 0.271569p 0.716858p 0.718041p 0.153023p 0.727648p 1.10e-08p 0.0
rc 2.62e-06p 0.001830p 3.21e-05o 0.096845p 0.224970p 0.272073p 0.719375o 0.720559n 0.153544n 0.730184m 1.10e-08p 0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.467483i 0.0 2.499420n 0.0 0.0
zp 34.74 ri 3.11e-08p 0.000185p 0.0 0.038295p 0.494554p 0.494856p 1.372504n 0.055308p 0.232696p 0.002931p 3.36e-06p 1.29e-10p
sig0.583 cc 3.19e-08p 0.000190p 0.0 0.039422p 0.507372p 0.527083p 2.370123p 2.426830p 0.726608p 2.671590p 3.45e-06p 1.32e-10p
rc 3.11e-08p 0.000185p 2.10e-06o 0.038452p 0.495134p 0.514082p 2.381720k 2.437028i 0.719590n 2.672659k 3.36e-06p 1.29e-10p

u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.079274n 0.0 0.0
zp 33.64 ri 6.67e-07p 0.001018p 0.0 0.029833p 0.026095p 0.026095p 0.003215p 1.54e-06p 6.57e-06p 3.22e-10p 0.0 0.0
sig0.497 cc 6.67e-07p 0.001019p 0.0 0.030685p 0.026095p 0.041438p 0.070748p 0.070750p 0.014142p 0.070756p 0.0
0.0
rc 6.67e-07p 0.001019p 0.000163o 0.030847p 0.036656p 0.041519p 0.081390o 0.081391n 0.016268n 0.081398m 0.0
0.0

kr branching to fit data; ga half life from 80eng2; as, se, br, kr half lives from 89wal1.

1

mass number 86 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 30 zn g 31 ga g 32 ge g 33 as g 34 se d 34 se g 35 br m 35 br g 36 kr d 36 kr g 37 rb g 38 sr g
half life 0.247s 0.9 s 0.30 s 15.0 s 4.5 s 55.5 s 55.7 s stable 18.66d stable
lambda 0.0 0.0 2.806e+00 7.702e-01 2.310e+00 4.621e-02 1.540e-01 1.249e-02 1.244e-02 0.0 4.299e-07 0.0
z - 1 g 100.0000 100.0000 100.0000 84.7850 0.0 91.4970 0.0 100.0000 0.0 100.0000 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 44.3600 100.0000 0.1880 0.0 2.5400 100.0000 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.286533k 0.0 0.0
zp 34.76 ri 0.0 2.09e-09p 1.31e-05p 0.003850p 0.0 0.092625p 0.077717p 0.077717p 0.0 0.029672p 0.000351p 3.11e-
07p
sig0.577 cc 0.0 2.09e-09p 1.31e-05p 0.003861p 0.0 0.096158p 0.077717p 0.173875p 0.0 0.281264p 0.000351p
0.000351p
rc 0.0 2.09e-09p 1.31e-05p 0.003861p 0.000265o 0.096423p 0.077791p 0.174140p 0.005141o 0.286744k 0.000351p
0.000351p
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.001245o 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.200994m 0.0 0.0
zp 34.93 ri 0.0 3.82e-11p 1.32e-06p 0.000759p 0.0 0.054838p 0.051035p 0.051035p 0.0 0.038256p 0.001213p 3.97e-
07p
sig0.551 cc 0.0 3.84e-11p 1.32e-06p 0.000763p 0.0 0.055777p 0.051258p 0.107035p 0.0 0.196717p 0.000355p
0.000355p
rc 0.0 3.82e-11p 1.32e-06p 0.000760p 6.90e-05o 0.055602p 0.051089p 0.106637p 0.005385o 0.201367m 0.001213p
0.001213p
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.165467k 0.0 0.0
zp 34.52 ri 0.0 1.51e-08p 3.98e-05p 0.006324p 0.0 0.072245p 0.037514p 0.037514p 0.0 0.007123p 4.90e-05p 2.04e-08p
sig0.579 cc 0.0 1.51e-08p 3.98e-05p 0.006358p 0.0 0.078062p 0.037514p 0.115576p 0.0 0.160212p 4.90e-05p 4.90e-05p
rc 0.0 1.51e-08p 3.98e-05p 0.006358p 0.000737o 0.078799p 0.037610p 0.116313o 0.004512o 0.165557k 4.90e-05p 4.90e-05p
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.153893n 0.0 0.0
zp 34.77 ri 0.0 1.42e-08p 2.27e-05p 0.003260p 0.0 0.047550p 0.041226p 0.041226p 0.0 0.017924p 0.000430p 9.84e-07p
sig0.627 cc 0.0 1.42e-08p 2.27e-05p 0.003279p 0.0 0.050550p 0.041226p 0.091777p 0.0 0.150927p 0.000430p 0.000431p
rc 0.0 1.42e-08p 2.27e-05p 0.003279p 0.000364o 0.050915p 0.041281p 0.092141p 0.003588o 0.154934n 0.000430p 0.000431p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.040428n 0.0 0.0
zp 35.06 ri 0.0 1.82e-10p 7.24e-07p 0.000238p 0.0 0.007171p 0.011655p 0.011655p 0.0 0.009147p 0.000395p 1.59e-06p
sig0.619 cc 0.0 1.82e-10p 7.24e-07p 0.000239p 0.0 0.007390p 0.011655p 0.019045p 0.0 0.039846p 0.000395p 0.000397p
rc 0.0 1.82e-10p 7.24e-07p 0.000239p 2.04e-05o 0.007410p 0.011661p 0.019065p 0.000754o 0.040627n 0.000395p 0.000397p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.029829n 0.0 0.0
zp 34.80 ri 0.0 1.78e-11p 3.34e-07p 0.000244p 0.0 0.008279p 0.008960p 0.008960p 0.0 0.002861p 2.54e-05p 9.56e-09p
sig0.543 cc 0.0 1.78e-11p 3.34e-07p 0.000244p 0.0 0.008503p 0.008960p 0.017463p 0.0 0.029283p 2.54e-05p 2.54e-05p
rc 0.0 1.78e-11p 3.34e-07p 0.000244p 1.62e-05o 0.008519p 0.008967p 0.017479p 0.000717o 0.030023n 2.54e-05p 2.54e-05p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.054529n 0.0 0.0
zp 34.86 ri 0.0 1.63e-09p 3.80e-06p 0.000754p 0.0 0.014290p 0.015303p 0.015303p 0.0 0.007986p 0.000225p 5.82e-07p

sig0.621 cc 0.0 1.63e-09p 3.80e-06p 0.000757p 0.0 0.014982p 0.015303p 0.030285p 0.0 0.053575p 0.000225p 0.000225p
rc 0.0 1.63e-09p 3.80e-06p 0.000757p 7.34e-05o 0.015056p 0.015318p 0.030359p 0.001206o 0.054869n 0.000225p 0.000225p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.909949n 0.0 0.0
zp 34.59 ri 3.36e-12p 1.04e-07p 0.000211p 0.030492p 0.0 0.364155p 0.221307p 0.220578p 0.0 0.055819p 0.000603p 4.73e-07p
sig0.597 cc 3.35e-12p 1.03e-07p 0.000210p 0.030596p 0.0 0.392244p 0.221001p 0.613245p 0.0 0.889930p 0.000602p 0.000602p
rc 3.36e-12p 1.04e-07p 0.000211p 0.030670p 0.003507o 0.395725p 0.221773p 0.616303o 0.024299o 0.918194m 0.000603p 0.000604p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.298916n 0.0 0.0
zp 35.13 ri 0.0 6.21e-10p 1.38e-05p 0.006816p 0.0 0.593193p 0.792358p 0.792521p 0.0 1.098806n 0.024886p 0.000104p
sig0.583 cc 0.0 6.21e-10p 1.38e-05p 0.006827p 0.0 0.599512p 0.792461p 1.391973p 0.0 3.283128p 0.024884p 0.024988p
rc 0.0 6.21e-10p 1.38e-05p 0.006828p 0.000436o 0.599876o 0.792728o 1.392397n 0.047286m 3.331217m 0.024886p 0.024990p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.985117i 0.0 0.0
zp 34.03 ri 0.0 1.57e-07p 0.001069p 0.123286p 0.0 0.664982o 0.072499p 0.072499p 0.0 0.001521p 2.75e-07p 1.37e-12p
sig0.497 cc 0.0 1.53e-07p 0.001040p 0.120849p 0.0 0.782847p 0.070547p 0.853394p 0.0 0.925422p 2.67e-07p 2.67e-07p
rc 0.0 1.57e-07p 0.001069p 0.124192p 0.020327o 0.798941n 0.074208p 0.871440l 0.038092n 0.985261i 2.75e-07p 2.75e-07p

ge half life from 80eng2; as, se, br half lives from 89wal1; rb half life 90bur1.

1

mass number 87 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	32 ge g	33 as g	34 se g	35 br d	35 br g	36 kr d	36 kr g	37 rb g	38 sr m	38 sr g	39 y g	40 zr g
half life	0.134s	0.8 s	5.6 s	1.50s	55.9 s	16.0 s	1.27 h	10.67l	2.81 h	stable	80.3 h	1.6 h

```
 lambda      5.173e+00 8.664e-01 1.238e-01 4.621e-01 1.240e-02 4.332e-02 1.516e-04 4.699e-19 6.852e-05       0.0 2.398e-06
1.203e-04
  z - 1 g    100.0000  100.0000   55.6400       0.0   99.8120       0.0   97.4600  100.0000   -0.3000  100.0000       0.0       0.0
  z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0 -100.0000 -100.0000
  z - 0 m       0.0       0.0       0.0    0.9660  100.0000    6.2600  100.0000       0.0       0.0   99.7000       0.0       0.0
  cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.286445n      0.0  0.286445n      0.0       0.0
 zp 35.14 ri 6.92e-07p 0.000597p 0.039145p      0.0  0.162868p      0.0  0.077647p 0.002525p 1.25e-06p 5.32e-06p 7.99e-10p      0.0
 sig0.577 cc 6.92e-07p 0.000598p 0.039473p      0.0  0.202281p      0.0  0.274781p 0.277305p 1.25e-06p 0.277311p 7.99e-10p
0.0
          rc 6.92e-07p 0.000598p 0.039478p 0.000132o 0.202403p 0.009936o 0.284845o 0.287370n 1.25e-06p 0.287376m 7.99e-10p
0.0
  cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.368893n      0.0  0.368893n      0.0       0.0
 zp 35.32 ri 6.48e-08p 0.000155p 0.028788p      0.0  0.183131p      0.0  0.150042p 0.005259p 3.06e-06p 1.31e-05p 1.28e-09p      0.0
 sig0.551 cc 6.46e-08p 0.000155p 0.028772p      0.0  0.211218p      0.0  0.356648p 0.361888p 3.05e-06p 0.361904p 1.27e-09p
0.0
          rc 6.48e-08p 0.000156p 0.028875p 7.15e-05o 0.212023p 0.007455o 0.364135o 0.369394n 3.06e-06p 0.369410m 1.28e-09p
0.0
  cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.213875n      0.0  0.213875n      0.0       0.0
 zp 34.90 ri 3.64e-06p 0.001657p 0.050025p      0.0  0.126579p      0.0  0.030497p 0.000585p 1.36e-07p 5.80e-07p 5.01e-11p      0.0
 sig0.579 cc 3.64e-06p 0.001660p 0.050937p      0.0  0.177440p      0.0  0.203423p 0.204008p 1.36e-07p 0.204008p 5.01e-11p
0.0
          rc 3.64e-06p 0.001660p 0.050949p 0.000223o 0.177656p 0.010712o 0.214353o 0.214938n 1.36e-07p 0.214938m 5.01e-11p
0.0
  es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.203670n      0.0  0.203670n      0.0       0.0
 zp 35.16 ri 2.25e-06p 0.000819p 0.028652p      0.0  0.112080p      0.0  0.055179p 0.003193p 3.52e-06p 1.50e-05p 9.63e-09p      0.0
 sig0.627 cc 2.25e-06p 0.000821p 0.029104p      0.0  0.141144p      0.0  0.192729p 0.195922p 3.53e-06p 0.195940p 9.63e-09p
0.0
          rc 2.25e-06p 0.000822p 0.029109p 0.000131o 0.141266p 0.008425o 0.201282o 0.204475n 3.53e-06p 0.204493m 9.63e-09p
0.0
  fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.056423n      0.0  0.056423n      0.0       0.0
```

zp 35.45 ri 5.32e-08p 4.59e-05p 0.003453p 0.0 0.026182p 0.0 0.023419p 0.002443p 4.79e-06p 2.04e-05p 2.24e-08p 1.60e-12p
sig0.619 cc 5.32e-08p 4.60e-05p 0.003479p 0.0 0.029654p 0.0 0.052320p 0.054763p 4.81e-06p 0.054788p 2.24e-08p 1.60e-12p
rc 5.32e-08p 4.60e-05p 0.003479p 1.41e-05o 0.029668p 0.001747o 0.054081o 0.056524n 4.81e-06p 0.056549m 2.24e-08p 1.60e-12p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.039985n 0.0 0.039985n 0.0 0.0
zp 35.19 ri 1.43e-08p 3.65e-05p 0.003983p 0.0 0.024203p 0.0 0.010861p 0.000310p 7.76e-08p 3.31e-07p 2.10e-11p 0.0
sig0.543 cc 1.43e-08p 3.66e-05p 0.004003p 0.0 0.028199p 0.0 0.038344p 0.038653p 7.76e-08p 0.038654p 2.10e-11p 0.0
rc 1.43e-08p 3.66e-05p 0.004003p 1.15e-05o 0.028210p 0.001414o 0.039769o 0.040079n 7.76e-08p 0.040079m 2.10e-11p 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.074512n 0.0 0.074512n 0.0 0.0
zp 35.26 ri 3.14e-07p 0.000165p 0.007860p 0.0 0.039505p 0.0 0.024048p 0.001686p 2.19e-06p 9.32e-06p 6.77e-09p 0.0
sig0.621 cc 3.14e-07p 0.000165p 0.007952p 0.0 0.047442p 0.0 0.070286p 0.071971p 2.19e-06p 0.071983p 6.77e-09p 0.0
rc 3.14e-07p 0.000165p 0.007952p 3.13e-05o 0.047474p 0.002695o 0.073011o 0.074697n 2.19e-06p 0.074709m 6.77e-09p 0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.199932n 0.0 1.199932n 0.0 0.0
zp 34.98 ri 1.97e-05p 0.007888p 0.243606p 0.0 0.708191p 0.0 0.216545p 0.006336p 1.54e-06p 1.25e-05p 2.12e-09p 0.0
sig0.597 cc 1.96e-05p 0.007887p 0.247357p 0.0 0.953479p 0.0 1.148084p 1.154403p 1.54e-06p 1.154417p 2.11e-09p 0.0
rc 1.97e-05p 0.007908p 0.248006p 0.001057o 0.956788o 0.055136o 1.204166n 1.210502m 1.54e-06p 1.210516m 2.12e-09p 0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.089143k 4.698909n 0.0 4.698909n 0.0 0.0
zp 35.52 ri 5.41e-07p 0.000982p 0.196411p 0.0 1.664687n 0.0 2.272890m 0.224988p 0.000354p 0.001511p 6.57e-07p 2.36e-11p
sig0.583 cc 5.42e-07p 0.000985p 0.197446p 0.0 1.866057p 0.0 4.139331p 4.311924p 0.000323p 4.313618p 5.97e-07p 2.14e-11p
rc 5.41e-07p 0.000982p 0.196958p 0.000553o 1.861828m 0.069635m 4.157063k 4.382052k 0.000355p 4.383917k 6.57e-07p 2.36e-11p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.530813n 0.0 1.530813n 0.0 0.0
zp 34.42 ri 9.46e-05p 0.045730p 0.883359p 0.0 0.589632p 0.0 0.024118p 1.93e-05p 8.50e-11p 3.62e-10p 0.0 0.0
sig0.497 cc 9.45e-05p 0.045817p 0.908711p 0.0 1.496786p 0.0 1.482882p 1.482901p 8.50e-11p 1.482901p 0.0 0.0
rc 9.46e-05p 0.045824p 0.908855o 0.002955o 1.499733n 0.059372o 1.545130n 1.545149m 8.50e-11p 1.545149m 0.0
0.0

ge half life from 80eng2; as, se, br, kr half lives from 89wal1; sr half life 90bur1.

1

mass number 88 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 32 ge g 33 as g 34 se g 35 br d 35 br g 36 kr d 36 kr g 37 rb g 38 sr g 39 y g 40 zr g
half life 0.129s 0.135s 1.50 s 0.41 s 16.4 s 4.38 s 2.84 h 17.7 m stable 106.6d 85. d
lambda 5.373e+00 5.134e+00 4.621e-01 1.691e+00 4.227e-02 1.583e-01 6.780e-05 6.527e-04 0.0 7.526e-08 9.438e-08
z - 1 g 100.0000 100.0000 100.0000 0.0 99.0340 0.0 93.7400 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 7.7000 100.0000 14.0000 100.0000 0.0 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.343933n 0.0 0.0
zp 35.52 ri 2.88e-08p 7.37e-05p 0.013603p 0.0 0.144897p 0.0 0.167020p 0.014565p 0.000109p 3.98e-08p 0.0
sig0.577 cc 2.86e-08p 7.32e-05p 0.013592p 0.0 0.157547p 0.0 0.315690p 0.330165p 0.330273p 3.96e-08p 0.0
rc 2.88e-08p 7.37e-05p 0.013676p 0.000278o 0.158719p 0.015177o 0.330980p 0.345544o 0.345654n 3.98e-08p 0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.448095n 0.0 0.0
zp 35.71 ri 1.48e-09p 9.93e-06p 0.007388p 0.0 0.111655p 0.0 0.300291p 0.024921p 0.000306p 6.77e-08p 1.58e-12p
sig0.551 cc 1.47e-09p 9.87e-06p 0.007352p 0.0 0.118278p 0.0 0.412026p 0.436793p 0.437097p 6.73e-08p 1.57e-12p
rc 1.48e-09p 9.93e-06p 0.007398p 0.000112o 0.119094p 0.011792o 0.423722p 0.448643o 0.448949n 6.77e-08p 1.58e-12p
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.274527n 0.0 0.0
zp 35.29 ri 1.97e-07p 0.000269p 0.022853p 0.0 0.147500p 0.0 0.089620p 0.004755p 1.74e-05p 3.74e-09p 0.0
sig0.579 cc 1.96e-07p 0.000269p 0.023106p 0.0 0.170466p 0.0 0.249351p 0.254103p 0.254120p 3.74e-09p 0.0
rc 1.97e-07p 0.000269p 0.023122p 0.000724o 0.171123p 0.023680o 0.273711o 0.278466o 0.278483n 3.74e-09p 0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.287266n 0.0 0.0
zp 35.55 ri 1.67e-07p 0.000156p 0.013420p 0.0 0.120832p 0.0 0.131557p 0.018089p 0.000262p 3.52e-07p 4.08e-11p
sig0.627 cc 1.66e-07p 0.000155p 0.013496p 0.0 0.133576p 0.0 0.257581p 0.275563p 0.275824p 3.50e-07p 4.05e-11p

```
        rc 1.67e-07p 0.000156p 0.013576p 0.000317o 0.134594p 0.012742o 0.270468p 0.288556o 0.288818n 3.52e-07p 4.08e-11p
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.081210p      0.0       0.0       0.0       0.0
zp 35.84 ri 3.31e-09p 7.57e-06p 0.001455p      0.0  0.026433p      0.0  0.053784p 0.013175p 0.000342p 8.01e-07p 1.54e-10p
sig0.619 cc 3.31e-09p 7.57e-06p 0.001463p      0.0  0.027882p      0.0  0.079920p 0.093095p 0.093437p 8.01e-07p 1.54e-10p
        rc 3.31e-09p 7.57e-06p 0.001463p 2.54e-05o 0.027907p 0.002156o 0.082100p 0.095274o 0.095617o 8.01e-07p 1.54e-10p
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.051268n      0.0       0.0
zp 35.58 ri 3.58e-10p 3.26e-06p 0.001191p      0.0  0.021386p      0.0  0.026226p 0.002286p 1.03e-05p 1.90e-09p      0.0
sig0.543 cc 3.58e-10p 3.26e-06p 0.001195p      0.0  0.022569p      0.0  0.047383p 0.049669p 0.049679p 1.90e-09p      0.0
        rc 3.58e-10p 3.26e-06p 0.001195p 1.63e-05o 0.022585p 0.001738o 0.049136p 0.051423o 0.051433n 1.90e-09p      0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.111077n      0.0       0.0
zp 35.67 ri 1.77e-08p 2.56e-05p 0.003217p      0.0  0.039776p      0.0  0.057142p 0.009900p 0.000179p 2.91e-07p 3.90e-11p
sig0.621 cc 1.77e-08p 2.56e-05p 0.003243p      0.0  0.042988p      0.0  0.097439p 0.107339p 0.107518p 2.91e-07p 3.90e-11p
        rc 1.77e-08p 2.56e-05p 0.003243p 6.94e-05o 0.043057p 0.003886o 0.101390p 0.111289o 0.111469n 2.91e-07p 3.90e-11p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.499916n      0.0       0.0
zp 35.37 ri 1.17e-06p 0.001315p 0.108150p      0.0  0.769718p      0.0  0.564554p 0.042839p 0.000263p 1.14e-07p 3.26e-12p
sig0.597 cc 1.16e-06p 0.001308p 0.108802p      0.0  0.873554p      0.0  1.388264p 1.430843p 1.431105p 1.13e-07p 3.24e-12p
        rc 1.17e-06p 0.001316p 0.109466p 0.002775o 0.880901o 0.095243o 1.485554n 1.528393n 1.528656m 1.14e-07p 3.26e-12p
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.568919i      0.0  5.599081n      0.0       0.0
zp 35.91 ri 1.80e-08p 8.00e-05p 0.057201p      0.0  1.055092n      0.0  4.415171j 0.653120p 0.022313p 1.90e-05p 2.57e-09p
sig0.583 cc 1.77e-08p 7.89e-05p 0.056459p      0.0  1.096054p      0.0  5.427783p 6.110544p 6.133839p 1.99e-05p 2.68e-09p
        rc 1.80e-08p 8.00e-05p 0.057281p 0.000642o 1.112462m 0.074701o 5.532694i 6.185814j 6.208146j 1.90e-05p 2.57e-09p
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0  3.911198p      0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.542279i      0.0       0.0
zp 34.81 ri 1.96e-06p 0.004149p 0.301718p      0.0  0.631064n      0.0  1.491292n 0.000317p 3.37e-08p      0.0       0.0
sig0.497 cc 4.62e-06p 0.009780p 0.720602p      0.0  2.202832p      0.0  2.282937p 2.283684p 2.283684p      0.0       0.0
        rc 1.96e-06p 0.004151p 0.305869p 0.014461o 0.948439p 0.206017o 2.586376n 2.586694k 2.586694i      0.0       0.0
```

ge, as half lives from 80eng2; se, br, kr, rb half lives from 89wal1.

mass number 89 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 33 as g 34 se g 35 br d 35 br g 36 kr d 36 kr g 37 rb g 38 sr g 39 y m 39 y g 40 zr g 41 nb g

half life 0.121s 0.41 s 0.427s 4.37 s 1.80 s 3.15 m 15.4 m 50.52d 15.7 s stable 78.5 h 2.0 h

lambda 5.728e+00 1.691e+00 1.623e+00 1.586e-01 3.851e-01 3.667e-03 7.502e-04 1.588e-07 4.415e-02 0.0 2.453e-06 9.627e-05

z - 1 g 100.0000 100.0000 0.0 92.3000 0.0 86.0000 100.0000 100.0000 0.0100 99.9900 -0.2000 -100.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -99.8000 0.0

z - 0 m 0.0 0.0 9.1320 100.0000 24.6000 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0

cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.477058k 0.0 0.0 0.0 0.0

zp 35.91 ri 6.57e-06p 0.003606p 0.0 0.105023p 0.0 0.302939p 0.069151p 0.001495p 1.35e-06p 3.16e-07p 1.26e-10p 0.0

sig0.577 cc 6.51e-06p 0.003580p 0.0 0.107409p 0.0 0.396891p 0.465426p 0.466908p 4.80e-05p 0.466909p 1.25e-10p 0.0

rc 6.57e-06p 0.003613p 4.68e-05o 0.108404p 0.010269o 0.406436o 0.475587m 0.477082k 4.91e-05k 0.477084k 1.26e-10p 0.0

cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.715464i 0.0 0.0 0.0 0.0

zp 36.10 ri 7.15e-07p 0.001450p 0.0 0.082876p 0.0 0.494039p 0.139072p 0.004366p 3.26e-06p 7.64e-07p 2.67e-10p 0.0

sig0.551 cc 7.12e-07p 0.001445p 0.0 0.083860p 0.0 0.566984p 0.705605p 0.709953p 7.42e-05p 0.709957p 2.65e-10p 0.0

rc 7.15e-07p 0.001451p 1.37e-05o 0.084229p 0.005551o 0.572027o 0.711098k 0.715465i 7.48e-05j 0.715469i 2.67e-10p 0.0

cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.434569k 0.0 0.0 0.0 0.0

zp 35.68 ri 3.79e-05p 0.009366p 0.0 0.160298p 0.0 0.234053p 0.034147p 0.000363p 1.93e-07p 4.53e-08p 8.80e-12p 0.0

sig0.579 cc 3.73e-05p 0.009236p 0.0 0.166008p 0.0 0.380421p 0.413957p 0.414313p 4.16e-05p 0.414313p 8.64e-12p 0.0

rc 3.79e-05p 0.009404p 0.000163o 0.169141p 0.020600o 0.400115o 0.434261m 0.434624k 4.37e-05k 0.434625k 8.80e-12p 0.0

es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.369358k 0.0 0.0 0.0 0.0

zp 35.94 ri 1.90e-05p 0.004094p 0.0 0.087146p 0.0 0.211091p 0.066901p 0.002365p 6.58e-06p 1.54e-06p 2.46e-09p 0.0

sig0.627 cc 1.88e-05p 0.004070p 0.0 0.089983p 0.0 0.290170p 0.356366p 0.358706p 4.24e-05p 0.358714p 2.44e-09p 0.0

rc 1.90e-05p 0.004113p 7.60e-05o 0.091019p 0.010752o 0.300119o 0.367020m 0.369385k 4.35e-05m 0.369393k 2.46e-09p 0.0

```
  fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.131390n      0.0       0.0
 zp 36.24 ri 6.43e-07p 0.000329p       0.0  0.015090p       0.0  0.072289p 0.041543p 0.002705p 1.36e-05p 3.20e-06p 8.86e-09p       0.0
 sig0.619 cc 6.43e-07p 0.000330p       0.0  0.015395p       0.0  0.085528p 0.127072p 0.129777p 2.66e-05p 0.129794p 8.86e-09p
0.0
          rc 6.43e-07p 0.000330p 5.44e-06o 0.015400p 0.001710o 0.087243p 0.128786p 0.131491o 2.68e-05p 0.131508n 8.86e-09p
0.0
  fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.065251n      0.0       0.0
 zp 35.98 ri 1.63e-07p 0.000211p       0.0  0.012219p       0.0  0.042365p 0.010956p 0.000168p 9.14e-08p 2.14e-08p 2.91e-12p       0.0
 sig0.543 cc 1.63e-07p 0.000212p       0.0  0.012414p       0.0  0.053042p 0.063998p 0.064166p 6.51e-06p 0.064166p 2.91e-12p
0.0
          rc 1.63e-07p 0.000212p 2.27e-06o 0.012417p 0.001164o 0.054207p 0.065164p 0.065331o 6.62e-06o 0.065332n 2.91e-12p
0.0
  fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.151468n      0.0       0.0
 zp 36.06 ri 2.79e-06p 0.000899p       0.0  0.026909p       0.0  0.088059p 0.035170p 0.001568p 5.35e-06p 1.26e-06p 2.36e-09p       0.0
 sig0.621 cc 2.79e-06p 0.000901p       0.0  0.027741p       0.0  0.111916p 0.147087p 0.148655p 2.02e-05p 0.148661p 2.36e-09p
0.0
          rc 2.79e-06p 0.000901p 1.46e-05o 0.027756p 0.003027o 0.114956p 0.150126o 0.151694o 2.05e-05o 0.151701n 2.36e-09p
0.0
  np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.999920n      0.0       0.0
 zp 35.76 ri 0.000160p 0.035883p       0.0  0.646468p       0.0  1.131267n 0.214315p 0.003572p 3.92e-06p 4.85e-07p 3.66e-10p
0.0
 sig0.597 cc 0.000158p 0.035762p       0.0  0.674666p       0.0  1.717981p 1.930912p 1.934457p 0.000197p 1.934461p 3.63e-10p
0.0
          rc 0.000160p 0.036042p 0.000646o 0.680381o 0.085761o 1.802156m 2.016470m 2.020043m 0.000206m 2.020047l 3.66e-
10p      0.0
  u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0  7.269403i 6.519465i 6.092672j      0.0       0.0       0.0       0.0
 zp 36.30 ri 4.85e-06p 0.008335p       0.0  0.525864p       0.0  4.558588j 1.768504n 0.104685p 0.000261p 6.12e-05p 1.07e-07p 1.16e-
12p
 sig0.583 cc 4.54e-06p 0.007804p       0.0  0.499302p       0.0  4.706247p 6.741669p 6.895327p 0.001073p 6.895800p 1.57e-07p
1.70e-12p
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          rc 4.85e-06p 0.008340p 6.18e-05o 0.533624p 0.025275o 5.042779j 6.811283i 6.915969h 0.000953o 6.916291h 1.07e-07p
1.16e-12p
  u238s   xi      0.0       0.0       0.0       0.0       0.0  3.911198p      0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.346258l      0.0  0.000000       0.0       0.0
 zp 35.20 ri 0.000634p 0.187167p      0.0  1.289963n      0.0  2.110060n 0.008652p 4.14e-06p 2.78e-11p 6.52e-12p      0.0       0.0
 sig0.497 cc 0.001081p 0.320101p      0.0  2.496545p      0.0  3.207562p 3.222309p 3.222316p 0.000322p 3.222316p      0.0       0.0
          rc 0.000634p 0.187801p 0.008262o 1.471565o 0.570814m 3.946421n 3.955073l 3.955077j 0.000396k 3.955077i      0.0
0.0

   as half life from 80eng2; se, br, kr, rb, sr half lives 89wal1.
1

      mass number     90             LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       34 se g   35 br d   35 br g   36 kr d   36 kr g   37 rb m   37 rb g   38 sr g   39 y  g   40 zr g   41 nb g   42 mo g
 half life     0.427s     0.27s     1.9 s    0.60 s    32.3 s     4.3 m     2.6 m    29.1 y    2.67 d    stable    14.59h     5.7 h
 lambda       1.623e+00 2.567e+00 3.648e-01 1.155e+00 2.146e-02 2.687e-03 4.443e-03 7.553e-10 3.005e-06       0.0 1.320e-05
3.378e-05
  z - 1 g    100.0000       0.0   90.8680       0.0   75.4000   11.0000   89.0000  100.0000  100.0000  100.0000   -3.0000 -100.0000
  z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0   97.4000       0.0       0.0  -97.0000       0.0
  z - 0 m        0.0   24.4380  100.0000   18.1000  100.0000       0.0    2.6000       0.0       0.0       0.0       0.0       0.0
  cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.513626n      0.0       0.0
 zp 36.29 ri 0.000513p      0.0  0.041269p      0.0  0.302175p 0.136368p 0.031992p 0.009872p 3.20e-05p 7.34e-09p      0.0       0.0
 sig0.577 cc 0.000512p      0.0  0.041686p      0.0  0.333839p 0.172953p 0.333569p 0.511886p 0.511918p 0.511918p      0.0       0.0
          rc 0.000513p 1.05e-05o 0.041745p 0.001838o 0.335489p 0.173271p 0.335082o 0.513720o 0.513752n 0.513752m      0.0
0.0
  cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.806791k      0.0       0.0       0.0       0.0
 zp 36.49 ri 0.000151p      0.0  0.022425p      0.0  0.469062p 0.232265p 0.054484p 0.033154p 8.23e-05p 2.32e-08p      0.0       0.0
 sig0.551 cc 0.000150p      0.0  0.022554p      0.0  0.486181p 0.285672p 0.494593p 0.805979p 0.806062p 0.806062p      0.0       0.0
          rc 0.000151p 1.83e-06o 0.022564p 0.000822o 0.486897p 0.285824p 0.495254o 0.806801k 0.806883k 0.806883k      0.0
0.0
  cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.481218n      0.0       0.0
 zp 36.06 ri 0.001785p      0.0  0.082057p      0.0  0.302334p 0.086886p 0.020381p 0.003137p 6.03e-06p 6.69e-10p      0.0       0.0
 sig0.579 cc 0.001779p      0.0  0.083409p      0.0  0.365850p 0.126850p 0.349220p 0.475898p 0.475904p 0.475904p      0.0       0.0
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rc 0.001785p 6.03e-05o 0.083739p 0.005732o 0.371205p 0.127719p 0.354074p 0.481609o 0.481615n 0.481615m 0.0
0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.458258n 0.0 0.0
zp 36.33 ri 0.000832p 0.0 0.042925p 0.0 0.240138p 0.136490p 0.032023p 0.014194p 0.000123p 9.68e-08p 6.50e-12p
0.0
sig0.627 cc 0.000831p 0.0 0.043607p 0.0 0.273374p 0.166358p 0.279597p 0.455800p 0.455922p 0.455922p 6.49e-12p
0.0
rc 0.000832p 2.65e-05o 0.043708p 0.002522o 0.275616p 0.166808p 0.281658o 0.458323n 0.458446n 0.458446m 6.50e-12p
0.0
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.201512n 0.0 0.0
zp 36.63 ri 5.96e-05p 0.0 0.006894p 0.0 0.077949p 0.082472p 0.019345p 0.015800p 0.000250p 3.49e-07p 3.94e-11p
0.0
sig0.619 cc 5.96e-05p 0.0 0.006948p 0.0 0.083188p 0.091623p 0.095765p 0.200806p 0.201056p 0.201056p 3.94e-11p
0.0
rc 5.96e-05p 2.14e-06o 0.006950p 0.000486o 0.083676p 0.091677p 0.096200p 0.201293o 0.201544n 0.201544m 3.94e-11p
0.0
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.085682n 0.0 0.0
zp 36.37 ri 2.48e-05p 0.0 0.004708p 0.0 0.046839p 0.027117p 0.006361p 0.001611p 3.76e-06p 3.49e-10p 0.0 0.0
sig0.543 cc 2.48e-05p 0.0 0.004731p 0.0 0.050406p 0.032662p 0.052072p 0.085495p 0.085499p 0.085499p 0.0 0.0
rc 2.48e-05p 3.97e-07o 0.004731p 0.000196o 0.050603p 0.032684p 0.052247p 0.085692o 0.085695n 0.085695m 0.0
0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.201384n 0.0 0.0
zp 36.46 ri 0.000160p 0.0 0.012157p 0.0 0.094434p 0.070799p 0.016607p 0.009563p 0.000105p 1.02e-07p 8.05e-12p
0.0
sig0.621 cc 0.000160p 0.0 0.012302p 0.0 0.103710p 0.082207p 0.111046p 0.200679p 0.200784p 0.200784p 8.05e-12p
0.0
rc 0.000160p 4.46e-06o 0.012306p 0.000642o 0.104355p 0.082278p 0.111623p 0.201324o 0.201430n 0.201430m 8.05e-12p
0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.499901n 0.0 0.0
zp 36.16 ri 0.007075p 0.0 0.342045p 0.0 1.493856n 0.620072p 0.076664p 0.031356p 0.000111p 2.74e-08p 0.0 0.0
sig0.597 cc 0.007060p 0.0 0.347790p 0.0 1.758119p 0.812352p 1.662347p 2.484867p 2.484978p 2.484978p 0.0 0.0

rc 0.007075p 0.000186o 0.348660p 0.018539o 1.775284m 0.815354o 1.677866m 2.503376l 2.503487l 2.503487l 0.0
0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.597833n 0.0 0.0
zp 36.70 ri 0.000677p 0.0 0.102136p 0.0 2.935358n 2.318346n 0.543800p 0.714679p 0.005257p 6.64e-06p 1.85e-10p
0.0
sig0.583 cc 0.000677p 0.0 0.102734p 0.0 3.013451p 2.649425p 3.294572p 6.589663p 6.594919p 6.594925p 1.85e-10p
0.0
rc 0.000677p 8.35e-06o 0.102759p 0.003467o 3.016306m 2.650140m 3.297216m 6.593131l 6.598388l 6.598394l 1.85e-10p
0.0
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.261925j 0.0 5.108527i 0.0 0.0
zp 35.59 ri 0.090472p 0.0 2.235949n 0.0 3.343781n 0.142952p 0.033596p 0.000370p 1.09e-08p 0.0 0.0 0.0
sig0.497 cc 0.089896p 0.0 2.304002p 0.0 5.096063p 0.702881p 4.587154p 5.272127p 5.272127p 5.272127p 0.0 0.0
rc 0.090472p 0.002238o 2.320397m 0.161006m 5.254367m 0.720932n 4.728727l 5.431284j 5.431284i 5.431284h 0.0
0.0

kr-rb branching from 70bal1; se half lives from 80eng2; br, kr, rb, sr, y half lives from 89wal1.

1

mass number 91 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 34 se g 35 br g 36 kr d 36 kr g 37 rb d 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb g 42 mo g
half life 0.27s 0.54 s 0.360s 8.6 s 1.84 s 58.0 s 4.53 s 9.5 h 58.5 d stable long 15.5 m
lambda 2.567e+00 1.284e+00 1.925e+00 8.060e-02 3.767e-01 1.195e-02 1.530e-01 2.027e-05 1.371e-07 0.0 0.0 7.453e-
04
z - 1 g 100.0000 75.5620 0.0 81.9000 0.0 100.0000 0.0 100.0000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 42.7300 100.0000 0.0330 100.0000 0.0100 100.0000 0.0 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.198912j 0.0 0.0 0.0 0.566259i 0.0 0.0 0.0 0.0
zp 36.68 ri 4.30e-05p 0.010124p 0.0 0.197669k 0.0 0.310997p 0.0 0.048334p 0.000460p 3.24e-07p 1.03e-11p 0.0
sig0.577 cc 4.62e-05p 0.010934p 0.0 0.222261p 0.0 0.518711p 0.0 0.565193p 0.565635p 0.565636p 9.91e-12p 0.0
rc 4.30e-05p 0.010156p 0.000649o 0.206636i 2.75e-05n 0.517660o 5.57e-05o 0.566050i 0.566510i 0.566510i 1.03e-11p
0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.823765k 0.0 0.0 0.0 0.0
zp 36.88 ri 7.49e-06p 0.004536p 0.0 0.230698p 0.0 0.464694p 0.0 0.124310p 0.001218p 9.54e-07p 1.85e-11p 0.0
sig0.551 cc 7.49e-06p 0.004541p 0.0 0.234449p 0.0 0.699136p 0.0 0.823422p 0.824640p 0.824641p 1.85e-11p 0.0
rc 7.49e-06p 0.004542p 0.000246o 0.234663p 3.73e-05o 0.699394n 6.23e-05o 0.823767k 0.824985k 0.824986k 1.85e-11p
0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.596163i 0.0 0.0 0.0 0.0
zp 36.44 ri 0.000247p 0.031483p 0.0 0.293304p 0.0 0.253069p 0.0 0.019711p 0.000109p 3.61e-08p 0.0 0.0
sig0.579 cc 0.000246p 0.031566p 0.0 0.319427p 0.0 0.572394p 0.0 0.592041p 0.592149p 0.592149p 0.0 0.0
rc 0.000247p 0.031669p 0.003989o 0.323230p 7.92e-05o 0.576378l 7.45e-05o 0.596164i 0.596273i 0.596273i 0.0 0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.531426j 0.0 0.0 0.0 0.0
zp 36.72 ri 0.000108p 0.013854p 0.0 0.180582p 0.0 0.282731p 0.0 0.055327p 0.001185p 2.40e-06p 4.24e-10p 0.0
sig0.627 cc 0.000108p 0.013918p 0.0 0.192156p 0.0 0.474805p 0.0 0.530059p 0.531243p 0.531245p 4.23e-10p 0.0
rc 0.000108p 0.013936p 0.001296o 0.193292p 3.25e-05o 0.476056m 4.46e-05o 0.531428j 0.532613j 0.532615j 4.24e-10p
0.0
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.391556j 0.0 0.0 0.0 0.0
zp 37.03 ri 8.77e-06p 0.002680p 0.0 0.075276p 0.0 0.229396p 0.0 0.084466p 0.003406p 1.27e-05p 3.95e-09p 0.0
sig0.619 cc 8.77e-06p 0.002687p 0.0 0.077464p 0.0 0.306886p 0.0 0.391339p 0.394745p 0.394758p 3.95e-09p 0.0
rc 8.77e-06p 0.002687p 0.000185o 0.077661p 1.01e-05o 0.307067o 2.45e-05o 0.391558j 0.394964j 0.394977j 3.95e-09p
0.0
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.111858n 0.0 0.0
zp 36.77 ri 1.63e-06p 0.001082p 0.0 0.033612p 0.0 0.067299p 0.0 0.009903p 8.01e-05p 2.74e-08p 0.0 0.0
sig0.543 cc 1.63e-06p 0.001083p 0.0 0.034499p 0.0 0.101798p 0.0 0.111701p 0.111781p 0.111781p 0.0 0.0
rc 1.63e-06p 0.001083p 6.63e-05o 0.034566p 5.12e-06o 0.101869p 1.02e-05o 0.111783p 0.111863o 0.111863n 0.0 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.241175l 0.0 0.0 0.0 0.0
zp 36.85 ri 1.82e-05p 0.003535p 0.0 0.065515p 0.0 0.137296p 0.0 0.035091p 0.000965p 2.44e-06p 5.15e-10p 0.0
sig0.621 cc 1.82e-05p 0.003547p 0.0 0.068394p 0.0 0.205732p 0.0 0.240809p 0.241774p 0.241776p 5.15e-10p 0.0
rc 1.82e-05p 0.003549p 0.000338o 0.068759p 1.17e-05o 0.206066n 2.01e-05o 0.241178l 0.242143l 0.242146l 5.15e-10p
0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.666802l 0.0 0.0 0.0 0.0
zp 36.56 ri 0.000761p 0.101848p 0.0 1.131608n 0.0 1.288027n 0.0 0.151172p 0.001514p 1.09e-06p 5.26e-11p 0.0

sig0.597 cc 0.000759p 0.102237p 0.0 1.217172p 0.0 2.503681p 0.0 2.654728p 2.656240p 2.656241p 5.25e-11p 0.0
rc 0.000761p 0.102423p 0.012496o 1.227988m 0.000289o 2.516304l 0.000326m 2.667802k 2.669317k 2.669318k 5.26e-11p
0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.105821h 0.0 0.0 0.0 0.0
zp 37.10 ri 3.42e-05p 0.019130p 0.0 1.250275n 0.0 3.828599n 0.0 2.010160n 0.051883p 0.000162p 1.74e-08p 0.0
sig0.583 cc 3.42e-05p 0.019155p 0.0 1.266121p 0.0 5.094563p 0.0 7.104726p 7.156606p 7.156768p 1.74e-08p 0.0
rc 3.42e-05p 0.019156p 0.000709o 1.266673m 0.000125o 5.095397m 0.000279m 7.105835h 7.157718h 7.157880h 1.74e-08p
0.0
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.750929k 6.873023k 5.521934i 0.0 0.0
zp 35.98 ri 0.009157p 0.882623n 0.0 4.222828n 0.0 0.765070p 0.0 0.006708p 9.80e-07p 3.58e-12p 0.0 0.0
sig0.497 cc 0.009121p 0.886053p 0.0 4.955032p 0.0 5.717100p 0.0 5.723782p 5.723783p 5.723783p 0.0 0.0
rc 0.009157p 0.889543m 0.096024o 5.047388m 0.001219m 5.813677l 0.000572m 5.820957j 5.820958i 5.820958h 0.0
0.0

y half life from 80eng2; se,br,kr,rb,sr,y half lives from 89wal1.
1

mass number 92 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 34 se g 35 br g 36 kr d 36 kr g 37 rb d 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb g 42 mo g
half life 0.168s 0.34 s 0.176s 1.84 s 1.29 s 4.48 s 5.86s 2.71 h 3.54 h stable 2.e7y stable
lambda 4.126e+00 2.039e+00 3.938e+00 3.767e-01 5.373e-01 1.547e-01 1.183e-01 7.105e-05 5.439e-05 0.0 1.099e-15
0.0
z - 1 g 100.0000 100.0000 0.0 57.2700 0.0 99.9670 0.0 99.9900 100.0000 100.0000 -100.0000 0.0
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 25.0890 100.0000 2.0100 100.0000 1.3500 100.0000 0.0 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.078017n 0.0 0.0 0.0 0.0 0.0 0.786132n 0.0 0.0
zp 37.07 ri 2.15e-06p 0.001517p 0.0 0.082498p 0.0 0.473124p 0.0 0.203668p 0.005390p 1.15e-05p 1.14e-09p 0.0
sig0.577 cc 3.33e-06p 0.002357p 0.0 0.129312p 0.0 0.578822p 0.0 0.760184p 0.765093p 0.765103p 1.04e-09p 0.0
rc 2.15e-06p 0.001519p 7.42e-05o 0.083442n 0.000935o 0.557474p 0.006352o 0.767438o 0.772828o 0.772840n 1.14e-09p
0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.095344n 0.0 0.0
zp 37.27 ri 3.45e-07p 0.000574p 0.0 0.112668p 0.0 0.509779p 0.0 0.456067p 0.011211p 3.62e-05p 1.99e-09p 0.0

sig0.551 cc 3.45e-07p 0.000574p 0.0 0.112922p 0.0 0.622449p 0.0 1.078751p 1.089954p 1.089990p 1.99e-09p 0.0
rc 3.45e-07p 0.000575p 1.22e-05o 0.113009p 0.000506o 0.623257o 0.005817o 1.085078o 1.096289o 1.096325n 1.99e-09p
0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.855499n 0.0 0.0
zp 36.83 ri 2.49e-05p 0.009311p 0.0 0.234227p 0.0 0.502068p 0.0 0.102304p 0.001628p 1.64e-06p 9.33e-11p 0.0
sig0.579 cc 2.48e-05p 0.009324p 0.0 0.239439p 0.0 0.741690p 0.0 0.843799p 0.845425p 0.845427p 9.32e-11p 0.0
rc 2.49e-05p 0.009335p 0.000458o 0.240032p 0.002544o 0.744565o 0.010692o 0.857486n 0.859114n 0.859116m 9.33e-11p
0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.615571n 0.0 0.0
zp 37.12 ri 9.15e-06p 0.003025p 0.0 0.096591p 0.0 0.347213p 0.0 0.157169p 0.008331p 4.39e-05p 2.07e-08p 0.0
sig0.627 cc 9.14e-06p 0.003032p 0.0 0.098265p 0.0 0.445425p 0.0 0.602639p 0.610964p 0.611008p 2.07e-08p 0.0
rc 9.15e-06p 0.003034p 0.000115o 0.098443p 0.000727o 0.446351p 0.004485o 0.607959o 0.616290o 0.616334n 2.07e-08p
0.0
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.444704n 0.0 0.0
zp 37.42 ri 5.39e-07p 0.000432p 0.0 0.030240p 0.0 0.214558p 0.0 0.180014p 0.017584p 0.000169p 1.39e-07p 9.24e-
12p
sig0.619 cc 5.39e-07p 0.000432p 0.0 0.030470p 0.0 0.244943p 0.0 0.425036p 0.442609p 0.442778p 1.39e-07p 9.23e-
12p
rc 5.39e-07p 0.000432p 1.17e-05o 0.030500p 0.000168o 0.245215p 0.002015o 0.427220o 0.444803o 0.444972n 1.39e-07p
9.24e-12p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.139823n 0.0 0.0
zp 37.16 ri 6.67e-08p 0.000155p 0.0 0.015421p 0.0 0.086413p 0.0 0.035865p 0.000937p 1.12e-06p 5.23e-11p 0.0
sig0.543 cc 6.67e-08p 0.000155p 0.0 0.015510p 0.0 0.101918p 0.0 0.137773p 0.138710p 0.138711p 5.23e-11p 0.0
rc 6.67e-08p 0.000155p 3.48e-06o 0.015513p 9.57e-05o 0.102017p 0.001151o 0.139024p 0.139961o 0.139962n 5.23e-11p
0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.302937n 0.0 0.0
zp 37.23 ri 1.61e-06p 0.000789p 0.0 0.035008p 0.0 0.164835p 0.0 0.094261p 0.006177p 3.92e-05p 2.14e-08p 0.0
sig0.621 cc 1.61e-06p 0.000790p 0.0 0.035450p 0.0 0.200311p 0.0 0.294526p 0.300701p 0.300740p 2.14e-08p 0.0
rc 1.61e-06p 0.000790p 3.12e-05o 0.035491p 0.000281o 0.200595p 0.002258o 0.297094o 0.303270o 0.303310n 2.14e-08p
0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.999841n 0.0 0.0
zp 36.96 ri 7.68e-05p 0.029170p 0.0 0.857095p 0.0 2.381570n 0.0 0.704259p 0.019381p 4.06e-05p 5.81e-09p 0.0
sig0.597 cc 7.67e-05p 0.029224p 0.0 0.873514p 0.0 3.254660p 0.0 3.959084p 3.978451p 3.978491p 5.81e-09p 0.0
rc 7.68e-05p 0.029246p 0.001062o 0.874906o 0.007062o 3.263249m 0.038184m 4.005366m 4.024747m 4.024788l 5.81e-09p
0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.660059h 6.399257l 7.599118n 0.0 0.0
zp 37.49 ri 1.22e-06p 0.001659p 0.0 0.376728p 0.0 2.408569n 0.0 3.830117l 0.208357p 0.002525p 6.64e-07p 2.69e-
11p
sig0.583 cc 1.22e-06p 0.001654p 0.0 0.376333p 0.0 2.776531p 0.0 6.609378p 6.824449p 6.826848p 6.30e-07p 2.55e-
11p
rc 1.22e-06p 0.001660p 3.16e-05o 0.377711p 0.001396o 2.787550m 0.021111m 6.638499h 6.846856i 6.849382i 6.64e-07p
2.69e-11p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.857020i 0.0 0.0
zp 36.36 ri 0.000580p 0.224146p 0.0 3.555802n 0.0 1.990041n 0.0 0.066470p 4.24e-05p 7.76e-10p 0.0 0.0
sig0.497 cc 0.000579p 0.224476p 0.0 3.683150p 0.0 5.673509p 0.0 5.739337p 5.739380p 5.739380p 0.0 0.0
rc 0.000580p 0.224725p 0.008724o 3.693226m 0.040341m 5.722390l 0.072640m 5.860927l 5.860970k 5.860970i 0.0
0.0

se half life from 80eng2; br, kr, rb, sr, y half lives from 89wal1.

1

mass number 93 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 35 br g 36 kr g 37 rb d 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb m 41 nb g 42 mo g 43 tc g
half life 0.176s 1.29 s 0.210s 5.85 s 2.76 s 7.4 m 10.2 h 1.5e6y 12. y stable 3.e3 y 2.73 h
lambda 3.938e+00 5.373e-01 3.301e+00 1.185e-01 2.511e-01 1.561e-03 1.888e-05 1.465e-14 1.832e-09 0.0 7.327e-39
7.053e-05
z - 1 g 100.0000 74.9110 0.0 97.9900 0.0 98.6500 100.0000 100.0000 95.0000 5.0000 -15.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -85.0000 0.0
z - 0 m 0.0 0.0 6.1300 100.0000 10.0000 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.948233n 0.0 0.0
zp 37.46 ri 0.000296p 0.046311p 0.0 0.424207p 0.0 0.426462p 0.031840p 0.000202p 1.18e-08p 5.03e-08p 1.26e-12p
0.0

sig0.577 cc 0.000295p 0.046352p 0.0 0.468174p 0.0 0.890075p 0.921791p 0.921992p 0.875893p 0.921992p 1.26e-12p
0.0
rc 0.000296p 0.046533p 0.000701o 0.470506p 0.029483o 0.920099p 0.951938o 0.952141o 0.904534n 0.952141m 1.27e-12p
0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.296109n 0.0 0.0
zp 37.66 ri 4.84e-05p 0.025132p 0.0 0.405963p 0.0 0.785634p 0.069839p 0.000600p 2.65e-08p 1.13e-07p 2.26e-12p 0.0
sig0.551 cc 4.83e-05p 0.025091p 0.0 0.429374p 0.0 1.210682p 1.280306p 1.280904p 1.216859p 1.280904p 2.25e-12p
0.0
rc 4.84e-05p 0.025169p 0.000261o 0.430886p 0.017489o 1.228193n 1.298032n 1.298632n 1.233701n 1.298633m 2.26e-12p
0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.176311n 0.0 0.0
zp 37.21 ri 0.001827p 0.125205p 0.0 0.665064p 0.0 0.331512p 0.014464p 4.23e-05p 1.37e-09p 5.86e-09p 0.0 0.0
sig0.579 cc 0.001820p 0.126122p 0.0 0.787004p 0.0 1.110043p 1.124456p 1.124498p 1.068273p 1.124498p 0.0 0.0
rc 0.001827p 0.126573p 0.002874o 0.791968o 0.068000o 1.180788o 1.195252o 1.195295n 1.135530n 1.195295m 0.0
0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.680184k 0.0 0.0 0.0 0.0 0.0
zp 37.51 ri 0.000458p 0.035848p 0.0 0.295985p 0.0 0.289757p 0.037427p 0.000494p 1.14e-07p 4.88e-07p 6.32e-11p
0.0
sig0.627 cc 0.000451p 0.035609p 0.0 0.326320p 0.0 0.617423p 0.654248p 0.654734p 0.621997p 0.654734p 6.22e-11p
0.0
rc 0.000458p 0.036191p 0.000751o 0.332199p 0.025428o 0.642899m 0.680326k 0.680820k 0.646779k 0.680820k 6.32e-11p
0.0
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.481283j 0.0 0.0 0.0 0.0 0.0
zp 37.81 ri 4.65e-05p 0.008312p 0.0 0.140986p 0.0 0.265921p 0.061821p 0.001496p 6.18e-07p 2.64e-06p 5.80e-10p 0.0
sig0.619 cc 4.62e-05p 0.008288p 0.0 0.148148p 0.0 0.413531p 0.474919p 0.476405p 0.452585p 0.476408p 5.76e-10p
0.0
rc 4.65e-05p 0.008347p 8.91e-05o 0.149254p 0.006332o 0.419493n 0.481314j 0.482810j 0.458670j 0.482813j 5.80e-10p
0.0
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.190405m 0.0 0.0 0.0 0.0 0.0
zp 37.56 ri 1.39e-05p 0.004751p 0.0 0.080570p 0.0 0.093854p 0.007737p 3.27e-05p 1.07e-09p 4.58e-09p 0.0 0.0
sig0.543 cc 1.39e-05p 0.004762p 0.0 0.085236p 0.0 0.177940p 0.185678p 0.185710p 0.176425p 0.185710p 0.0 0.0

rc 1.39e-05p 0.004762p 5.50e-05o 0.085292p 0.004823o 0.182818o 0.190555m 0.190588m 0.181058m 0.190588m 0.0
0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.402769n 0.0 0.0
zp 37.62 ri 0.000124p 0.013870p 0.0 0.153345p 0.0 0.196886p 0.030841p 0.000496p 1.35e-07p 5.77e-07p 8.43e-11p
0.0
sig0.621 cc 0.000124p 0.013905p 0.0 0.166400p 0.0 0.361799p 0.392512p 0.393006p 0.373356p 0.393006p 8.39e-11p
0.0
rc 0.000124p 0.013963p 0.000242o 0.167270p 0.010875o 0.372773p 0.403614o 0.404110o 0.383905n 0.404111m 8.43e-11p
0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.861255l 0.0 0.0 0.0 0.0 0.0
zp 37.37 ri 0.004233p 0.348160p 0.0 2.478989n 0.0 1.820671n 0.137910p 0.000846p 4.04e-08p 3.27e-07p 1.05e-11p
0.0
sig0.597 cc 0.004211p 0.349514p 0.0 2.810018p 0.0 4.606752p 4.743949p 4.744791p 4.507551p 4.744791p 1.04e-11p
0.0
rc 0.004233p 0.351331p 0.005127o 2.828385m 0.165491m 4.776363l 4.914273k 4.915119k 4.669363k 4.915120k 1.05e-11p
0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 6.939430i 7.049421i 0.0 0.0 7.799360n 0.0 0.0
zp 37.89 ri 0.000126p 0.069336p 0.0 1.495323n 0.0 4.881517k 0.807575p 0.022335p 4.21e-06p 1.80e-05p 2.30e-09p
0.0
sig0.583 cc 0.000124p 0.068392p 0.0 1.540107p 0.0 6.350968p 7.230888p 7.254014p 6.891317p 7.254037p 2.38e-09p
0.0
rc 0.000126p 0.069430p 0.000465o 1.563823m 0.038551o 6.462779i 7.270354i 7.292688i 6.928058i 7.292711h 2.30e-09p
0.0
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.171573i 0.0 0.0
zp 36.74 ri 0.034772p 1.980957n 0.0 3.364365n 0.0 0.395416p 0.001048p 8.48e-08p 0.0 0.0 0.0 0.0
sig0.497 cc 0.034717p 2.003813p 0.0 5.331738p 0.0 5.654547p 5.655594p 5.655594p 5.372814p 5.655594p 0.0 0.0
rc 0.034772p 2.007005m 0.049757o 5.380787m 0.510905m 6.214468m 6.215516l 6.215516l 5.904740j 6.215516h 0.0
0.0

kr, rb half lives from 80eng2; br, kr, rb, sr, y, zr half lives from 89wal1.

mass number 94 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 34 se g 35 br g 36 kr g 37 rb d 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb m 41 nb g 42 mo g

half life 0.111s 0.21 s 0.78 s 2.73 s 0.38 s 1.25 m 18.7 m stable 6.26 m 2.0e4y stable

lambda 0.0 6.245e+00 3.301e+00 8.887e-01 2.539e-01 1.824e+00 9.242e-03 6.178e-04 0.0 1.845e-03 1.099e-12 0.0

z - 1 g 100.0000 100.0000 100.0000 0.0 93.8700 0.0 90.0000 100.0000 100.0000 0.0 0.0 100.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.2000

z - 0 m 0.0 0.0 0.0 7.5050 100.0000 8.6200 100.0000 0.0 0.0 0.0 99.8000 0.0

cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.135904n 0.0 0.0 0.0

zp 37.85 ri 3.70e-09p 2.46e-05p 0.011410p 0.0 0.283945p 0.0 0.717381p 0.140071p 0.002581p 9.92e-07p 1.43e-06p 1.54e-10p

sig0.577 cc 3.69e-09p 2.46e-05p 0.011404p 0.0 0.293934p 0.0 0.982930p 1.122747p 1.125321p 9.90e-07p 2.41e-06p 2.41e-06p

rc 3.70e-09p 2.46e-05p 0.011435p 0.000146o 0.294825p 0.011973o 0.994697o 1.134768n 1.137349m 9.92e-07p 2.42e-06p 2.42e-06p

cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.495511n 0.0 0.0 0.0

zp 38.05 ri 1.00e-10p 2.00e-06p 0.004257p 0.0 0.170863p 0.0 1.104689n 0.221606p 0.007401p 1.95e-06p 2.80e-06p 3.30e-10p

sig0.551 cc 1.00e-10p 1.99e-06p 0.004255p 0.0 0.174682p 0.0 1.262299p 1.483696p 1.491089p 1.94e-06p 4.74e-06p 4.74e-06p

rc 1.00e-10p 2.00e-06p 0.004259p 2.94e-05o 0.174891p 0.005340o 1.267431m 1.489037m 1.496437m 1.95e-06p 4.74e-06p 4.75e-06p

cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.497124n 0.0 0.0 0.0

zp 37.59 ri 7.52e-08p 0.000242p 0.046645p 0.0 0.635290p 0.0 0.772493p 0.087815p 0.000731p 1.52e-07p 2.19e-07p 1.06e-11p

sig0.579 cc 7.50e-08p 0.000242p 0.046741p 0.0 0.677396p 0.0 1.384342p 1.471883p 1.472612p 1.52e-07p 3.70e-07p 3.71e-07p

rc 7.52e-08p 0.000242p 0.046887p 0.000697o 0.680000o 0.029755o 1.414248n 1.502063n 1.502794m 1.52e-07p 3.71e-07p 3.72e-07p

es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.967433n 0.0 0.0 0.0

zp 37.91 ri 2.71e-08p 6.08e-05p 0.012191p 0.0 0.242618p 0.0 0.560388p 0.164127p 0.005428p 7.12e-06p 1.02e-05p 4.89e-09p

sig0.627 cc 2.70e-08p 6.07e-05p 0.012221p 0.0 0.253536p 0.0 0.789369p 0.953295p 0.958709p 7.10e-06p 1.73e-05p 1.73e-05p
rc 2.71e-08p 6.09e-05p 0.012252p 0.000170o 0.254288p 0.009817o 0.799064o 0.963192n 0.968619m 7.12e-06p 1.73e-05p 1.74e-05p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.495239n 0.0 0.0 0.0
zp 38.21 ri 5.24e-10p 3.05e-06p 0.001451p 0.0 0.061947p 0.0 0.277601p 0.149922p 0.009126p 2.17e-05p 3.12e-05p 2.58e-08p
sig0.619 cc 5.24e-10p 3.05e-06p 0.001452p 0.0 0.063241p 0.0 0.334693p 0.484520p 0.493636p 2.16e-05p 5.27e-05p 5.28e-05p
rc 5.24e-10p 3.05e-06p 0.001454p 1.33e-05o 0.063325p 0.001695o 0.336288p 0.486210o 0.495336n 2.17e-05p 5.28e-05p 5.28e-05p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.233038n 0.0 0.0 0.0
zp 37.95 ri 2.47e-11p 7.59e-07p 0.000897p 0.0 0.047382p 0.0 0.151364p 0.036248p 0.000507p 1.27e-07p 1.83e-07p 7.23e-12p
sig0.543 cc 2.47e-11p 7.57e-07p 0.000896p 0.0 0.048138p 0.0 0.194841p 0.231024p 0.231530p 1.27e-07p 3.09e-07p 3.09e-07p
rc 2.47e-11p 7.59e-07p 0.000898p 8.14e-06o 0.048233p 0.001624o 0.196397p 0.232645o 0.233152n 1.27e-07p 3.09e-07p 3.10e-07p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.525091n 0.0 0.0 0.0
zp 38.01 ri 4.07e-09p 1.38e-05p 0.003934p 0.0 0.104996p 0.0 0.307872p 0.110899p 0.004415p 6.75e-06p 9.72e-06p 5.19e-09p
sig0.621 cc 4.06e-09p 1.38e-05p 0.003939p 0.0 0.108474p 0.0 0.405895p 0.516637p 0.521041p 6.74e-06p 1.64e-05p 1.64e-05p
rc 4.07e-09p 1.38e-05p 0.003948p 5.76e-05o 0.108760p 0.004333o 0.410089p 0.520988o 0.525402n 6.75e-06p 1.65e-05p 1.65e-05p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.019800n 0.0 0.0 0.0
zp 37.78 ri 1.03e-07p 0.000352p 0.083302p 0.0 1.575619n 0.0 2.908157n 0.572440p 0.010028p 3.39e-06p 9.65e-06p 1.14e-09p
sig0.597 cc 1.03e-07p 0.000351p 0.083416p 0.0 1.649728p 0.0 4.398706p 4.969812p 4.979811p 3.38e-06p 1.30e-05p 1.30e-05p
rc 1.03e-07p 0.000352p 0.083654p 0.000935o 1.655079m 0.058403o 4.456131m 5.028572l 5.038599l 3.39e-06p 1.30e-05p 1.30e-05p

u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.229509k 6.053078i 7.399141n 0.0 0.0 0.0
zp 38.29 ri 2.79e-10p 3.68e-06p 0.007580p 0.0 0.378357p 0.0 3.944561l 1.753869m 0.171589p 0.000171p 0.000246p
1.66e-07p
sig0.583 cc 2.93e-10p 3.86e-06p 0.007954p 0.0 0.404328p 0.0 4.507718p 6.073268p 6.215111p 0.000141p 0.000345p
0.000345p
rc 2.79e-10p 3.68e-06p 0.007584p 4.94e-05o 0.385525p 0.010034o 4.301568j 6.055436h 6.227025i 0.000171p 0.000417p
0.000418p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.492589i 0.0 0.0 0.0
zp 37.12 ri 5.25e-07p 0.003669p 0.808032p 0.0 4.335443n 0.0 1.627446n 0.017274p 6.08e-06p 1.29e-11p 1.85e-11p 0.0
sig0.497 cc 5.23e-07p 0.003658p 0.809063p 0.0 5.083911p 0.0 6.216660p 6.233878p 6.233884p 1.28e-11p 3.12e-11p
3.13e-11p
rc 5.25e-07p 0.003669p 0.811701o 0.011704o 5.109091m 0.258006m 6.483634l 6.500908k 6.500914i 1.29e-11p 3.13e-11p
3.14e-11p

br, kr, rb, sr, y half lives from 89wal1.
1

mass number 95 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 36 kr g 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb m 41 nb g 42 mo g 43 tc m 43 tc g 44 ru g
half life 0.78 s 0.377s 0.204s 25.1s 10.3 m 64.02d 3.61 d 34.97d stable 61. d 20.0 h 1.64 h
lambda 8.887e-01 1.839e+00 3.398e+00 2.762e-02 1.122e-03 1.253e-07 2.222e-06 2.294e-07 0.0 1.315e-07 9.627e-06
1.174e-04
z - 1 g 100.0000 92.4950 0.0 91.3800 100.0000 100.0000 1.0000 99.0000 100.0000 -96.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 14.0000 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0 4.0000 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.481446i 0.0 0.0 0.0 0.0 0.0 0.0
zp 38.24 ri 0.001950p 0.137091p 0.0 0.887897p 0.438886p 0.022655p 1.21e-05p 5.18e-05p 1.27e-08p 0.0 0.0 0.0
sig0.577 cc 0.001947p 0.138678p 0.0 1.014774p 1.453760p 1.476379p 0.014776p 1.476443p 1.476443p 0.0 0.0 0.0
rc 0.001950p 0.138895p 0.005088o 1.019907o 1.458793k 1.481448i 0.014827i 1.481512i 1.481512i 0.0 0.0 0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.627561k 0.0 0.0 0.0 0.0 0.0 0.0
zp 38.44 ri 0.000391p 0.061587p 0.0 0.913504p 0.605599p 0.049619p 2.47e-05p 0.000105p 2.54e-08p 0.0 0.0 0.0
sig0.551 cc 0.000391p 0.061913p 0.0 0.970286p 1.575745p 1.625336p 0.016278p 1.625465p 1.625465p 0.0 0.0 0.0

rc 0.000391p 0.061949p 0.002245o 0.972358o 1.577958m 1.627577k 0.016300k 1.627707k 1.627707k 0.0 0.0 0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.627750i 0.0 0.0 0.0 0.0 0.0 0.0
zp 37.97 ri 0.009282p 0.336597p 0.0 1.000838n 0.283645p 0.006613p 1.88e-06p 8.00e-06p 8.45e-10p 0.0 0.0 0.0
sig0.579 cc 0.009238p 0.343527p 0.0 1.314955p 1.600089p 1.606670p 0.016069p 1.606679p 1.606679p 0.0 0.0 0.0
rc 0.009282p 0.345183p 0.021269o 1.337535m 1.621180k 1.627792i 0.016280i 1.627802i 1.627802i 0.0 0.0 0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.144663m 0.0 0.0 0.0 0.0 0.0 0.0
zp 38.31 ri 0.002269p 0.111790p 0.0 0.599493p 0.402846p 0.032530p 5.11e-05p 0.000218p 2.02e-07p 2.45e-12p 1.04e-11p
0.0
sig0.627 cc 0.002264p 0.113646p 0.0 0.703765p 1.106501p 1.138962p 0.011441p 1.139230p 1.139230p 2.44e-12p 1.05e-11p
0.0
rc 0.002269p 0.113889p 0.005825o 0.709389o 1.112234n 1.144765l 0.011499l 1.145034l 1.145034l 2.45e-12p 1.05e-11p
0.0
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.541021l 0.0 0.520983i 0.0 0.0 0.0 0.0
zp 38.61 ri 0.000177p 0.019496p 0.0 0.210447p 0.252589p 0.039210p 0.000109p 0.000465p 7.61e-07p 1.55e-11p 6.62e-11p
0.0
sig0.619 cc 0.000173p 0.019226p 0.0 0.223720p 0.481897p 0.520243p 0.005313p 0.520822p 0.520823p 1.57e-11p 6.74e-11p
0.0
rc 0.000177p 0.019659p 0.001107o 0.229518p 0.482107m 0.521317k 0.005322l 0.521891i 0.521892i 1.55e-11p 6.68e-11p
0.0
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.307611n 0.0 0.0 0.0
zp 38.34 ri 0.000108p 0.018734p 0.0 0.171314p 0.113455p 0.005009p 2.02e-06p 8.60e-06p 8.94e-10p 0.0 0.0 0.0
sig0.543 cc 0.000108p 0.018820p 0.0 0.188591p 0.301984p 0.306989p 0.003072p 0.307000p 0.307000p 0.0 0.0 0.0
rc 0.000108p 0.018834p 0.000644o 0.189169p 0.302623o 0.307632o 0.003078o 0.307643o 0.307643n 0.0 0.0 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.666461n 0.0 0.0 0.0
zp 38.39 ri 0.000767p 0.049556p 0.0 0.329666p 0.263964p 0.024740p 4.38e-05p 0.000187p 1.88e-07p 2.36e-12p 1.01e-11p
0.0
sig0.621 cc 0.000766p 0.050213p 0.0 0.375826p 0.639593p 0.664308p 0.006687p 0.664538p 0.664538p 2.36e-12p 1.01e-11p
0.0
rc 0.000767p 0.050265p 0.002032o 0.377630p 0.641594o 0.666334o 0.006707o 0.666565o 0.666565n 2.36e-12p 1.02e-11p
0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.539780n 0.0 0.0 0.0
zp 38.20 ri 0.012457p 0.666073p 0.0 3.192600n 1.626680n 0.080708p 3.50e-05p 0.000283p 8.72e-08p 0.0 1.39e-12p
0.0
sig0.597 cc 0.012440p 0.676684p 0.0 3.813649p 5.438655p 5.519255p 0.055227p 5.519572p 5.519572p 0.0 1.40e-12p
0.0
rc 0.012457p 0.677595o 0.024609o 3.836395m 5.463075l 5.543784l 0.055473l 5.544102l 5.544102l 0.0 1.40e-12p 0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 6.194749h 0.0 0.0 0.0 0.0 0.0 0.0
zp 38.68 ri 0.000659p 0.115802p 0.0 2.571238n 2.945598n 0.569342p 0.000929p 0.003959p 4.74e-06p 2.91e-11p 1.24e-10p
0.0
sig0.583 cc 0.000659p 0.116391p 0.0 2.677908p 5.623300p 6.192556p 0.062854p 6.197442p 6.197447p 2.91e-11p 1.25e-10p
0.0
rc 0.000659p 0.116411p 0.002198o 2.679812m 5.625410l 6.194752h 0.062876h 6.199639h 6.199643h 2.91e-11p 1.25e-10p
0.0
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.182338m 0.0 0.0 6.678371i 0.0 0.0 0.0
zp 37.50 ri 0.155944p 2.848889n 0.0 3.503694n 0.181352p 0.000192p 1.01e-09p 4.32e-09p 0.0 0.0 0.0 0.0
sig0.497 cc 0.161881p 3.107075p 0.0 6.276443p 6.409892p 6.410091p 0.064101p 6.410091p 6.410091p 0.0 0.0 0.0
rc 0.155944p 2.993129l 0.186202m 6.425017k 6.606369k 6.606561k 0.066066k 6.606561j 6.606561i 0.0 0.0 0.0

rb half life from 80eng2; kr, rb, sr, y, zr, nb half lives 89wal; tc half life 90bur1.

1

mass number 96 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 34 se g 35 br g 36 kr g 37 rb g 38 sr d 38 sr g 39 y m 39 y g 40 zr d 40 zr g 41 nb g 42 mo g
half life 0.089s 0.293s 0.199s 0.170s 1.06 s 9.6 s 6.2 s 3.7 s stable 23.4 h stable
lambda 0.0 7.788e+00 2.366e+00 3.483e+00 4.077e+00 6.539e-01 7.220e-02 1.118e-01 1.873e-01 0.0 8.228e-06 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 86.0000 0.0 100.0000 0.0 100.0000 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 26.6000 100.0000 0.0050 100.0000 0.0540 100.0000 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.531001n 0.0 0.0
zp 38.63 ri 0.0 4.10e-08p 0.000176p 0.036165p 0.0 0.622117p 0.692436p 0.076938p 0.0 0.106586p 0.000885p 5.41e-
07p

sig0.577 cc 0.0 4.10e-08p 0.000176p 0.036328p 0.0 0.653674p 0.692199p 1.422784p 0.0 1.529333p 0.000885p 0.000885p
rc 0.0 4.10e-08p 0.000176p 0.036341p 0.001597o 0.654967o 0.692451o 1.424356n 0.000665n 1.531608m 0.000885p 0.000886p
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.492518n 0.0 0.0
zp 38.83 ri 0.0 1.51e-09p 3.79e-05p 0.015995p 0.0 0.867016p 1.125102n 0.125012p 0.0 0.360634p 0.002479p 2.04e-06p
sig0.551 cc 0.0 1.51e-09p 3.79e-05p 0.016032p 0.0 0.880948p 1.125004p 2.130953p 0.0 2.491553p 0.002479p 0.002481p
rc 0.0 1.51e-09p 3.79e-05p 0.016033p 0.000653o 0.881457o 1.125119m 2.131588m 0.001071m 2.493293m 0.002479p 0.002481p
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.098110n 0.0 0.0
zp 38.35 ri 3.21e-11p 9.28e-07p 0.001505p 0.150414p 0.0 1.122791n 0.707822p 0.078649p 0.0 0.048636p 0.000210p 5.36e-08p
sig0.579 cc 3.20e-11p 9.26e-07p 0.001503p 0.151666p 0.0 1.254849p 0.706664p 2.040031p 0.0 2.088586p 0.000209p 0.000209p
rc 3.21e-11p 9.28e-07p 0.001506p 0.151920p 0.011430o 1.264872m 0.707867o 2.051388m 0.001280m 2.101304l 0.000210p 0.000210p
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.527526n 0.0 0.0
zp 38.71 ri 1.48e-11p 2.40e-07p 0.000330p 0.041275p 0.0 0.526696p 0.727188p 0.080800p 0.0 0.154627p 0.003237p 6.40e-06p
sig0.627 cc 1.48e-11p 2.40e-07p 0.000330p 0.041584p 0.0 0.562989p 0.726808p 1.370553p 0.0 1.525098p 0.003235p 0.003241p
rc 1.48e-11p 2.40e-07p 0.000331p 0.041606p 0.002471o 0.564949o 0.727204o 1.372952n 0.000738m 1.528317m 0.003237p 0.003243p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.007560n 0.0 0.0
zp 39.00 ri 0.0 8.11e-09p 2.77e-05p 0.007877p 0.0 0.206288p 0.531124p 0.059014p 0.0 0.203771p 0.007668p 2.66e-05p
sig0.619 cc 0.0 8.10e-09p 2.77e-05p 0.007904p 0.0 0.213186p 0.531059p 0.803252p 0.0 1.006997p 0.007667p 0.007694p
rc 0.0 8.11e-09p 2.77e-05p 0.007905p 0.000373o 0.213459p 0.531129o 0.803602n 0.000394o 1.007767m 0.007668p 0.007695p

fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.410147n 0.0 0.0
zp 38.74 ri 0.0 4.94e-10p 7.59e-06p 0.004595p 0.0 0.130682p 0.218022p 0.024225p 0.0 0.032848p 0.000242p 7.52e-08p
sig0.543 cc 0.0 4.94e-10p 7.59e-06p 0.004602p 0.0 0.134696p 0.217978p 0.376895p 0.0 0.409736p 0.000242p 0.000242p
rc 0.0 4.94e-10p 7.59e-06p 0.004603p 0.000245o 0.134886p 0.218026p 0.377137o 0.000279o 0.410264n 0.000242p 0.000242p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.745122n 0.0 0.0
zp 38.78 ri 1.96e-12p 4.63e-08p 8.82e-05p 0.014423p 0.0 0.227979p 0.371714p 0.041302p 0.0 0.090763p 0.002122p 4.52e-06p
sig0.621 cc 1.96e-12p 4.62e-08p 8.82e-05p 0.014507p 0.0 0.240621p 0.371596p 0.653506p 0.0 0.744240p 0.002122p 0.002126p
rc 1.96e-12p 4.63e-08p 8.82e-05p 0.014511p 0.000720o 0.241179p 0.371720p 0.654200o 0.000290o 0.745254m 0.002122p 0.002127p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.499781n 0.0 0.0
zp 38.61 ri 1.64e-11p 5.34e-07p 0.001146p 0.174651p 0.0 2.191127n 2.616216n 0.166992p 0.0 0.367469p 0.004179p 3.45e-06p
sig0.597 cc 1.64e-11p 5.34e-07p 0.001146p 0.175715p 0.0 2.343789p 2.615004p 5.125709p 0.0 5.493004p 0.004177p 0.004181p
rc 1.64e-11p 5.34e-07p 0.001147p 0.175799p 0.007905o 2.350218m 2.616267m 5.133478l 0.002296m 5.503243l 0.004179p 0.004183p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.798095n 0.0 0.0
zp 39.08 ri 0.0 1.89e-09p 3.64e-05p 0.015668p 0.0 1.196146n 2.553976m 0.283776p 0.0 1.750045n 0.034853p 0.000127p
sig0.583 cc 0.0 1.89e-09p 3.64e-05p 0.015704p 0.0 1.209766p 2.553918p 4.047452p 0.0 5.797449p 0.034852p 0.034979p
rc 0.0 1.89e-09p 3.64e-05p 0.015704p 0.000422o 1.210073m 2.553991m 4.047840l 0.001335m 5.799220l 0.034853p 0.034980p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.678371i 0.0 0.0
zp 37.89 ri 3.32e-11p 4.73e-06p 0.018747p 1.311274n 0.0 4.774727n 0.590348p 0.065607p 0.0 0.004153p 4.37e-07p 1.25e-12p

sig0.497 cc 3.30e-11p 4.71e-06p 0.018663p 1.323705p 0.0 5.922458p 0.587656p 6.575408p 0.0 6.579541p 4.35e-07p 4.35e-07p
rc 3.32e-11p 4.73e-06p 0.018752p 1.330025m 0.096986o 6.015534l 0.590577o 6.671719k 0.003504m 6.679375i 4.37e-07p 4.37e-07p

br, kr half lives from 80eng2; rb, sr, y half lives from 89wal1.
1

mass number 97 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 36 kr g 37 rb g 38 sr d 38 sr g 39 y g 40 zr d 40 zr g 41 nb m 41 nb g 42 mo g 43 tc g 44 ru g
half life 0.1 s 0.169s 0.110s 0.42 s 3.76 s 2.0 s 16.8 h 58.1 s 1.23 h stable 2.6e6y 2.9 d
lambda 6.931e+00 4.101e+00 6.301e+00 1.650e+00 1.843e-01 3.466e-01 1.146e-05 1.193e-02 1.565e-04 0.0 8.454e-15 2.766e-06
z - 1 g 100.0000 100.0000 0.0 73.4000 99.9950 0.0 99.9460 94.0000 6.0000 100.0000 -100.0000 -99.9600
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -0.0400
z - 0 m 0.0 0.0 13.3000 100.0000 0.0 0.2280 100.0000 0.0 100.0000 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.575158i 0.0 0.0 0.0 0.0 0.0
zp 39.03 ri 9.50e-06p 0.005994p 0.0 0.292915p 0.934164o 0.0 0.342603p 0.001586p 0.006762p 1.59e-05p 1.41e-09p 0.0
sig0.577 cc 9.50e-06p 0.006000p 0.0 0.297205p 1.231405p 0.0 1.573414p 1.480595p 1.581758p 1.581774p 1.41e-09p 0.0
rc 9.50e-06p 0.006004p 0.000126o 0.297448p 1.231597n 0.001636o 1.575171i 1.482247i 1.583519i 1.583535i 1.41e-09p 0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.036783k 0.0 0.0 0.0 0.0 0.0
zp 39.22 ri 1.40e-06p 0.002454p 0.0 0.337236p 1.643562n 0.0 1.054080n 0.005250p 0.022382p 6.23e-05p 3.59e-09p 0.0
sig0.551 cc 1.40e-06p 0.002455p 0.0 0.339001p 1.982335p 0.0 3.035595p 2.858709p 3.063223p 3.063285p 3.59e-09p 0.0
rc 1.40e-06p 0.002455p 2.23e-05o 0.339060p 1.982605m 0.001403o 3.037017k 2.860046k 3.064648j 3.064710j 3.59e-09p 0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.614573i 0.0 0.0 0.0 0.0 0.0
zp 38.74 ri 0.000147p 0.042822p 0.0 0.854378p 1.483200n 0.0 0.242482p 0.000576p 0.002456p 2.36e-06p 1.04e-10p 0.0

sig0.579 cc 0.000147p 0.042939p 0.0 0.885669p 2.369094p 0.0 2.610286p 2.454245p 2.613316p 2.613319p 1.04e-10p 0.0
rc 0.000147p 0.042969p 0.001109o 0.887026o 2.370182l 0.003229o 2.614613i 2.458312i 2.617645i 2.617648i 1.04e-10p 0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.848441i 0.0 0.0 0.0 0.0 0.0
zp 39.12 ri 2.80e-05p 0.009263p 0.0 0.295751p 1.063952n 0.0 0.481196p 0.004847p 0.020665p 0.000135p 6.35e-08p 2.53e-12p
sig0.627 cc 2.80e-05p 0.009287p 0.0 0.302502p 1.366002p 0.0 1.846977p 1.741004p 1.872479p 1.872614p 6.34e-08p 2.53e-12p
rc 2.80e-05p 0.009291p 0.000171o 0.302741p 1.366678m 0.001330o 1.848466i 1.742405i 1.873978i 1.874113i 6.35e-08p 2.53e-12p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.012630n 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.321240j 0.0 1.191590i 0.0 0.0 0.0
zp 39.40 ri 1.84e-06p 0.001399p 0.0 0.093485p 0.634918p 0.0 0.510993o 0.008467p 0.011856n 0.000408p 3.20e-07p 2.02e-11p
sig0.619 cc 1.80e-06p 0.001371p 0.0 0.092487p 0.713792p 0.0 1.213668p 1.149717p 1.260346p 1.260773p 3.36e-07p 2.11e-11p
rc 1.84e-06p 0.001401p 2.06e-05o 0.094534p 0.729447o 0.000574o 1.240620j 1.174650i 1.260943h 1.261351h 3.20e-07p 2.02e-11p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.683209k 0.0 0.0 0.0 0.0 0.0
zp 39.13 ri 4.37e-07p 0.000922p 0.0 0.083733p 0.432539p 0.0 0.166124p 0.000755p 0.003218p 4.32e-06p 1.83e-10p 0.0
sig0.543 cc 4.37e-07p 0.000922p 0.0 0.084378p 0.517024p 0.0 0.682791p 0.642578p 0.686762p 0.686766p 1.83e-10p 0.0
rc 4.37e-07p 0.000923p 9.22e-06o 0.084419p 0.516954o 0.000410o 0.683208k 0.642970k 0.687181k 0.687185k 1.83e-10p 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.755192m 0.0 0.0 0.0 0.0 0.0
zp 39.17 ri 6.40e-06p 0.002699p 0.0 0.104190p 0.431478p 0.0 0.217248p 0.002364p 0.010078p 6.84e-05p 3.22e-08p 1.22e-12p
sig0.621 cc 6.40e-06p 0.002705p 0.0 0.106175p 0.537567p 0.0 0.754609p 0.711696p 0.767048p 0.767116p 3.22e-08p 1.22e-12p
rc 6.40e-06p 0.002705p 5.96e-05o 0.106235p 0.537708p 0.000577o 0.755242m 0.712292m 0.767684m 0.767752m 3.22e-08p 1.22e-12p

```
  np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  5.343444l      0.0       0.0       0.0       0.0       0.0
 zp 39.02 ri 6.66e-05p 0.029650p       0.0  1.010921n 3.219260n       0.0  1.091289n 0.003829p 0.030981p 8.55e-05p 1.44e-08p
0.0
 sig0.597 cc 6.66e-05p 0.029714p       0.0  1.032783p 4.251718p       0.0  5.340938p 5.024310p 5.375745p 5.375830p 1.44e-08p
0.0
          rc 6.66e-05p 0.029717p 0.000437o 1.033170m 4.252378m 0.003670m 5.345040k 5.028167k 5.379851k 5.379936k 1.44e-08p
0.0
  u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  5.243433g      0.0       0.0       0.0       0.0       0.0
 zp 39.48 ri 9.77e-07p 0.001586p       0.0  0.284742p 2.186424n       0.0  2.771371l 0.035483p 0.151271p 0.001647p 5.18e-07p
1.66e-11p
 sig0.583 cc 9.77e-07p 0.001586p       0.0  0.285878p 2.472044p       0.0  5.242373p 4.963310p 5.429107p 5.430754p 5.18e-07p
1.66e-11p
          rc 9.77e-07p 0.001587p 1.07e-05o 0.285917p 2.472327m 0.001095o 5.243458g 4.964334g 5.430213h 5.431860h 5.18e-07p
1.66e-11p
  u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  5.964578l      0.0       0.0  6.678371i      0.0       0.0
 zp 38.27 ri 0.001312p 0.363299p       0.0  4.311943n 1.901542n       0.0  0.045384p 4.16e-06p 1.77e-05p 2.81e-10p       0.0       0.0
 sig0.497 cc 0.001320p 0.366991p       0.0  4.612316p 6.479950p       0.0  6.522131p 6.130807p 6.522152p 6.522152p       0.0       0.0
          rc 0.001312p 0.364611p 0.007927o 4.587494m 6.488807l 0.009941m 6.540628k 6.148194k 6.540650j 6.540650i       0.0
0.0

   kr, rb, sr, y, zr, nb half lives from 89wal1; ru half life 90bur1.
1

     mass number     98              LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       36 kr g   37 rb g   38 sr g   39 y  m   39 y  g   40 zr d   40 zr g   41 nb m   41 nb g   42 mo g   43 tc g   44  ru g
 half life     0.160s    0.107s    0.65 s     2.1 s    0.59 s     1.4 s    30.7 s     51. m     2.9 s    stable    1.5e6y    stable
 lambda       4.332e+00 6.478e+00 1.066e+00 3.301e-01 1.175e+00 4.951e-01 2.258e-02 2.265e-04 2.390e-01       0.0 1.465e-14
0.0
  z - 1 g    100.0000  100.0000   86.7000       0.0  100.0000       0.0   99.7720       0.0  100.0000  100.0000       0.0  100.0000
  z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0  100.0000       0.0       0.0
  z - 0 m       0.0       0.0       0.0    0.1290       0.0    2.0200  100.0000       0.0       0.0       0.0       0.0       0.0
  cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.478332n      0.0       0.0
```

zp 39.43 ri 4.79e-07p 0.000947p 0.136492p 0.580119p 0.580142p 0.0 1.093888n 0.018798p 0.056395p 0.000440p 1.24e-07p 2.31e-12p
sig0.577 cc 4.79e-07p 0.000947p 0.137228p 0.579779p 0.717006p 0.0 2.389875p 0.018787p 2.446235p 2.465461p 1.24e-07p 1.24e-07p
rc 4.79e-07p 0.000947p 0.137313p 0.580165o 0.717455o 0.017705o 2.407578m 0.018798p 2.463973m 2.483212l 1.24e-07p 1.24e-07p
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.492593n 0.0 0.0
zp 39.61 ri 3.43e-08p 0.000167p 0.091649p 0.523549p 0.523557p 0.0 2.205675n 0.034688p 0.104060p 0.001262p 2.04e-07p 3.45e-12p
sig0.551 cc 3.43e-08p 0.000167p 0.091740p 0.523253p 0.614993p 0.0 3.343250p 0.034668p 3.447253p 3.483183p 2.04e-07p 2.04e-07p
rc 3.43e-08p 0.000167p 0.091794p 0.523566o 0.615351o 0.012106o 3.355295m 0.034688p 3.459355m 3.495306l 2.04e-07p 2.04e-07p
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.208122n 0.0 0.0
zp 39.12 ri 9.85e-06p 0.008327p 0.448860p 0.959979p 0.960091p 0.0 0.779726p 0.006680p 0.020040p 6.08e-05p 8.02e-09p 0.0
sig0.579 cc 9.85e-06p 0.008333p 0.455869p 0.959629p 1.415498p 0.0 3.152670p 0.006677p 3.172700p 3.179438p 8.01e-09p 8.01e-09p
rc 9.85e-06p 0.008337p 0.456088p 0.960206o 1.416179o 0.042171o 3.195053m 0.006680p 3.215093m 3.221834m 8.02e-09p 8.02e-09p
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.228547n 0.0 0.0
zp 39.54 ri 1.41e-06p 0.001283p 0.107633p 0.474496p 0.474516p 0.0 1.022441n 0.034026p 0.102059p 0.001924p 2.52e-06p 2.85e-10p
sig0.627 cc 1.41e-06p 0.001283p 0.108683p 0.474240p 0.582924p 0.0 2.078934p 0.034006p 2.180952p 2.216881p 2.52e-06p 2.52e-06p
rc 1.41e-06p 0.001284p 0.108747p 0.474537p 0.583263p 0.014675o 2.093586m 0.034026p 2.195645m 2.231595l 2.52e-06p 2.52e-06p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.511340n 0.0 0.0
zp 39.80 ri 7.50e-08p 0.000155p 0.027071p 0.224469p 0.224473p 0.0 0.838668p 0.047145p 0.141412p 0.004458p 9.46e-06p 1.64e-09p
sig0.619 cc 7.50e-08p 0.000155p 0.027193p 0.224370p 0.251563p 0.0 1.314307p 0.047123p 1.455678p 1.507258p 9.45e-06p 9.46e-06p

rc 7.50e-08p 0.000155p 0.027205p 0.224476p 0.251678p 0.004619o 1.318868o 0.047145p 1.460280n 1.511884m 9.46e-06p 9.46e-06p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.699115n 0.0 0.0
zp 39.52 ri 9.26e-09p 6.93e-05p 0.020957p 0.158636p 0.158638p 0.0 0.333108p 0.006144p 0.018431p 9.17e-05p 1.39e-08p 0.0
sig0.543 cc 9.25e-09p 6.93e-05p 0.021006p 0.158552p 0.179558p 0.0 0.671004p 0.006140p 0.689424p 0.695656p 1.39e-08p 1.39e-08p
rc 9.26e-09p 6.93e-05p 0.021017p 0.158641p 0.179656p 0.003821o 0.674816o 0.006144p 0.693247o 0.699482n 1.39e-08p 1.39e-08p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.009790n 0.0 0.0
zp 39.56 ri 4.06e-07p 0.000447p 0.043224p 0.209259p 0.209266p 0.0 0.476952p 0.016273p 0.048819p 0.000909p 1.13e-06p 1.14e-10p
sig0.621 cc 4.05e-07p 0.000448p 0.043586p 0.209141p 0.252727p 0.0 0.938553p 0.016263p 0.987342p 1.004513p 1.12e-06p 1.12e-06p
rc 4.06e-07p 0.000448p 0.043613p 0.209274p 0.252879p 0.005826o 0.944354o 0.016273p 0.993173o 1.010355n 1.13e-06p 1.13e-06p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.299789n 0.0 0.0
zp 39.43 ri 2.48e-06p 0.003287p 0.315091p 1.291732n 1.291773n 0.0 2.192906n 0.028424p 0.161059p 0.001358p 6.92e-07p 2.33e-11p
sig0.597 cc 2.48e-06p 0.003288p 0.317777p 1.291097p 1.608874p 0.0 5.090775p 0.028409p 5.251760p 5.281526p 6.92e-07p 6.92e-07p
rc 2.48e-06p 0.003289p 0.317943p 1.291814m 1.609716m 0.028812o 5.119578l 0.028424p 5.280637l 5.310419l 6.92e-07p 6.92e-07p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.698457n 0.0 0.0
zp 39.87 ri 2.02e-08p 8.05e-05p 0.051536p 0.428927p 0.428931p 0.0 3.303838n 0.116573p 0.349701p 0.014313p 1.09e-05p 1.31e-09p
sig0.583 cc 2.02e-08p 8.05e-05p 0.051592p 0.428813p 0.480405p 0.0 4.212320p 0.116541p 4.561943p 4.692793p 1.09e-05p 1.09e-05p
rc 2.02e-08p 8.05e-05p 0.051606p 0.428934p 0.480537p 0.006691o 4.218904m 0.116573p 4.568605m 4.699490l 1.09e-05p 1.09e-05p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.492589i 0.0 0.0

zp 38.66 ri 4.98e-05p 0.059555p 2.575138n 1.732581n 1.733166n 0.0 0.313857p 0.000155p 0.000464p 3.67e-08p 0.0
0.0
sig0.497 cc 4.98e-05p 0.059597p 2.626508p 1.732963p 4.359471p 0.0 6.396481p 0.000155p 6.396945p 6.397100p 0.0
0.0
rc 4.98e-05p 0.059604p 2.626816m 1.733769m 4.359982l 0.099049o 6.496716l 0.000155p 6.497180k 6.497334i 0.0
0.0

kr half life from 80eng2; rb, sr, y, zr, nb half lives from 89wal1.

1

mass number 99 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 38 sr g 39 y g 40 zr d 40 zr g 41 nb m 41 nb g 42 mo g 43 tc m 43 tc g 44 ru g 45 rh g 46 pd g
half life 0.269s 1.47 s 0.80 s 2.2 s 2.6 m 15.0 s 2.748d 6.01 h 2.1e5y stable 15.0 d 21.4m
lambda 2.577e+00 4.715e-01 8.664e-01 3.151e-01 4.443e-03 4.621e-02 2.919e-06 3.204e-05 1.047e-13 0.0 5.348e-07
5.398e-04
z - 1 g 100.0000 99.8710 0.0 97.9800 30.0000 70.0000 100.0000 88.0000 12.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.8420 100.0000 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.278880i 0.0 0.0 0.0 0.0 0.0
zp 39.83 ri 0.035600p 0.840954p 0.0 2.033649n 0.346941p 0.030171p 0.006580p 1.11e-06p 4.72e-06p 3.51e-10p 0.0
0.0
sig0.577 cc 0.035593p 0.876342p 0.0 2.892507p 1.214648p 2.054920p 3.276147p 2.883010p 3.276152p 3.276152p 0.0
0.0
rc 0.035600p 0.876508o 0.002805o 2.895257m 1.215518n 2.056850m 3.278948i 2.885475i 3.278954h 3.278954h 0.0
0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.896960h 0.0 0.0 0.0 0.0 0.0
zp 40.00 ri 0.013726p 0.585601p 0.0 2.707741n 0.539656p 0.046928p 0.013776p 1.77e-06p 7.53e-06p 4.48e-10p 0.0
0.0
sig0.551 cc 0.013724p 0.599235p 0.0 3.295003p 1.528107p 2.353425p 3.895306p 3.427871p 3.895315p 3.895315p 0.0
0.0
rc 0.013726p 0.599309o 0.001684o 3.296628m 1.528645n 2.354568m 3.896988h 3.429351h 3.896997h 3.896997h 0.0
0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 4.119913i 0.0 0.0 0.0 0.0 0.0
zp 39.50 ri 0.175965p 1.911952n 0.0 1.893179n 0.157414p 0.013690p 0.001114p 8.32e-08p 3.55e-07p 9.58e-12p 0.0
0.0
sig0.579 cc 0.175884p 2.086727p 0.0 3.938776p 1.338996p 2.770827p 4.110936p 3.617624p 4.110937p 4.110937p 0.0
0.0
rc 0.175965p 2.087690m 0.009604n 3.948302l 1.341905m 2.777501l 4.120521i 3.626058i 4.120521h 4.120521h 0.0
0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.104176i 0.0 0.0 0.0 0.0 0.0
zp 39.96 ri 0.031232p 0.695293p 0.0 1.788286n 0.533852p 0.046425p 0.021459p 1.47e-05p 6.27e-05p 2.46e-08p 0.0
0.0
sig0.627 cc 0.031226p 0.726352p 0.0 2.500175p 1.283841p 1.796539p 3.101836p 2.729630p 3.101913p 3.101913p 0.0
0.0
rc 0.031232p 0.726485o 0.002420o 2.502517m 1.284607n 1.798187m 3.104253i 2.731757i 3.104330i 3.104330i 0.0
0.0
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.544116j 0.0 1.754678n 0.0 0.0
zp 40.20 ri 0.005355p 0.223336p 0.0 0.980927p 0.476660p 0.041450p 0.030817p 3.31e-05p 0.000141p 8.29e-08p 3.13e-12p
0.0
sig0.619 cc 0.005355p 0.228657p 0.0 1.205043p 0.838131p 0.884975p 1.753919p 1.543482p 1.754093p 1.754093p 3.13e-12p
0.0
rc 0.005355p 0.228684p 0.000713o 1.205704o 0.838371p 0.885443o 1.754631m 1.544109j 1.754805j 1.754805j 3.14e-12p
0.0
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.856822n 0.0 0.0
zp 39.92 ri 0.003836p 0.185326p 0.0 0.548527p 0.111279p 0.009677p 0.001544p 1.63e-07p 6.94e-07p 1.81e-11p 0.0
0.0
sig0.543 cc 0.003835p 0.189122p 0.0 0.733880p 0.331427p 0.523391p 0.856363p 0.753599p 0.856364p 0.856364p 0.0
0.0
rc 0.003836p 0.189157p 0.000545o 0.734407n 0.331601o 0.523762n 0.856907n 0.754078m 0.856908m 0.856908m 0.0
0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.208307n 0.0 0.0
zp 39.94 ri 0.012149p 0.276294p 0.0 0.700467p 0.199556p 0.017354p 0.007347p 4.39e-06p 1.87e-05p 6.12e-09p 0.0
0.0

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 sig0.621 cc 0.012146p 0.288358p       0.0  0.983109p 0.494455p 0.705526p 1.207327p 1.062452p 1.207350p 1.207350p       0.0
0.0
          rc 0.012149p 0.288428p 0.001143o 0.984212o 0.494820o 0.706302n 1.208469n 1.063457n 1.208492m 1.208492m       0.0
0.0
  np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  4.861041l      0.0       0.0       0.0       0.0       0.0
 zp 39.83 ri 0.063782p 1.362797n       0.0  2.825561n 0.571796p 0.049726p 0.012342p 2.02e-06p 1.63e-05p 1.84e-09p       0.0
0.0
 sig0.597 cc 0.063766p 1.426139p       0.0  4.223357p 1.838712p 3.006064p 4.857115p 4.274263p 4.857133p 4.857133p       0.0
0.0
          rc 0.063782p 1.426497m 0.004753o 4.227996m 1.840195m 3.009323l 4.861860k 4.278439k 4.861879j 4.861879j       0.0
0.0
  u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  4.214607g      0.0       0.0  3.939771l      0.0       0.0
 zp 40.27 ri 0.005590p 0.325674p       0.0  2.632286n 1.075152n 0.093492p 0.081784p 4.26e-05p 0.000182p 6.85e-08p       0.0
0.0
 sig0.583 cc 0.005590p 0.331245p       0.0  2.956880p 1.962186p 2.163305p 4.207271p 3.702443p 4.207503p 4.207503p       0.0
0.0
          rc 0.005590p 0.331257p 0.000442o 2.957293m 1.962340l 2.163597m 4.207721g 3.702837g 4.207945g 4.207945g       0.0
0.0
  u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  5.932943h      0.0       0.0  6.254386h      0.0       0.0
 zp 39.05 ri 0.921240p 3.983358n       0.0  1.230541n 0.009211p 0.000801p 2.69e-06p 2.06e-12p 8.77e-12p       0.0       0.0       0.0
 sig0.497 cc 0.922198p 4.908504p       0.0  6.034788p 1.819657p 4.225153p 6.044813p 5.319436p 6.044813p 6.044813p       0.0
0.0
          rc 0.921240o 4.903410m 0.026257n 6.061159k 1.827559l 4.243612k 6.071174h 5.342633h 6.071174h 6.071174g       0.0
0.0

    nb decay from 71har1;  sr, y, zr, nb, mo, tc half lives 89wal1.
1

      mass number    100              LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       36 kr g   37 rb g   38 sr g   39 y  g   40 zr g   41 nb m   41 nb g   42 mo g   43 tc g   44 ru g
 half life               0.053s    0.201s    0.73 s     7.1 s     3.0 s     1.5 s    stable     16. s    stable
 lambda            0.0 1.308e+01 3.448e+00 9.495e-01 9.763e-02 2.310e-01 4.621e-01       0.0 4.332e-02       0.0
  z - 1 g    100.0000  100.0000  100.0000  100.0000   99.1580   50.0000   50.0000  100.0000       0.0  100.0000
```

```
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.568798n      0.0       0.0
zp 40.24 ri 1.61e-10p 3.34e-06p 0.004673p 0.328434p 2.130873n 0.526672p 0.526672p 0.054275p 0.000153p 3.04e-08p
sig0.577 cc 1.61e-10p 3.34e-06p 0.004676p 0.333110p 2.461179p 1.757261p 1.757261p 3.568798p 0.000153p 0.000153p
         rc 1.61e-10p 3.34e-06p 0.004676p 0.333110p 2.461179m 1.757261m 1.757261m 3.568798l 0.000153p 0.000153p
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.989419n      0.0       0.0
zp 40.39 ri 4.90e-12p 2.90e-07p 0.001800p 0.198174p 3.158811n 0.750363p 0.750363p 0.131592p 0.000241p 4.94e-08p
sig0.551 cc 4.90e-12p 2.90e-07p 0.001800p 0.199974p 3.357101p 2.428913p 2.428913p 4.989419p 0.000241p 0.000241p
         rc 4.90e-12p 2.90e-07p 0.001800p 0.199974p 3.357101m 2.428913m 2.428913m 4.989419l 0.000241p 0.000241p
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.510936n      0.0       0.0
zp 39.89 ri 1.11e-08p 8.47e-05p 0.037495p 1.103028n 2.726845n 0.320559p 0.320559p 0.011970p 1.43e-05p 9.68e-10p
sig0.579 cc 1.11e-08p 8.47e-05p 0.037580p 1.140608p 3.857849p 2.249483p 2.249483p 4.510936p 1.43e-05p 1.43e-05p
         rc 1.11e-08p 8.47e-05p 0.037580p 1.140608m 3.857849m 2.249483m 2.249483m 4.510936l 1.43e-05p 1.43e-05p
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.444118n      0.0       0.0
zp 40.37 ri 1.19e-09p 8.27e-06p 0.004992p 0.282440p 1.726599n 0.655952p 0.655952p 0.120595p 0.001147p 9.96e-07p
sig0.627 cc 1.19e-09p 8.27e-06p 0.005000p 0.287440p 2.011619p 1.661762p 1.661762p 3.444118p 0.001147p 0.001148p
         rc 1.19e-09p 8.27e-06p 0.005000p 0.287440p 2.011619m 1.661762n 1.661762n 3.444118l 0.001147p 0.001148p
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.216632n      0.0       0.0
zp 40.60 ri 3.97e-11p 6.21e-07p 0.000779p 0.083884p 0.886968p 0.543838p 0.543838p 0.158038p 0.002332p 3.02e-06p
sig0.619 cc 3.97e-11p 6.21e-07p 0.000780p 0.084664p 0.970918p 1.029297p 1.029297p 2.216632p 0.002332p 0.002335p
         rc 3.97e-11p 6.21e-07p 0.000780p 0.084664p 0.970918o 1.029297n 1.029297n 2.216632m 0.002332p 0.002335p
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.952025n      0.0       0.0
zp 40.31 ri 1.07e-12p 1.08e-07p 0.000409p 0.064335p 0.542312p 0.166036p 0.166036p 0.013442p 2.59e-05p 1.98e-09p
sig0.543 cc 1.07e-12p 1.08e-07p 0.000409p 0.064744p 0.606510p 0.469291p 0.469291p 0.952025p 2.59e-05p 2.59e-05p
         rc 1.07e-12p 1.08e-07p 0.000409p 0.064744p 0.606510o 0.469291o 0.469291o 0.952025m 2.59e-05p 2.59e-05p
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.510383n      0.0       0.0
zp 40.33 ri 5.03e-10p 3.81e-06p 0.002379p 0.133429p 0.780407p 0.275100p 0.275100p 0.045108p 0.000364p 2.55e-07p
sig0.621 cc 5.03e-10p 3.81e-06p 0.002382p 0.135811p 0.915075p 0.732638p 0.732638p 1.510383p 0.000364p 0.000365p
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        rc 5.03e-10p 3.81e-06p 0.002382p 0.135811p 0.915075o 0.732638o 0.732638o 1.510383m 0.000364p 0.000365p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.199793n      0.0       0.0
zp 40.24 ri 9.94e-10p 1.18e-05p 0.009387p 0.555171p 2.924438n 0.813312p 0.813312p 0.088915p 0.000389p 1.19e-07p
sig0.597 cc 9.94e-10p 1.18e-05p 0.009399p 0.564569p 3.484254p 2.555439p 2.555439p 5.199793p 0.000389p 0.000389p
        rc 9.94e-10p 1.18e-05p 0.009399p 0.564569o 3.484254m 2.555439m 2.555439m 5.199793l 0.000389p 0.000389p
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.998607n      0.0       0.0
zp 40.67 ri 1.59e-12p 6.25e-08p 0.000375p 0.052128p 1.389628n 0.631773p 0.631773p 0.293371p 0.001992p 2.31e-06p
sig0.583 cc 1.59e-12p 6.25e-08p 0.000375p 0.052503p 1.441689p 1.352618p 1.352618p 2.998607p 0.001992p 0.001994p
        rc 1.59e-12p 6.25e-08p 0.000375p 0.052503p 1.441689m 1.352618n 1.352618n 2.998607m 0.001992p 0.001994p
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.130804i      0.0       0.0
zp 39.45 ri 1.00e-08p 0.000254p 0.189271p 2.928852n 2.941970n 0.048295p 0.048295p 0.000119p 2.26e-09p       0.0
sig0.497 cc 1.00e-08p 0.000254p 0.189524p 3.118373p 6.034091p 3.065341p 3.065341p 6.130801p 2.26e-09p 2.26e-09p
        rc 1.00e-08p 0.000254p 0.189524p 3.118377m 6.034090l 3.065341l 3.065341l 6.130801i 2.26e-09p 2.26e-09p

  rb, sr, y, zr, nb half lives from 89wal1.
1

    mass number    101              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       38 sr g   39 y  g   40 zr g   41 nb g   42 mo g   43 tc g   44 ru g   45 rh m   45 rh g   46 pd g
half life     0.115s    0.43 s     2.1 s     7.1 s    14.6 m    14.2 m    stable    4.47 d     3.  y     8.3 h
lambda       6.027e+00 1.612e+00 3.301e-01 9.763e-02 7.913e-04 8.136e-04       0.0 1.795e-06 7.327e-09 2.320e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  -90.0000 -100.0000       0.0
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0 -100.0000
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   10.0000       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  3.955417n 4.262730n      0.0       0.0       0.0
zp 40.65 ri 0.000402p 0.087075p 1.577875n 2.043528n 0.297499p 0.002609p 1.75e-06p 4.13e-11p 9.69e-12p       0.0
sig0.577 cc 0.000402p 0.087477p 1.665352p 3.708879p 4.006378p 4.008987p 4.008989p 3.98e-11p 1.33e-11p       0.0
        rc 0.000402p 0.087477p 1.665352m 3.708879l 4.006378l 4.008987l 4.008989l 4.13e-11p 1.38e-11p       0.0
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.787726n      0.0       0.0       0.0
zp 40.78 ri 0.000117p 0.052007p 1.988395n 3.104437n 0.638115p 0.004652p 2.66e-06p 3.04e-11p 7.13e-12p       0.0
sig0.551 cc 0.000117p 0.052124p 2.040519p 5.144956p 5.783071p 5.787723p 5.787726p 3.04e-11p 1.02e-11p       0.0
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        rc 0.000117p 0.052124p 2.040519m 5.144956l 5.783071l 5.787723l 5.787726l 3.04e-11p 1.02e-11p       0.0
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.245274n      0.0       0.0       0.0
zp 40.27 ri 0.005970p 0.480771p 2.958701n 1.713177n 0.086358p 0.000298p 6.06e-08p       0.0       0.0       0.0
sig0.579 cc 0.005970p 0.486740p 3.445441p 5.158618p 5.244976p 5.245274p 5.245274p       0.0       0.0       0.0
        rc 0.005970p 0.486740p 3.445441m 5.158618l 5.244976l 5.245274l 5.245274l       0.0       0.0       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.849308n      0.0       0.0       0.0
zp 40.79 ri 0.000508p 0.076659p 1.168740n 2.112265n 0.479057p 0.012044p 2.89e-05p 4.90e-09p 1.15e-09p       0.0
sig0.627 cc 0.000508p 0.077167p 1.245907p 3.358173p 3.837229p 3.849273p 3.849302p 4.90e-09p 1.64e-09p       0.0
        rc 0.000508p 0.077167p 1.245907m 3.358173l 3.837229m 3.849273m 3.849302l 4.90e-09p 1.64e-09p       0.0
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.714434n      0.0       0.0       0.0
zp 40.99 ri 7.94e-05p 0.021998p 0.563317p 1.576517n 0.532856p 0.019595p 6.63e-05p 1.51e-08p 3.54e-09p       0.0
sig0.619 cc 7.94e-05p 0.022077p 0.585394p 2.161911p 2.694767p 2.714362p 2.714429p 1.51e-08p 5.05e-09p       0.0
        rc 7.94e-05p 0.022077p 0.585394o 2.161911m 2.694767m 2.714362m 2.714429l 1.51e-08p 5.05e-09p       0.0
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.142430n      0.0       0.0       0.0
zp 40.70 ri 2.90e-05p 0.015470p 0.391991p 0.654842p 0.079581p 0.000519p 1.41e-07p 1.17e-12p       0.0       0.0
sig0.543 cc 2.90e-05p 0.015499p 0.407490p 1.062331p 1.141912p 1.142432p 1.142432p 1.17e-12p       0.0       0.0
        rc 2.90e-05p 0.015499p 0.407489p 1.062331o 1.141912n 1.142432n 1.142432m 1.17e-12p       0.0       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.812460n      0.0       0.0       0.0
zp 40.72 ri 0.000310p 0.043948p 0.607682p 0.969518p 0.187183p 0.003805p 6.99e-06p 8.62e-10p 2.02e-10p       0.0
sig0.621 cc 0.000310p 0.044258p 0.651940p 1.621458p 1.808642p 1.812447p 1.812454p 8.62e-10p 2.88e-10p       0.0
        rc 0.000310p 0.044258p 0.651940o 1.621458n 1.808642n 1.812447n 1.812454m 8.62e-10p 2.88e-10p       0.0
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  4.999801n      0.0       0.0       0.0
zp 40.65 ri 0.000804p 0.135804p 1.877222n 2.603748n 0.377465p 0.004754p 4.37e-06p 2.39e-10p 2.96e-11p       0.0
sig0.597 cc 0.000804p 0.136608p 2.013830p 4.617578p 4.995043p 4.999797p 4.999801p 2.39e-10p 5.35e-11p       0.0
        rc 0.000804p 0.136608p 2.013830m 4.617578l 4.995043l 4.999797l 4.999801l 2.39e-10p 5.35e-11p       0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.999071n      0.0       0.0       0.0
zp 41.07 ri 1.21e-05p 0.006245p 0.377409p 1.076106n 0.526681p 0.012582p 3.62e-05p 2.88e-09p 6.76e-10p       0.0
sig0.583 cc 1.21e-05p 0.006257p 0.383666p 1.459773p 1.986453p 1.999035p 1.999071p 2.88e-09p 9.64e-10p       0.0
        rc 1.21e-05p 0.006257p 0.383666p 1.459773m 1.986453m 1.999035m 1.999071m 2.88e-09p 9.64e-10p       0.0
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u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 6.537863h 0.0 0.0 0.0
zp 39.84 ri 0.024540p 1.438718n 4.541597n 0.530209p 0.002797p 2.42e-07p 0.0 0.0 0.0 0.0
sig0.497 cc 0.024540p 1.463257p 6.004854p 6.535064p 6.537861p 6.537861p 6.537861p 0.0 0.0 0.0
rc 0.024540p 1.463258m 6.004855m 6.535064l 6.537861k 6.537861j 6.537861h 0.0 0.0 0.0

sr, y, zr, nb, mo, tc half lives from 89wal1.
1

mass number 102 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 38 sr g 39 y g 40 zr g 41 nb g 42 mo d 42 mo g 43 tc m 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g
half life 0.068s 0.36 s 2.9 s 1.3 s 1.5 s 11.3 m 4.4 m 5.3 s stable 3. y 207. d stable
lambda 1.019e+01 1.925e+00 2.390e-01 5.332e-01 4.621e-01 1.022e-03 2.626e-03 1.308e-01 0.0 7.327e-09 3.876e-08
0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 100.0000 100.0000 0.0 100.0000 -100.0000 -84.0000 16.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 95.0000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0140 100.0000 0.0 5.0000 0.0 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.956663n 0.0 0.0 0.0
zp 41.06 ri 2.34e-05p 0.016045p 0.849376p 2.912925n 0.0 1.147817n 0.015126p 0.015126p 6.29e-05p 3.03e-09p 3.03e-09p
0.0
sig0.577 cc 2.34e-05p 0.016068p 0.865441p 3.778359p 0.0 4.926186p 4.941312p 0.262191p 4.956500p 3.03e-09p 3.03e-09p
4.84e-10p
rc 2.34e-05p 0.016068p 0.865444o 3.778369m 0.000370n 4.926556l 4.941681l 0.262210l 4.956870l 3.03e-09p 3.03e-09p
4.84e-10p
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.885398n 0.0 0.0 0.0
zp 41.18 ri 5.10e-06p 0.006404p 0.961417p 3.427633n 0.0 2.443196n 0.023227p 0.023227p 0.000114p 2.35e-09p 2.35e-09p
0.0
sig0.551 cc 5.10e-06p 0.006409p 0.967821p 4.395438p 0.0 6.838655p 6.861883p 0.366321p 6.885224p 2.35e-09p 2.35e-09p
3.75e-10p
rc 5.10e-06p 0.006409p 0.967826o 4.395459m 0.000363n 6.839018l 6.862245l 0.366340l 6.885586l 2.35e-09p 2.35e-09p
3.75e-10p
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.455085n 0.0 0.0 0.0

zp 40.66 ri 0.000532p 0.124302p 2.022395n 2.912455n 0.0 0.391255p 0.001970p 0.001970p 2.45e-06p 4.26e-11p 4.26e-11p 0.0
sig0.579 cc 0.000532p 0.124834p 2.147228p 5.059682p 0.0 5.450939p 5.452909p 0.274615p 5.454881p 4.26e-11p 4.26e-11p 6.82e-12p
rc 0.000532p 0.124834p 2.147229m 5.059684l 0.000605n 5.451544l 5.453514l 0.274645l 5.455486l 4.26e-11p 4.26e-11p 6.82e-12p
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.558391n 0.0 0.0 0.0
zp 41.22 ri 3.34e-05p 0.014022p 0.562231p 2.497439n 0.0 1.391888n 0.046003p 0.046003p 0.000615p 1.85e-07p 1.85e-07p 1.89e-11p
sig0.627 cc 3.34e-05p 0.014055p 0.576284p 3.073710p 0.0 4.465613p 4.511616p 0.271584p 4.558235p 1.85e-07p 1.85e-07p 2.96e-08p
rc 3.34e-05p 0.014056p 0.576287o 3.073725m 0.000339n 4.465952l 4.511955l 0.271601m 4.558574l 1.85e-07p 1.85e-07p 2.96e-08p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.016037n 0.0 0.0 0.0
zp 41.40 ri 4.30e-06p 0.003274p 0.218706p 1.485385n 0.0 1.195975n 0.055797p 0.055797p 0.001021p 4.01e-07p 4.01e-07p 5.05e-11p
sig0.619 cc 4.30e-06p 0.003278p 0.221983p 1.707361p 0.0 2.903344p 2.959141p 0.203754p 3.015961p 4.01e-07p 4.01e-07p 6.43e-08p
rc 4.30e-06p 0.003278p 0.221984p 1.707369m 0.000135o 2.903479l 2.959276l 0.203761n 3.016096l 4.01e-07p 4.01e-07p 6.43e-08p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.237632n 0.0 0.0 0.0
zp 41.10 ri 1.04e-06p 0.001988p 0.164767p 0.785865p 0.0 0.278835p 0.003051p 0.003051p 6.03e-06p 1.15e-10p 1.15e-10p 0.0
sig0.543 cc 1.04e-06p 0.001989p 0.166755p 0.952618p 0.0 1.231455p 1.234506p 0.064776p 1.237563p 1.15e-10p 1.15e-10p 1.85e-11p
rc 1.04e-06p 0.001989p 0.166756p 0.952621o 9.48e-05o 1.231550o 1.234601n 0.064781n 1.237658m 1.15e-10p 1.15e-10p 1.85e-11p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.009790n 0.0 0.0 0.0
zp 41.12 ri 2.40e-05p 0.008960p 0.308139p 1.146213n 0.0 0.519670p 0.013280p 0.013280p 0.000129p 2.69e-08p 2.69e-08p 1.80e-12p
sig0.621 cc 2.40e-05p 0.008984p 0.317123p 1.463332p 0.0 1.983007p 1.996287p 0.113094p 2.009696p 2.69e-08p 2.69e-08p 4.30e-09p

rc 2.40e-05p 0.008984p 0.317124p 1.463337m 0.000152o 1.983159m 1.996439m 0.113102m 2.009848l 2.69e-08p 2.69e-08p 4.30e-09p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.599817n 0.0 0.0 0.0
zp 41.08 ri 3.63e-05p 0.018910p 0.748579p 2.731955n 0.0 1.060863n 0.019614p 0.019614p 0.000113p 1.12e-08p 1.12e-08p 0.0
sig0.597 cc 3.63e-05p 0.018946p 0.767523p 3.499471p 0.0 4.560343p 4.579956p 0.248611p 4.599683p 1.12e-08p 1.12e-08p 1.79e-09p
rc 3.63e-05p 0.018946p 0.767525o 3.499480m 0.000304n 4.560647l 4.580261l 0.248627l 4.599987l 1.12e-08p 1.12e-08p 1.79e-09p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.499303n 0.0 0.0 0.0
zp 41.46 ri 3.53e-07p 0.000440p 0.092219p 0.547639p 0.0 0.816006p 0.021253p 0.021253p 0.000437p 5.28e-08p 5.28e-08p 3.92e-12p
sig0.583 cc 3.53e-07p 0.000441p 0.092659p 0.640296p 0.0 1.456305p 1.477557p 0.095131p 1.499247p 5.28e-08p 5.28e-08p 8.45e-09p
rc 3.53e-07p 0.000441p 0.092659p 0.640298o 2.83e-05o 1.456333n 1.477586n 0.095132n 1.499276m 5.28e-08p 5.28e-08p 8.45e-09p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.160762h 0.0 0.0 0.0
zp 40.23 ri 0.001658p 0.396402p 4.144544n 1.583830n 0.0 0.033706p 6.56e-06p 6.56e-06p 1.44e-10p 0.0 0.0 0.0
sig0.497 cc 0.001658p 0.398058p 4.542578p 6.126434p 0.0 6.160139p 6.160146p 0.308014p 6.160152p 0.0 0.0 0.0
rc 0.001658p 0.398060p 4.542604m 6.126434l 0.000612n 6.160751k 6.160758j 0.308044j 6.160764h 0.0 0.0 0.0

rb, sr, y, zr, nb, mo, tc half lives from 89wal1.
1

mass number 103 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 39 y g 40 zr g 41 nb d 41 nb g 42 mo d 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g 47 ag g
half life 0.260s 1.3 s 2.573s 1.5 s 4.8 s 1.13 m 54. s 39.27d 56.12m stable 16.99d 1.10 h
lambda 2.666e+00 5.332e-01 2.694e-01 4.621e-01 1.444e-01 1.022e-02 1.284e-02 2.043e-07 2.059e-04 0.0 4.722e-07 1.750e-04
z - 1 g 100.0000 100.0000 0.0 100.0000 0.0 99.9860 100.0000 100.0000 99.0000 1.0000 -0.1000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -99.9000 0.0
z - 0 m 0.0 0.0 0.1820 100.0000 0.0410 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.303698i 0.0 0.0 0.0 0.0
zp 41.47 ri 0.001578p 0.253846p 0.0 2.385377n 0.0 2.473448n 0.187885p 0.001228p 3.37e-07p 5.04e-08p 8.13e-12p
0.0
sig0.577 cc 0.001578p 0.255414p 0.0 2.640732p 0.0 5.113875p 5.301763p 5.302991p 5.249962p 5.302992p 8.13e-12p
0.0
rc 0.001578p 0.255423p 9.62e-05o 2.640897m 0.000619n 5.114594l 5.302479k 5.303707i 5.250670i 5.303707i 8.13e-12p
0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.929615k 0.0 0.0 0.0 0.0
zp 41.60 ri 0.000409p 0.176575p 0.0 2.413080n 0.0 4.033859n 0.303474p 0.002179p 3.65e-07p 5.45e-08p 5.59e-12p
0.0
sig0.551 cc 0.000409p 0.176981p 0.0 2.590041p 0.0 6.623562p 6.927034p 6.929213p 6.859921p 6.929213p 5.59e-12p
0.0
rc 0.000409p 0.176984p 4.66e-05o 2.590111m 0.000396o 6.624003l 6.927477l 6.929656k 6.860360k 6.929656k 5.59e-12p
0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.514002i 0.0 0.0 0.0 0.0
zp 41.05 ri 0.020797p 0.931117p 0.0 3.367171n 0.0 1.160427n 0.033061p 6.18e-05p 5.80e-09p 8.66e-10p 0.0 0.0
sig0.579 cc 0.020797p 0.951874p 0.0 4.319046p 0.0 5.478909p 5.511968p 5.512030p 5.456910p 5.512030p 0.0 0.0
rc 0.020797p 0.951915o 0.000604o 4.319690m 0.001400n 5.480912l 5.513973k 5.514035i 5.458894i 5.514035i 0.0
0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.856746i 0.0 0.0 0.0 0.0
zp 41.64 ri 0.001909p 0.202366p 0.0 2.218355n 0.0 2.940661n 0.484618p 0.008636p 1.26e-05p 1.88e-06p 2.09e-09p
0.0
sig0.627 cc 0.001909p 0.204269p 0.0 2.422578p 0.0 5.362914p 5.847570p 5.856206p 5.797657p 5.856221p 2.09e-09p
0.0
rc 0.001909p 0.204276p 7.10e-05o 2.422702m 0.000471n 5.363494l 5.848112k 5.856748i 5.798193i 5.856763i 2.09e-09p
0.0
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.168776i 0.0 0.0 0.0 0.0
zp 41.82 ri 0.000287p 0.052510p 0.0 0.911298p 0.0 1.777330n 0.416950p 0.010330p 2.00e-05p 2.99e-06p 4.21e-09p
0.0
sig0.619 cc 0.000287p 0.052795p 0.0 0.964077p 0.0 2.741270p 3.158239p 3.168570p 3.136904p 3.168593p 4.21e-09p
0.0

rc 0.000287p 0.052797p 1.74e-05o 0.964112o 0.000187o 2.741494m 3.158444k 3.168774i 3.137107i 3.168797i 4.21e-09p
0.0
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.332835n 0.0 0.0
zp 41.49 ri 0.000165p 0.045381p 0.0 0.631253p 0.0 0.614264p 0.041595p 0.000141p 1.69e-08p 2.53e-09p 0.0 0.0
sig0.543 cc 0.000165p 0.045545p 0.0 0.676792p 0.0 1.290968p 1.332563p 1.332704p 1.319377p 1.332704p 0.0 0.0
rc 0.000165p 0.045546p 1.45e-05o 0.676813o 0.000148o 1.291130n 1.332725n 1.332866n 1.319537n 1.332866m 0.0
0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.210769n 0.0 0.0
zp 41.51 ri 0.001308p 0.112247p 0.0 0.973262p 0.0 1.000165n 0.122166p 0.001515p 1.44e-06p 2.16e-07p 1.49e-10p
0.0
sig0.621 cc 0.001308p 0.113553p 0.0 1.086810p 0.0 2.086834p 2.208997p 2.210512p 2.188409p 2.210514p 1.49e-10p
0.0
rc 0.001308p 0.113556p 5.64e-05o 1.086874o 0.000282o 2.087169m 2.209335m 2.210850m 2.188743m 2.210852l 1.49e-10p
0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.329828n 0.0 0.0
zp 41.50 ri 0.001775p 0.203569p 0.0 1.968533n 0.0 1.955005n 0.199239p 0.001709p 9.68e-07p 8.42e-08p 4.29e-11p
0.0
sig0.597 cc 0.001775p 0.205340p 0.0 2.173858p 0.0 4.128580p 4.327816p 4.329525p 4.286231p 4.329526p 4.29e-11p
0.0
rc 0.001775p 0.205343p 6.40e-05o 2.173940m 0.000397o 4.129038l 4.328277l 4.329986l 4.286688l 4.329988l 4.29e-11p
0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.060990h 0.0 0.0 0.0 0.0
zp 41.75 ri 5.23e-11p 0.000197p 0.0 0.201870p 0.0 0.845225m 0.013714p 3.21e-07p 0.0 0.0 0.0 0.0
sig0.350 cc 5.23e-11p 0.000197p 0.0 0.202054p 0.0 1.047265p 1.060978p 1.060978p 1.050368p 1.060978p 0.0 0.0
rc 5.23e-11p 0.000197p 1.13e-08o 0.202067p 9.24e-06o 1.047273l 1.060987j 1.060987h 1.050377h 1.060987h 0.0 0.0
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.557318i 0.0 0.0
zp 40.62 ri 0.052079p 1.964420n 0.0 2.351802n 0.0 0.187052p 0.000318p 1.61e-08p 0.0 0.0 0.0 0.0
sig0.497 cc 0.052077p 2.016416p 0.0 4.368307p 0.0 4.554742p 4.555060p 4.555060p 4.509510p 4.555060p 0.0 0.0
rc 0.052079p 2.016499m 0.001130o 4.369432l 0.001251n 4.557123l 4.557441l 4.557441l 4.511866j 4.557441h 0.0 0.0

y half life from 80eng2; zr, nb, mo, tc, ru, rh half lives 89wal1; pd half life 90bur1.

1

mass number 104 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 38 sr g 39 y g 40 zr g 41 nb d 41 nb g 42 mo d 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g

half life 0.163s 0.128s 1.2 s 0.493s 4.8 s 2.8 s 60. s 18.2 m stable 4.35 m 42. s stable

lambda 4.252e+00 5.415e+00 5.776e-01 1.406e+00 1.444e-01 2.476e-01 1.155e-02 6.348e-04 0.0 2.656e-03 1.650e-02 0.0

z - 1 g 100.0000 100.0000 100.0000 0.0 99.8180 0.0 99.9590 100.0000 100.0000 0.0 -0.5000 99.5000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1800

z - 0 m 0.0 0.0 0.0 1.0880 100.0000 2.2320 100.0000 0.0 0.0 0.0 99.8200 0.0

cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.519796l 5.963228n 0.0 0.0 0.0

zp 41.89 ri 1.36e-08p 0.000102p 0.052754p 0.0 1.458015n 0.0 4.064329n 0.871543p 0.017090p 1.35e-05p 4.49e-06p 1.29e-09p

sig0.577 cc 1.36e-08p 0.000102p 0.052826p 0.0 1.509919p 0.0 5.573689p 6.445254p 6.463118p 1.41e-05p 1.87e-05p 1.87e-05p

rc 1.36e-08p 0.000102p 0.052856p 5.91e-05o 1.510834m 0.010704o 5.585248m 6.456791k 6.473881k 1.35e-05p 1.79e-05p 1.79e-05p

cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.683705n 0.0 0.0 0.0

zp 42.02 ri 7.30e-10p 1.32e-05p 0.025590p 0.0 0.940953p 0.0 5.633859n 1.045172n 0.031995p 1.40e-05p 4.67e-06p 1.18e-09p

sig0.551 cc 7.30e-10p 1.32e-05p 0.025596p 0.0 0.966238p 0.0 6.600254p 7.645154p 7.677140p 1.40e-05p 1.87e-05p 1.86e-05p

rc 7.30e-10p 1.32e-05p 0.025604p 2.43e-05o 0.966534o 0.007905o 6.607902m 7.653074l 7.685069l 1.40e-05p 1.87e-05p 1.86e-05o

cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.294329n 0.0 0.0 0.0

zp 41.44 ri 1.23e-06p 0.002581p 0.329555p 0.0 3.082924n 0.0 2.651423n 0.206313p 0.001140p 2.83e-07p 9.44e-08p 6.92e-12p

sig0.579 cc 1.23e-06p 0.002580p 0.331847p 0.0 3.411691p 0.0 6.064641p 6.270795p 6.271934p 2.83e-07p 3.77e-07p 3.75e-07p

rc 1.23e-06p 0.002583p 0.332138p 0.000766o 3.415223m 0.041135n 6.106380l 6.312693l 6.313833l 2.83e-07p 3.77e-07p 3.76e-07o

es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.280450n 0.0 0.0 0.0
zp 42.07 ri 3.98e-08p 0.000133p 0.038905p 0.0 1.109387n 0.0 3.590559n 1.466308n 0.069430p 0.000244p 8.13e-05p 1.36e-07p
sig0.627 cc 3.98e-08p 0.000133p 0.039025p 0.0 1.148003p 0.0 4.738821p 6.204772p 6.274182p 0.000244p 0.000325p 0.000324p
rc 3.98e-08p 0.000133p 0.039037p 4.91e-05o 1.148403m 0.007795o 4.746286m 6.212594l 6.282026l 0.000244p 0.000325p 0.000324o
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.021383n 0.0 0.0 0.0
zp 42.25 ri 2.82e-09p 1.82e-05p 0.009545p 0.0 0.447551p 0.0 2.190215n 1.285944n 0.085663p 0.000410p 0.000137p 2.95e-07p
sig0.619 cc 2.82e-09p 1.82e-05p 0.009561p 0.0 0.457000p 0.0 2.647353p 3.933086p 4.018733p 0.000410p 0.000545p 0.000544p
rc 2.82e-09p 1.82e-05p 0.009563p 1.17e-05o 0.457108p 0.003148o 2.650284m 3.936227l 4.021893l 0.000410p 0.000545p 0.000544o
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.523240n 0.0 0.0 0.0
zp 41.89 ri 3.24e-10p 8.16e-06p 0.007959p 0.0 0.351811p 0.0 0.961892p 0.195853p 0.002284p 8.63e-07p 2.88e-07p 2.20e-11p
sig0.543 cc 3.24e-10p 8.15e-06p 0.007962p 0.0 0.359535p 0.0 1.321595p 1.517363p 1.519646p 8.63e-07p 1.15e-06p 1.14e-06p
rc 3.24e-10p 8.16e-06p 0.007968p 1.36e-05o 0.359778p 0.004033o 1.325555o 1.521408n 1.523692m 8.63e-07p 1.15e-06p 1.15e-06o
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.718690n 0.0 0.0 0.0
zp 41.91 ri 5.23e-08p 0.000138p 0.030875p 0.0 0.655725p 0.0 1.559560n 0.453183p 0.014325p 3.14e-05p 1.05e-05p 1.03e-08p
sig0.621 cc 5.23e-08p 0.000138p 0.030997p 0.0 0.686355p 0.0 2.246139p 2.699150p 2.713468p 3.14e-05p 4.18e-05p 4.17e-05p
rc 5.23e-08p 0.000138p 0.031012p 5.62e-05o 0.686737o 0.006426o 2.252442m 2.705624m 2.719950m 3.14e-05p 4.18e-05p 4.17e-05o
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.999841n 0.0 0.0 0.0
zp 41.92 ri 2.07e-08p 0.000103p 0.035055p 0.0 0.933713p 0.0 2.369957n 0.640591p 0.015936p 2.56e-05p 4.51e-06p 3.86e-09p

sig0.597 cc 2.06e-08p 0.000102p 0.035145p 0.0 0.968489p 0.0 3.338529p 3.978962p 3.994893p 2.55e-05p 3.00e-05p 2.99e-05p
rc 2.07e-08p 0.000103p 0.035157p 3.91e-05o 0.968846o 0.006191o 3.344596m 3.985187m 4.001123l 2.56e-05p 3.00e-05p 2.99e-05p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.349770n 0.0 0.0 0.0
zp 41.95 ri 0.0 0.0 6.23e-06p 0.0 0.022527p 0.0 0.313860p 0.013262p 1.75e-06p 0.0 0.0 0.0
sig0.350 cc 0.0 0.0 6.23e-06p 0.0 0.022529p 0.0 0.336386p 0.349646p 0.349647p 0.0 0.0 0.0
rc 0.0 0.0 6.23e-06p 2.15e-09o 0.022533p 0.000111o 0.336495p 0.349757o 0.349759n 0.0 0.0 0.0
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.744866h 0.0 0.0 0.0
zp 41.02 ri 8.47e-07p 0.004021p 0.616638p 0.0 2.431824n 0.0 0.680957p 0.005012p 1.20e-06p 3.13e-12p 1.04e-12p 0.0
sig0.497 cc 8.47e-07p 0.004021p 0.620426p 0.0 3.050272p 0.0 3.731063p 3.736073p 3.736074p 3.13e-12p 4.16e-12p 4.15e-12p
rc 8.47e-07p 0.004022p 0.620660o 0.000277o 3.051631m 0.008528o 3.739865l 3.744878j 3.744879h 3.13e-12p 4.17e-12p 4.15e-12o

sr, y half lives from 80eng2; zr, nb, mo, tc half lives 89wal1.
1

mass number 105 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 40 zr g 41 nb g 42 mo d 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g
half life 0.493s 3.0 s 1.0 s 36. s 7.6 m 4.44 h 40. s 35.4 h stable 7.2 m 41.0d 55.5m
lambda 1.406e+00 2.310e-01 6.931e-01 1.925e-02 1.520e-03 4.337e-05 1.733e-02 5.439e-06 0.0 1.605e-03 1.957e-07 2.082e-04
z - 1 g 100.0000 98.9120 0.0 97.7680 100.0000 100.0000 27.0000 73.0000 100.0000 -50.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.9400 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0 50.0000 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 6.593244i 0.0 0.0 0.0 0.0 0.0 0.0
zp 42.32 ri 0.005429p 0.474215p 0.0 3.746012n 2.235879n 0.141599p 6.50e-05p 0.000435p 1.25e-07p 1.20e-12p 0.0 0.0
sig0.577 cc 0.005429p 0.479561p 0.0 4.214939p 6.450777p 6.592371p 1.780005p 6.592870p 6.592871p 1.20e-12p 0.0 0.0
rc 0.005429p 0.479585p 0.000879o 4.215772m 6.451650k 6.593250i 1.780242i 6.593749h 6.593749h 1.20e-12p 0.0 0.0

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 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  9.422944k      0.0  9.053221k 9.143154n      0.0       0.0       0.0
zp 42.44 ri 0.002235p 0.351960p      0.0  5.224625n 3.436006n 0.285304p 9.46e-05p 0.000633p 1.42e-07p      0.0       0.0       0.0
sig0.551 cc 0.002229p 0.353240p      0.0  5.556369p 9.009388p 9.292207p 2.508992p 9.292948p 9.292948p      0.0       0.0       0.0
         rc 0.002235p 0.354170p 0.000385o 5.571276m 9.007281k 9.292585j 2.509093k 9.293312i 9.293313i      0.0       0.0       0.0
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  6.397507i      0.0       0.0       0.0       0.0       0.0       0.0
zp 41.83 ri 0.070444p 1.773284n      0.0  3.803682n 0.773660p 0.012315p 1.61e-06p 1.08e-05p 7.06e-10p      0.0       0.0       0.0
sig0.579 cc 0.070424p 1.842440p      0.0  5.605366p 6.379183p 6.391495p 1.725705p 6.391507p 6.391507p      0.0       0.0       0.0
         rc 0.070444p 1.842961m 0.006084o 5.611592m 6.385252k 6.397567i 1.727345i 6.397579h 6.397579h      0.0       0.0       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  6.236703l      0.0       0.0       0.0       0.0       0.0       0.0
zp 42.50 ri 0.004510p 0.344790p      0.0  2.787668n 2.769215n 0.337703p 0.000566p 0.003785p 5.18e-06p 4.61e-10p 6.90e-11p
0.0
sig0.627 cc 0.004510p 0.349237p      0.0  3.129199p 5.898348p 6.236043p 1.684297p 6.240394p 6.240399p 4.61e-10p 3.00e-10p
0.0
         rc 0.004510p 0.349251p 0.000701o 3.129825m 5.899041l 6.236743k 1.684486k 6.241094k 6.241100k 4.61e-10p 3.00e-10p
0.0
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  4.923124k      0.0       0.0       0.0       0.0       0.0       0.0
zp 42.68 ri 0.001072p 0.139990p      0.0  1.770537n 2.569615n 0.444831p 0.001031p 0.006901p 1.25e-05p 1.40e-09p 2.08e-10p
0.0
sig0.619 cc 0.001072p 0.141048p      0.0  1.908478p 4.478057p 4.922887p 1.330210p 4.930818p 4.930831p 1.40e-09p 9.06e-10p
0.0
         rc 0.001072p 0.141051p 0.000246o 1.908686m 4.478302l 4.923132k 1.330277k 4.931064j 4.931077j 1.40e-09p 9.06e-10p
0.0
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  2.388783k      0.0       0.0       0.0       0.0       0.0       0.0
zp 42.28 ri 0.001250p 0.179451p      0.0  1.393066n 0.789435p 0.029297p 6.68e-06p 4.47e-05p 3.55e-09p      0.0       0.0       0.0
sig0.543 cc 0.001250p 0.180678p      0.0  1.569736p 2.359157p 2.388453p 0.644889p 2.388504p 2.388504p      0.0       0.0       0.0
         rc 0.001250p 0.180688p 0.000338o 1.570059m 2.359494l 2.388791k 0.644980k 2.388842j 2.388842j      0.0       0.0       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  3.107587l      0.0       0.0       0.0       0.0       0.0       0.0
zp 42.32 ri 0.005161p 0.282803p      0.0  1.618335n 1.117402n 0.089590p 9.18e-05p 0.000615p 4.83e-07p 2.33e-11p 3.48e-12p
0.0
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 sig0.621 cc 0.005161p 0.287884p       0.0  1.899880p 3.017227p 3.106810p 0.838931p 3.107516p 3.107517p 2.33e-11p 1.51e-11p
0.0
          rc 0.005161p 0.287908p 0.000831o 1.900647m 3.018049l 3.107640k 0.839155k 3.108346j 3.108347j 2.33e-11p 1.51e-11p
0.0
  np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.444541l      0.0       0.0       0.0       0.0
 zp 42.34 ri 0.003594p 0.273870p       0.0  1.819014n 1.265099n 0.088036p 3.50e-05p 0.000465p 2.00e-07p 4.84e-12p       0.0
0.0
 sig0.597 cc 0.003594p 0.277407p       0.0  2.090313p 3.355352p 3.443382p 0.929748p 3.443882p 3.443882p 4.84e-12p 2.84e-12p
0.0
          rc 0.003594p 0.277425p 0.000713o 2.090960m 3.356059l 3.444095l 0.929941l 3.444594k 3.444594k 4.84e-12p 2.85e-12p
0.0
  u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0  0.243282l      0.0       0.0       0.0       0.0       0.0       0.0
 zp 42.18 ri 1.97e-07p 0.004989p       0.0  0.203460p 0.034917p 2.07e-05p       0.0  2.78e-12p       0.0       0.0       0.0       0.0
 sig0.350 cc 1.97e-07p 0.004989p       0.0  0.208340p 0.243255p 0.243276p 0.065684p 0.243276p 0.243276p       0.0       0.0       0.0
          rc 1.97e-07p 0.004990p 2.68e-06o 0.208341o 0.243258n 0.243278l 0.065685l 0.243278k 0.243278k       0.0       0.0       0.0
  u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0  0.631617l      0.0  1.098939l 0.732945n       0.0       0.0       0.0
 zp 41.42 ri 0.025462p 0.356912p       0.0  0.402138p 0.009745p 1.08e-05p 3.27e-11p 2.19e-10p       0.0       0.0       0.0       0.0
 sig0.497 cc 0.028066p 0.421176p       0.0  0.773808p 0.784550p 0.784562p 0.211832p 0.784562p 0.784562p       0.0       0.0       0.0
          rc 0.025462p 0.382097p 0.000710o 0.776416n 0.786161m 0.786172k 0.212266k 0.786172k 0.786172k       0.0       0.0       0.0

   zr half life from 80eng2; nb, mo, tc, ru, rh half lives 89wal1.
1

     mass number    106              LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       40 zr g   41 nb g   42 mo g   43 tc g   44 ru g   45 rh m   45 rh g   46 pd g   47 ag m   47 ag g   48 cd g
 half life     0.907s     1.0 s     8.4 s     36. s    1.020y    2.18 h    29.9 s    stable     8.4 d    24.1 m    stable
 lambda      7.642e-01 6.931e-01 8.252e-02 1.925e-02 2.155e-08 8.832e-05 2.318e-02       0.0 9.551e-07 4.794e-04       0.0
  z - 1 g    100.0000  100.0000   99.0600  100.0000  100.0000       0.0  100.0000  100.0000 -100.0000 -100.0000       0.0
  z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
  z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
  cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0  6.817046i      0.0       0.0       0.0       0.0       0.0       0.0
 zp 42.76 ri 0.000316p 0.093225p 2.242627n 3.763340n 0.718417p 0.004247p 0.004247p 7.53e-06p 2.12e-10p 9.07e-11p       0.0
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sig0.577 cc 0.000316p 0.093542p 2.335290p 6.098629p 6.817046p 0.004247p 6.821293p 6.825548p 2.12e-10p 9.07e-11p 0.0
rc 0.000316p 0.093542p 2.335290m 6.098629l 6.817046i 0.004247p 6.821293i 6.825548i 2.12e-10p 9.07e-11p 0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 7.388927k 0.0 0.0 0.0 0.0 0.0 0.0
zp 42.86 ri 8.83e-05p 0.040891p 2.415829n 3.759115n 1.173388n 0.004407p 0.004407p 7.97e-06p 8.27e-11p 3.54e-11p 0.0
sig0.551 cc 8.83e-05p 0.040980p 2.456424p 6.215539p 7.388927p 0.004407p 7.393333p 7.397748p 8.27e-11p 3.54e-11p 0.0
rc 8.83e-05p 0.040980p 2.456424m 6.215539l 7.388927k 0.004407p 7.393333k 7.397748k 8.27e-11p 3.54e-11p 0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 6.169171i 0.0 0.0 0.0 0.0 0.0 0.0
zp 42.23 ri 0.008827p 0.638411p 3.563874n 1.878696n 0.085447p 0.000132p 0.000132p 4.78e-08p 0.0 0.0 0.0
sig0.579 cc 0.008827p 0.647238p 4.205028p 6.083724p 6.169171p 0.000132p 6.169303p 6.169435p 0.0 0.0 0.0
rc 0.008827p 0.647238o 4.205028m 6.083724k 6.169171i 0.000132p 6.169303i 6.169435i 0.0 0.0 0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 6.491847j 0.0 0.0 0.0 0.0 0.0 0.0
zp 42.93 ri 0.000353p 0.074238p 1.545333n 3.734859n 1.137765n 0.019659p 0.019659p 0.000132p 2.73e-08p 1.17e-08p 0.0
sig0.627 cc 0.000353p 0.074591p 1.619223p 5.354082p 6.491847p 0.019659p 6.511506p 6.531296p 2.73e-08p 1.17e-08p 0.0
rc 0.000353p 0.074591p 1.619223m 5.354082m 6.491847j 0.019659p 6.511506j 6.531296j 2.73e-08p 1.17e-08p 0.0
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 5.496814j 0.0 0.0 0.0 0.0 0.0 0.0
zp 43.11 ri 7.02e-05p 0.026112p 0.882754p 3.194169n 1.393955n 0.033768p 0.033768p 0.000306p 8.15e-08p 3.49e-08p 3.50e-12p
sig0.619 cc 7.02e-05p 0.026182p 0.908691p 4.102860p 5.496814p 0.033768p 5.530582p 5.564657p 8.15e-08p 3.49e-08p 3.50e-12p
rc 7.02e-05p 0.026182p 0.908691o 4.102860m 5.496814j 0.033768p 5.530582j 5.564657j 8.15e-08p 3.49e-08p 3.50e-12p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.415191n 0.0 0.0 0.0
zp 42.68 ri 7.18e-05p 0.035918p 0.859005p 1.362816n 0.156758p 0.000481p 0.000481p 2.45e-07p 1.64e-12p 0.0 0.0
sig0.543 cc 7.18e-05p 0.035990p 0.894656p 2.257472p 2.414230p 0.000481p 2.414711p 2.415192p 1.64e-12p 0.0 0.0
rc 7.18e-05p 0.035990p 0.894656o 2.257472m 2.414230m 0.000481p 2.414711m 2.415192l 1.64e-12p 0.0 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.617621n 0.0 0.0 0.0
zp 42.72 ri 0.000620p 0.087740p 1.213198n 1.935581n 0.373699p 0.003799p 0.003799p 1.40e-05p 1.49e-09p 6.37e-10p 0.0
sig0.621 cc 0.000620p 0.088359p 1.300727p 3.236308p 3.610007p 0.003799p 3.613806p 3.617618p 1.49e-09p 6.37e-10p 0.0
rc 0.000620p 0.088359p 1.300727m 3.236308l 3.610007m 0.003799p 3.613806m 3.617618l 1.49e-09p 6.37e-10p 0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.999881n 0.0 0.0 0.0
zp 42.67 ri 0.000424p 0.075431p 1.093980n 1.586579n 0.240983p 0.001597p 0.001597p 3.10e-06p 1.65e-10p 3.62e-11p 0.0

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 sig0.597 cc 0.000424p 0.075855p 1.169122p 2.755701p 2.996684p 0.001597p 2.998281p 2.999881p 1.65e-10p 3.62e-11p       0.0
          rc 0.000424p 0.075855p 1.169122m 2.755701l 2.996684m 0.001597p 2.998281l 2.999881l 1.65e-10p 3.62e-11p       0.0
  u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.099934n      0.0       0.0       0.0
 zp 42.43 ri 2.02e-09p 0.000285p 0.068711p 0.030805p 0.000133p 6.00e-11p 6.00e-11p       0.0       0.0       0.0       0.0
 sig0.350 cc 2.02e-09p 0.000285p 0.068993p 0.099798p 0.099931p 6.00e-11p 0.099931p 0.099931p       0.0       0.0       0.0
          rc 2.02e-09p 0.000285p 0.068993p 0.099798p 0.099931o 6.00e-11p 0.099931o 0.099931n       0.0       0.0       0.0
  u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0  0.300695n      0.0       0.0  0.215043n      0.0       0.0       0.0
 zp 41.68 ri 0.000111p 0.075374p 0.192717p 0.002280p 2.67e-08p       0.0       0.0       0.0       0.0       0.0       0.0
 sig0.350 cc 0.000109p 0.074174p 0.267544p 0.269784p 0.269784p       0.0  0.269784p 0.269784p       0.0       0.0       0.0
          rc 0.000111p 0.075485p 0.267492p 0.269772o 0.269772n       0.0  0.269772n 0.269772m       0.0       0.0       0.0

   zr half life from 80eng2; nb, mo, tc, ru, rh half lives 89wal1.
1

     mass number    107              LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       41 nb g   42 mo g   43 tc g   44 ru g   45 rh g   46 pd m   46 pd g   47 ag m   47 ag g   48 cd g   49 in g
 half life     0.766s     3.5 s    21.2 s     3.8 m    21.7 m    21.3 s    6.5e6y     44. s    stable     6.5 h     33. m
 lambda       9.049e-01 1.980e-01 3.270e-02 3.040e-03 5.324e-04 3.254e-02 3.381e-15 1.575e-02       0.0 2.962e-05 3.501e-04
  z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000       0.0  100.0000   -0.3400 -100.0000
  z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  -99.6600       0.0
  z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0  100.0000       0.0       0.0
  cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0  7.285076l      0.0       0.0       0.0  7.155873n      0.0       0.0
 zp 43.21 ri 0.010398p 0.823259p 4.062806n 2.284483n 0.089191p 0.000182p 9.80e-05p 3.63e-08p 5.42e-09p       0.0       0.0
 sig0.577 cc 0.010396p 0.833527p 4.895699p 7.180957p 7.270134p 0.000184p 7.270417p 3.66e-08p 7.270417p       0.0       0.0
          rc 0.010398p 0.833657o 4.896463m 7.180946l 7.270136k 0.000182p 7.270417k 3.63e-08p 7.270417k       0.0       0.0
  cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.985186n      0.0       0.0
 zp 43.28 ri 0.003821p 0.627891p 3.589289n 2.680711n 0.083248p 0.000147p 7.90e-05p 1.37e-08p 2.05e-09p       0.0       0.0
 sig0.551 cc 0.003821p 0.631713p 4.221002p 6.901713p 6.984961p 0.000147p 6.985186p 1.37e-08p 6.985186p       0.0       0.0
          rc 0.003821p 0.631713o 4.221002m 6.901713l 6.984961l 0.000147p 6.985186l 1.37e-08p 6.985186l       0.0       0.0
  cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.294329n      0.0       0.0
 zp 42.63 ri 0.161952p 2.441589n 3.278021n 0.408969p 0.003796p 1.41e-06p 7.57e-07p 6.00e-11p 8.97e-12p       0.0       0.0
```

```
sig0.579 cc 0.161952p 2.603541p 5.881562p 6.290531p 6.294327p 1.41e-06p 6.294329p 6.00e-11p 6.294329p      0.0       0.0
        rc 0.161952p 2.603541m 5.881562l 6.290531l 6.294327l 1.41e-06p 6.294329l 6.01e-11p 6.294329l      0.0       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.280450n      0.0       0.0
zp 43.36 ri 0.009578p 0.529556p 3.168728n 2.358503n 0.212113p 0.001281p 0.000690p 1.45e-06p 2.17e-07p 1.21e-10p      0.0
sig0.627 cc 0.009578p 0.539134p 3.707862p 6.066365p 6.278478p 0.001281p 6.280449p 1.45e-06p 6.280450p 1.21e-10p      0.0
        rc 0.009578p 0.539134o 3.707862m 6.066365l 6.278478l 0.001281p 6.280449l 1.45e-06p 6.280450l 1.21e-10p      0.0
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.428867n      0.0       0.0
zp 43.54 ri 0.002701p 0.251899p 2.330486n 2.518965n 0.320709p 0.002667p 0.001436p 3.98e-06p 5.94e-07p 4.11e-10p      0.0
sig0.619 cc 0.002701p 0.254600p 2.585086p 5.104050p 5.424760p 0.002667p 5.428863p 3.98e-06p 5.428867p 4.11e-10p      0.0
        rc 0.002701p 0.254600p 2.585086m 5.104050l 5.424760l 0.002667p 5.428863l 3.98e-06p 5.428867l 4.11e-10p      0.0
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.608407n      0.0       0.0
zp 43.07 ri 0.005002p 0.378682p 1.667043n 0.546727p 0.010945p 6.39e-06p 3.44e-06p 2.97e-10p 4.43e-11p      0.0       0.0
sig0.543 cc 0.005002p 0.383683p 2.050726p 2.597453p 2.608398p 6.39e-06p 2.608408p 2.97e-10p 2.608408p      0.0       0.0
        rc 0.005002p 0.383683p 2.050726m 2.597453m 2.608398m 6.39e-06p 2.608408m 2.97e-10p 2.608408l      0.0       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.522027n      0.0       0.0
zp 43.13 ri 0.019233p 0.676864p 2.572256n 1.191093n 0.062270p 0.000202p 0.000109p 1.15e-07p 1.72e-08p 4.54e-12p      0.0
sig0.621 cc 0.019233p 0.696096p 3.268352p 4.459445p 4.521716p 0.000202p 4.522026p 1.15e-07p 4.522027p 4.54e-12p      0.0
        rc 0.019233p 0.696096o 3.268352m 4.459445l 4.521716l 0.000202p 4.522026l 1.15e-07p 4.522027l 4.54e-12p      0.0
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.499859n      0.0       0.0
zp 42.88 ri 0.026229p 0.633293p 1.469743n 0.362423p 0.008158p 1.09e-05p 2.91e-06p 1.47e-09p 1.27e-10p      0.0       0.0
sig0.597 cc 0.026229p 0.659522p 2.129265p 2.491688p 2.499845p 1.09e-05p 2.499859p 1.47e-09p 2.499859p      0.0       0.0
        rc 0.026229p 0.659522o 2.129265m 2.491688m 2.499845m 1.09e-05p 2.499859m 1.47e-09p 2.499859m      0.0       0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.025983n      0.0       0.0
zp 42.80 ri 0.000293p 0.008833p 0.013365p 0.003450p 4.07e-05p 3.59e-08p 1.93e-08p 2.19e-12p      0.0       0.0       0.0
sig0.583 cc 0.000293p 0.009126p 0.022492p 0.025942p 0.025982p 3.59e-08p 0.025982p 2.19e-12p 0.025982p      0.0       0.0
        rc 0.000293p 0.009126p 0.022492p 0.025942o 0.025982o 3.59e-08p 0.025982o 2.19e-12p 0.025982n      0.0       0.0
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.139032n      0.0       0.0
zp 41.87 ri 0.017920p 0.116846p 0.004266p 2.14e-07p      0.0       0.0       0.0       0.0       0.0       0.0       0.0
sig0.350 cc 0.017920p 0.134766p 0.139032p 0.139032p 0.139032p      0.0  0.139032p      0.0  0.139032p      0.0       0.0
```

rc 0.017920p 0.134766p 0.139032p 0.139032o 0.139032o 0.0 0.139032o 0.0 0.139032n 0.0 0.0

nb half life from 80eng2; mo, tc, ru, rh, pd half lives 89wal1.
1

mass number 108 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 40 zr g 41 nb g 42 mo g 43 tc d 43 tc g 44 ru d 44 ru g 45 rh m 45 rh g 46 pd g 47 ag g 48 cd g
half life 0.378s 0.242s 1.5 s 1.41 s 5.1 s 1.4 s 4.5 m 5.9 m 17. s stable 2.41 m stable
lambda 1.834e+00 2.864e+00 4.621e-01 4.916e-01 1.359e-01 4.951e-01 2.567e-03 1.958e-03 4.077e-02 0.0 4.794e-03
0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 100.0000 0.0 100.0000 0.0 100.0000 100.0000 -2.3000 97.7000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.1360 100.0000 0.0880 100.0000 0.0 0.0 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.939329n 0.0 0.0
zp 43.67 ri 1.37e-07p 0.000541p 0.151542p 0.0 2.366174n 0.0 3.923690n 0.245671p 0.245671p 0.005559p 3.12e-06p
1.17e-10p
sig0.577 cc 1.37e-07p 0.000541p 0.152081p 0.0 2.518210p 0.0 6.441959p 0.245666p 6.687625p 6.938849p 3.12e-06p
3.05e-06p
rc 1.37e-07p 0.000541p 0.152084p 1.97e-05o 2.518278m 0.000695o 6.442663l 0.245671p 6.688334l 6.939564l 3.12e-06p
3.05e-06p
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.987303n 0.0 0.0
zp 43.68 ri 2.76e-08p 0.000168p 0.113986p 0.0 1.583739n 0.0 3.983296n 0.151155p 0.151155p 0.003394p 6.84e-07p
1.45e-11p
sig0.551 cc 2.76e-08p 0.000168p 0.114151p 0.0 1.697856p 0.0 5.681196p 0.151152p 5.832348p 5.986893p 6.83e-07p
6.68e-07p
rc 2.76e-08p 0.000168p 0.114154p 1.62e-05o 1.697909m 0.000559o 5.681764m 0.151155p 5.832919m 5.987468l 6.84e-07p
6.68e-07p
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.084518n 0.0 0.0
zp 43.06 ri 3.05e-05p 0.021796p 1.001958n 0.0 3.711189n 0.0 1.309695n 0.019152p 0.019152p 7.36e-05p 8.17e-09p
0.0
sig0.579 cc 3.05e-05p 0.021825p 1.023753p 0.0 4.734919p 0.0 6.044669p 0.019151p 6.063821p 6.083046p 8.17e-09p
7.98e-09p

rc 3.05e-05p 0.021826p 1.023784m 0.000364o 4.735337m 0.002714n 6.047746l 0.019152p 6.066898l 6.086124l 8.17e-09p 7.98e-09p
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.875260n 0.0 0.0
zp 43.78 ri 5.05e-07p 0.000825p 0.121573p 0.0 1.812951n 0.0 3.209289n 0.356319p 0.356318p 0.017511p 4.10e-05p 8.38e-09p
sig0.627 cc 5.05e-07p 0.000826p 0.122395p 0.0 1.935309p 0.0 5.144657p 0.356310p 5.500966p 5.874788p 4.10e-05p 4.01e-05p
rc 5.05e-07p 0.000826p 0.122398p 2.68e-05o 1.935376m 0.000664o 5.145330l 0.356319p 5.501647m 5.875478l 4.10e-05p 4.01e-05p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.629936n 0.0 0.0
zp 43.97 ri 5.95e-08p 0.000189p 0.049807p 0.0 1.218069n 0.0 3.266542n 0.528947o 0.528946p 0.037146p 0.000120p 3.20e-08p
sig0.619 cc 5.95e-08p 0.000189p 0.049995p 0.0 1.268048p 0.0 4.534622p 0.528939p 5.063561p 5.629649p 0.000120p 0.000117p
rc 5.95e-08p 0.000189p 0.049996p 8.43e-06o 1.268073m 0.000369o 4.534984m 0.528947o 5.063930l 5.630027l 0.000120p 0.000117p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.705014n 0.0 0.0
zp 43.46 ri 6.74e-08p 0.000414p 0.103922p 0.0 1.328656n 0.0 1.196931n 0.037228p 0.037228p 0.000230p 2.87e-08p 0.0
sig0.543 cc 6.74e-08p 0.000415p 0.104333p 0.0 1.432953p 0.0 2.629926p 0.037227p 2.667153p 2.704610p 2.87e-08p 2.81e-08p
rc 6.74e-08p 0.000415p 0.104336p 2.42e-05o 1.433017m 0.000648o 2.630595l 0.037228p 2.667823l 2.705282l 2.87e-08p 2.81e-08p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.225453n 0.0 0.0
zp 43.55 ri 2.29e-06p 0.002462p 0.232276p 0.0 2.199869n 0.0 2.457917n 0.163895p 0.163894p 0.004468p 5.40e-06p 5.36e-10p
sig0.621 cc 2.29e-06p 0.002464p 0.234731p 0.0 2.434534p 0.0 4.892538p 0.163889p 5.056427p 5.224784p 5.40e-06p 5.27e-06p
rc 2.29e-06p 0.002464p 0.234740p 6.80e-05o 2.434677m 0.001087n 4.893680l 0.163895p 5.057575l 5.225938l 5.40e-06p 5.28e-06p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.899893n 0.0 0.0

zp 43.19 ri 6.39e-06p 0.004464p 0.232743p 0.0 1.092577n 0.0 0.543300p 0.013150p 0.013150p 0.000101p 2.69e-08p
0.0
sig0.597 cc 6.39e-06p 0.004470p 0.237206p 0.0 1.329771p 0.0 1.873091p 0.013150p 1.886241p 1.899492p 2.69e-08p
2.63e-08p
rc 6.39e-06p 0.004470p 0.237213p 7.31e-05o 1.329863m 0.000583o 1.873746m 0.013150p 1.886897m 1.900148m 2.69e-08p
2.63e-08p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.008195n 0.0 0.0
zp 43.44 ri 2.32e-09p 2.73e-06p 0.000542p 0.0 0.003066p 0.0 0.004363p 0.000108p 0.000108p 2.11e-06p 4.81e-10p 0.0
sig0.583 cc 2.32e-09p 2.74e-06p 0.000545p 0.0 0.003612p 0.0 0.007975p 0.000108p 0.008083p 0.008193p 4.81e-10p
4.70e-10p
rc 2.32e-09p 2.74e-06p 0.000545p 8.23e-08o 0.003612p 1.43e-06o 0.007976p 0.000108p 0.008084o 0.008194n 4.81e-10p
4.70e-10p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.081321n 0.0 0.0
zp 42.09 ri 2.38e-07p 0.003318p 0.069565p 0.0 0.008415p 0.0 2.21e-06p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 2.38e-07p 0.003318p 0.072883p 0.0 0.081298p 0.0 0.081300p 0.0 0.081300p 0.081300p 0.0 0.0
rc 2.38e-07p 0.003318p 0.072883p 1.19e-05o 0.081310p 1.04e-05o 0.081323p 0.0 0.081323o 0.081323n 0.0 0.0

zr, nb half lives from 80eng2; mo, tc, ru, rh half lives 89wal1.
1

mass number 109 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 41 nb g 42 mo g 43 tc g 44 ru d 44 ru g 45 rh m 45 rh g 46 pd m 46 pd g 47 ag g 48 cd g 49 in g
half life 0.315s 1.41 s 1.4 s 0.83 s 34.5 s 50. s 1.34 m 4.69 m 13.5 h stable 462.9d 4.2 h
lambda 2.200e+00 4.916e-01 4.951e-01 8.351e-01 2.009e-02 1.386e-02 8.621e-03 2.463e-03 1.426e-05 0.0 1.733e-08
4.584e-05
z - 1 g 100.0000 100.0000 99.8640 0.0 99.9120 50.0000 50.0000 0.0 100.0000 100.0000 0.0 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -100.0000 0.0
z - 0 m 0.0 0.0 0.0 0.6210 100.0000 0.0 100.0000 0.0 100.0000 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.330960k 0.0 0.0 0.0
zp 44.14 ri 1.37e-05p 0.014445p 0.775415p 0.0 3.941727n 0.769036p 0.769034p 0.039711p 0.021383p 0.000130p 1.93e-08p
0.0
sig0.577 cc 1.37e-05p 0.014458p 0.789819p 0.0 4.730940p 3.134479p 6.268958p 0.039709p 6.330050p 6.330180p 1.93e-08p
0.0

rc 1.37e-05p 0.014459p 0.789854o 0.000986o 4.731871m 3.134971m 6.269941l 0.039711p 6.331035k 6.331166k 1.93e-08p
0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.012488k 0.0 0.0 0.0
zp 44.07 ri 6.45e-06p 0.011906p 0.623133p 0.0 3.455230n 0.448142p 0.448134p 0.016759p 0.009024p 2.16e-05p 1.30e-09p
0.0
sig0.551 cc 6.45e-06p 0.011912p 0.635001p 0.0 4.089728p 2.492989p 4.985979p 0.016759p 5.011761p 5.011783p 1.30e-09p
0.0
rc 6.45e-06p 0.011913p 0.635030o 0.000771o 4.090472m 2.493379m 4.986749l 0.016759p 5.012533k 5.012555k 1.30e-09p
0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.054957k 0.0 0.0 0.0
zp 43.49 ri 0.001816p 0.265779p 2.816517n 0.0 2.726088n 0.120087p 0.120072p 0.000989p 0.000533p 5.81e-07p 1.23e-11p
0.0
sig0.579 cc 0.001816p 0.267542p 3.083133p 0.0 5.807150p 3.023641p 6.047282p 0.000989p 6.048804p 6.048804p 1.23e-11p
0.0
rc 0.001816p 0.267595p 3.083749m 0.008093n 5.815216l 3.027695l 6.055374k 0.000989p 6.056896j 6.056896j 1.23e-11p
0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.520189k 0.0 0.0 0.0
zp 44.19 ri 5.02e-05p 0.019620p 0.734620p 0.0 3.062206n 0.801996p 0.801985p 0.064488p 0.034725p 0.000618p 3.46e-07p
1.64e-11p
sig0.627 cc 5.02e-05p 0.019668p 0.754213p 0.0 3.815877p 2.709896p 5.419792p 0.064484p 5.518999p 5.519616p 3.46e-07p
1.64e-11p
rc 5.02e-05p 0.019670p 0.754263o 0.001269o 3.817074m 2.710533m 5.421054l 0.064488p 5.520267k 5.520885k 3.46e-07p
1.64e-11p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.699504j 0.0 0.0 0.0
zp 44.40 ri 8.12e-06p 0.006188p 0.413443p 0.0 2.807795n 1.130439n 1.130435n 0.137123p 0.073836p 0.001931p 1.52e-06p
9.55e-11p
sig0.619 cc 8.12e-06p 0.006196p 0.419615p 0.0 3.227120p 2.743970p 5.487939p 0.137118p 5.698890p 5.700821p 1.52e-06p
9.55e-11p
rc 8.12e-06p 0.006196p 0.419631p 0.000642o 3.227698m 2.744288l 5.488573k 0.137123p 5.699532j 5.701463j 1.52e-06p
9.55e-11p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.898230n 0.0 0.0

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 zp 43.86 ri 2.00e-05p 0.017755p 0.718181p       0.0  1.816903n 0.170558p 0.170560p 0.002360p 0.001271p 1.66e-06p 2.88e-11p
0.0
 sig0.543 cc 2.00e-05p 0.017773p 0.735840p       0.0  2.552226p 1.446653p 2.893307p 0.002360p 2.896938p 2.896939p 2.88e-11p
0.0
          rc 2.00e-05p 0.017775p 0.735932o 0.001708o 2.553896m 1.447506m 2.895014l 0.002360p 2.898646l 2.898647l 2.88e-11p
0.0
  fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.418690n      0.0       0.0
 zp 43.96 ri 0.000197p 0.049772p 1.184788n       0.0  3.134302n 0.506323p 0.506330p 0.023343p 0.012569p 0.000119p 3.30e-08p
0.0
 sig0.621 cc 0.000197p 0.049963p 1.234542p       0.0  4.368006p 2.690280p 5.380561p 0.023340p 5.416469p 5.416588p 3.30e-08p
0.0
          rc 0.000197p 0.049969p 1.234688m 0.002788o 4.370691m 2.691668m 5.383344l 0.023343p 5.419257l 5.419375k 3.30e-08p
0.0
  np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.456532m      0.0       0.0       0.0
 zp 43.57 ri 0.000388p 0.053358p 0.609211p       0.0  0.706803p 0.042495p 0.042495p 0.000689p 0.000183p 6.48e-07p 3.20e-11p
0.0
 sig0.597 cc 0.000388p 0.053737p 0.662771p       0.0  1.369118p 0.727046p 1.454092p 0.000689p 1.454965p 1.454965p 3.20e-11p
0.0
          rc 0.000388p 0.053746p 0.662883o 0.001876o 1.370979n 0.727984n 1.455968m 0.000689p 1.456840l 1.456841l 3.20e-11p
0.0
  u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.008996n      0.0       0.0
 zp 43.96 ri 9.06e-08p 6.04e-05p 0.001561p       0.0  0.006035p 0.000649p 0.000649p 2.66e-05p 1.43e-05p 4.94e-08p 6.24e-12p
0.0
 sig0.583 cc 9.06e-08p 6.05e-05p 0.001622p       0.0  0.007655p 0.004476p 0.008952p 2.66e-05p 0.008993p 0.008993p 6.24e-12p
0.0
          rc 9.06e-08p 6.05e-05p 0.001622p 2.37e-06o 0.007657p 0.004477p 0.008955o 2.66e-05p 0.008996n 0.008996m 6.24e-12p
0.0
  u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.011846n      0.0       0.0
 zp 42.31 ri 0.000111p 0.008650p 0.003053p       0.0  3.98e-06p      0.0       0.0       0.0       0.0       0.0       0.0       0.0
 sig0.350 cc 0.000111p 0.008761p 0.011803p       0.0  0.011796p 0.005898p 0.011796p       0.0  0.011796p 0.011796p       0.0       0.0
          rc 0.000111p 0.008761p 0.011803p 5.89e-05o 0.011855o 0.005928o 0.011855n       0.0  0.011855n 0.011855m       0.0       0.0
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nb, mo half lives from 80eng2; tc, ru, rh, pd half lives 89wal1.
1

mass number 110 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 40 zr g 41 nb g 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g
half life 0.130s 2.77 s 0.83 s 15. s 29. s 3.1 s stable 252. d 24.6 s stable
lambda 0.0 5.332e+00 2.502e-01 8.351e-01 4.621e-02 2.390e-02 2.236e-01 0.0 3.184e-08 2.818e-02 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 99.3790 0.0 100.0000 100.0000 0.0 -0.3000 99.7000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 98.6000
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.4000 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.947996n 0.0 0.0 0.0
zp 44.60 ri 3.57e-12p 2.12e-07p 0.000837p 0.157875p 2.517886n 1.449783m 1.449783n 0.372810p 0.001996p 0.000856p 1.60e-06p
sig0.577 cc 3.57e-12p 2.12e-07p 0.000837p 0.158712p 2.675613p 1.449783p 4.125396p 5.947997p 0.001996p 0.000883p 0.002851p
rc 3.57e-12p 2.12e-07p 0.000837p 0.158712p 2.675613m 1.449783m 4.125396l 5.947991l 0.001996p 0.000883p 0.002851p
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.991535n 0.0 0.0 0.0
zp 44.46 ri 1.58e-12p 1.17e-07p 0.000907p 0.123316p 2.377577n 0.673552o 0.673552p 0.143401p 0.000227p 9.74e-05p 8.33e-08p
sig0.551 cc 1.58e-12p 1.17e-07p 0.000907p 0.124223p 2.501029p 0.673552p 3.174581p 3.991535p 0.000227p 0.000101p 0.000325p
rc 1.58e-12p 1.17e-07p 0.000907p 0.124223p 2.501029m 0.673552o 3.174581m 3.991535l 0.000227p 0.000101p 0.000325p
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.769802n 0.0 0.0 0.0
zp 43.94 ri 8.41e-09p 7.41e-05p 0.037748p 1.265354n 3.521298n 0.466759p 0.466759p 0.019902p 1.91e-05p 8.19e-06p 2.14e-09p
sig0.579 cc 8.41e-09p 7.41e-05p 0.037823p 1.303176p 4.816381p 0.466759p 5.283140p 5.769802p 1.91e-05p 8.46e-06p 2.73e-05p
rc 8.41e-09p 7.41e-05p 0.037823p 1.303176m 4.816381m 0.466759p 5.283140m 5.769802l 1.91e-05p 8.46e-06p 2.73e-05p
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.267474n 0.0 0.0 0.0
zp 44.61 ri 1.50e-10p 1.90e-06p 0.002047p 0.202266p 2.076693n 1.293886n 1.293886n 0.399945p 0.004655p 0.001995p 1.03e-05p
sig0.627 cc 1.50e-10p 1.90e-06p 0.002049p 0.204315p 2.279739p 1.293886p 3.573625p 5.267477p 0.004655p 0.002060p 0.006654p
rc 1.50e-10p 1.90e-06p 0.002049p 0.204315p 2.279739m 1.293886m 3.573625l 5.267463l 0.004655p 0.002060p 0.006654p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.434213n 0.0 0.0 0.0
zp 44.83 ri 8.74e-12p 2.46e-07p 0.000548p 0.102784p 1.824821n 1.817597n 1.817597n 0.871449p 0.015470p 0.006630p 5.05e-05p
sig0.619 cc 8.74e-12p 2.46e-07p 0.000548p 0.103332p 1.927511p 1.817597p 3.745108p 6.434220p 0.015470p 0.006847p 0.022130p
rc 8.74e-12p 2.46e-07p 0.000548p 0.103332p 1.927511m 1.817597m 3.745108l 6.434175l 0.015470p 0.006847p 0.022130p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.284660n 0.0 0.0 0.0
zp 44.25 ri 8.11e-12p 6.71e-07p 0.002085p 0.273001p 1.952611n 0.511924o 0.511924p 0.034821p 3.89e-05p 1.67e-05p 3.48e-09p
sig0.543 cc 8.11e-12p 6.71e-07p 0.002086p 0.275087p 2.225990p 0.511924p 2.737915p 3.284660p 3.89e-05p 1.72e-05p 5.55e-05p
rc 8.11e-12p 6.71e-07p 0.002086p 0.275087p 2.225990m 0.511924o 2.737915m 3.284660l 3.89e-05p 1.72e-05p 5.55e-05p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.619382n 0.0 0.0 0.0
zp 44.37 ri 1.24e-09p 1.04e-05p 0.007169p 0.441755p 2.818649n 1.080456n 1.080456n 0.193671p 0.001205p 0.000516p 1.33e-06p
sig0.621 cc 1.24e-09p 1.04e-05p 0.007179p 0.448934p 3.264795p 1.080456p 4.345251p 5.619383p 0.001205p 0.000533p 0.001721p
rc 1.24e-09p 1.04e-05p 0.007179p 0.448934p 3.264795m 1.080456m 4.345251l 5.619379k 0.001205p 0.000533p 0.001721p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.299927n 0.0 0.0 0.0
zp 43.94 ri 5.52e-09p 2.89e-05p 0.010423p 0.291653p 0.774837p 0.109553p 0.109551p 0.005729p 9.34e-06p 2.05e-06p 1.54e-09p
sig0.597 cc 5.52e-09p 2.89e-05p 0.010452p 0.302102p 1.075067p 0.109552p 1.184618p 1.299899p 9.34e-06p 2.18e-06p 1.14e-05p
rc 5.52e-09p 2.89e-05p 0.010452p 0.302106p 1.075066o 0.109553p 1.184617n 1.299899m 9.34e-06p 2.18e-06p 1.14e-05p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.008295n 0.0 0.0 0.0
zp 44.40 ri 0.0 2.00e-09p 5.61e-06p 0.000375p 0.005122p 0.001248p 0.001248p 0.000298p 6.85e-07p 2.94e-07p 5.31e-10p
sig0.583 cc 0.0 2.00e-09p 5.61e-06p 0.000381p 0.005500p 0.001248p 0.006748p 0.008294p 6.85e-07p 3.03e-07p 9.78e-07p
rc 0.0 2.00e-09p 5.61e-06p 0.000381p 0.005500p 0.001248p 0.006748p 0.008294n 6.85e-07p 3.03e-07p 9.78e-07p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.009793n 0.0 0.0 0.0
zp 42.60 ri 1.31e-07p 0.000125p 0.004394p 0.004962p 0.000370p 2.91e-07p 2.91e-07p 2.73e-11p 0.0 0.0 0.0
sig0.497 cc 1.31e-07p 0.000125p 0.004519p 0.009481p 0.009791p 2.91e-07p 0.009792p 0.009792p 0.0 0.0 0.0
rc 1.31e-07p 0.000125p 0.004519p 0.009481p 0.009791o 2.91e-07p 0.009792o 0.009792n 0.0 0.0 0.0

nb, mo half lives from 80eng2; tc, ru, rh half lives from 89wal1.

mass number 111 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 42 mo g 43 tc g 44 ru g 45 rh g 46 pd m 46 pd g 47 ag m 47 ag g 48 cd m 48 cd g 49 in g 50 sn g

half life 0.466s 1.98 s 1.5 s 11. s 5.5 h 23.4 m 1.08 m 7.47 d 48.7 m stable 2.83 d 35.3 m

lambda 1.487e+00 3.501e-01 4.621e-01 6.301e-02 3.501e-05 4.937e-04 1.070e-02 1.074e-06 2.372e-04 0.0 2.835e-06 3.273e-04

z - 1 g 100.0000 100.0000 100.0000 100.0000 0.4300 99.5700 99.3000 0.7000 0.0 100.0000 -100.0000 -100.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 21.7000 7.0000 0.0 0.3000 0.0 0.0

z - 0 m 0.0 0.0 0.0 0.0 0.0 71.3000 0.0 99.7000 0.0 100.0000 0.0 0.0

cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.939540k 0.0 4.886963o 0.0 0.0

zp 45.05 ri 2.52e-05p 0.016819p 0.866946p 2.902424n 0.725871p 0.390853p 0.024939p 0.003727p 4.46e-05p 1.33e-05p 5.42e-09p 0.0

sig0.577 cc 2.52e-05p 0.016844p 0.883790p 3.786214p 0.742151p 4.689941p 4.843097p 4.917074p 4.46e-05p 4.931662p 5.42e-09p 0.0

rc 2.52e-05p 0.016844p 0.883790o 3.786214m 0.742151o 4.689941m 4.843097l 4.917074k 4.46e-05p 4.931662k 5.42e-09p 0.0

cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.867853i 0.0 2.875657n 0.0 0.0

zp 44.85 ri 3.33e-05p 0.018380p 0.858000p 1.600606n 0.257216p 0.138501p 0.003088p 0.000461p 1.95e-06p 5.82e-07p 4.46e-11p 0.0

sig0.551 cc 3.33e-05p 0.018413p 0.876414p 2.477020p 0.267867p 2.795859p 2.837504p 2.867774p 1.95e-06p 2.876289p 4.46e-11p 0.0

rc 3.33e-05p 0.018413p 0.876414o 2.477020m 0.267867p 2.795859m 2.837504l 2.867774i 1.95e-06p 2.876289i 4.46e-11p 0.0

cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.317297k 0.0 5.550046o 0.0 0.0

zp 44.38 ri 0.003220p 0.349118p 2.814927n 2.108450n 0.091461p 0.049248p 0.000573p 8.57e-05p 1.41e-07p 4.23e-08p 2.83e-12p 0.0

sig0.579 cc 0.003220p 0.352337p 3.167264p 5.275713p 0.114146p 5.383662p 5.371319p 5.400967p 1.41e-07p 5.417081p 2.83e-12p 0.0

rc 0.003220p 0.352337p 3.167264m 5.275713l 0.114146p 5.383662l 5.371319l 5.400967k 1.41e-07p 5.417081j 2.84e-12p 0.0

es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.711516i 0.0 4.750262n 0.0 0.0

zp 45.02 ri 0.000140p 0.036585p 0.931980p 2.717835n 0.649716p 0.349847p 0.036808p 0.005500p 0.000135p 4.05e-05p 6.49e-08p 2.02e-12p
sig0.627 cc 0.000140p 0.036725p 0.968706p 3.686541p 0.665569p 4.495086p 4.644857p 4.714478p 0.000135p 4.728588p 6.49e-08p 2.02e-12p
rc 0.000140p 0.036725p 0.968706o 3.686541m 0.665569o 4.495086m 4.644857l 4.714478i 0.000135p 4.728588i 6.49e-08p 2.02e-12p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.510395i 0.0 5.539234n 0.0 0.0
zp 45.27 ri 2.15e-05p 0.011864p 0.583071p 2.981159n 1.186403n 0.638833p 0.110620p 0.016536p 0.000655p 0.000196p 4.83e-07p 2.18e-11p
sig0.619 cc 2.15e-05p 0.011885p 0.594952p 3.576087p 1.201771p 5.056400p 5.392453p 5.512330p 0.000655p 5.529359p 4.83e-07p 2.18e-11p
rc 2.15e-05p 0.011885p 0.594957o 3.576116m 1.201781m 5.056441l 5.392452l 5.512330i 0.000655p 5.529359i 4.83e-07p 2.18e-11p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.188053n 0.0 0.0
zp 44.64 ri 0.000129p 0.056955p 1.213893n 1.737177n 0.116303p 0.062625p 0.000844p 0.000126p 1.67e-07p 5.00e-08p 1.82e-12p 0.0
sig0.543 cc 0.000129p 0.057084p 1.270977p 3.008154p 0.129238p 3.149991p 3.156830p 3.178582p 1.67e-07p 3.188053p 1.82e-12p 0.0
rc 0.000129p 0.057084p 1.270977m 3.008154l 0.129238p 3.149991l 3.156830l 3.178582l 1.67e-07p 3.188053l 1.82e-12p 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.413216j 0.0 5.446887n 0.0 0.0
zp 44.77 ri 0.000681p 0.108838p 1.683794n 2.983841n 0.417133p 0.224610p 0.012755p 0.001906p 2.34e-05p 7.00e-06p 5.26e-09p 0.0
sig0.621 cc 0.000681p 0.109519p 1.793313p 4.777154p 0.437675p 5.293285p 5.363962p 5.417467p 2.34e-05p 5.433589p 5.26e-09p 0.0
rc 0.000681p 0.109519p 1.793313m 4.777154l 0.437675p 5.293285l 5.363962l 5.417467j 2.34e-05p 5.433589j 5.26e-09p 0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.210496l 0.0 1.213749o 0.0 0.0
zp 44.31 ri 0.001495p 0.105563p 0.653939p 0.425320p 0.021753p 0.005782p 0.000133p 1.16e-05p 4.59e-08p 7.47e-09p 1.29e-12p 0.0
sig0.597 cc 0.001495p 0.107058p 0.760997p 1.186317p 0.026854p 1.206146p 1.203663p 1.210387p 4.59e-08p 1.213998p 1.29e-12p 0.0

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        rc 0.001495p 0.107058p 0.760997o 1.186317o 0.026854p 1.206146o 1.203663n 1.210387l 4.59e-08p 1.213998l 1.29e-12p
0.0
  u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.009124j      0.0  0.009066m      0.0       0.0
 zp 44.71 ri 7.91e-07p 0.000151p 0.003617p 0.004440p 0.000600p 0.000323p 7.46e-06p 1.12e-06p 6.97e-09p 2.08e-09p       0.0
0.0
 sig0.583 cc 7.91e-07p 0.000152p 0.003768p 0.008209p 0.000635p 0.008949p 0.009032p 0.009113p 6.97e-09p 0.009140p       0.0
0.0
        rc 7.91e-07p 0.000152p 0.003768p 0.008209p 0.000635p 0.008949o 0.009032m 0.009113j 6.97e-09p 0.009140j       0.0
0.0
  u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.008565n      0.0       0.0
 zp 43.23 ri 0.000677p 0.005139p 0.002707p 4.18e-05p 1.46e-08p 7.85e-09p       0.0       0.0       0.0       0.0       0.0       0.0
 sig0.497 cc 0.000677p 0.005817p 0.008523p 0.008565p 3.68e-05p 0.008555p 0.008503p 0.008540p       0.0  0.008565p       0.0
0.0
        rc 0.000677p 0.005817p 0.008523p 0.008565o 3.68e-05o 0.008555o 0.008503o 0.008540n       0.0  0.008565m       0.0       0.0

   mo, tc half lives from 80eng2; ru, rh, pd, ag half lives 89wal1.
1

     mass number    112              LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       42 mo g   43 tc g   44 ru g   45 rh g   46 pd g   47 ag g   48 cd g   49 in m   49 in g   50 sn g
 half life     0.975s    0.431s     4.5 s      4. s    20.04h    3.13 h    stable    20.8 m    14.4 m    stable
 lambda       7.109e-01 1.608e+00 1.540e-01 1.733e-01 9.608e-06 6.151e-05       0.0 5.554e-04 8.023e-04       0.0
  z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  -56.0000   44.0000
  z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
  z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
  cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  3.937896i      0.0       0.0       0.0       0.0       0.0
 zp 45.49 ri 4.56e-07p 0.001071p 0.182084p 1.799299n 1.955441m 0.156225p 0.001079p 2.92e-07p 6.85e-08p 8.02e-12p
 sig0.577 cc 4.56e-07p 0.001071p 0.183156p 1.982454p 3.937896p 4.094121p 4.095200p 2.92e-07p 3.61e-07p 1.59e-07p
        rc 4.56e-07p 0.001071p 0.183156p 1.982454m 3.937896i 4.094121i 4.095200i 2.92e-07p 3.61e-07p 1.59e-07p
  cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  2.026962k      0.0       0.0       0.0       0.0       0.0
 zp 45.24 ri 8.61e-07p 0.001306p 0.234258p 0.978857p 0.812540o 0.018323p 5.40e-05p 2.18e-09p 5.12e-10p       0.0
 sig0.551 cc 8.61e-07p 0.001307p 0.235565p 1.214422p 2.026962p 2.045286p 2.045340p 2.18e-09p 2.70e-09p 1.19e-09p
```

rc 8.61e-07p 0.001307p 0.235565p 1.214422o 2.026962k 2.045286k 2.045340k 2.18e-09p 2.70e-09p 1.19e-09p
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 4.675711i 0.0 0.0 0.0 0.0 0.0
zp 44.80 ri 0.000170p 0.058678p 1.366843n 2.733052n 0.516967p 0.007590p 7.01e-06p 2.97e-10p 6.96e-11p 0.0
sig0.579 cc 0.000170p 0.058848p 1.425691p 4.158743p 4.675711p 4.683301p 4.683308p 2.97e-10p 3.67e-10p 1.61e-10p
rc 0.000170p 0.058848p 1.425691m 4.158743l 4.675711i 4.683301i 4.683308i 2.97e-10p 3.67e-10p 1.61e-10p
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 3.804591k 0.0 0.0 0.0 0.0 0.0
zp 45.43 ri 6.02e-06p 0.004197p 0.272787p 1.896677n 1.630924n 0.170872p 0.001870p 1.52e-06p 3.57e-07p 1.62e-10p
sig0.627 cc 6.02e-06p 0.004203p 0.276990p 2.173667p 3.804591p 3.975463p 3.977334p 1.52e-06p 1.88e-06p 8.27e-07p
rc 6.02e-06p 0.004203p 0.276990p 2.173667m 3.804591k 3.975463k 3.977334k 1.52e-06p 1.88e-06p 8.27e-07p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.624067n 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 5.090156j 6.432134i 0.0 0.0 0.0 0.0
zp 45.72 ri 5.95e-07p 0.001007p 0.144736p 2.003073n 3.162762l 0.904080n 0.013295p 1.88e-05p 4.40e-06p 3.28e-09p
sig0.619 cc 6.26e-07p 0.001060p 0.153333p 2.260705p 5.588150p 6.216641p 6.228968p 1.74e-05p 2.14e-05p 9.44e-06p
rc 5.95e-07p 0.001007p 0.145744p 2.148817m 5.311578j 6.215658i 6.228966i 1.88e-05p 2.31e-05p 1.02e-05o
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 3.613126m 0.0 0.0 0.0 0.0 0.0
zp 45.03 ri 5.74e-06p 0.008766p 0.588362p 2.328620n 0.687372p 0.012214p 9.65e-06p 2.38e-10p 5.57e-11p 0.0
sig0.543 cc 5.74e-06p 0.008772p 0.597134p 2.925754p 3.613126p 3.625340p 3.625350p 2.38e-10p 2.93e-10p 1.29e-10p
rc 5.74e-06p 0.008772p 0.597134o 2.925754m 3.613126l 3.625340l 3.625350l 2.38e-10p 2.93e-10p 1.29e-10p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.627411n 0.0 0.0 0.0
zp 45.18 ri 4.36e-05p 0.018834p 0.744325p 3.148768n 1.620060n 0.094845p 0.000534p 2.09e-07p 4.89e-08p 1.00e-11p
sig0.621 cc 4.36e-05p 0.018878p 0.763203p 3.911971p 5.532032p 5.626877p 5.627411p 2.09e-07p 2.58e-07p 1.13e-07p
rc 4.36e-05p 0.018878p 0.763203o 3.911971m 5.532032l 5.626877l 5.627411l 2.09e-07p 2.58e-07p 1.13e-07p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.210496l 0.0 0.0 0.0 0.0 0.0
zp 44.66 ri 0.000183p 0.031668p 0.448385p 0.635867p 0.094368p 0.001219p 1.15e-06p 6.48e-11p 8.00e-12p 0.0
sig0.597 cc 0.000183p 0.031849p 0.480207p 1.116110p 1.210471p 1.211690p 1.211692p 6.48e-11p 7.28e-11p 3.20e-11p
rc 0.000183p 0.031851p 0.480236p 1.116104n 1.210471l 1.211690l 1.211692l 6.48e-11p 7.28e-11p 3.20e-11p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.010993n 0.0 0.0 0.0
zp 45.07 ri 7.43e-08p 3.11e-05p 0.002313p 0.005358p 0.003228p 6.26e-05p 2.22e-07p 1.44e-11p 3.37e-12p 0.0
sig0.583 cc 7.43e-08p 3.12e-05p 0.002344p 0.007702p 0.010930p 0.010992p 0.010992p 1.44e-11p 1.77e-11p 7.80e-12p
rc 7.43e-08p 3.12e-05p 0.002344p 0.007702p 0.010930o 0.010992o 0.010992n 1.44e-11p 1.77e-11p 7.80e-12p

u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.005859n 0.0 0.0 0.0
zp 43.83 ri 2.34e-05p 0.001322p 0.004052p 0.000458p 2.33e-06p 1.94e-10p 0.0 0.0 0.0 0.0
sig0.497 cc 2.34e-05p 0.001346p 0.005398p 0.005856p 0.005859p 0.005859p 0.005859p 0.0 0.0 0.0
rc 2.34e-05p 0.001346p 0.005398p 0.005856p 0.005859o 0.005859o 0.005859n 0.0 0.0 0.0

mo, tc half lives from 80eng2; ru, rh, pd, ag half lives 89wal1.
1

mass number 113 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 43 tc g 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd m 48 cd g 49 in m 49 in g 50 sn g 51 sb g
half life 0.652s 2.7 s 0.9 s 1.64 m 1.14 m 5.3 h 14.6 y 9.e15y 1.658h stable 115.1d 6.7 m
lambda 1.063e+00 2.567e-01 7.702e-01 7.044e-03 1.013e-02 3.633e-05 1.505e-09 2.442e-24 1.161e-04 0.0 6.970e-08
1.724e-03
z - 1 g 100.0000 100.0000 100.0000 100.0000 10.0000 90.0000 1.3000 98.7000 0.0 100.0000 0.0 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 99.9000 -100.0000 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1000 0.0 100.0000 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.628559k 0.0 0.0 0.0 3.544572k 0.0 0.0
zp 45.93 ri 4.07e-05p 0.023616p 0.725085p 2.224513n 0.457098p 0.068302p 0.009227p 0.002756p 2.68e-06p 1.14e-05p 1.14e-09p
0.0
sig0.577 cc 4.07e-05p 0.023656p 0.748741p 2.973254p 0.754423p 2.744231p 0.044902p 3.465780p 2.68e-06p 3.510651p 1.14e-
09p 0.0
rc 4.07e-05p 0.023656p 0.748741o 2.973254m 0.754423p 2.744231k 0.044902m 3.465780k 2.68e-06p 3.510651j 1.14e-09p
0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.788818k 0.0 0.0 0.0 0.895287o 0.0 0.0
zp 45.58 ri 1.02e-09p 0.000987p 0.309063p 0.568107o 0.002814p 0.000420p 1.53e-08p 4.56e-09p 0.0 0.0 0.0 0.0
sig0.350 cc 1.01e-09p 0.000977p 0.306987p 0.878188p 0.090605p 0.790786p 0.010280p 0.871120p 0.0 0.881390p 0.0
0.0
rc 1.02e-09p 0.000987p 0.310050p 0.878156l 0.090629n 0.790761k 0.010280k 0.871121k 0.0 0.881390k 0.0 0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.141262k 0.0 0.0 0.0 2.889167k 0.0 0.0
zp 45.21 ri 0.004348p 0.298034p 1.584822n 0.741080p 0.029955p 0.004476p 7.75e-05p 2.31e-05p 3.27e-09p 1.39e-08p 0.0
0.0

sig0.579 cc 0.004258p 0.296153p 1.848332p 2.628995p 0.292237p 2.370479p 0.030892p 2.631954p 3.20e-09p 2.662815p 0.0
0.0
rc 0.004348p 0.302382p 1.887204m 2.628284l 0.292783m 2.369931k 0.030887k 2.631959j 3.27e-09p 2.662815j 0.0
0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.646713n 0.0 0.0
zp 45.83 ri 0.000375p 0.062156p 1.035454n 2.033081n 0.436558p 0.065233p 0.010641p 0.003179p 6.93e-06p 2.96e-05p 8.44e-
09p 0.0
sig0.627 cc 0.000375p 0.062531p 1.097986p 3.131066p 0.749664p 2.883192p 0.048123p 3.598602p 6.94e-06p 3.646713p 8.44e-
09p 0.0
rc 0.000375p 0.062531p 1.097986m 3.131066m 0.749664p 2.883192l 0.048123n 3.598602l 6.94e-06p 3.646713l 8.44e-09p
0.0
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.730471n 0.0 0.0
zp 46.17 ri 4.68e-05p 0.020197p 0.785233p 3.233135n 1.394061n 0.208308p 0.068547p 0.020475p 8.88e-05p 0.000379p 2.06e-
07p 7.23e-12p
sig0.619 cc 4.68e-05p 0.020244p 0.805477p 4.038612p 1.797922p 3.843059p 0.118507p 5.611615p 8.90e-05p 5.730471p 2.06e-
07p 7.23e-12p
rc 4.68e-05p 0.020244p 0.805477o 4.038612m 1.797922m 3.843059m 0.118507p 5.611615l 8.90e-05p 5.730471l 2.06e-07p
7.23e-12p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.162281m 0.0 0.0 0.0 4.518938m 0.0 0.0
zp 45.42 ri 0.000872p 0.192964p 2.205896n 1.754167n 0.086604p 0.012941p 0.000209p 6.25e-05p 5.65e-09p 2.41e-08p 0.0
0.0
sig0.543 cc 0.000864p 0.192076p 2.377946p 4.154804p 0.501298p 3.752147p 0.048985p 4.204779p 5.59e-09p 4.253715p 0.0
0.0
rc 0.000872p 0.193835p 2.399732m 4.153898l 0.501994m 3.751449k 0.048978k 4.204786k 5.65e-09p 4.253715k 0.0
0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.029369n 0.0 0.0
zp 45.61 ri 0.002004p 0.218072p 2.359050n 2.988691n 0.395333p 0.059073p 0.005495p 0.001641p 1.90e-06p 8.10e-06p 1.15e-
09p 0.0
sig0.621 cc 0.002004p 0.220076p 2.579126p 5.567817p 0.952114p 5.070108p 0.071406p 5.958024p 1.90e-06p 6.029369p 1.15e-
09p 0.0
rc 0.002004p 0.220076p 2.579126m 5.567817l 0.952114o 5.070108l 0.071406l 5.958024l 1.90e-06p 6.029369l 1.15e-09p
0.0

```
  np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.229931n      0.0       0.0
 zp 45.02 ri 0.006770p 0.230859p 0.735067p 0.249246p 0.007312p 0.000636p 1.68e-05p 2.73e-06p 3.62e-10p 2.93e-09p       0.0
0.0
 sig0.597 cc 0.006770p 0.237628p 0.972692p 1.221942p 0.129507p 1.100384p 0.014322p 1.215602p 3.62e-10p 1.229910p       0.0
0.0
          rc 0.006770p 0.237629p 0.972696o 1.221942n 0.129507n 1.100384n 0.014322n 1.215602n 3.62e-10p 1.229910m       0.0
0.0
  u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.013991n      0.0       0.0
 zp 45.43 ri 5.60e-06p 0.000878p 0.005965p 0.006738p 0.000349p 5.21e-05p 2.38e-06p 7.10e-07p 1.60e-10p 6.83e-10p       0.0
0.0
 sig0.583 cc 5.60e-06p 0.000884p 0.006849p 0.013587p 0.001707p 0.012280p 0.000162p 0.013829p 1.60e-10p 0.013991p       0.0
0.0
          rc 5.60e-06p 0.000884p 0.006849p 0.013587p 0.001707o 0.012280p 0.000162o 0.013829o 1.60e-10p 0.013991n       0.0
0.0
  u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.005103n      0.0       0.0
 zp 44.37 ri 0.000188p 0.003078p 0.001776p 6.13e-05p 3.53e-08p 5.28e-09p       0.0       0.0       0.0       0.0       0.0       0.0
 sig0.497 cc 0.000188p 0.003266p 0.005041p 0.005103p 0.000510p 0.004592p 5.97e-05p 0.005043p       0.0  0.005103p       0.0
0.0
          rc 0.000188p 0.003266p 0.005041p 0.005103o 0.000510o 0.004592o 5.97e-05o 0.005043n       0.0  0.005103m       0.0       0.0

   tc half life from 80eng2; ru, rh, pd, ag half lives 89wal1; sn, in half lives 90bur1.

1

     mass number    114              LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       42 mo g   43 tc g   44 ru g   45 rh g   46 pd g   47 ag g   48 cd g   49 in m   49 in g   50 sn g
 half life     0.377s    0.202s    8.14 s     1.8 s    2.48 m     4.6 s    stable    49.51d    71.9 s    stable
 lambda      1.839e+00 3.431e+00 8.515e-02 3.851e-01 4.658e-03 1.507e-01       0.0 1.620e-07 9.640e-03       0.0
  z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000   -3.5000   -2.0000   98.0000
  z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
  z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   96.5000       0.0
  cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  2.469356n      0.0       0.0       0.0
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zp 46.35 ri 3.09e-11p 8.85e-07p 0.001698p 0.160954p 1.369552n 0.877154p 0.059990p 0.000173p 5.75e-05p 6.28e-08p
sig0.577 cc 3.09e-11p 8.85e-07p 0.001699p 0.162653p 1.532205p 2.409360p 2.469354p 0.000173p 0.000224p 0.000220p
         rc 3.09e-11p 8.85e-07p 0.001699p 0.162653p 1.532205m 2.409360n 2.469360m 0.000173p 0.000224p 0.000220o
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.398307n      0.0       0.0       0.0
zp 45.75 ri      0.0  1.70e-11p 7.69e-05p 0.065233p 0.328584p 0.004414p 1.24e-07p      0.0       0.0       0.0
sig0.350 cc      0.0  1.70e-11p 7.69e-05p 0.065310p 0.393893p 0.398307p 0.398307p      0.0       0.0       0.0
         rc      0.0  1.70e-11p 7.69e-05p 0.065310p 0.393893p 0.398307o 0.398307n      0.0       0.0       0.0
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.098110n      0.0       0.0       0.0
zp 45.60 ri 9.27e-08p 0.000307p 0.060794p 0.849478p 1.063305n 0.123172p 0.001054p 4.13e-07p 1.38e-07p 1.61e-11p
sig0.579 cc 9.27e-08p 0.000307p 0.061102p 0.910579p 1.973884p 2.097056p 2.098110p 4.13e-07p 5.37e-07p 5.26e-07p
         rc 9.27e-08p 0.000307p 0.061102p 0.910579o 1.973884m 2.097056m 2.098110l 4.13e-07p 5.37e-07p 5.26e-07o
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  3.241523n      0.0       0.0       0.0
zp 46.24 ri 4.06e-09p 2.05e-05p 0.009048p 0.379736p 1.759820n 1.022260n 0.070626p 0.000371p 0.000124p 3.13e-07p
sig0.627 cc 4.06e-09p 2.05e-05p 0.009068p 0.388804p 2.148625p 3.170885p 3.241520p 0.000371p 0.000482p 0.000473p
         rc 4.06e-09p 2.05e-05p 0.009068p 0.388804p 2.148625m 3.170885l 3.241533l 0.000371p 0.000482p 0.000473o
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  5.026729n      0.0       0.0       0.0
zp 46.62 ri 7.23e-11p 1.19e-06p 0.001569p 0.177278p 1.960121n 2.507000n 0.380609p 0.004416p 0.001472p 8.00e-06p
sig0.619 cc 7.23e-11p 1.19e-06p 0.001570p 0.178848p 2.138969p 4.645969p 5.026695p 0.004416p 0.005734p 0.005627p
         rc 7.23e-11p 1.19e-06p 0.001570p 0.178848p 2.138969m 4.645969l 5.026847l 0.004416p 0.005734p 0.005627o
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  4.830383n      0.0       0.0       0.0
zp 45.81 ri 2.61e-09p 5.06e-05p 0.038241p 1.335207n 2.965951n 0.486486p 0.004447p 1.30e-06p 4.33e-07p 2.54e-11p
sig0.543 cc 2.61e-09p 5.06e-05p 0.038291p 1.373498p 4.339449p 4.825935p 4.830383p 1.30e-06p 1.69e-06p 1.65e-06p
         rc 2.61e-09p 5.06e-05p 0.038291p 1.373498m 4.339449m 4.825935m 4.830383l 1.30e-06p 1.69e-06p 1.65e-06o
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  6.029369n      0.0       0.0       0.0
zp 46.05 ri 3.15e-08p 0.000118p 0.037161p 1.087346n 3.483310n 1.362069n 0.059360p 0.000183p 6.10e-05p 8.51e-08p
sig0.621 cc 3.15e-08p 0.000118p 0.037279p 1.124625p 4.607935p 5.970003p 6.029368p 0.000183p 0.000238p 0.000233p
         rc 3.15e-08p 0.000118p 0.037279p 1.124625m 4.607935m 5.970003l 6.029374l 0.000183p 0.000238p 0.000233o
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.229902n      0.0       0.0       0.0
zp 45.38 ri 8.81e-07p 0.001021p 0.086149p 0.628256p 0.477651p 0.036584p 0.000230p 8.73e-08p 1.54e-08p 3.01e-12p
```

sig0.597 cc 8.81e-07p 0.001022p 0.087171p 0.715427p 1.193077p 1.229662p 1.229892p 8.73e-08p 9.96e-08p 9.76e-08p
rc 8.81e-07p 0.001022p 0.087171p 0.715427o 1.193077o 1.229662o 1.229892n 8.73e-08p 9.96e-08p 9.76e-08p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.015989n 0.0 0.0 0.0
zp 45.83 ri 1.04e-10p 3.68e-07p 0.000211p 0.003173p 0.011136p 0.001428p 3.95e-05p 2.02e-08p 6.73e-09p 2.89e-12p
sig0.583 cc 1.04e-10p 3.68e-07p 0.000212p 0.003385p 0.014521p 0.015949p 0.015989p 2.02e-08p 2.62e-08p 2.57e-08p
rc 1.04e-10p 3.68e-07p 0.000212p 0.003385p 0.014521p 0.015949o 0.015989n 2.02e-08p 2.62e-08p 2.57e-08o
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.004110n 0.0 0.0 0.0
zp 44.84 ri 5.83e-09p 1.38e-05p 0.001119p 0.002563p 0.000412p 1.58e-06p 1.88e-10p 0.0 0.0 0.0
sig0.497 cc 5.83e-09p 1.39e-05p 0.001133p 0.003696p 0.004108p 0.004110p 0.004110p 0.0 0.0 0.0
rc 5.83e-09p 1.39e-05p 0.001133p 0.003696p 0.004108p 0.004110o 0.004110n 0.0 0.0 0.0

mo, tc, ru half lives from 80eng2; rh, pd, ag half lives 89wal1.
1

mass number 115 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd m 48 cd g 49 in m 49 in g 50 sn g 51 sb g 52 te g
half life 0.878s 0.99 s 47. s 18.7 s 20. m 44.6 d 2.228d 4.486h 5.e14y stable 32. m 6. m
lambda 7.895e-01 7.001e-01 1.475e-02 3.707e-02 5.776e-04 1.799e-07 3.601e-06 4.292e-05 4.396e-23 0.0 3.610e-04
1.925e-03
z - 1 g 100.0000 100.0000 100.0000 27.0000 73.0000 9.5000 90.5000 100.0000 0.0 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 5.0000 95.0000 0.0100 99.9900 3.7000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 96.3000 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.812065i 0.0 0.0 2.035580i 0.0 0.0
zp 46.76 ri 9.50e-05p 0.027990p 0.673333p 0.564958p 0.564998p 0.166087p 0.049611p 0.000485p 0.002066p 2.26e-06p 9.07e-
11p 0.0
sig0.577 cc 9.50e-05p 0.028086p 0.701431p 0.754355p 1.077013p 0.306126p 1.740946p 1.741461p 1.985189p 2.049625p 9.07e-
11p 0.0
rc 9.50e-05p 0.028085p 0.701418o 0.754341o 1.077033n 0.306122o 1.740950i 1.741465i 1.985188j 2.049625h 9.07e-11p
0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.024987j 0.232877i 0.0 0.0 0.257864i 0.0 0.0
zp 45.92 ri 6.53e-06p 0.023651p 0.224073o 0.005022p 0.005022p 6.46e-07p 1.93e-07p 0.0 0.0 0.0 0.0 0.0

sig0.350 cc 6.53e-06p 0.023652p 0.247733p 0.071909p 0.185866p 0.021253p 0.236523p 0.236525p 0.249025p 0.257776p 0.0
0.0
rc 6.53e-06p 0.023658p 0.247731n 0.071909n 0.185866m 0.021253k 0.236523i 0.236525i 0.249025i 0.257776h 0.0
0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.255207i 0.0 0.0 1.407047i 0.0 0.0
zp 45.81 ri 0.000131p 0.265546p 1.089144m 0.016466p 0.016466p 6.84e-07p 2.04e-07p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.000130p 0.264538p 1.354962p 0.382235p 1.005517p 0.114637p 1.273117p 1.273128p 1.340648p 1.387753p 0.0
0.0
rc 0.000131p 0.265677p 1.354821l 0.382268m 1.005485l 0.114635l 1.273118i 1.273130i 1.340648i 1.387753h 0.0 0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.212688j 2.618467i 0.0 0.0 2.829148i 0.0 0.0
zp 46.64 ri 0.000922p 0.097716p 1.071184n 0.710001p 0.710001p 0.180205p 0.053827p 0.000790p 0.003369p 6.95e-06p 1.01e-
09p 0.0
sig0.627 cc 0.000922p 0.098638p 1.169818p 1.025849p 1.563965p 0.380074p 2.443772p 2.444603p 2.737566p 2.828023p 1.01e-
09p 0.0
rc 0.000922p 0.098638p 1.169822m 1.025853o 1.563971n 0.380075h 2.443781i 2.444610i 2.737565i 2.828023h 1.01e-09p
0.0
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.581096j 4.495004j 0.0 0.0 5.059545k 0.0 0.0
zp 47.06 ri 9.53e-05p 0.031375p 0.944482p 1.534950n 1.534950n 0.330357m 0.650088p 0.009785p 0.041716p 0.000207p 6.93e-
08p 1.83e-12p
sig0.619 cc 9.13e-05p 0.030137p 0.934589p 1.722233p 2.152144p 1.178826p 3.849137p 3.858725p 4.935031p 5.078004p 6.70e-
08p 1.77e-12p
rc 9.53e-05p 0.031471p 0.975953o 1.798457m 2.247395m 0.633782j 4.392514j 4.402363j 4.914909i 5.078004i 6.93e-08p
1.83e-12p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.042986k 0.0 0.0 5.642640k 0.0 0.0
zp 46.20 ri 0.004873p 0.547502p 3.418267n 0.787175p 0.787175p 0.035625p 0.010641p 1.20e-05p 5.10e-05p 3.35e-09p 0.0
0.0
sig0.543 cc 0.004873p 0.552375p 3.970643p 1.859249p 3.685744p 0.478733p 5.112526p 5.112586p 5.402156p 5.591322p 0.0
0.0
rc 0.004873p 0.552375o 3.970643m 1.859249n 3.685744m 0.478733m 5.112526k 5.112586k 5.402156j 5.591322j 0.0
0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.613705k 0.0 0.0 6.014684k 0.0 0.0

zp 46.50 ri 0.003839p 0.321647p 2.728201n 1.372805n 1.372805n 0.252606p 0.075454p 0.000755p 0.003218p 4.24e-06p 3.71e-10p 0.0
sig0.621 cc 0.003839p 0.325486p 3.053688p 2.197300p 3.601997p 0.704661p 5.422696p 5.423521p 5.930659p 6.131334p 3.71e-10p 0.0
rc 0.003839p 0.325486p 3.053688m 2.197300l 3.601997l 0.704661o 5.422696j 5.423521j 5.930659j 6.131334j 3.71e-10p 0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.109999n 1.102273l 0.0 0.0 1.229988i 0.0 0.0
zp 45.74 ri 0.023330p 0.400576p 0.682048p 0.060685p 0.060685p 0.001652p 0.000269p 2.49e-07p 2.01e-06p 1.78e-10p 0.0 0.0
sig0.597 cc 0.023384p 0.424882p 1.105670p 0.359356p 0.867964p 0.102080p 1.127165p 1.127176p 1.187542p 1.229247p 0.0 0.0
rc 0.023330p 0.423906p 1.105954n 0.359293n 0.868032n 0.102080m 1.127166l 1.127176l 1.187542j 1.229247h 0.0 0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.017234j 0.0 0.0 0.016997n 0.0 0.0
zp 46.25 ri 2.79e-05p 0.001539p 0.011854p 0.002512p 0.002512p 0.000257p 7.69e-05p 1.70e-07p 7.26e-07p 2.59e-10p 0.0 0.0
sig0.583 cc 2.79e-05p 0.001567p 0.013421p 0.006136p 0.012309p 0.001733p 0.017046p 0.017046p 0.018149p 0.018780p 0.0 0.0
rc 2.79e-05p 0.001567p 0.013421p 0.006136o 0.012309o 0.001733o 0.017046j 0.017046j 0.018149j 0.018780j 0.0 0.0
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.003827n 0.0 0.0
zp 45.27 ri 0.000258p 0.002226p 0.001319p 1.17e-05p 1.17e-05p 1.13e-08p 3.36e-09p 0.0 0.0 0.0 0.0 0.0
sig0.497 cc 0.000258p 0.002484p 0.003804p 0.001039p 0.002788p 0.000317p 0.003510p 0.003510p 0.003697p 0.003827p 0.0 0.0
rc 0.000258p 0.002484p 0.003804o 0.001039o 0.002788o 0.000317o 0.003510n 0.003510n 0.003697n 0.003827m 0.0 0.0

ru half life 80eng2; ag-115g branching 80tob1; ag-115m branching to fit data; rh, pd, ag, cd, in half lives 89wal1.

1

mass number 116 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	42 mo g	43 tc g	44 ru g	45 rh g	46 pd g	47 ag m	47 ag g	48 cd g	49 in m	49 in g	50 sn g
half life	0.115s	1.70 s	0.7 s	12.7 s	10.5 s	2.68 m	stable	54.2 m	14.2 s	stable	

```
lambda          0.0 6.027e+00 4.077e-01 9.902e-01 5.458e-02 6.601e-02 4.311e-03       0.0 2.131e-04 4.881e-02       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000   50.0000   50.0000  100.0000       0.0       0.0  100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0  100.0000
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.179198n      0.0       0.0       0.0
zp 47.17 ri      0.0  1.10e-10p 2.27e-06p 0.002132p 0.151543p 0.339177p 0.339177p 0.347166p 0.006104p 0.006104p 3.46e-05p
sig0.577 cc      0.0  1.10e-10p 2.27e-06p 0.002134p 0.153678p 0.416016p 0.416016p 1.179198p 0.006104p 0.006104p 0.012243p
         rc      0.0  1.10e-10p 2.27e-06p 0.002134p 0.153678p 0.416016p 0.416016p 1.179198n 0.006104p 0.006104p 0.012243o
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.069704n      0.0       0.0       0.0
zp 46.09 ri      0.0       0.0  2.02e-07p 0.002126p 0.061960p 0.002808p 0.002808p 2.06e-06p      0.0       0.0       0.0
sig0.350 cc      0.0       0.0  2.02e-07p 0.002126p 0.064087p 0.034851p 0.034851p 0.069704p      0.0       0.0       0.0
         rc      0.0       0.0  2.02e-07p 0.002126p 0.064087p 0.034851p 0.034851p 0.069704n      0.0       0.0       0.0
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.076868n      0.0       0.0       0.0
zp 46.00 ri      0.0       0.0  7.23e-07p 0.005992p 0.065122p 0.002876p 0.002876p 6.56e-07p      0.0       0.0       0.0
sig0.350 cc      0.0       0.0  7.23e-07p 0.005993p 0.071115p 0.038434p 0.038434p 0.076868p      0.0       0.0       0.0
         rc      0.0       0.0  7.23e-07p 0.005993p 0.071115p 0.038434p 0.038434p 0.076868n      0.0       0.0       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.545877n      0.0       0.0       0.0
zp 47.04 ri      0.0  2.16e-08p 6.67e-05p 0.018216p 0.485435p 0.738065p 0.738065p 0.566029p 0.012529p 0.012529p 0.000109p
sig0.627 cc      0.0  2.16e-08p 6.67e-05p 0.018283p 0.503717p 0.989924p 0.989924p 2.545877p 0.012529p 0.012529p 0.025167p
         rc      0.0  2.16e-08p 6.67e-05p 0.018283p 0.503717p 0.989924o 0.989924o 2.545877m 0.012529p 0.012529p 0.025167o
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.021383n      0.0       0.0       0.0
zp 47.50 ri      0.0  2.24e-10p 2.71e-06p 0.002652p 0.224767p 0.951502p 0.951502p 1.890957n 0.110189p 0.110189p 0.002563p
sig0.619 cc      0.0  2.24e-10p 2.71e-06p 0.002655p 0.227421p 1.065213p 1.065213p 4.021383p 0.110189p 0.110189p 0.222940p
         rc      0.0  2.24e-10p 2.71e-06p 0.002655p 0.227421p 1.065213o 1.065213o 4.021383m 0.110189p 0.110189p 0.222940o
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.660873n      0.0       0.0       0.0
zp 46.58 ri      0.0  3.97e-08p 0.000362p 0.131997p 2.369452n 1.452871n 1.452871n 0.253320p 0.000570p 0.000570p 2.10e-07p
sig0.543 cc      0.0  3.97e-08p 0.000362p 0.132358p 2.501811p 2.703776p 2.703776p 5.660873p 0.000570p 0.000570p 0.001140p
         rc      0.0  3.97e-08p 0.000362p 0.132358p 2.501811m 2.703776l 2.703776l 5.660873k 0.000570p 0.000570p 0.001140o
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.619382n      0.0       0.0       0.0
```

zp 46.96 ri 1.85e-12p 6.88e-08p 0.000206p 0.051964p 1.236964n 1.636489n 1.636489n 1.057271n 0.018747p 0.018747p 0.000124p
sig0.621 cc 1.85e-12p 6.88e-08p 0.000206p 0.052169p 1.289133p 2.281056p 2.281056p 5.619382p 0.018747p 0.018747p 0.037618p
rc 1.85e-12p 6.88e-08p 0.000206p 0.052169p 1.289133m 2.281056m 2.281056m 5.619382k 0.018747p 0.018747p 0.037618o
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.229931n 0.0 0.0 0.0
zp 46.10 ri 1.03e-09p 8.33e-06p 0.004578p 0.190512p 0.727728p 0.147811p 0.147811p 0.011482p 1.74e-05p 1.74e-05p 7.28e-09p
sig0.597 cc 1.03e-09p 8.33e-06p 0.004587p 0.195098p 0.922826p 0.609224p 0.609224p 1.229931p 1.74e-05p 1.74e-05p 3.48e-05p
rc 1.03e-09p 8.33e-06p 0.004587p 0.195098p 0.922826o 0.609224o 0.609224o 1.229931m 1.74e-05p 1.74e-05p 3.48e-05o
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.015466n 0.0 0.0 0.0
zp 46.69 ri 0.0 2.67e-10p 1.69e-06p 0.000248p 0.006965p 0.003317p 0.003317p 0.001617p 5.79e-06p 5.79e-06p 1.42e-08p
sig0.583 cc 0.0 2.67e-10p 1.69e-06p 0.000250p 0.007215p 0.006924p 0.006924p 0.015466p 5.79e-06p 5.79e-06p 1.16e-05p
rc 0.0 2.67e-10p 1.69e-06p 0.000250p 0.007215p 0.006924p 0.006924p 0.015466m 5.79e-06p 5.79e-06p 1.16e-05o
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.003554n 0.0 0.0 0.0
zp 45.67 ri 0.0 2.08e-08p 3.56e-05p 0.001157p 0.002210p 7.50e-05p 7.50e-05p 4.23e-07p 9.45e-12p 9.45e-12p 0.0
sig0.497 cc 0.0 2.08e-08p 3.57e-05p 0.001193p 0.003403p 0.001777p 0.001777p 0.003554p 9.45e-12p 9.45e-12p 1.89e-11p
rc 0.0 2.08e-08p 3.57e-05p 0.001193p 0.003403p 0.001777p 0.001777p 0.003554m 9.45e-12p 9.45e-12p 1.89e-11o

tc, ru half lives from 80eng2; rh, pd, ag half lives from 89wal1.
1

mass number 117 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd m 48 cd g 49 in m 49 in g 50 sn g 51 sb g 52 te g
half life 0.343s 1.22 s 5. s 5.3 s 1.22 m 3.4 h 2.49 h 1.94 h 44. m stable 2.80 h 64. m
lambda 2.021e+00 5.682e-01 1.386e-01 1.308e-01 9.469e-03 5.663e-05 7.733e-05 9.925e-05 2.626e-04 0.0 6.876e-05 1.805e-04
z - 1 g 100.0000 100.0000 100.0000 50.0000 50.0000 50.0000 50.0000 92.0000 8.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 1.0000 99.0000 53.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 47.0000 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.493871n 0.0 0.0
zp 47.55 ri 3.12e-08p 8.72e-05p 0.017492p 0.100561p 0.100561p 0.193738p 0.057870p 0.004441p 0.018932p 0.000190p 7.57e-08p 2.01e-12p

sig0.577 cc 3.12e-08p 8.72e-05p 0.017579p 0.109350p 0.109350p 0.248413p 0.221895p 0.211068p 0.381815p 0.493871p 7.57e-08p 2.01e-12p
rc 3.12e-08p 8.72e-05p 0.017579p 0.109350p 0.109350p 0.248413p 0.221895o 0.211068o 0.381815o 0.493871m 7.57e-08p 2.01e-12p
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.029910n 0.0 0.0
zp 46.25 ri 8.86e-09p 0.000390p 0.023708p 0.002903p 0.002903p 4.31e-06p 1.29e-06p 0.0 1.24e-12p 0.0 0.0 0.0
sig0.350 cc 8.86e-09p 0.000390p 0.024098p 0.014952p 0.014952p 0.007480p 0.022430p 0.020710p 0.018934p 0.029910p 0.0 0.0
rc 8.86e-09p 0.000390p 0.024098p 0.014952p 0.014952p 0.007480p 0.022430o 0.020710o 0.018934n 0.029910m 0.0 0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.021387n 0.0 0.0
zp 46.20 ri 1.32e-08p 0.000497p 0.016773p 0.002057p 0.002057p 1.59e-06p 4.74e-07p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 1.32e-08p 0.000497p 0.017271p 0.010693p 0.010693p 0.005348p 0.016040p 0.014810p 0.013538p 0.021387p 0.0 0.0
rc 1.32e-08p 0.000497p 0.017271p 0.010693p 0.010693p 0.005348p 0.016040o 0.014810o 0.013538n 0.021387m 0.0 0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.228547n 0.0 0.0
zp 47.44 ri 3.12e-06p 0.002229p 0.148269p 0.526665p 0.526665p 0.711946p 0.212659p 0.018810p 0.080190p 0.001109p 1.14e-06p 1.01e-10p
sig0.627 cc 3.12e-06p 0.002232p 0.150502p 0.601916p 0.601916p 1.012904p 1.115533p 1.055229p 1.668165p 2.228547p 1.14e-06p 1.01e-10p
rc 3.12e-06p 0.002232p 0.150502p 0.601916o 0.601916o 1.012904o 1.115533n 1.055229n 1.668165m 2.228547l 1.14e-06p 1.01e-10p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.518710n 0.0 0.0
zp 47.93 ri 5.39e-08p 0.000155p 0.036994p 0.412651p 0.412651p 1.565130n 0.467506p 0.114803p 0.489424p 0.019340p 5.65e-05p 1.36e-08p
sig0.619 cc 5.39e-08p 0.000155p 0.037148p 0.431225p 0.431225p 1.780743p 1.114344p 1.157807p 2.885676p 3.518710p 5.65e-05p 1.36e-08p
rc 5.39e-08p 0.000155p 0.037148p 0.431225p 0.431225p 1.780743m 1.114344o 1.157807o 2.885676m 3.518710l 5.65e-05p 1.36e-08p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.856075n 0.0 0.0

zp 46.97 ri 1.58e-05p 0.019863p 1.113797n 1.880551n 1.880551n 0.729365p 0.217862p 0.002672p 0.011390p 9.17e-06p 2.28e-10p 0.0
sig0.543 cc 1.58e-05p 0.019879p 1.133676p 2.447389p 2.447389p 1.953060p 3.888945p 3.600032p 3.948049p 5.856075p 2.28e-10p 0.0
rc 1.58e-05p 0.019879p 1.133676m 2.447389m 2.447389m 1.953060n 3.888945l 3.600032l 3.948049l 5.856075k 2.29e-10p 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.716267n 0.0 0.0
zp 47.40 ri 6.90e-06p 0.005121p 0.338665p 1.153501n 1.153501n 1.450161n 0.433165p 0.034280p 0.146142p 0.001722p 1.44e-06p 9.75e-11p
sig0.621 cc 6.90e-06p 0.005128p 0.343793p 1.325397p 1.325397p 2.112860p 2.421261p 2.282969p 3.504570p 4.716267p 1.44e-06p 9.75e-11p
rc 6.90e-06p 0.005128p 0.343793p 1.325397m 1.325397m 2.112860m 2.421261m 2.282969m 3.504570l 4.716267k 1.44e-06p 9.75e-11p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.229951n 0.0 0.0
zp 46.46 ri 0.000641p 0.066306p 0.583424p 0.265034p 0.265034p 0.042253p 0.006878p 4.18e-05p 0.000338p 2.10e-07p 7.69e-12p 0.0
sig0.597 cc 0.000641p 0.066947p 0.650371p 0.590219p 0.590219p 0.337363p 0.892208p 0.824246p 0.793100p 1.229951p 7.69e-12p 0.0
rc 0.000641p 0.066947p 0.650371o 0.590219o 0.590219o 0.337363o 0.892208n 0.824246n 0.793100m 1.229951l 7.69e-12p 0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.014499n 0.0 0.0
zp 47.14 ri 5.00e-08p 3.13e-05p 0.002273p 0.003827p 0.003827p 0.003398p 0.001015p 2.40e-05p 0.000102p 4.40e-07p 5.28e-11p 0.0
sig0.583 cc 5.00e-08p 3.14e-05p 0.002304p 0.004980p 0.004980p 0.005888p 0.008484p 0.007889p 0.010318p 0.014499p 5.28e-11p 0.0
rc 5.00e-08p 3.14e-05p 0.002304p 0.004980p 0.004980p 0.005888p 0.008484o 0.007889o 0.010318n 0.014499m 5.29e-11p 0.0
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.003280n 0.0 0.0
zp 46.07 ri 2.78e-06p 0.000370p 0.002345p 0.000278p 0.000278p 5.18e-06p 1.55e-06p 2.69e-10p 1.15e-09p 0.0 0.0 0.0
sig0.497 cc 2.78e-06p 0.000373p 0.002718p 0.001637p 0.001637p 0.000824p 0.002457p 0.002268p 0.002078p 0.003280p 0.0 0.0

rc 2.78e-06p 0.000373p 0.002718p 0.001637p 0.001637p 0.000824o 0.002457o 0.002268o 0.002078n 0.003280m 0.0
0.0

ag-to-cd branching from 80eng2; ru half life from 80eng2; rh, pd, ag, cd, in half lives 89wal1.

1

mass number 118 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g 49 in m 49 in g 50 sn g 51 sb m 51 sb g 52 te g
half life 0.662s 0.316s 2.4 s 2.4 s 4.0 s 50.3 m 4.4 m 5.0 s stable 5.00 h 3.6 m 6.00 d
lambda 1.047e+00 2.194e+00 2.888e-01 2.888e-01 1.733e-01 2.297e-04 2.626e-03 1.386e-01 0.0 3.851e-05 3.209e-03
1.337e-06
z - 1 g 100.0000 100.0000 100.0000 50.0000 50.0000 100.0000 0.0 100.0000 100.0000 -100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 54.0000 0.0 0.0 100.0000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 46.0000 0.0 0.0 0.0 0.0 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.196533n 0.0 0.0 0.0
zp 47.75 ri 0.0 1.07e-11p 3.43e-05p 0.021377p 0.021377p 0.150773p 0.000743p 0.002229p 5.89e-08p 0.0 0.0 0.0
sig0.350 cc 0.0 1.07e-11p 3.43e-05p 0.021394p 0.031235p 0.193561p 0.000743p 0.195790p 0.196533p 0.0 0.0 0.0
rc 0.0 1.07e-11p 3.43e-05p 0.021394p 0.031235p 0.193561p 0.000743p 0.195790o 0.196533n 0.0 0.0 0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.009970n 0.0 0.0 0.0
zp 46.42 ri 2.35e-10p 3.14e-05p 0.006908p 0.001509p 0.001509p 1.19e-05p 2.52e-12p 7.56e-12p 0.0 0.0 0.0 0.0
sig0.350 cc 2.35e-10p 3.14e-05p 0.006940p 0.004979p 0.007269p 0.009970p 2.52e-12p 0.009970p 0.009970p 0.0 0.0
0.0
rc 2.35e-10p 3.14e-05p 0.006940p 0.004979p 0.007269o 0.009970n 2.52e-12p 0.009970n 0.009970m 0.0 0.0 0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.007486n 0.0 0.0 0.0
zp 46.38 ri 3.03e-10p 4.58e-05p 0.004733p 0.001351p 0.001351p 4.91e-06p 1.17e-12p 3.52e-12p 0.0 0.0 0.0 0.0
sig0.350 cc 3.03e-10p 4.58e-05p 0.004778p 0.003740p 0.005461p 0.007486p 1.17e-12p 0.007486p 0.007486p 0.0 0.0
0.0
rc 3.03e-10p 4.58e-05p 0.004778p 0.003740p 0.005461o 0.007486n 1.17e-12p 0.007486n 0.007486m 0.0 0.0 0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.222021n 0.0 0.0 0.0
zp 47.83 ri 6.80e-08p 0.000126p 0.020829p 0.173491p 0.173491p 0.681288p 0.042038p 0.126112p 0.004631p 7.21e-06p 5.01e-
06p 2.83e-09p

sig0.627 cc 6.80e-08p 0.000126p 0.020954p 0.183968p 0.268593p 1.049223p 0.042038p 1.175336p 1.222017p 7.21e-06p 5.02e-06p 2.83e-09p
rc 6.80e-08p 0.000126p 0.020954p 0.183968p 0.268594p 1.049224o 0.042038p 1.175336n 1.222017m 7.21e-06p 5.02e-06p 2.83e-09p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.619656n 0.0 0.0 0.0
zp 48.35 ri 6.66e-10p 5.52e-06p 0.003713p 0.110197p 0.110197p 1.341529n 0.243060p 0.729181p 0.081115p 0.000388p 0.000270p 4.56e-07p
sig0.619 cc 6.66e-10p 5.52e-06p 0.003719p 0.112056p 0.163602p 1.565641p 0.243060p 2.294822p 2.619656p 0.000388p 0.000270p 4.56e-07p
rc 6.66e-10p 5.52e-06p 0.003719p 0.112056p 0.163602p 1.565641m 0.243060p 2.294822m 2.619656m 0.000388p 0.000270p 4.56e-07p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.893067n 0.0 0.0 0.0
zp 47.35 ri 4.50e-07p 0.001934p 0.344661p 1.621991n 1.621991n 2.202225n 0.025012p 0.075035p 0.000219p 1.12e-08p 7.81e-09p 0.0
sig0.543 cc 4.50e-07p 0.001935p 0.346595p 1.795288p 2.621121p 5.792801p 0.025012p 5.867836p 5.893067p 1.12e-08p 7.81e-09p 0.0
rc 4.50e-07p 0.001935p 0.346595p 1.795288m 2.621121l 5.792801l 0.025012p 5.867836l 5.893067l 1.12e-08p 7.81e-09p 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.019579n 0.0 0.0 0.0
zp 47.83 ri 1.59e-07p 0.000344p 0.063524p 0.562615p 0.562615p 2.262336n 0.138392p 0.415177p 0.014540p 2.06e-05p 1.43e-05p 7.02e-09p
sig0.621 cc 1.59e-07p 0.000344p 0.063869p 0.594550p 0.868043p 3.451435p 0.138392p 3.866612p 4.019579p 2.06e-05p 1.43e-05p 7.02e-09p
rc 1.59e-07p 0.000344p 0.063869p 0.594550o 0.868043n 3.451435m 0.138392p 3.866612m 4.019579l 2.06e-05p 1.43e-05p 7.02e-09p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.229358n 0.0 0.0 0.0
zp 46.81 ri 6.82e-05p 0.017475p 0.355609p 0.352629p 0.352629p 0.148112p 0.000420p 0.002377p 3.94e-06p 2.77e-10p 9.74e-11p 0.0
sig0.597 cc 6.82e-05p 0.017543p 0.373152p 0.539205p 0.787239p 1.226522p 0.000420p 1.228899p 1.229323p 2.77e-10p 9.74e-11p 0.0
rc 6.82e-05p 0.017543p 0.373152p 0.539205p 0.787239o 1.226522n 0.000420p 1.228899n 1.229323m 2.77e-10p 9.74e-11p 0.0

u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.011433n 0.0 0.0 0.0
zp 47.59 ri 7.95e-10p 1.43e-06p 0.000425p 0.001742p 0.001742p 0.007011p 0.000126p 0.000377p 7.34e-06p 1.51e-09p 1.05e-09p
0.0
sig0.583 cc 7.95e-10p 1.43e-06p 0.000427p 0.001956p 0.002855p 0.010922p 0.000126p 0.011300p 0.011433p 1.51e-09p 1.05e-
09p 0.0
rc 7.95e-10p 1.43e-06p 0.000427p 0.001956p 0.002855p 0.010922p 0.000126p 0.011300o 0.011433n 1.51e-09p 1.05e-09p
0.0
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.003189n 0.0 0.0 0.0
zp 46.46 ri 1.41e-07p 7.90e-05p 0.001742p 0.000654p 0.000654p 6.12e-05p 1.42e-08p 4.27e-08p 1.54e-12p 0.0 0.0 0.0
sig0.497 cc 1.41e-07p 7.92e-05p 0.001821p 0.001564p 0.002283p 0.003189p 1.42e-08p 0.003189p 0.003189p 0.0 0.0
0.0
rc 1.41e-07p 7.92e-05p 0.001821p 0.001564p 0.002283o 0.003189n 1.42e-08p 0.003189n 0.003189m 0.0 0.0 0.0

ru, rh, ag half lives 80eng2; pd, ag, cd, in half lives 89wal1; sb half life 90bur1.

1

mass number 119 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag g 48 cd m 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te g
half life 0.195s 0.465s 1.76 s 2.1s 2.20 m 2.69 m 17.9 m 2.3 m 293. d stable 38.1 h 16. h
lambda 3.555e+00 1.491e+00 3.938e-01 3.301e-01 5.251e-03 4.295e-03 6.454e-04 5.023e-03 2.738e-08 0.0 5.054e-06
1.203e-05
z - 1 g 100.0000 100.0000 100.0000 100.0000 50.0000 50.0000 100.0000 0.0 5.0000 95.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 95.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.0000 0.0 100.0000 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.117920n 0.0 0.0
zp 47.91 ri 0.0 0.0 3.20e-06p 0.012886p 0.049991p 0.049991p 0.000959p 0.004088p 2.61e-07p 7.80e-08p 0.0 0.0
sig0.350 cc 0.0 0.0 3.20e-06p 0.012890p 0.056436p 0.056436p 0.057395p 0.063394p 0.003170p 0.117920p 0.0 0.0
rc 0.0 0.0 3.20e-06p 0.012890p 0.056436p 0.056436p 0.057395p 0.063394p 0.003170p 0.117920n 0.0 0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.004985n 0.0 0.0
zp 47.02 ri 1.39e-08p 1.30e-05p 0.000992p 0.002863p 0.000551p 0.000551p 3.09e-06p 1.32e-05p 1.52e-08p 4.53e-09p 0.0
0.0

sig0.551 cc 1.39e-08p 1.30e-05p 0.001005p 0.003867p 0.002484p 0.002484p 0.002487p 0.002622p 0.000131p 0.004985p 0.0 0.0
rc 1.39e-08p 1.30e-05p 0.001005p 0.003867p 0.002484o 0.002484o 0.002487o 0.002622o 0.000131o 0.004985m 0.0 0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.003208n 0.0 0.0
zp 46.56 ri 6.59e-12p 4.05e-06p 0.001395p 0.001798p 5.58e-06p 5.58e-06p 8.30e-12p 3.54e-11p 0.0 0.0 0.0 0.0
sig0.350 cc 6.59e-12p 4.05e-06p 0.001399p 0.003197p 0.001604p 0.001604p 0.001604p 0.001684p 8.42e-05p 0.003208p 0.0 0.0
rc 6.59e-12p 4.05e-06p 0.001399p 0.003197p 0.001604p 0.001604p 0.001604o 0.001684o 8.42e-05o 0.003208m 0.0 0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.661928n 0.0 0.0
zp 48.22 ri 1.01e-09p 4.84e-06p 0.002036p 0.081644p 0.181333p 0.181333p 0.038404p 0.163722p 0.010288p 0.003073p 8.93e-05p 5.38e-08p
sig0.627 cc 1.01e-09p 4.84e-06p 0.002041p 0.083686p 0.223176p 0.223176p 0.261580p 0.399977p 0.030287p 0.661928p 8.94e-05p 5.38e-08p
rc 1.01e-09p 4.84e-06p 0.002041p 0.083686p 0.223176p 0.223176p 0.261580o 0.399977o 0.030287o 0.661928m 8.94e-05p 5.38e-08p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.813608n 0.0 0.0
zp 48.75 ri 6.12e-12p 1.40e-07p 0.000256p 0.039552p 0.292860p 0.292860p 0.187200p 0.798064p 0.152950p 0.045686p 0.004177p 7.83e-06p
sig0.619 cc 6.12e-12p 1.40e-07p 0.000256p 0.039808p 0.312764p 0.312764p 0.499964p 1.135826p 0.209741p 1.813605p 0.004184p 7.83e-06p
rc 6.12e-12p 1.40e-07p 0.000256p 0.039808p 0.312764p 0.312764p 0.499964o 1.135826o 0.209741p 1.813613m 0.004184p 7.83e-06p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.953676n 0.0 0.0
zp 47.74 ri 7.16e-09p 0.000110p 0.066610p 1.895604n 1.755833n 1.755833n 0.090472p 0.385698p 0.002705p 0.000808p 1.09e-06p 1.27e-11p
sig0.543 cc 7.16e-09p 0.000110p 0.066720p 1.962324p 2.736995p 2.736995p 2.827468p 3.264067p 0.165909p 5.953676p 1.09e-06p 1.27e-11p
rc 7.16e-09p 0.000110p 0.066720p 1.962324m 2.736995m 2.736995m 2.827468l 3.264067m 0.165909m 5.953676k 1.09e-06p 1.27e-11p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.222151n 0.0 0.0
zp 48.23 ri 2.93e-09p 1.73e-05p 0.008436p 0.374511p 0.882144p 0.882144p 0.191596p 0.816804p 0.050881p 0.015198p 0.000420p 2.29e-07p
sig0.621 cc 2.93e-09p 1.73e-05p 0.008453p 0.382964p 1.073626p 1.073626p 1.265222p 1.953691p 0.148565p 3.222151p 0.000420p 2.29e-07p
rc 2.93e-09p 1.73e-05p 0.008453p 0.382964p 1.073626o 1.073626o 1.265222n 1.953691n 0.148565o 3.222151m 0.000420p 2.29e-07p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.229358n 0.0 0.0
zp 47.17 ri 4.84e-06p 0.003206p 0.158949p 0.712668p 0.169426p 0.169426p 0.001718p 0.013903p 4.89e-05p 7.97e-06p 1.44e-08p 0.0
sig0.597 cc 4.84e-06p 0.003210p 0.162159p 0.874827p 0.606840p 0.606840p 0.608558p 0.651171p 0.032608p 1.229358p 1.44e-08p 0.0
rc 4.84e-06p 0.003210p 0.162159p 0.874827o 0.606840o 0.606840o 0.608558o 0.651171n 0.032608n 1.229358m 1.44e-08p 0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.008699n 0.0 0.0
zp 48.02 ri 7.36e-12p 5.52e-08p 4.35e-05p 0.001313p 0.002921p 0.002921p 0.000275p 0.001172p 4.11e-05p 1.23e-05p 7.60e-08p 1.14e-11p
sig0.583 cc 7.36e-12p 5.52e-08p 4.35e-05p 0.001356p 0.003599p 0.003599p 0.003874p 0.004965p 0.000289p 0.008699p 7.60e-08p 1.14e-11p
rc 7.36e-12p 5.52e-08p 4.35e-05p 0.001356p 0.003599p 0.003599p 0.003874p 0.004965p 0.000289o 0.008699m 7.60e-08p 1.14e-11p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.003793n 0.0 0.0
zp 46.84 ri 5.38e-09p 1.28e-05p 0.001033p 0.002366p 0.000190p 0.000190p 2.77e-07p 1.18e-06p 1.34e-10p 4.00e-11p 0.0 0.0
sig0.497 cc 5.38e-09p 1.28e-05p 0.001046p 0.003411p 0.001896p 0.001896p 0.001896p 0.001992p 9.96e-05p 0.003793p 0.0 0.0
rc 5.38e-09p 1.28e-05p 0.001046p 0.003411p 0.001896p 0.001896p 0.001896o 0.001992o 9.96e-05o 0.003793m 0.0 0.0

ru, rh, pd half lives 80eng2; ag, cd, in, sn half lives 89wal1.
1

mass number 120 LA-UR-94-3106 (ENDF-349) percent yields

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nuclide      44 ru g   45 rh g   46 pd g   47 ag g   48 cd g   49 in m   49 in g   50 sn g   51 sb m   51 sb g   52 te g
half life     0.350s    0.172s    3.91 s    1.23 s    50.8 s     46. s     3.1 s    stable    5.76 d    16.0 m    stable
lambda      1.980e+00 4.030e+00 1.773e-01 5.635e-01 1.364e-02 1.507e-02 2.236e-01       0.0 1.393e-06 7.220e-04       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000   50.0000   50.0000  100.0000 -100.0000 -100.0000       0.0
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cf250s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.058960n      0.0       0.0       0.0
zp 48.05 ri     0.0       0.0  2.69e-07p 0.003085p 0.050433p 0.002721p 0.002721p 1.05e-06p      0.0       0.0       0.0
sig0.350 cc     0.0       0.0  2.69e-07p 0.003085p 0.053518p 0.029479p 0.029479p 0.058960p      0.0       0.0       0.0
         rc     0.0       0.0  2.69e-07p 0.003085p 0.053518p 0.029479p 0.029479p 0.058960n      0.0       0.0       0.0
 cm244s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001992n      0.0       0.0       0.0
zp 47.73 ri 5.28e-12p 3.78e-08p 2.99e-05p 0.000478p 0.001364p 5.92e-05p 5.92e-05p 1.54e-06p 2.14e-10p 1.49e-10p       0.0
sig0.551 cc 5.28e-12p 3.78e-08p 2.99e-05p 0.000508p 0.001872p 0.000995p 0.000995p 0.001992p 2.14e-10p 1.49e-10p       0.0
         rc 5.28e-12p 3.78e-08p 2.99e-05p 0.000508p 0.001872p 0.000995p 0.000995p 0.001992n 2.14e-10p 1.49e-10p       0.0
 cm248s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.002139n      0.0       0.0       0.0
zp 46.74 ri 1.20e-07p 3.49e-05p 0.000696p 0.001208p 0.000197p 1.23e-06p 1.23e-06p 1.92e-09p       0.0       0.0       0.0
sig0.579 cc 1.20e-07p 3.50e-05p 0.000731p 0.001939p 0.002136p 0.001069p 0.001069p 0.002139p       0.0       0.0       0.0
         rc 1.20e-07p 3.50e-05p 0.000731p 0.001939p 0.002136o 0.001069o 0.001069o 0.002139m       0.0       0.0       0.0
 es253s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.315689n      0.0       0.0       0.0
zp 48.60 ri 1.00e-11p 1.23e-07p 0.000130p 0.012525p 0.125827p 0.076797p 0.076797p 0.023234p 0.000223p 0.000155p 5.73e-
07p
sig0.627 cc 1.00e-11p 1.23e-07p 0.000130p 0.012655p 0.138483p 0.146038p 0.146038p 0.315689p 0.000223p 0.000155p 5.73e-
07p
         rc 1.00e-11p 1.23e-07p 0.000130p 0.012655p 0.138483p 0.146038p 0.146038p 0.315689m 0.000223p 0.000155p 5.73e-07p
 fm254s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.111761n      0.0       0.0       0.0
zp 49.14 ri     0.0  2.32e-09p 1.13e-05p 0.004526p 0.164087p 0.316655p 0.316655p 0.294543p 0.009017p 0.006266p 7.46e-05p
sig0.619 cc     0.0  2.32e-09p 1.13e-05p 0.004538p 0.168624p 0.400967p 0.400967p 1.111760p 0.009017p 0.006266p 7.46e-05p
         rc     0.0  2.32e-09p 1.13e-05p 0.004538p 0.168624p 0.400967p 0.400967p 1.111760n 0.009017p 0.006266p 7.46e-05p
 fm255t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.796459n      0.0       0.0       0.0
zp 48.14 ri 5.85e-11p 3.36e-06p 0.007318p 0.684847p 3.636420n 0.716272p 0.716272p 0.035288p 2.34e-05p 1.63e-05p 1.73e-09p
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sig0.543 cc 5.85e-11p 3.36e-06p 0.007321p 0.692168p 4.328588p 2.880566p 2.880566p 5.796459p 2.34e-05p 1.63e-05p 1.73e-09p
rc 5.85e-11p 3.36e-06p 0.007321p 0.692168o 4.328588m 2.880566m 2.880566m 5.796459l 2.34e-05p 1.63e-05p 1.73e-09p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.617998n 0.0 0.0 0.0
zp 48.63 ri 3.65e-11p 5.89e-07p 0.000773p 0.088233p 0.997882p 0.659149p 0.659149p 0.209365p 0.002033p 0.001413p 5.07e-06p
sig0.621 cc 3.65e-11p 5.89e-07p 0.000773p 0.089007p 1.086888p 1.202593p 1.202593p 2.617998p 0.002033p 0.001413p 5.07e-06p
rc 3.65e-11p 5.89e-07p 0.000773p 0.089007p 1.086888o 1.202593n 1.202593n 2.617998m 0.002033p 0.001413p 5.07e-06p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.229358n 0.0 0.0 0.0
zp 47.53 ri 2.42e-07p 0.000420p 0.052024p 0.540124p 0.573405p 0.031367p 0.031367p 0.000581p 2.87e-07p 1.01e-07p 1.72e-11p
sig0.597 cc 2.42e-07p 0.000420p 0.052441p 0.592540p 1.165976p 0.614354p 0.614354p 1.229289p 2.87e-07p 1.01e-07p 1.72e-11p
rc 2.42e-07p 0.000420p 0.052444p 0.592568o 1.165973n 0.614354n 0.614354n 1.229289m 2.87e-07p 1.01e-07p 1.72e-11p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.008119n 0.0 0.0 0.0
zp 48.43 ri 0.0 1.51e-09p 4.59e-06p 0.000333p 0.004895p 0.001278p 0.001278p 0.000329p 6.91e-07p 4.80e-07p 6.92e-10p
sig0.583 cc 0.0 1.51e-09p 4.59e-06p 0.000338p 0.005233p 0.003895p 0.003895p 0.008119p 6.91e-07p 4.80e-07p 6.92e-10p
rc 0.0 1.51e-09p 4.59e-06p 0.000338p 0.005233p 0.003895p 0.003895p 0.008119m 6.91e-07p 4.80e-07p 6.92e-10p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.003793n 0.0 0.0 0.0
zp 47.22 ri 9.53e-11p 9.82e-07p 0.000312p 0.002291p 0.001172p 8.74e-06p 8.74e-06p 9.02e-09p 0.0 0.0 0.0
sig0.497 cc 9.53e-11p 9.82e-07p 0.000313p 0.002604p 0.003776p 0.001897p 0.001897p 0.003793p 0.0 0.0 0.0
rc 9.53e-11p 9.82e-07p 0.000313p 0.002604p 0.003776o 0.001897o 0.001897o 0.003793m 0.0 0.0 0.0

ru, rh, pd half lives from 80eng2; ag, cd, in half lives 89wal1.
1

mass number 121 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 45 rh g 46 pd g 47 ag g 48 cd d 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te g 53 i g
half life 0.250s 0.644s 0.78 s 1.5 s 13.5 s 3.8 m 23. s 55. y 1.128d stable 17. d 2.12 h
lambda 2.773e+00 1.076e+00 8.887e-01 4.621e-01 5.134e-02 3.040e-03 3.014e-02 3.996e-10 7.112e-06 0.0 4.719e-07 9.082e-05
z - 1 g 100.0000 100.0000 100.0000 0.0 100.0000 18.0000 82.0000 0.0 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 100.0000 0.0 0.0

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  z - 0 m         0.0       0.0       0.0    0.1840  100.0000       0.0       0.0       0.0       0.0       0.0       0.0       0.0
  cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.024892k 0.028874k       0.0       0.0
 zp 48.19 ri      0.0  1.79e-08p 0.000594p       0.0  0.021702p 0.000900p 0.003838p 1.82e-06p 7.42e-07p       0.0       0.0       0.0
 sig0.350 cc      0.0  1.79e-08p 0.000594p       0.0  0.022295p 0.004913p 0.022120p 1.82e-06p 0.027034p 0.027036p       0.0       0.0
          rc      0.0  1.79e-08p 0.000594p 3.39e-07o 0.022296p 0.004914p 0.022121n 1.82e-06p 0.027035k 0.027037j       0.0       0.0
  cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001198l 0.001398l       0.0       0.0
 zp 48.40 ri 7.92e-11p 4.13e-07p 5.76e-05p       0.0  0.000767p 8.73e-05p 0.000372p 2.39e-05p 9.77e-06p 7.81e-08p 1.35e-11p
0.0
 sig0.551 cc 7.92e-11p 4.13e-07p 5.80e-05p       0.0  0.000825p 0.000236p 0.001048p 2.39e-05p 0.001294p 0.001318p 1.35e-11p
0.0
          rc 7.92e-11p 4.13e-07p 5.80e-05p 1.19e-08o 0.000825p 0.000236p 0.001048o 2.39e-05p 0.001294l 0.001318k 1.35e-11p
0.0
  cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001818n       0.0       0.0
 zp 47.37 ri 1.15e-06p 0.000121p 0.000953p       0.0  0.000697p 8.62e-06p 3.67e-05p 1.47e-07p 5.99e-08p 5.60e-11p       0.0       0.0
 sig0.579 cc 1.15e-06p 0.000122p 0.001075p       0.0  0.001772p 0.000328p 0.001490p 1.47e-07p 0.001817p 0.001817p       0.0
0.0
          rc 1.15e-06p 0.000122p 0.001075p 6.37e-07o 0.001772o 0.000328o 0.001490o 1.47e-07p 0.001818n 0.001818m       0.0
0.0
  es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.139902k 0.161038k       0.0       0.0
 zp 48.81 ri      0.0  3.21e-12p 1.42e-05p       0.0  0.028982p 0.022770p 0.097072p 0.002567p 0.001049p 9.80e-08p       0.0       0.0
 sig0.350 cc      0.0  3.21e-12p 1.42e-05p       0.0  0.028996p 0.027989p 0.120849p 0.002567p 0.149887p 0.152455p       0.0       0.0
          rc      0.0  3.21e-12p 1.42e-05p 1.46e-09o 0.028996p 0.027989p 0.120849o 0.002567p 0.149887k 0.152455j       0.0       0.0
  fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.664931j 0.767110j       0.0       0.0
 zp 49.49 ri 4.64e-11p 5.48e-07p 0.000523p       0.0  0.043250p 0.068052p 0.296251p 0.247431p 0.101063p 0.039725p 0.000451p
4.44e-07p
 sig0.619 cc 4.67e-11p 5.53e-07p 0.000527p       0.0  0.044113p 0.076520p 0.328540p 0.249351p 0.506908p 0.796747p 0.000455p
4.47e-07p
          rc 4.64e-11p 5.48e-07p 0.000523p       0.0  0.043773p 0.075931p 0.332145o 0.247431p 0.509140k 0.796734j 0.000452p
4.44e-07p
  fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.699852n       0.0       0.0
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zp 48.54 ri 6.13e-08p 0.000490p 0.157718p 0.0 2.526838n 0.531236p 2.264742n 0.154738p 0.063203p 0.000866p 1.40e-07p 0.0
sig0.543 cc 6.13e-08p 0.000490p 0.158208p 0.0 2.685049p 1.014544p 4.466480p 0.154737p 5.544226p 5.699830p 1.40e-07p 0.0
rc 6.13e-08p 0.000490p 0.158208p 2.51e-05o 2.685070m 1.014549n 4.466500l 0.154738p 5.544251l 5.699855l 1.40e-07p 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.305629k 2.706608k 0.0 0.0
zp 49.02 ri 1.88e-08p 6.54e-05p 0.019145p 0.0 0.522867p 0.298568p 1.274115n 0.409398p 0.172187p 0.023464p 8.97e-05p 2.90e-08p
sig0.621 cc 1.89e-08p 6.56e-05p 0.019255p 0.0 0.543325p 0.397053p 1.721295p 0.410339p 2.285951p 2.719899p 9.00e-05p 2.91e-08p
rc 1.88e-08p 6.55e-05p 0.019210p 3.14e-06o 0.542080o 0.396142p 1.718621m 0.409398p 2.286950j 2.719902j 8.97e-05p 2.90e-08p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.259343n 0.0 0.0
zp 47.90 ri 3.72e-05p 0.012085p 0.306470p 0.0 0.743914p 0.021125p 0.170918p 0.003726p 0.000818p 8.13e-06p 9.88e-10p 0.0
sig0.597 cc 3.72e-05p 0.012122p 0.318570p 0.0 1.062520p 0.212377p 1.042173p 0.003726p 1.255368p 1.259102p 9.88e-10p 0.0
rc 3.72e-05p 0.012123p 0.318593p 0.000238o 1.062744o 0.212419n 1.042368n 0.003726p 1.255605n 1.259340m 9.88e-10p 0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.007976k 0.007383o 0.0 0.0
zp 48.82 ri 4.64e-11p 3.46e-07p 8.93e-05p 0.0 0.002830p 0.000852p 0.003634p 0.000863p 0.000352p 1.51e-05p 2.17e-08p 1.05e-12p
sig0.583 cc 4.64e-11p 3.46e-07p 8.97e-05p 0.0 0.002920p 0.001378p 0.006028p 0.000863p 0.007758p 0.008636p 2.17e-08p 1.05e-12p
rc 4.64e-11p 3.46e-07p 8.97e-05p 3.73e-08o 0.002920p 0.001378p 0.006028n 0.000863p 0.007758k 0.008636k 2.17e-08p 1.05e-12p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.003890n 0.0 0.0
zp 47.59 ri 4.73e-08p 5.98e-05p 0.001478p 0.0 0.002234p 2.22e-05p 9.47e-05p 1.74e-07p 7.09e-08p 8.00e-12p 0.0 0.0
sig0.497 cc 4.73e-08p 5.98e-05p 0.001538p 0.0 0.003772p 0.000701p 0.003188p 1.74e-07p 0.003889p 0.003889p 0.0 0.0
rc 4.73e-08p 5.98e-05p 0.001538p 1.23e-06o 0.003773p 0.000701p 0.003189p 1.74e-07p 0.003890o 0.003890n 0.0 0.0

in branching from 71erd1; rh, pd half lives 80eng2; ag, cd, in, sn half lives 89wal1.

1

mass number 122 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	44 ru g	45 rh g	46 pd g	47 ag g	48 cd d	48 cd g	49 in m	49 in g	50 sn g	51 sb m	51 sb g	52 te g
half life		0.107s	1.41 s	0.56 s	0.39s	5.3 s	10. s	1.5 s	stable	4.2 m	2.72 d	stable
lambda	0.0	6.478e+00	4.916e-01	1.238e+00	1.777e+00	1.308e-01	6.931e-02	4.621e-01	0.0	2.751e-03	2.949e-06	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	0.0	99.8160	0.0	100.0000	100.0000	0.0	-3.0000	97.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.5450	100.0000	0.0	0.0	0.0	0.0	100.0000	0.0
cf250s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.019653n	0.0	0.0	0.0
zp 48.31 ri	0.0	0.0	2.20e-09p	0.000184p	0.0	0.014043p	0.002710p	0.002710p	6.95e-06p	1.94e-12p	1.72e-12p	0.0
sig0.350 cc	0.0	0.0	2.20e-09p	0.000184p	0.0	0.014227p	0.002710p	0.016936p	0.019653p	1.94e-12p	3.65e-12p	3.54e-12p
rc	0.0	0.0	2.20e-09p	0.000184p	3.30e-07o	0.014227p	0.002710p	0.016937p	0.019653n	1.94e-12p	3.65e-12p	3.55e-12p
cm244s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.002433n	0.0	0.0	0.0
zp 49.00 ri	0.0	0.0	9.06e-09p	6.48e-06p	0.0	0.000574p	0.000639p	0.000639p	0.000575p	3.45e-06p	3.06e-06p	9.11e-09p
sig0.551 cc	0.0	0.0	9.06e-09p	6.49e-06p	0.0	0.000580p	0.000639p	0.001219p	0.002433p	3.45e-06p	6.50e-06p	6.32e-06p
rc	0.0	0.0	9.06e-09p	6.49e-06p	0.0	0.000580p	0.000639p	0.001219p	0.002433n	3.45e-06p	6.50e-06p	6.32e-06p
cm248s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001647n	0.0	0.0	0.0
zp 47.97 ri	1.75e-12p	1.68e-08p	9.30e-06p	0.000337p	0.0	0.001007p	0.000143p	0.000143p	6.62e-06p	5.24e-09p	4.65e-09p	0.0
sig0.579 cc	1.75e-12p	1.68e-08p	9.31e-06p	0.000346p	0.0	0.001353p	0.000143p	0.001497p	0.001647p	5.24e-09p	9.89e-09p	9.59e-09p
rc	1.75e-12p	1.68e-08p	9.31e-06p	0.000346p	3.33e-07o	0.001354p	0.000143p	0.001497o	0.001647n	5.24e-09p	9.89e-09p	9.59e-09p
es253s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.065661n	0.0	0.0	0.0
zp 48.98 ri	0.0	0.0	0.0	7.92e-07p	0.0	0.005672p	0.027785p	0.027785p	0.004418p	2.31e-07p	2.05e-07p	0.0
sig0.350 cc	0.0	0.0	0.0	7.92e-07p	0.0	0.005673p	0.027785p	0.033458p	0.065661p	2.31e-07p	4.35e-07p	4.22e-07p

rc 0.0 0.0 0.0 7.92e-07p 2.48e-10o 0.005673p 0.027785p 0.033458p 0.065661n 2.31e-07p 4.35e-07p 4.22e-07p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.404277n 0.0 0.0 0.0
zp 49.72 ri 0.0 0.0 0.0 4.71e-11p 0.0 0.000103p 0.054683p 0.054683p 0.294654p 0.002728p 0.002419p 7.00e-08p
sig0.350 cc 0.0 0.0 0.0 4.71e-11p 0.0 0.000103p 0.054683p 0.054786p 0.404277p 0.002728p 0.005146p 0.004992p
rc 0.0 0.0 0.0 4.71e-11p 0.0 0.000103p 0.054683p 0.054786p 0.404277n 0.002728p 0.005146p 0.004992p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.313421n 0.0 0.0 0.0
zp 49.02 ri 0.0 2.39e-10p 9.22e-06p 0.013646p 0.0 0.888805p 1.712810n 1.712810n 0.984852p 0.009002p 0.007983p
1.30e-05p
sig0.543 cc 0.0 2.39e-10p 9.22e-06p 0.013655p 0.0 0.902437p 1.712810p 2.615247p 5.313418p 0.009002p 0.016984p
0.016488p
rc 0.0 2.39e-10p 9.22e-06p 0.013655p 3.32e-06o 0.902439o 1.712810m 2.615249m 5.313421l 0.009002p 0.016984p
0.016488p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.510383n 0.0 0.0 0.0
zp 49.40 ri 0.0 2.54e-10p 2.29e-06p 0.001704p 0.0 0.112680p 0.383791p 0.383791p 0.626617p 0.031816p 0.028214p
0.000573p
sig0.621 cc 0.0 2.54e-10p 2.29e-06p 0.001706p 0.0 0.114383p 0.383791p 0.498174p 1.510383p 0.031816p 0.060030p
0.058802p
rc 0.0 2.54e-10p 2.29e-06p 0.001706p 0.0 0.114383p 0.383791p 0.498174p 1.510383n 0.031816p 0.060030p
0.058802p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.299322n 0.0 0.0 0.0
zp 48.27 ri 1.79e-10p 2.31e-06p 0.001993p 0.127179p 0.0 0.717990p 0.213552p 0.213541p 0.025106p 8.31e-05p 3.56e-05p
3.93e-08p
sig0.597 cc 1.79e-10p 2.31e-06p 0.001996p 0.129168p 0.0 0.846940p 0.213540p 1.060480p 1.299129p 8.31e-05p 0.000119p
0.000115p
rc 1.79e-10p 2.31e-06p 0.001996p 0.129175p 0.000201o 0.847128o 0.213552p 1.060668n 1.299330m 8.31e-05p 0.000119p
0.000115o
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.014291n 0.0 0.0 0.0
zp 49.20 ri 0.0 1.24e-12p 3.37e-08p 2.02e-05p 0.0 0.002118p 0.003345p 0.003345p 0.005459p 7.84e-05p 6.95e-05p 7.48e-
07p
sig0.583 cc 0.0 1.24e-12p 3.37e-08p 2.03e-05p 0.0 0.002138p 0.003345p 0.005483p 0.014291p 7.84e-05p 0.000148p
0.000144p

rc 0.0 1.24e-12p 3.37e-08p 2.03e-05p 1.30e-12o 0.002138p 0.003345p 0.005483p 0.014292n 7.84e-05p 0.000148p 0.000144p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.004189n 0.0 0.0 0.0
zp 47.96 ri 0.0 1.43e-09p 7.40e-06p 0.000664p 0.0 0.003005p 0.000255p 0.000255p 4.15e-06p 3.04e-10p 2.69e-10p 0.0
sig0.497 cc 0.0 1.43e-09p 7.40e-06p 0.000671p 0.0 0.003675p 0.000255p 0.003930p 0.004188p 3.04e-10p 5.73e-10p 5.56e-10p
rc 0.0 1.43e-09p 7.40e-06p 0.000671p 1.07e-06o 0.003676p 0.000255p 0.003931o 0.004189n 3.04e-10p 5.73e-10p 5.56e-10p

ru, rh pd half lives from 80eng2; ag, cd, in half lives 89wal1.
1

mass number 123 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 45 rh g 46 pd g 47 ag g 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te m 52 te g 53 i g
half life 0.134s 0.300s 0.31 s 2.09 s 47. s 6.0 s 40.1 m 129.2d stable 119.7d 1e+13y 13.2 h
lambda 5.173e+00 2.310e+00 2.236e+00 3.316e-01 1.475e-02 1.155e-01 2.881e-04 6.209e-08 0.0 6.702e-08 2.198e-21 1.459e-05
z - 1 g 100.0000 100.0000 100.0000 99.4550 23.0000 77.0000 100.0000 0.0 100.0000 0.0 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 100.0000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.018671n 0.0 0.0 0.0
zp 49.06 ri 5.88e-12p 8.80e-08p 6.04e-05p 0.003200p 0.002085p 0.008888p 0.001254p 0.003070p 0.000114p 1.82e-07p 5.45e-08p 2.28e-11p
sig0.577 cc 5.88e-12p 8.80e-08p 6.05e-05p 0.003260p 0.002835p 0.011398p 0.015487p 0.003070p 0.018671p 1.82e-07p 2.37e-07p 2.28e-11p
rc 5.88e-12p 8.80e-08p 6.05e-05p 0.003260p 0.002835p 0.011398p 0.015487o 0.003070p 0.018671n 1.82e-07p 2.37e-07p 2.28e-11p
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.004866n 0.0 0.0 0.0
zp 49.40 ri 0.0 0.0 1.20e-10p 2.84e-05p 0.000503p 0.002142p 0.000635p 0.001555p 3.62e-06p 4.19e-12p 1.25e-12p 0.0
sig0.350 cc 0.0 0.0 1.20e-10p 2.84e-05p 0.000509p 0.002164p 0.003308p 0.001555p 0.004866p 4.19e-12p 5.44e-12p 0.0
rc 0.0 0.0 1.20e-10p 2.84e-05p 0.000509p 0.002164p 0.003308p 0.001555p 0.004866n 4.19e-12p 5.44e-12p 0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.001867n 0.0 0.0 0.0
zp 48.57 ri 1.10e-10p 3.34e-07p 6.08e-05p 0.000787p 0.000175p 0.000744p 2.87e-05p 7.02e-05p 7.79e-07p 2.88e-10p 8.61e-11p
0.0
sig0.579 cc 1.10e-10p 3.34e-07p 6.11e-05p 0.000848p 0.000370p 0.001397p 0.001796p 7.02e-05p 0.001867p 2.88e-10p 3.74e-10p
0.0
rc 1.10e-10p 3.34e-07p 6.11e-05p 0.000848p 0.000370p 0.001397p 0.001796o 7.02e-05p 0.001867n 2.88e-10p 3.74e-10p
0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.031805n 0.0 0.0 0.0
zp 49.14 ri 0.0 0.0 4.55e-08p 0.001091p 0.004932p 0.021027p 0.001378p 0.003374p 1.54e-06p 0.0 0.0 0.0
sig0.350 cc 0.0 0.0 4.55e-08p 0.001091p 0.005183p 0.021868p 0.028429p 0.003374p 0.031804p 0.0 0.0 0.0
rc 0.0 0.0 4.55e-08p 0.001091p 0.005183p 0.021868p 0.028429o 0.003374p 0.031804n 0.0 0.0 0.0
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.252673n 0.0 0.0 0.0
zp 49.84 ri 0.0 0.0 2.96e-12p 1.66e-05p 0.008044p 0.034292p 0.058869p 0.144128p 0.007323p 1.93e-07p 5.75e-08p 0.0
sig0.350 cc 0.0 0.0 2.96e-12p 1.66e-05p 0.008048p 0.034305p 0.101222p 0.144128p 0.252673p 1.93e-07p 2.50e-07p
0.0
rc 0.0 0.0 2.96e-12p 1.66e-05p 0.008048p 0.034305p 0.101222p 0.144128p 0.252673n 1.93e-07p 2.50e-07p 0.0
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.926990n 0.0 0.0 0.0
zp 49.49 ri 0.0 8.98e-08p 0.000609p 0.167758p 0.443374p 1.890173n 0.658530p 1.612263n 0.153763p 0.000402p 0.000120p
7.19e-08p
sig0.543 cc 0.0 8.98e-08p 0.000609p 0.168364p 0.482098p 2.019814p 3.160442p 1.612263p 4.926990p 0.000402p 0.000523p
7.19e-08p
rc 0.0 8.98e-08p 0.000609p 0.168364p 0.482098p 2.019814m 3.160442m 1.612263m 4.926991l 0.000402p 0.000523p
7.19e-08p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.908811n 0.0 0.0 0.0
zp 49.69 ri 0.0 0.0 1.63e-10p 0.000293p 0.050101p 0.213588p 0.184230p 0.451046p 0.009553p 8.32e-08p 2.48e-08p
0.0
sig0.350 cc 0.0 0.0 1.63e-10p 0.000293p 0.050168p 0.213814p 0.448212p 0.451046p 0.908811p 8.32e-08p 1.08e-07p
0.0
rc 0.0 0.0 1.63e-10p 0.000293p 0.050168p 0.213814p 0.448212o 0.451046p 0.908811n 8.32e-08p 1.08e-07p 0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.349296n 0.0 0.0 0.0

zp 48.65 ri 9.07e-08p 0.000217p 0.036655p 0.506677p 0.077305p 0.625467p 0.018339p 0.083542p 0.001283p 1.01e-06p 1.65e-07p 7.26e-11p
sig0.597 cc 9.07e-08p 0.000217p 0.036872p 0.543348p 0.202275p 1.043846p 1.264459p 0.083542p 1.349286p 1.01e-06p 1.18e-06p 7.26e-11p
rc 9.07e-08p 0.000217p 0.036872p 0.543348o 0.202275o 1.043846n 1.264459n 0.083542p 1.349286m 1.01e-06p 1.18e-06p 7.26e-11p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.019055n 0.0 0.0 0.0
zp 49.44 ri 0.0 0.0 2.39e-10p 7.90e-05p 0.001788p 0.007622p 0.002768p 0.006778p 2.05e-05p 3.32e-11p 9.90e-12p 0.0
sig0.350 cc 0.0 0.0 2.39e-10p 7.90e-05p 0.001806p 0.007683p 0.012257p 0.006778p 0.019055p 3.32e-11p 4.31e-11p 0.0
rc 0.0 0.0 2.39e-10p 7.90e-05p 0.001806p 0.007683p 0.012257o 0.006778p 0.019055n 3.32e-11p 4.31e-11p 0.0
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.004489n 0.0 0.0 0.0
zp 48.33 ri 2.59e-11p 5.64e-07p 0.000195p 0.002809p 0.000274p 0.001168p 1.26e-05p 3.08e-05p 2.47e-08p 0.0 0.0 0.0
sig0.497 cc 2.59e-11p 5.64e-07p 0.000196p 0.003004p 0.000965p 0.003481p 0.004458p 3.08e-05p 0.004489p 0.0 0.0 0.0
rc 2.59e-11p 5.64e-07p 0.000196p 0.003004p 0.000965p 0.003481p 0.004458o 3.08e-05p 0.004489n 0.0 0.0 0.0

rh, pd half lives from 80eng2; ag, cd, in, sn half lives 89wal1; i, te half lives 90bur1.

1

mass number 124 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	44 ru g	45 rh g	46 pd g	47 ag g	48 cd g	49 in g	50 sn g	51 sb m	51 sb g	52 te g
half life		0.514s	0.22 s	1.24 s	3.18 s	stable	20.2 m	60.20d	stable	
lambda	0.0	0.0	1.349e+00	3.151e+00	5.590e-01	2.180e-01	0.0	5.719e-04	1.333e-07	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	0.0	0.0	100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0
cf250s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.018671n	0.0	0.0	0.0
zp 49.64 ri	0.0	0.0	0.0	7.85e-12p	1.05e-05p	0.005997p	0.012663p	6.26e-05p	6.26e-05p	1.06e-09p
sig0.350 cc	0.0	0.0	0.0	7.85e-12p	1.05e-05p	0.006008p	0.018671p	6.26e-05p	0.000125p	0.000125p
rc	0.0	0.0	0.0	7.85e-12p	1.05e-05p	0.006008p	0.018671n	6.26e-05p	0.000125p	0.000125p
cm244s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.008759n      0.0       0.0       0.0
zp 49.52 ri      0.0       0.0       0.0  2.54e-11p 1.88e-05p 0.003178p 0.005563p 8.51e-06p 8.51e-06p 8.04e-11p
sig0.350 cc      0.0       0.0       0.0  2.54e-11p 1.88e-05p 0.003196p 0.008759p 8.51e-06p 1.70e-05p 1.70e-05p
        rc      0.0       0.0       0.0  2.54e-11p 1.88e-05p 0.003196p 0.008759n 8.51e-06p 1.70e-05p 1.70e-05p
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.002039n      0.0       0.0       0.0
zp 49.17 ri      0.0       0.0  4.22e-09p 4.11e-06p 0.000253p 0.001222p 0.000559p 1.09e-05p 1.09e-05p 5.70e-08p
sig0.579 cc      0.0       0.0  4.22e-09p 4.12e-06p 0.000257p 0.001480p 0.002039p 1.09e-05p 2.18e-05p 2.18e-05p
        rc      0.0       0.0  4.22e-09p 4.12e-06p 0.000257p 0.001480p 0.002039n 1.09e-05p 2.18e-05p 2.18e-05p
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.019493n      0.0       0.0       0.0
zp 49.29 ri      0.0  1.53e-11p 8.77e-08p 4.36e-05p 0.002053p 0.010581p 0.006816p 0.000263p 0.000263p 4.14e-06p
sig0.627 cc      0.0  1.53e-11p 8.77e-08p 4.37e-05p 0.002097p 0.012677p 0.019493p 0.000263p 0.000526p 0.000530p
        rc      0.0  1.53e-11p 8.77e-08p 4.37e-05p 0.002097p 0.012677p 0.019493n 0.000263p 0.000526p 0.000530p
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.151604n      0.0       0.0       0.0
zp 49.94 ri      0.0       0.0       0.0       0.0  3.18e-06p 0.016935p 0.134666p 0.004301p 0.004301p 6.28e-07p
sig0.350 cc      0.0       0.0       0.0       0.0  3.18e-06p 0.016938p 0.151604p 0.004301p 0.008602p 0.008603p
        rc      0.0       0.0       0.0       0.0  3.18e-06p 0.016938p 0.151604n 0.004301p 0.008602p 0.008603p
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.808100n      0.0       0.0       0.0
zp 49.77 ri      0.0       0.0       0.0  1.67e-10p 0.000550p 0.855016p 2.952534n 0.035579p 0.035579p 1.45e-06p
sig0.350 cc      0.0       0.0       0.0  1.67e-10p 0.000550p 0.855566p 3.808100p 0.035579p 0.071157p 0.071159p
        rc      0.0       0.0       0.0  1.67e-10p 0.000550p 0.855566o 3.808100m 0.035579p 0.071157p 0.071159p
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.454405n      0.0       0.0       0.0
zp 49.83 ri      0.0       0.0       0.0  5.92e-12p 3.22e-05p 0.079677p 0.374696p 0.006604p 0.006604p 4.38e-07p
sig0.350 cc      0.0       0.0       0.0  5.92e-12p 3.22e-05p 0.079709p 0.454405p 0.006604p 0.013208p 0.013208p
        rc      0.0       0.0       0.0  5.92e-12p 3.22e-05p 0.079709p 0.454405n 0.006604p 0.013208p 0.013208p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.399270n      0.0       0.0       0.0
zp 49.02 ri      0.0  2.68e-09p 1.74e-05p 0.007752p 0.264358p 0.841709p 0.285419p 0.004551p 0.004551p 2.24e-05p
sig0.597 cc      0.0  2.68e-09p 1.74e-05p 0.007770p 0.272124p 1.113841p 1.399257p 0.004551p 0.009101p 0.009124p
        rc      0.0  2.68e-09p 1.74e-05p 0.007770p 0.272128p 1.113837o 1.399257m 0.004551p 0.009102p 0.009124p
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.031441n      0.0       0.0       0.0
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zp 49.60 ri 0.0 0.0 0.0 2.15e-11p 3.06e-05p 0.008794p 0.022617p 5.77e-05p 5.77e-05p 1.04e-09p
sig0.350 cc 0.0 0.0 0.0 2.15e-11p 3.06e-05p 0.008824p 0.031441p 5.77e-05p 0.000115p 0.000115p
rc 0.0 0.0 0.0 2.15e-11p 3.06e-05p 0.008824p 0.031441n 5.77e-05p 0.000115p 0.000115p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.004987n 0.0 0.0 0.0
zp 48.70 ri 0.0 0.0 2.69e-08p 3.74e-05p 0.001854p 0.002807p 0.000289p 3.31e-07p 3.31e-07p 4.58e-11p
sig0.497 cc 0.0 0.0 2.69e-08p 3.74e-05p 0.001891p 0.004698p 0.004987p 3.31e-07p 6.61e-07p 6.62e-07p
rc 0.0 0.0 2.69e-08p 3.74e-05p 0.001891p 0.004698o 0.004987n 3.31e-07p 6.61e-07p 6.62e-07p

pd, sb half lives from 80eng2; ag, cd, in half lives from 89wal1.
1

mass number 125 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 46 pd g 47 ag g 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te m 52 te g 53 i g 54 xe g
half life 0.166s 0.334s 0.68 s 12.2 s 2.36 s 9.5 m 9.63 d 2.758y 58. d stable 60.14d 17. h
lambda 4.176e+00 2.075e+00 1.019e+00 5.682e-02 2.937e-01 1.216e-03 8.331e-07 7.969e-09 1.383e-07 0.0 1.334e-07
1.133e-05
z - 1 g 100.0000 100.0000 100.0000 30.0000 70.0000 50.0000 50.0000 100.0000 22.5000 77.5000 -100.0000 -
100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 50.0000 50.0000 100.0000 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.010415k 0.0 0.0 0.021822k 0.0 0.0
zp 49.75 ri 0.0 1.16e-12p 3.71e-06p 0.002315p 0.002315p 0.004736p 0.011595p 0.000322p 4.91e-09p 1.47e-09p 0.0 0.0
sig0.350 cc 0.0 1.16e-12p 3.71e-06p 0.002317p 0.002318p 0.007053p 0.013913p 0.021288p 0.004790p 0.021288p 0.0
0.0
rc 0.0 1.16e-12p 3.71e-06p 0.002317p 0.002318p 0.007053p 0.013913j 0.021288m 0.004790m 0.021288k 0.0 0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.006610m 0.0 0.0 0.016502l 0.0 0.0
zp 49.65 ri 0.0 5.05e-12p 8.44e-06p 0.002157p 0.002157p 0.003213p 0.007866p 9.78e-05p 7.95e-10p 2.38e-10p 0.0 0.0
sig0.350 cc 0.0 5.05e-12p 8.44e-06p 0.002159p 0.002163p 0.005374p 0.010027p 0.015498p 0.003487p 0.015498p 0.0
0.0
rc 0.0 5.05e-12p 8.44e-06p 0.002159p 0.002163p 0.005374p 0.010027l 0.015498m 0.003487m 0.015498l 0.0 0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.003121k 0.0 0.0 0.006645k 0.0 0.0
zp 49.36 ri 0.0 3.61e-10p 4.67e-05p 0.002122p 0.002122p 0.000641p 0.001570p 3.49e-06p 2.20e-12p 0.0 0.0 0.0

sig0.350 cc 0.0 3.61e-10p 4.67e-05p 0.002136p 0.002155p 0.002787p 0.003716p 0.006506p 0.001464p 0.006506p 0.0
0.0
rc 0.0 3.61e-10p 4.67e-05p 0.002136p 0.002155p 0.002787o 0.003716k 0.006506l 0.001464m 0.006506k 0.0 0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.009264k 0.0 0.0 0.019477k 0.0 0.0
zp 49.83 ri 0.0 0.0 1.41e-06p 0.001661p 0.001661p 0.004392p 0.010753p 0.000514p 1.25e-08p 3.74e-09p 0.0 0.0
sig0.350 cc 0.0 0.0 1.41e-06p 0.001661p 0.001662p 0.006054p 0.012415p 0.018983p 0.004271p 0.018983p 0.0 0.0
rc 0.0 0.0 1.41e-06p 0.001661p 0.001662p 0.006054p 0.012415j 0.018983m 0.004271m 0.018983k 0.0 0.0
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.066353j 0.0 0.0 0.132593l 0.0 0.0
zp 50.01 ri 0.0 0.0 1.04e-06p 0.004663p 0.004663p 0.031148p 0.076259p 0.010052p 9.57e-07p 2.86e-07p 0.0 0.0
sig0.350 cc 0.0 0.0 1.04e-06p 0.004663p 0.004664p 0.035812p 0.080922p 0.126786p 0.028528p 0.126788p 0.0 0.0
rc 0.0 0.0 1.04e-06p 0.004663p 0.004664p 0.035812p 0.080922j 0.126786m 0.028528m 0.126788l 0.0 0.0
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.590900m 0.0 0.0 3.337963m 0.0 0.0
zp 49.90 ri 0.0 1.17e-11p 0.000108p 0.216687p 0.216687p 0.823798p 1.601077m 0.157933p 6.21e-06p 1.86e-06p 0.0
0.0
sig0.350 cc 0.0 1.03e-11p 9.49e-05p 0.191077p 0.191115p 0.917422p 1.969342p 3.016291p 0.678671p 3.016298p 0.0
0.0
rc 0.0 1.17e-11p 0.000108p 0.216720p 0.216763p 1.040539o 1.817818l 3.016290l 0.678671l 3.016298k 0.0 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.443046n 0.0 0.0
zp 49.92 ri 0.0 0.0 1.04e-05p 0.025070p 0.025070p 0.107581p 0.263388p 0.021923p 1.11e-06p 3.31e-07p 0.0 0.0
sig0.350 cc 0.0 0.0 1.04e-05p 0.025073p 0.025077p 0.132656p 0.288463p 0.443042p 0.099685p 0.443043p 0.0 0.0
rc 0.0 0.0 1.04e-05p 0.025073p 0.025077p 0.132656p 0.288463p 0.443042o 0.099685o 0.443043m 0.0 0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.499217n 0.0 0.0
zp 49.41 ri 8.34e-07p 0.001047p 0.095366p 0.373043p 0.373043p 0.109159p 0.497280p 0.049902p 0.000292p 4.75e-05p 1.64e-
07p 5.23e-12p
sig0.597 cc 8.34e-07p 0.001048p 0.096414p 0.401967p 0.440533p 0.530409p 0.918530p 1.498841p 0.337531p 1.499181p 1.64e-
07p 5.23e-12p
rc 8.34e-07p 0.001048p 0.096414p 0.401967p 0.440533p 0.530409o 0.918530p 1.498841n 0.337531n 1.499181m 1.64e-07p
5.23e-12p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.092501j 0.0 0.0 0.158860j 0.0 0.0
zp 49.77 ri 0.0 5.33e-12p 2.35e-05p 0.013906p 0.013906p 0.037152p 0.090958p 0.002348p 4.93e-08p 1.47e-08p 0.0 0.0

sig0.350 cc 0.0 5.33e-12p 2.35e-05p 0.013913p 0.013922p 0.051070p 0.104876p 0.158293p 0.035616p 0.158293p 0.0
0.0
rc 0.0 5.33e-12p 2.35e-05p 0.013913p 0.013922p 0.051070p 0.104876i 0.158293l 0.035616m 0.158293i 0.0 0.0
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.005989n 0.0 0.0
zp 49.10 ri 5.75e-10p 3.72e-06p 0.000761p 0.001920p 0.001920p 0.000398p 0.000974p 1.34e-05p 3.36e-09p 1.01e-09p 0.0
0.0
sig0.497 cc 5.75e-10p 3.72e-06p 0.000765p 0.002149p 0.002455p 0.002700p 0.003276p 0.005989p 0.001348p 0.005989p 0.0
0.0
rc 5.75e-10p 3.72e-06p 0.000765p 0.002149p 0.002455p 0.002700o 0.003276o 0.005989n 0.001348n 0.005989m 0.0
0.0

pd, ag half lives from 80eng2; cd, in, sn, sb, te half lives from 89wal1; i half life 90bur1.

1

mass number 126 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 46 pd g 47 ag g 48 cd g 49 in g 50 sn d 50 sn g 51 sb m 51 sb g 52 te g 53 i g 54 xe g
half life 0.252s 0.140s 0.52 s 1.63 s 3.76 s 1.e5y 19.0 m 12.4 d stable 13.02d stable
lambda 2.751e+00 4.951e+00 1.333e+00 4.252e-01 1.843e-01 2.198e-13 6.080e-04 6.470e-07 0.0 6.162e-07 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 100.0000 100.0000 0.0 100.0000 -56.0000 44.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 86.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.6600 100.0000 0.0 14.0000 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.043969n 0.0 0.0
zp 49.87 ri 0.0 0.0 1.93e-06p 0.005791p 0.0 0.036678p 0.000929p 0.000545p 7.31e-08p 0.0 0.0
sig0.350 cc 0.0 0.0 1.93e-06p 0.005793p 0.0 0.042470p 0.043399p 0.006621p 0.043945p 0.0 0.0
rc 0.0 0.0 1.93e-06p 0.005793p 2.58e-05o 0.042496p 0.043425o 0.006625o 0.043971n 0.0 0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.068129n 0.0 0.0
zp 49.80 ri 0.0 1.11e-12p 7.43e-06p 0.009053p 0.0 0.057966p 0.000664p 0.000390p 4.34e-08p 0.0 0.0
sig0.350 cc 0.0 1.11e-12p 7.43e-06p 0.009061p 0.0 0.067027p 0.067690p 0.009867p 0.068080p 0.0 0.0
rc 0.0 1.11e-12p 7.43e-06p 0.009061p 5.18e-05o 0.067079p 0.067742o 0.009874o 0.068132n 0.0 0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.013253n 0.0 0.0
zp 49.51 ri 0.0 6.38e-11p 2.65e-05p 0.006492p 0.0 0.006676p 1.87e-05p 1.10e-05p 7.86e-11p 0.0 0.0

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sig0.350 cc      0.0  6.38e-11p 2.65e-05p 0.006518p      0.0  0.013194p 0.013213p 0.001861p 0.013224p      0.0       0.0
         rc      0.0  6.38e-11p 2.65e-05p 0.006518p 3.26e-05o 0.013227p 0.013246o 0.001865o 0.013257n      0.0       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.029947n      0.0       0.0
zp 49.91 ri      0.0       0.0  8.61e-07p 0.003662p      0.0  0.024924p 0.000847p 0.000497p 7.80e-08p      0.0       0.0
sig0.350 cc      0.0       0.0  8.61e-07p 0.003663p      0.0  0.028588p 0.029434p 0.004618p 0.029932p      0.0       0.0
         rc      0.0       0.0  8.61e-07p 0.003663p 1.54e-05o 0.028603p 0.029450o 0.004620o 0.029947n      0.0       0.0
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.163834n      0.0       0.0
zp 50.09 ri      0.0       0.0  4.65e-07p 0.007637p      0.0  0.136715p 0.012257p 0.007199p 4.37e-06p      0.0       0.0
sig0.350 cc      0.0       0.0  4.65e-07p 0.007638p      0.0  0.144354p 0.156611p 0.029124p 0.163813p      0.0       0.0
         rc      0.0       0.0  4.65e-07p 0.007638p 2.08e-05o 0.144374p 0.156631o 0.029127o 0.163834n      0.0       0.0
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.404636n      0.0       0.0
zp 50.00 ri      0.0  1.07e-12p 2.17e-05p 0.184255p      0.0  2.036984n 0.115322p 0.067729p 2.14e-05p 1.04e-12p      0.0
sig0.350 cc      0.0  1.07e-12p 2.17e-05p 0.184267p      0.0  2.221270p 2.336587p 0.394848p 2.404333p 1.04e-12p      0.0
         rc      0.0  1.07e-12p 2.17e-05p 0.184277p 0.000374o 2.221635m 2.336957m 0.394903m 2.404707l 1.04e-12p      0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.418659n      0.0       0.0
zp 49.98 ri      0.0       0.0  4.66e-06p 0.034989p      0.0  0.354414p 0.018371p 0.010789p 3.01e-06p      0.0       0.0
sig0.350 cc      0.0       0.0  4.66e-06p 0.034990p      0.0  0.389411p 0.407779p 0.067877p 0.418571p      0.0       0.0
         rc      0.0       0.0  4.66e-06p 0.034994p 8.53e-05o 0.389493p 0.407864o 0.067890o 0.418656n      0.0       0.0
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.899299n      0.0       0.0
zp 49.78 ri 3.80e-08p 0.000129p 0.030622p 0.579304p      0.0  1.073961n 0.090531p 0.120000p 0.003686p 4.80e-06p 4.20e-10p
sig0.597 cc 3.80e-08p 0.000129p 0.030747p 0.609968p      0.0  1.684039p 1.774558p 0.368427p 1.898235p 4.79e-06p 2.11e-06p
         rc 3.80e-08p 0.000129p 0.030751p 0.610055o 0.001448o 1.685463m 1.775995m 0.368639n 1.899683l 4.80e-06p 2.11e-06p
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.228664n      0.0       0.0
zp 49.94 ri      0.0       0.0  4.62e-06p 0.015495p      0.0  0.204916p 0.005161p 0.003031p 1.00e-06p      0.0       0.0
sig0.350 cc      0.0       0.0  4.62e-06p 0.015497p      0.0  0.220417p 0.225577p 0.034611p 0.228608p      0.0       0.0
         rc      0.0       0.0  4.62e-06p 0.015500p 3.79e-05o 0.220453p 0.225614o 0.034617o 0.228646n      0.0       0.0
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.006982n      0.0       0.0
zp 49.37 ri      0.0  3.09e-10p 5.08e-05p 0.004209p      0.0  0.002700p 2.46e-06p 1.44e-06p 4.07e-12p      0.0       0.0
sig0.350 cc      0.0  3.09e-10p 5.08e-05p 0.004260p      0.0  0.006960p 0.006963p 0.000976p 0.006964p      0.0       0.0
```

rc 0.0 3.09e-10p 5.08e-05p 0.004260p 2.04e-05o 0.006981p 0.006983o 0.000979o 0.006985n 0.0 0.0

pd, ag half lives from 80eng2; cd, in, sn, sb half lives 89wal1; i half life 90bur1.

1

mass number 127 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 47 ag g 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te m 52 te g 53 i g 54 xe g 55 cs g
half life 0.175s 0.4 s 3.73 s 1.14 s 4.15 m 2.12 h 3.84 d 109. d 9.4 h stable 36.41d 6.2 h
lambda 3.961e+00 1.733e+00 1.858e-01 6.080e-01 2.784e-03 9.082e-05 2.089e-06 7.360e-08 2.048e-05 0.0 2.203e-07 3.105e-05
z - 1 g 100.0000 100.0000 50.0000 50.0000 49.6700 49.6700 100.0000 16.0000 84.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 100.0000 100.0000 0.0 0.0 2.4000 0.0 0.0
z - 0 m 0.0 0.0 0.1220 0.0 0.0610 0.0 0.0 0.0 97.6000 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.113077k 0.0 0.0 0.113077n 0.0 0.0
zp 50.00 ri 0.0 9.92e-07p 0.003906p 0.003906p 0.028198p 0.069036p 0.008052p 7.57e-07p 3.09e-07p 0.0 0.0 0.0
sig0.350 cc 0.0 9.92e-07p 0.003907p 0.003907p 0.030138p 0.074883p 0.113073p 0.018092p 0.112640p 0.113074p 0.0 0.0
rc 0.0 9.92e-07p 0.003907p 0.003907p 0.030138p 0.074883p 0.113073k 0.018092k 0.112640k 0.113074k 0.0 0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.198664k 0.0 0.0 0.198664n 0.0 0.0
zp 49.95 ri 0.0 3.47e-06p 0.007849p 0.007849p 0.050403p 0.123399p 0.009204p 6.85e-07p 2.80e-07p 0.0 0.0 0.0
sig0.350 cc 0.0 3.47e-06p 0.007850p 0.007850p 0.054302p 0.135149p 0.198655p 0.031786p 0.197893p 0.198656p 0.0 0.0
rc 0.0 3.47e-06p 0.007850p 0.007850p 0.054302p 0.135149o 0.198655k 0.031786k 0.197893k 0.198656j 0.0 0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.031151k 0.0 0.0 0.031151n 0.0 0.0
zp 49.67 ri 9.12e-12p 1.33e-05p 0.004939p 0.004939p 0.006094p 0.014921p 0.000267p 1.74e-09p 7.11e-10p 0.0 0.0 0.0
sig0.350 cc 9.12e-12p 1.33e-05p 0.004946p 0.004946p 0.008551p 0.022323p 0.031140p 0.004982p 0.031021p 0.031140p 0.0 0.0
rc 9.12e-12p 1.33e-05p 0.004946p 0.004946p 0.008551p 0.022323o 0.031140k 0.004982k 0.031021k 0.031140k 0.0 0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.063357k 0.0 0.0 0.063456n 0.0 0.0

zp 50.01 ri 0.0 5.20e-07p 0.002334p 0.002334p 0.015570p 0.038119p 0.005019p 4.40e-07p 1.80e-07p 0.0 0.0 0.0
sig0.350 cc 0.0 5.20e-07p 0.002334p 0.002334p 0.016729p 0.041613p 0.063361p 0.010138p 0.063118p 0.063361p 0.0
0.0
rc 0.0 5.20e-07p 0.002334p 0.002334p 0.016729p 0.041613p 0.063361k 0.010138k 0.063118j 0.063361j 0.0 0.0
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.239361k 0.0 0.0 0.233034o 0.0 0.0
zp 50.18 ri 0.0 1.94e-07p 0.003159p 0.003159p 0.055134p 0.134973p 0.042466p 1.30e-05p 5.29e-06p 3.63e-12p 0.0 0.0
sig0.350 cc 0.0 1.94e-07p 0.003159p 0.003159p 0.056700p 0.139704p 0.238869p 0.038232p 0.237970p 0.238887p 0.0
0.0
rc 0.0 1.94e-07p 0.003159p 0.003159p 0.056703p 0.139700p 0.238869k 0.038232k 0.237970k 0.238887k 0.0 0.0
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.321878k 0.0 0.0 2.321878n 0.0 0.0
zp 50.08 ri 0.0 7.30e-06p 0.056635p 0.056635p 0.563473p 1.379537n 0.265920p 4.01e-05p 1.64e-05p 5.18e-12p 0.0 0.0
sig0.350 cc 0.0 7.30e-06p 0.056639p 0.056639p 0.591605p 1.464309p 2.321834p 0.371534p 2.312974p 2.321891p 0.0
0.0
rc 0.0 7.30e-06p 0.056639p 0.056639p 0.591606o 1.464309m 2.321834k 0.371534k 2.312974j 2.321891j 0.0 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.429330m 0.0 0.0 0.429330n 0.0 0.0
zp 50.04 ri 0.0 2.19e-06p 0.012930p 0.012930p 0.105117p 0.257353p 0.041069p 4.72e-06p 1.93e-06p 0.0 0.0 0.0
sig0.350 cc 0.0 2.19e-06p 0.012931p 0.012931p 0.111539p 0.276708p 0.429316p 0.068695p 0.427674p 0.429322p 0.0
0.0
rc 0.0 2.19e-06p 0.012931p 0.012931p 0.111540p 0.276707p 0.429316m 0.068695m 0.427674l 0.429322l 0.0 0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.479492l 0.0 0.0 2.519343n 0.0 0.0
zp 50.06 ri 2.29e-05p 0.011350p 0.213741p 0.213741p 0.268316p 1.222327n 0.553302p 0.016035p 0.003520p 5.34e-05p 1.00e-
08p 0.0
sig0.597 cc 2.29e-05p 0.011373p 0.219435p 0.219435p 0.377317p 1.550793p 2.481430p 0.412999p 2.490995p 2.500960p 9.98e-
09p 0.0
rc 2.29e-05p 0.011373p 0.219428p 0.219428p 0.377305p 1.550744m 2.481352l 0.413051l 2.490993k 2.500960k 1.00e-08p
0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.384688k 0.0 0.0 0.353773n 0.0 0.0
zp 50.12 ri 0.0 7.17e-07p 0.005738p 0.005738p 0.095662p 0.233744p 0.042029p 1.09e-05p 4.47e-06p 1.48e-12p 0.0 0.0
sig0.350 cc 0.0 7.16e-07p 0.005731p 0.005731p 0.098393p 0.242502p 0.382874p 0.061271p 0.381419p 0.382890p 0.0
0.0
rc 0.0 7.17e-07p 0.005738p 0.005738p 0.098512p 0.242332p 0.382874k 0.061271k 0.381419j 0.382890j 0.0 0.0

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 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.013975n      0.0       0.0
zp 49.52 ri 5.19e-11p 2.75e-05p 0.003076p 0.003076p 0.002257p 0.005525p 3.16e-05p 7.56e-11p 3.09e-11p       0.0       0.0       0.0
sig0.350 cc 5.19e-11p 2.75e-05p 0.003089p 0.003089p 0.003791p 0.010149p 0.013971p 0.002235p 0.013918p 0.013971p       0.0
0.0
         rc 5.19e-11p 2.75e-05p 0.003089p 0.003089p 0.003791p 0.010149p 0.013971o 0.002235o 0.013918n 0.013971m       0.0
0.0

  ag half life from 80eng2; cd, in, sn, sb, te half lives 89wal1.
1

    mass number    128              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       46 pd g   47 ag g   48 cd g   49 in g   50 sn d   50 sn g   51 sb m   51 sb g   52 te g   53 i  g   54 xe g
half life              0.094s    0.28 s    0.80 s     2.5 s    59.1 m    10.1 m     9.1 h    stable    25.00m    stable
lambda            0.0 7.374e+00 2.476e+00 8.664e-01 2.773e-01 1.955e-04 1.144e-03 2.116e-05       0.0 4.621e-04       0.0
 z - 1 g    100.0000  100.0000  100.0000   99.8780       0.0   99.9390   99.8000    0.2000  100.0000   -6.3000   93.7000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0    2.9200  100.0000       0.0       0.0       0.0       0.0       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.214962n      0.0       0.0
zp 50.14 ri      0.0       0.0  2.88e-07p 0.006537p       0.0  0.177979p 0.019143p 0.011243p 1.14e-05p 1.56e-12p       0.0
sig0.350 cc      0.0       0.0  2.88e-07p 0.006537p       0.0  0.184515p 0.203287p 0.011611p 0.214909p 1.56e-12p 1.46e-12p
         rc      0.0       0.0  2.88e-07p 0.006537p 5.43e-05o 0.184567p 0.203340o 0.011612p 0.214964n 1.56e-12p 1.46e-12p
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.486636n      0.0       0.0
zp 50.11 ri      0.0       0.0  1.07e-06p 0.013171p       0.0  0.429715p 0.027178p 0.015962p 1.84e-05p 1.35e-12p       0.0
sig0.350 cc      0.0       0.0  1.07e-06p 0.013165p       0.0  0.442900p 0.469179p 0.016840p 0.486037p 1.35e-12p 1.26e-12p
         rc      0.0       0.0  1.07e-06p 0.013172p 0.000631o 0.443510p 0.469801o 0.016849p 0.486668n 1.35e-12p 1.27e-12p
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.101948n      0.0       0.0
zp 49.84 ri      0.0  1.21e-12p 6.76e-06p 0.017087p       0.0  0.081618p 0.001846p 0.001084p 9.95e-08p       0.0       0.0
sig0.350 cc      0.0  1.21e-12p 6.76e-06p 0.017094p       0.0  0.098702p 0.100351p 0.001282p 0.101633p       0.0       0.0
         rc      0.0  1.21e-12p 6.76e-06p 0.017094p 0.000329o 0.099031p 0.100679o 0.001282p 0.101962n       0.0       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.154564n      0.0       0.0
zp 50.14 ri      0.0       0.0  2.21e-07p 0.005303p       0.0  0.126125p 0.014547p 0.008544p 7.49e-06p 1.08e-12p       0.0
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sig0.350 cc      0.0       0.0  2.21e-07p 0.005303p      0.0  0.131427p 0.145710p 0.008806p 0.154523p 1.08e-12p 1.01e-12p
         rc      0.0       0.0  2.21e-07p 0.005303p 4.09e-05o 0.131466p 0.145750o 0.008807p 0.154564n 1.08e-12p 1.02e-12p
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.455094n      0.0       0.0
zp 50.31 ri      0.0       0.0  5.40e-08p 0.004780p      0.0  0.317685p 0.083133p 0.048824p 0.000147p 8.15e-11p      0.0
sig0.350 cc      0.0       0.0  5.40e-08p 0.004778p      0.0  0.322518p 0.404970p 0.049448p 0.454565p 8.15e-11p 7.64e-11p
         rc      0.0       0.0  5.40e-08p 0.004780p 0.000563o 0.323025p 0.405512o 0.049470p 0.455129n 8.15e-11p 7.64e-11p
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.168887n      0.0       0.0
zp 50.16 ri      0.0       0.0  2.26e-06p 0.064356p      0.0  1.746265n 0.225385p 0.132370p 0.000137p 2.37e-11p      0.0
sig0.350 cc      0.0       0.0  2.26e-06p 0.064353p      0.0  1.810610p 2.032358p 0.135981p 2.168476p 2.37e-11p 2.22e-11p
         rc      0.0       0.0  2.26e-06p 0.064358p 0.000494o 1.811078m 2.032841m 0.135992p 2.168970l 2.37e-11p 2.22e-11p
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.570899n      0.0       0.0
zp 50.13 ri      0.0       0.0  8.61e-07p 0.020052p      0.0  0.466765p 0.052849p 0.031038p 2.65e-05p 3.71e-12p      0.0
sig0.350 cc      0.0       0.0  8.60e-07p 0.020050p      0.0  0.486816p 0.538684p 0.032008p 0.570718p 3.71e-12p 3.48e-12p
         rc      0.0       0.0  8.61e-07p 0.020053p 0.000182o 0.486988p 0.538862o 0.032012p 0.570901n 3.71e-12p 3.48e-12p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.898487n      0.0       0.0
zp 50.26 ri 4.46e-10p 5.58e-06p 0.004693p 0.291936p      0.0  1.610076n 0.402811p 0.533976p 0.053751p 0.000248p 7.99e-08p
sig0.597 cc 4.46e-10p 5.58e-06p 0.004698p 0.296578p      0.0  1.906678p 2.305621p 0.537699p 2.897076p 0.000248p 0.000232p
         rc 4.46e-10p 5.58e-06p 0.004698p 0.296628p 0.001726o 1.908249m 2.307244m 0.537793o 2.898803m 0.000248p 0.000232p
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.063261n      0.0       0.0
zp 50.31 ri      0.0       0.0  1.35e-07p 0.007545p      0.0  0.837859o 0.136660p 0.080270p 0.000405p 1.42e-10p      0.0
sig0.350 cc      0.0       0.0  1.35e-07p 0.007543p      0.0  0.845430p 0.980386p 0.081944p 1.062735p 1.42e-10p 1.33e-10p
         rc      0.0       0.0  1.35e-07p 0.007545p 0.000515o 0.845914o 0.980883n 0.081962p 1.063250m 1.42e-10p 1.33e-10p
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.019950n      0.0       0.0
zp 49.69 ri      0.0  3.58e-12p 7.20e-06p 0.005266p      0.0  0.014452p 0.000112p 6.58e-05p 2.24e-09p      0.0       0.0
sig0.350 cc      0.0  3.58e-12p 7.20e-06p 0.005273p      0.0  0.019722p 0.019795p 0.000105p 0.019900p      0.0       0.0
         rc      0.0  3.58e-12p 7.20e-06p 0.005273p 5.23e-05o 0.019775p 0.019847o 0.000105p 0.019952n      0.0       0.0

  ag half life from 80eng2; cd, in, sn, sb half lives from 89wal1.
1
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mass number 129 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te m 52 te g 53 i g 54 xe g 55 cs g 56 ba g

half life 0.27 s 1.23 s 0.63s 6.9 m 2.4 m 4.40 h 33.6 d 1.16 h 1.6e7y stable 32.06h 2.1 h

lambda 2.567e+00 5.635e-01 1.100e+00 1.674e-03 4.814e-03 4.376e-05 2.388e-07 1.660e-04 1.374e-15 0.0 6.006e-06 9.169e-05

z - 1 g 100.0000 0.0 100.0000 0.0 97.0800 100.0000 16.6000 83.4000 100.0000 100.0000 -100.0000 -100.0000

z - 1 m 0.0 0.0 0.0 0.0 100.0000 100.0000 0.0 0.0 36.4000 0.0 0.0 0.0

z - 0 m 0.0 0.0 0.0 1.0400 0.0 0.0 0.0 63.6000 0.0 0.0 0.0 0.0

cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.396761k 0.0 0.0 0.0 0.0 0.0 0.0

zp 50.31 ri 4.44e-08p 0.001859p 0.001859p 0.082224p 0.201308p 0.109377p 9.96e-05p 4.07e-05p 7.38e-11p 0.0 0.0 0.0

sig0.350 cc 4.44e-08p 0.001859p 0.001859p 0.082217p 0.204952p 0.396573p 0.065931p 0.372714p 0.396713p 0.396713p 0.0 0.0

rc 4.44e-08p 0.001859p 0.001859p 0.082416p 0.204972p 0.396765k 0.065963k 0.372895k 0.396905k 0.396905k 0.0 0.0

cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.735055k 0.0 0.466859k 0.0 0.744988n 0.0 0.0

zp 50.29 ri 0.000422p 0.021191p 0.021191p 0.121620p 0.298037p 0.188161p 0.007255p 0.002963p 1.69e-05p 2.06e-09p 0.0 0.0

sig0.551 cc 0.000421p 0.021107p 0.021528p 0.121256p 0.338876p 0.649981p 0.115160p 0.618293p 0.660228p 0.660228p 0.0 0.0

rc 0.000422p 0.021191p 0.021613p 0.121875p 0.340209p 0.650245k 0.115195l 0.618532j 0.660480j 0.660480j 0.0 0.0

cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.322203k 0.0 0.0 0.0 0.0 0.0 0.0

zp 50.02 ri 2.34e-06p 0.011269p 0.011269p 0.079120p 0.193631p 0.026823p 2.52e-06p 1.03e-06p 0.0 0.0 0.0 0.0

sig0.350 cc 2.34e-06p 0.011266p 0.011268p 0.079101p 0.215867p 0.321784p 0.053419p 0.302343p 0.321788p 0.321788p 0.0 0.0

rc 2.34e-06p 0.011269p 0.011271p 0.079548p 0.215841o 0.322212k 0.053490k 0.302745k 0.322215k 0.322215k 0.0 0.0

es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.310341j 0.0 0.0 0.0 0.0 0.0 0.0

zp 50.33 ri 2.72e-08p 0.001402p 0.001402p 0.061269p 0.150004p 0.096125p 8.74e-05p 3.57e-05p 7.99e-11p 0.0 0.0 0.0

sig0.350 cc 2.72e-08p 0.001402p 0.001402p 0.061269p 0.152767p 0.310162p 0.051574p 0.291512p 0.310285p 0.310285p 0.0 0.0

rc 2.72e-08p 0.001402p 0.001402p 0.061452p 0.152767p 0.310344j 0.051605j 0.291683j 0.310467j 0.310467j 0.0 0.0

fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.815817j 0.0 0.0 0.0 0.0 0.0 0.0
zp 50.56 ri 0.000387p 0.018909p 0.018909p 0.106002p 0.259709p 0.412314o 0.038956p 0.015912p 0.000736p 8.62e-07p 8.15e-11p 0.0
sig0.619 cc 0.000387p 0.018907p 0.019293p 0.106064p 0.297310p 0.815675p 0.174353p 0.807071p 0.871271p 0.871272p 8.15e-11p 0.0
rc 0.000387p 0.018909p 0.019296p 0.106154p 0.297350p 0.815819j 0.174382m 0.807212j 0.871423j 0.871424j 8.15e-11p 0.0
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.263589k 0.0 0.0 0.0 0.0 0.0 0.0
zp 50.26 ri 5.52e-07p 0.016919p 0.016919p 0.484968p 1.188552n 0.555764p 0.000312p 0.000128p 1.68e-10p 0.0 0.0 0.0
sig0.350 cc 5.52e-07p 0.016915p 0.016915p 0.485328p 1.221554p 2.262629p 0.375909p 2.126238p 2.263069p 2.263069p 0.0 0.0
rc 5.52e-07p 0.016919p 0.016920p 0.485964p 1.221897m 2.263625k 0.376074k 2.127174j 2.264065j 2.264065j 0.0 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.858659m 0.0 0.0 0.0 0.0 0.0 0.0
zp 50.26 ri 1.98e-07p 0.006250p 0.006250p 0.183040p 0.449014p 0.213590p 0.000123p 5.04e-05p 6.82e-11p 0.0 0.0 0.0
sig0.350 cc 1.98e-07p 0.006247p 0.006247p 0.183307p 0.461097p 0.857961p 0.142545p 0.806248p 0.858135p 0.858135p 0.0 0.0
rc 1.98e-07p 0.006250p 0.006250p 0.183762p 0.461331p 0.858684l 0.142665l 0.806927l 0.858857l 0.858857l 0.0 0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.298783n 0.0 0.0
zp 50.58 ri 0.000827p 0.058308p 0.058308p 0.245305p 1.118126n 1.618172n 0.163290p 0.035844p 0.002098p 1.60e-06p 8.12e-11p 0.0
sig0.597 cc 0.000827p 0.058306p 0.059133p 0.245431p 1.233784p 3.097329p 0.677439p 3.049866p 3.298552p 3.298553p 8.12e-11p 0.0
rc 0.000827p 0.058308p 0.059136p 0.245580p 1.233843m 3.097595l 0.677491n 3.050123l 3.298827l 3.298828l 8.12e-11p 0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.554528i 0.0 0.0 0.0 2.075202n 0.0 0.0
zp 50.66 ri 0.000209p 0.017431p 0.017431p 0.213481p 0.522776p 0.805170n 0.135219p 0.052339p 0.001471p 1.35e-06p 4.12e-11p 0.0
sig0.583 cc 0.000214p 0.017830p 0.018044p 0.218416p 0.570089p 1.612130p 0.375275p 1.627166p 1.765001p 1.765002p 3.45e-11p 0.0

rc 0.000209p 0.017431p 0.017640p 0.213574p 0.557333o 1.576077i 0.396848n 1.619182j 1.765106j 1.765107j 4.12e-11p
0.0
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.026590l 0.0 0.0
zp 49.86 ri 1.43e-06p 0.001791p 0.001791p 0.006443p 0.015775p 0.000766p 2.53e-08p 1.03e-08p 0.0 0.0 0.0 0.0
sig0.350 cc 1.43e-06p 0.001791p 0.001792p 0.006443p 0.019306p 0.026515p 0.004402p 0.024913p 0.026515p 0.026515p 0.0
0.0
rc 1.43e-06p 0.001791p 0.001792p 0.006518p 0.019306p 0.026590o 0.004414o 0.024984n 0.026590m 0.026590k 0.0
0.0

cd, in, sn, sb, te, i half lives 89wal1. sb-te branching to fit data; cs half life 90bur1.

1

mass number 130 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 46 pd g 47 ag g 48 cd g 49 in g 50 sn d 50 sn g 51 sb m 51 sb g 52 te g 53 i m 53 i g 54 xe g
half life 0.20 s 0.29 s 0.28 s 3.7 m 6.5 m 38.4 m stable 8.9 m 12.36h stable
lambda 0.0 0.0 3.466e+00 2.390e+00 2.476e+00 3.122e-03 1.777e-03 3.008e-04 0.0 1.298e-03 1.558e-05 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 98.9600 90.0000 10.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 15.0000
z - 0 m 0.0 0.0 0.0 0.0 1.8400 100.0000 0.0 0.0 0.0 0.0 85.0000 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.879388n 0.0 0.0 0.0
zp 50.66 ri 0.0 1.76e-08p 8.23e-05p 0.018352p 0.0 0.341165p 0.285003p 0.167384p 0.067511p 0.000183p 0.000426p
4.05e-07p
sig0.577 cc 0.0 1.76e-08p 8.24e-05p 0.018434p 0.0 0.359421p 0.608476p 0.203321p 0.879306p 0.000183p 0.000581p
0.000609p
rc 0.0 1.76e-08p 8.24e-05p 0.018435p 8.68e-05o 0.359495p 0.608549p 0.203333p 0.879393n 0.000183p 0.000581p
0.000609p
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.990550i 0.0 0.0 0.0
zp 50.69 ri 0.0 5.54e-09p 8.89e-05p 0.024378p 0.0 0.888894p 0.566122p 0.332484p 0.178745p 0.000243p 0.000567p
4.30e-07p
sig0.551 cc 0.0 5.54e-09p 8.89e-05p 0.024467p 0.0 0.913120p 1.387924p 0.423793p 1.990459p 0.000243p 0.000774p
0.000811p

rc 0.0 5.54e-09p 8.89e-05p 0.024467p 9.16e-05o 0.913199o 1.388001n 0.423804p 1.990551i 0.000243p 0.000774p 0.000811p
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.027543n 0.0 0.0 0.0
zp 50.22 ri 0.0 0.0 9.34e-07p 0.041102p 0.0 1.562663n 0.266118p 0.156289p 0.000245p 1.99e-11p 4.65e-11p 0.0
sig0.350 cc 0.0 0.0 9.34e-07p 0.041093p 0.0 1.603431p 1.709147p 0.316600p 2.025992p 1.99e-11p 6.34e-11p 6.63e-11p
rc 0.0 0.0 9.34e-07p 0.041103p 0.001777o 1.605117m 1.710723m 0.316801o 2.027769m 1.99e-11p 6.34e-11p 6.64e-11p
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.579615n 0.0 0.0 0.0
zp 50.68 ri 7.78e-12p 1.17e-07p 0.000150p 0.017413p 0.0 0.208321p 0.188973p 0.110986p 0.053849p 0.000316p 0.000736p 1.94e-06p
sig0.627 cc 7.78e-12p 1.17e-07p 0.000150p 0.017561p 0.0 0.225717p 0.392111p 0.133552p 0.579508p 0.000316p 0.001005p 0.001054p
rc 7.78e-12p 1.17e-07p 0.000150p 0.017562p 0.000113o 0.225814p 0.392206p 0.133567p 0.579622n 0.000316p 0.001005p 0.001054p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.498390n 0.0 0.0 0.0
zp 50.95 ri 0.0 1.92e-08p 5.79e-05p 0.014547p 0.0 0.339757p 0.550113p 0.323083p 0.270936p 0.002725p 0.006358p 2.79e-05p
sig0.619 cc 0.0 1.92e-08p 5.79e-05p 0.014605p 0.0 0.354220p 0.868907p 0.358502p 1.498341p 0.002725p 0.008674p 0.009111p
rc 0.0 1.92e-08p 5.79e-05p 0.014605p 5.15e-05o 0.354261p 0.868948o 0.358509p 1.498393m 0.002725p 0.008675p 0.009111p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.482331n 0.0 0.0 0.0
zp 50.46 ri 0.0 6.18e-08p 0.000381p 0.095415p 0.0 1.219796n 0.692377p 0.406637p 0.068361p 6.34e-05p 0.000148p 2.64e-08p
sig0.543 cc 0.0 6.18e-08p 0.000381p 0.095791p 0.0 1.314638p 1.875528p 0.538084p 2.481970p 6.34e-05p 0.000202p 0.000212p
rc 0.0 6.18e-08p 0.000381p 0.095795p 0.000402o 1.314998m 1.875875n 0.538136p 2.482372m 6.34e-05p 0.000202p 0.000212p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.545127n 0.0 0.0 0.0

zp 50.55 ri 5.14e-11p 6.77e-07p 0.000729p 0.068769p 0.0 0.651220p 0.458479p 0.269268p 0.097048p 0.000397p 0.000926p 1.60e-06p
sig0.621 cc 5.14e-11p 6.77e-07p 0.000730p 0.069494p 0.0 0.720040p 1.106494p 0.341257p 1.544792p 0.000397p 0.001263p 0.001324p
rc 5.14e-11p 6.77e-07p 0.000730p 0.069499p 0.000361o 0.720358o 1.106801o 0.341304p 1.545153m 0.000397p 0.001263p 0.001325p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.598122n 0.0 0.0 0.0
zp 50.96 ri 0.0 1.26e-08p 6.95e-05p 0.026404p 0.0 0.776125p 0.927641p 1.229667n 0.638425p 0.003158p 0.014386p 3.68e-05p
sig0.597 cc 0.0 1.26e-08p 6.95e-05p 0.026473p 0.0 0.802337p 1.649742p 1.309894p 3.598056p 0.003158p 0.017070p 0.017580p
rc 0.0 1.26e-08p 6.95e-05p 0.026473p 7.20e-05o 0.802395o 1.649796n 1.309907m 3.598128m 0.003158p 0.017070p 0.017580p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.996462n 0.0 0.0 0.0
zp 51.06 ri 0.0 1.21e-09p 2.21e-05p 0.008975p 0.0 0.650372p 0.926953p 0.544401p 0.865815p 0.004913p 0.011463p 5.63e-05p
sig0.583 cc 0.0 1.21e-09p 2.21e-05p 0.008997p 0.0 0.659279p 1.520303p 0.610328p 2.996444p 0.004913p 0.015639p 0.016432p
rc 0.0 1.21e-09p 2.21e-05p 0.008997p 1.90e-05o 0.659294o 1.520317n 0.610330o 2.996463m 0.004913p 0.015639p 0.016432p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.139649n 0.0 0.0 0.0
zp 50.05 ri 0.0 0.0 6.97e-07p 0.007188p 0.0 0.120559p 0.007471p 0.004388p 2.31e-06p 0.0 0.0 0.0
sig0.350 cc 0.0 0.0 6.97e-07p 0.007187p 0.0 0.127677p 0.122378p 0.017154p 0.139534p 0.0 0.0 0.0
rc 0.0 0.0 6.97e-07p 0.007189p 0.000119o 0.127792p 0.122484o 0.017167o 0.139653n 0.0 0.0 0.0

cd, in, sn, sb half lives from 89wal1; i half life 90bur1.
1

mass number 131 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 48 cd g 49 in g 50 sn d 50 sn g 51 sb g 52 te m 52 te g 53 i g 54 xe m 54 xe g 55 cs g 56 ba g
half life 0.106s 0.28 s 0.12s 39. s 23.0 m 1.35 d 25.0 m 8.040d 11.9 d stable 9.69 d 11.7 d
lambda 6.539e+00 2.476e+00 5.776e+00 1.777e-02 5.023e-04 5.943e-06 4.621e-04 9.978e-07 6.742e-07 0.0 8.279e-07 6.857e-07

```
  z - 1 g    100.0000  100.0000       0.0   98.1600  100.0000    7.0000   93.0000  100.0000    1.4000   98.6000 -100.0000 -100.0000
  z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0   82.0000       0.0       0.0       0.0       0.0
  z - 0 m       0.0       0.0    5.3600  100.0000       0.0       0.0   18.0000       0.0       0.0  100.0000       0.0       0.0
  cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.733025i      0.0  1.679035i      0.0       0.0
 zp 51.09 ri 6.30e-06p 0.004713p       0.0  0.270307p 0.996637n 0.299496p 0.121529p 0.012031p 1.90e-05p 7.76e-06p 2.81e-09p
0.0
 sig0.577 cc 6.30e-06p 0.004717p       0.0  0.274818p 1.270983p 0.388322p 1.374183p 1.704632p 0.023884p 1.704659p 2.86e-09p
0.0
          rc 6.30e-06p 0.004719p 2.65e-05o 0.274967p 1.271604m 0.388508p 1.374052m 1.704659i 0.023884i 1.704686h 2.81e-09p
0.0
  cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.142558k      0.0  3.000008h      0.0       0.0
 zp 51.10 ri 4.14e-06p 0.004972p       0.0  0.479337p 1.703817n 0.571666p 0.229295p 0.014970p 1.59e-05p 6.48e-06p 8.78e-10p
0.0
 sig0.551 cc 4.13e-06p 0.004969p       0.0  0.483550p 2.184983p 0.723814p 2.395491p 3.003968p 0.042072p 3.003991p 9.13e-10p
0.0
          rc 4.14e-06p 0.004976p 2.10e-05o 0.484242o 2.188059m 0.724830o 2.394659l 3.003990i 0.042072k 3.004012g 8.78e-10p
0.0
  cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.700558i      0.0  2.215380k      0.0       0.0
 zp 50.54 ri 0.000572p 0.096015p       0.0  1.152905n 1.245273n 0.088916p 0.036318p 0.000910p 2.59e-07p 1.06e-07p 8.95e-12p
0.0
 sig0.579 cc 0.000570p 0.096217p       0.0  1.243335p 2.493479p 0.263118p 2.402475p 2.619139p 0.036668p 2.619139p 9.81e-12p
0.0
          rc 0.000572p 0.096587p 0.001314o 1.249030m 2.494303l 0.263517o 2.403453k 2.620446i 0.036687i 2.620447h 8.95e-12p
0.0
  es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.136186k      0.0       0.0       0.0       0.0
 zp 51.10 ri 1.95e-05p 0.006148p       0.0  0.187603p 0.647065p 0.199616p 0.081534p 0.014235p 5.08e-05p 2.08e-05p 3.21e-08p
1.22e-12p
 sig0.627 cc 1.95e-05p 0.006167p       0.0  0.193677p 0.840730p 0.258462p 0.909933p 1.136106p 0.015956p 1.136178p 3.21e-08p
1.22e-12p
          rc 1.95e-05p 0.006168p 7.84e-05o 0.193735p 0.840800o 0.258472p 0.910002n 1.136184k 0.015957k 1.136256k 3.21e-08p
1.22e-12p
  fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.439257i 0.0 0.0 0.0 0.0
zp 51.39 ri 3.76e-06p 0.002795p 0.0 0.182360p 1.211678n 0.678257p 0.277034p 0.087167p 0.000553p 0.000226p 5.97e-07p 3.66e-11p
sig0.619 cc 3.76e-06p 0.002799p 0.0 0.185111p 1.396788p 0.776031p 1.715732p 2.439244p 0.034702p 2.440023p 5.97e-07p 3.66e-11p
rc 3.76e-06p 0.002799p 1.33e-05o 0.185121p 1.396799m 0.776033o 1.715743m 2.439257i 0.034703i 2.440037i 5.97e-07p 3.66e-11p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.214965k 0.0 0.0 0.0 0.0
zp 50.84 ri 2.63e-05p 0.021846p 0.0 0.833022p 2.000843n 0.252684p 0.103209p 0.003565p 1.09e-06p 4.43e-07p 2.48e-11p 0.0
sig0.543 cc 2.63e-05p 0.021872p 0.0 0.854531p 2.855343p 0.452552p 2.840135p 3.214793p 0.045008p 3.214795p 2.48e-11p 0.0
rc 2.63e-05p 0.021872p 0.000174o 0.854666o 2.855509m 0.452570o 2.840295l 3.214967k 0.045011k 3.214969k 2.48e-11p 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.536948m 0.0 0.0 0.0 0.0
zp 51.00 ri 7.02e-05p 0.019565p 0.0 0.510332p 1.470066n 0.367084p 0.149936p 0.020098p 5.20e-05p 2.12e-05p 2.25e-08p 0.0
sig0.621 cc 7.02e-05p 0.019635p 0.0 0.529648p 1.999686p 0.507052p 2.100910p 2.536789p 0.035567p 2.536863p 2.25e-08p 0.0
rc 7.02e-05p 0.019636p 0.000169o 0.529775o 1.999841m 0.507073p 2.101061m 2.536958l 0.035569l 2.537032l 2.25e-08p 0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.493525m 0.0 4.109240i 0.0 0.0
zp 51.35 ri 3.65e-06p 0.003907p 0.0 0.305402p 2.076563n 1.210855n 0.387976p 0.105253p 0.000580p 0.000127p 2.91e-07p 7.86e-12p
sig0.597 cc 3.77e-06p 0.004032p 0.0 0.318777p 2.459319p 1.420313p 2.816810p 4.089962p 0.057778p 4.090595p 2.60e-07p 7.03e-12p
rc 3.65e-06p 0.003911p 1.99e-05o 0.309261p 2.385825m 1.377863l 2.854808l 4.089909j 0.057838k 4.090617h 2.91e-07p 7.86e-12p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.401675o 0.0 3.749399h 0.0 0.0 0.0 0.0
zp 51.49 ri 6.19e-07p 0.001033p 0.0 0.190600p 1.500099n 1.347135n 0.570645p 0.137723p 0.000864p 0.000353p 3.94e-07p 1.30e-11p

sig0.583 cc 6.15e-07p 0.001027p 0.0 0.190338p 1.680431p 1.490260p 2.391699p 3.747226p 0.053320p 3.748436p 3.91e-07p 1.29e-11p
rc 6.19e-07p 0.001034p 3.06e-06o 0.191618p 1.691717m 1.465555m 2.407742l 3.747221h 0.053326h 3.748439h 3.94e-07p 1.30e-11p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.405422m 0.0 0.449177h 0.0 0.0
zp 50.25 ri 1.36e-07p 0.006450p 0.0 0.348817p 0.092175p 5.55e-05p 2.27e-05p 2.29e-11p 0.0 0.0 0.0 0.0
sig0.350 cc 1.37e-07p 0.006487p 0.0 0.354615p 0.447321p 0.031368p 0.421678p 0.447400p 0.006264p 0.447400p 0.0 0.0
rc 1.36e-07p 0.006450p 0.001490o 0.356638p 0.448812n 0.031472o 0.423083l 0.448890j 0.006284l 0.448890h 0.0 0.0

cd half life from 80eng2; in, sn, sb, te, i, xe half lives from 89wal1.

1

mass number 132 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 48 cd g 49 in g 50 sn g 51 sb m 51 sb g 52 te g 53 i g 54 xe g 55 cs g 56 ba g
half life 0.136s 0.20 s 40. s 2.8 m 4.2 m 3.26 d 2.28 h stable 6.475d stable
lambda 5.097e+00 3.466e+00 1.733e-02 4.126e-03 2.751e-03 2.461e-06 8.445e-05 0.0 1.239e-06 0.0
z - 1 g 100.0000 100.0000 94.6400 50.0000 50.0000 100.0000 100.0000 100.0000 -97.8000 2.2000
z - 1 m 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.2550 0.0 0.0 0.0 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.315353i 0.0 2.473312i 0.0 0.0
zp 51.53 ri 1.88e-07p 0.000494p 0.093873p 0.430965p 0.595142p 1.224845m 0.113452p 0.000852p 3.20e-07p 7.99e-12p
sig0.577 cc 1.88e-07p 0.000496p 0.094543p 0.479159p 0.643687p 2.350314p 2.458760p 2.459596p 3.14e-07p 6.91e-09p
rc 1.88e-07p 0.000495p 0.094341p 0.478135p 0.642312o 2.345293i 2.458744i 2.459597h 3.20e-07p 7.04e-09p
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.022625i 0.0 4.208076h 0.0 0.0
zp 51.52 ri 1.07e-07p 0.000393p 0.163429p 0.611347p 0.844242p 2.447104m 0.126888p 0.000848p 1.03e-07p 1.30e-12p
sig0.551 cc 1.07e-07p 0.000393p 0.164056p 0.694326p 0.927583p 4.072820p 4.193393p 4.194229p 1.02e-07p 2.24e-09p
rc 1.07e-07p 0.000393p 0.163801p 0.693248o 0.926142o 4.066494i 4.193381i 4.194229h 1.03e-07p 2.27e-09p
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.432765i 0.0 3.739080k 0.0 0.0
zp 50.97 ri 4.42e-05p 0.024479p 0.887699p 1.114149n 1.538586n 0.755599p 0.016045p 2.40e-05p 2.05e-09p 0.0
sig0.579 cc 4.42e-05p 0.024516p 0.910615p 1.569097p 1.993398p 4.317851p 4.335285p 4.335311p 2.23e-09p 4.90e-11p

rc 4.42e-05p 0.024524p 0.910908o 1.569603m 1.994040m 4.319242i 4.335287i 4.335311h 2.05e-09p 4.51e-11p
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.371171k 0.0 0.0 0.0 0.0
zp 51.54 ri 1.60e-06p 0.001461p 0.122608p 0.454047p 0.627018p 1.166114n 0.155037p 0.002192p 2.88e-06p 3.25e-10p
sig0.627 cc 1.60e-06p 0.001463p 0.123992p 0.516043p 0.689014p 2.371171p 2.526209p 2.528403p 2.88e-06p 6.36e-08p
rc 1.60e-06p 0.001463p 0.123992p 0.516043p 0.689014o 2.371171k 2.526209k 2.528403k 2.88e-06p 6.36e-08p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.672529m 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.839103j 0.0 0.0 0.0 0.0
zp 51.85 ri 1.05e-07p 0.000247p 0.048734p 0.380321p 0.525206p 1.881934l 0.671896p 0.012517p 3.00e-05p 5.92e-09p
sig0.619 cc 1.12e-07p 0.000262p 0.051931p 0.429296p 0.582946p 3.008032p 3.507565p 3.520870p 3.19e-05p 7.07e-07p
rc 1.05e-07p 0.000247p 0.048968p 0.404806p 0.549690o 2.836429i 3.508325l 3.520871l 3.00e-05p 6.67e-07p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.760336k 0.0 0.0 0.0 0.0
zp 51.24 ri 1.08e-06p 0.003253p 0.413091p 1.207559n 1.667582n 1.469025n 0.048526p 7.50e-05p 4.55e-09p 0.0
sig0.543 cc 1.08e-06p 0.003254p 0.416170p 1.415644p 1.875667p 4.760336p 4.808862p 4.808937p 4.55e-09p 1.00e-10p
rc 1.08e-06p 0.003254p 0.416170p 1.415644m 1.875667m 4.760336j 4.808862j 4.808937j 4.55e-09p 1.00e-10p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.833124l 0.0 0.0 0.0 0.0
zp 51.46 ri 3.66e-06p 0.003150p 0.240011p 0.783064p 1.081375n 1.725689n 0.188796p 0.002079p 2.01e-06p 1.59e-10p
sig0.621 cc 3.66e-06p 0.003153p 0.242995p 0.904562p 1.202872p 3.833123p 4.021919p 4.024000p 2.01e-06p 4.44e-08p
rc 3.66e-06p 0.003153p 0.242995p 0.904562o 1.202872m 3.833123k 4.021919k 4.024000k 2.01e-06p 4.44e-08p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.221753m 0.0 4.394001i 0.0 0.0
zp 51.75 ri 1.19e-07p 0.000372p 0.081438p 0.873855p 0.558694p 2.468760n 0.407296p 0.007104p 8.53e-06p 6.89e-10p
sig0.597 cc 1.17e-07p 0.000367p 0.080645p 0.901944p 0.591195p 3.942340p 4.390231p 4.397509p 8.73e-06p 1.93e-07p
rc 1.19e-07p 0.000372p 0.081790p 0.914750o 0.599589o 3.983100l 4.390396j 4.397509h 8.53e-06p 1.88e-07p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.011139h 4.891553i 0.0 0.0 0.0
zp 51.93 ri 1.21e-08p 5.70e-05p 0.043064p 0.351340p 0.485183p 3.708734k 0.561978p 0.020186p 1.82e-05p 2.60e-09p
sig0.583 cc 1.20e-08p 5.65e-05p 0.042764p 0.369829p 0.502571p 4.550604p 5.149042p 5.170558p 1.94e-05p 4.29e-07p
rc 1.21e-08p 5.70e-05p 0.043118p 0.372899p 0.506742o 4.588375h 5.150353i 5.170558i 1.82e-05p 4.03e-07p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.928050j 3.498341j 3.318660f 0.0 0.0
zp 50.68 ri 2.15e-05p 0.027773p 1.286202n 0.771095p 1.064845n 0.177449p 0.000344p 2.07e-08p 0.0 0.0
sig0.497 cc 2.15e-05p 0.027794p 1.312494p 1.427334p 1.721082p 3.325863p 3.326240p 3.326240p 0.0 0.0
rc 2.15e-05p 0.027795p 1.312507m 1.427349o 1.721099m 3.325896j 3.326240h 3.326240f 0.0 0.0

cd half life from 80eng2; in, sn, sb, te, i half lives 89wal1; cs half life 90bur1.

1

mass number 133 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 49 in g 50 sn g 51 sb d 51 sb g 52 te m 52 te g 53 i g 54 xe m 54 xe g 55 cs g 56 ba g 57 la g
half life 0.18 s 1.44 s 1.04s 2.5 m 55.4 m 12.4 m 20.8 h 2.19 d 5.243d stable 10.74y 4. h
lambda 3.851e+00 4.814e-01 6.665e-01 4.621e-03 2.085e-04 9.316e-04 9.257e-06 3.663e-06 1.530e-06 0.0 2.047e-09
4.814e-05
z - 1 g 100.0000 100.0000 0.0 99.7450 42.0000 58.0000 100.0000 2.8000 97.2000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 87.0000 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 18.3000 100.0000 0.0 13.0000 0.0 0.0 100.0000 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.886900i 0.0 0.0 0.0 0.0 0.0
zp 51.98 ri 3.07e-05p 0.020517p 0.0 0.718782p 1.764524n 0.720718p 0.661989p 0.012246p 0.005002p 2.34e-05p 2.18e-09p
0.0
sig0.577 cc 3.07e-05p 0.020547p 0.0 0.739339p 2.075006p 1.419272p 3.886509p 0.121068p 3.903756p 3.903780p 2.18e-09p
0.0
rc 3.07e-05p 0.020548p 0.000341o 0.739618o 2.075164m 1.419468n 3.886850i 0.121078k 3.904098h 3.904121h 2.18e-09p
0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.703591h 5.586770i 0.0 0.0
zp 51.96 ri 1.89e-05p 0.024769p 0.0 0.940759p 2.786532n 1.138157n 0.754274p 0.011373p 0.004645p 9.44e-06p 4.00e-10p
0.0
sig0.551 cc 1.89e-05p 0.024734p 0.0 0.963496p 3.185162p 2.108594p 5.644481p 0.169394p 5.660465p 5.660474p 4.03e-10p
0.0
rc 1.89e-05p 0.024788p 0.000449o 0.965933o 3.192223m 2.113387m 5.644895j 0.169430l 5.660914h 5.660923g 4.00e-10p
0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.264061i 0.0 0.0 0.0 0.0 0.0
zp 51.41 ri 0.002602p 0.306166p 0.0 2.656823n 1.516447n 0.619408p 0.153734p 0.000555p 0.000227p 2.38e-07p 4.00e-12p
0.0
sig0.579 cc 0.002601p 0.308636p 0.0 2.965511p 2.761468p 2.698180p 5.254393p 0.147678p 5.255175p 5.255175p 3.99e-12p
0.0

rc 0.002602p 0.308768p 0.009042o 2.973845m 2.765462l 2.703748m 5.263434i 0.147932i 5.264216i 5.264216i 4.00e-12p
0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.647808k 0.0 0.0 0.0 0.0 0.0
zp 52.00 ri 9.08e-05p 0.022533p 0.0 0.548650p 1.089669n 0.445073p 0.541343p 0.015554p 0.006353p 8.69e-05p 3.05e-08p
0.0
sig0.627 cc 9.08e-05p 0.022623p 0.0 0.571296p 1.329566p 0.949252p 2.647302p 0.089677p 2.669207p 2.669294p 3.05e-08p
0.0
rc 9.08e-05p 0.022624p 0.000459o 0.571676o 1.329773m 0.949515o 2.647760k 0.089691m 2.669666k 2.669753k 3.05e-08p
0.0
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.219851i 0.0 0.0 0.0 0.0 0.0
zp 52.32 ri 1.15e-05p 0.007202p 0.0 0.398163p 1.611710n 0.658303p 1.544378n 0.085525p 0.034933p 0.000909p 5.85e-07p
3.00e-11p
sig0.619 cc 1.15e-05p 0.007213p 0.0 0.405377p 1.781960p 1.125074p 4.219750p 0.203677p 4.340207p 4.341117p 5.85e-07p
3.00e-11p
rc 1.15e-05p 0.007213p 8.66e-05o 0.405445p 1.781997m 1.125120n 4.219835i 0.203680o 4.340293i 4.341203i 5.85e-07p
3.00e-11p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.420955k 0.0 0.0 0.0 0.0 0.0
zp 51.64 ri 0.000220p 0.096849p 0.0 2.063651n 2.097280n 0.856633p 0.304232p 0.001171p 0.000478p 3.70e-07p 3.09e-12p
0.0
sig0.543 cc 0.000220p 0.097057p 0.0 2.160742p 3.004603p 2.500387p 5.418616p 0.152892p 5.420265p 5.420266p 3.09e-12p
0.0
rc 0.000220p 0.097068p 0.002170o 2.162642m 3.005589m 2.501691m 5.420786k 0.152953k 5.422435j 5.422435j 3.10e-12p
0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.805423m 0.0 0.0 0.0 0.0 0.0
zp 51.93 ri 0.000170p 0.039985p 0.0 0.888623p 1.566993n 0.640035p 0.668804p 0.015717p 0.006420p 6.80e-05p 1.75e-08p
0.0
sig0.621 cc 0.000170p 0.040153p 0.0 0.928819p 1.957015p 1.433133p 3.804510p 0.122242p 3.826645p 3.826713p 1.75e-08p
0.0
rc 0.000170p 0.040155p 0.000859o 0.929535o 1.957398m 1.433627n 3.805367l 0.122267m 3.827503l 3.827571l 1.75e-08p
0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.498340n 0.0 0.0

zp 52.15 ri 2.07e-05p 0.013001p 0.0 0.613042p 2.153116n 0.472633p 1.193642n 0.042972p 0.009433p 0.000181p 4.34e-08p 0.0
sig0.597 cc 2.07e-05p 0.013022p 0.0 0.626096p 2.416040p 1.149848p 4.445422p 0.167443p 4.497826p 4.498007p 4.34e-08p 0.0
rc 2.07e-05p 0.013022p 0.000320o 0.626351o 2.416183m 1.150020o 4.445741l 0.167453n 4.498146l 4.498327l 4.34e-08p 0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 5.845283m 0.0 5.522117h 0.0 5.684682j 0.0 0.0 0.0
zp 52.37 ri 1.50e-06p 0.003146p 0.0 0.239232p 3.386412m 0.669643p 1.379315n 0.089062p 0.036480p 0.000468p 1.90e-07p 2.52e-12p
sig0.583 cc 2.07e-06p 0.004337p 0.0 0.334052p 2.552147p 1.510649p 5.631993p 0.279190p 5.803111p 5.803748p 2.58e-07p 3.42e-12p
rc 1.50e-06p 0.003147p 5.98e-05o 0.242431p 3.488233m 1.263723o 5.677801g 0.248040o 5.803343h 5.803811h 1.90e-07p 2.52e-12p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.782504j 0.0 0.0 5.599123f 0.0 0.0
zp 51.12 ri 0.003009p 0.662657p 0.0 3.554707n 0.958542p 0.391548p 0.014166p 3.46e-06p 1.41e-06p 2.51e-11p 0.0 0.0
sig0.497 cc 0.003007p 0.665254p 0.0 4.219343p 2.730221p 3.193483p 5.582933p 0.156326p 5.582938p 5.582938p 0.0 0.0
rc 0.003009p 0.665666o 0.016576o 4.235251m 2.737348n 3.203849m 5.599508i 0.156790j 5.599512h 5.599512f 0.0 0.0

sb-te branching 66str1; in, sn, sb, te, i, xe half lives 89wal1; ba half life 90bur1.

1

mass number 134 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	48 cd g	49 in g	50 sn g	51 sb g	52 te d	52 te g	53 i m	53 i g	54 xe m	54 xe g	55 cs g	56 ba g
half life	0.081s	1.04 s	0.8 s	1.82 s	42. m	3.7 m	52.6 m	0.29 s	stable	2.062y	stable	
lambda	0.0	8.557e+00	6.665e-01	8.664e-01	3.809e-01	2.751e-04	3.122e-03	2.196e-04	2.390e+00	0.0	1.066e-08	0.0
z - 1 g	100.0000	100.0000	100.0000	81.7000	0.0	100.0000	0.0	100.0000	0.0	100.0000	0.0	100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0000	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	17.8700	100.0000	0.0	98.0000	0.0	100.0000	0.0	0.0
cf250s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.158982i	0.0	0.0

zp 52.42 ri 2.26e-11p 7.95e-07p 0.001865p 0.214082p 0.0 2.165900n 0.687467p 0.948653o 0.093672p 0.040145p 0.000623p 2.08e-07p
sig0.577 cc 2.26e-11p 7.94e-07p 0.001864p 0.215446p 0.0 2.382111p 0.686958p 4.003987p 0.107342p 4.151444p 0.000623p 0.000623p
rc 2.26e-11p 7.95e-07p 0.001866p 0.215606p 0.007586o 2.389091m 0.687467o 4.011463j 0.107422p 4.159029h 0.000623p 0.000624p
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.812607h 0.0 0.0
zp 52.39 ri 6.68e-12p 3.96e-07p 0.002454p 0.270264p 0.0 4.304640n 0.859588o 1.186775n 0.125623p 0.053838p 0.000328p 6.74e-08p
sig0.551 cc 6.67e-12p 3.95e-07p 0.002453p 0.272129p 0.0 4.577784p 0.859144p 6.606183p 0.142741p 6.802734p 0.000328p 0.000328p
rc 6.68e-12p 3.96e-07p 0.002455p 0.272269p 0.009905o 4.586814m 0.859588o 6.615986j 0.142815p 6.812639h 0.000328p 0.000328p
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.985091k 0.0 0.0
zp 51.85 ri 1.83e-08p 0.000124p 0.049284p 1.306639n 0.0 2.916083n 0.263547p 0.362478p 0.007372p 0.003159p 1.12e-05p 6.77e-10p
sig0.579 cc 1.82e-08p 0.000124p 0.049163p 1.340317p 0.0 4.264834p 0.262238p 4.883966p 0.012580p 4.899690p 1.12e-05p 1.12e-05p
rc 1.83e-08p 0.000125p 0.049409p 1.347005m 0.093361o 4.356449m 0.263547p 4.977203l 0.012643p 4.993006k 1.12e-05p 1.12e-05p
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.949038n 0.0 0.0
zp 52.47 ri 3.65e-10p 3.26e-06p 0.002506p 0.178696p 0.0 1.351378n 0.531115p 0.733283p 0.101158p 0.043353p 0.001736p 1.92e-06p
sig0.627 cc 3.65e-10p 3.26e-06p 0.002507p 0.180560p 0.0 1.533411p 0.530570p 2.786061p 0.111665p 2.941036p 0.001735p 0.001736p
rc 3.65e-10p 3.26e-06p 0.002509p 0.180746p 0.009610o 1.541734m 0.531115o 2.795510m 0.111780p 2.950643l 0.001736p 0.001738p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.868274m 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.393433n 0.0 0.0
zp 52.78 ri 9.71e-12p 2.40e-07p 0.000473p 0.078579p 0.0 1.244873n 0.937430n 2.434754n 0.336161p 0.144069p 0.010834p 2.19e-05p
sig0.619 cc 1.24e-11p 3.08e-07p 0.000606p 0.101200p 0.0 1.697275p 1.201387p 4.533693p 0.454843p 5.173172p 0.013884p 0.013912p

rc 9.71e-12p 2.40e-07p 0.000473p 0.078965p 0.001761o 1.325600m 0.937430m 4.679035l 0.354910p 5.178014l 0.010834p 0.010856p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.846565n 0.0 0.0
zp 52.06 ri 1.60e-10p 7.04e-06p 0.011849p 0.870460p 0.0 3.720668n 0.500616o 0.691173p 0.016213p 0.006949p 2.02e-05p 6.76e-10p
sig0.543 cc 1.59e-10p 7.03e-06p 0.011834p 0.878535p 0.0 4.602890p 0.499699p 5.782656p 0.026178p 5.815770p 2.01e-05p 2.01e-05p
rc 1.60e-10p 7.04e-06p 0.011856p 0.880146o 0.039365o 4.640180m 0.500616o 5.821956l 0.026226p 5.855130l 2.02e-05p 2.02e-05p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.098148n 0.0 0.0
zp 52.39 ri 7.35e-10p 6.47e-06p 0.004688p 0.302799p 0.0 2.013220n 0.677621p 0.935522p 0.105819p 0.045351p 0.001409p 1.15e-06p
sig0.621 cc 7.34e-10p 6.46e-06p 0.004688p 0.306247p 0.0 2.321845p 0.676765p 3.919655p 0.119221p 4.084170p 0.001407p 0.001409p
rc 7.35e-10p 6.47e-06p 0.004694p 0.306634p 0.016969o 2.336823m 0.677621o 3.936413m 0.119371p 4.101136l 0.001409p 0.001410p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.443994i 0.0 0.0
zp 52.54 ri 3.65e-11p 9.82e-07p 0.001748p 0.222246p 0.0 2.360459n 1.564730n 1.000652n 0.235595p 0.051716p 0.002732p 1.87e-06p
sig0.597 cc 3.65e-11p 9.82e-07p 0.001748p 0.223588p 0.0 2.585493p 1.564123p 5.118347p 0.266786p 5.436829p 0.002731p 0.002733p
rc 3.65e-11p 9.82e-07p 0.001749p 0.223675p 0.007512o 2.591646m 1.564730m 5.125734j 0.266890p 5.444340h 0.002732p 0.002734p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.586080i 0.914469k 4.051197i 0.0 6.096462n 0.0 0.0
zp 52.80 ri 0.0 3.77e-08p 0.000327p 0.064832p 0.0 2.401102i 0.890159k 1.011313n 0.600720p 0.257451p 0.008229p 1.37e-05p
sig0.583 cc 0.0 3.10e-08p 0.000269p 0.053514p 0.0 2.028034p 1.019518p 4.435066p 0.560253p 5.226688p 0.007395p 0.007408p
rc 0.0 3.77e-08p 0.000327p 0.065099p 0.001319o 2.467520h 0.890159j 4.351188h 0.618523p 5.227162k 0.008229p 0.008243p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.117466j 0.0 4.836316e 0.0 0.0

zp 51.55 ri 2.23e-09p 8.33e-05p 0.090494p 1.954580n 0.0 2.538043l 0.050612p 0.069892p 0.000152p 6.51e-05p 6.07e-09p 0.0
sig0.497 cc 2.19e-09p 8.18e-05p 0.088868p 1.990295p 0.0 4.569217p 0.049657p 4.686453p 0.001142p 4.687659p 5.96e-09p 5.96e-09p
rc 2.23e-09p 8.33e-05p 0.090577p 2.028582m 0.149945o 4.716571i 0.050612p 4.836063g 0.001164p 4.837292e 6.07e-09p 6.07e-09p

in half life from 80eng2; sn, sb, te, i half lives 89wal1; cs half life 90bur1.

1

mass number 135 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 50 sn g 51 sb g 52 te d 52 te g 53 i d 53 i g 54 xe m 54 xe g 55 cs g 56 ba g 57 la g 58 ce g
half life 0.418s 1.71 s 0.82s 19.0 s 19.0 s 6.57 h 15.3 m 9.10 h 2.3e6y stable 19.5 h 17.7 h
lambda 1.658e+00 4.053e-01 8.453e-01 3.648e-02 3.648e-02 2.931e-05 7.551e-04 2.116e-05 9.556e-15 0.0 9.874e-06 1.088e-05
z - 1 g 100.0000 100.0000 0.0 82.1300 0.0 100.0000 14.7000 85.3000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 28.9790 100.0000 1.1400 100.0000 0.0 100.0000 0.0 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.997368i 0.0 0.0 0.0 0.0 0.0 0.0
zp 52.85 ri 0.000112p 0.042339p 0.0 1.286798n 0.0 2.669514k 0.451184p 0.184287p 0.009577p 1.10e-05p 5.73e-10p 0.0
sig0.577 cc 0.000112p 0.042416p 0.0 1.321076p 0.0 3.991703p 1.037600p 4.626661p 4.636230p 4.636241p 5.72e-10p 0.0
rc 0.000112p 0.042450p 0.001423o 1.323086m 0.005252o 3.997852i 1.038868o 4.633322k 4.642900k 4.642911k 5.73e-10p 0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 6.519130i 0.0 7.529305h 0.0 7.382518i 0.0 0.0
zp 52.82 ri 0.000110p 0.055315p 0.0 2.369450n 0.0 4.089282l 0.668357p 0.291354p 0.007672p 4.98e-06p 7.97e-11p 0.0
sig0.551 cc 0.000110p 0.055549p 0.0 2.420896p 0.0 6.526038p 1.625220p 7.463915p 7.471614p 7.471619p 8.00e-11p 0.0
rc 0.000110p 0.055425p 0.001469o 2.416439m 0.010094o 6.515815i 1.626182n 7.475526h 7.483198h 7.483203g 7.98e-11p 0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 5.639349i 0.0 0.0 0.0 0.0 0.0 0.0
zp 52.28 ri 0.006239p 0.516204p 0.0 3.247597n 0.0 1.920130n 0.070855p 0.028941p 0.000354p 7.41e-08p 0.0 0.0
sig0.579 cc 0.006221p 0.520890p 0.0 3.673471p 0.0 5.597384p 0.893460p 5.696884p 5.697237p 5.697237p 0.0 0.0
rc 0.006239p 0.522443o 0.025591o 3.702270m 0.018808o 5.641208i 0.900113k 5.741004i 5.741358i 5.741358i 0.0
0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.853154k 0.0 0.0 0.0 0.0 0.0 0.0
zp 52.93 ri 0.000255p 0.053526p 0.0 1.113644n 0.0 2.690582l 0.582428p 0.237895p 0.028348p 9.51e-05p 2.81e-08p
0.0
sig0.627 cc 0.000255p 0.053748p 0.0 1.157666p 0.0 3.848900p 1.147876p 4.668742p 4.697073p 4.697168p 2.81e-08p
0.0
rc 0.000255p 0.053780p 0.001618o 1.159432m 0.003810o 3.853824j 1.148940n 4.674147k 4.702495k 4.702590k 2.81e-08p
0.0
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.234127j 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.231731j 0.0 0.0 0.0 0.0
zp 53.23 ri 1.97e-05p 0.009834p 0.0 0.439847p 0.0 2.061982n 0.823912p 1.068248j 0.073880p 0.000449p 2.30e-07p
9.41e-12p
sig0.619 cc 2.35e-05p 0.011776p 0.0 0.535477p 0.0 3.000334p 1.425749p 4.387235p 4.475530p 4.476067p 2.75e-07p
1.12e-11p
rc 1.97e-05p 0.009853p 0.000385o 0.448324o 0.001938o 2.512244m 1.193212o 4.404404i 4.478284i 4.478733i 2.30e-07p
9.41e-12p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.974708k 0.0 0.0 0.0 0.0 0.0 0.0
zp 52.48 ri 0.000822p 0.219463p 0.0 2.965161n 0.0 2.806602m 0.131556p 0.053737p 0.000610p 8.12e-08p 0.0 0.0
sig0.543 cc 0.000821p 0.219885p 0.0 3.143241p 0.0 5.953088p 1.006427p 6.138050p 6.138659p 6.138659p 0.0 0.0
rc 0.000822p 0.220286p 0.008788o 3.154870m 0.015974o 5.977446k 1.010241l 6.162739j 6.163349j 6.163349j 0.0
0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.307402m 0.0 0.0 0.0 0.0 0.0 0.0
zp 52.84 ri 0.000500p 0.094462p 0.0 1.710589n 0.0 3.512067m 0.623763p 0.254786p 0.023619p 5.82e-05p 1.20e-08p
0.0
sig0.621 cc 0.000499p 0.094911p 0.0 1.788574p 0.0 5.301106p 1.402723p 6.179219p 6.202825p 6.202883p 1.20e-08p
0.0
rc 0.000500p 0.094962p 0.002825o 1.791407m 0.005616o 5.309089l 1.404200n 6.187639k 6.211257k 6.211316k 1.20e-08p
0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.998156n 0.0 0.0
zp 52.93 ri 0.000119p 0.041925p 0.0 1.143997n 0.0 2.971814n 0.673773p 0.147912p 0.020956p 4.06e-05p 5.35e-09p
0.0
sig0.597 cc 0.000119p 0.042030p 0.0 1.178674p 0.0 4.150588p 1.283725p 4.972037p 4.992986p 4.993026p 5.35e-09p
0.0
rc 0.000119p 0.042045p 0.001651o 1.180179m 0.004745o 4.156738m 1.284814n 4.978423l 4.999379l 4.999419l 5.35e-09p
0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.563584j 1.361911m 5.263865h 0.0 5.228944n 0.0 0.0
zp 53.23 ri 9.17e-06p 0.007374p 0.0 0.678845p 0.0 2.834683k 1.083851n 0.645777o 0.067407p 0.000301p 4.67e-08p
0.0
sig0.583 cc 8.69e-06p 0.006998p 0.0 0.649183p 0.0 3.337064p 1.847261p 5.247927p 5.316689p 5.316996p 4.76e-08p
0.0
rc 9.17e-06p 0.007383p 0.000171o 0.685080o 0.002366o 3.522129i 1.601604l 5.251757h 5.319163h 5.319464h 4.67e-08p
0.0
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.845966j 0.0 0.0 0.0 5.229181f 0.0 0.0
zp 51.96 ri 0.009248p 0.829846p 0.0 3.795569m 0.0 0.616761p 0.003838p 0.001568p 7.45e-07p 2.82e-12p 0.0 0.0
sig0.497 cc 0.009282p 0.842124p 0.0 4.462171p 0.0 5.101131p 0.753567p 5.106343p 5.106344p 5.106344p 0.0 0.0
rc 0.009248p 0.839094o 0.065879o 4.550597l 0.040351o 5.207709i 0.769371i 5.213115i 5.213116h 5.213116f 0.0 0.0

xe branching from 74dan1; sn half life from 80eng2; sb, te, i, xe, cs half lives 89wal1.

1

mass number 136 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 48 cd g 49 in g 50 sn g 51 sb g 52 te d 52 te g 53 i m 53 i g 54 xe d 54 xe g 55 cs g 56 ba g
half life 0.717s 0.82 s 0.478s 17.5 s 47. s 1.39 m 24.5 s stable 13.00d stable
lambda 0.0 0.0 9.667e-01 8.453e-01 1.450e+00 3.961e-02 1.475e-02 8.311e-03 2.829e-02 0.0 6.171e-07 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 71.0210 0.0 98.8600 0.0 100.0000 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 18.0320 100.0000 2.6900 0.0 6.9700 100.0000 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.895806h 0.0 0.0
zp 53.27 ri 0.0 1.42e-10p 3.93e-06p 0.004908p 0.0 0.457081p 1.305032n 1.306617n 0.0 1.693748n 0.077201p
0.000289p

sig0.577 cc 0.0 1.42e-10p 3.93e-06p 0.004910p 0.0 0.460441p 1.306186p 1.761377p 0.0 4.760744p 0.077176p 0.077465p
rc 0.0 1.42e-10p 3.93e-06p 0.004912p 7.82e-05o 0.460648p 1.308308m 1.762013m 0.140452m 4.904521h 0.077201p 0.077491p
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.553786h 0.0 0.0
zp 53.23 ri 0.0 3.82e-11p 3.45e-06p 0.005064p 0.0 0.881743p 1.791728n 1.793992n 0.0 2.903814n 0.063652p 0.000182p
sig0.551 cc 0.0 3.82e-11p 3.45e-06p 0.005066p 0.0 0.885090p 1.793443p 2.668444p 0.0 7.364806p 0.063633p 0.063815p
rc 0.0 3.82e-11p 3.45e-06p 0.005068p 6.39e-05o 0.885406o 1.796388m 2.669305m 0.195948m 7.565454h 0.063652p 0.063834p
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.734981k 0.0 0.0
zp 52.70 ri 0.0 7.64e-08p 0.000337p 0.087972p 0.0 1.584118n 1.241945n 1.253172n 0.0 0.371496p 0.004168p 2.90e-06p
sig0.579 cc 0.0 7.62e-08p 0.000336p 0.088071p 0.0 1.643281p 1.249879p 2.874426p 0.0 4.494796p 0.004157p 0.004160p
rc 0.0 7.64e-08p 0.000337p 0.088309p 0.002960o 1.649796m 1.266079m 2.884160l 0.325272m 4.847007j 0.004168p 0.004171p
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.128653n 0.0 0.0
zp 53.39 ri 0.0 1.20e-09p 8.80e-06p 0.005574p 0.0 0.330221p 1.052601n 1.053608n 0.0 1.668541n 0.160225p 0.001597p
sig0.627 cc 0.0 1.20e-09p 8.80e-06p 0.005581p 0.0 0.334130p 1.053357p 1.383678p 0.0 4.105167p 0.160186p 0.161782p
rc 0.0 1.20e-09p 8.80e-06p 0.005583p 8.02e-05o 0.334266p 1.054641m 1.384064m 0.094770m 4.202015l 0.160225p 0.161822p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.253018n 0.0 0.0
zp 53.67 ri 0.0 4.75e-11p 8.88e-07p 0.001326p 0.0 0.169015p 1.044783n 1.045151n 0.0 2.970339o 0.503100p 0.008761p
sig0.619 cc 0.0 4.75e-11p 8.88e-07p 0.001327p 0.0 0.169951p 1.045084p 1.213097p 0.0 5.228326p 0.503068p 0.511828p
rc 0.0 4.75e-11p 8.88e-07p 0.001327p 1.37e-05o 0.169971p 1.045525m 1.213184m 0.065242o 5.294290l 0.503100o 0.511862o

fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.129464n 0.0 0.0
zp 52.90 ri 0.0 1.16e-09p 3.01e-05p 0.030296p 0.0 1.379210n 1.931936n 1.937537n 0.0 0.809823p 0.009733p 5.06e-06p
sig0.543 cc 0.0 1.15e-09p 3.01e-05p 0.030297p 0.0 1.399568p 1.935720p 3.319333p 0.0 6.064106p 0.009724p 0.009729p
rc 0.0 1.16e-09p 3.01e-05p 0.030326p 0.000469o 1.401216m 1.943351m 3.322780l 0.284020m 6.359973l 0.009733p 0.009738p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.683597n 0.0 0.0
zp 53.28 ri 0.0 2.64e-09p 1.76e-05p 0.009733p 0.0 0.485541p 1.272357n 1.274233n 0.0 1.617875n 0.118611p 0.000850p
sig0.621 cc 0.0 2.64e-09p 1.76e-05p 0.009746p 0.0 0.492326p 1.273722p 1.760436p 0.0 4.651368p 0.118562p 0.119412p
rc 0.0 2.64e-09p 1.76e-05p 0.009750p 0.000193o 0.492658p 1.276168m 1.761275m 0.136587m 4.791906l 0.118611p 0.119461p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.884863h 0.0 0.0
zp 53.32 ri 0.0 3.91e-10p 5.76e-06p 0.005687p 0.0 0.411821p 1.304207n 1.305670n 0.0 1.736749n 0.115180p 0.000621p
sig0.597 cc 0.0 3.91e-10p 5.76e-06p 0.005691p 0.0 0.415768p 1.305273p 1.716301p 0.0 4.757786p 0.115144p 0.115764p
rc 0.0 3.91e-10p 5.76e-06p 0.005693p 0.000102o 0.415966p 1.307230m 1.716894m 0.132237m 4.893110h 0.115180p 0.115800p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.766204n 0.0 0.0
zp 53.65 ri 0.0 2.81e-12p 2.78e-07p 0.000591p 0.0 0.207159p 0.986007p 0.986415p 0.0 4.559323n 0.378789p 0.006491p
sig0.583 cc 0.0 2.82e-12p 2.78e-07p 0.000591p 0.0 0.207569p 0.986359p 1.191562p 0.0 6.736980p 0.378768p 0.385258p
rc 0.0 2.82e-12p 2.78e-07p 0.000592p 6.09e-06o 0.207585p 0.986829o 1.191634o 0.075297m 6.813083m 0.378789p 0.385280p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.711955f 0.0 0.0
zp 52.34 ri 0.0 2.79e-08p 0.000632p 0.226700p 0.0 3.370710n 0.864698p 0.840427p 0.0 0.055483p 3.28e-05p 5.55e-10p

sig0.497 cc 0.0 2.75e-08p 0.000622p 0.224019p 0.0 3.482848p 0.878105p 4.321249p 0.0 5.254028p 3.24e-05p 3.24e-05p
rc 0.0 2.79e-08p 0.000632p 0.227332p 0.007386o 3.539550m 0.924135o 4.339626l 0.395192m 5.714436f 3.28e-05p 3.28e-05p

sn half life from 80eng2; sb, te, i half lives from 89wal1.
1

mass number 137 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 50 sn g 51 sb g 52 te g 53 i d 53 i g 54 xe d 54 xe g 55 cs g 56 ba m 56 ba g 57 la g 58 ce g
half life 0.478s 2.5 s 1.6 s 24.5 s 6.50 s 3.82 m 30.17y 2.552m stable 6.e4y 9.0 h
lambda 0.0 1.450e+00 2.773e-01 4.332e-01 2.829e-02 1.066e-01 3.024e-03 7.285e-10 4.527e-03 0.0 3.663e-13 2.139e-05
z - 1 g 100.0000 100.0000 81.9680 0.0 97.3100 0.0 93.0300 100.0000 94.6000 5.4000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 6.7800 100.0000 5.3800 100.0000 0.0 0.0 100.0000 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.437019n 0.0 0.0
zp 53.67 ri 1.10e-07p 0.000434p 0.121409p 0.0 1.895267n 0.0 3.132895n 0.393540p 0.003162p 0.001291p 2.50e-06p 9.41e-11p
sig0.577 cc 1.10e-07p 0.000433p 0.121519p 0.0 2.010103p 0.0 5.007255p 5.400103p 5.111653p 5.404550p 2.49e-06p 9.39e-11p
rc 1.10e-07p 0.000434p 0.121765p 0.001369o 2.015126m 0.048045o 5.055612l 5.449152m 5.158059l 5.453607l 2.50e-06p 9.41e-11p
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 8.101539k 0.0 7.852720i 0.0 0.0
zp 53.64 ri 5.36e-08p 0.000354p 0.172912p 0.0 2.641163n 0.0 4.844282n 0.411092p 0.002316p 0.000946p 7.12e-07p 1.08e-11p
sig0.551 cc 5.34e-08p 0.000353p 0.172379p 0.0 2.796812p 0.0 7.462698p 7.870128p 7.447483p 7.873427p 7.20e-07p 1.09e-11p
rc 5.36e-08p 0.000354p 0.173202p 0.001557o 2.811262m 0.049287o 7.508886l 7.919979k 7.494616j 7.923241i 7.12e-07p 1.08e-11p
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.070829i 0.0 0.0 0.0 0.0
zp 53.12 ri 1.94e-05p 0.016394p 0.883703p 0.0 3.776013n 0.0 1.509930n 0.052605p 8.49e-05p 3.47e-05p 1.58e-08p 0.0

sig0.579 cc 1.93e-05p 0.016329p 0.892528p 0.0 4.629414p 0.0 5.836708p 5.889042p 5.571118p 5.889161p 1.57e-08p 0.0
rc 1.94e-05p 0.016413p 0.897156o 0.017710o 4.666746m 0.172771m 6.024175k 6.076780i 5.748719i 6.076900i 1.58e-08p 0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.521858n 0.0 0.0
zp 53.84 ri 2.35e-07p 0.000445p 0.075469p 0.0 1.285223n 0.0 2.569875n 0.649334p 0.012994p 0.005307p 4.95e-05p 1.17e-08p
sig0.627 cc 2.34e-07p 0.000444p 0.075712p 0.0 1.357058p 0.0 3.835155p 4.483672p 4.254527p 4.501993p 4.94e-05p 1.17e-08p
rc 2.35e-07p 0.000445p 0.075834p 0.000753o 1.359770m 0.027977o 3.862846m 4.512179m 4.281516l 4.530531l 4.95e-05p 1.17e-08p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.539546n 0.0 0.0
zp 54.10 ri 1.72e-08p 7.58e-05p 0.027522p 0.0 0.908981p 0.0 3.215254n 1.375203n 0.046244p 0.018889p 0.000288p 1.07e-07p
sig0.619 cc 1.72e-08p 7.58e-05p 0.027562p 0.0 0.935145p 0.0 4.086803p 5.461154p 5.212459p 5.526523p 0.000288p 1.07e-07p
rc 1.72e-08p 7.58e-05p 0.027584p 0.000230o 0.936053o 0.016013o 4.102078m 5.477281l 5.227752l 5.542703l 0.000289p 1.07e-07p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.223763n 0.0 0.0
zp 53.32 ri 6.66e-07p 0.002600p 0.422235p 0.0 3.657102n 0.0 2.287688n 0.095781p 0.000135p 5.53e-05p 1.50e-08p 0.0
sig0.543 cc 6.65e-07p 0.002595p 0.423550p 0.0 4.063612p 0.0 6.074716p 6.170313p 5.837251p 6.170503p 1.50e-08p 0.0
rc 6.66e-07p 0.002600p 0.424367p 0.004882o 4.074935m 0.110536m 6.189137l 6.284918l 5.945668l 6.285109l 1.50e-08p 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.073897n 0.0 0.0
zp 53.69 ri 7.01e-07p 0.001068p 0.140822p 0.0 1.820196n 0.0 2.718051n 0.493311p 0.006640p 0.002712p 1.60e-05p 2.25e-09p
sig0.621 cc 7.00e-07p 0.001067p 0.141418p 0.0 1.954715p 0.0 4.540704p 5.033228p 4.768061p 5.042578p 1.59e-05p 2.25e-09p
rc 7.01e-07p 0.001069p 0.141699p 0.001684o 1.959768m 0.046040o 4.587263l 5.080574m 4.812863m 5.089942l 1.60e-05p 2.25e-09p

np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.098119n 0.0 0.0
zp 53.71 ri 2.02e-07p 0.000567p 0.111922p 0.0 1.786919n 0.0 2.824607n 0.472265p 0.005682p 0.001247p 7.48e-06p
5.42e-10p
sig0.597 cc 2.01e-07p 0.000566p 0.112168p 0.0 1.893007p 0.0 4.589724p 5.061232p 4.793597p 5.068156p 7.47e-06p
5.41e-10p
rc 2.02e-07p 0.000567p 0.112386p 0.001337o 1.897619m 0.043968o 4.633931l 5.106196m 4.836144m 5.113133l 7.48e-06p
5.42e-10p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.804287i 0.0 0.0
zp 54.07 ri 3.90e-09p 3.38e-05p 0.030545p 0.0 1.050480n 0.0 5.259950n 1.465940n 0.043693p 0.017846p 0.000101p
1.74e-08p
sig0.583 cc 3.90e-09p 3.38e-05p 0.030559p 0.0 1.079791p 0.0 6.265519p 7.730887p 7.357092p 7.792503p 0.000101p
1.74e-08p
rc 3.90e-09p 3.38e-05p 0.030573p 0.000178o 1.080408m 0.011861o 6.276915m 7.742855l 7.368434k 7.804496i 0.000101p
1.74e-08p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.798183i 0.0 0.0
zp 52.72 ri 2.73e-05p 0.040935p 2.175989n 0.0 3.488225n 0.0 0.383764p 0.000945p 5.02e-08p 2.05e-08p 0.0 0.0
sig0.497 cc 2.72e-05p 0.040923p 2.207497p 0.0 5.638456p 0.0 5.629180p 5.630125p 5.326098p 5.630125p 0.0 0.0
rc 2.73e-05p 0.040962p 2.209564m 0.031620o 5.669973m 0.149942n 5.808482m 5.809428l 5.495719j 5.809428h 0.0
0.0

sb half life from 80eng2; te, i, xe, cs, ba half lives 89wal1.
1

mass number 138 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 50 sn g 51 sb g 52 te g 53 i d 53 i g 54 xe d 54 xe g 55 cs m 55 cs g 56 ba g 57 la g 58 ce g
half life 0.173s 1.4 s 0.580s 6.5 s 2.38 s 14.1 m 2.9 m 32.2 m stable 11.02l stable
lambda 0.0 4.007e+00 4.951e-01 1.195e+00 1.066e-01 2.912e-01 8.193e-04 3.984e-03 3.588e-04 0.0 2.099e-19 0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 93.2200 0.0 94.6200 0.0 100.0000 100.0000 -70.0000 30.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 25.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 7.9620 100.0000 9.8100 100.0000 0.0 75.0000 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.733584n 0.0 0.0

zp 54.06 ri 1.96e-09p 2.40e-05p 0.020172p 0.0 0.874133p 0.0 3.658537n 0.590663o 0.590619p 0.038034p 6.47e-05p 7.61e-09p
sig0.577 cc 1.96e-09p 2.40e-05p 0.020183p 0.0 0.892397p 0.0 4.504251p 0.590272p 5.537226p 5.722849p 6.47e-05p 1.94e-05p
rc 1.96e-09p 2.40e-05p 0.020196p 8.63e-05o 0.893046o 0.013722o 4.517259m 0.590663o 5.550876l 5.736620l 6.47e-05p 1.94e-05p
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.663618i 0.0 0.0
zp 54.04 ri 5.77e-10p 1.11e-05p 0.022950p 0.0 0.894557p 0.0 5.633426m 0.550960p 0.550632p 0.035745p 2.22e-05p 1.50e-09p
sig0.551 cc 5.76e-10p 1.11e-05p 0.022930p 0.0 0.914766p 0.0 6.501386p 0.550214p 7.464262p 7.637528p 2.22e-05p 6.66e-06p
rc 5.77e-10p 1.11e-05p 0.022961p 0.000134o 0.916096o 0.026244o 6.526480l 0.550960o 7.490331k 7.663832i 2.22e-05p 6.67e-06p
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.462322n 0.0 0.0
zp 53.52 ri 6.20e-07p 0.001634p 0.259577p 0.0 2.964216n 0.0 3.054639n 0.146174p 0.146174p 0.002011p 8.37e-07p 1.94e-11p
sig0.579 cc 6.18e-07p 0.001628p 0.260182p 0.0 3.196175p 0.0 6.091631p 0.145598p 6.346428p 6.384831p 8.34e-07p 2.50e-07p
rc 6.20e-07p 0.001635p 0.261211p 0.003640o 3.211357m 0.146522m 6.239748l 0.146174p 6.495552l 6.534107l 8.37e-07p 2.51e-07p
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.816762n 0.0 0.0
zp 54.28 ri 4.09e-09p 2.28e-05p 0.011079p 0.0 0.509592p 0.0 2.566518n 0.811171o 0.811028p 0.122417p 0.000943p 6.57e-07p
sig0.627 cc 4.08e-09p 2.28e-05p 0.011091p 0.0 0.519459p 0.0 3.060108p 0.810364p 4.478244p 4.803789p 0.000942p 0.000283p
rc 4.09e-09p 2.28e-05p 0.011102p 0.000107o 0.520048o 0.016223o 3.074811m 0.811171o 4.494217m 4.820088l 0.000943p 0.000283p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.730565n 0.0 0.0
zp 54.51 ri 2.72e-10p 3.39e-06p 0.003392p 0.0 0.294470p 0.0 2.547494n 1.293358m 1.293286n 0.308210p 0.003671p 3.79e-06p
sig0.619 cc 2.72e-10p 3.39e-06p 0.003395p 0.0 0.297558p 0.0 2.829860p 1.292996p 5.092603p 5.726545p 0.003670p 0.001105p

rc 2.72e-10p 3.39e-06p 0.003396p 1.70e-05o 0.297653p 0.004915o 2.834047m 1.293358m 5.097352l 5.731472l 0.003671p 0.001105p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.035164n 0.0 0.0
zp 53.73 ri 8.24e-09p 0.000123p 0.071885p 0.0 1.986927n 0.0 3.571978n 0.236646p 0.236610p 0.003387p 1.02e-06p 1.15e-11p
sig0.543 cc 8.22e-09p 0.000122p 0.071827p 0.0 2.049065p 0.0 5.516965p 0.236052p 5.930055p 5.992447p 1.01e-06p 3.04e-07p
rc 8.24e-09p 0.000123p 0.072008p 0.000541o 2.054594m 0.064891o 5.580926m 0.236646p 5.995020l 6.057569l 1.02e-06p 3.05e-07p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.269047n 0.0 0.0
zp 54.11 ri 1.56e-08p 6.80e-05p 0.024774p 0.0 0.832387p 0.0 3.023342n 0.672779p 0.672627p 0.067224p 0.000320p 1.29e-07p
sig0.621 cc 1.56e-08p 6.79e-05p 0.024805p 0.0 0.854341p 0.0 3.834909p 0.671763p 5.010495p 5.245781p 0.000319p 9.59e-05p
rc 1.56e-08p 6.80e-05p 0.024842p 0.000273o 0.855818o 0.029829o 3.862947m 0.672779o 5.040159l 5.275802l 0.000320p 9.60e-05p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.998156n 0.0 0.0
zp 54.09 ri 4.67e-09p 3.68e-05p 0.019684p 0.0 0.798859p 0.0 2.976626n 0.592368o 0.592265p 0.044898p 0.000133p 2.70e-08p
sig0.597 cc 4.66e-09p 3.67e-05p 0.019695p 0.0 0.816254p 0.0 3.751425p 0.591610p 4.786743p 4.979579p 0.000132p 3.98e-05p
rc 4.67e-09p 3.68e-05p 0.019721p 0.000176o 0.817418o 0.023839o 3.773906m 0.592368o 4.810447l 5.003530l 0.000133p 3.98e-05p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.853947i 0.741144n 4.950840i 7.114979n 0.0 0.0
zp 54.48 ri 3.29e-11p 7.48e-07p 0.002626p 0.0 0.218033p 0.0 3.616835j 0.760775m 0.696838o 0.349176p 0.001423p 9.69e-07p
sig0.583 cc 2.96e-11p 6.73e-07p 0.002363p 0.0 0.198383p 0.0 3.445668p 0.954895p 5.116735p 5.634536p 0.001134p 0.000341p
rc 3.29e-11p 7.48e-07p 0.002627p 1.53e-05o 0.220497p 0.006091o 3.831560i 0.760775l 5.098979h 5.639351j 0.001423p 0.000428p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 6.996898o 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 8.316147l 6.197253i 0.0 0.0

zp 53.10 ri 3.50e-07p 0.002266p 0.464115p 0.0 2.339957n 0.0 3.512872n 0.004090p 0.004090p 2.67e-06p 1.27e-11p
0.0
sig0.497 cc 6.07e-07p 0.003926p 0.807752p 0.0 4.808941p 0.0 5.999736p 0.007083p 6.012131p 6.013906p 2.20e-11p
6.61e-12p
rc 3.50e-07p 0.002267p 0.466382p 0.012359o 2.787077n 0.282784m 6.432789m 0.004090p 6.439946k 6.440971i 1.27e-11p
3.82e-12p

sb half life from 80eng2; te, i, xe, cs half lives from 89wal1.
1

mass number 139 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 51 sb g 52 te g 53 i g 54 xe d 54 xe g 55 cs g 56 ba g 57 la g 58 ce m 58 ce g 59 pr g
half life 0.218s 0.580s 2.30 s 0.86 s 39.7 s 9.3 m 1.396h stable 56. s 137.7d 4.41 h
lambda 3.180e+00 1.195e+00 3.014e-01 8.060e-01 1.746e-02 1.242e-03 1.379e-04 0.0 1.238e-02 5.826e-08 4.366e-05
z - 1 g 100.0000 100.0000 92.0380 0.0 90.1900 100.0000 100.0000 100.0000 0.0 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 9.2700 100.0000 0.0 0.0 0.0 0.0 100.0000 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.532682l 0.0 6.225850i 0.0 0.0 0.0 0.0
zp 54.46 ri 4.12e-07p 0.001084p 0.138877p 0.0 1.553127l 4.050254m 0.458029p 0.001343p 3.57e-07p 1.46e-07p 8.39e-12p
sig0.577 cc 8.24e-07p 0.002169p 0.279776p 0.0 3.362059p 5.940584p 6.173882p 6.175096p 3.23e-07p 4.55e-07p 7.58e-12p
rc 4.12e-07p 0.001084p 0.139875p 0.002680o 1.681960k 5.732215k 6.190244i 6.191587i 3.57e-07p 5.03e-07p 8.39e-12p
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 7.126169k 6.966925i 0.0 0.0 0.0
zp 54.44 ri 2.86e-07p 0.001689p 0.265962p 0.0 3.946951n 2.590219n 0.214784p 0.000553p 7.69e-08p 3.14e-08p 0.0
sig0.551 cc 2.85e-07p 0.001683p 0.266505p 0.0 4.173562p 6.779853p 6.993320p 6.993880p 7.77e-08p 1.09e-07p 0.0
rc 2.86e-07p 0.001689p 0.267517p 0.003634o 4.191858m 6.782077k 6.996860j 6.997414i 7.69e-08p 1.08e-07p 0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 6.221346i 0.0 0.0 0.0 0.0
zp 53.92 ri 9.48e-05p 0.045627p 1.451520n 0.0 3.841892n 0.970019p 0.019682p 2.55e-05p 1.34e-09p 5.48e-10p 0.0
sig0.579 cc 9.46e-05p 0.045622p 1.490329p 0.0 5.188039p 6.159363p 6.179002p 6.179027p 1.34e-09p 1.89e-09p 0.0
rc 9.48e-05p 0.045722p 1.493601m 0.042963o 5.231934m 6.201953k 6.221636i 6.221661i 1.34e-09p 1.89e-09p 0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.858769k 0.0 0.0 0.0 0.0
zp 54.70 ri 1.00e-06p 0.001345p 0.164142p 0.0 2.051290n 3.078925n 0.576786p 0.011800p 1.62e-05p 6.61e-06p 3.83e-09p
sig0.627 cc 1.00e-06p 0.001346p 0.165350p 0.0 2.200919p 5.279438p 5.856163p 5.867984p 1.62e-05p 2.28e-05p 3.82e-09p

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        rc 1.00e-06p 0.001346p 0.165380p 0.002721o 2.203167m 5.282093l 5.858879k 5.870702k 1.62e-05p 2.28e-05p 3.83e-09p
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0  1.207168o      0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  4.967106k      0.0       0.0       0.0       0.0
zp 54.92 ri 7.64e-08p 0.000214p 0.049901p       0.0  1.087743n 2.623278n 1.206084o 0.023870p 4.83e-05p 1.97e-05p 1.60e-08p
sig0.619 cc 8.38e-08p 0.000234p 0.054971p       0.0  1.243444p 4.121963p 4.959481p 4.985747p 5.30e-05p 7.47e-05p 1.76e-08p
        rc 7.64e-08p 0.000214p 0.050098p 0.000860o 1.133786m 3.757064m 4.963149k 4.987087k 4.83e-05p 6.81e-05p 1.60e-08p
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.657966n      0.0       0.0       0.0
zp 54.15 ri 3.02e-06p 0.006792p 0.655232p       0.0  3.570986n 1.445043n 0.036666p 4.25e-05p 1.36e-09p 5.57e-10p       0.0
sig0.543 cc 3.02e-06p 0.006791p 0.661112p       0.0  4.168296p 5.612680p 5.649325p 5.649368p 1.36e-09p 1.92e-09p       0.0
        rc 3.02e-06p 0.006795p 0.661485o 0.010479o 4.178058m 5.623102l 5.659767l 5.659810l 1.36e-09p 1.92e-09p       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  6.093684l      0.0       0.0       0.0       0.0
zp 54.52 ri 3.43e-06p 0.003425p 0.300925p       0.0  2.665527n 2.798775n 0.349419p 0.004438p 3.53e-06p 1.44e-06p 4.58e-10p
sig0.621 cc 3.43e-06p 0.003428p 0.303964p       0.0  2.940542p 5.738627p 6.087985p 6.092426p 3.53e-06p 4.98e-06p 4.58e-10p
        rc 3.43e-06p 0.003429p 0.304081p 0.006053o 2.945830m 5.744605l 6.094024k 6.098467k 3.53e-06p 4.98e-06p 4.58e-10p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  4.762200l      0.0       0.0       0.0       0.0
zp 54.48 ri 1.46e-06p 0.002212p 0.241025p       0.0  2.221645n 2.111423n 0.205236p 0.001673p 8.00e-07p 1.76e-07p 3.77e-11p
sig0.597 cc 1.46e-06p 0.002212p 0.242962p       0.0  2.441405p 4.552360p 4.757533p 4.759206p 8.00e-07p 9.75e-07p 3.77e-11p
        rc 1.46e-06p 0.002213p 0.243063p 0.004924o 2.445787m 4.557210l 4.762447k 4.764121k 8.00e-07p 9.76e-07p 3.77e-11p
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  2.564767i 6.232980i 6.869202i 7.058080n      0.0       0.0       0.0
zp 54.90 ri 2.06e-08p 0.000193p 0.061912p       0.0  2.407233i 3.570938k 1.067277n 0.018340p 2.34e-05p 9.54e-06p 1.99e-09p
sig0.583 cc 1.70e-08p 0.000160p 0.051443p       0.0  2.041114p 5.852608p 7.101654p 7.120865p 2.44e-05p 3.44e-05p 2.09e-09p
        rc 2.06e-08p 0.000193p 0.062090p 0.000485o 2.463716h 6.034654h 7.101931h 7.120305h 2.34e-05p 3.29e-05p 1.99e-09p
 u238s   xi      0.0       0.0       0.0       0.0  4.997784p      0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  6.747009m 6.816978i      0.0       0.0       0.0
zp 53.49 ri 0.000179p 0.155053p 2.739783n       0.0  3.992681n 0.116131p 0.000167p 3.78e-09p      0.0       0.0       0.0
sig0.497 cc 0.000205p 0.178117p 3.307632p       0.0  6.531890p 6.665141p 6.665332p 6.665332p      0.0       0.0       0.0
        rc 0.000179p 0.155231p 2.882655m 0.131498m 6.724046m 6.840176l 6.840343k 6.840343i      0.0       0.0       0.0

  sb half life from 80eng2; i, xe, cs, ba half lives from 89wal1; cehalf life 90bur1.
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mass number 140 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	52 te g	53 i g	54 xe d	54 xe g	55 cs d	55 cs g	56 ba d	56 ba g	57 la g	58 ce g	59 pr g	60 nd g
half life	0.894s	0.86 s	0.46s	13.6 s	1.72 s	1.06 m	24.9 s	12.75d	1.678d	stable	3.39 m	3.37 d
lambda	7.753e-01	8.060e-01	1.507e+00	5.097e-02	4.030e-01	1.090e-02	2.784e-02	6.292e-07	4.781e-06	0.0	3.408e-03	2.381e-06
z - 1 g	100.0000	100.0000	0.0	90.7300	0.0	100.0000	0.0	100.0000	100.0000	100.0000	-100.0000	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	21.3000	100.0000	0.0350	100.0000	0.0470	100.0000	0.0	0.0	0.0	0.0
cf250s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.841235n	0.0	0.0	0.0	5.258624i	0.0	0.0	0.0	0.0

zp 54.85 ri 7.60e-05p 0.028833p 0.0 0.875809n 0.0 3.261634n 0.0 1.070541o 0.011665p 1.34e-05p 6.98e-10p 0.0
sig0.577 cc 0.000126p 0.047939p 0.0 1.497239p 0.0 4.515653p 0.0 5.233300p 5.244116p 5.244128p 6.47e-10p 0.0
rc 7.60e-05p 0.028909p 0.001329o 0.903367m 0.000189o 4.165191m 0.001769o 5.237501i 5.249166i 5.249179i 6.98e-10p 0.0

cm244s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.156878h	0.0	5.979954i	0.0	0.0

zp 54.83 ri 9.27e-05p 0.039105p 0.0 2.119904n 0.0 3.056195n 0.0 0.881349p 0.005971p 4.92e-06p 6.61e-11p 0.0
sig0.551 cc 9.26e-05p 0.039192p 0.0 2.155497p 0.0 5.211369p 0.0 6.092924p 6.098984p 6.098989p 6.71e-11p 0.0
rc 9.27e-05p 0.039198p 0.000961o 2.156429m 0.000218o 5.212842l 0.001713o 6.095904h 6.101875h 6.101880h 6.61e-11p 0.0

cm248s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.819968i	0.0	0.0	0.0	0.0

zp 54.32 ri 0.004974p 0.458484p 0.0 3.182422n 0.0 2.072959n 0.0 0.118905p 0.000472p 1.11e-07p 1.43e-12p 0.0
sig0.579 cc 0.004966p 0.462697p 0.0 3.603564p 0.0 5.676122p 0.0 5.794854p 5.795325p 5.795325p 1.43e-12p 0.0
rc 0.004974p 0.463459p 0.022182o 3.625100m 0.000703n 5.698762k 0.002410o 5.820077i 5.820549i 5.820549i 1.44e-12p 0.0

es253s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.586247i	0.0	0.0	0.0	0.0

zp 55.11 ri 9.06e-05p 0.029262p 0.0 0.913228p 0.0 3.217176n 0.0 1.427074n 0.073893p 0.000381p 1.75e-07p 6.81e-12p
sig0.627 cc 9.06e-05p 0.029350p 0.0 0.940035p 0.0 4.156991p 0.0 5.584117p 5.658003p 5.658384p 1.75e-07p 6.81e-12p
rc 9.06e-05p 0.029352p 0.000790o 0.940650o 0.000105o 4.157930m 0.001320o 5.586325i 5.660218i 5.660598i 1.75e-07p 6.81e-12p

fm254s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.126074o	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.591096i	4.943868k	0.0	0.0	0.0

zp 55.32 ri 1.48e-05p 0.009258p 0.0 0.511811p 0.0 2.918136n 0.0 1.980808n 0.122302o 0.001086p 6.99e-07p 3.59e-11p
sig0.619 cc 1.47e-05p 0.009211p 0.0 0.516816p 0.0 3.415497p 0.0 5.387583p 5.541400p 5.542562p 7.47e-07p 3.84e-11p
rc 1.48e-05p 0.009273p 0.000198o 0.520422o 4.71e-05o 3.438606m 0.000935o 5.420348i 5.542650h 5.543737h 6.99e-07p 3.59e-11p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.827246k 0.0 0.0 0.0 0.0
zp 54.58 ri 0.000309p 0.112733p 0.0 2.022761n 0.0 2.481180n 0.0 0.216290p 0.000974p 1.80e-07p 1.23e-12p 0.0
sig0.543 cc 0.000309p 0.113008p 0.0 2.125579p 0.0 4.606511p 0.0 4.822797p 4.823770p 4.823770p 1.23e-12p 0.0
rc 0.000309p 0.113041p 0.002669o 2.127992m 0.000281o 4.609453l 0.001774o 4.827517k 4.828491k 4.828491k 1.24e-12p 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.927248k 0.0 0.0 0.0 0.0
zp 54.92 ri 0.000283p 0.065012p 0.0 1.411936n 0.0 3.433975n 0.0 1.018602n 0.032949p 9.88e-05p 2.49e-08p 0.0
sig0.621 cc 0.000283p 0.065284p 0.0 1.471584p 0.0 4.905205p 0.0 5.923761p 5.956705p 5.956804p 2.48e-08p 0.0
rc 0.000283p 0.065295p 0.001930o 1.473108m 0.000180o 4.907263m 0.001639o 5.927505j 5.960454j 5.960553j 2.49e-08p 0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.811396l 0.0 0.0 0.0 0.0
zp 54.87 ri 0.000177p 0.052955p 0.0 1.247097n 0.0 2.830986n 0.0 0.682177p 0.014979p 2.47e-05p 2.77e-09p 0.0
sig0.597 cc 0.000177p 0.053122p 0.0 1.295621p 0.0 4.126255p 0.0 4.808470p 4.823446p 4.823471p 2.77e-09p 0.0
rc 0.000177p 0.053131p 0.001655o 1.296958m 0.000171o 4.128115m 0.001484o 4.811777k 4.826755k 4.826780k 2.77e-09p 0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.979280i 7.674419i 6.908966i 0.0 0.0
zp 55.31 ri 6.39e-06p 0.005226p 0.0 0.732337p 0.0 3.015120n 0.0 3.184402m 0.365757p 0.000791p 1.25e-07p 3.02e-12p
sig0.583 cc 6.63e-06p 0.005425p 0.0 0.764346p 0.0 3.890868p 0.0 7.184433p 7.302330p 7.303137p 1.27e-07p 3.08e-12p
rc 6.39e-06p 0.005232p 9.31e-05o 0.737177o 5.14e-05o 3.752348m 0.001008o 6.937759i 7.303517h 7.304307h 1.25e-07p 3.02e-12p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.797820m 0.0 6.798935f 0.0 0.0
zp 53.87 ri 0.021438p 1.397107n 0.0 4.801525n 0.0 0.616700p 0.0 0.003640p 3.54e-07p 0.0 0.0 0.0
sig0.497 cc 0.021364p 1.413584p 0.0 6.089330p 0.0 6.705744p 0.0 6.709371p 6.709372p 6.709372p 0.0 0.0

rc 0.021438p 1.418546m 0.085088o 6.173660m 0.001720n 6.792080k 0.003216o 6.798936j 6.798936h 6.798936f 0.0
0.0

te half life from 80eng2; i, xe, cs, ba, la half lives from 89wal1.

1

mass number 141 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 53 i g 54 xe d 54 xe g 55 cs d 55 cs g 56 ba d 56 ba g 57 la g 58 ce g 59 pr g 60 nd g 61 pm g
half life 0.45s 0.20 s 1.72 s 1.22s 24.9 s 1.69 s 18.3 m 3.90 h 32.50d stable 2.46 h 20.9 m
lambda 1.540e+00 3.466e+00 4.030e-01 5.682e-01 2.784e-02 4.101e-01 6.313e-04 4.937e-05 2.468e-07 0.0 7.827e-05
5.527e-04
z - 1 g 100.0000 0.0 78.7000 0.0 99.9650 0.0 99.9530 100.0000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 13.8610 100.0000 0.4040 100.0000 0.0950 100.0000 0.0 0.0 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.530141p 0.0 0.0 0.0 0.0 0.0 5.852211i 0.0 0.0 0.0
zp 55.24 ri 0.006239p 0.0 0.535730p 0.0 3.222059n 0.0 2.001702n 0.083581p 0.000288p 4.68e-08p 0.0 0.0
sig0.577 cc 0.007048p 0.0 0.610746p 0.0 3.824757p 0.0 5.763936p 5.845805p 5.846088p 5.846088p 0.0 0.0
rc 0.006239p 8.71e-05o 0.540727o 0.000656o 3.763253m 0.002376o 5.765563l 5.849144k 5.849432i 5.849432i 0.0
0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.770655i 5.481624i 0.0 0.0
zp 55.22 ri 0.004510p 0.0 0.619837p 0.0 3.020699n 0.0 1.924800n 0.050786p 0.000114p 6.41e-09p 0.0 0.0
sig0.551 cc 0.004499p 0.0 0.621909p 0.0 3.635323p 0.0 5.567082p 5.617748p 5.617862p 5.617862p 0.0 0.0
rc 0.004510p 3.01e-05o 0.623416o 0.000495o 3.644392m 0.001482o 5.568962l 5.619748k 5.619863i 5.619863h 0.0
0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.607239i 0.0 0.0 0.0
zp 54.71 ri 0.104140p 0.0 1.924148n 0.0 3.115220n 0.0 0.473020p 0.005455p 3.90e-06p 1.57e-10p 0.0 0.0
sig0.579 cc 0.104103p 0.0 2.006158p 0.0 5.120516p 0.0 5.591248p 5.596701p 5.596705p 5.596705p 0.0 0.0
rc 0.104140p 0.002400o 2.008507m 0.003728o 5.126751l 0.004479o 5.601841l 5.607297k 5.607301i 5.607301i 0.0
0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.740211k 0.0 0.0 0.0
zp 55.52 ri 0.003710p 0.0 0.297088p 0.0 2.508438n 0.0 2.596489n 0.330624p 0.004463p 5.58e-06p 6.00e-10p 0.0

sig0.627 cc 0.003709p 0.0 0.300009p 0.0 2.808319p 0.0 5.403505p 5.734134p 5.738596p 5.738602p 6.00e-10p 0.0
rc 0.003710p 4.64e-05o 0.300054p 0.000279o 2.808665m 0.001394o 5.405228l 5.735852l 5.740315k 5.740320k 6.00e-10p
0.0
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.478435i 0.0 0.0 0.0
zp 55.72 ri 0.000932p 0.0 0.133935p 0.0 1.853596n 0.0 2.926700n 0.552787p 0.010832p 1.89e-05p 2.68e-09p 0.0
sig0.619 cc 0.000932p 0.0 0.134667p 0.0 1.988194p 0.0 4.913970p 5.466770p 5.477601p 5.477620p 2.68e-09p 0.0
rc 0.000932p 8.33e-06o 0.134677p 9.05e-05o 1.988316m 0.000739o 4.914821l 5.467608k 5.478439i 5.478458i 2.68e-09p
0.0
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.620673n 0.0 0.0
zp 55.01 ri 0.012530p 0.0 0.791962p 0.0 2.972465n 0.0 0.832304p 0.013931p 1.03e-05p 2.94e-10p 0.0 0.0
sig0.543 cc 0.012530p 0.0 0.801810p 0.0 3.774016p 0.0 4.604539p 4.618469p 4.618479p 4.618479p 0.0 0.0
rc 0.012530p 9.89e-05o 0.801922o 0.000703o 3.774809m 0.002212o 4.607551m 4.621482m 4.621492m 4.621492l 0.0
0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.756921n 0.0 0.0
zp 55.33 ri 0.009061p 0.0 0.508225p 0.0 2.972617n 0.0 2.095743n 0.171827p 0.001388p 9.72e-07p 5.53e-11p 0.0
sig0.621 cc 0.009060p 0.0 0.515367p 0.0 3.487801p 0.0 5.581906p 5.753724p 5.755112p 5.755113p 5.53e-11p 0.0
rc 0.009061p 0.000118o 0.515474o 0.000500o 3.488410m 0.001769o 5.584283l 5.756110l 5.757498l 5.757499l 5.53e-11p
0.0
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.798229n 0.0 0.0
zp 55.26 ri 0.007773p 0.0 0.483508p 0.0 2.667467n 0.0 1.551570n 0.089029p 0.000410p 1.32e-07p 2.80e-12p 0.0
sig0.597 cc 0.007772p 0.0 0.489632p 0.0 3.156929p 0.0 4.707012p 4.796036p 4.796446p 4.796447p 2.80e-12p 0.0
rc 0.007773p 0.000107o 0.489732p 0.000515o 3.157543m 0.001747o 4.709376l 4.798405l 4.798816l 4.798816l 2.80e-12p
0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.153064h 6.491445i 0.0 0.0
zp 55.71 ri 0.000437p 0.0 0.146606p 0.0 1.998679n 0.0 4.257563n 0.502034p 0.008333p 4.77e-06p 2.95e-10p 0.0
sig0.583 cc 0.000433p 0.0 0.145632p 0.0 2.126357p 0.0 6.398791p 6.904250p 6.912508p 6.912513p 3.07e-10p 0.0
rc 0.000437p 2.03e-06o 0.146952p 7.77e-05o 2.145657m 0.000615o 6.402827l 6.904860j 6.913193h 6.913198h 2.95e-10p
0.0
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.853559k 6.896942i 0.0 0.0
zp 54.26 ri 0.399482p 0.0 4.592696n 0.0 1.918201n 0.0 0.045330p 1.98e-05p 2.44e-10p 0.0 0.0 0.0

sig0.497 cc 0.399289p 0.0 4.907328p 0.0 6.823635p 0.0 6.865735p 6.865755p 6.865755p 6.865755p 0.0 0.0
rc 0.399482p 0.008426o 4.915515m 0.010465m 6.842461l 0.005628o 6.890202l 6.890222k 6.890222j 6.890222i 0.0
0.0

i, xe, cs, ba, la, ce half lives from 89wal1.
1

mass number 142 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	52 te g	53 i g	54 xe g	55 cs d	55 cs g	56 ba d	56 ba g	57 la g	58 ce g	59 pr g	60 nd g
half life	0.590s	0.2 s	1.22 s	0.96 s	1.8 s	1.78 s	10.7 m	1.54 h	5.e16y	19.16h	stable
lambda	1.175e+00	3.466e+00	5.682e-01	7.220e-01	3.851e-01	3.894e-01	1.080e-03	1.250e-04	4.396e-25	1.005e-05	0.0
z - 1 g	100.0000	100.0000	86.1390	0.0	99.5960	0.0	99.9050	100.0000	100.0000	0.0	100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	3.0560	100.0000	1.6000	100.0000	0.0	0.0	0.0	0.0
cf250s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.606073k	5.753037n	0.0	0.0

zp 55.64 ri 1.73e-07p 0.000628p 0.161778p 0.0 2.338901n 0.0 3.605452n 0.420555p 0.004096p 2.11e-06p 7.28e-11p
sig0.577 cc 1.73e-07p 0.000627p 0.162083p 0.0 2.497139p 0.0 6.104302p 6.523923p 6.528297p 2.25e-06p 2.25e-06p
rc 1.73e-07p 0.000628p 0.162320p 0.000732o 2.501297m 0.015294o 6.119667l 6.540222k 6.544318k 2.11e-06p 2.11e-06p

cm244s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.876848i	0.0	0.0

zp 55.62 ri 4.30e-08p 0.000217p 0.122412p 0.0 1.437966n 0.0 3.105963n 0.200634p 0.001883p 3.14e-07p 5.48e-12p
sig0.551 cc 4.30e-08p 0.000217p 0.122508p 0.0 1.559031p 0.0 4.664561p 4.865187p 4.867068p 3.14e-07p 3.14e-07p
rc 4.30e-08p 0.000217p 0.122599p 0.000404o 1.560473m 0.009485o 4.674439l 4.875073k 4.876956i 3.14e-07p 3.14e-07p

cm248s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.301621i	0.0	0.0	0.0

zp 55.11 ri 2.11e-05p 0.017295p 0.907797p 0.0 3.789481n 0.0 1.499344n 0.050197p 0.000111p 1.42e-08p 0.0
sig0.579 cc 2.10e-05p 0.017292p 0.921454p 0.0 4.703707p 0.0 6.203419p 6.253548p 6.253658p 1.42e-08p 1.42e-08p
rc 2.11e-05p 0.017316p 0.922713o 0.006609o 4.715075m 0.042904m 6.252844k 6.303041i 6.303152i 1.42e-08p 1.42e-08p

es253s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.799774n	0.0	0.0

zp 55.92 ri 1.45e-07p 0.000335p 0.068680p 0.0 1.397910n 0.0 3.306538n 0.987053p 0.033350p 0.000109p 3.15e-08p
sig0.627 cc 1.45e-07p 0.000335p 0.068933p 0.0 1.465976p 0.0 4.772148p 5.758815p 5.792148p 0.000109p 0.000109p
rc 1.45e-07p 0.000335p 0.068968p 0.000388o 1.466988m 0.010216o 4.782348m 5.769401m 5.802751l 0.000109p 0.000109p

fm254s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.461839o	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.976789k	0.0	0.0	0.0

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zp 56.11 ri 1.33e-08p 6.01e-05p 0.022351p      0.0  0.755574p      0.0  2.732608n 1.460312o 0.057809p 0.000262p 9.96e-08p
sig0.619 cc 1.40e-08p 6.34e-05p 0.023652p      0.0  0.821297p      0.0  3.707072p 4.966782p 5.027815p 0.000277p 0.000277p
         rc 1.33e-08p 6.01e-05p 0.022403p 0.000104o 0.777990o 0.004678o 3.514537m 4.974849k 5.032658k 0.000262p 0.000262p
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.337774n      0.0       0.0
zp 55.45 ri 1.20e-07p 0.000713p 0.173314p      0.0  2.154448n      0.0  1.890297n 0.114380p 0.000343p 4.14e-08p      0.0
sig0.543 cc 1.20e-07p 0.000713p 0.173859p      0.0  2.326903p      0.0  4.215802p 4.330140p 4.330483p 4.14e-08p 4.14e-08p
         rc 1.20e-07p 0.000713p 0.173928p 0.000530o 2.328204m 0.012188o 4.228477l 4.342857l 4.343200l 4.14e-08p 4.14e-08p
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.269047n      0.0       0.0
zp 55.73 ri 5.04e-07p 0.000848p 0.122956p      0.0  1.738507n      0.0  2.830242n 0.558822p 0.011630p 2.19e-05p 3.42e-09p
sig0.621 cc 5.03e-07p 0.000848p 0.123620p      0.0  1.860883p      0.0  4.690418p 5.248998p 5.260622p 2.19e-05p 2.19e-05p
         rc 5.04e-07p 0.000848p 0.123687p 0.000635o 1.862329m 0.012028o 4.702831l 5.261653l 5.273284l 2.19e-05p 2.19e-05p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.498340n      0.0       0.0
zp 55.64 ri 3.31e-07p 0.000771p 0.126884p      0.0  1.712183n      0.0  2.320689n 0.328928p 0.004039p 3.62e-06p 2.16e-10p
sig0.597 cc 3.31e-07p 0.000771p 0.127485p      0.0  1.838477p      0.0  4.158296p 4.487088p 4.491124p 3.61e-06p 3.62e-06p
         rc 3.31e-07p 0.000771p 0.127548p 0.000569o 1.839784m 0.010703o 4.169428l 4.498356l 4.502395l 3.62e-06p 3.62e-06p
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.294341i 5.850736n      0.0       0.0
zp 56.13 ri 1.75e-09p 1.46e-05p 0.019224p      0.0  0.628612p      0.0  4.469801n 1.164098n 0.067356p 0.000106p 2.67e-08p
sig0.583 cc 1.75e-09p 1.46e-05p 0.019226p      0.0  0.647403p      0.0  5.114765p 6.278258p 6.348407p 0.000110p 0.000110p
         rc 1.75e-09p 1.46e-05p 0.019237p 3.65e-05o 0.647808o 0.002442o 5.119434m 6.283532i 6.350889i 0.000106p 0.000106p
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.297208i      0.0       0.0
zp 54.65 ri 5.28e-05p 0.060740p 2.538040n      0.0  3.311301n      0.0  0.289836p 0.000552p 3.15e-08p      0.0       0.0
sig0.497 cc 5.27e-05p 0.060719p 2.587258p      0.0  5.890497p      0.0  6.175506p 6.176058p 6.176058p      0.0       0.0
         rc 5.28e-05p 0.060793p 2.590407m 0.032864n 5.924107l 0.091180m 6.299494l 6.300047k 6.300047i      0.0       0.0

  te half life from 80eng2; i, xe, cs, ba, la half lives 89wal1.
1

    mass number    143            LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide      54 xe g   55 cs d   55 cs g   56 ba d   56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm m   62 sm g
half life     0.30 s    1.1  s    1.78 s    1.001s    14.3 s    14.1 m    1.38 d    13.57d    stable    265. d     64. s    8.83 m
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 lambda      2.310e+00 6.301e-01 3.894e-01 6.925e-01 4.847e-02 8.193e-04 5.813e-06 5.912e-07       0.0 3.027e-08 1.083e-02
1.308e-03
  z - 1 g    100.0000       0.0   96.9440       0.0   98.4000  100.0000  100.0000  100.0000  100.0000 -100.0000       0.0 -100.0000
  z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
  z - 0 m       0.0    4.6120  100.0000    3.1300  100.0000       0.0       0.0       0.0       0.0       0.0       0.0  100.0000
  cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  5.565377i      0.0       0.0       0.0       0.0       0.0
 zp 56.02 ri 0.023938p      0.0  0.932571p      0.0  3.546608n 1.040116n 0.030138p 4.58e-05p 4.79e-09p      0.0       0.0       0.0
 sig0.577 cc 0.023928p      0.0  0.955402p      0.0  4.487306p 5.527228p 5.557353p 5.557399p 5.557399p      0.0       0.0       0.0
          rc 0.023938p 0.000105o 0.955882o 0.007990o 4.495185m 5.535302k 5.565440i 5.565486i 5.565486i      0.0       0.0       0.0
  cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  3.886970i      0.0  4.086302i      0.0       0.0       0.0
 zp 56.01 ri 0.013205p      0.0  0.579970p      0.0  2.753733n 0.639429p 0.014791p 1.06e-05p 5.26e-10p      0.0       0.0       0.0
 sig0.551 cc 0.013300p      0.0  0.597095p      0.0  3.360033p 3.976269p 3.991168p 3.991179p 3.991179p      0.0       0.0       0.0
          rc 0.013205p 5.75e-05o 0.592828o 0.004469o 3.341545m 3.980975k 3.995766i 3.995777i 3.995777h      0.0       0.0       0.0
  cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  5.477458k      0.0       0.0       0.0       0.0       0.0
 zp 55.52 ri 0.216266p      0.0  2.469990n      0.0  2.558486n 0.243246p 0.001675p 6.97e-07p 1.62e-11p      0.0       0.0       0.0
 sig0.579 cc 0.215947p      0.0  2.676250p      0.0  5.195361p 5.438571p 5.440244p 5.440244p 5.440244p      0.0       0.0       0.0
          rc 0.216266p 0.001848o 2.681494m 0.042141m 5.239217l 5.482463l 5.484138k 5.484139k 5.484139k      0.0       0.0       0.0
  es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  6.441081i      0.0       0.0       0.0       0.0       0.0
 zp 56.31 ri 0.012706p      0.0  0.626117p      0.0  3.365939n 2.260044n 0.182192p 0.001505p 1.13e-06p 7.22e-11p      0.0       0.0
 sig0.627 cc 0.012703p      0.0  0.638269p      0.0  3.994371p 6.254249p 6.436398p 6.437903p 6.437904p 7.22e-11p      0.0       0.0
          rc 0.012706p 5.72e-05o 0.638492o 0.004662o 3.998878m 6.258922k 6.441113i 6.442619i 6.442620i 7.22e-11p      0.0       0.0
  fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  5.450961i      0.0       0.0       0.0       0.0       0.0
 zp 56.50 ri 0.003410p      0.0  0.289034p      0.0  2.446578n 2.431446n 0.283377p 0.003296p 3.32e-06p 2.70e-10p      0.0       0.0
 sig0.619 cc 0.003410p      0.0  0.292300p      0.0  2.734414p 5.165714p 5.449065p 5.452360p 5.452363p 2.70e-10p      0.0       0.0
          rc 0.003410p 1.28e-05o 0.292353p 0.001897o 2.736149m 5.167596k 5.450973i 5.454268i 5.454272i 2.70e-10p      0.0       0.0
  fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  3.138189k      0.0       0.0       0.0       0.0       0.0
 zp 55.88 ri 0.017359p      0.0  0.744877p      0.0  1.984312n 0.393054p 0.004450p 2.17e-06p 4.02e-11p      0.0       0.0       0.0
 sig0.543 cc 0.017348p      0.0  0.761244p      0.0  2.733775p 3.126895p 3.131342p 3.131344p 3.131344p      0.0       0.0       0.0
          rc 0.017359p 6.78e-05o 0.761773o 0.007074o 2.740971m 3.134026l 3.138475k 3.138478k 3.138478k      0.0       0.0       0.0
  fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.878747n      0.0       0.0       0.0
 zp 56.13 ri 0.020788p      0.0  0.731551p      0.0  2.778383n 1.287268n 0.067305p 0.000336p 1.43e-07p 4.90e-12p      0.0       0.0
 sig0.621 cc 0.020779p      0.0  0.751433p      0.0  3.518494p 4.805360p 4.872637p 4.872973p 4.872973p 4.90e-12p      0.0       0.0
        rc 0.020788p 0.000116o 0.751819o 0.006983o 3.525156m 4.812425l 4.879730l 4.880066l 4.880066l 4.91e-12p      0.0       0.0
  np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.541749n      0.0       0.0       0.0       0.0       0.0
 zp 56.03 ri 0.018623p      0.0  0.650984p      0.0  2.118989n 0.735357p 0.024040p 6.06e-05p 1.05e-08p      0.0       0.0       0.0
 sig0.597 cc 0.018615p      0.0  0.668765p      0.0  2.777553p 3.512694p 3.536724p 3.536784p 3.536784p      0.0       0.0       0.0
        rc 0.018623p 9.12e-05o 0.669129o 0.005844o 2.783256m 3.518613m 3.542653l 3.542714l 3.542714l      0.0       0.0       0.0
  u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.289496h      0.0  4.570837i      0.0       0.0       0.0
 zp 56.56 ri 0.001194p      0.0  0.151452p      0.0  2.491049n 2.101458n 0.340457p 0.001808p 1.25e-06p 2.87e-11p      0.0       0.0
 sig0.583 cc 0.001186p      0.0  0.151648p      0.0  2.624745p 4.773214p 5.083027p 5.084956p 5.084957p 3.06e-11p      0.0       0.0
        rc 0.001194p 2.40e-06o 0.152612p 0.000562o 2.641781m 4.743239k 5.083696h 5.085504h 5.085506g 2.87e-11p      0.0
0.0
  u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  6.596000j 7.497650k 7.307709i      0.0       0.0       0.0
 zp 55.05 ri 1.075409n      0.0  4.647483n      0.0  1.443540n 0.011688p 3.14e-06p 1.32e-11p      0.0       0.0       0.0       0.0
 sig0.497 cc 1.077214p      0.0  5.702068p      0.0  7.042260p 7.053967p 7.053970p 7.053970p 7.053970p      0.0       0.0       0.0
        rc 1.075409m 0.008791o 5.698819m 0.098011m 7.149189l 7.160877k 7.160880j 7.160880i 7.160880h      0.0       0.0       0.0

   xe, cs, ba, la, ce, pr half lives from 89wal1.
1

     mass number    144              LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide      54 xe g   55 cs g   56 ba d   56 ba g   57 la g   58 ce g   59 pr m   59 pr g   60 nd g   61 pm g   62 sm g
 half life      1.2 s    1.01 s    0.59 s    11.4 s    40.7 s    284.6d     7.2 m    17.28m    15.32l    363. d    stable
 lambda      5.776e-01 6.863e-01 1.175e+00 6.080e-02 1.703e-02 2.819e-08 1.605e-03 6.685e-04 1.052e-23 2.210e-08      0.0
  z - 1 g    100.0000   95.3880      0.0   96.8700  100.0000  100.0000    0.5000   99.5000  100.0000 -100.0000      0.0
  z - 1 m      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0    0.0500       0.0       0.0
  z - 0 m      0.0       0.0   13.5900  100.0000      0.0       0.0       0.0   99.9500      0.0       0.0       0.0
  cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  4.742721i      0.0       0.0       0.0       0.0       0.0
 zp 56.41 ri 0.002266p 0.253109p      0.0  2.497907n 1.842937n 0.146926p 0.000599p 6.66e-05p 2.16e-07p 3.11e-12p      0.0
 sig0.577 cc 0.002264p 0.255097p      0.0  2.745744p 4.588207p 4.735056p 0.024274p 4.735709p 4.735721p 3.11e-12p      0.0
        rc 0.002266p 0.255271p 0.007719o 2.752906m 4.595843k 4.742769i 0.024313i 4.743422i 4.743435i 3.11e-12p      0.0
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 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  4.020911k      0.0       0.0  3.582990i      0.0       0.0
zp 56.40 ri 0.001248p 0.141598p       0.0  2.318013n 1.111356n 0.104956p 0.000163p 1.81e-05p 3.84e-08p       0.0       0.0
sig0.551 cc 0.001242p 0.142157p       0.0  2.446425p 3.571242p 3.672653p 0.018535p 3.672836p 3.672845p       0.0       0.0
         rc 0.001248p 0.142788p 0.003116o 2.459448m 3.570804l 3.675760k 0.018542k 3.675932j 3.675941i       0.0       0.0
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  5.827996i      0.0       0.0       0.0       0.0       0.0
zp 55.93 ri 0.040059p 1.308148n       0.0  3.544602n 0.916520p 0.019104p 2.29e-05p 2.55e-06p 1.94e-09p       0.0       0.0
sig0.579 cc 0.039963p 1.343107p       0.0  4.847564p 5.765494p 5.784552p 0.028946p 5.784563p 5.784577p       0.0       0.0
         rc 0.040059p 1.346360m 0.043792o 4.892613m 5.809133k 5.828238i 0.029164i 5.828249i 5.828263i       0.0       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  5.098019k      0.0       0.0       0.0       0.0       0.0
zp 56.69 ri 0.001240p 0.147778p       0.0  1.805956n 2.656219n 0.487007p 0.008766p 0.000974p 1.84e-05p 3.01e-09p       0.0
sig0.627 cc 0.001239p 0.148904p       0.0  1.951016p 4.606502p 5.093486p 0.034230p 5.103205p 5.103241p 3.01e-09p       0.0
         rc 0.001240p 0.148961p 0.004689o 1.954943m 4.611162l 5.098169k 0.034257n 5.107892k 5.107928k 3.01e-09p       0.0
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  4.823818j      0.0       0.0       0.0       0.0       0.0
zp 56.89 ri 0.000278p 0.060331p       0.0  1.227776n 2.778314n 0.757904p 0.019897p 0.002211p 5.85e-05p 1.28e-08p       0.0
sig0.619 cc 0.000278p 0.060590p       0.0  1.286721p 4.064829p 4.822696p 0.044008p 4.844779p 4.844860p 1.28e-08p       0.0
         rc 0.000278p 0.060596p 0.001140o 1.287616m 4.065930m 4.823834j 0.044016o 4.845919j 4.846000j 1.28e-08p       0.0
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.206181n      0.0       0.0
zp 56.30 ri 0.001471p 0.224621p       0.0  1.840600n 1.099110n 0.043228p 7.27e-05p 8.08e-06p 5.96e-09p       0.0       0.0
sig0.543 cc 0.001470p 0.225907p       0.0  2.060015p 3.158685p 3.201891p 0.016082p 3.201963p 3.201972p       0.0       0.0
         rc 0.001471p 0.226024p 0.004983o 2.064532m 3.163642l 3.206870l 0.016107l 3.206943l 3.206951l       0.0       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.488447n      0.0       0.0
zp 56.52 ri 0.002513p 0.220728p       0.0  1.954744n 2.052902n 0.256349p 0.002930p 0.000326p 3.65e-06p 3.36e-10p       0.0
sig0.621 cc 0.002511p 0.223021p       0.0  2.171682p 4.223908p 4.480141p 0.025329p 4.483382p 4.483399p 3.36e-10p       0.0
         rc 0.002513p 0.223125p 0.005815o 2.176700m 4.229603l 4.485952l 0.025359m 4.489194l 4.489210l 3.36e-10p       0.0
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.998893n      0.0       0.0
zp 56.42 ri 0.001978p 0.184865p       0.0  1.479178n 1.230398n 0.103703p 0.000681p 4.34e-05p 3.59e-07p 1.18e-11p       0.0
sig0.597 cc 0.001977p 0.186653p       0.0  1.660622p 2.890542p 2.994190p 0.015651p 2.994906p 2.994914p 1.18e-11p       0.0
         rc 0.001978p 0.186752p 0.004650o 1.664735m 2.895134l 2.998837l 0.015675l 2.999553l 2.999561l 1.18e-11p       0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0  3.738521i      0.0       0.0       0.0  4.155014i      0.0       0.0
zp 57.00 ri 5.20e-05p 0.017902p       0.0  1.109585n 2.178557l 1.007114n 0.014829p 0.001648p 4.80e-05p 3.15e-09p       0.0
sig0.583 cc 5.07e-05p 0.017515p       0.0  1.099641p 3.225292p 4.311544p 0.037387p 4.329114p 4.329184p 3.36e-09p       0.0
        rc 5.20e-05p 0.017952p 0.000170o 1.127145m 3.305702i 4.312815k 0.036393o 4.329274j 4.329340i 3.15e-09p       0.0
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  6.364825k      0.0       0.0  6.157270i      0.0       0.0
zp 55.45 ri 0.190610p 2.949582n       0.0  2.894912n 0.097274p 0.000120p 2.01e-09p 2.23e-10p       0.0       0.0       0.0
sig0.497 cc 0.188523p 3.097116p       0.0  5.930537p 6.026746p 6.026865p 0.030134p 6.026850p 6.026865p       0.0       0.0
        rc 0.190610p 3.131402m 0.187093m 6.115395l 6.212669k 6.212789j 0.031064j 6.212774j 6.212789i       0.0       0.0

  xe, cs, ba, la, ce, pr, half lives from 89wal1.
1

    mass number    145            LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       54 xe g   55 cs g   56 ba d   56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g
half life      0.9 s    0.59 s    0.340s     4.0 s     24. s    3.00 m    5.98 h    stable    17.7 y    340. d
lambda       7.702e-01 1.175e+00 2.039e+00 1.733e-01 2.888e-02 3.851e-03 3.220e-05       0.0 1.242e-09 2.360e-08
 z - 1 g    100.0000  100.0000       0.0   86.4100  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0   13.3000  100.0000       0.0       0.0       0.0       0.0       0.0       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.942744n      0.0       0.0
zp 56.80 ri 0.000172p 0.056627p       0.0  1.510943n 2.787345n 0.586780p 0.007730p 7.68e-06p 3.47e-10p       0.0
sig0.577 cc 0.000172p 0.056795p       0.0  1.560221p 4.347413p 4.934149p 4.941878p 4.941886p 3.46e-10p       0.0
        rc 0.000172p 0.056799p 0.000948o 1.560971m 4.348316m 4.935096l 4.942826l 4.942833l 3.47e-10p       0.0
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.085353i      0.0       0.0
zp 56.82 ri 4.55e-05p 0.022885p       0.0  0.980437p 1.694575n 0.387155p 0.003178p 2.06e-06p 3.30e-11p       0.0
sig0.551 cc 4.55e-05p 0.022930p       0.0  1.000294p 2.694840p 3.081982p 3.085160p 3.085162p 3.30e-11p       0.0
        rc 4.55e-05p 0.022931p 0.000193o 1.000445o 2.695020m 3.082175l 3.085353k 3.085355i 3.30e-11p       0.0
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.442846n      0.0       0.0
zp 56.35 ri 0.003192p 0.319048p       0.0  2.386924n 1.668043n 0.103163p 0.000445p 1.14e-07p 1.61e-12p       0.0
sig0.579 cc 0.003190p 0.322074p       0.0  2.666090p 4.333488p 4.436599p 4.437043p 4.437043p 1.60e-12p       0.0
        rc 0.003192p 0.322239p 0.006836o 2.672207m 4.340250l 4.443412l 4.443857l 4.443857l 1.61e-12p       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.799774n      0.0       0.0
zp 57.08 ri 0.000114p 0.034389p       0.0  1.002842n 3.316857n 1.382437n 0.066934p 0.000321p 1.37e-07p 4.96e-12p
sig0.627 cc 0.000114p 0.034501p       0.0  1.032816p 4.349576p 5.731953p 5.798884p 5.799206p 1.37e-07p 4.96e-12p
        rc 0.000114p 0.034503p 0.000612o 1.033268m 4.350126m 5.732562l 5.799497l 5.799818l 1.37e-07p 4.96e-12p
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.106905n      0.0       0.0
zp 57.28 ri 1.48e-05p 0.008376p       0.0  0.421421p 2.202216n 1.377078n 0.098158p 0.000673p 3.92e-07p 1.82e-11p
sig0.619 cc 1.48e-05p 0.008391p       0.0  0.428705p 2.630905p 4.007967p 4.106124p 4.106797p 3.92e-07p 1.82e-11p
        rc 1.48e-05p 0.008391p 0.000115o 0.428786p 2.631002m 4.008080l 4.106238l 4.106911l 3.92e-07p 1.82e-11p
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.828983n      0.0       0.0
zp 56.71 ri 6.65e-05p 0.036600p       0.0  0.954507p 1.636536n 0.204421p 0.001375p 3.87e-07p 4.08e-12p       0.0
sig0.543 cc 6.65e-05p 0.036664p       0.0  0.986290p 2.622741p 2.827148p 2.828523p 2.828524p 4.08e-12p       0.0
        rc 6.65e-05p 0.036667p 0.000500o 0.986690o 2.623227m 2.827647m 2.829023m 2.829023l 4.09e-12p       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.902998n      0.0       0.0
zp 56.92 ri 0.000186p 0.042606p       0.0  0.925487p 2.250547n 0.667621p 0.021594p 6.47e-05p 1.63e-08p       0.0
sig0.621 cc 0.000186p 0.042788p       0.0  0.962639p 3.213063p 3.880633p 3.902225p 3.902289p 1.63e-08p       0.0
        rc 0.000186p 0.042791p 0.000754o 0.963217o 3.213764m 3.881385m 3.902978m 3.903043l 1.63e-08p       0.0
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.498696n      0.0       0.0
zp 56.82 ri 0.000130p 0.034096p       0.0  0.710788p 1.441952n 0.309878p 0.006000p 8.68e-06p 8.49e-10p       0.0
sig0.597 cc 0.000130p 0.034223p       0.0  0.740478p 2.182342p 2.492194p 2.498194p 2.498203p 8.49e-10p       0.0
        rc 0.000130p 0.034226p 0.000534o 0.740897o 2.182850m 2.492727m 2.498728m 2.498736m 8.49e-10p       0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  3.054282i      0.0  2.479125n      0.0       0.0
zp 57.43 ri 8.87e-07p 0.001250p       0.0  0.196232p 1.332403n 1.505038m 0.080079p 0.000617p 1.68e-07p 4.67e-12p
sig0.583 cc 8.84e-07p 0.001247p       0.0  0.196712p 1.525040p 3.025475p 3.114762p 3.115450p 1.88e-07p 5.20e-12p
        rc 8.87e-07p 0.001251p 6.27e-06o 0.197319p 1.529722m 3.034760i 3.114839i 3.115456i 1.68e-07p 4.67e-12p
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.997341i      0.0       0.0
zp 55.84 ri 0.023089p 1.353633n       0.0  4.261181n 0.498741p 0.002631p 2.28e-07p      0.0       0.0       0.0
sig0.497 cc 0.023044p 1.374049p       0.0  5.452030p 5.949915p 5.952541p 5.952541p 5.952541p      0.0       0.0
        rc 0.023089p 1.376721m 0.045452o 5.496258m 5.994998l 5.997630l 5.997630k 5.997630i      0.0       0.0

  xe, cs, ba, la, ce, pr half lives from 89wal1; pm, sm half lives 90bur1.
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    mass number    146              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       54 xe g   55 cs g   56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g
half life     0.563s    0.322s    2.20 s     6.3 s    13.5 m    24.2 m    stable    5.53 y    1.0e8y
lambda       1.231e+00 2.153e+00 3.151e-01 1.100e-01 8.557e-04 4.774e-04       0.0 3.975e-09 2.198e-16
 z - 1 g    100.0000  100.0000   86.7000  100.0000  100.0000  100.0000  100.0000  -65.0000   35.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cf250s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  4.448470n      0.0       0.0
zp 57.19 ri 7.16e-06p 0.007121p 0.534223p 2.510765n 1.347243n 0.049909p 0.000150p 2.10e-08p       0.0
sig0.577 cc 7.16e-06p 0.007128p 0.540403p 3.051168p 4.398411p 4.448320p 4.448470p 2.10e-08p 7.35e-09p
         rc 7.16e-06p 0.007128p 0.540403o 3.051168m 4.398411l 4.448320l 4.448470l 2.10e-08p 7.35e-09p
 cm244s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  2.587715i      0.0       0.0
zp 57.26 ri 9.00e-07p 0.001454p 0.276717p 1.219422n 1.064828n 0.025411p 7.96e-05p 4.24e-09p       0.0
sig0.551 cc 9.00e-07p 0.001454p 0.277979p 1.497403p 2.562228p 2.587639p 2.587718p 4.24e-09p 1.48e-09p
         rc 9.00e-07p 0.001454p 0.277978p 1.497400m 2.562228l 2.587639k 2.587718i 4.24e-09p 1.48e-09p
 cm248s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  3.736030n      0.0       0.0
zp 56.78 ri 0.000157p 0.051243p 1.133657n 2.162700n 0.389681p 0.005423p 4.73e-06p 2.33e-10p       0.0
sig0.579 cc 0.000157p 0.051401p 1.178222p 3.340921p 3.730602p 3.736025p 3.736030p 2.33e-10p 8.17e-11p
         rc 0.000157p 0.051401p 1.178222m 3.340921m 3.730602m 3.736025m 3.736030l 2.33e-10p 8.17e-11p
 es253s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  5.406569n      0.0       0.0
zp 57.47 ri 5.98e-06p 0.004599p 0.327955p 2.485402n 2.320812n 0.265217p 0.003187p 3.53e-06p 3.35e-10p
sig0.627 cc 5.98e-06p 0.004605p 0.331948p 2.817350p 5.138162p 5.403379p 5.406568p 3.53e-06p 1.24e-06p
         rc 5.98e-06p 0.004605p 0.331948p 2.817350m 5.138162l 5.403379l 5.406568l 3.53e-06p 1.24e-06p
 fm254s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  3.724867n      0.0       0.0
zp 57.67 ri 5.76e-07p 0.000860p 0.109631p 1.355829n 1.926645n 0.326325p 0.005683p 8.74e-06p 1.09e-09p
sig0.619 cc 5.76e-07p 0.000861p 0.110377p 1.466206p 3.392851p 3.719176p 3.724864p 8.74e-06p 3.06e-06p
         rc 5.76e-07p 0.000861p 0.110377p 1.466206m 3.392851l 3.719176m 3.724864l 8.74e-06p 3.06e-06p
 fm255t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.482331n      0.0       0.0
zp 57.11 ri 1.90e-06p 0.003756p 0.320972p 1.572443n 0.572733p 0.012911p 1.32e-05p 5.21e-10p       0.0
sig0.543 cc 1.90e-06p 0.003758p 0.324231p 1.896674p 2.469407p 2.482318p 2.482331p 5.21e-10p 1.82e-10p
        rc 1.90e-06p 0.003758p 0.324231p 1.896674m 2.469407m 2.482318m 2.482331m 5.21e-10p 1.82e-10p
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.415123n      0.0       0.0
zp 57.32 ri 9.28e-06p 0.005661p 0.310192p 1.775311n 1.225662n 0.098267p 0.000775p 5.29e-07p 2.94e-11p
sig0.621 cc 9.28e-06p 0.005670p 0.315108p 2.090418p 3.316080p 3.414347p 3.415123p 5.29e-07p 1.85e-07p
        rc 9.28e-06p 0.005670p 0.315108p 2.090418m 3.316080l 3.414347l 3.415123l 5.29e-07p 1.85e-07p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.998957n      0.0       0.0
zp 57.22 ri 5.31e-06p 0.004012p 0.225596p 1.134772n 0.603547p 0.031428p 0.000130p 3.78e-08p       0.0
sig0.597 cc 5.31e-06p 0.004017p 0.229079p 1.363851p 1.967398p 1.998826p 1.998956p 3.78e-08p 1.32e-08p
        rc 5.31e-06p 0.004017p 0.229079p 1.363851m 1.967398m 1.998826m 1.998956m 3.78e-08p 1.32e-08p
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  2.379587j      0.0  1.671610n      0.0       0.0
zp 57.86 ri 1.22e-08p 4.71e-05p 0.029343p 0.476064p 1.791810l 0.201481p 0.006024p 4.47e-06p 5.23e-10p
sig0.583 cc 1.20e-08p 4.63e-05p 0.028846p 0.496193p 2.255197p 2.497517p 2.504766p 5.38e-06p 1.88e-06p
        rc 1.22e-08p 4.71e-05p 0.029384p 0.505448p 2.297258j 2.498739k 2.504766k 4.47e-06p 1.56e-06p
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  5.243420n      0.0       0.0
zp 56.23 ri 0.001424p 0.340333p 3.558327n 1.359838n 0.028938p 1.13e-05p 1.24e-10p       0.0       0.0
sig0.497 cc 0.001424p 0.341757p 3.854630p 5.214468p 5.243407p 5.243418p 5.243418p       0.0       0.0
        rc 0.001424p 0.341757p 3.854630m 5.214468l 5.243407l 5.243418l 5.243418l       0.0       0.0

  xe half life from 80eng2; cs, ba, la, ce, pr half lives 89wal1.
1

    mass number    147              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g
half life     0.892s    4.02 s     56. s    13.4 m    10.98d    2.623y    11.03l    24.3 d    38.0 h
lambda      7.771e-01 1.724e-01 1.238e-02 8.621e-04 7.306e-07 8.380e-09 2.051e-19 3.301e-07 5.067e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0  3.814494i      0.0       0.0       0.0       0.0
zp 57.59 ri 0.115492p 1.469902n 2.019857n 0.207356p 0.001885p 8.40e-07p 2.51e-11p       0.0       0.0
sig0.577 cc 0.115492p 1.585393p 3.605250p 3.812607p 3.814492p 3.814493p 3.814493p       0.0       0.0
        rc 0.115492p 1.585394m 3.605251l 3.812607k 3.814492i 3.814493i 3.814493i       0.0       0.0
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  1.433196m      0.0  1.990550i      0.0       0.0
zp 57.72 ri 0.026592p 0.508533p 1.325444o 0.119521p 0.001230p 4.38e-07p 8.59e-12p       0.0       0.0
sig0.551 cc 0.029166p 0.586922p 1.848882p 1.979971p 1.981320p 1.981320p 1.981320p       0.0       0.0
        rc 0.026592p 0.535126o 1.860569m 1.980090m 1.981320l 1.981320k 1.981320i       0.0       0.0
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  3.130742i      0.0       0.0       0.0       0.0
zp 57.23 ri 0.324112p 1.809328n 0.953787p 0.043380p 0.000134p 2.43e-08p       0.0       0.0       0.0
sig0.579 cc 0.324112p 2.133440p 3.087227p 3.130607p 3.130742p 3.130742p 3.130742p       0.0       0.0
        rc 0.324112p 2.133441m 3.087227l 3.130607k 3.130742i 3.130742i 3.130742i       0.0       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  4.816762n      0.0       0.0
zp 57.87 ri 0.070013p 1.274771n 2.719582n 0.730303p 0.022029p 6.40e-05p 1.63e-08p       0.0       0.0
sig0.627 cc 0.070013p 1.344784p 4.064366p 4.794668p 4.816697p 4.816761p 4.816761p       0.0       0.0
        rc 0.070013p 1.344784m 4.064366m 4.794668m 4.816697l 4.816761l 4.816761l       0.0       0.0
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  3.446959k      0.0       0.0       0.0       0.0
zp 58.06 ri 0.020396p 0.613980p 1.995651n 0.783092p 0.033834p 0.000136p 4.55e-08p 1.20e-12p       0.0
sig0.619 cc 0.020396p 0.634374p 2.630020p 3.413120p 3.446954p 3.447089p 3.447090p 1.20e-12p       0.0
        rc 0.020396p 0.634376o 2.630028m 3.413120l 3.446954k 3.447089k 3.447090k 1.21e-12p       0.0
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.022640n      0.0       0.0
zp 57.52 ri 0.060870p 0.921527p 0.968599p 0.071375p 0.000266p 4.04e-08p       0.0       0.0       0.0
sig0.543 cc 0.060870p 0.982397p 1.950997p 2.022372p 2.022638p 2.022638p 2.022638p       0.0       0.0
        rc 0.060870p 0.982397o 1.950997n 2.022372n 2.022638n 2.022638n 2.022638m       0.0       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.122398n      0.0       0.0
zp 57.73 ri 0.072918p 1.031127n 1.679995n 0.331442p 0.006897p 1.30e-05p 2.03e-09p       0.0       0.0
sig0.621 cc 0.072918p 1.104046p 2.784041p 3.115482p 3.122380p 3.122393p 3.122393p       0.0       0.0
        rc 0.072918p 1.104046m 2.784041l 3.115482m 3.122380m 3.122393m 3.122393l       0.0       0.0
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  1.702007m      0.0       0.0       0.0       0.0
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zp 57.63 ri 0.049909p 0.657607p 0.872279p 0.120683p 0.001445p 1.26e-06p 7.33e-11p 0.0 0.0
sig0.597 cc 0.049907p 0.707483p 1.579790p 1.700478p 1.701922p 1.701924p 1.701924p 0.0 0.0
rc 0.049909p 0.707516o 1.579795n 1.700478m 1.701922l 1.701924l 1.701924l 0.0 0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.401012j 0.0 1.093505i 0.0 0.0
zp 58.28 ri 0.001570p 0.093922p 0.777728p 0.306764p 0.025363p 6.56e-05p 2.06e-08p 0.0 0.0
sig0.583 cc 0.001511p 0.091936p 0.840709p 1.180922p 1.205340p 1.205412p 1.205412p 0.0 0.0
rc 0.001570p 0.095492p 0.873219o 1.179983l 1.205346j 1.205412i 1.205412h 0.0 0.0
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 4.240350k 5.196741m 4.387249n 0.0 0.0
zp 56.63 ri 1.881885m 2.320070n 0.196760p 0.000336p 1.77e-08p 0.0 0.0 0.0 0.0
sig0.497 cc 1.884507p 4.207810p 4.398715p 4.399052p 4.399052p 4.399052p 4.399052p 0.0 0.0
rc 1.881885m 4.201955l 4.398716l 4.399052k 4.399052j 4.399052j 4.399052j 0.0 0.0

cs, ba, la, ce, pr, nd, pm half lives from 89wal1.
1

mass number 148 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 54 xe g 55 cs g 56 ba g 57 la d 57 la g 58 ce d 58 ce g 59 pr g 60 nd g 61 pm m 61 pm g 62 sm g
half life 0.15 s 0.64 s 0.695s 1.1 s 2.41 s 56. s 2.27 m stable 41.3 d 5.37 d 8.e15y
lambda 0.0 4.621e+00 1.083e+00 9.973e-01 6.301e-01 2.876e-01 1.238e-02 5.089e-03 0.0 1.943e-07 1.494e-06 2.747e-24
z - 1 g 100.0000 100.0000 100.0000 0.0 100.0000 0.0 100.0000 100.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 95.4000
z - 0 m 0.0 0.0 0.0 0.5750 100.0000 1.0600 100.0000 0.0 0.0 0.0 4.6000 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.459921n 0.0 0.0 0.0
zp 58.00 ri 2.26e-09p 2.32e-05p 0.016439p 0.0 0.607331p 0.0 2.202293n 0.615551p 0.016912p 1.70e-05p 7.28e-06p 2.40e-09p
sig0.577 cc 2.26e-09p 2.32e-05p 0.016460p 0.0 0.623715p 0.0 2.826149p 3.441640p 3.458550p 1.70e-05p 8.07e-06p 2.43e-05p
rc 2.26e-09p 2.32e-05p 0.016462p 7.43e-06o 0.623801o 0.001674o 2.827768m 3.443319m 3.460231l 1.70e-05p 8.07e-06p 2.43e-05p
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.691968i 0.0 0.0 0.0

zp 58.13 ri 4.29e-11p 1.10e-06p 0.003019p 0.0 0.153225p 0.0 1.222145n 0.300540p 0.012639p 7.27e-06p 3.12e-06p 9.32e-10p
sig0.551 cc 4.29e-11p 1.10e-06p 0.003020p 0.0 0.156230p 0.0 1.378377p 1.678931p 1.691569p 7.27e-06p 3.45e-06p 1.04e-05p
rc 4.29e-11p 1.10e-06p 0.003020p 9.55e-07o 0.156245p 0.000389o 1.378779m 1.679319k 1.691959i 7.27e-06p 3.45e-06p 1.04e-05p
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.625318n 0.0 0.0 0.0
zp 57.67 ri 5.90e-08p 0.000239p 0.057379p 0.0 0.957624p 0.0 1.411231n 0.194364p 0.002011p 8.99e-07p 3.85e-07p 4.60e-11p
sig0.579 cc 5.90e-08p 0.000239p 0.057607p 0.0 1.015053p 0.0 2.426501p 2.620837p 2.622847p 8.99e-07p 4.26e-07p 1.28e-06p
rc 5.90e-08p 0.000239p 0.057618p 3.39e-05o 1.015276o 0.003261o 2.429768m 2.624131m 2.626142l 8.99e-07p 4.27e-07p 1.28e-06p
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.833749n 0.0 0.0 0.0
zp 58.26 ri 3.94e-09p 2.09e-05p 0.009695p 0.0 0.425984p 0.0 2.059456n 1.246990n 0.090040p 0.000463p 0.000198p 4.39e-07p
sig0.627 cc 3.94e-09p 2.09e-05p 0.009716p 0.0 0.435666p 0.0 2.495240p 3.742153p 3.832186p 0.000463p 0.000220p 0.000662p
rc 3.94e-09p 2.09e-05p 0.009716p 5.22e-06o 0.435706p 0.001079o 2.496240m 3.743230l 3.833270l 0.000463p 0.000220p 0.000662p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.865283n 0.0 0.0 0.0
zp 58.45 ri 2.57e-10p 2.74e-06p 0.002367p 0.0 0.178057p 0.0 1.349775n 1.207454n 0.125944p 0.000910p 0.000390p 1.16e-06p
sig0.619 cc 2.57e-10p 2.74e-06p 0.002369p 0.0 0.180417p 0.0 1.530254p 2.737662p 2.863599p 0.000910p 0.000432p 0.001301p
rc 2.57e-10p 2.74e-06p 0.002369p 1.22e-06o 0.180427p 0.000447o 1.530649m 2.738103l 2.864047l 0.000910p 0.000432p 0.001301p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.746826n 0.0 0.0 0.0
zp 57.92 ri 2.61e-10p 7.25e-06p 0.007785p 0.0 0.376145p 0.0 1.113389n 0.245500p 0.003135p 1.22e-06p 5.22e-07p 3.68e-11p
sig0.543 cc 2.61e-10p 7.25e-06p 0.007792p 0.0 0.383886p 0.0 1.497355p 1.742828p 1.745962p 1.22e-06p 5.78e-07p 1.74e-06p

rc 2.61e-10p 7.25e-06p 0.007793p 3.62e-06o 0.383941p 0.001059o 1.498389m 1.743889m 1.747024m 1.22e-06p 5.78e-07p 1.74e-06p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.703973n 0.0 0.0 0.0
zp 58.14 ri 5.96e-09p 2.80e-05p 0.010964p 0.0 0.394915p 0.0 1.532969n 0.725097p 0.038778p 0.000139p 5.95e-05p 8.65e-08p
sig0.621 cc 5.96e-09p 2.80e-05p 0.010991p 0.0 0.405860p 0.0 1.938945p 2.663977p 2.702751p 0.000139p 6.59e-05p 0.000198p
rc 5.96e-09p 2.80e-05p 0.010992p 6.79e-06o 0.405914p 0.001222o 1.940105m 2.665201m 2.703980m 0.000139p 6.59e-05p 0.000198p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.199374n 0.0 0.0 0.0
zp 58.06 ri 1.51e-09p 1.10e-05p 0.005439p 0.0 0.204839p 0.0 0.714156p 0.265066p 0.009332p 2.09e-05p 4.59e-06p 4.78e-09p
sig0.597 cc 1.51e-09p 1.10e-05p 0.005449p 0.0 0.210256p 0.0 0.924424p 1.189512p 1.198842p 2.09e-05p 5.55e-06p 2.55e-05p
rc 1.51e-09p 1.10e-05p 0.005450p 2.39e-06o 0.210291p 0.000485o 0.924931o 1.189997n 1.199329m 2.09e-05p 5.55e-06p 2.55e-05p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.952766n 0.0 0.0 0.0
zp 58.69 ri 0.0 1.64e-08p 0.000104p 0.0 0.015295p 0.0 0.428792p 0.408207p 0.099530p 0.000499p 0.000214p 8.76e-07p
sig0.583 cc 0.0 1.64e-08p 0.000104p 0.0 0.015397p 0.0 0.444118p 0.852417p 0.951929p 0.000499p 0.000237p 0.000714p
rc 0.0 1.64e-08p 0.000104p 1.98e-08o 0.015400p 1.99e-05o 0.444211p 0.852419o 0.951948n 0.000499p 0.000237p 0.000714p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.036190n 0.0 0.0 0.0
zp 57.03 ri 6.18e-07p 0.003047p 0.484367p 0.0 1.969534n 0.0 0.569308p 0.004338p 1.08e-06p 2.73e-12p 1.17e-12p 0.0
sig0.497 cc 6.18e-07p 0.003047p 0.487338p 0.0 2.456674p 0.0 3.026257p 3.030594p 3.030595p 2.73e-12p 1.30e-12p 3.91e-12p
rc 6.18e-07p 0.003048p 0.487414p 0.000429o 2.457378m 0.012255n 3.038941m 3.043278m 3.043279l 2.73e-12p 1.30e-12p 3.91e-12p

cs, ba, la, ce, pr half lives 89wal1.

mass number 149 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	56 ba g	57 la d	57 la g	58 ce d	58 ce g	59 pr g	60 nd g	61 pm g	62 sm g	63 eu g	64 gd g
half life	0.36 s	0.962s	1.10 s	0.608s	5.2 s	2.3 m	1.72 h	2.212d	1.e16y	93. d	9.3 d
lambda	1.925e+00	7.205e-01	6.301e-01	1.140e+00	1.333e-01	5.023e-03	1.119e-04	3.627e-06	2.198e-24	8.626e-08	8.626e-07
z - 1 g	100.0000	0.0	99.4250	0.0	98.9400	100.0000	100.0000	100.0000	100.0000	-100.0000	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	10.9280	100.0000	0.3990	100.0000	0.0	0.0	0.0	0.0	0.0	0.0
cf250s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	3.256761i	0.0	0.0	0.0	0.0
zp 58.44 ri	0.001291p	0.0	0.156618p	0.0	1.667607n	1.319369n	0.113480p	0.000559p	1.98e-07p	3.11e-12p	0.0
sig0.577 cc	0.001291p	0.0	0.157901p	0.0	1.823838p	3.143206p	3.256684p	3.257243p	3.257243p	3.11e-12p	0.0
rc	0.001291p	4.60e-06o	0.157906p	7.15e-05o	1.823911m	3.143280k	3.256760i	3.257319i	3.257319i	3.11e-12p	0.0
cm244s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	1.532724k	1.652157k	1.393385i	0.0	0.0
zp 58.55 ri	0.000166p	0.0	0.036528p	0.0	0.733206p	0.611112p	0.070978p	0.000269p	6.94e-08p	0.0	0.0
sig0.551 cc	0.000163p	0.0	0.035962p	0.0	0.754170p	1.382059p	1.451622p	1.451876p	1.451876p	0.0	0.0
rc	0.000166p	5.69e-07o	0.036694p	1.31e-05o	0.769524o	1.380636m	1.451614k	1.451882j	1.451882i	0.0	0.0
cm248s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.027543n	0.0	0.0
zp 58.10 ri	0.005903p	0.0	0.301721p	0.0	1.230112n	0.477321p	0.015498p	3.33e-05p	4.15e-09p	0.0	0.0
sig0.579 cc	0.005903p	0.0	0.307591p	0.0	1.534457p	2.011763p	2.027260p	2.027294p	2.027294p	0.0	0.0
rc	0.005903p	4.12e-05o	0.307631p	0.000240o	1.534722m	2.012043n	2.027541n	2.027575n	2.027575m	0.0	0.0
es253s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.131922k	0.0	0.0	0.0
zp 58.66 ri	0.000908p	0.0	0.100882p	0.0	1.155347n	1.596120n	0.274543p	0.005123p	8.98e-06p	1.37e-09p	0.0
sig0.627 cc	0.000908p	0.0	0.101785p	0.0	1.256061p	2.852165p	3.126715p	3.131838p	3.131847p	1.37e-09p	0.0
rc	0.000908p	6.53e-06o	0.101791p	6.69e-05o	1.256126m	2.852246l	3.126789l	3.131912k	3.131921k	1.37e-09p	0.0
fm254s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	2.846181l	0.0	0.0	0.0	0.0
zp 58.85 ri	0.000213p	0.0	0.041943p	0.0	0.779345p	1.619705n	0.405401p	0.010773p	2.59e-05p	5.10e-09p	0.0
sig0.619 cc	0.000213p	0.0	0.042155p	0.0	0.821057p	2.440759p	2.846159p	2.856932p	2.856958p	5.10e-09p	0.0
rc	0.000213p	1.09e-06o	0.042156p	2.09e-05o	0.821075o	2.440780m	2.846181l	2.856954l	2.856980l	5.10e-09p	0.0
fm255t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.468327k	0.0	0.0	0.0
zp 58.31 ri	0.000630p	0.0	0.099234p	0.0	0.836473p	0.512204p	0.020734p	4.00e-05p	3.05e-09p	0.0	0.0

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sig0.543 cc 0.000630p      0.0  0.099859p      0.0  0.935280p 1.447480p 1.468213p 1.468253p 1.468253p      0.0       0.0
         rc 0.000630p 3.58e-06o 0.099864p 6.97e-05o 0.935348o 1.447552n 1.468287m 1.468327k 1.468327k      0.0       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.653701l      0.0       0.0       0.0
zp 58.56 ri 0.001181p      0.0  0.114097p      0.0  1.104775n 1.260575n 0.171817p 0.002398p 2.97e-06p 3.02e-10p      0.0
sig0.621 cc 0.001181p      0.0  0.115272p      0.0  1.218833p 2.479395p 2.651215p 2.653614p 2.653617p 3.02e-10p      0.0
         rc 0.001181p 6.77e-06o 0.115278p 6.91e-05o 1.218900m 2.479474l 2.651291l 2.653689k 2.653692k 3.02e-10p      0.0
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.899336n      0.0       0.0
zp 58.48 ri 0.000416p      0.0  0.045322p      0.0  0.418033p 0.397095p 0.038596p 0.000315p 1.83e-07p 7.09e-12p      0.0
sig0.597 cc 0.000416p      0.0  0.045734p      0.0  0.463285p 0.860379p 0.898974p 0.899289p 0.899289p 7.09e-12p      0.0
         rc 0.000416p 2.27e-06o 0.045737p 2.69e-05o 0.463313p 0.860407p 0.899003o 0.899318o 0.899318n 7.09e-12p      0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.666936n      0.0       0.0
zp 59.09 ri 3.45e-06p      0.0  0.001878p      0.0  0.119570p 0.357496p 0.183363p 0.004612p 1.40e-05p 1.46e-09p      0.0
sig0.583 cc 3.45e-06p      0.0  0.001881p      0.0  0.121432p 0.478927p 0.662290p 0.666902p 0.666916p 1.46e-09p      0.0
         rc 3.45e-06p 1.09e-08o 0.001881p 5.27e-07o 0.121432p 0.478928p 0.662291o 0.666903o 0.666917n 1.46e-09p      0.0
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.298981l 2.189030i      0.0       0.0
zp 57.43 ri 0.074665p      0.0  1.081486n      0.0  1.024721n 0.031452p 3.61e-05p 6.30e-10p      0.0       0.0       0.0
sig0.497 cc 0.074656p      0.0  1.155723p      0.0  2.168196p 2.199644p 2.199680p 2.199680p 2.199680p      0.0       0.0
         rc 0.074665p 0.000436o 1.156158m 0.000914o 2.169538l 2.200990l 2.201026k 2.201026j 2.201026i      0.0       0.0

  ba, la, ce, pr, nd, pm half lives from 89wal1.
1

    mass number    150            LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       54 xe g   55 cs g   56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g
half life              0.124s    0.962s    0.608s     4.4 s     6.2 s    stable    2.68 h    stable
lambda            0.0 5.590e+00 7.205e-01 1.140e+00 1.575e-01 1.118e-01       0.0 7.184e-05       0.0
 z - 1 g    100.0000  100.0000  100.0000   89.0720   99.6010  100.0000  100.0000       0.0  100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.361134n      0.0       0.0
zp 58.89 ri       0.0  4.61e-09p 4.21e-05p 0.017882p 0.603732p 1.378453n 0.361100p 0.006058p 7.78e-06p
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sig0.577 cc       0.0  4.61e-09p 4.21e-05p 0.017919p 0.621580p 2.000033p 2.361134p 0.006058p 0.006066p
         rc       0.0  4.61e-09p 4.21e-05p 0.017919p 0.621580o 2.000033m 2.361134m 0.006058p 0.006066p
 cm244s  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.995275i      0.0       0.0
zp 58.96 ri       0.0  1.37e-10p 5.21e-06p 0.003291p 0.259335p 0.521396p 0.211262p 0.002128p 2.63e-06p
sig0.551 cc       0.0  1.37e-10p 5.21e-06p 0.003295p 0.262617p 0.784013p 0.995275p 0.002128p 0.002131p
         rc       0.0  1.37e-10p 5.21e-06p 0.003295p 0.262617p 0.784013n 0.995275i 0.002128p 0.002131p
 cm248s  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  1.520657n      0.0       0.0
zp 58.52 ri 3.01e-12p 1.43e-07p 0.000377p 0.059833p 0.683507p 0.709836p 0.067386p 0.000464p 1.93e-07p
sig0.579 cc 3.01e-12p 1.43e-07p 0.000377p 0.060168p 0.743434p 1.453270p 1.520657p 0.000464p 0.000464p
         rc 3.01e-12p 1.43e-07p 0.000377p 0.060168p 0.743435o 1.453270n 1.520657m 0.000464p 0.000464p
 es253s  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  2.439940n      0.0       0.0
zp 59.05 ri       0.0  1.89e-08p 5.97e-05p 0.016708p 0.455411p 1.414147n 0.553687p 0.025067p 0.000112p
sig0.627 cc       0.0  1.89e-08p 5.97e-05p 0.016761p 0.472106p 1.886253p 2.439940p 0.025067p 0.025179p
         rc       0.0  1.89e-08p 5.97e-05p 0.016761p 0.472106p 1.886253m 2.439940m 0.025067p 0.025179p
 fm254s  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  2.153935n      0.0       0.0
zp 59.25 ri       0.0  1.55e-09p 9.95e-06p 0.005226p 0.245037p 1.199589n 0.704096p 0.046901p 0.000299p
sig0.619 cc       0.0  1.55e-09p 9.95e-06p 0.005235p 0.250251p 1.449839p 2.153935p 0.046901p 0.047200p
         rc       0.0  1.55e-09p 9.95e-06p 0.005235p 0.250251p 1.449839m 2.153935m 0.046901p 0.047200p
 fm255t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  1.287135n      0.0       0.0
zp 58.70 ri       0.0  2.43e-09p 3.27e-05p 0.017438p 0.441868p 0.738156p 0.089707p 0.000585p 1.59e-07p
sig0.543 cc       0.0  2.43e-09p 3.27e-05p 0.017467p 0.459263p 1.197422p 1.287129p 0.000585p 0.000585p
         rc       0.0  2.43e-09p 3.27e-05p 0.017467p 0.459265p 1.197422n 1.287129m 0.000585p 0.000585p
 fm256s  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  2.221120n      0.0       0.0
zp 59.00 ri       0.0  1.88e-08p 6.20e-05p 0.017265p 0.450384p 1.297248n 0.456237p 0.017735p 6.46e-05p
sig0.621 cc       0.0  1.88e-08p 6.20e-05p 0.017320p 0.467635p 1.764884p 2.221120p 0.017735p 0.017799p
         rc       0.0  1.88e-08p 6.20e-05p 0.017320p 0.467635p 1.764884m 2.221120m 0.017735p 0.017799p
 np237h  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.699484n      0.0       0.0
zp 58.90 ri       0.0  4.42e-09p 2.08e-05p 0.006738p 0.170875p 0.414786p 0.107075p 0.002534p 4.53e-06p
sig0.597 cc       0.0  4.42e-09p 2.08e-05p 0.006756p 0.177595p 0.592397p 0.699466p 0.002534p 0.002538p
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        rc      0.0  4.42e-09p 2.08e-05p 0.006757p 0.177605p 0.592391p 0.699466n 0.002534p 0.002538p
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.495438n      0.0       0.0
zp 59.48 ri      0.0  1.65e-12p 1.00e-07p 0.000132p 0.029181p 0.182047p 0.284079p 0.015550p 0.000169p
sig0.583 cc      0.0  1.66e-12p 1.00e-07p 0.000132p 0.029313p 0.211360p 0.495438p 0.015550p 0.015718p
        rc      0.0  1.66e-12p 1.00e-07p 0.000132p 0.029313p 0.211360p 0.495438n 0.015550p 0.015718p
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.998227n      0.0       0.0
zp 57.83 ri 1.13e-11p 1.27e-06p 0.003986p 0.225631p 0.691334p 0.078215p 0.000398p 3.31e-08p      0.0
sig0.497 cc 1.13e-11p 1.27e-06p 0.003988p 0.229181p 0.919603p 0.997817p 0.998215p 3.31e-08p 3.31e-08p
        rc 1.13e-11p 1.27e-06p 0.003988p 0.229183p 0.919602o 0.997817n 0.998215m 3.31e-08p 3.31e-08p

  cs, ba, la half lives from 80eng2; ce, pr half lives from 89wal1.
1

    mass number    151            LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide       57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g
half life     0.719s     1.0 s    22.4 s    12.4 m    1.183d     90. y    stable    120. d    17.6 h
lambda      9.640e-01 6.931e-01 3.094e-02 9.316e-04 6.782e-06 2.442e-10       0.0 6.685e-08 1.094e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  2.071579i      0.0       0.0       0.0       0.0
zp 59.35 ri 0.001303p 0.150893p 1.051028n 0.822317o 0.046037p 0.000216p 4.82e-08p      0.0       0.0
sig0.577 cc 0.001303p 0.152196p 1.203220p 2.025541p 2.071578p 2.071794p 2.071794p      0.0       0.0
        rc 0.001303p 0.152196p 1.203224m 2.025541k 2.071578i 2.071794i 2.071794i      0.0       0.0
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.696693k      0.0  0.696693i      0.0       0.0
zp 59.36 ri 0.000225p 0.047021p 0.333124p 0.304452p 0.011835p 4.10e-05p 3.69e-09p      0.0       0.0
sig0.551 cc 0.000225p 0.047245p 0.380363p 0.684823p 0.696657p 0.696698p 0.696698p      0.0       0.0
        rc 0.000225p 0.047246p 0.380371p 0.684822m 0.696657k 0.696698j 0.696698i      0.0       0.0
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  1.184063i      0.0       0.0       0.0       0.0
zp 58.92 ri 0.008518p 0.270974p 0.719169o 0.181728p 0.003674p 4.76e-06p 3.53e-10p      0.0       0.0
sig0.579 cc 0.008518p 0.279492p 0.998660p 1.180388p 1.184063p 1.184067p 1.184067p      0.0       0.0
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        rc 0.008518p 0.279492p 0.998660n 1.180388k 1.184063i 1.184067i 1.184067i      0.0       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  1.906817k      0.0       0.0       0.0       0.0
zp 59.45 ri 0.001808p 0.123105p 0.893592p 0.800684p 0.087619p 0.001005p 1.06e-06p 9.59e-11p       0.0
sig0.627 cc 0.001808p 0.124911p 1.018485p 1.819192p 1.906809p 1.907813p 1.907814p 9.59e-11p       0.0
        rc 0.001808p 0.124914p 1.018505o 1.819190m 1.906809k 1.907813k 1.907814k 9.59e-11p       0.0
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.685688n      0.0       0.0
zp 59.65 ri 0.000439p 0.053348p 0.630820p 0.859423p 0.139338p 0.002314p 3.39e-06p 4.03e-10p       0.0
sig0.619 cc 0.000439p 0.053787p 0.684607p 1.544030p 1.683367p 1.685682p 1.685685p 4.03e-10p       0.0
        rc 0.000439p 0.053787p 0.684607o 1.544030n 1.683367n 1.685682n 1.685685m 4.03e-10p       0.0
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  1.285986k      0.0       0.0       0.0       0.0
zp 59.10 ri 0.002065p 0.171215p 0.816618p 0.289747p 0.006341p 6.27e-06p 2.40e-10p       0.0       0.0
sig0.543 cc 0.002065p 0.173280p 0.989895p 1.279644p 1.285985p 1.285991p 1.285991p       0.0       0.0
        rc 0.002065p 0.173280p 0.989898o 1.279644m 1.285985k 1.285991k 1.285991k       0.0       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  2.049074l      0.0       0.0       0.0       0.0
zp 59.44 ri 0.001791p 0.130193p 0.967967p 0.859169p 0.089937p 0.000944p 8.69e-07p 6.53e-11p       0.0
sig0.621 cc 0.001791p 0.131981p 1.099929p 1.959122p 2.049057p 2.050002p 2.050003p 6.53e-11p       0.0
        rc 0.001791p 0.131984p 1.099951o 1.959120m 2.049057l 2.050002l 2.050003l 6.53e-11p       0.0
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.529609n      0.0       0.0
zp 59.31 ri 0.000652p 0.046051p 0.285278p 0.185542p 0.012012p 6.31e-05p 2.33e-08p       0.0       0.0
sig0.597 cc 0.000652p 0.046703p 0.331980p 0.517523p 0.529535p 0.529598p 0.529598p       0.0       0.0
        rc 0.000652p 0.046703p 0.331981p 0.517523o 0.529535o 0.529598o 0.529598n       0.0       0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.342996n      0.0       0.0
zp 59.87 ri 6.80e-06p 0.003535p 0.072419p 0.226675p 0.039364p 0.000982p 9.22e-07p 9.01e-11p       0.0
sig0.583 cc 6.80e-06p 0.003541p 0.075959p 0.302637p 0.342000p 0.342981p 0.342982p 9.01e-11p       0.0
        rc 6.80e-06p 0.003541p 0.075961p 0.302636p 0.342000o 0.342981o 0.342982n 9.01e-11p       0.0
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.199499n      0.0       0.0
zp 58.22 ri 0.013332p 0.135037p 0.050099p 0.001030p 3.86e-07p 4.07e-12p       0.0       0.0       0.0
sig0.497 cc 0.013332p 0.148369p 0.198468p 0.199498p 0.199498p 0.199498p 0.199498p       0.0       0.0
        rc 0.013332p 0.148369p 0.198468o 0.199498o 0.199498o 0.199498o 0.199498n       0.0       0.0
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la half life from 80eng2; ce, pr, nd, pm, sm half lives 89wal1.
1

mass number 152 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 56 ba g 57 la g 58 ce g 59 pr g 60 nd g 61 pm m 61 pm g 62 sm g 63 eu m 63 eu g 64 gd g
half life 0.420s 0.285s 3.1 s 3.2 s 11.4 m 7.5 m 4.1 m stable 9.3 h 13. y 14.04l
lambda 1.650e+00 2.432e+00 2.236e-01 2.166e-01 1.013e-03 1.540e-03 2.818e-03 0.0 2.070e-05 1.691e-09 2.005e-22
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 0.0 100.0000 100.0000 -23.0000 -72.0000 28.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 77.0000
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.574089n 0.0 0.0 0.0
zp 59.80 ri 8.42e-09p 4.84e-05p 0.019507p 0.426169p 0.960224p 0.082735p 0.082735p 0.002663p 1.08e-06p 1.08e-06p 1.19e-10p
sig0.577 cc 8.42e-09p 4.84e-05p 0.019556p 0.445724p 1.405949p 0.082735p 1.488684p 1.574083p 1.08e-06p 1.08e-06p 1.14e-06p
rc 8.42e-09p 4.84e-05p 0.019556p 0.445725p 1.405949n 0.082735p 1.488684n 1.574083m 1.08e-06p 1.08e-06p 1.14e-06p
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.597165i 0.0 0.0 0.0
zp 59.76 ri 1.13e-09p 8.92e-06p 0.007742p 0.134797p 0.415066o 0.019498p 0.019498p 0.000556p 7.20e-08p 7.20e-08p 3.95e-12p
sig0.551 cc 1.13e-09p 8.92e-06p 0.007751p 0.142550p 0.557613p 0.019498p 0.577111p 0.597165p 7.20e-08p 7.20e-08p 7.56e-08p
rc 1.13e-09p 8.92e-06p 0.007751p 0.142548p 0.557614m 0.019498p 0.577111k 0.597165i 7.20e-08p 7.20e-08p 7.56e-08p
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.968502n 0.0 0.0 0.0
zp 59.31 ri 6.03e-07p 0.000874p 0.078383p 0.531983p 0.338297p 0.009446p 0.009446p 7.29e-05p 8.31e-09p 8.31e-09p 0.0
sig0.579 cc 6.03e-07p 0.000874p 0.079257p 0.611240p 0.949537p 0.009446p 0.958983p 0.968502p 8.31e-09p 8.31e-09p 8.73e-09p
rc 6.03e-07p 0.000874p 0.079257p 0.611240o 0.949537o 0.009446p 0.958983o 0.968502n 8.31e-09p 8.31e-09p 8.73e-09p
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.561562n 0.0 0.0 0.0
zp 59.85 ri 7.29e-08p 0.000141p 0.024589p 0.428230p 0.876416p 0.112819p 0.112818p 0.006504p 9.01e-06p 9.01e-06p 4.38e-09p
sig0.627 cc 7.29e-08p 0.000142p 0.024730p 0.452956p 1.329377p 0.112818p 1.442195p 1.561530p 9.01e-06p 9.01e-06p 9.46e-06p
rc 7.29e-08p 0.000142p 0.024731p 0.452960p 1.329376o 0.112819p 1.442194n 1.561526m 9.01e-06p 9.01e-06p 9.46e-06p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.498390n 0.0 0.0 0.0
zp 60.05 ri 7.45e-09p 2.89e-05p 0.009280p 0.272952p 0.868393p 0.166792p 0.166791p 0.014085p 2.76e-05p 2.76e-05p 1.80e-08p

sig0.619 cc 7.45e-09p 2.89e-05p 0.009309p 0.282261p 1.150654p 0.166792p 1.317446p 1.498362p 2.76e-05p 2.76e-05p 2.90e-05p
rc 7.45e-09p 2.89e-05p 0.009309p 0.282261p 1.150654o 0.166792p 1.317445n 1.498349m 2.76e-05p 2.76e-05p 2.90e-05p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.103258n 0.0 0.0 0.0
zp 59.49 ri 2.01e-08p 0.000136p 0.037565p 0.522530p 0.508478p 0.017215p 0.017215p 0.000117p 8.04e-09p 8.04e-09p 0.0
sig0.543 cc 2.01e-08p 0.000136p 0.037701p 0.560231p 1.068709p 0.017215p 1.085924p 1.103257p 8.04e-09p 8.04e-09p 8.45e-09p
rc 2.01e-08p 0.000136p 0.037701p 0.560231o 1.068709n 0.017215p 1.085924n 1.103257m 8.04e-09p 8.04e-09p 8.45e-09p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.641698n 0.0 0.0 0.0
zp 59.88 ri 4.15e-08p 0.000102p 0.021158p 0.419738p 0.937728p 0.127697p 0.127696p 0.007532p 1.02e-05p 1.02e-05p 4.66e-09p
sig0.621 cc 4.15e-08p 0.000102p 0.021259p 0.440993p 1.378725p 0.127696p 1.506422p 1.641665p 1.02e-05p 1.02e-05p 1.08e-05p
rc 4.15e-08p 0.000102p 0.021259p 0.440997p 1.378725o 0.127697p 1.506421n 1.641660m 1.02e-05p 1.02e-05p 1.08e-05p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.399705n 0.0 0.0 0.0
zp 59.72 ri 1.41e-08p 4.07e-05p 0.008244p 0.134862p 0.218677p 0.018654p 0.018654p 0.000561p 3.11e-07p 3.11e-07p 4.63e-11p
sig0.597 cc 1.41e-08p 4.07e-05p 0.008284p 0.143145p 0.361824p 0.018653p 0.380477p 0.399692p 3.11e-07p 3.11e-07p 3.27e-07p
rc 1.41e-08p 4.07e-05p 0.008284p 0.143146p 0.361823p 0.018654p 0.380477o 0.399692n 3.11e-07p 3.11e-07p 3.27e-07p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.266774n 0.0 0.0 0.0
zp 60.26 ri 1.75e-11p 2.12e-07p 0.000401p 0.018469p 0.179362p 0.031606p 0.031606p 0.005309p 5.95e-06p 5.95e-06p 4.34e-09p
sig0.583 cc 1.75e-11p 2.12e-07p 0.000401p 0.018870p 0.198234p 0.031605p 0.229839p 0.266762p 5.95e-06p 5.95e-06p 6.25e-06p
rc 1.75e-11p 2.12e-07p 0.000401p 0.018870p 0.198233p 0.031606p 0.229838o 0.266758n 5.95e-06p 5.95e-06p 6.25e-06p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.049875n 0.0 0.0 0.0
zp 58.60 ri 6.63e-07p 0.000631p 0.022246p 0.025122p 0.001871p 1.47e-06p 1.47e-06p 1.38e-10p 0.0 0.0 0.0
sig0.497 cc 6.63e-07p 0.000632p 0.022878p 0.048000p 0.049871p 1.47e-06p 0.049873p 0.049874p 0.0 0.0 0.0
rc 6.63e-07p 0.000632p 0.022878p 0.048000p 0.049871o 1.47e-06p 0.049873o 0.049874n 0.0 0.0 0.0

ba, la half lives from 80eng2; ce, pr, nd, pm half lives 89wal1.
1

mass number 153 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	57 la g	58 ce g	59 pr g	60 nd g	61 pm g	62 sm g	63 eu g	64 gd g	65 tb g
half life	0.326s	1.47 s	4.3 s	28.9 s	5.4 m	1.929d	stable	241.6d	2.34 d

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lambda      2.126e+00 4.715e-01 1.612e-01 2.398e-02 2.139e-03 4.159e-06       0.0 3.321e-08 3.428e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cf250s  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  1.215061i      0.0       0.0       0.0
zp 60.23 ri 1.24e-06p 0.001683p 0.115111p 0.728762p 0.351839p 0.017666p 4.85e-05p 9.34e-09p       0.0
sig0.577 cc 1.24e-06p 0.001684p 0.116794p 0.845554p 1.197395p 1.215061p 1.215109p 9.34e-09p       0.0
         rc 1.24e-06p 0.001684p 0.116795p 0.845556o 1.197395k 1.215061i 1.215109i 9.34e-09p       0.0
 cm244s  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  0.517543k 0.497638i      0.0       0.0
zp 60.16 ri 2.93e-07p 0.000716p 0.048831p 0.337219p 0.109621p 0.004169p 4.51e-06p 3.62e-10p       0.0
sig0.551 cc 2.88e-07p 0.000705p 0.048795p 0.386266p 0.496451p 0.500556p 0.500561p 3.66e-10p       0.0
         rc 2.93e-07p 0.000716p 0.049547p 0.386767o 0.496388l 0.500556j 0.500561i 3.62e-10p       0.0
 cm248s  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  0.792720i      0.0       0.0       0.0
zp 59.70 ri 5.87e-05p 0.015308p 0.275813p 0.436169p 0.064645p 0.000725p 5.04e-07p 1.97e-11p       0.0
sig0.579 cc 5.87e-05p 0.015367p 0.291180p 0.727349p 0.791995p 0.792720p 0.792720p 1.97e-11p       0.0
         rc 5.87e-05p 0.015367p 0.291180p 0.727349m 0.791995k 0.792720i 0.792720i 1.97e-11p       0.0
 es253s  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  1.481982k      0.0       0.0       0.0
zp 60.25 ri 8.72e-06p 0.003939p 0.169131p 0.800612p 0.474752p 0.033534p 0.000241p 1.56e-07p 8.59e-12p
sig0.627 cc 8.72e-06p 0.003947p 0.173074p 0.973667p 1.448443p 1.481976p 1.482217p 1.56e-07p 8.59e-12p
         rc 8.72e-06p 0.003947p 0.173078p 0.973691o 1.448442m 1.481976k 1.482217k 1.56e-07p 8.59e-12p
 fm254s  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  1.384548j      0.0       0.0       0.0
zp 60.45 ri 1.33e-06p 0.001144p 0.086086p 0.652647p 0.583778o 0.060891p 0.000628p 5.59e-07p 4.00e-11p
sig0.619 cc 1.33e-06p 0.001146p 0.087231p 0.739876p 1.323657p 1.384547p 1.385176p 5.59e-07p 4.00e-11p
         rc 1.33e-06p 0.001146p 0.087232p 0.739879o 1.323657l 1.384547i 1.385176i 5.59e-07p 4.00e-11p
 fm255t  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  0.998079k      0.0       0.0       0.0
zp 59.88 ri 5.83e-06p 0.005507p 0.236317p 0.630042p 0.124795p 0.001412p 6.89e-07p 1.28e-11p       0.0
sig0.543 cc 5.83e-06p 0.005513p 0.241829p 0.871871p 0.996666p 0.998078p 0.998079p 1.28e-11p       0.0
         rc 5.83e-06p 0.005513p 0.241830p 0.871872n 0.996666m 0.998078k 0.998079k 1.28e-11p       0.0
 fm256s  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0  1.351986m      0.0       0.0       0.0
```

zp 60.31 ri 3.97e-06p 0.002360p 0.126328p 0.707494p 0.478281p 0.037502p 0.000289p 1.92e-07p 1.04e-11p
sig0.621 cc 3.97e-06p 0.002364p 0.128689p 0.836166p 1.314469p 1.351970p 1.352259p 1.92e-07p 1.04e-11p
rc 3.97e-06p 0.002364p 0.128692p 0.836187o 1.314468n 1.351970m 1.352259m 1.92e-07p 1.04e-11p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.314822l 0.0 0.0 0.0
zp 60.12 ri 1.83e-06p 0.001060p 0.046367p 0.185391p 0.078781p 0.003214p 1.03e-05p 2.27e-09p 0.0
sig0.597 cc 1.83e-06p 0.001062p 0.047428p 0.232821p 0.311601p 0.314815p 0.314825p 2.27e-09p 0.0
rc 1.83e-06p 0.001062p 0.047429p 0.232820p 0.311601n 0.314815l 0.314825l 2.27e-09p 0.0
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.190553n 0.0 0.0
zp 60.64 ri 5.90e-09p 2.64e-05p 0.004163p 0.083618p 0.087307p 0.015311p 0.000118p 1.02e-07p 2.95e-12p
sig0.583 cc 5.90e-09p 2.64e-05p 0.004189p 0.087807p 0.175115p 0.190425p 0.190543p 1.02e-07p 2.95e-12p
rc 5.90e-09p 2.64e-05p 0.004189p 0.087807p 0.175115p 0.190425o 0.190543n 1.02e-07p 2.95e-12p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.019950n 0.0 0.0
zp 58.99 ri 2.62e-05p 0.003605p 0.012974p 0.003322p 2.19e-05p 4.67e-09p 0.0 0.0 0.0
sig0.497 cc 2.62e-05p 0.003632p 0.016606p 0.019928p 0.019950p 0.019950p 0.019950p 0.0 0.0
rc 2.62e-05p 0.003632p 0.016606p 0.019928p 0.019950o 0.019950o 0.019950n 0.0 0.0

la, ce half lives from 80eng2; pr, nd, pm, sm half lives 89wal1; gd half life 90bur1.

1

mass number 154 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 56 ba g 57 la g 58 ce g 59 pr g 60 nd g 61 pm m 61 pm g 62 sm g 63 eu g 64 gd g
half life 0.149s 2.02 s 2.3 s 25.9 s 2.7 m 1.7 m stable 8.8 y stable
lambda 0.0 4.652e+00 3.431e-01 3.014e-01 2.676e-02 4.279e-03 6.796e-03 0.0 2.498e-09 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 0.0 100.0000 100.0000 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.836235n 0.0 0.0
zp 60.62 ri 0.0 2.46e-08p 0.000103p 0.020505p 0.344137p 0.207680p 0.207679p 0.056130p 0.000453p 2.69e-07p
sig0.577 cc 0.0 2.46e-08p 0.000103p 0.020608p 0.364744p 0.207680p 0.572424p 0.836234p 0.000453p 0.000454p
rc 0.0 2.46e-08p 0.000103p 0.020608p 0.364744p 0.207680p 0.572424o 0.836234m 0.000453p 0.000454p
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.389309n 0.0 0.0
zp 60.55 ri 0.0 4.64e-09p 4.77e-05p 0.008534p 0.210664p 0.074835p 0.074835p 0.020393p 6.07e-05p 2.07e-08p
sig0.551 cc 0.0 4.64e-09p 4.77e-05p 0.008581p 0.219245p 0.074835p 0.294080p 0.389309p 6.07e-05p 6.07e-05p
rc 0.0 4.64e-09p 4.77e-05p 0.008581p 0.219245p 0.074835p 0.294080o 0.389309n 6.07e-05p 6.07e-05p
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.407790n 0.0 0.0
zp 60.08 ri 1.32e-10p 1.74e-06p 0.001317p 0.063828p 0.248029p 0.045893p 0.045893p 0.002828p 5.75e-06p 6.76e-10p
sig0.579 cc 1.32e-10p 1.74e-06p 0.001319p 0.065147p 0.313175p 0.045893p 0.359068p 0.407790p 5.75e-06p 5.75e-06p
rc 1.32e-10p 1.74e-06p 0.001319p 0.065147p 0.313175p 0.045893p 0.359068o 0.407790n 5.75e-06p 5.75e-06p
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.073574n 0.0 0.0
zp 60.65 ri 1.99e-11p 2.78e-07p 0.000331p 0.035870p 0.401907p 0.271944p 0.271940p 0.091577p 0.001670p 2.86e-06p
sig0.627 cc 1.99e-11p 2.78e-07p 0.000331p 0.036201p 0.438106p 0.271943p 0.710049p 1.073569p 0.001670p 0.001673p
rc 1.99e-11p 2.78e-07p 0.000331p 0.036201p 0.438108p 0.271944p 0.710047o 1.073569m 0.001670p 0.001673p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.030143n 0.0 0.0
zp 60.86 ri 0.0 3.00e-08p 7.22e-05p 0.014573p 0.277028p 0.294036p 0.294036p 0.150397p 0.004091p 1.01e-05p
sig0.619 cc 0.0 3.00e-08p 7.22e-05p 0.014645p 0.291674p 0.294036p 0.585710p 1.030143p 0.004091p 0.004101p
rc 0.0 3.00e-08p 7.22e-05p 0.014645p 0.291674p 0.294036p 0.585710p 1.030143n 0.004091p 0.004101p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.708791n 0.0 0.0
zp 60.27 ri 1.35e-12p 1.19e-07p 0.000395p 0.055019p 0.415605p 0.114749p 0.114749p 0.008273p 1.41e-05p 9.41e-10p
sig0.543 cc 1.35e-12p 1.19e-07p 0.000395p 0.055414p 0.471019p 0.114749p 0.585768p 0.708790p 1.41e-05p 1.41e-05p
rc 1.35e-12p 1.19e-07p 0.000395p 0.055414p 0.471019p 0.114749p 0.585768o 0.708790n 1.41e-05p 1.41e-05p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.062275n 0.0 0.0
zp 60.74 ri 4.38e-12p 9.34e-08p 0.000161p 0.023935p 0.346143p 0.287965p 0.287964p 0.116105p 0.002473p 4.77e-06p
sig0.621 cc 4.38e-12p 9.34e-08p 0.000161p 0.024096p 0.370239p 0.287965p 0.658204p 1.062274p 0.002473p 0.002478p
rc 4.38e-12p 9.34e-08p 0.000161p 0.024096p 0.370239p 0.287965p 0.658204o 1.062274m 0.002473p 0.002478p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.249816n 0.0 0.0
zp 60.52 ri 2.11e-12p 5.38e-08p 9.07e-05p 0.010957p 0.111091p 0.057676p 0.057676p 0.012325p 0.000111p 7.23e-08p
sig0.597 cc 2.11e-12p 5.38e-08p 9.08e-05p 0.011048p 0.122139p 0.057676p 0.179815p 0.249816p 0.000111p 0.000111p
rc 2.11e-12p 5.38e-08p 9.08e-05p 0.011048p 0.122139p 0.057676p 0.179815o 0.249816n 0.000111p 0.000111p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.133387n 0.0 0.0

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zp 61.03 ri       0.0  7.45e-11p 1.24e-06p 0.000465p 0.031180p 0.032853p 0.032853p 0.036034p 0.000631p 2.00e-06p
sig0.583 cc       0.0  7.45e-11p 1.24e-06p 0.000467p 0.031646p 0.032853p 0.064500p 0.133387p 0.000631p 0.000633p
         rc       0.0  7.45e-11p 1.24e-06p 0.000467p 0.031646p 0.032853p 0.064500p 0.133387n 0.000631p 0.000633p
 u238s   xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.007980n       0.0       0.0
zp 59.37 ri 3.45e-11p 6.38e-07p 0.000353p 0.004202p 0.003341p 4.18e-05p 4.18e-05p 7.64e-08p 1.06e-12p       0.0
sig0.497 cc 3.45e-11p 6.38e-07p 0.000354p 0.004555p 0.007896p 4.18e-05p 0.007938p 0.007980p 1.06e-12p 1.06e-12p
         rc 3.45e-11p 6.38e-07p 0.000354p 0.004555p 0.007896p 4.18e-05p 0.007938o 0.007980n 1.06e-12p 1.06e-12p

  la, ce half lives 80eng2; pr, nd, pm half lives 89wal1; eu half life 90bur1.

1

    mass number    155              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g
half life     0.528s    1.12 s     8.9 s     48. s    22.2 m    4.71 y    stable     5.3 d     9.6 h
lambda      1.313e+00 6.189e-01 7.788e-02 1.444e-02 5.204e-04 4.667e-09       0.0 1.514e-06 2.006e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cf250s  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0       0.0  0.683968n      0.0       0.0
zp 61.01 ri 4.81e-06p 0.002865p 0.132795p 0.403830p 0.141205p 0.003261p 5.88e-06p 4.90e-10p       0.0
sig0.577 cc 4.81e-06p 0.002870p 0.135665p 0.539495p 0.680700p 0.683961p 0.683967p 4.90e-10p       0.0
         rc 4.81e-06p 0.002870p 0.135665p 0.539495p 0.680700o 0.683961o 0.683967n 4.90e-10p       0.0
 cm244s  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0       0.0  0.291981n      0.0       0.0
zp 60.93 ri 1.75e-06p 0.001239p 0.072783p 0.166609p 0.050774p 0.000576p 5.28e-07p 1.20e-11p       0.0
sig0.551 cc 1.75e-06p 0.001240p 0.074023p 0.240632p 0.291406p 0.291982p 0.291983p 1.20e-11p       0.0
         rc 1.75e-06p 0.001240p 0.074023p 0.240632p 0.291406o 0.291982o 0.291983n 1.20e-11p       0.0
 cm248s  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc    0.0       0.0       0.0       0.0       0.0       0.0  0.254869n      0.0       0.0
zp 60.47 ri 8.68e-05p 0.012028p 0.121254p 0.112059p 0.009386p 5.63e-05p 2.03e-08p       0.0       0.0
sig0.579 cc 8.68e-05p 0.012115p 0.133368p 0.245427p 0.254813p 0.254869p 0.254869p       0.0       0.0
         rc 8.68e-05p 0.012115p 0.133368p 0.245427p 0.254813o 0.254869o 0.254869n       0.0       0.0
 es253s  xi    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.927177n      0.0       0.0
zp 61.05 ri 2.25e-05p 0.006284p 0.171282p 0.531865p 0.208243p 0.009428p 4.21e-05p 1.67e-08p       0.0
sig0.627 cc 2.25e-05p 0.006306p 0.177588p 0.709452p 0.917696p 0.927123p 0.927166p 1.67e-08p       0.0
        rc 2.25e-05p 0.006306p 0.177588p 0.709453o 0.917696o 0.927123n 0.927166m 1.67e-08p       0.0
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.800966n      0.0       0.0
zp 61.27 ri 3.11e-06p 0.001719p 0.084461p 0.431837p 0.264395p 0.018426p 0.000123p 7.00e-08p 3.16e-12p
sig0.619 cc 3.11e-06p 0.001722p 0.086183p 0.518019p 0.782415p 0.800840p 0.800964p 7.00e-08p 3.16e-12p
        rc 3.11e-06p 0.001722p 0.086183p 0.518020p 0.782415o 0.800840o 0.800964n 7.00e-08p 3.16e-12p
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.531593n      0.0       0.0
zp 60.65 ri 1.99e-05p 0.009075p 0.199063p 0.292309p 0.030952p 0.000173p 4.01e-08p       0.0       0.0
sig0.543 cc 1.99e-05p 0.009095p 0.208158p 0.500467p 0.531419p 0.531592p 0.531592p       0.0       0.0
        rc 1.99e-05p 0.009095p 0.208158p 0.500467p 0.531419o 0.531592o 0.531592n       0.0       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.837319n      0.0       0.0
zp 61.15 ri 8.06e-06p 0.003238p 0.119360p 0.473454p 0.228677p 0.012510p 6.55e-05p 2.93e-08p 1.06e-12p
sig0.621 cc 8.06e-06p 0.003246p 0.122606p 0.596059p 0.824737p 0.837247p 0.837312p 2.93e-08p 1.06e-12p
        rc 8.06e-06p 0.003246p 0.122606p 0.596060p 0.824737o 0.837247o 0.837312n 2.93e-08p 1.06e-12p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.179867n      0.0       0.0
zp 60.92 ri 4.61e-06p 0.001578p 0.042020p 0.106712p 0.028831p 0.000717p 1.35e-06p 1.74e-10p       0.0
sig0.597 cc 4.61e-06p 0.001582p 0.043602p 0.150314p 0.179144p 0.179862p 0.179863p 1.74e-10p       0.0
        rc 4.61e-06p 0.001582p 0.043602p 0.150314p 0.179144o 0.179862o 0.179863n 1.74e-10p       0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.104804n      0.0       0.0
zp 61.41 ri 3.56e-08p 4.75e-05p 0.007061p 0.045648p 0.049235p 0.002787p 2.03e-05p 5.25e-09p       0.0
sig0.583 cc 3.56e-08p 4.75e-05p 0.007108p 0.052756p 0.101991p 0.104778p 0.104799p 5.25e-09p       0.0
        rc 3.56e-08p 4.75e-05p 0.007108p 0.052756p 0.101991p 0.104778o 0.104799n 5.25e-09p       0.0
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.002992n      0.0       0.0
zp 59.75 ri 1.91e-05p 0.000819p 0.001980p 0.000174p 6.59e-07p 4.02e-11p       0.0       0.0       0.0
sig0.497 cc 1.91e-05p 0.000838p 0.002818p 0.002992p 0.002992p 0.002992p 0.002992p       0.0       0.0
        rc 1.91e-05p 0.000838p 0.002818p 0.002992p 0.002992o 0.002992o 0.002992n       0.0       0.0

  ce, pr half lives from 80eng2; nd, pm, sm, eu half lives 89wal1.
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    mass number    156              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb m   65 tb g   66 dy g
half life     0.596s    0.379s     5.5 s    26.7 s     9.4 h    15.2 d    stable     5.0 h     5.1 d    2.e14y
lambda      1.163e+00 1.829e+00 1.260e-01 2.596e-02 2.048e-05 5.278e-07       0.0 3.851e-05 1.573e-06 1.099e-22
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  -50.0000 -100.0000       0.0
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   50.0000       0.0
 cf250s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.508091n      0.0       0.0       0.0
zp 61.40 ri 1.30e-07p 0.000235p 0.031212p 0.246178p 0.216612p 0.013778p 7.42e-05p 1.91e-09p 1.72e-08p       0.0
sig0.577 cc 1.30e-07p 0.000235p 0.031447p 0.277626p 0.494238p 0.508016p 0.508090p 1.91e-09p 1.82e-08p       0.0
         rc 1.30e-07p 0.000235p 0.031447p 0.277626p 0.494238o 0.508016o 0.508090n 1.91e-09p 1.82e-08p       0.0
 cm244s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0  0.228463l 0.188730k 0.218530n      0.0       0.0       0.0
zp 61.32 ri 3.97e-08p 7.74e-05p 0.017632p 0.091211p 0.092688p 0.002332p 8.99e-06p 5.79e-11p 5.21e-10p       0.0
sig0.551 cc 3.96e-08p 7.74e-05p 0.017684p 0.108766p 0.201324p 0.203939p 0.203949p 6.35e-11p 6.03e-10p       0.0
         rc 3.97e-08p 7.75e-05p 0.017709p 0.108920p 0.201609l 0.203940k 0.203949j 5.79e-11p 5.50e-10p       0.0
 cm248s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.203895n      0.0       0.0       0.0
zp 60.85 ri 5.15e-06p 0.002037p 0.054005p 0.121477p 0.025935p 0.000435p 4.63e-07p 2.80e-12p 2.52e-11p       0.0
sig0.579 cc 5.15e-06p 0.002042p 0.056047p 0.177524p 0.203459p 0.203895p 0.203895p 2.80e-12p 2.66e-11p       0.0
         rc 5.15e-06p 0.002042p 0.056047p 0.177524p 0.203459o 0.203895o 0.203895n 2.80e-12p 2.66e-11p       0.0
 es253s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.772820n      0.0       0.0       0.0
zp 61.46 ri 9.25e-07p 0.000694p 0.048352p 0.358616p 0.328036p 0.036683p 0.000431p 4.65e-08p 4.19e-07p 4.31e-11p
sig0.627 cc 9.25e-07p 0.000695p 0.049046p 0.407662p 0.735699p 0.772382p 0.772813p 4.65e-08p 4.42e-07p 4.31e-11p
         rc 9.25e-07p 0.000695p 0.049047p 0.407662p 0.735699p 0.772382o 0.772813n 4.65e-08p 4.42e-07p 4.31e-11p
 fm254s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.664438n      0.0       0.0       0.0
zp 61.69 ri 8.65e-08p 0.000136p 0.018169p 0.235024p 0.348346p 0.061634p 0.001125p 1.82e-07p 1.64e-06p 2.39e-10p
sig0.619 cc 8.65e-08p 0.000136p 0.018305p 0.253329p 0.601675p 0.663309p 0.664436p 1.82e-07p 1.73e-06p 2.39e-10p
         rc 8.65e-08p 0.000136p 0.018305p 0.253329p 0.601675p 0.663309o 0.664436n 1.82e-07p 1.73e-06p 2.39e-10p
 fm255t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.442994n      0.0       0.0       0.0
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zp 61.04 ri 6.41e-07p 0.001011p 0.069948p 0.284294p 0.086161p 0.001577p 1.29e-06p 4.04e-12p 3.64e-11p       0.0
sig0.543 cc 6.41e-07p 0.001012p 0.070960p 0.355254p 0.441415p 0.442992p 0.442994p 4.04e-12p 3.84e-11p       0.0
        rc 6.41e-07p 0.001012p 0.070960p 0.355254p 0.441415o 0.442992o 0.442994n 4.04e-12p 3.84e-11p       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.675993n      0.0       0.0       0.0       0.0       0.0
zp 61.55 ri 3.16e-07p 0.000340p 0.032092p 0.303942p 0.339617p 0.045288p 0.000617p 7.46e-08p 6.71e-07p 7.40e-11p
sig0.621 cc 3.16e-07p 0.000340p 0.032432p 0.336375p 0.675992p 0.721280p 0.721898p 7.46e-08p 7.09e-07p 7.40e-11p
        rc 3.16e-07p 0.000340p 0.032432p 0.336375p 0.675992n 0.721280m 0.721898m 7.46e-08p 7.09e-07p 7.40e-11p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.139897n      0.0       0.0       0.0
zp 61.32 ri 1.65e-07p 0.000163p 0.011803p 0.074835p 0.049771p 0.003301p 1.78e-05p 4.05e-10p 6.34e-09p       0.0
sig0.597 cc 1.65e-07p 0.000163p 0.011966p 0.086801p 0.136572p 0.139873p 0.139891p 4.05e-10p 6.54e-09p       0.0
        rc 1.65e-07p 0.000163p 0.011966p 0.086801p 0.136572p 0.139873o 0.139891n 4.05e-10p 6.54e-09p       0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.076221n      0.0       0.0       0.0
zp 61.79 ri 7.42e-10p 2.35e-06p 0.001207p 0.016380p 0.052373p 0.006103p 0.000152p 9.26e-09p 8.33e-08p 8.86e-12p
sig0.583 cc 7.42e-10p 2.35e-06p 0.001210p 0.017589p 0.069962p 0.076065p 0.076217p 9.26e-09p 8.80e-08p 8.86e-12p
        rc 7.42e-10p 2.35e-06p 0.001210p 0.017589p 0.069962p 0.076065o 0.076217n 9.26e-09p 8.80e-08p 8.86e-12p
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000997n      0.0       0.0       0.0
zp 60.12 ri 5.96e-07p 9.52e-05p 0.000705p 0.000194p 2.81e-06p 7.17e-10p      0.0       0.0       0.0       0.0
sig0.497 cc 5.96e-07p 9.58e-05p 0.000801p 0.000995p 0.000997p 0.000997p 0.000997p      0.0       0.0       0.0
        rc 5.96e-07p 9.58e-05p 0.000801p 0.000995p 0.000997o 0.000997o 0.000997n      0.0       0.0       0.0

  ce, pr half lives from 80eng2; nd, pm, sm, eu half lives 89wal1.
1

    mass number    157              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g
half life     0.214s    0.380s    2.48 s    10.9 s     8.0 m    15.13h    stable    160. y     8.1 h
lambda      3.239e+00 1.824e+00 2.795e-01 6.359e-02 1.444e-03 1.273e-05       0.0 1.374e-10 2.377e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.410381n      0.0       0.0
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zp 61.78 ri 2.69e-09p 1.46e-05p 0.005565p 0.115420p 0.248052p 0.040707p 0.000621p 4.77e-07p 2.48e-11p
sig0.577 cc 2.69e-09p 1.46e-05p 0.005580p 0.121000p 0.369052p 0.409759p 0.410380p 4.77e-07p 2.48e-11p
rc 2.69e-09p 1.46e-05p 0.005580p 0.121000p 0.369052p 0.409759o 0.410380n 4.77e-07p 2.48e-11p
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.155723n 0.0 0.0
zp 61.70 ri 5.37e-10p 4.29e-06p 0.002519p 0.045529p 0.097935p 0.009644p 9.35e-05p 2.47e-08p 0.0
sig0.551 cc 5.37e-10p 4.29e-06p 0.002523p 0.048052p 0.145987p 0.155631p 0.155725p 2.47e-08p 0.0
rc 5.37e-10p 4.29e-06p 0.002523p 0.048052p 0.145987p 0.155631o 0.155725n 2.47e-08p 0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.132532n 0.0 0.0
zp 61.23 ri 1.64e-07p 0.000189p 0.013701p 0.076484p 0.040318p 0.001834p 5.67e-06p 1.03e-09p 0.0
sig0.579 cc 1.64e-07p 0.000190p 0.013890p 0.090374p 0.130692p 0.132526p 0.132532p 1.03e-09p 0.0
rc 1.64e-07p 0.000190p 0.013890p 0.090374p 0.130692p 0.132526o 0.132532n 1.03e-09p 0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.740991k 0.0 0.0 0.0
zp 61.86 ri 3.18e-08p 6.33e-05p 0.011261p 0.200518p 0.418975p 0.110172p 0.003248p 9.22e-06p 2.30e-09p
sig0.627 cc 3.18e-08p 6.33e-05p 0.011324p 0.211838p 0.630823p 0.740990p 0.744247p 9.22e-06p 2.30e-09p
rc 3.18e-08p 6.33e-05p 0.011324p 0.211842p 0.630817n 0.740989k 0.744247k 9.22e-06p 2.30e-09p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.611045j 0.0 0.0 0.0
zp 62.12 ri 1.57e-09p 7.27e-06p 0.002771p 0.095865p 0.354415p 0.157988p 0.007831p 3.64e-05p 1.42e-08p
sig0.619 cc 1.57e-09p 7.27e-06p 0.002778p 0.098643p 0.453058p 0.611045p 0.618913p 3.64e-05p 1.42e-08p
rc 1.57e-09p 7.27e-06p 0.002778p 0.098643p 0.453057o 0.611045j 0.618913j 3.64e-05p 1.42e-08p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.364683k 0.0 0.0 0.0
zp 61.43 ri 1.24e-08p 6.91e-05p 0.015771p 0.185388p 0.154622p 0.008832p 2.49e-05p 2.81e-09p 0.0
sig0.543 cc 1.24e-08p 6.91e-05p 0.015840p 0.201227p 0.355850p 0.364682p 0.364707p 2.81e-09p 0.0
rc 1.24e-08p 6.91e-05p 0.015840p 0.201228p 0.355850m 0.364682k 0.364707k 2.81e-09p 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.517147l 0.0 0.0 0.0
zp 61.94 ri 7.61e-09p 2.16e-05p 0.005209p 0.118465p 0.300441p 0.093009p 0.003150p 9.91e-06p 2.62e-09p
sig0.621 cc 7.61e-09p 2.16e-05p 0.005231p 0.123692p 0.424139p 0.517146p 0.520306p 9.92e-06p 2.62e-09p
rc 7.61e-09p 2.16e-05p 0.005231p 0.123695p 0.424136o 0.517146l 0.520306l 9.92e-06p 2.62e-09p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.092445o 0.0 0.0 0.0
zp 61.72 ri 3.26e-09p 9.42e-06p 0.001909p 0.031235p 0.050647p 0.008640p 0.000130p 1.44e-07p 1.07e-11p

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sig0.597 cc 3.26e-09p 9.42e-06p 0.001919p 0.033153p 0.083801p 0.092441p 0.092571p 1.44e-07p 1.07e-11p
         rc 3.26e-09p 9.42e-06p 0.001919p 0.033153p 0.083801p 0.092441n 0.092571n 1.44e-07p 1.07e-11p
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.052402n      0.0       0.0
zp 62.18 ri 7.83e-12p 9.28e-08p 0.000114p 0.005236p 0.034088p 0.012277p 0.000683p 1.51e-06p 3.58e-10p
sig0.583 cc 7.83e-12p 9.28e-08p 0.000114p 0.005350p 0.039437p 0.051715p 0.052400p 1.51e-06p 3.58e-10p
         rc 7.83e-12p 9.28e-08p 0.000114p 0.005350p 0.039437p 0.051715o 0.052400n 1.51e-06p 3.58e-10p
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000399n      0.0       0.0
zp 60.50 ri 1.26e-08p 8.22e-06p 0.000207p 0.000175p 9.34e-06p 1.01e-08p      0.0       0.0       0.0
sig0.497 cc 1.26e-08p 8.23e-06p 0.000215p 0.000390p 0.000399p 0.000399p 0.000399p      0.0       0.0
         rc 1.26e-08p 8.23e-06p 0.000215p 0.000390p 0.000399o 0.000399o 0.000399n      0.0       0.0

  ce, pr, nd half lives from 80eng2; pm, sm, eu half lives 89wal1.
1

    mass number    158            LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb m   65 tb g   66 dy g
half life              0.169s    2.69 s     4.8 s     5.5 m    45.9 m    stable    10.9 s    150. y    stable
lambda            0.0 4.101e+00 2.577e-01 1.444e-01 2.100e-03 2.517e-04       0.0 6.359e-02 1.465e-10       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  -84.0000   16.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.341984n      0.0       0.0       0.0
zp 62.16 ri 3.82e-11p 6.28e-07p 0.000700p 0.039630p 0.211497p 0.086529p 0.003621p 8.17e-07p 7.35e-06p 1.28e-09p
sig0.577 cc 3.82e-11p 6.28e-07p 0.000700p 0.040330p 0.251826p 0.338356p 0.341984p 8.17e-07p 8.17e-06p 1.31e-06p
         rc 3.82e-11p 6.28e-07p 0.000700p 0.040330p 0.251826p 0.338356o 0.341984n 8.17e-07p 8.17e-06p 1.31e-06p
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.097327n      0.0       0.0       0.0
zp 62.08 ri 4.52e-12p 9.88e-08p 0.000232p 0.010146p 0.071022p 0.015368p 0.000560p 3.94e-08p 3.55e-07p 3.01e-11p
sig0.551 cc 4.52e-12p 9.88e-08p 0.000232p 0.010378p 0.081400p 0.096768p 0.097328p 3.94e-08p 3.94e-07p 6.31e-08p
         rc 4.52e-12p 9.88e-08p 0.000232p 0.010378p 0.081400p 0.096768o 0.097328n 3.94e-08p 3.94e-07p 6.31e-08p
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.101948n      0.0       0.0       0.0
zp 61.60 ri 4.50e-09p 1.49e-05p 0.002954p 0.041276p 0.051666p 0.005985p 5.12e-05p 2.68e-09p 2.41e-08p       0.0
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sig0.579 cc 4.50e-09p 1.49e-05p 0.002969p 0.044245p 0.095911p 0.101896p 0.101948p 2.68e-09p 2.68e-08p 4.29e-09p
rc 4.50e-09p 1.49e-05p 0.002969p 0.044245p 0.095911p 0.101896o 0.101948n 2.68e-09p 2.68e-08p 4.29e-09p
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.579615n 0.0 0.0 0.0
zp 62.26 ri 5.96e-10p 3.17e-06p 0.001466p 0.064415p 0.311464p 0.188568p 0.013615p 1.00e-05p 9.00e-05p 6.64e-08p
sig0.627 cc 5.96e-10p 3.17e-06p 0.001469p 0.065885p 0.377349p 0.565916p 0.579616p 1.00e-05p 0.000100p 1.61e-05p
rc 5.96e-10p 3.17e-06p 0.001469p 0.065885p 0.377348p 0.565916o 0.579616n 1.00e-05p 0.000100p 1.61e-05p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.473298n 0.0 0.0 0.0
zp 62.56 ri 1.31e-11p 1.85e-07p 0.000210p 0.020529p 0.198565p 0.223913p 0.029785p 4.00e-05p 0.000360p 4.68e-07p
sig0.619 cc 1.31e-11p 1.85e-07p 0.000210p 0.020743p 0.219336p 0.443213p 0.473338p 4.00e-05p 0.000400p 6.44e-05p
rc 1.31e-11p 1.85e-07p 0.000210p 0.020740p 0.219304p 0.443218o 0.473338n 4.00e-05p 0.000400p 6.44e-05p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.265797n 0.0 0.0 0.0
zp 61.81 ri 1.44e-10p 2.78e-06p 0.002104p 0.073471p 0.163204p 0.026769p 0.000245p 9.52e-09p 8.57e-08p 1.40e-12p
sig0.543 cc 1.44e-10p 2.78e-06p 0.002107p 0.075578p 0.238782p 0.265551p 0.265796p 9.52e-09p 9.52e-08p 1.52e-08p
rc 1.44e-10p 2.78e-06p 0.002107p 0.075578p 0.238782p 0.265551o 0.265796n 9.52e-09p 9.52e-08p 1.52e-08p
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.399629n 0.0 0.0 0.0
zp 62.33 ri 1.33e-10p 1.01e-06p 0.000629p 0.035270p 0.206288p 0.145441p 0.011924p 9.63e-06p 8.67e-05p 6.75e-08p
sig0.621 cc 1.33e-10p 1.01e-06p 0.000630p 0.035900p 0.242190p 0.387628p 0.399633p 9.63e-06p 9.63e-05p 1.55e-05p
rc 1.33e-10p 1.01e-06p 0.000630p 0.035899p 0.242188p 0.387628o 0.399633n 9.63e-06p 9.63e-05p 1.55e-05p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.079941n 0.0 0.0 0.0
zp 62.11 ri 6.03e-11p 5.01e-07p 0.000283p 0.012075p 0.047190p 0.019607p 0.000780p 1.46e-07p 2.28e-06p 5.22e-10p
sig0.597 cc 6.03e-11p 5.01e-07p 0.000284p 0.012359p 0.059549p 0.079155p 0.079938p 1.46e-07p 2.43e-06p 3.89e-07p
rc 6.03e-11p 5.01e-07p 0.000284p 0.012359p 0.059549p 0.079155o 0.079938n 1.46e-07p 2.43e-06p 3.89e-07p
u232t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.033347n 0.0 0.0 0.0
zp 62.56 ri 0.0 1.93e-09p 8.50e-06p 0.000876p 0.017731p 0.012502p 0.002219p 1.12e-06p 1.01e-05p 9.57e-09p
sig0.583 cc 0.0 1.93e-09p 8.50e-06p 0.000884p 0.018615p 0.031118p 0.033346p 1.12e-06p 1.12e-05p 1.81e-06p
rc 0.0 1.93e-09p 8.50e-06p 0.000884p 0.018615p 0.031118o 0.033346n 1.12e-06p 1.12e-05p 1.81e-06p
u238s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 9.97e-05n 0.0 0.0 0.0
zp 60.87 ri 1.05e-10p 2.80e-07p 2.52e-05p 6.31e-05p 1.11e-05p 4.76e-08p 6.38e-12p 0.0 0.0 0.0
sig0.497 cc 1.05e-10p 2.81e-07p 2.55e-05p 8.86e-05p 9.97e-05p 9.97e-05p 9.97e-05p 0.0 0.0 0.0

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        rc 1.05e-10p 2.81e-07p 2.55e-05p 8.86e-05p 9.97e-05p 9.97e-05o 9.97e-05n      0.0       0.0       0.0

  pr, nd half lives from 80eng2; pm, sm, eu half lives from 89wal1.
1

    mass number    159            LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g
half life     0.181s    0.642s     3.0 s    11.3 s    18.1 m    18.6 h    stable    144.4d     8.3 s     33. m
lambda      3.830e+00 1.080e+00 2.310e-01 6.134e-02 6.383e-04 1.035e-05       0.0 5.556e-08 8.351e-02 3.501e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000       0.0 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000
 cf250s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.254045n      0.0       0.0       0.0
zp 62.54 ri 1.60e-08p 5.31e-05p 0.008489p 0.116255p 0.116294p 0.012870p 8.35e-05p 3.94e-08p       0.0       0.0
sig0.577 cc 1.60e-08p 5.31e-05p 0.008542p 0.124797p 0.241091p 0.253961p 0.254045p 3.94e-08p       0.0       0.0
         rc 1.60e-08p 5.31e-05p 0.008542p 0.124797p 0.241091p 0.253961o 0.254045n 3.94e-08p       0.0       0.0
 cm244s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.068129n      0.0       0.0       0.0
zp 62.46 ri 2.27e-09p 1.43e-05p 0.002386p 0.037404p 0.026064p 0.002256p 6.28e-06p 1.31e-09p       0.0       0.0
sig0.551 cc 2.27e-09p 1.43e-05p 0.002400p 0.039804p 0.065867p 0.068123p 0.068130p 1.31e-09p       0.0       0.0
         rc 2.27e-09p 1.43e-05p 0.002400p 0.039804p 0.065867p 0.068123o 0.068130n 1.31e-09p       0.0       0.0
 cm248s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.071363n      0.0       0.0       0.0
zp 61.98 ri 6.73e-07p 0.000383p 0.014270p 0.043668p 0.012739p 0.000302p 4.64e-07p 4.08e-11p       0.0       0.0
sig0.579 cc 6.73e-07p 0.000384p 0.014654p 0.058322p 0.071061p 0.071363p 0.071363p 4.08e-11p       0.0       0.0
         rc 6.73e-07p 0.000384p 0.014654p 0.058322p 0.071061o 0.071363o 0.071363n 4.08e-11p       0.0       0.0
 es253s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0  0.563153k      0.0       0.0       0.0       0.0
zp 62.67 ri 1.23e-07p 0.000154p 0.017531p 0.205214p 0.289395p 0.050857p 0.000971p 1.74e-06p 3.53e-11p 2.37e-10p
sig0.627 cc 1.23e-07p 0.000154p 0.017684p 0.222892p 0.512296p 0.563151p 0.564124p 1.74e-06p 3.53e-11p 2.72e-10p
         rc 1.23e-07p 0.000154p 0.017685p 0.222899p 0.512294n 0.563151k 0.564124k 1.74e-06p 3.53e-11p 2.72e-10p
 fm254s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0  0.430121j      0.0       0.0       0.0       0.0
zp 62.99 ri 3.80e-09p 1.27e-05p 0.003511p 0.089913p 0.251632p 0.085051p 0.003128p 1.06e-05p 3.86e-10p 2.59e-09p
sig0.619 cc 3.80e-09p 1.27e-05p 0.003524p 0.093437p 0.345070p 0.430121p 0.433259p 1.06e-05p 3.86e-10p 2.97e-09p
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        rc 3.80e-09p 1.27e-05p 0.003524p 0.093437p 0.345069o 0.430121j 0.433259j 1.06e-05p 3.86e-10p 2.97e-09p
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.194918n      0.0       0.0       0.0
zp 62.19 ri 7.06e-08p 0.000181p 0.019707p 0.119754p 0.053740p 0.001534p 2.02e-06p 1.04e-10p       0.0       0.0
sig0.543 cc 7.06e-08p 0.000181p 0.019888p 0.139642p 0.193382p 0.194915p 0.194917p 1.04e-10p       0.0       0.0
        rc 7.06e-08p 0.000181p 0.019888p 0.139642p 0.193382o 0.194915o 0.194917n 1.04e-10p       0.0       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.304480n      0.0       0.0       0.0
zp 62.71 ri 3.46e-08p 5.54e-05p 0.007665p 0.103639p 0.161916p 0.030592p 0.000608p 1.09e-06p 2.10e-11p 1.41e-10p
sig0.621 cc 3.46e-08p 5.55e-05p 0.007721p 0.111360p 0.273276p 0.303868p 0.304477p 1.09e-06p 2.10e-11p 1.62e-10p
        rc 3.46e-08p 5.55e-05p 0.007721p 0.111360p 0.273276p 0.303868o 0.304477n 1.09e-06p 2.10e-11p 1.62e-10p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  0.067858o      0.0       0.0       0.0       0.0
zp 62.51 ri 1.60e-08p 2.62e-05p 0.003082p 0.030520p 0.030993p 0.003234p 2.85e-05p 1.80e-08p       0.0       0.0
sig0.597 cc 1.60e-08p 2.62e-05p 0.003109p 0.033629p 0.064622p 0.067856p 0.067885p 1.80e-08p       0.0       0.0
        rc 1.60e-08p 2.62e-05p 0.003109p 0.033629p 0.064622p 0.067856o 0.067885n 1.80e-08p       0.0       0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.020961n      0.0       0.0       0.0
zp 62.95 ri 2.99e-11p 3.23e-07p 0.000119p 0.005269p 0.011321p 0.004177p 7.31e-05p 1.51e-07p 1.37e-12p 9.16e-12p
sig0.583 cc 2.99e-11p 3.23e-07p 0.000119p 0.005389p 0.016710p 0.020887p 0.020960p 1.51e-07p 1.37e-12p 1.05e-11p
        rc 2.99e-11p 3.23e-07p 0.000119p 0.005389p 0.016710p 0.020887o 0.020960n 1.51e-07p 1.37e-12p 1.05e-11p
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.99e-05n      0.0       0.0       0.0
zp 61.25 ri 4.11e-09p 1.46e-06p 1.18e-05p 6.59e-06p 1.09e-07p 6.31e-11p       0.0       0.0       0.0       0.0
sig0.497 cc 4.11e-09p 1.46e-06p 1.33e-05p 1.98e-05p 1.99e-05p 1.99e-05p 1.99e-05p       0.0       0.0       0.0
        rc 4.11e-09p 1.46e-06p 1.33e-05p 1.98e-05p 1.99e-05o 1.99e-05o 1.99e-05n       0.0       0.0       0.0

  pr, nd, pm half lives from 80eng2; sm, eu, gd half lives 89wal1; dy half life 90bur1.

1

    mass number    160              LA-UR-94-3106 (ENDF-349)                                percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g
half life                       0.789s    0.729s     9.6 s     38. s    stable    72.3 d    stable
lambda            0.0       0.0 8.785e-01 9.508e-01 7.220e-02 1.824e-02       0.0 1.110e-07       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000
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 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.214962n      0.0       0.0
zp 62.92 ri      0.0  3.07e-10p 3.05e-06p 0.001411p 0.051545p 0.126400p 0.035601p 0.000647p 9.05e-07p
sig0.577 cc      0.0  3.07e-10p 3.05e-06p 0.001414p 0.052959p 0.179360p 0.214961p 0.000647p 0.000648p
         rc      0.0  3.07e-10p 3.05e-06p 0.001414p 0.052959p 0.179360o 0.214961n 0.000647p 0.000648p
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.043797n      0.0       0.0
zp 62.85 ri      0.0  2.12e-11p 5.67e-07p 0.000255p 0.014621p 0.022178p 0.006743p 4.92e-05p 4.31e-08p
sig0.551 cc      0.0  2.12e-11p 5.67e-07p 0.000255p 0.014876p 0.037054p 0.043797p 4.92e-05p 4.92e-05p
         rc      0.0  2.12e-11p 5.67e-07p 0.000255p 0.014876p 0.037054p 0.043797n 4.92e-05p 4.92e-05p
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.050974n      0.0       0.0
zp 62.36 ri      0.0  2.05e-08p 3.42e-05p 0.003511p 0.026946p 0.019261p 0.001222p 5.41e-06p 1.43e-09p
sig0.579 cc      0.0  2.05e-08p 3.42e-05p 0.003545p 0.030491p 0.049752p 0.050974p 5.41e-06p 5.42e-06p
         rc      0.0  2.05e-08p 3.42e-05p 0.003545p 0.030491p 0.049752o 0.050974n 5.41e-06p 5.42e-06p
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.434711n      0.0       0.0
zp 63.08 ri      0.0  2.54e-09p 8.67e-06p 0.002606p 0.076006p 0.251336p 0.104754p 0.005072p 2.43e-05p
sig0.627 cc      0.0  2.54e-09p 8.67e-06p 0.002614p 0.078620p 0.329957p 0.434710p 0.005072p 0.005096p
         rc      0.0  2.54e-09p 8.67e-06p 0.002614p 0.078620p 0.329956p 0.434710n 0.005072p 0.005096p
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.209343n      0.0       0.0
zp 63.42 ri      0.0  2.68e-11p 2.65e-07p 0.000212p 0.014878p 0.105585p 0.088668p 0.008651p 8.31e-05p
sig0.619 cc      0.0  2.68e-11p 2.65e-07p 0.000213p 0.015090p 0.120675p 0.209343p 0.008651p 0.008734p
         rc      0.0  2.68e-11p 2.65e-07p 0.000213p 0.015090p 0.120675p 0.209343n 0.008651p 0.008734p
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.150618n      0.0       0.0
zp 62.57 ri      0.0  1.18e-09p 1.04e-05p 0.003667p 0.063983p 0.076473p 0.006483p 2.83e-05p 5.05e-09p
sig0.543 cc      0.0  1.18e-09p 1.04e-05p 0.003678p 0.067661p 0.144134p 0.150618p 2.83e-05p 2.83e-05p
         rc      0.0  1.18e-09p 1.04e-05p 0.003678p 0.067661p 0.144134o 0.150618n 2.83e-05p 2.83e-05p
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.228360n      0.0       0.0
zp 63.09 ri      0.0  8.26e-10p 3.42e-06p 0.001185p 0.038030p 0.132678p 0.056462p 0.002695p 1.22e-05p
sig0.621 cc      0.0  8.26e-10p 3.42e-06p 0.001189p 0.039219p 0.171897p 0.228359p 0.002695p 0.002708p
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         rc      0.0  8.26e-10p 3.42e-06p 0.001189p 0.039219p 0.171897p 0.228359n 0.002695p 0.002708p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.049963n      0.0       0.0
zp 62.90 ri      0.0  3.15e-10p 1.48e-06p 0.000481p 0.012204p 0.029628p 0.007648p 0.000181p 3.24e-07p
sig0.597 cc      0.0  3.15e-10p 1.48e-06p 0.000483p 0.012687p 0.042315p 0.049962p 0.000181p 0.000181p
         rc      0.0  3.15e-10p 1.48e-06p 0.000483p 0.012687p 0.042315p 0.049962n 0.000181p 0.000181p
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.014291n      0.0       0.0
zp 63.33 ri      0.0       0.0  1.11e-08p 9.58e-06p 0.001415p 0.006117p 0.006749p 0.000254p 1.83e-06p
sig0.583 cc      0.0       0.0  1.11e-08p 9.59e-06p 0.001425p 0.007542p 0.014291p 0.000254p 0.000256p
         rc      0.0       0.0  1.11e-08p 9.59e-06p 0.001425p 0.007542p 0.014291n 0.000254p 0.000256p
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  4.99e-06n      0.0       0.0
zp 61.62 ri      0.0  4.63e-11p 6.55e-08p 1.79e-06p 2.96e-06p 1.71e-07p 3.99e-10p      0.0       0.0
sig0.497 cc      0.0  4.63e-11p 6.55e-08p 1.86e-06p 4.82e-06p 4.99e-06p 4.99e-06p      0.0       0.0
         rc      0.0  4.63e-11p 6.55e-08p 1.86e-06p 4.82e-06p 4.99e-06o 4.99e-06n      0.0       0.0

  nd, pm half lives from 80eng2; sm, eu half lives from 89wal1.
1

    mass number    161              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g
half life     0.311s    0.790s    4.78 s     27. s    3.66 m    6.91 d    stable     6.8 s     2.5 h     3.1 h
lambda      2.229e+00 8.774e-01 1.450e-01 2.567e-02 3.156e-03 1.161e-06       0.0 1.019e-01 7.702e-05 6.211e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000  -73.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  -27.0000
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.166107n      0.0       0.0       0.0
zp 63.30 ri 1.04e-07p 0.000141p 0.014248p 0.087699p 0.061003p 0.003004p 1.22e-05p 3.08e-10p 2.06e-09p       0.0
sig0.577 cc 1.04e-07p 0.000141p 0.014389p 0.102087p 0.163090p 0.166094p 0.166106p 3.08e-10p 2.37e-09p       0.0
         rc 1.04e-07p 0.000141p 0.014389p 0.102087p 0.163090p 0.166094o 0.166106n 3.08e-10p 2.37e-09p       0.0
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.029198n      0.0       0.0       0.0
zp 63.23 ri 1.22e-08p 2.20e-05p 0.003108p 0.015555p 0.010236p 0.000276p 6.41e-07p 4.96e-12p 3.32e-11p       0.0
sig0.551 cc 1.22e-08p 2.20e-05p 0.003130p 0.018686p 0.028922p 0.029198p 0.029198p 4.96e-12p 3.81e-11p       0.0
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        rc 1.22e-08p 2.20e-05p 0.003130p 0.018686p 0.028922p 0.029198o 0.029198n 4.96e-12p 3.81e-11p       0.0
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.035682n      0.0       0.0       0.0
zp 62.73 ri 2.14e-06p 0.000607p 0.011807p 0.020031p 0.003195p 3.89e-05p 2.94e-08p       0.0  1.09e-12p       0.0
sig0.579 cc 2.14e-06p 0.000609p 0.012416p 0.032448p 0.035643p 0.035682p 0.035682p       0.0  1.26e-12p       0.0
        rc 2.14e-06p 0.000609p 0.012416p 0.032448p 0.035643o 0.035682o 0.035682n       0.0  1.26e-12p       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.289808n      0.0       0.0       0.0
zp 63.49 ri 2.74e-07p 0.000221p 0.016507p 0.130618p 0.127100p 0.015168p 0.000191p 2.88e-08p 1.93e-07p 2.22e-11p
sig0.627 cc 2.74e-07p 0.000221p 0.016728p 0.147346p 0.274446p 0.289614p 0.289805p 2.89e-08p 2.22e-07p 2.22e-11p
        rc 2.74e-07p 0.000221p 0.016728p 0.147346p 0.274446p 0.289614o 0.289805n 2.89e-08p 2.22e-07p 2.22e-11p
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.118324n      0.0       0.0       0.0
zp 63.83 ri 4.50e-09p 1.00e-05p 0.001884p 0.033440p 0.066615p 0.015969p 0.000405p 1.20e-07p 8.05e-07p 1.73e-10p
sig0.619 cc 4.50e-09p 1.00e-05p 0.001894p 0.035334p 0.101949p 0.117918p 0.118324p 1.20e-07p 9.25e-07p 1.73e-10p
        rc 4.50e-09p 1.00e-05p 0.001894p 0.035334p 0.101949p 0.117918o 0.118324n 1.20e-07p 9.25e-07p 1.73e-10p
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.115179n      0.0       0.0       0.0
zp 62.95 ri 3.69e-07p 0.000436p 0.023044p 0.073822p 0.017629p 0.000246p 1.51e-07p       0.0  3.06e-12p       0.0
sig0.543 cc 3.69e-07p 0.000437p 0.023481p 0.097302p 0.114932p 0.115178p 0.115178p       0.0  3.51e-12p       0.0
        rc 3.69e-07p 0.000437p 0.023481p 0.097302p 0.114932p 0.115178o 0.115178n       0.0  3.52e-12p       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.161755n      0.0       0.0       0.0
zp 63.48 ri 1.25e-07p 0.000113p 0.009052p 0.073474p 0.070912p 0.008108p 9.36e-05p 1.24e-08p 8.28e-08p 7.91e-12p
sig0.621 cc 1.25e-07p 0.000113p 0.009165p 0.082639p 0.153551p 0.161659p 0.161753p 1.24e-08p 9.52e-08p 7.91e-12p
        rc 1.25e-07p 0.000113p 0.009165p 0.082639p 0.153551p 0.161659o 0.161753n 1.24e-08p 9.52e-08p 7.91e-12p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.034974n      0.0       0.0       0.0
zp 63.28 ri 5.73e-08p 5.08e-05p 0.003324p 0.019208p 0.011683p 0.000704p 3.42e-06p 8.14e-11p 1.08e-09p       0.0
sig0.597 cc 5.73e-08p 5.09e-05p 0.003375p 0.022583p 0.034266p 0.034969p 0.034973p 8.14e-11p 1.16e-09p       0.0
        rc 5.73e-08p 5.09e-05p 0.003375p 0.022583p 0.034266p 0.034969o 0.034973n 8.14e-11p 1.16e-09p       0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.008575n      0.0       0.0       0.0
zp 63.71 ri 1.73e-10p 5.37e-07p 0.000180p 0.002457p 0.005300p 0.000627p 1.02e-05p 8.00e-10p 5.35e-09p       0.0
sig0.583 cc 1.73e-10p 5.38e-07p 0.000181p 0.002637p 0.007937p 0.008564p 0.008574p 8.00e-10p 6.15e-09p       0.0
        rc 1.73e-10p 5.38e-07p 0.000181p 0.002637p 0.007937p 0.008564o 0.008574n 8.00e-10p 6.15e-09p       0.0
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 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.50e-06n      0.0       0.0       0.0
zp 62.00 ri 2.03e-09p 2.10e-07p 1.08e-06p 2.06e-07p 1.94e-09p      0.0       0.0       0.0       0.0       0.0
sig0.497 cc 2.03e-09p 2.12e-07p 1.29e-06p 1.49e-06p 1.50e-06p 1.50e-06p 1.50e-06p      0.0       0.0       0.0
         rc 2.03e-09p 2.12e-07p 1.29e-06p 1.49e-06p 1.50e-06o 1.50e-06o 1.50e-06n      0.0       0.0       0.0

  nd, pm, sm half lives from 80eng2; eu, gd, tb half lives 89wal1.
1

    mass number    162              LA-UR-94-3106 (ENDF-349)                                percent yields
nuclide       60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb m   65 tb g   66 dy g   67 ho m   67 ho g   68 er g
half life              0.324s    5.26 s     11. s     8.4 m    2.23 h     7.6 m    stable     66. m     13. m    stable
lambda           0.0 2.139e+00 1.318e-01 6.301e-02 1.375e-03 8.634e-05 1.520e-03       0.0 1.750e-04 8.887e-04       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000    2.0000   98.0000  100.0000  -37.0000 -100.0000       0.0
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   63.0000       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.127023n      0.0       0.0       0.0
zp 63.69 ri 2.06e-09p 8.61e-06p 0.002550p 0.041913p 0.072852p 0.004792p 0.004792p 0.000114p 4.76e-08p 2.04e-08p 2.72e-12p
sig0.577 cc 2.06e-09p 8.62e-06p 0.002558p 0.044471p 0.117323p 0.007139p 0.119769p 0.127022p 4.76e-08p 5.04e-08p 2.72e-12p
         rc 2.06e-09p 8.62e-06p 0.002558p 0.044471p 0.117323p 0.007139p 0.119769o 0.127022n 4.76e-08p 5.04e-08p 2.72e-12p
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.019465n      0.0       0.0       0.0
zp 63.61 ri 1.91e-10p 9.34e-07p 0.000512p 0.005846p 0.012325p 0.000387p 0.000387p 7.05e-06p 7.97e-10p 3.41e-10p       0.0
sig0.551 cc 1.91e-10p 9.34e-07p 0.000513p 0.006359p 0.018684p 0.000761p 0.018698p 0.019466p 7.97e-10p 8.43e-10p       0.0
         rc 1.91e-10p 9.34e-07p 0.000513p 0.006359p 0.018684p 0.000761p 0.018698o 0.019466n 7.97e-10p 8.43e-10p       0.0
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.030584n      0.0       0.0       0.0
zp 63.11 ri 1.03e-07p 8.43e-05p 0.004426p 0.018484p 0.007344p 0.000122p 0.000122p 5.41e-07p 4.86e-11p 2.08e-11p       0.0
sig0.579 cc 1.03e-07p 8.44e-05p 0.004511p 0.022995p 0.030339p 0.000729p 0.029855p 0.030584p 4.86e-11p 5.14e-11p       0.0
         rc 1.03e-07p 8.44e-05p 0.004511p 0.022995p 0.030339o 0.000729o 0.029855o 0.030584n 4.86e-11p 5.14e-11p       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.212526n      0.0       0.0       0.0
zp 63.90 ri 6.37e-09p 1.40e-05p 0.002734p 0.053228p 0.120858p 0.017285p 0.017285p 0.001116p 2.44e-06p 1.05e-06p 9.58e-10p
sig0.627 cc 6.37e-09p 1.40e-05p 0.002748p 0.055976p 0.176834p 0.020821p 0.190582p 0.212523p 2.44e-06p 2.58e-06p 9.58e-10p
         rc 6.37e-09p 1.40e-05p 0.002748p 0.055976p 0.176834p 0.020822p 0.190582o 0.212523n 2.44e-06p 2.58e-06p 9.58e-10p
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 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.072815n      0.0       0.0       0.0
zp 64.23 ri 6.25e-11p 3.82e-07p 0.000191p 0.008550p 0.040079p 0.011276p 0.011276p 0.001436p 6.10e-06p 2.62e-06p 4.48e-09p
sig0.619 cc 6.25e-11p 3.82e-07p 0.000191p 0.008741p 0.048820p 0.012252p 0.059119p 0.072815p 6.10e-06p 6.46e-06p 4.48e-09p
         rc 6.25e-11p 3.82e-07p 0.000191p 0.008741p 0.048820p 0.012252p 0.059119o 0.072815n 6.10e-06p 6.46e-06p 4.48e-09p
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.088599n      0.0       0.0       0.0
zp 63.34 ri 7.47e-09p 3.11e-05p 0.005374p 0.049202p 0.032552p 0.000718p 0.000718p 3.05e-06p 1.80e-10p 7.70e-11p       0.0
sig0.543 cc 7.47e-09p 3.11e-05p 0.005405p 0.054607p 0.087159p 0.002462p 0.086134p 0.088599p 1.80e-10p 1.90e-10p       0.0
         rc 7.47e-09p 3.11e-05p 0.005405p 0.054607p 0.087159p 0.002462o 0.086134o 0.088599n 1.80e-10p 1.90e-10p       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.114180n      0.0       0.0       0.0
zp 63.86 ri 3.46e-09p 8.05e-06p 0.001598p 0.030290p 0.064876p 0.008464p 0.008464p 0.000477p 8.64e-07p 3.70e-07p 2.67e-10p
sig0.621 cc 3.46e-09p 8.05e-06p 0.001606p 0.031896p 0.096772p 0.010400p 0.103301p 0.114179p 8.64e-07p 9.14e-07p 2.67e-10p
         rc 3.46e-09p 8.05e-06p 0.001606p 0.031896p 0.096772p 0.010400p 0.103301o 0.114179n 8.64e-07p 9.14e-07p 2.67e-10p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.026980n      0.0       0.0       0.0
zp 63.67 ri 1.51e-09p 3.81e-06p 0.000678p 0.009836p 0.014265p 0.001083p 0.001083p 2.87e-05p 2.28e-08p 5.01e-09p 1.81e-12p
sig0.597 cc 1.51e-09p 3.81e-06p 0.000682p 0.010518p 0.024783p 0.001579p 0.025371p 0.026979p 2.28e-08p 1.94e-08p 1.81e-12p
         rc 1.51e-09p 3.81e-06p 0.000682p 0.010518p 0.024783p 0.001579p 0.025371o 0.026979n 2.28e-08p 1.94e-08p 1.81e-12p
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.005717n      0.0       0.0       0.0
zp 64.10 ri 2.18e-12p 1.67e-08p 2.02e-05p 0.000611p 0.004047p 0.000491p 0.000491p 5.48e-05p 5.54e-08p 2.38e-08p 1.84e-11p
sig0.583 cc 2.18e-12p 1.67e-08p 2.02e-05p 0.000631p 0.004679p 0.000585p 0.005077p 0.005716p 5.54e-08p 5.87e-08p 1.84e-11p
         rc 2.18e-12p 1.67e-08p 2.02e-05p 0.000631p 0.004679p 0.000585p 0.005077o 0.005716n 5.54e-08p 5.87e-08p 1.84e-11p
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.98e-07n      0.0       0.0       0.0
zp 62.37 ri 5.48e-11p 2.20e-08p 3.61e-07p 2.08e-07p 7.18e-09p 2.38e-12p 2.38e-12p       0.0       0.0       0.0       0.0
sig0.497 cc 5.48e-11p 2.21e-08p 3.83e-07p 5.91e-07p 5.98e-07p 1.20e-08p 5.87e-07p 5.98e-07p       0.0       0.0       0.0
         rc 5.48e-11p 2.21e-08p 3.83e-07p 5.91e-07p 5.98e-07o 1.20e-08o 5.87e-07o 5.98e-07n       0.0       0.0       0.0

  pm, sm half lives from 80eng2; eu, gd, tb half lives from 89wal1.
1

    mass number    163              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g
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half life 1.27 s 7.60 s 1.13 m 19.5 m stable 1.07 s 33. y 75. m
lambda 0.0 0.0 5.458e-01 9.120e-02 1.022e-02 5.924e-04 0.0 6.478e-01 6.660e-10 1.540e-04
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 0.0 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0
cf250s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.107481n 0.0 0.0 0.0
zp 64.07 ri 3.27e-11p 4.13e-07p 0.000356p 0.015855p 0.068046p 0.022479p 0.000743p 1.69e-07p 1.13e-06p 1.57e-10p
sig0.577 cc 3.27e-11p 4.13e-07p 0.000357p 0.016212p 0.084257p 0.106736p 0.107481p 1.69e-07p 1.30e-06p 1.57e-10p
rc 3.27e-11p 4.13e-07p 0.000357p 0.016212p 0.084257p 0.106736o 0.107481n 1.69e-07p 1.30e-06p 1.57e-10p
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.011679n 0.0 0.0 0.0
zp 63.99 ri 1.49e-12p 3.01e-08p 4.33e-05p 0.001796p 0.008093p 0.001708p 3.90e-05p 3.32e-09p 2.22e-08p 1.19e-12p
sig0.551 cc 1.49e-12p 3.01e-08p 4.34e-05p 0.001839p 0.009932p 0.011640p 0.011679p 3.32e-09p 2.55e-08p 1.19e-12p
rc 1.49e-12p 3.01e-08p 4.34e-05p 0.001839p 0.009932p 0.011640o 0.011679n 3.32e-09p 2.55e-08p 1.19e-12p
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.023448n 0.0 0.0 0.0
zp 63.48 ri 3.19e-09p 7.50e-06p 0.001068p 0.011033p 0.010437p 0.000896p 5.53e-06p 2.67e-10p 1.79e-09p 0.0
sig0.579 cc 3.19e-09p 7.50e-06p 0.001075p 0.012108p 0.022546p 0.023442p 0.023448p 2.67e-10p 2.05e-09p 0.0
rc 3.19e-09p 7.50e-06p 0.001075p 0.012108p 0.022546p 0.023442o 0.023448n 2.67e-10p 2.05e-09p 0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.144904n 0.0 0.0 0.0
zp 64.31 ri 9.10e-11p 5.47e-07p 0.000285p 0.014066p 0.075645p 0.050782p 0.004093p 4.40e-06p 2.94e-05p 2.54e-08p
sig0.627 cc 9.10e-11p 5.47e-07p 0.000286p 0.014352p 0.089996p 0.140778p 0.144905p 4.40e-06p 3.38e-05p 2.54e-08p
rc 9.10e-11p 5.47e-07p 0.000286p 0.014352p 0.089996p 0.140778o 0.144905n 4.40e-06p 3.38e-05p 2.54e-08p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.054611n 0.0 0.0 0.0
zp 64.63 ri 0.0 1.19e-08p 1.60e-05p 0.001857p 0.020996p 0.027425p 0.004256p 8.76e-06p 5.87e-05p 9.39e-08p
sig0.619 cc 0.0 1.19e-08p 1.61e-05p 0.001873p 0.022869p 0.050294p 0.054617p 8.76e-06p 6.75e-05p 9.39e-08p
rc 0.0 1.19e-08p 1.61e-05p 0.001873p 0.022869p 0.050294o 0.054617n 8.76e-06p 6.75e-05p 9.39e-08p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.070879n 0.0 0.0 0.0
zp 63.71 ri 1.19e-10p 1.66e-06p 0.000915p 0.023879p 0.040935p 0.005113p 3.44e-05p 1.26e-09p 8.42e-09p 0.0
sig0.543 cc 1.19e-10p 1.66e-06p 0.000917p 0.024796p 0.065731p 0.070844p 0.070879p 1.26e-09p 9.68e-09p 0.0
rc 1.19e-10p 1.66e-06p 0.000917p 0.024796p 0.065731p 0.070844o 0.070879n 1.26e-09p 9.68e-09p 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

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        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.079926n      0.0       0.0       0.0
zp 64.24 ri 6.59e-11p 3.97e-07p 0.000199p 0.009047p 0.043547p 0.025418p 0.001704p 1.44e-06p 9.65e-06p 6.21e-09p
sig0.621 cc 6.59e-11p 3.98e-07p 0.000199p 0.009246p 0.052793p 0.078211p 0.079926p 1.44e-06p 1.11e-05p 6.21e-09p
        rc 6.59e-11p 3.98e-07p 0.000199p 0.009246p 0.052793p 0.078211o 0.079926n 1.44e-06p 1.11e-05p 6.21e-09p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.019985n      0.0       0.0       0.0
zp 64.05 ri 2.80e-11p 1.98e-07p 9.52e-05p 0.003497p 0.011918p 0.004325p 0.000149p 2.76e-08p 3.67e-07p 7.21e-11p
sig0.597 cc 2.80e-11p 1.98e-07p 9.54e-05p 0.003592p 0.015510p 0.019836p 0.019984p 2.76e-08p 3.95e-07p 7.21e-11p
        rc 2.80e-11p 1.98e-07p 9.54e-05p 0.003592p 0.015510p 0.019836o 0.019984n 2.76e-08p 3.95e-07p 7.21e-11p
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.003525n      0.0       0.0       0.0
zp 64.48 ri       0.0  4.76e-10p 1.36e-06p 0.000139p 0.001873p 0.001351p 0.000160p 1.04e-07p 6.98e-07p 4.44e-10p
sig0.583 cc       0.0  4.76e-10p 1.36e-06p 0.000140p 0.002013p 0.003364p 0.003525p 1.04e-07p 8.03e-07p 4.44e-10p
        rc      0.0  4.76e-10p 1.36e-06p 0.000140p 0.002013p 0.003364o 0.003525n 1.04e-07p 8.03e-07p 4.44e-10p
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  9.97e-08n      0.0       0.0       0.0
zp 62.75 ri       0.0  5.67e-10p 3.34e-08p 5.86e-08p 7.10e-09p 1.95e-11p       0.0       0.0       0.0       0.0
sig0.497 cc       0.0  5.67e-10p 3.40e-08p 9.26e-08p 9.97e-08p 9.97e-08p 9.97e-08p       0.0       0.0       0.0
        rc      0.0  5.67e-10p 3.40e-08p 9.26e-08p 9.97e-08p 9.97e-08o 9.97e-08n       0.0       0.0       0.0

  sm, eu half lives from 80eng2; gd, tb half lives from 89wal1.
1

    mass number    164              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g
half life                      1.39 s    1.58 s     45. s     3.0 m    stable     37. m     24. m    stable
lambda            0.0       0.0 4.987e-01 4.387e-01 1.540e-02 3.851e-03       0.0 3.122e-04 4.814e-04       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  -47.0000   53.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.078168n      0.0       0.0       0.0
zp 64.45 ri       0.0  1.14e-08p 2.91e-05p 0.003627p 0.039601p 0.032075p 0.002830p 1.00e-05p 4.30e-06p 5.21e-09p
sig0.577 cc       0.0  1.14e-08p 2.91e-05p 0.003656p 0.043257p 0.075332p 0.078168p 1.00e-05p 1.43e-05p 7.60e-06p
        rc      0.0  1.14e-08p 2.91e-05p 0.003656p 0.043257p 0.075332o 0.078168n 1.00e-05p 1.43e-05p 7.60e-06o
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.007786n      0.0       0.0       0.0
zp 64.38 ri       0.0  4.98e-10p 3.00e-06p 0.000320p 0.004966p 0.002301p 0.000196p 2.44e-07p 1.04e-07p 6.92e-11p
sig0.551 cc       0.0  4.98e-10p 3.00e-06p 0.000323p 0.005289p 0.007590p 0.007786p 2.44e-07p 3.48e-07p 1.85e-07p
        rc      0.0  4.98e-10p 3.00e-06p 0.000323p 0.005289p 0.007590o 0.007786n 2.44e-07p 3.48e-07p 1.85e-07o
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.018351n      0.0       0.0       0.0
zp 63.86 ri 6.14e-11p 4.30e-07p 0.000175p 0.004764p 0.010971p 0.002399p 4.14e-05p 3.17e-08p 1.36e-08p 2.82e-12p
sig0.579 cc 6.14e-11p 4.30e-07p 0.000175p 0.004939p 0.015910p 0.018309p 0.018351p 3.17e-08p 4.53e-08p 2.40e-08p
        rc 6.14e-11p 4.30e-07p 0.000175p 0.004939p 0.015910p 0.018309o 0.018351n 3.17e-08p 4.53e-08p 2.40e-08o
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.106263n      0.0       0.0       0.0
zp 64.71 ri 1.03e-12p 1.66e-08p 2.29e-05p 0.002861p 0.036562p 0.056002p 0.010717p 0.000157p 6.73e-05p 4.44e-07p
sig0.627 cc 1.03e-12p 1.66e-08p 2.29e-05p 0.002884p 0.039445p 0.095448p 0.106270p 0.000157p 0.000224p 0.000119p
        rc 1.03e-12p 1.66e-08p 2.29e-05p 0.002884p 0.039445p 0.095448p 0.106270n 0.000157p 0.000224p 0.000119o
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.038228n      0.0       0.0       0.0
zp 65.01 ri       0.0  2.79e-10p 9.78e-07p 0.000285p 0.007636p 0.022302p 0.007867p 0.000212p 9.09e-05p 1.08e-06p
sig0.619 cc       0.0  2.79e-10p 9.78e-07p 0.000286p 0.007922p 0.030224p 0.038233p 0.000212p 0.000303p 0.000162p
        rc      0.0  2.79e-10p 9.78e-07p 0.000286p 0.007922p 0.030224p 0.038233n 0.000212p 0.000303p 0.000162o
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.053159n      0.0       0.0       0.0
zp 64.09 ri 1.00e-12p 4.89e-08p 9.06e-05p 0.007287p 0.033838p 0.011696p 0.000248p 1.67e-07p 7.14e-08p 8.81e-12p
sig0.543 cc 1.00e-12p 4.89e-08p 9.07e-05p 0.007377p 0.041215p 0.052911p 0.053159p 1.67e-07p 2.38e-07p 1.26e-07p
        rc 1.00e-12p 4.89e-08p 9.07e-05p 0.007377p 0.041215p 0.052911o 0.053159n 1.67e-07p 2.38e-07p 1.26e-07o
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.057090n      0.0       0.0       0.0
zp 64.62 ri       0.0  1.40e-08p 1.79e-05p 0.001995p 0.022065p 0.028545p 0.004436p 4.99e-05p 2.14e-05p 1.02e-07p
sig0.621 cc       0.0  1.40e-08p 1.79e-05p 0.002013p 0.024078p 0.052623p 0.057092p 4.99e-05p 7.13e-05p 3.79e-05p
        rc      0.0  1.40e-08p 1.79e-05p 0.002013p 0.024078p 0.052623o 0.057092n 4.99e-05p 7.13e-05p 3.79e-05o
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.015988n      0.0       0.0       0.0
zp 64.43 ri       0.0  7.50e-09p 9.94e-06p 0.000953p 0.007812p 0.006639p 0.000573p 3.37e-06p 7.39e-07p 2.09e-09p
sig0.597 cc       0.0  7.50e-09p 9.95e-06p 0.000963p 0.008774p 0.015413p 0.015988p 3.37e-06p 4.10e-06p 2.18e-06p
        rc      0.0  7.50e-09p 9.95e-06p 0.000963p 0.008774p 0.015413o 0.015988n 3.37e-06p 4.10e-06p 2.18e-06p
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.002382n      0.0       0.0       0.0
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zp 64.86 ri       0.0  7.75e-12p 7.97e-08p 1.86e-05p 0.000805p 0.001138p 0.000417p 3.28e-06p 1.41e-06p 9.26e-09p
sig0.583 cc       0.0  7.75e-12p 7.97e-08p 1.87e-05p 0.000824p 0.001962p 0.002382p 3.28e-06p 4.69e-06p 2.49e-06p
         rc       0.0  7.75e-12p 7.97e-08p 1.87e-05p 0.000824p 0.001962p 0.002382n 3.28e-06p 4.69e-06p 2.49e-06o
 u238s   xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  2.99e-08n      0.0       0.0       0.0
zp 63.12 ri       0.0  1.61e-11p 3.55e-09p 1.91e-08p 7.23e-09p 7.59e-11p       0.0       0.0       0.0       0.0
sig0.497 cc       0.0  1.61e-11p 3.56e-09p 2.26e-08p 2.98e-08p 2.99e-08p 2.99e-08p       0.0       0.0       0.0
         rc       0.0  1.61e-11p 3.56e-09p 2.26e-08p 2.98e-08p 2.99e-08o 2.99e-08n       0.0       0.0       0.0

  sm, eu half lives from 80eng2; gd, tb half lives from 89wal1.
1

    mass number    165              LA-UR-94-3106 (ENDF-349)                                percent yields
nuclide       61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy m   66 dy g   67 ho g   68 er g   69 tm g
half life              0.454s    1.35 s    0.705m     2.1 m    1.26 m    2.33 h    stable    10.36h    30.06h
lambda            0.0 1.527e+00 5.134e-01 1.639e-02 5.501e-03 9.169e-03 8.264e-05       0.0 1.859e-05 6.405e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000   50.0000   50.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0    2.5000       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0   97.5000       0.0       0.0       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.062964n      0.0       0.0
zp 64.83 ri 2.29e-10p 1.75e-06p 0.000629p 0.018146p 0.035932p 0.001058p 0.007080p 0.000116p 1.26e-07p 6.20e-12p
sig0.577 cc 2.29e-10p 1.75e-06p 0.000631p 0.018777p 0.054709p 0.028413p 0.062137p 0.062963p 1.26e-07p 6.20e-12p
         rc 2.29e-10p 1.75e-06p 0.000631p 0.018777p 0.054709p 0.028413p 0.062137n 0.062963m 1.26e-07p 6.20e-12p
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.004906n      0.0       0.0
zp 64.76 ri 7.10e-12p 1.16e-07p 4.84e-05p 0.001750p 0.002597p 6.58e-05p 0.000440p 3.48e-06p 1.87e-09p       0.0
sig0.551 cc 7.10e-12p 1.16e-07p 4.86e-05p 0.001799p 0.004396p 0.002264p 0.004845p 0.004906p 1.87e-09p       0.0
         rc 7.10e-12p 1.16e-07p 4.86e-05p 0.001799p 0.004396p 0.002264p 0.004845n 0.004906m 1.87e-09p       0.0
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.013179n      0.0       0.0
zp 64.24 ri 1.50e-08p 1.78e-05p 0.001323p 0.007565p 0.004083p 2.48e-05p 0.000166p 6.05e-07p 1.13e-10p       0.0
sig0.579 cc 1.50e-08p 1.78e-05p 0.001340p 0.008905p 0.012988p 0.006519p 0.013015p 0.013179p 1.13e-10p       0.0
         rc 1.50e-08p 1.78e-05p 0.001340p 0.008905p 0.012988p 0.006519o 0.013015n 0.013179m 1.13e-10p       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.077282n      0.0       0.0
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zp 65.11 ri 3.37e-10p 1.24e-06p 0.000399p 0.012469p 0.043916p 0.002533p 0.016950p 0.001009p 5.20e-06p 2.39e-09p
sig0.627 cc 3.37e-10p 1.24e-06p 0.000401p 0.012870p 0.056786p 0.030926p 0.075495p 0.077282p 5.20e-06p 2.39e-09p
        rc 3.37e-10p 1.24e-06p 0.000401p 0.012870p 0.056786p 0.030926p 0.075495o 0.077282n 5.20e-06p 2.39e-09p
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.024575n      0.0       0.0
zp 65.40 ri 3.72e-12p 3.50e-08p 2.67e-05p 0.001782p 0.012103p 0.001267p 0.008478p 0.000909p 8.32e-06p 6.54e-09p
sig0.619 cc 3.72e-12p 3.50e-08p 2.67e-05p 0.001809p 0.013912p 0.008223p 0.023452p 0.024575p 8.33e-06p 6.54e-09p
        rc 3.72e-12p 3.50e-08p 2.67e-05p 0.001809p 0.013912p 0.008223p 0.023452o 0.024575n 8.33e-06p 6.54e-09p
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.045969n      0.0       0.0
zp 64.47 ri 1.03e-09p 6.56e-06p 0.001697p 0.022315p 0.020627p 0.000172p 0.001148p 4.21e-06p 5.43e-10p       0.0
sig0.543 cc 1.03e-09p 6.56e-06p 0.001704p 0.024018p 0.044645p 0.022494p 0.045402p 0.045969p 5.43e-10p       0.0
        rc 1.03e-09p 6.56e-06p 0.001704p 0.024018p 0.044645p 0.022494o 0.045402n 0.045969m 5.43e-10p       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.043457n      0.0       0.0
zp 65.00 ri 3.64e-10p 1.20e-06p 0.000335p 0.008741p 0.025178p 0.001151p 0.007704p 0.000344p 1.25e-06p 3.85e-10p
sig0.621 cc 3.64e-10p 1.20e-06p 0.000336p 0.009078p 0.034256p 0.018279p 0.042654p 0.043456p 1.25e-06p 3.85e-10p
        rc 3.64e-10p 1.20e-06p 0.000336p 0.009078p 0.034256p 0.018279p 0.042654n 0.043456m 1.25e-06p 3.85e-10p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.011994n      0.0       0.0
zp 64.81 ri 1.81e-10p 6.65e-07p 0.000170p 0.003469p 0.006880p 0.000101p 0.001344p 2.73e-05p 3.84e-08p 3.66e-12p
sig0.597 cc 1.81e-10p 6.65e-07p 0.000171p 0.003640p 0.010521p 0.005362p 0.011832p 0.011993p 3.84e-08p 3.66e-12p
        rc 1.81e-10p 6.65e-07p 0.000171p 0.003640p 0.010521p 0.005362p 0.011832n 0.011993m 3.84e-08p 3.66e-12p
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001715n      0.0       0.0
zp 65.25 ri       0.0  2.37e-09p 2.01e-06p 0.000195p 0.000856p 8.29e-05p 0.000555p 2.41e-05p 1.14e-07p 1.87e-11p
sig0.583 cc       0.0  2.37e-09p 2.01e-06p 0.000197p 0.001053p 0.000609p 0.001675p 0.001715p 1.14e-07p 1.87e-11p
        rc       0.0  2.37e-09p 2.01e-06p 0.000197p 0.001053p 0.000609p 0.001675o 0.001715n 1.14e-07p 1.87e-11p
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.98e-09n      0.0       0.0
zp 63.50 ri       0.0  2.42e-10p 4.41e-09p 5.13e-09p 1.99e-10p       0.0       0.0       0.0       0.0       0.0
sig0.497 cc       0.0  2.42e-10p 4.65e-09p 9.78e-09p 9.98e-09p 4.99e-09p 9.86e-09p 9.98e-09p       0.0       0.0
        rc       0.0  2.42e-10p 4.65e-09p 9.78e-09p 9.98e-09o 4.99e-09o 9.86e-09n 9.98e-09m       0.0       0.0

  sm, eu, gd half lives from 80eng2; tb, dy half lives from 89wal1.
1
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mass number 166 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	62 sm g	63 eu g	64 gd g	65 tb g	66 dy g	67 ho m	67 ho g	68 er g	69 tm g	70 yb g
half life						3.400d	1.2e3y	1.117d	stable	7.70 h	56.7 h
lambda	0.0	0.0	0.0	0.0	2.360e-06	1.832e-11	7.182e-06	0.0	2.501e-05	3.396e-06
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	0.0	100.0000	100.0000	-100.0000	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
cf250s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.050809n	0.0	0.0

zp 65.21 ri 6.90e-08p 7.27e-05p 0.005752p 0.028388p 0.015970p 0.000436p 0.000187p 1.98e-06p 2.94e-10p 0.0
sig0.577 cc 6.90e-08p 7.27e-05p 0.005825p 0.034213p 0.050184p 0.000436p 0.050371p 0.050809p 2.94e-10p 0.0
rc 6.90e-08p 7.27e-05p 0.005825p 0.034213p 0.050184o 0.000436p 0.050371o 0.050809n 2.94e-10p 0.0

cm244s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.003406n	0.0	0.0

zp 65.14 ri 3.65e-09p 4.04e-06p 0.000539p 0.001730p 0.001114p 1.32e-05p 5.67e-06p 4.09e-08p 1.48e-12p 0.0
sig0.551 cc 3.65e-09p 4.05e-06p 0.000543p 0.002274p 0.003388p 1.32e-05p 0.003393p 0.003406p 1.48e-12p 0.0
rc 3.65e-09p 4.05e-06p 0.000543p 0.002274p 0.003388o 1.32e-05p 0.003393o 0.003406n 1.48e-12p 0.0

cm248s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.010195n	0.0	0.0

zp 64.61 ri 1.40e-06p 0.000284p 0.004070p 0.005215p 0.000619p 3.81e-06p 1.63e-06p 2.93e-09p 0.0 0.0
sig0.579 cc 1.40e-06p 0.000285p 0.004355p 0.009570p 0.010189p 3.81e-06p 0.010191p 0.010195p 0.0 0.0
rc 1.40e-06p 0.000285p 0.004355p 0.009570p 0.010189o 3.81e-06p 0.010191o 0.010195n 0.0 0.0

es253s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.057962n	0.0	0.0

zp 65.50 ri 5.06e-08p 4.18e-05p 0.003198p 0.025860p 0.025688p 0.002193p 0.000940p 4.04e-05p 4.81e-08p 4.92e-12p
sig0.627 cc 5.06e-08p 4.19e-05p 0.003240p 0.029100p 0.054788p 0.002193p 0.055728p 0.057961p 4.81e-08p 4.92e-12p
rc 5.06e-08p 4.19e-05p 0.003240p 0.029100p 0.054788p 0.002193p 0.055728o 0.057961n 4.81e-08p 4.92e-12p

fm254s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.018204n	0.0	0.0

zp 65.79 ri 9.89e-10p 2.00e-06p 0.000340p 0.005509p 0.010084p 0.001552p 0.000665p 5.12e-05p 1.06e-07p 1.80e-11p
sig0.619 cc 9.89e-10p 2.00e-06p 0.000342p 0.005851p 0.015935p 0.001552p 0.016600p 0.018204p 1.06e-07p 1.80e-11p
rc 9.89e-10p 2.00e-06p 0.000342p 0.005851p 0.015935p 0.001552p 0.016600o 0.018204n 1.06e-07p 1.80e-11p

fm255t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.035440n	0.0	0.0

zp 64.85 ri 2.66e-07p 0.000229p 0.008982p 0.022141p 0.004046p 2.92e-05p 1.25e-05p 1.85e-08p 0.0 0.0

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sig0.543 cc 2.66e-07p 0.000229p 0.009211p 0.031352p 0.035398p 2.92e-05p 0.035410p 0.035439p       0.0        0.0
         rc 2.66e-07p 0.000229p 0.009211p 0.031352p 0.035398p 2.92e-05p 0.035410o 0.035439n       0.0        0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.033302n      0.0       0.0
zp 65.38 ri 5.69e-08p 4.02e-05p 0.002539p 0.016560p 0.012964p 0.000832p 0.000356p 1.08e-05p 8.58e-09p       0.0
sig0.621 cc 5.69e-08p 4.03e-05p 0.002580p 0.019139p 0.032103p 0.000832p 0.032460p 0.033302p 8.58e-09p       0.0
         rc 5.69e-08p 4.03e-05p 0.002580p 0.019139p 0.032103p 0.000832p 0.032460o 0.033302n 8.58e-09p       0.0
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.009493n      0.0       0.0
zp 65.19 ri 3.19e-08p 2.23e-05p 0.001163p 0.005460p 0.002715p 0.000108p 2.37e-05p 5.05e-07p 1.35e-10p       0.0
sig0.597 cc 3.19e-08p 2.23e-05p 0.001185p 0.006645p 0.009361p 0.000108p 0.009384p 0.009493p 1.35e-10p       0.0
         rc 3.19e-08p 2.23e-05p 0.001185p 0.006645p 0.009361o 0.000108p 0.009384o 0.009493n 1.35e-10p       0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001143n      0.0       0.0
zp 65.63 ri 5.41e-11p 1.09e-07p 3.61e-05p 0.000327p 0.000722p 4.00e-05p 1.71e-05p 9.28e-07p 3.62e-10p       0.0
sig0.583 cc 5.41e-11p 1.09e-07p 3.62e-05p 0.000363p 0.001085p 4.00e-05p 0.001102p 0.001143p 3.62e-10p       0.0
         rc 5.41e-11p 1.09e-07p 3.62e-05p 0.000363p 0.001085p 4.00e-05p 0.001102o 0.001143n 3.62e-10p       0.0
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.99e-09n      0.0       0.0
zp 63.88 ri 1.17e-11p 7.91e-10p 2.81e-09p 3.72e-10p 2.27e-12p       0.0       0.0       0.0       0.0       0.0
sig0.497 cc 1.17e-11p 8.02e-10p 3.62e-09p 3.99e-09p 3.99e-09p       0.0  3.99e-09p 3.99e-09p       0.0       0.0
         rc 1.17e-11p 8.02e-10p 3.62e-09p 3.99e-09p 3.99e-09o       0.0  3.99e-09o 3.99e-09n       0.0       0.0

  dy, ho half lives from 89wal1.
1

    mass number    167              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho g   68 er m   68 er g   69 tm g   70 yb g
half life                                     6.2 m     3.1 h    2.28 s    stable    9.24 d    17.5 m
lambda           0.0       0.0       0.0       0.0 1.863e-03 6.211e-05 3.040e-01       0.0 8.682e-07 6.601e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000   10.0000   90.0000   -2.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  -98.0000       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.040061n      0.0       0.0
zp 65.59 ri 1.73e-09p 5.41e-06p 0.001213p 0.015435p 0.021210p 0.002177p 2.57e-06p 1.72e-05p 8.83e-09p       0.0
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sig0.577 cc 1.73e-09p 5.41e-06p 0.001218p 0.016653p 0.037864p 0.040041p 0.004007p 0.040061p 8.83e-09p 0.0
rc 1.73e-09p 5.41e-06p 0.001218p 0.016653p 0.037864p 0.040041o 0.004007o 0.040061n 8.83e-09p 0.0
cm244s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.002433n 0.0 0.0
zp 65.52 ri 5.72e-11p 2.58e-07p 8.74e-05p 0.000957p 0.001309p 7.92e-05p 5.80e-08p 3.88e-07p 6.67e-11p 0.0
sig0.551 cc 5.72e-11p 2.58e-07p 8.77e-05p 0.001045p 0.002354p 0.002433p 0.000243p 0.002433p 6.67e-11p 0.0
rc 5.72e-11p 2.58e-07p 8.77e-05p 0.001045p 0.002354p 0.002433o 0.000243o 0.002433n 6.67e-11p 0.0
cm248s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.008156n 0.0 0.0
zp 64.99 ri 7.11e-08p 4.17e-05p 0.001593p 0.004993p 0.001492p 3.63e-05p 7.45e-09p 4.99e-08p 5.20e-12p 0.0
sig0.579 cc 7.11e-08p 4.18e-05p 0.001635p 0.006628p 0.008119p 0.008156p 0.000816p 0.008156p 5.20e-12p 0.0
rc 7.11e-08p 4.18e-05p 0.001635p 0.006628p 0.008119o 0.008156o 0.000816o 0.008156n 5.20e-12p 0.0
es253s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.040573n 0.0 0.0
zp 65.89 ri 1.33e-09p 2.84e-06p 0.000544p 0.010352p 0.023022p 0.006448p 2.65e-05p 0.000177p 6.21e-07p 1.66e-10p
sig0.627 cc 1.33e-09p 2.85e-06p 0.000547p 0.010899p 0.033920p 0.040368p 0.004064p 0.040573p 6.21e-07p 1.66e-10p
rc 1.33e-09p 2.85e-06p 0.000547p 0.010899p 0.033920p 0.040368o 0.004064o 0.040573n 6.21e-07p 1.66e-10p
fm254s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.011832n 0.0 0.0
zp 66.17 ri 1.84e-11p 9.67e-08p 4.17e-05p 0.001621p 0.006676p 0.003309p 2.39e-05p 0.000160p 9.65e-07p 4.26e-10p
sig0.619 cc 1.84e-11p 9.67e-08p 4.18e-05p 0.001663p 0.008339p 0.011648p 0.001190p 0.011832p 9.66e-07p 4.26e-10p
rc 1.84e-11p 9.67e-08p 4.18e-05p 0.001663p 0.008339p 0.011648o 0.001190o 0.011833n 9.66e-07p 4.26e-10p
fm255t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.026580n 0.0 0.0
zp 65.23 ri 6.58e-09p 1.92e-05p 0.002360p 0.015986p 0.007959p 0.000255p 4.97e-08p 3.32e-07p 2.24e-11p 0.0
sig0.543 cc 6.58e-09p 1.92e-05p 0.002379p 0.018365p 0.026324p 0.026579p 0.002658p 0.026580p 2.24e-11p 0.0
rc 6.58e-09p 1.92e-05p 0.002379p 0.018365p 0.026324p 0.026579o 0.002658o 0.026580n 2.24e-11p 0.0
fm256s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.024739n 0.0 0.0
zp 65.76 ri 1.82e-09p 3.30e-06p 0.000515p 0.007791p 0.013520p 0.002846p 8.26e-06p 5.53e-05p 1.29e-07p 2.17e-11p
sig0.621 cc 1.82e-09p 3.31e-06p 0.000518p 0.008310p 0.021829p 0.024675p 0.002476p 0.024739p 1.29e-07p 2.17e-11p
rc 1.82e-09p 3.31e-06p 0.000518p 0.008310p 0.021829p 0.024675o 0.002476o 0.024739n 1.29e-07p 2.17e-11p
np237h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.006995n 0.0 0.0
zp 65.57 ri 9.67e-10p 1.87e-06p 0.000256p 0.002927p 0.003397p 0.000408p 2.93e-07p 3.90e-06p 3.11e-09p 0.0
sig0.597 cc 9.67e-10p 1.87e-06p 0.000258p 0.003185p 0.006582p 0.006990p 0.000699p 0.006995p 3.11e-09p 0.0

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        rc 9.67e-10p 1.87e-06p 0.000258p 0.003185p 0.006582p 0.006990o 0.000699o 0.006995n 3.11e-09p       0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000762n      0.0       0.0
zp 66.02 ri       0.0  4.84e-09p 3.81e-06p 0.000115p 0.000512p 0.000127p 6.08e-07p 4.07e-06p 6.66e-09p       0.0
sig0.583 cc       0.0  4.84e-09p 3.81e-06p 0.000119p 0.000631p 0.000757p 7.64e-05p 0.000762p 6.66e-09p       0.0
        rc      0.0  4.84e-09p 3.81e-06p 0.000119p 0.000631p 0.000757o 7.64e-05o 0.000762n 6.66e-09p       0.0
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.97e-10n      0.0       0.0
zp 64.25 ri       0.0  5.95e-11p 6.63e-10p 2.69e-10p 6.13e-12p       0.0       0.0       0.0       0.0       0.0
sig0.497 cc       0.0  5.97e-11p 7.23e-10p 9.91e-10p 9.97e-10p 9.97e-10p 9.97e-11p 9.97e-10p       0.0       0.0
        rc      0.0  5.97e-11p 7.23e-10p 9.91e-10p 9.97e-10o 9.97e-10o 9.98e-11o 9.97e-10n       0.0       0.0

  dy, ho half lives from 89wal1; er, tm half life 90bur1.
1

    mass number    168              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb g
half life                                          8.5 m     3.0 m    stable    93.1 d    stable
lambda            0.0       0.0       0.0       0.0 1.359e-03 3.851e-03       0.0 8.617e-08       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000       0.0
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.032244n      0.0       0.0
zp 65.97 ri 2.91e-11p 2.74e-07p 0.000178p 0.006078p 0.020517p 0.005335p 0.000135p 1.79e-07p 1.62e-11p
sig0.577 cc 2.91e-11p 2.74e-07p 0.000178p 0.006257p 0.026773p 0.032109p 0.032244p 1.79e-07p 1.62e-11p
        rc 2.91e-11p 2.74e-07p 0.000178p 0.006257p 0.026773p 0.032109o 0.032244n 1.79e-07p 1.62e-11p
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001460n      0.0       0.0
zp 65.91 ri       0.0  6.39e-09p 8.82e-06p 0.000236p 0.001064p 0.000148p 3.29e-06p 1.37e-09p       0.0
sig0.551 cc       0.0  6.39e-09p 8.83e-06p 0.000245p 0.001308p 0.001457p 0.001460p 1.37e-09p       0.0
        rc      0.0  6.39e-09p 8.83e-06p 0.000245p 0.001308p 0.001457o 0.001460n 1.37e-09p       0.0
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.006117n      0.0       0.0
zp 65.36 ri 2.46e-09p 4.10e-06p 0.000421p 0.003233p 0.002311p 0.000147p 6.50e-07p 1.71e-10p       0.0
sig0.579 cc 2.46e-09p 4.10e-06p 0.000425p 0.003658p 0.005970p 0.006116p 0.006117p 1.71e-10p       0.0
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        rc 2.46e-09p 4.10e-06p 0.000425p 0.003658p 0.005970p 0.006116o 0.006117n 1.71e-10p       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.028981n      0.0       0.0
zp 66.28 ri 2.45e-11p 1.37e-07p 6.64e-05p 0.003053p 0.015403p 0.009719p 0.000733p 5.65e-06p 3.94e-09p
sig0.627 cc 2.45e-11p 1.37e-07p 6.65e-05p 0.003120p 0.018523p 0.028242p 0.028981p 5.65e-06p 3.94e-09p
        rc 2.45e-11p 1.37e-07p 6.65e-05p 0.003120p 0.018523p 0.028242o 0.028981n 5.65e-06p 3.94e-09p
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.005461n      0.0       0.0
zp 66.56 ri       0.0  2.13e-09p 2.42e-06p 0.000237p 0.002291p 0.002583p 0.000344p 4.61e-06p 5.40e-09p
sig0.619 cc       0.0  2.13e-09p 2.42e-06p 0.000239p 0.002530p 0.005113p 0.005462p 4.61e-06p 5.40e-09p
        rc       0.0  2.13e-09p 2.42e-06p 0.000239p 0.002530p 0.005113o 0.005462n 4.61e-06p 5.40e-09p
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.017720n      0.0       0.0
zp 65.61 ri 8.99e-11p 9.03e-07p 0.000362p 0.007082p 0.009381p 0.000889p 4.39e-06p 8.93e-10p       0.0
sig0.543 cc 8.99e-11p 9.03e-07p 0.000363p 0.007445p 0.016826p 0.017715p 0.017720p 8.93e-10p       0.0
        rc 8.99e-11p 9.03e-07p 0.000363p 0.007445p 0.016826p 0.017715o 0.017720n 8.93e-10p       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.019030n      0.0       0.0
zp 66.14 ri 4.20e-11p 1.97e-07p 7.72e-05p 0.002780p 0.010794p 0.005105p 0.000273p 1.40e-06p 6.09e-10p
sig0.621 cc 4.20e-11p 1.97e-07p 7.74e-05p 0.002857p 0.013651p 0.018755p 0.019030p 1.40e-06p 6.09e-10p
        rc 4.20e-11p 1.97e-07p 7.74e-05p 0.002857p 0.013651p 0.018755o 0.019030n 1.40e-06p 6.09e-10p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.005496n      0.0       0.0
zp 65.95 ri 2.11e-11p 1.14e-07p 4.20e-05p 0.001205p 0.003275p 0.000947p 2.54e-05p 5.19e-08p 7.22e-12p
sig0.597 cc 2.11e-11p 1.14e-07p 4.21e-05p 0.001247p 0.004523p 0.005470p 0.005496p 5.19e-08p 7.22e-12p
        rc 2.11e-11p 1.14e-07p 4.21e-05p 0.001247p 0.004523p 0.005470o 0.005496n 5.19e-08p 7.22e-12p
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000476n      0.0       0.0
zp 66.40 ri       0.0  1.15e-10p 3.22e-07p 2.15e-05p 0.000294p 0.000143p 1.71e-05p 5.62e-08p 3.05e-11p
sig0.583 cc       0.0  1.15e-10p 3.22e-07p 2.19e-05p 0.000316p 0.000459p 0.000476p 5.62e-08p 3.05e-11p
        rc       0.0  1.15e-10p 3.22e-07p 2.19e-05p 0.000316p 0.000459o 0.000476n 5.62e-08p 3.05e-11p
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.99e-10n      0.0       0.0
zp 64.63 ri       0.0  4.33e-12p 1.69e-10p 2.08e-10p 1.71e-11p       0.0       0.0       0.0       0.0
sig0.497 cc       0.0  4.34e-12p 1.73e-10p 3.82e-10p 3.99e-10p 3.99e-10p 3.99e-10p       0.0       0.0
        rc       0.0  4.34e-12p 1.73e-10p 3.82e-10p 3.99e-10o 3.99e-10o 3.99e-10n       0.0       0.0
```

dy, ho half lives from 89wal1.
1

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    mass number    169              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       63 eu g   64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb m   70 yb g   71 lu m   71 lu g
half life                                    4.7 m    9.40 d    stable     46. s    32.02d     2.7 m    1.42 d
lambda            0.0       0.0       0.0       0.0 2.458e-03 8.535e-07       0.0 1.507e-02 2.505e-07 4.279e-03 5.650e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000       0.0 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0  100.0000
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.024427n      0.0       0.0       0.0       0.0
zp 66.35 ri 8.75e-09p 1.68e-05p 0.001592p 0.013547p 0.008676p 0.000593p 2.28e-06p 8.07e-11p 5.40e-10p       0.0       0.0
sig0.577 cc 8.75e-09p 1.68e-05p 0.001609p 0.015156p 0.023832p 0.024425p 0.024427p 8.07e-11p 6.21e-10p       0.0       0.0
         rc 8.75e-09p 1.68e-05p 0.001609p 0.015156p 0.023832p 0.024425o 0.024427n 8.07e-11p 6.21e-10p       0.0       0.0
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000973n      0.0       0.0       0.0       0.0
zp 66.29 ri 1.68e-10p 6.20e-07p 6.22e-05p 0.000616p 0.000280p 1.51e-05p 2.50e-08p       0.0  2.64e-12p       0.0       0.0
sig0.551 cc 1.68e-10p 6.20e-07p 6.28e-05p 0.000679p 0.000958p 0.000973p 0.000973p       0.0  3.03e-12p       0.0       0.0
         rc 1.68e-10p 6.20e-07p 6.28e-05p 0.000679p 0.000958p 0.000973o 0.000973n       0.0  3.03e-12p       0.0       0.0
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.004588n      0.0       0.0       0.0       0.0
zp 65.74 ri 2.56e-07p 7.48e-05p 0.001492p 0.002592p 0.000424p 5.29e-06p 4.12e-09p       0.0       0.0       0.0       0.0
sig0.579 cc 2.56e-07p 7.50e-05p 0.001567p 0.004159p 0.004582p 0.004588p 0.004588p       0.0       0.0       0.0       0.0
         rc 2.56e-07p 7.50e-05p 0.001567p 0.004159p 0.004582o 0.004588o 0.004588n       0.0       0.0       0.0       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.022219n      0.0       0.0       0.0       0.0
zp 66.66 ri 5.28e-09p 6.44e-06p 0.000715p 0.008194p 0.011319p 0.001947p 3.63e-05p 8.28e-09p 5.54e-08p 1.26e-12p 8.43e-12p
sig0.627 cc 5.28e-09p 6.45e-06p 0.000722p 0.008915p 0.020235p 0.022182p 0.022218p 8.28e-09p 6.37e-08p 1.26e-12p 9.69e-12p
         rc 5.28e-09p 6.45e-06p 0.000722p 0.008915p 0.020235p 0.022182o 0.022218n 8.28e-09p 6.37e-08p 1.26e-12p 9.69e-12p
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.003641n      0.0       0.0       0.0       0.0
zp 66.94 ri 5.08e-11p 1.49e-07p 3.67e-05p 0.000837p 0.002106p 0.000640p 2.10e-05p 8.16e-09p 5.46e-08p 2.02e-12p 1.35e-11p
sig0.619 cc 5.08e-11p 1.50e-07p 3.68e-05p 0.000874p 0.002980p 0.003620p 0.003641p 8.16e-09p 6.28e-08p 2.02e-12p 1.55e-11p
         rc 5.08e-11p 1.50e-07p 3.68e-05p 0.000874p 0.002980p 0.003620o 0.003641n 8.16e-09p 6.28e-08p 2.02e-12p 1.55e-11p
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 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.015062n      0.0       0.0       0.0       0.0
zp 65.99 ri 3.40e-08p 4.57e-05p 0.002720p 0.009684p 0.002572p 4.05e-05p 2.82e-08p      0.0       0.0       0.0       0.0
sig0.543 cc 3.40e-08p 4.57e-05p 0.002766p 0.012450p 0.015021p 0.015062p 0.015062p      0.0       0.0       0.0       0.0
         rc 3.40e-08p 4.57e-05p 0.002766p 0.012450p 0.015021p 0.015062o 0.015062n      0.0       0.0       0.0       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.013321n      0.0       0.0       0.0       0.0
zp 66.52 ri 7.46e-09p 7.45e-06p 0.000654p 0.005801p 0.006088p 0.000760p 9.65e-06p 1.41e-09p 9.42e-09p      0.0       0.0
sig0.621 cc 7.46e-09p 7.46e-06p 0.000662p 0.006463p 0.012551p 0.013311p 0.013321p 1.41e-09p 1.08e-08p      0.0       0.0
         rc 7.46e-09p 7.46e-06p 0.000662p 0.006463p 0.012551p 0.013311o 0.013321n 1.41e-09p 1.08e-08p      0.0       0.0
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.004197n      0.0       0.0       0.0       0.0
zp 66.33 ri 4.56e-09p 4.62e-06p 0.000343p 0.002229p 0.001516p 0.000103p 5.69e-07p 1.55e-11p 2.06e-10p      0.0       0.0
sig0.597 cc 4.56e-09p 4.63e-06p 0.000348p 0.002577p 0.004093p 0.004196p 0.004197p 1.55e-11p 2.22e-10p      0.0       0.0
         rc 4.56e-09p 4.63e-06p 0.000348p 0.002577p 0.004093p 0.004196o 0.004197n 1.55e-11p 2.22e-10p      0.0       0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000305n      0.0       0.0       0.0       0.0
zp 66.78 ri 2.44e-12p 1.62e-08p 3.75e-06p 0.000107p 0.000155p 3.82e-05p 4.27e-07p 7.13e-11p 4.77e-10p      0.0       0.0
sig0.583 cc 2.44e-12p 1.62e-08p 3.77e-06p 0.000111p 0.000266p 0.000304p 0.000305p 7.13e-11p 5.48e-10p      0.0       0.0
         rc 2.44e-12p 1.62e-08p 3.77e-06p 0.000111p 0.000266p 0.000304o 0.000305n 7.13e-11p 5.48e-10p      0.0       0.0
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.99e-10n      0.0       0.0       0.0       0.0
zp 65.00 ri      0.0  3.50e-11p 1.30e-10p 3.43e-11p      0.0       0.0       0.0       0.0       0.0       0.0       0.0
sig0.497 cc      0.0  3.52e-11p 1.65e-10p 1.99e-10p 1.99e-10p 1.99e-10p 1.99e-10p      0.0       0.0       0.0       0.0
         rc      0.0  3.52e-11p 1.65e-10p 1.99e-10p 1.99e-10o 1.99e-10o 1.99e-10n      0.0       0.0       0.0       0.0

  ho, er half lives from 89wal1; yb half life 90bur1.
1

    mass number    170              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide      62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g   69 tm g   70 yb g
half life                                                   43. s     2.8 m    stable    128.6d    stable
lambda          0.0       0.0       0.0       0.0       0.0 1.612e-02 4.126e-03       0.0 6.238e-08       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000   -0.2000   99.8000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

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 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.020519n      0.0       0.0
zp 66.73 ri      0.0  2.05e-10p 1.18e-06p 0.000319p 0.007110p 0.005558p 0.005558p 0.001972p 2.15e-05p 1.75e-08p
sig0.577 cc      0.0  2.05e-10p 1.18e-06p 0.000321p 0.007431p 0.005558p 0.012989p 0.020519p 2.15e-05p 2.15e-05p
         rc      0.0  2.05e-10p 1.18e-06p 0.000321p 0.007431p 0.005558p 0.012989p 0.020519n 2.15e-05p 2.15e-05p
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000584n      0.0       0.0
zp 66.67 ri      0.0  2.01e-12p 3.03e-08p 7.80e-06p 0.000269p 0.000129p 0.000129p 4.87e-05p 2.08e-07p 1.04e-10p
sig0.551 cc      0.0  2.01e-12p 3.03e-08p 7.83e-06p 0.000277p 0.000129p 0.000406p 0.000584p 2.08e-07p 2.08e-07p
         rc      0.0  2.01e-12p 3.03e-08p 7.83e-06p 0.000277p 0.000129p 0.000406p 0.000584n 2.08e-07p 2.08e-07p
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.003568n      0.0       0.0
zp 66.12 ri      0.0  1.10e-08p 9.33e-06p 0.000503p 0.002151p 0.000438p 0.000438p 2.99e-05p 6.81e-08p 8.98e-12p
sig0.579 cc      0.0  1.10e-08p 9.34e-06p 0.000512p 0.002663p 0.000438p 0.003101p 0.003568p 6.81e-08p 6.79e-08p
         rc      0.0  1.10e-08p 9.34e-06p 0.000512p 0.002663p 0.000438p 0.003101o 0.003568n 6.81e-08p 6.79e-08p
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.016422n      0.0       0.0
zp 67.04 ri      0.0  1.39e-10p 4.30e-07p 0.000118p 0.003131p 0.004761p 0.004761p 0.003651p 0.000162p 7.05e-07p
sig0.627 cc      0.0  1.39e-10p 4.30e-07p 0.000118p 0.003249p 0.004761p 0.008010p 0.016422p 0.000162p 0.000162p
         rc      0.0  1.39e-10p 4.30e-07p 0.000118p 0.003249p 0.004761p 0.008010p 0.016422n 0.000162p 0.000162p
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.002731n      0.0       0.0
zp 67.32 ri      0.0       0.0  7.46e-09p 4.66e-06p 0.000258p 0.000734p 0.000734p 0.000999p 7.79e-05p 5.88e-07p
sig0.619 cc      0.0       0.0  7.46e-09p 4.67e-06p 0.000262p 0.000734p 0.000997p 0.002731p 7.79e-05p 7.84e-05p
         rc      0.0       0.0  7.46e-09p 4.67e-06p 0.000262p 0.000734p 0.000997p 0.002731n 7.79e-05p 7.84e-05p
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.012404n      0.0       0.0
zp 66.37 ri      0.0  7.75e-10p 3.56e-06p 0.000674p 0.006704p 0.002396p 0.002396p 0.000231p 5.38e-07p 4.99e-11p
sig0.543 cc      0.0  7.75e-10p 3.56e-06p 0.000677p 0.007382p 0.002396p 0.009777p 0.012404p 5.38e-07p 5.36e-07p
         rc      0.0  7.75e-10p 3.56e-06p 0.000677p 0.007382p 0.002396p 0.009777p 0.012404n 5.38e-07p 5.36e-07p
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.009515n      0.0       0.0
zp 66.90 ri      0.0  2.02e-10p 5.19e-07p 0.000113p 0.002354p 0.002743p 0.002743p 0.001560p 4.82e-05p 1.38e-07p
sig0.621 cc      0.0  2.02e-10p 5.19e-07p 0.000114p 0.002468p 0.002743p 0.005212p 0.009515p 4.82e-05p 4.82e-05p
         rc      0.0  2.02e-10p 5.19e-07p 0.000114p 0.002468p 0.002743p 0.005212p 0.009515n 4.82e-05p 4.82e-05p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.003198n      0.0       0.0
zp 66.71 ri      0.0  1.24e-10p 3.48e-07p 6.87e-05p 0.001098p 0.000870p 0.000870p 0.000290p 4.26e-06p 4.59e-09p
sig0.597 cc      0.0  1.24e-10p 3.48e-07p 6.91e-05p 0.001167p 0.000870p 0.002037p 0.003198p 4.26e-06p 4.25e-06p
        rc      0.0  1.24e-10p 3.48e-07p 6.91e-05p 0.001167p 0.000870p 0.002037p 0.003198n 4.26e-06p 4.25e-06p
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000210n      0.0       0.0
zp 67.17 ri      0.0       0.0  6.34e-10p 3.50e-07p 3.39e-05p 4.98e-05p 4.98e-05p 7.58e-05p 1.90e-06p 8.86e-09p
sig0.583 cc      0.0       0.0  6.34e-10p 3.51e-07p 3.42e-05p 4.98e-05p 8.40e-05p 0.000210p 1.90e-06p 1.91e-06p
        rc      0.0       0.0  6.34e-10p 3.51e-07p 3.42e-05p 4.98e-05p 8.40e-05p 0.000210n 1.90e-06p 1.91e-06p
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.97e-11n      0.0       0.0
zp 65.38 ri      0.0       0.0  4.22e-12p 5.19e-11p 4.25e-11p      0.0       0.0       0.0       0.0       0.0
sig0.497 cc      0.0       0.0  4.23e-12p 5.61e-11p 9.86e-11p      0.0  9.92e-11p 9.98e-11p      0.0       0.0
        rc      0.0       0.0  4.23e-12p 5.61e-11p 9.86e-11p      0.0  9.92e-11o 9.97e-11n      0.0       0.0

  ho half life from 89wal1; tm half life 90bur1.
1

    mass number    171            LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide      64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb g   71 lu m   71 lu g   72 hf g
half life                                   7.52 h    1.92 y    stable     78. s    8.24 d    12.2 h
lambda          0.0       0.0       0.0       0.0 2.560e-05 1.145e-08       0.0 8.887e-03 9.736e-07 1.578e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.015634n      0.0       0.0       0.0
zp 67.11 ri 4.90e-08p 3.88e-05p 0.002349p 0.009090p 0.004035p 0.000121p 2.90e-07p 1.62e-11p 1.62e-11p      0.0
sig0.577 cc 4.90e-08p 3.89e-05p 0.002388p 0.011477p 0.015512p 0.015633p 0.015634p 1.62e-11p 3.23e-11p      0.0
        rc 4.90e-08p 3.89e-05p 0.002388p 0.011477p 0.015512o 0.015633o 0.015634n 1.62e-11p 3.23e-11p      0.0
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000389n      0.0       0.0       0.0
zp 67.05 ri 8.34e-10p 8.58e-07p 7.14e-05p 0.000223p 9.26e-05p 1.49e-06p 1.98e-09p      0.0       0.0       0.0
sig0.551 cc 8.34e-10p 8.59e-07p 7.23e-05p 0.000295p 0.000388p 0.000389p 0.000389p      0.0       0.0       0.0
        rc 8.34e-10p 8.59e-07p 7.23e-05p 0.000295p 0.000388o 0.000389o 0.000389n      0.0       0.0       0.0
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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```
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.002549n      0.0       0.0       0.0
zp 66.49 ri 7.65e-07p 0.000112p 0.001186p 0.001148p 0.000101p 6.41e-07p 2.45e-10p      0.0       0.0       0.0
sig0.579 cc 7.65e-07p 0.000113p 0.001299p 0.002447p 0.002548p 0.002549p 0.002549p      0.0       0.0       0.0
        rc 7.65e-07p 0.000113p 0.001299p 0.002447p 0.002548o 0.002549o 0.002549n      0.0       0.0       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.010626n      0.0       0.0       0.0
zp 67.42 ri 1.74e-08p 1.18e-05p 0.000751p 0.005111p 0.004306p 0.000441p 4.72e-06p 2.31e-09p 2.31e-09p      0.0
sig0.627 cc 1.74e-08p 1.18e-05p 0.000763p 0.005874p 0.010180p 0.010621p 0.010626p 2.31e-09p 4.63e-09p      0.0
        rc 1.74e-08p 1.18e-05p 0.000763p 0.005874p 0.010180p 0.010621o 0.010626n 2.31e-09p 4.63e-09p      0.0
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001820n      0.0       0.0       0.0
zp 67.70 ri 2.17e-10p 3.50e-07p 4.80e-05p 0.000635p 0.000961p 0.000174p 3.25e-06p 2.69e-09p 2.69e-09p      0.0
sig0.619 cc 2.17e-10p 3.50e-07p 4.83e-05p 0.000683p 0.001643p 0.001817p 0.001820p 2.69e-09p 5.38e-09p      0.0
        rc 2.17e-10p 3.50e-07p 4.83e-05p 0.000683p 0.001643p 0.001817o 0.001820n 2.69e-09p 5.38e-09p      0.0
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.008860n      0.0       0.0       0.0
zp 66.75 ri 1.51e-07p 9.44e-05p 0.002767p 0.005260p 0.000733p 5.58e-06p 1.79e-09p      0.0       0.0       0.0
sig0.543 cc 1.51e-07p 9.46e-05p 0.002861p 0.008121p 0.008854p 0.008860p 0.008860p      0.0       0.0       0.0
        rc 1.51e-07p 9.46e-05p 0.002861p 0.008121p 0.008854p 0.008860o 0.008860n      0.0       0.0       0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.007041n      0.0       0.0       0.0
zp 67.28 ri 2.59e-08p 1.43e-05p 0.000715p 0.003753p 0.002383p 0.000175p 1.25e-06p 3.87e-10p 3.87e-10p      0.0
sig0.621 cc 2.59e-08p 1.44e-05p 0.000729p 0.004483p 0.006865p 0.007040p 0.007041p 3.87e-10p 7.74e-10p      0.0
        rc 2.59e-08p 1.44e-05p 0.000729p 0.004483p 0.006865p 0.007040o 0.007041n 3.87e-10p 7.74e-10p      0.0
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.002388n      0.0       0.0       0.0
zp 67.09 ri 1.74e-08p 9.34e-06p 0.000379p 0.001416p 0.000562p 2.13e-05p 6.29e-08p 6.41e-12p 6.41e-12p      0.0
sig0.597 cc 1.74e-08p 9.36e-06p 0.000389p 0.001804p 0.002367p 0.002388p 0.002388p 6.41e-12p 1.28e-11p      0.0
        rc 1.74e-08p 9.36e-06p 0.000389p 0.001804p 0.002367o 0.002388o 0.002388n 6.41e-12p 1.28e-11p      0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000143n      0.0       0.0       0.0
zp 67.55 ri 1.34e-11p 2.65e-08p 5.75e-06p 5.25e-05p 7.83e-05p 6.27e-06p 6.67e-08p 1.28e-11p 1.28e-11p      0.0
sig0.583 cc 1.34e-11p 2.65e-08p 5.78e-06p 5.83e-05p 0.000137p 0.000143p 0.000143p 1.28e-11p 2.56e-11p      0.0
        rc 1.34e-11p 2.65e-08p 5.78e-06p 5.83e-05p 0.000137p 0.000143o 0.000143n 1.28e-11p 2.56e-11p      0.0
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.99e-11n      0.0       0.0       0.0
```

```
zp 65.75 ri      0.0  8.19e-12p 1.98e-11p 1.74e-12p      0.0       0.0       0.0       0.0       0.0       0.0
sig0.497 cc      0.0  8.38e-12p 2.82e-11p 2.99e-11p 2.99e-11p 2.99e-11p 2.99e-11p      0.0       0.0       0.0
         rc      0.0  8.38e-12p 2.82e-11p 2.99e-11p 2.99e-11o 2.99e-11o 2.99e-11n      0.0       0.0       0.0

  er, tm half lives from 89wal1.
1

     mass number    172              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb g   71 lu m   71 lu g   72 hf g
half life                                          2.05 d    2.65 d    stable      4. m    6.70 d    1.87 y
lambda            0.0       0.0       0.0       0.0 3.913e-06 3.027e-06       0.0 2.888e-03 1.197e-06 1.175e-08
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 cf250s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.012702n      0.0       0.0       0.0
zp 67.50 ri 1.29e-09p 3.11e-06p 0.000544p 0.005514p 0.006135p 0.000503p 3.57e-06p 6.14e-10p 6.14e-10p       0.0
sig0.577 cc 1.29e-09p 3.11e-06p 0.000547p 0.006061p 0.012196p 0.012699p 0.012702p 6.14e-10p 1.23e-09p       0.0
         rc 1.29e-09p 3.11e-06p 0.000547p 0.006061p 0.012196p 0.012699o 0.012702n 6.14e-10p 1.23e-09p       0.0
 cm244s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000292n      0.0       0.0       0.0
zp 67.44 ri 1.71e-11p 4.86e-08p 1.59e-05p 0.000114p 0.000156p 6.17e-06p 3.35e-08p 1.58e-12p 1.58e-12p       0.0
sig0.551 cc 1.71e-11p 4.86e-08p 1.59e-05p 0.000130p 0.000286p 0.000292p 0.000292p 1.58e-12p 3.16e-12p       0.0
         rc 1.71e-11p 4.86e-08p 1.59e-05p 0.000130p 0.000286p 0.000292o 0.000292n 1.58e-12p 3.16e-12p       0.0
 cm248s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.002039n      0.0       0.0       0.0
zp 66.87 ri 4.44e-08p 1.86e-05p 0.000519p 0.001223p 0.000274p 4.85e-06p 5.46e-09p       0.0       0.0       0.0
sig0.579 cc 4.44e-08p 1.86e-05p 0.000537p 0.001760p 0.002034p 0.002039p 0.002039p       0.0       0.0       0.0
         rc 4.44e-08p 1.86e-05p 0.000537p 0.001760p 0.002034o 0.002039o 0.002039n       0.0       0.0       0.0
 es253s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.007728n      0.0       0.0       0.0
zp 67.80 ri 5.59e-10p 9.59e-07p 0.000148p 0.002308p 0.004259p 0.000987p 2.54e-05p 3.12e-08p 3.12e-08p 1.34e-11p
sig0.627 cc 5.59e-10p 9.59e-07p 0.000149p 0.002457p 0.006716p 0.007703p 0.007728p 3.12e-08p 6.24e-08p 1.34e-11p
         rc 5.59e-10p 9.59e-07p 0.000149p 0.002457p 0.006716p 0.007703o 0.007728n 3.12e-08p 6.24e-08p 1.34e-11p
 fm254s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000910n      0.0       0.0       0.0
```

```
zp 68.09 ri 3.08e-12p 1.32e-08p 4.69e-06p 0.000151p 0.000525p 0.000219p 1.02e-05p 2.19e-08p 2.19e-08p 1.58e-11p
sig0.619 cc 3.08e-12p 1.32e-08p 4.70e-06p 0.000156p 0.000681p 0.000900p 0.000910p 2.19e-08p 4.39e-08p 1.58e-11p
        rc 3.08e-12p 1.32e-08p 4.70e-06p 0.000156p 0.000681p 0.000900o 0.000910n 2.19e-08p 4.39e-08p 1.58e-11p
 fm255t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.007088n      0.0       0.0       0.0
zp 67.13 ri 4.51e-09p 9.51e-06p 0.000863p 0.004462p 0.001712p 4.10e-05p 4.46e-08p      0.0       0.0       0.0
sig0.543 cc 4.51e-09p 9.51e-06p 0.000873p 0.005335p 0.007047p 0.007088p 0.007088p      0.0  1.88e-12p      0.0
        rc 4.51e-09p 9.51e-06p 0.000873p 0.005335p 0.007047p 0.007088o 0.007088n      0.0  1.88e-12p      0.0
 fm256s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.004757n      0.0       0.0       0.0
zp 67.66 ri 8.30e-10p 1.17e-06p 0.000144p 0.001741p 0.002449p 0.000415p 7.33e-06p 5.81e-09p 5.81e-09p 1.52e-12p
sig0.621 cc 8.30e-10p 1.17e-06p 0.000145p 0.001886p 0.004335p 0.004750p 0.004757p 5.81e-09p 1.16e-08p 1.52e-12p
        rc 8.30e-10p 1.17e-06p 0.000145p 0.001886p 0.004335p 0.004750o 0.004757n 5.81e-09p 1.16e-08p 1.52e-12p
 np237h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001899n      0.0       0.0       0.0
zp 67.47 ri 6.32e-10p 9.32e-07p 9.89e-05p 0.000891p 0.000828p 7.86e-05p 6.24e-07p 1.77e-10p 1.77e-10p      0.0
sig0.597 cc 6.32e-10p 9.32e-07p 9.99e-05p 0.000991p 0.001819p 0.001898p 0.001899p 1.77e-10p 3.54e-10p      0.0
        rc 6.32e-10p 9.32e-07p 9.99e-05p 0.000991p 0.001819p 0.001898o 0.001899n 1.77e-10p 3.54e-10p      0.0
 u232t   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  9.53e-05n      0.0       0.0       0.0
zp 67.93 ri      0.0  1.04e-09p 7.87e-07p 1.53e-05p 6.78e-05p 1.10e-05p 3.96e-07p 1.79e-10p 1.79e-10p      0.0
sig0.583 cc      0.0  1.04e-09p 7.88e-07p 1.61e-05p 8.38e-05p 9.49e-05p 9.53e-05p 1.79e-10p 3.57e-10p      0.0
        rc      0.0  1.04e-09p 7.88e-07p 1.61e-05p 8.38e-05p 9.49e-05o 9.53e-05n 1.79e-10p 3.57e-10p      0.0
 u238s   xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  9.97e-12n      0.0       0.0       0.0
zp 66.13 ri      0.0       0.0  7.02e-12p 1.99e-12p      0.0       0.0       0.0       0.0       0.0       0.0
sig0.497 cc      0.0       0.0  7.95e-12p 9.95e-12p 9.98e-12p 9.98e-12p 9.98e-12p      0.0       0.0       0.0
        rc      0.0       0.0  7.95e-12p 9.94e-12p 9.97e-12o 9.97e-12o 9.98e-12n      0.0       0.0       0.0

  er, tm half lives from 89wal1.
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type        value   err.     value                nuclide     material       value      no.   treatment

 66        cf250s   es    cu        0.0019653 30.0   0.0020000  0.0000000     0                    0.0000000   75mee1      0
 66        cm244s   es    cu        0.0000398 30.0   0.0000400  0.0000000     0                    0.0000000   75mee1      0
```

66	cm248s	es	cu	0.0004392	30.0	0.0004000	0.0000000	0	0.0000000	75mee1	0
66	es253s	es	cu	0.0002667	30.0	0.0002600	0.0000000	0	0.0000000	75mee1	0
66	fm254s	es	cu	0.0000283	30.0	0.0000280	0.0000000	0	0.0000000	75mee1	0
66	fm255t	es	cu	0.0001585	30.0	0.0001700	0.0000000	0	0.0000000	75mee1	0
66	fm256s	es	cu	0.0001010	30.0	0.0001000	0.0000000	0	0.0000000	75mee1	0
66	np237h	es	cu	0.0049996	30.0	0.0050000	0.0000000	0	0.0000000	75mee1	0
66	u232t	es	cu	0.0069954	30.0	0.0070000	0.0000000	0	0.0000000	75mee1	0
66	u238s	es	cu	0.0000000	30.0	0.0000009	0.0000000	0	10000.0000000	75mee1	0
67	cf250s	es	cu	0.0024567	30.0	0.0025000	0.0000000	0	0.0000000	75mee1	0
67	cm244s	es	cu	0.0000657	30.0	0.0000660	0.0000000	0	0.0000000	75mee1	0
67	cm248s	es	cu	0.0005491	30.0	0.0005000	0.0000000	0	0.0000000	75mee1	0
67	es253s	es	cu	0.0003591	30.0	0.0003500	0.0000000	0	0.0000000	75mee1	0
67	fm254s	es	cu	0.0000384	30.0	0.0000380	0.0000000	0	0.0000000	75mee1	0
67	fm255t	es	cu	0.0002051	30.0	0.0002200	0.0000000	0	0.0000000	75mee1	0
67	fm256s	es	cu	0.0001616	30.0	0.0001600	0.0000000	0	0.0000000	75mee1	0
67	np237h	es	cu	0.0069994	30.0	0.0070000	0.0000000	0	0.0000000	75mee1	0
67	u232t	es	cu	0.0089941	30.0	0.0090000	0.0000000	0	0.0000000	75mee1	0
67	u238s	es	cu	0.0000000	30.0	0.0000003	0.0000000	0	1000.0000000	75mee1	0
68	cf250s	es	cu	0.0029480	30.0	0.0030000	0.0000000	0	0.0000000	75mee1	0
68	cm244s	es	cu	0.0000996	30.0	0.0001000	0.0000000	0	0.0000000	75mee1	0
68	cm248s	es	cu	0.0007687	30.0	0.0007000	0.0000000	0	0.0000000	75mee1	0
68	es253s	es	cu	0.0005130	30.0	0.0005000	0.0000000	0	0.0000000	75mee1	0
68	fm254s	es	cu	0.0000526	30.0	0.0000520	0.0000000	0	0.0000000	75mee1	0
68	fm255t	es	cu	0.0002517	30.0	0.0002700	0.0000000	0	0.0000000	75mee1	0
68	fm256s	es	cu	0.0002222	30.0	0.0002200	0.0000000	0	0.0000000	75mee1	0
68	np237h	es	cu	0.0089993	30.0	0.0090000	0.0000000	0	0.0000000	75mee1	0
68	u232t	es	cu	0.0129915	30.0	0.0130000	0.0000000	0	0.0000000	75mee1	0
68	u238s	es	cu	0.0000000	30.0	0.0000009	0.0000000	0	1000.0000000	75mee1	0
69	cf250s	es	cu	0.0037341	30.0	0.0038000	0.0000000	0	0.0000000	75mee1	0
69	cm244s	es	cu	0.0001494	30.0	0.0001500	0.0000000	0	0.0000000	75mee1	0
69	cm248s	es	cu	0.0009883	30.0	0.0009000	0.0000000	0	0.0000000	75mee1	0
69	es253s	es	cu	0.0006771	30.0	0.0006600	0.0000000	0	0.0000000	75mee1	0
69	fm254s	es	cu	0.0000748	30.0	0.0000740	0.0000000	0	0.0000000	75mee1	0
69	fm255t	es	cu	0.0003263	30.0	0.0003500	0.0000000	0	0.0000000	75mee1	0
69	fm256s	es	cu	0.0003029	30.0	0.0003000	0.0000000	0	0.0000000	75mee1	0
69	np237h	es	cu	0.0119990	30.0	0.0120000	0.0000000	0	0.0000000	75mee1	0

69	u232t	es	cu	0.0179882	30.0	0.0180000	0.0000000	0	0.0000000	75mee1	0
69	u238s	es	cu	0.0000000	30.0	0.0000028	0.0000000	0	1000.0000000	75mee1	0
70	cf250s	es	cu	0.0049133	30.0	0.0050000	0.0000000	0	0.0000000	75mee1	0
70	cm244s	es	cu	0.0002489	30.0	0.0002500	0.0000000	0	0.0000000	75mee1	0
70	cm248s	es	cu	0.0013902	30.0	0.0013000	0.0000000	0	0.0000000	75mee1	0
70	es253s	es	cu	0.0009439	30.0	0.0009200	0.0000000	0	0.0000000	75mee1	0
70	fm254s	es	cu	0.0001011	30.0	0.0001000	0.0000000	0	0.0000000	75mee1	0
70	fm255t	es	cu	0.0004381	30.0	0.0004700	0.0000000	0	0.0000000	75mee1	0
70	fm256s	es	cu	0.0004039	30.0	0.0004000	0.0000000	0	0.0000000	75mee1	0
70	np237h	es	cu	0.0149988	30.0	0.0150000	0.0000000	0	0.0000000	75mee1	0
70	u232t	es	cu	0.0249836	30.0	0.0250000	0.0000000	0	0.0000000	75mee1	0
70	u238s	es	cu	0.0000000	30.0	0.0000009	0.0000000	0	100.0000000	75mee1	0
71	cf250s	es	cu	0.0058960	30.0	0.0060000	0.0000000	0	0.0000000	75mee1	0
71	cm244s	es	cu	0.0003983	30.0	0.0004000	0.0000000	0	0.0000000	75mee1	0
71	cm248s	es	cu	0.0018668	30.0	0.0017000	0.0000000	0	0.0000000	75mee1	0
71	es253s	es	cu	0.0013337	30.0	0.0013000	0.0000000	0	0.0000000	75mee1	0
71	fm254s	es	cu	0.0001516	30.0	0.0001500	0.0000000	0	0.0000000	75mee1	0
71	fm255t	es	cu	0.0005779	30.0	0.0006200	0.0000000	0	0.0000000	75mee1	0
71	fm256s	es	cu	0.0005251	30.0	0.0005200	0.0000000	0	0.0000000	75mee1	0
71	np237h	es	cu	0.0199984	30.0	0.0200000	0.0000000	0	0.0000000	75mee1	0
71	u232t	es	cu	0.0349770	30.0	0.0350000	0.0000000	0	0.0000000	75mee1	0
71	u238s	es	cu	0.0000000	30.0	0.0000028	0.0000000	0	100.0000000	75mee1	0
72	cf250s	es	cu	0.0078613	30.0	0.0080000	0.0000000	0	0.0000000	75mee1	0
72	cm244s	es	cu	0.0006572	30.0	0.0006600	0.0000000	0	0.0000000	75mee1	0
72	cm248s	es	cu	0.0024158	30.0	0.0022000	0.0000000	0	0.0000000	75mee1	0
72	es253s	es	cu	0.0018467	30.0	0.0018000	0.0000000	0	0.0000000	75mee1	0
72	fm254s	es	cu	0.0002021	30.0	0.0002000	0.0000000	0	0.0000000	75mee1	0
72	fm255t	es	cu	0.0007457	30.0	0.0008000	0.0000000	0	0.0000000	75mee1	0
72	fm256s	es	cu	0.0007069	30.0	0.0007000	0.0000000	0	0.0000000	75mee1	0
72	np237h	es	cu	0.0249980	30.0	0.0250000	0.0000000	0	0.0000000	75mee1	0
72	u232t	es	cu	0.0469691	30.0	0.0470000	0.0000000	0	0.0000000	75mee1	0
72	u238s	es	cu	0.0000001	30.0	0.0000009	0.0000000	0	10.0000000	75mee1	0
72	np237t	es	cu	0.0000000	0.0	0.0000300	0.0000000	0	0.0000000	72sid1	0
72	pu240t	es	cu	0.0000000	0.0	0.0000600	0.0000000	0	0.0000000	72sid1	0
72	pu242t	es	cu	0.0000000	0.0	0.0000100	0.0000000	0	0.0000000	72sid1	0
73	cf250s	es	cu	0.0098774	30.0	0.0100000	0.0000000	0	0.0000000	75mee1	0

73	cm244s	es	cu	0.0009970	30.0	0.0010000	0.0000000	0	0.0000000	75mee1	0
73	cm248s	es	cu	0.0032081	30.0	0.0030000	0.0000000	0	0.0000000	75mee1	0
73	es253s	es	cu	0.0023422	30.0	0.0023000	0.0000000	0	0.0000000	75mee1	0
73	fm254s	es	cu	0.0002821	30.0	0.0002800	0.0000000	0	0.0000000	75mee1	0
73	fm255t	es	cu	0.0009520	30.0	0.0010000	0.0000000	0	0.0000000	75mee1	0
73	fm256s	es	cu	0.0010069	30.0	0.0010000	0.0000000	0	0.0000000	75mee1	0
73	np237h	es	cu	0.0329981	30.0	0.0330000	0.0000000	0	0.0000000	75mee1	0
73	u232t	es	cu	0.0679684	30.0	0.0680000	0.0000000	0	0.0000000	75mee1	0
73	u238s	es	cu	0.0000003	30.0	0.0000003	0.0000000	0	0.0000000	75mee1	0
73	np237t	es	cu	0.0000000	0.0	0.0000900	0.0000000	0	0.0000000	72sid1	0
73	pu240t	es	cu	0.0000000	0.0	0.0001500	0.0000000	0	0.0000000	72sid1	0
73	pu242t	es	cu	0.0000000	0.0	0.0000300	0.0000000	0	0.0000000	72sid1	0
74	cf250s	es	cu	0.0127746	30.0	0.0130000	0.0000000	0	0.0000000	75mee1	0
74	cm244s	es	cu	0.0014937	30.0	0.0015000	0.0000000	0	0.0000000	75mee1	0
74	cm248s	es	cu	0.0043924	30.0	0.0040000	0.0000000	0	0.0000000	75mee1	0
74	es253s	es	cu	0.0033856	30.0	0.0033000	0.0000000	0	0.0000000	75mee1	0
74	fm254s	es	cu	0.0003841	30.0	0.0003800	0.0000000	0	0.0000000	75mee1	0
74	fm255t	es	cu	0.0013050	30.0	0.0014000	0.0000000	0	0.0000000	75mee1	0
74	fm256s	es	cu	0.0013127	30.0	0.0013000	0.0000000	0	0.0000000	75mee1	0
74	np237h	es	cu	0.0429966	30.0	0.0430000	0.0000000	0	0.0000000	75mee1	0
74	u232t	es	cu	0.0899409	30.0	0.0900000	0.0000000	0	0.0000000	75mee1	0
74	u238s	es	cu	0.0000008	30.0	0.0000009	0.0000000	0	0.0000000	75mee1	0
74	np237t	es	cu	0.0000000	0.0	0.0002700	0.0000000	0	0.0000000	72sid1	0
74	pu240t	es	cu	0.0000000	0.0	0.0003000	0.0000000	0	0.0000000	72sid1	0
74	pu242t	es	cu	0.0000000	0.0	0.0000800	0.0000000	0	0.0000000	72sid1	0
75	cf250s	es	cu	0.0167053	30.0	0.0170000	0.0000000	0	0.0000000	75mee1	0
75	cm244s	es	cu	0.0025691	30.0	0.0025800	0.0000000	0	0.0000000	75mee1	0
75	cm248s	es	cu	0.0059298	30.0	0.0054000	0.0000000	0	0.0000000	75mee1	0
75	es253s	es	cu	0.0046168	30.0	0.0045000	0.0000000	0	0.0000000	75mee1	0
75	fm254s	es	cu	0.0005053	30.0	0.0005000	0.0000000	0	0.0000000	75mee1	0
75	fm255t	es	cu	0.0015847	30.0	0.0017000	0.0000000	0	0.0000000	75mee1	0
75	fm256s	es	cu	0.0018176	30.0	0.0018000	0.0000000	0	0.0000000	75mee1	0
75	np237h	es	cu	0.0529958	30.0	0.0530000	0.0000000	0	0.0000000	75mee1	0
75	u232t	es	cu	0.1299146	30.0	0.1300000	0.0000000	0	0.0000000	75mee1	0
75	u238s	es	cu	0.0000024	30.0	0.0000028	0.0000000	0	0.0000000	75mee1	0
75	np237t	es	cu	0.0000000	0.0	0.0004500	0.0000000	0	0.0000000	72sid1	0

75	pu240t	es	cu	0.0000000	0.0	0.0009000	0.0000000	0			0.0000000	72sid1	0
75	pu242t	es	cu	0.0000000	0.0	0.0002000	0.0000000	0			0.0000000	72sid1	0
76	cf250s	es	cu	0.0196533	30.0	0.0200000	0.0000000	0			0.0000000	75mee1	0
76	cm244s	es	cu	0.0039831	30.0	0.0040000	0.0000000	0			0.0000000	75mee1	0
76	cm248s	es	cu	0.0076868	30.0	0.0070000	0.0000000	0			0.0000000	75mee1	0
76	es253s	es	cu	0.0061557	30.0	0.0060000	0.0000000	0			0.0000000	75mee1	0
76	fm254s	es	cu	0.0007075	30.0	0.0007000	0.0000000	0			0.0000000	75mee1	0
76	fm255t	es	cu	0.0021440	30.0	0.0023000	0.0000000	0			0.0000000	75mee1	0
76	fm256s	es	cu	0.0025245	30.0	0.0025000	0.0000000	0			0.0000000	75mee1	0
76	np237h	es	cu	0.0699944	30.0	0.0700000	0.0000000	0			0.0000000	75mee1	0

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0measured nuclide	fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
76	u232t	es	cu		0.1698884	30.0	0.1700000	0.0000000	0		0.0000000	75mee1	0
76	u238s	es	cu		0.0000081	30.0	0.0000093	0.0000000	0		0.0000000	75mee1	0
76	np237t	es	cu		0.0000000	0.0	0.0019000	0.0000000	0		0.0000000	72sid1	0
76	pu240t	es	cu		0.0000000	0.0	0.0018000	0.0000000	0		0.0000000	72sid1	0
76	pu242t	es	cu		0.0000000	0.0	0.0004200	0.0000000	0		0.0000000	72sid1	0
77	cf250s	es	cu		0.0255493	30.0	0.0260000	0.0000000	0		0.0000000	75mee1	0
77	cm244s	es	cu		0.0069791	30.0	0.0070000	0.0000000	0		0.0000000	75mee1	0
77	as g cm244s	rc	cu		0.0024925	36.0	0.0025000	0.0009000	0		0.0000000	72fly2	0
77	cm248s	es	cu		0.0106937	30.0	0.0100000	0.0000000	0		0.0000000	75mee1	0
77	es253s	es	cu		0.0081468	30.0	0.0080000	0.0000000	0		0.0000000	75mee1	0
77	fm254s	es	cu		0.0010107	30.0	0.0010000	0.0000000	0		0.0000000	75mee1	0
77	fm255t	es	cu		0.0027965	30.0	0.0030000	0.0000000	0		0.0000000	75mee1	0
77	fm256s	es	cu		0.0034235	30.0	0.0034000	0.0000000	0		0.0000000	75mee1	0
77	np237h	es	cu		0.0949947	30.0	0.0950000	0.0000000	0		0.0000000	75mee1	0
77	u232t	es	cu		0.2498839	30.0	0.2500000	0.0000000	0		0.0000000	75mee1	0
77	u238s	es	cu		0.0000255	30.0	0.0000280	0.0000000	0		0.0000000	75mee1	0
77	np237t	es	cu		0.0000000	0.0	0.0044000	0.0000000	0		0.0000000	72sid1	0
77	pu240t	es	cu		0.0000000	0.0	0.0059000	0.0000000	0		0.0000000	72sid1	0
77	pu242t	es	cu		0.0000000	0.0	0.0027000	0.0000000	0		0.0000000	72sid1	0
78	cf250s	es	cu		0.0324280	30.0	0.0330000	0.0000000	0		0.0000000	75mee1	0
78	cm244s	es	cu		0.0099577	30.0	0.0100000	0.0000000	0		0.0000000	75mee1	0
78	cm248s	es	cu		0.0142754	30.0	0.0130000	0.0000000	0		0.0000000	75mee1	0

78	es253s	es	cu	0.0112855	30.0	0.0110000	0.0000000	0	0.0000000	75mee1	0
78	fm254s	es	cu	0.0015160	30.0	0.0015000	0.0000000	0	0.0000000	75mee1	0
78	fm255t	es	cu	0.0037286	30.0	0.0040000	0.0000000	0	0.0000000	75mee1	0
78	fm256s	es	cu	0.0046450	30.0	0.0046000	0.0000000	0	0.0000000	75mee1	0
78	np237h	es	cu	0.1199904	30.0	0.1200000	0.0000000	0	0.0000000	75mee1	0
78	u232t	es	cu	0.3497701	30.0	0.3500000	0.0000000	0	0.0000000	75mee1	0
78	u238s	es	cu	0.0000813	30.0	0.0000930	0.0000000	0	0.0000000	75mee1	0
78	np237t	es	cu	0.0000000	0.0	0.0130000	0.0000000	0	0.0000000	72sid1	0
78	pu240t	es	cu	0.0000000	0.0	0.0170000	0.0000000	0	0.0000000	72sid1	0
78	pu242t	es	cu	0.0000000	0.0	0.0065000	0.0000000	0	0.0000000	72sid1	0
79	cf250s	es	cu	0.0422546	30.0	0.0430000	0.0000000	0	0.0000000	75mee1	0
79	cm244s	es	cu	0.0169280	30.0	0.0170000	0.0000000	0	0.0000000	75mee1	0
79	cm248s	es	cu	0.0186679	30.0	0.0170000	0.0000000	0	0.0000000	75mee1	0
79	es253s	es	cu	0.0153893	30.0	0.0150000	0.0000000	0	0.0000000	75mee1	0
79	fm254s	es	cu	0.0023246	30.0	0.0023000	0.0000000	0	0.0000000	75mee1	0
79	fm255t	es	cu	0.0046608	30.0	0.0050000	0.0000000	0	0.0000000	75mee1	0
79	fm256s	es	cu	0.0070685	30.0	0.0070000	0.0000000	0	0.0000000	75mee1	0
79	np237h	es	cu	0.1599873	30.0	0.1600000	0.0000000	0	0.0000000	75mee1	0
79	u232t	es	cu	0.4797771	30.0	0.4800000	0.0000000	0	0.0000000	75mee1	0
79	u238s	es	cu	0.0003371	30.0	0.0003700	0.0000000	0	0.0000000	75mee1	0
79	np237t	es	cu	0.0000000	0.0	0.0270000	0.0000000	0	0.0000000	72sid1	0
79	pu240t	es	cu	0.0000000	0.0	0.0160000	0.0000000	0	0.0000000	72sid1	0
79	pu242t	es	cu	0.0000000	0.0	0.0075000	0.0000000	0	0.0000000	72sid1	0
80	cf250s	es	cu	0.0501159	30.0	0.0510000	0.0000000	0	0.0000000	75mee1	0
80	cm244s	es	cu	0.0268857	30.0	0.0270000	0.0000000	0	0.0000000	75mee1	0
80	cm248s	es	cu	0.0252565	30.0	0.0230000	0.0000000	0	0.0000000	75mee1	0
80	es253s	es	cu	0.0225709	30.0	0.0220000	0.0000000	0	0.0000000	75mee1	0
80	fm254s	es	cu	0.0035374	30.0	0.0035000	0.0000000	0	0.0000000	75mee1	0
80	fm255t	es	cu	0.0063386	30.0	0.0068000	0.0000000	0	0.0000000	75mee1	0
80	fm256s	es	cu	0.0090881	30.0	0.0090000	0.0000000	0	0.0000000	75mee1	0
80	np237h	es	cu	0.1999841	30.0	0.2000000	0.0000000	0	0.0000000	75mee1	0
80	u232t	es	cu	0.6395797	30.0	0.6400000	0.0000000	0	0.0000000	75mee1	0
80	u238s	es	cu	0.0008132	30.0	0.0009300	0.0000000	0	0.0000000	75mee1	0
80	np237t	es	cu	0.0000000	0.0	0.0360000	0.0000000	0	0.0000000	72sid1	0
80	pu240t	es	cu	0.0000000	0.0	0.0390000	0.0000000	0	0.0000000	72sid1	0
80	pu242t	es	cu	0.0000000	0.0	0.0200000	0.0000000	0	0.0000000	72sid1	0

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81      cf250s   es    cu        0.0687866 30.0   0.0700000  0.0000000     0                    0.0000000   75mee1      0
81      cm244s   es    cu        0.0448095 30.0   0.0450000  0.0000000     0                    0.0000000   75mee1      0
81      cm248s   es    cu        0.0351395 30.0   0.0320000  0.0000000     0                    0.0000000   75mee1      0
81      es253s   es    cu        0.0307786 30.0   0.0300000  0.0000000     0                    0.0000000   75mee1      0
81      fm254s   es    cu        0.0050535 30.0   0.0050000  0.0000000     0                    0.0000000   75mee1      0
81      fm255t   es    cu        0.0080165 30.0   0.0086000  0.0000000     0                    0.0000000   75mee1      0
81      fm256s   es    cu        0.0121175 30.0   0.0120000  0.0000000     0                    0.0000000   75mee1      0
81      np237h   es    cu        0.2599793 30.0   0.2600000  0.0000000     0                    0.0000000   75mee1      0
81      u232t    es    cu        0.7994746 30.0   0.8000000  0.0000000     0                    0.0000000   75mee1      0
81      u238s    es    cu        0.0040223 30.0   0.0046000  0.0000000     0                    0.0000000   75mee1      0
81      np237t   es    cu        0.0000000  0.0   0.1200000  0.0000000     0                    0.0000000   72sid1      0
81      pu240t   es    cu        0.0000000  0.0   0.1100000  0.0000000     0                    0.0000000   72sid1      0
81      pu242t   es    cu        0.0000000  0.0   0.0410000  0.0000000     0                    0.0000000   72sid1      0
82      cf250s   es    cu        0.0884399 30.0   0.0900000  0.0000000     0                    0.0000000   75mee1      0
82      cm244s   es    cu        0.0697037 30.0   0.0700000  0.0000000     0                    0.0000000   75mee1      0
82      cm248s   es    cu        0.0461206 30.0   0.0420000  0.0000000     0                    0.0000000   75mee1      0
82      es253s   es    cu        0.0410381 30.0   0.0400000  0.0000000     0                    0.0000000   75mee1      0
82      fm254s   es    cu        0.0080855 30.0   0.0080000  0.0000000     0                    0.0000000   75mee1      0
82      fm255t   es    cu        0.0102537 30.0   0.0110000  0.0000000     0                    0.0000000   75mee1      0
82      fm256s   es    cu        0.0161566 30.0   0.0160000  0.0000000     0                    0.0000000   75mee1      0
82      np237h   es    cu        0.3499721 30.0   0.3500000  0.0000000     0                    0.0000000   75mee1      0
82      u232t    es    cu        1.0992776 30.0   1.1000000  0.0000000     0                    0.0000000   75mee1      0
82      u238s    es    cu        0.0122418 30.0   0.0140000  0.0000000     0                    0.0000000   75mee1      0
82      np237t   es    cu        0.0000000  0.0   0.1800000  0.0000000     0                    0.0000000   72sid1      0
82      pu240t   es    cu        0.0000000  0.0   0.1200000  0.0000000     0                    0.0000000   72sid1      0
82      pu242t   es    cu        0.0000000  0.0   0.0610000  0.0000000     0                    0.0000000   72sid1      0
83 kr g   cf250s   ms    re        0.0873665 12.1   0.3060000  0.0130000    86 kr g      cf250s      1.0000000   80sri1      0
83 kr g   cf250s   ms    cu    x1   0.0000000  0.0   0.0430000 11.6000000%    0                    0.0000000   80sri1      0
83 br g   cf250s   rc    cu        0.1025536 10.0   0.1030000 10.0000000%    0                    0.0000000   77fly1      0
83 kr g   cm244s   ms    cu    rp   0.1149946 27.3   0.1660000  0.0000000  no. relative values =    3            72fly2
83 br g   cm244s   rc    cu        0.1158264 10.3   0.1160000  0.0120000     0                    0.0000000   72fly2      0
83 kr g   cm248s   ms    cu        0.0368830 11.1   0.0360000 11.1000000%    0                    0.0000000   80sri1      0
83 br g   cm248s   rc    cu        0.0522509 10.0   0.0510000 10.0000000%    0                    0.0000000   77fly1      0
83 br g   es253s   rc    cu        0.0615597  9.8   0.0610000  0.0060000     0                    0.0000000   76fly1      0
83 br g   es253s   rc    cu    su   0.0000000  0.0   0.0610000  0.0060000     0                    0.0000000   73uni1      0
83      fm254s   es    cu        0.0120907 30.0   0.0120000  0.0000000     0                    0.0000000   75mee1      0
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 83        fm255t   es    cu        0.0133283 30.0   0.0140000  0.0000000     0                    0.0000000   75mee1      0
 83        fm256s   es    cu        0.0221523 30.0   0.0220000  0.0000000     0                    0.0000000   75mee1      0
 83        np237h   es    cu        0.4499747 30.0   0.4500000  0.0000000     0                    0.0000000   75mee1      0
 83        u232t    es    cu        1.4993034 30.0   1.5000000  0.0000000     0                    0.0000000   75mee1      0
 83 kr g   u238s    rc    cu        0.0287297 10.2   0.0327000  0.0028000   136 xe g      u238s       6.3000000   60you1      0
 83 kr g   u238s    ms    cu        0.0332105 41.7   0.0360000  0.0150000   136 xe g      u238s       6.0000000   53wet1      0
 83        u238s    es    cu        0.0214061 30.0   0.0221000  0.0000000     0                    0.0000000   75mee1      0
 83 kr g   u238s    rc    cu        0.0351205 23.0   0.1200000  0.0100000   129 xe g      u238s       0.0880000   50mac2      0
 83 kr g   u238s    cm    cu        0.0000000  0.0   0.0210000  0.0000000     0                    0.0000000   69gun2      0
 83 kr g   u238s    ms    cu        0.0281761 29.7   0.0700000  0.0200000    83 kr g      u238s       0.0700000   71sab1      0
 83 kr g   u238s    ms    cu    rp  0.0295180 53.5   0.0700000  0.0000000  no. relative values =    2            71sab1
 83 br g   ac227f   rc    re        0.0000000  0.0   7.0100000 20.0000000%   91 sr g      ac227f      5.8100000   65iye1      0
 83 br g   ac227f   cm    cu        0.0000000  0.0   7.2200000 10.0000000%    0                    0.0000000   77cro1      0
 83 kr g   th232s   ms    cu        0.0000000  0.0   0.0360000  0.0250000     0                    0.0000000   53wet1      0
 83        np238t   ms    re        0.0000000  0.0   0.3180000  0.0030000    86          np238t      1.0000000   73tra1      0
 83        am241r   ms    re        0.0000000  0.0   0.6800000  0.0400000    84          am241r      1.0000000   73tra1      0
 83        np237t   ms    re        0.0000000  0.0   0.3270000  0.0140000    86          np237t      1.0000000   73tra1      0
 83        np237t   es    cu        0.0000000  0.0   0.3000000  0.0000000     0                    0.0000000   72sid1      0
 83        pu240t   es    cu        0.0000000  0.0   0.2500000  0.0000000     0                    0.0000000   72sid1      0
 83        pu242t   es    cu        0.0000000  0.0   0.1400000  0.0000000     0                    0.0000000   72sid1      0
 83 br g   np236t   rc    cu        0.0000000  0.0   0.3500000  0.0500000     0                    0.0000000   81gin2      0
 84        cf250s   es    cu        0.1288732 30.0   0.1300000  0.0000000     0                    0.0000000   75mee1      0
 84 kr g   cf250s   ms    re        0.1654445 13.0   0.5820000  0.0370000    86 kr g      cf250s      1.0000000   80sri1      0
 84 kr g   cf250s   ms    cu    x1  0.0000000  0.0   0.0820000 12.2000000%    0                    0.0000000   80sri1      0
 84 kr g   cm244s   ms    cu        0.1154500 23.4   0.1660000  0.0340000    83 kr g      cm244s      0.1660000   72fly2      0
 84        cm248s   es    cu        0.0776015 30.0   0.0750000  0.0000000     0                    0.0000000   75mee1      0
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0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value      no.   treatment

 84 kr g   cm248s   ms    cu        0.0765668 12.2   0.0740000 12.2000000%    0                    0.0000000   80sri1      0
 84        es253s   es    cu        0.0820761 30.0   0.0800000  0.0000000     0                    0.0000000   75mee1      0
 84        fm254s   es    cu        0.0171818 30.0   0.0170000  0.0000000     0                    0.0000000   75mee1      0
 84        fm255t   es    cu        0.0167788 30.0   0.0180000  0.0000000     0                    0.0000000   75mee1      0
 84        fm256s   es    cu        0.0302937 30.0   0.0300000  0.0000000     0                    0.0000000   75mee1      0
 84        np237h   es    cu        0.5799538 30.0   0.5800000  0.0000000     0                    0.0000000   75mee1      0
```

84		u232t	es	cu	1.7991641	30.0	1.8000000	0.0000000	0			0.0000000	75mee1	0
84	kr g	u238s	rc	cu	0.1071873	10.2	0.1220000	0.0120000	136	xe g	u238s	6.3000000	60you1	0
84	kr g	u238s	ms	cu	0.1097791	33.7	0.1190000	0.0400000	136	xe g	u238s	6.0000000	53wet1	0
84		u238s	es	cu	0.0804910	30.0	0.0831000	0.0000000	0			0.0000000	75mee1	0
84	kr g	u238s	rc	cu	0.1317017	23.0	0.4500000	0.0500000	129	xe g	u238s	0.0880000	50mac2	0
84	kr g	u238s	cm	cu	0.0000000	0.0	0.0740000	0.0000000	0			0.0000000	69gun2	0
84	kr g	u238s	ms	cu	0.0966014	22.3	0.2400000	0.0500000	83	kr g	u238s	0.0700000	71sab1	0
84	br g	pa231h	rc	cu	0.0000000	0.0	0.6500000	0.0220000	97	zr g	pa231h	1.0000000	66bro1	0
84	br g	pa231h	cm	cu	0.0000000	0.0	2.7800000	5.0000000%	0			0.0000000	77cro1	0
84	kr g	th232s	ms	cu	0.0000000	0.0	0.1800000	0.0400000	0			0.0000000	53wet1	0
84		np238t	ms	re	0.0000000	0.0	0.5620000	0.0040000	86		np238t	1.0000000	73tra1	0
84		np237t	es	cu	0.0000000	0.0	0.5100000	0.0000000	0			0.0000000	72sid1	0
84		pu240t	es	cu	0.0000000	0.0	0.4200000	0.0000000	0			0.0000000	72sid1	0
84		pu242t	es	cu	0.0000000	0.0	0.2800000	0.0000000	0			0.0000000	72sid1	0
84	br g	np236t	rc	cu	0.0000000	0.0	0.5300000	0.0800000	0			0.0000000	81gin2	0
85		cf250s	es	cu	0.1788968	30.0	0.1800000	0.0000000	0			0.0000000	75mee1	0
85	kr m	cf250s	ms	re	0.2260025	12.3	0.7930000	0.0390000	86	kr g	cf250s	1.0000000	80sri1	0
85	kr m	cf250s	ms	cu	x1 0.0000000	0.0	0.1120000	10.7000000%	0			0.0000000	80sri1	0
85		cm244s	es	re	0.2142688	34.0	1.0103000	0.0000000	85	kr m	cm244s	1.0000000	75mee1	0
85	kr m	cm244s	ms	cu	0.2138335	15.2	0.3070000	0.0310000	83	kr g	cm244s	0.1660000	72fly2	0
85		cm248s	es	cu	0.1034687	30.0	0.1000000	0.0000000	0			0.0000000	75mee1	0
85	kr m	cm248s	ms	cu	0.0993300	11.5	0.0960000	11.5000000%	0			0.0000000	80sri1	0
85		es253s	es	cu	0.1120186	30.0	0.1100000	0.0000000	0			0.0000000	75mee1	0
85		fm254s	es	cu	0.0262780	30.0	0.0260000	0.0000000	0			0.0000000	75mee1	0
85		fm255t	es	cu	0.0238006	30.0	0.0250000	0.0000000	0			0.0000000	75mee1	0
85		fm256s	es	cu	0.0402769	30.0	0.0400000	0.0000000	0			0.0000000	75mee1	0
85		np237h	es	cu	0.7299589	30.0	0.7300000	0.0000000	0			0.0000000	75mee1	0
85		u232t	es	cu	2.4994195	30.0	2.5000000	0.0000000	0			0.0000000	75mee1	0
85	kr m	u232t	rc	cu	2.4994195	5.0	2.5000000	0.0500000	0			0.0000000	71kem1	0
85	kr m	u232t	rc	cu	2.2494776	19.1	2.2500000	0.4300000	0			0.0000000	85had1	0
85	kr m	u232t	rc	cu	2.2394799	18.3	2.2400000	0.4100000	0			0.0000000	89had1	0
85		u238s	es	cu	0.0792743	30.0	0.0870000	0.0000000	0			0.0000000	75mee1	0
85		np238t	ms	re	0.0000000	0.0	0.6720000	0.0030000	86		np238t	1.0000000	73tra1	0
85		am241r	ms	re	0.0000000	0.0	1.1700000	0.1100000	84		am241r	1.0000000	73tra1	0
85		np237t	ms	re	0.0000000	0.0	0.6800000	0.0200000	86		np237t	1.0000000	73tra1	0
85		np237t	es	cu	0.0000000	0.0	0.7400000	0.0000000	0			0.0000000	72sid1	0

85 kr m np237t rc cu 0.0000000 0.0 1.0400000 0.0800000 0 0.0000000 80thi1 0
85 pu240t es cu 0.0000000 0.0 0.4700000 0.0000000 0 0.0000000 72sid1 0
85 pu242t es cu 0.0000000 0.0 0.3300000 0.0000000 0 0.0000000 72sid1 0
85 kr m np236t rc cu 0.0000000 0.0 1.0500000 0.0500000 0 0.0000000 81gin2 0
86 cf250s es cu 0.2285904 30.0 0.2300000 0.0000000 0 0.0000000 75mee1 0
86 kr g cf250s ms cu x1 0.0000000 0.0 0.1400000 10.0000000% 0 0.0000000 80sri1 0
86 kr g cf250s ms re rp 0.2949812 11.5 1.0000000 0.0000000 no. relative values = 3 80sri1
86 rb g cm244s rc fi 0.0012447 35.6 0.0062000 0.0017000 86 cm244s 1.0000000 72fly2 0
86 kr g cm244s ms cu 0.2009943 19.2 0.2890000 0.0450000 83 kr g cm244s 0.1660000 72fly2 0
86 cm248s es cu 0.1552031 30.0 0.1500000 0.0000000 0 0.0000000 75mee1 0
86 kr g cm248s ms cu 0.1665846 9.9 0.1610000 9.9000000% 0 0.0000000 80sri1 0
86 es253s es cu 0.1538928 30.0 0.1500000 0.0000000 0 0.0000000 75mee1 0
86 fm254s es cu 0.0404277 30.0 0.0400000 0.0000000 0 0.0000000 75mee1 0
86 fm255t es cu 0.0298289 30.0 0.0320000 0.0000000 0 0.0000000 75mee1 0
86 fm256s es cu 0.0545286 30.0 0.0540000 0.0000000 0 0.0000000 75mee1 0
86 np237h es cu 0.9099488 30.0 0.9100000 0.0000000 0 0.0000000 75mee1 0
86 u232t es cu 3.2989164 30.0 3.3000000 0.0000000 0 0.0000000 75mee1 0
86 kr g u238s rc cu 0.8434661 10.2 0.9510000 0.0570000 136 xe g u238s 6.3000000 60you1 0
86 kr g u238s ms cu x4 0.0000000 0.0 0.7500000 0.1100000 136 xe g u238s 6.0000000 53wet1 0
86 u238s es cu 0.7773507 30.0 0.7950000 0.0000000 0 0.0000000 75mee1 0
86 kr g u238s rc cu x4 0.0000000 0.0 1.6400000 0.1500000 136 xe g u238s 6.0000000 50mac2 0
86 kr g u238s cm cu 0.0000000 0.0 0.5900000 0.0000000 0 0.0000000 69gun2 0
86 kr g u238s ms cu 1.0243989 5.0 1.1000000 0.0500000 136 xe g u238s 6.0000000 71sab1 0
86 kr g th232s ms cu 0.0000000 0.0 0.8700000 0.1200000 0 0.0000000 53wet1 0
86 am241r ms re 0.0000000 0.0 1.5300000 0.1800000 84 am241r 1.0000000 73tra1 0
86 np237t es cu 0.0000000 0.0 1.1400000 0.0000000 0 0.0000000 72sid1 0
86 pu240t es cu 0.0000000 0.0 0.6800000 0.0000000 0 0.0000000 72sid1 0
86 pu242t es cu 0.0000000 0.0 0.5000000 0.0000000 0 0.0000000 72sid1 0
87 cf250s es cu 0.2864453 30.0 0.2900000 0.0000000 0 0.0000000 75mee1 0
87 rb g cf250s es cu 0.2864453 30.0 0.2900000 0.0000000 0 0.0000000 75mee1 0
87 cm244s es cu 0.3688927 30.0 0.3700000 0.0000000 0 0.0000000 75mee1 0
87 rb g cm244s es cu 0.3688927 30.0 0.3700000 0.0000000 0 0.0000000 75mee1 0
87 cm248s es cu 0.2138748 30.0 0.2000000 0.0000000 0 0.0000000 75mee1 0
87 rb g cm248s es cu 0.2138748 30.0 0.2000000 0.0000000 0 0.0000000 75mee1 0
87 es253s es cu 0.2036701 30.0 0.2000000 0.0000000 0 0.0000000 75mee1 0
87 rb g es253s es cu 0.2036701 30.0 0.2000000 0.0000000 0 0.0000000 75mee1 0

87		fm254s	es	cu	0.0564234	30.0	0.0560000	0.0000000	0		0.0000000	75mee1	0
87	rb g	fm254s	es	cu	0.0564234	30.0	0.0560000	0.0000000	0		0.0000000	75mee1	0
87		fm255t	es	cu	0.0399850	30.0	0.0420000	0.0000000	0		0.0000000	75mee1	0
87	rb g	fm255t	es	cu	0.0399850	30.0	0.0420000	0.0000000	0		0.0000000	75mee1	0
87		fm256s	es	cu	0.0745122	30.0	0.0740000	0.0000000	0		0.0000000	75mee1	0
87	rb g	fm256s	es	cu	0.0745122	30.0	0.0740000	0.0000000	0		0.0000000	75mee1	0
87		np237h	es	cu	1.1999325	30.0	1.2000000	0.0000000	0		0.0000000	75mee1	0
87	rb g	np237h	es	cu	1.1999325	30.0	1.2000000	0.0000000	0		0.0000000	75mee1	0
87		u232t	es	cu	4.6989087	30.0	4.7000000	0.0000000	0		0.0000000	75mee1	0
87	rb g	u232t	es	cu	4.6989087	30.0	4.7000000	0.0000000	0		0.0000000	75mee1	0
87	kr g	u232t	rc	cu	4.4389691	14.2	4.4400000	0.6300000	0		0.0000000	85had1	0
87	kr g	u232t	rc	cu	3.6091618	16.6	3.6100000	0.6000000	0		0.0000000	89had1	0
87		u238s	es	cu	1.5308132	30.0	1.6800000	0.0000000	0		0.0000000	75mee1	0
87	rb g	u238s	es	cu	1.5308132	30.0	1.6800000	0.0000000	0		0.0000000	75mee1	0
87	br g	a242mf	rc	cu	0.0000000	0.0	0.7100000	0.0500000	0		0.0000000	81wal1	0
87	br g	cf249f	rc	cu	0.0000000	0.0	0.3000000	0.0300000	0		0.0000000	81wal1	0
87	br g	cm245f	rc	cu	0.0000000	0.0	0.5100000	0.0400000	0		0.0000000	81wal1	0
87	br g	u232f	rc	cu	0.0000000	0.0	2.8100000	0.1800000	0		0.0000000	81wal1	0
87		np238t	ms	re	0.0000000	0.0	1.1600000	0.0600000	86	np238t	1.0000000	73tra1	0
87		np237t	es	cu	0.0000000	0.0	1.5800000	0.0000000	0		0.0000000	72sid1	0
87	kr g	np237t	rc	cu	0.0000000	0.0	1.8800000	0.1600000	0		0.0000000	80thi1	0
87		pu240t	es	cu	0.0000000	0.0	0.8300000	0.0000000	0		0.0000000	72sid1	0
87		pu242t	es	cu	0.0000000	0.0	0.6800000	0.0000000	0		0.0000000	72sid1	0
87	kr g	np236t	rc	cu	0.0000000	0.0	1.9200000	0.1900000	0		0.0000000	81gin2	0
88		cf250s	es	cu	0.3439329	30.0	0.3500000	0.0000000	0		0.0000000	75mee1	0
88		cm244s	es	cu	0.4480954	30.0	0.4500000	0.0000000	0		0.0000000	75mee1	0
88		cm248s	es	cu	0.2745274	30.0	0.2500000	0.0000000	0		0.0000000	75mee1	0
88		es253s	es	cu	0.2872665	30.0	0.2800000	0.0000000	0		0.0000000	75mee1	0
88	kr g	fm254s	rc	cu	0.0812096	99.9	0.0800000	0.0800000	0		0.0000000	73har1	0
88		fm255t	es	cu	0.0512684	30.0	0.0550000	0.0000000	0		0.0000000	75mee1	0
88		fm256s	es	cu	0.1110769	30.0	0.1100000	0.0000000	0		0.0000000	75mee1	0
88		np237h	es	cu	1.4999156	30.0	1.5000000	0.0000000	0		0.0000000	75mee1	0
88		u232t	es	cu	5.5990806	30.0	5.6000000	0.0000000	0		0.0000000	75mee1	0
88	kr g	u232t	rc	cu	5.6090789	8.4	5.6100000	0.4700000	0		0.0000000	85had1	0
88	kr g	u232t	rc	cu	5.5390904	7.2	5.5400000	0.4000000	0		0.0000000	89had1	0
88		u238s	es	cu	2.5422790	5.0	2.6000000	5.0000000%	0		0.0000000	75mee1	0

88 kr g u238s rc in 3.9111984 75.0 4.0000000 3.0000000 0 0.0000000 67bor2 0
88 np238t ms re 0.0000000 0.0 1.4000000 0.0500000 86 np238t 1.0000000 73tra1 0
88 np237t es cu 0.0000000 0.0 2.1100000 0.0000000 0 0.0000000 72sid1 0
88 kr g np237t rc cu 0.0000000 0.0 2.2400000 0.1700000 0 0.0000000 80thi1 0
88 pu240t es cu 0.0000000 0.0 1.1900000 0.0000000 0 0.0000000 72sid1 0
88 pu242t es cu 0.0000000 0.0 0.8600000 0.0000000 0 0.0000000 72sid1 0
1
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nuclide material tech. type value err. value nuclide material value no. treatment

88 kr g np236t rc cu 0.0000000 0.0 2.3700000 0.1900000 0 0.0000000 81gin2 0
89 sr g cf250s rc cu 0.4770582 10.0 0.4800000 10.0000000% 0 0.0000000 77fly1 0
89 sr g cm244s rc cu 0.7154643 5.0 0.7160000 0.0360000 0 0.0000000 72fly2 0
89 sr g cm248s rc cu 0.4345685 10.0 0.4200000 10.0000000% 0 0.0000000 77fly1 0
89 sr g es253s rc cu 0.3693582 10.1 0.3660000 0.0370000 0 0.0000000 76fly1 0
89 sr g es253s rc cu su 0.0000000 0.0 0.3700000 0.0400000 0 0.0000000 73uni1 0
89 fm254s es cu 0.1313899 30.0 0.1300000 0.0000000 0 0.0000000 75mee1 0
89 fm255t es cu 0.0652507 30.0 0.0700000 0.0000000 0 0.0000000 75mee1 0
89 fm256s es cu 0.1514684 30.0 0.1500000 0.0000000 0 0.0000000 75mee1 0
89 np237h es cu 1.9999204 30.0 2.0000000 0.0000000 0 0.0000000 75mee1 0
89 u232t rc cu su 0.0000000 0.0 5.0000000 0.0000000 99 mo g u232t 3.9400000 73man2 0
89 sr g u232t rc cu x5 0.0000000 0.0 1.9390000 0.0400000 99 mo g u235t 0.0000000 79man1 7
89 sr g u232t rc cu 6.0926724 5.7 6.0100000 0.1200000 99 mo g u232t 4.1500000 79man1 0
89 rb g u232t rc cu 6.5194648 5.0 6.5200000 0.1700000 0 0.0000000 85had1 0
89 kr g u232t rc cu 7.2694032 5.0 7.2700000 0.2000000 0 0.0000000 89had1 0
89 u238s es cu 3.9796444 5.0 4.0700000 5.0000000% 0 0.0000000 75mee1 0
89 sr g u238s rc cu 5.7690177 23.7 5.9000000 1.4000000 0 0.0000000 61kur1 0
89 sr g u238s rc cu 3.2267387 9.1 3.3000000 0.3000000 0 0.0000000 68ari1 0
89 sr g u238s rc re nr 4.5362027 25.7 0.0004100 0.0001000 90 sr g u238s 0.0004800 54kur1 0
89 sr g u238s rc cu x7 0.0000000 0.0 0.0002700 0.0000900 0 dps/g 0.0000000 67rao1 0
89 sr g u238s rc cu 3.9600884 75.1 4.0500000 3.0400000 0 0.0000000 67rao1 0
89 sr g u238s rc cu 2.8356189 10.3 2.9000000 0.3000000 0 0.0000000 56rus1 0
89 sr g u238s cm cu 0.0000000 0.0 3.1100000 0.0000000 0 0.0000000 69gun2 0
89 kr g u238s rc in 3.9111984 75.0 4.0000000 3.0000000 0 0.0000000 67bor2 0
89 sr g ac227f rc re 0.0000000 0.0 8.0200000 20.0000000% 91 sr g ac227f 5.8100000 65iye1 0
89 sr g ac227f cm cu 0.0000000 0.0 7.8700000 10.0000000% 0 0.0000000 77cro1 0

89	sr g	pu240s	rc	cu		0.0000000	0.0	0.8000000	0.3200000	0			0.0000000	62lai1	0
89	sr g	pu240s	rc	cu		0.0000000	0.0	0.8000000	0.3200000	0			0.0000000	61lai1	0
89		np237t	es	cu		0.0000000	0.0	2.8200000	0.0000000	0			0.0000000	72sid1	0
89		pu240t	es	cu		0.0000000	0.0	1.3200000	0.0000000	0			0.0000000	72sid1	0
89		pu242t	es	cu		0.0000000	0.0	0.9200000	0.0000000	0			0.0000000	72sid1	0
90		cf250s	es	cu		0.5136261	30.0	0.5200000	0.0000000	0			0.0000000	75mee1	0
90	sr g	cm244s	rc	cu		0.8067909	10.0	0.8080000	0.0810000	0			0.0000000	72fly2	0
90		cm248s	es	cu		0.4812183	30.0	0.4500000	0.0000000	0			0.0000000	75mee1	0
90		es253s	es	cu		0.4582578	30.0	0.4500000	0.0000000	0			0.0000000	75mee1	0
90		fm254s	es	cu		0.2015120	30.0	0.2000000	0.0000000	0			0.0000000	75mee1	0
90		fm255t	es	cu		0.0856822	30.0	0.0900000	0.0000000	0			0.0000000	75mee1	0
90		fm256s	es	cu		0.2013845	30.0	0.2000000	0.0000000	0			0.0000000	75mee1	0
90		np237h	es	cu		2.4999005	30.0	2.5000000	0.0000000	0			0.0000000	75mee1	0
90		u232t	es	cu		6.5978327	30.0	6.6000000	0.0000000	0			0.0000000	75mee1	0
90		u238s	es	cu		5.1085272	5.0	5.1900000	5.0000000%	0			0.0000000	75mee1	0
90	sr g	u238s	rc	cu		6.6932533	10.0	6.8000000	0.6000000	0			0.0000000	61kur1	0
90	sr g	u238s	rc	cu		5.8073815	10.2	5.9000000	0.6000000	0			0.0000000	68ari1	0
90	sr g	u238s	rc	cu	x7	0.0000000	0.0	0.0004300	0.0001400	0		dps/g	0.0000000	67rao1	0
90	sr g	u238s	rc	cu		6.3487476	32.6	6.4500000	2.1000000	0			0.0000000	67rao1	0
90	sr g	u238s	cm	cu		0.0000000	0.0	5.4000000	0.0000000	0			0.0000000	69gun2	0
90		np237t	es	cu		0.0000000	0.0	3.4800000	0.0000000	0			0.0000000	72sid1	0
90		pu240t	es	cu		0.0000000	0.0	1.8400000	0.0000000	0			0.0000000	72sid1	0
90		pu242t	es	cu		0.0000000	0.0	1.2400000	0.0000000	0			0.0000000	72sid1	0
91	sr g	cf250s	rc	cu		0.5981614	10.0	0.6000000	10.0000000%	0			0.0000000	77fly1	0
91	sr g	cf250s	sp	cu		0.5582840	5.0	0.5600000	5.0000000%	0			0.0000000	77fly1	0
91	kr g	cf250s	rc	fc		0.2031536	12.5	36.0000000	4.0000000	91	sr g	cf250s	100.0000000	77mei1	0
91	kr g	cf250s	rc	fc		0.1965415	12.8	34.8000000	4.0000000	91		cf250s	100.0000000	80mei1	0
91	kr g	cf250s	rc	fc		0.1965415	13.6	0.3480000	0.0430000	91		cf250s	1.0000000	83mei1	0
91	sr g	cm244s	rc	cu		0.8237655	10.1	0.8250000	0.0830000	0			0.0000000	72fly2	0
91	sr g	cm248s	rc	cu		0.6205795	10.0	0.6100000	10.0000000%	0			0.0000000	77fly1	0
91	sr g	cm248s	sp	cu		0.5900592	5.0	0.5800000	5.0000000%	0			0.0000000	77fly1	0
91	sr g	es253s	rc	cu		0.5314256	7.0	0.5280000	0.0370000	0			0.0000000	76fly1	0
91	sr g	es253s	rc	cu	su	0.0000000	0.0	0.5300000	0.0400000	0			0.0000000	73uni1	0
91	sr g	fm254s	rc	cu		0.4010692	10.0	0.4000000	0.0400000	0			0.0000000	73uni1	0
91	sr g	fm254s	rc	cu		0.3810157	10.5	0.3800000	0.0400000	0			0.0000000	77gin1	0
91		fm255t	es	cu		0.1118584	30.0	0.1200000	0.0000000	0			0.0000000	75mee1	0

91	sr	g	fm255t	rc	cu	su	0.0000000	0.0	0.5000000	0.1000000	0		0.0000000	73uni1	0
91	sr	g	fm256s	rc	cu	su	0.0000000	0.0	0.2200000	0.0300000	0		0.0000000	73uni1	0
91	sr	g	fm256s	rc	cu		0.2411748	12.5	0.2400000	0.0300000	0		0.0000000	72fly1	0
91	sr	g	np237h	rc	cu		2.6668018	15.1	2.7100000	0.2500000	99	mo g	np237h	4.9400000	60col1	0
91	sr	g	np237h	cm	cu		0.0000000	0.0	2.7100000	10.0000000%	0		0.0000000	77cro1	0
91			u232t	rc	cu	su	0.0000000	0.0	7.0200000	0.0000000	99	mo g	u232t	3.9400000	73man2	0
91	y	m	u232t	rc	cu		7.3793942	5.0	7.3800000	0.1400000	0		0.0000000	71kem1	0
91	sr	g	u232t	rc	cu	x5	0.0000000	0.0	1.8550000	0.0520000	99	mo g	u235t	0.0000000	79man1	7
91	sr	g	u232t	rc	cu		7.2179413	5.7	7.1200000	0.2000000	99	mo g	u232t	4.1500000	79man1	0
91	sr	g	u232t	rc	cu		6.9794270	5.0	6.9800000	0.1700000	0		0.0000000	85had1	0
91	sr	g	u232t	rc	cu		7.0694196	5.0	7.0700000	0.1700000	0		0.0000000	89had1	0
91	sr	g	u232t	rc	cu		7.4393892	10.3	7.4400000	0.7700000	0		0.0000000	90chu1	0
91			u238s	es	cu		5.5219340	5.0	5.6100000	5.0000000%	0		0.0000000	75mee1	0
91	y	g	u238s	rc	cu		6.8730227	9.8	8.3000000	0.4660000	141	ce g	u238s	8.1900000	67ish1	0
91	sr	g	u238s	rc	cu		4.9215098	80.0	5.0000000	4.0000000	0		0.0000000	61kur1	0
91	sr	g	u238s	rc	cu	x7	0.0000000	0.0	0.0004000	0.0003000	0		dps/g	0.0720000	59hey1	0
91	sr	g	u238s	rc	cu		5.9058117	83.3	6.0000000	5.0000000	0		0.0000000	59hey1	0
91	sr	g	u238s	rc	cu		6.7916835	10.0	6.9000000	0.5000000	0		0.0000000	56rus1	0
91	sr	g	u238s	cm	cu		0.0000000	0.0	6.0500000	0.0000000	0		0.0000000	69gun2	0
91	sr	g	ac227f	rc	cu		0.0000000	0.0	5.8100000	20.0000000%	0		0.0000000	65iye1	0
91	sr	g	ac227f	cm	cu		0.0000000	0.0	5.8200000	10.0000000%	0		0.0000000	77cro1	0
91	sr	g	pu240s	rc	cu		0.0000000	0.0	1.5100000	0.1700000	0		0.0000000	62lai1	0
91	sr	g	pa231h	rc	cu		0.0000000	0.0	1.3000000	0.0700000	97	zr g	pa231h	1.0000000	66bro1	0
91	sr	g	pa231h	cm	cu		0.0000000	0.0	5.5600000	6.0000000%	0		0.0000000	77cro1	0
91	sr	g	pu240s	rc	cu		0.0000000	0.0	1.5100000	0.1700000	0		0.0000000	61lai1	0
91	sr	g	cm242s	rc	cu		0.0000000	0.0	0.9400000	0.3000000	0		0.0000000	54ste2	0
91			np237t	es	cu		0.0000000	0.0	3.9600000	0.0000000	0		0.0000000	72sid1	0
91	y	g	np237t	rc	cu		0.0000000	0.0	3.6700000	0.2600000	0		0.0000000	80thi1	0
91			pu240t	es	cu		0.0000000	0.0	2.2100000	0.0000000	0		0.0000000	72sid1	0
91			pu242t	es	cu		0.0000000	0.0	1.6900000	0.0000000	0		0.0000000	72sid1	0
91	sr	g	np236t	rc	cu		0.0000000	0.0	4.9400000	0.3300000	0		0.0000000	81gin2	0
92			cf250s	es	cu		0.7861322	30.0	0.8000000	0.0000000	0		0.0000000	75mee1	0
92	kr	g	cf250s	rc	fc		0.0837933	52.8	11.0000000	3.0000000	92	sr g	cf250s	99.0000000	77mei1	0
92	kr	g	cf250s	rc	fc		0.0751853	51.5	9.9000000	4.0000000	92		cf250s	100.0000000	80mei1	0
92	kr	g	cf250s	rc	fc		0.0751853	53.1	0.0990000	0.0420000	92		cf250s	1.0000000	83mei1	0
92			cm244s	es	cu		1.0953443	30.0	1.1000000	0.0000000	0		0.0000000	75mee1	0

92		cm248s	es	cu		0.8554993	30.0	0.8000000	0.0000000	0			0.0000000	75mee1	0
92		es253s	es	cu		0.6155710	30.0	0.6000000	0.0000000	0			0.0000000	75mee1	0
92		fm254s	es	cu		0.4447043	30.0	0.4400000	0.0000000	0			0.0000000	75mee1	0
92		fm255t	es	cu		0.1398230	30.0	0.1500000	0.0000000	0			0.0000000	75mee1	0
92		fm256s	es	cu		0.3029369	30.0	0.3000000	0.0000000	0			0.0000000	75mee1	0
92		np237h	es	cu		3.9998408	30.0	4.0000000	0.0000000	0			0.0000000	75mee1	0
92		u232t	es	cu		7.5991177	30.0	7.6000000	0.0000000	0			0.0000000	75mee1	0
92	y g	u232t	rc	cu		6.3992570	14.8	6.4000000	0.9500000	0			0.0000000	90chu1	0
92	sr g	u232t	rc	cu		6.7992105	5.0	6.8000000	0.3300000	0			0.0000000	85had1	0
92	sr g	u232t	rc	cu		5.7993266	10.7	5.8000000	0.6200000	0			0.0000000	90chu1	0
92	sr g	u232t	rc	cu		6.7092210	5.0	6.7100000	0.3300000	0			0.0000000	89had1	0
92		u238s	es	cu		5.8570196	5.0	5.9900000	5.0000000%	0			0.0000000	75mee1	0
92	sr g	u238s	rc	cu	x1	0.0000000	0.0	11.0000000	4.0000000	0			0.0000000	61kur1	0
92	sr g	u238s	rc	cu	x1	0.0000000	0.0	12.0000000	5.0000000	0			0.0000000	59hey1	0
92	sr g	u238s	rc	cu	x7	0.0000000	0.0	0.0008000	0.0003000	0		dps/g	0.0720000	59hey1	0
92	sr g	u238s	cm	cu		0.0000000	0.0	5.7800000	0.0000000	0			0.0000000	69gun2	0
92	sr g	cm242s	rc	cu		0.0000000	0.0	1.1000000	0.3000000	0			0.0000000	54ste2	0
92		np237t	es	cu		0.0000000	0.0	4.5400000	0.0000000	0			0.0000000	72sid1	0
92	y g	np237t	rc	cu		0.0000000	0.0	4.1800000	0.2400000	0			0.0000000	80thi1	0
92		pu240t	es	cu		0.0000000	0.0	2.6700000	0.0000000	0			0.0000000	72sid1	0
92		pu242t	es	cu		0.0000000	0.0	2.0400000	0.0000000	0			0.0000000	72sid1	0
92	sr g	np236t	rc	cu		0.0000000	0.0	4.8200000	0.5800000	0			0.0000000	81gin2	0

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0measured nuclide	fissile material	meas. tech.	meas. type	note	value	updated err.	pct.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
93		cf250s	es	cu		0.9482328	30.0	0.9600000	0.0000000	0			0.0000000	75mee1	0
93		cm244s	es	cu		1.2961094	30.0	1.3000000	0.0000000	0			0.0000000	75mee1	0
93		cm248s	es	cu		1.1763115	30.0	1.1000000	0.0000000	0			0.0000000	75mee1	0
93	y g	es253s	rc	cu		0.6801842	9.9	0.6740000	0.0670000	0			0.0000000	76fly1	0
93	y g	es253s	rc	cu	su	0.0000000	0.0	0.6700000	0.0700000	0			0.0000000	73uni1	0
93	y g	fm254s	rc	cu		0.4812830	10.4	0.4800000	0.0500000	0			0.0000000	73uni1	0
93	y g	fm254s	rc	cu		0.4812830	10.4	0.4800000	0.0500000	0			0.0000000	77gin1	0
93	y g	fm255t	rc	cu	su	0.0000000	0.0	0.3000000	0.1000000	0			0.0000000	73uni1	0
93	y g	fm255t	rc	cu		0.1904050	20.0	0.2000000	0.0400000	0			0.0000000	75fly3	0
93		fm256s	es	cu		0.4027689	30.0	0.4000000	0.0000000	0			0.0000000	75mee1	0

93	y	g	np237h	rc	cu		4.8612549	15.1	4.9400000	0.2500000	99	mo	g	np237h	4.9400000	60col1	0
93	y	g	np237h	cm	cu		0.0000000	0.0	4.9400000	15.0000000%	0				0.0000000	77cro1	0
93			u232t	es	cu		7.7993597	30.0	7.8000000	0.0000000	0				0.0000000	75mee1	0
93	y	g	u232t	rc	cu		7.0494212	5.0	7.0500000	0.3400000	0				0.0000000	85had1	0
93	sr	g	u232t	rc	cu		6.9394303	5.5	6.9400000	0.3800000	0				0.0000000	89had1	0
93			u238s	es	cu		6.1715733	5.0	6.2700000	5.0000000%	0				0.0000000	75mee1	0
93	y	g	u238s	rc	cu	x1	0.0000000	0.0	9.6200000	0.4200000	141	ce	g	u238s	8.1900000	67ish1	0
93	y	g	pa231h	rc	cu		0.0000000	0.0	1.5500000	0.0600000	97	zr	g	pa231h	1.0000000	66bro1	0
93	y	g	pa231h	cm	cu		0.0000000	0.0	6.6300000	5.0000000%	0				0.0000000	77cro1	0
93	y	g	cf254s	rc	cu	x5	0.0000000	0.0	0.6900000	0.0300000	93	y	g	cf252s	0.8300000	74wol3	0
93			np237t	es	cu		0.0000000	0.0	5.2100000	0.0000000	0				0.0000000	72sid1	0
93	y	g	np237t	rc	cu		0.0000000	0.0	4.8000000	0.4500000	0				0.0000000	80thi1	0
93			pu240t	es	cu		0.0000000	0.0	3.4200000	0.0000000	0				0.0000000	72sid1	0
93			pu242t	es	cu		0.0000000	0.0	2.5900000	0.0000000	0				0.0000000	72sid1	0
93	y	g	np236t	rc	cu		0.0000000	0.0	5.4500000	0.5200000	0				0.0000000	81gin2	0
94			cf250s	es	cu		1.1359039	30.0	1.1500000	0.0000000	0				0.0000000	75mee1	0
94			cm244s	es	cu		1.4955108	30.0	1.5000000	0.0000000	0				0.0000000	75mee1	0
94			cm248s	es	cu		1.4971237	30.0	1.4000000	0.0000000	0				0.0000000	75mee1	0
94			es253s	es	cu		0.9674331	30.0	0.9500000	0.0000000	0				0.0000000	75mee1	0
94			fm254s	es	cu		0.4952389	30.0	0.4900000	0.0000000	0				0.0000000	75mee1	0
94			fm255t	es	cu		0.2330383	30.0	0.2500000	0.0000000	0				0.0000000	75mee1	0
94			fm256s	es	cu		0.5250906	30.0	0.5200000	0.0000000	0				0.0000000	75mee1	0
94			np237h	es	cu		5.0198002	30.0	5.0200000	0.0000000	0				0.0000000	75mee1	0
94			u232t	es	cu		7.3991409	30.0	7.4000000	0.0000000	0				0.0000000	75mee1	0
94	y	g	u232t	rc	cu		6.3192663	5.0	6.3200000	0.2800000	0				0.0000000	85had1	0
94	y	g	u232t	rc	cu		5.2293928	8.8	5.2300000	0.4600000	0				0.0000000	89had1	0
94	sr	g	u232t	rc	cu		4.2295089	10.9	4.2300000	0.4600000	0				0.0000000	89had1	0
94			u238s	es	cu		6.4925894	5.0	6.6400000	5.0000000%	0				0.0000000	75mee1	0
94			np237t	es	cu		0.0000000	0.0	5.4000000	0.0000000	0				0.0000000	72sid1	0
94	y	g	np237t	rc	cu		0.0000000	0.0	5.0200000	0.5500000	0				0.0000000	80thi1	0
94			pu240t	es	cu		0.0000000	0.0	3.8900000	0.0000000	0				0.0000000	72sid1	0
94			pu242t	es	cu		0.0000000	0.0	3.1300000	0.0000000	0				0.0000000	72sid1	0
95	zr	g	cf250s	rc	cu		1.3059857	10.0	1.3100000	10.0000000%	0				0.0000000	77fly1	0
95	zr	g	cf250s	sp	cu		1.5253115	5.0	1.5300000	5.0000000%	0				0.0000000	77fly1	0
95	zr	g	cm244s	rc	cu		1.6275609	9.8	1.6300000	0.1600000	0				0.0000000	72fly2	0
95	zr	g	cm248s	sp	cu		1.6277496	5.0	1.6000000	5.0000000%	0				0.0000000	77fly1	0

95	zr g	es253s	rc	cu		1.1446627	17.7	1.1300000	0.2000000	0		0.0000000	76fly1	0
95	zr g	es253s	rc	cu	su	0.0000000	0.0	1.3000000	0.2000000	0		0.0000000	73uni1	0
95	nb g	fm254s	rc	cu		0.5209828	5.0	0.5200000	0.0200000	0		0.0000000	73har1	0
95	zr g	fm254s	rc	cu	su	0.0000000	0.0	0.5400000	0.0800000	0		0.0000000	73uni1	0
95	zr g	fm254s	rc	cu		0.5410206	14.8	0.5400000	0.0800000	0		0.0000000	77gin1	0
95		fm255t	es	cu		0.3076105	30.0	0.3300000	0.0000000	0		0.0000000	75mee1	0
95		fm256s	es	cu		0.6664611	30.0	0.6600000	0.0000000	0		0.0000000	75mee1	0
95		np237h	es	cu		5.5397795	30.0	5.5400000	0.0000000	0		0.0000000	75mee1	0
95		u232t	rc	cu	su	0.0000000	0.0	6.1800000	0.0000000	99 mo g	u232t	3.9400000	73man2	0
95	zr g	u232t	rc	cu		6.2994828	5.0	6.3000000	0.1000000	0		0.0000000	71kem1	0
95	zr g	u232t	rc	cu	x5	0.0000000	0.0	1.4900000	0.0140000	99 mo g	u235t	0.0000000	79man1	7
95	zr g	u232t	rc	cu		6.3866616	5.7	6.3000000	0.0600000	99 mo g	u232t	4.1500000	79man1	0
95	zr g	u232t	rc	cu		5.8895165	8.0	5.8900000	0.4700000	0		0.0000000	85had1	0
95	zr g	u232t	rc	cu		5.8595189	8.0	5.8600000	0.4700000	0		0.0000000	89had1	0
95		u238s	es	cu		6.6783713	5.0	6.8300000	5.0000000%	0		0.0000000	75mee1	0
95	zr g	u238s	rc	cu		5.1823379	20.8	5.3000000	1.1000000	0		0.0000000	65mo 1	0
95	zr g	u238s	cm	cu		0.0000000	0.0	4.3000000	0.0000000	0		0.0000000	69gun2	0
95		np237t	es	cu		0.0000000	0.0	5.6400000	0.0000000	0		0.0000000	72sid1	0
95	nb g	np237t	rc	cu		0.0000000	0.0	5.7200000	0.4400000	0		0.0000000	80thi1	0
95		pu240t	es	cu		0.0000000	0.0	4.6900000	0.0000000	0		0.0000000	72sid1	0
95		pu242t	es	cu		0.0000000	0.0	3.7800000	0.0000000	0		0.0000000	72sid1	0
95	zr g	np236t	rc	cu		0.0000000	0.0	6.4800000	0.2500000	0		0.0000000	81gin2	0
95	zr g	cm246s	rc	cu		0.0000000	0.0	1.9900000	0.2800000	0		0.0000000	81gin3	0
96		cf250s	es	cu		1.5310009	30.0	1.5500000	0.0000000	0		0.0000000	75mee1	0
96		cm244s	es	cu		2.4925180	30.0	2.5000000	0.0000000	0		0.0000000	75mee1	0
96		cm248s	es	cu		2.0981097	30.0	2.0000000	0.0000000	0		0.0000000	75mee1	0
96		es253s	es	cu		1.5275259	30.0	1.5000000	0.0000000	0		0.0000000	75mee1	0
96		fm254s	es	cu		1.0075601	30.0	1.0000000	0.0000000	0		0.0000000	75mee1	0
96		fm255t	es	cu		0.4101474	30.0	0.4400000	0.0000000	0		0.0000000	75mee1	0
96		fm256s	es	cu		0.7451225	30.0	0.7400000	0.0000000	0		0.0000000	75mee1	0
96		np237h	es	cu		5.4997811	30.0	5.5000000	0.0000000	0		0.0000000	75mee1	0
96		u232t	es	cu		5.7980954	30.0	5.8000000	0.0000000	0		0.0000000	75mee1	0
96		u238s	es	cu		6.6783713	5.0	6.8300000	5.0000000%	0		0.0000000	75mee1	0
96		np237t	es	cu		0.0000000	0.0	5.7400000	0.0000000	0		0.0000000	72sid1	0
96		pu240t	es	cu		0.0000000	0.0	4.7300000	0.0000000	0		0.0000000	72sid1	0
96		pu242t	es	cu		0.0000000	0.0	4.2600000	0.0000000	0		0.0000000	72sid1	0

97	zr g	cf250s	rc	cu		1.6549132	10.0	1.6600000	10.0000000%	0		0.0000000	77fly1	0
97	zr g	cf250s	sp	cu		1.5552196	5.0	1.5600000	5.0000000%	0		0.0000000	77fly1	0
97	zr g	cm244s	rc	cu		3.0367833	9.9	3.0400000	0.3000000	0		0.0000000	72fly2	0
97	zr g	cm248s	sp	cu		2.6145728	5.0	2.5700000	5.0000000%	0		0.0000000	77fly1	0
97	zr g	es253s	rc	cu		1.8484413	5.0	1.8400000	0.0900000	0		0.0000000	76fly1	0
97	zr g	es253s	rc	cu	su	0.0000000	0.0	1.8000000	0.1000000	0		0.0000000	73uni1	0
97	nb g	fm254s	rc	cu		1.1915904	5.0	1.1900000	0.0600000	0		0.0000000	73har1	0
97	nb g	fm254s	es	fi		0.0126303	30.3	0.0100000	0.0000000	97	fm254s	1.0000000	73har1	0
97	zr g	fm254s	rc	cu		1.3017374	7.7	1.3000000	0.1000000	0		0.0000000	73uni1	0
97	zr g	fm254s	rc	cu		1.3518042	9.6	1.3500000	0.1300000	0		0.0000000	77gin1	0
97	zr g	fm255t	rc	cu	su	0.0000000	0.0	0.8300000	0.1300000	0		0.0000000	73uni1	0
97	zr g	fm255t	rc	cu		0.6832088	10.0	0.7000000	0.0700000	0		0.0000000	75fly3	0
97	zr g	fm256s	rc	cu	su	0.0000000	0.0	0.7000000	0.1400000	0		0.0000000	73uni1	0
97	zr g	fm256s	rc	cu		0.7551917	20.0	0.7500000	0.1500000	0		0.0000000	72fly1	0
97	zr g	np237h	rc	cu		5.3434441	15.1	5.4300000	0.4900000	99	mo g	np237h	4.9400000	60col1	0
97	zr g	np237h	cm	cu		0.0000000	0.0	5.4300000	9.0000000%	0		0.0000000	77cro1	0
97		u232t	rc	cu	su	0.0000000	0.0	4.7300000	0.0000000	99	mo g	u232t	3.9400000	73man2	0
97	zr g	u232t	rc	cu		5.3095641	5.0	5.3100000	0.0900000	0		0.0000000	71kem1	0
97	zr g	u232t	rc	cu	x5	0.0000000	0.0	1.2630000	0.0170000	99	mo g	u235t	0.0000000	79man1	7
97	zr g	u232t	rc	cu		5.0079537	5.7	4.9400000	0.0600000	99	mo g	u232t	4.1500000	79man1	0
97	zr g	u232t	rc	cu		5.3395616	5.0	5.3400000	0.1600000	0		0.0000000	85had1	0
97	zr g	u232t	rc	cu	x4	0.0000000	0.0	3.4500000	0.3200000	0		0.0000000	90chu1	0
97	zr g	u232t	rc	cu		5.2595682	5.0	5.2600000	0.2000000	0		0.0000000	89had1	0
97		u238s	es	cu		6.6783713	5.0	6.8300000	5.0000000%	0		0.0000000	75mee1	0
97	zr g	u238s	rc	cu		5.9645776	11.5	6.1000000	0.7000000	0		0.0000000	67rao2	0
97	zr g	u238s	cm	cu		0.0000000	0.0	3.7000000	0.0000000	0		0.0000000	69gun2	0
97	zr g	ac227f	rc	re		0.0000000	0.0	0.3200000	20.0000000%	91	sr g	ac227f	5.8100000	65iye1	0
97	zr g	ac227f	cm	cu		0.0000000	0.0	0.3220000	10.0000000%	0		0.0000000	77cro1	0
97	zr g	pu240s	rc	cu		0.0000000	0.0	6.4600000	0.2100000	0		0.0000000	62lai1	0
97	zr g	pa231h	cm	cu		0.0000000	0.0	4.2900000	5.0000000%	0		0.0000000	77cro1	0
97	zr g	pu240s	rc	cu		0.0000000	0.0	6.4600000	0.2100000	0		0.0000000	61lai1	0
97	zr g	cf254s	rc	cu	x5	0.0000000	0.0	0.8900000	0.0800000	97	zr g	cf252s	1.2000000	74wol3	0
97		np237t	es	cu		0.0000000	0.0	5.8000000	0.0000000	0		0.0000000	72sid1	0
97	nb g	np237t	rc	cu		0.0000000	0.0	5.8800000	0.2900000	0		0.0000000	80thi1	0
97		pu240t	es	cu		0.0000000	0.0	5.1700000	0.0000000	0		0.0000000	72sid1	0
97		pu242t	es	cu		0.0000000	0.0	4.5200000	0.0000000	0		0.0000000	72sid1	0

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 97 zr g   np236t   rc    cu        0.0000000  0.0   6.6000000  0.2500000     0                    0.0000000   81gin2      0
 97 zr g   cm246s   rc    cu        0.0000000  0.0   2.3700000  0.2900000     0                    0.0000000   81gin3      0
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0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value      no.   treatment

 98        cf250s   es    cu        2.4783316 30.0   2.5000000  0.0000000     0                    0.0000000   75mee1      0
 98        cm244s   es    cu        3.4925932 30.0   3.5000000  0.0000000     0                    0.0000000   75mee1      0
 98        cm248s   es    cu        3.2081222 30.0   3.0000000  0.0000000     0                    0.0000000   75mee1      0
 98        es253s   es    cu        2.2285469 30.0   2.2000000  0.0000000     0                    0.0000000   75mee1      0
 98        fm254s   es    cu        1.5113401 30.0   1.5000000  0.0000000     0                    0.0000000   75mee1      0
 98        fm255t   es    cu        0.6991148 30.0   0.7500000  0.0000000     0                    0.0000000   75mee1      0
 98        fm256s   es    cu        1.0097896 30.0   1.0000000  0.0000000     0                    0.0000000   75mee1      0
 98        np237h   es    cu        5.2997891 30.0   5.3000000  0.0000000     0                    0.0000000   75mee1      0
 98        u232t    es    cu        4.6984566 30.0   4.7000000  0.0000000     0                    0.0000000   75mee1      0
 98        u238s    es    cu        6.4925894  5.0   6.6400000  5.0000000%    0                    0.0000000   75mee1      0
 98        np237t   es    cu        0.0000000  0.0   5.9600000  0.0000000     0                    0.0000000   72sid1      0
 98        pu240t   es    cu        0.0000000  0.0   5.9400000  0.0000000     0                    0.0000000   72sid1      0
 98        pu242t   es    cu        0.0000000  0.0   5.6000000  0.0000000     0                    0.0000000   72sid1      0
 99 mo g   cf250s   rc    cu        3.3028278 10.0   3.3100000 10.0000000%    0                    0.0000000   77fly1      0
 99 mo g   cf250s   sp    cu        3.2728928  5.0   3.2800000  5.0000000%    0                    0.0000000   77fly1      0
 99 mo g   cm244s   rc    cu        3.7480160  5.3   3.7500000  0.2000000     0                    0.0000000   72fly2      0
 99 mo g   cm244s   rc    cu        4.0278679  5.0   4.0300000  0.0200000     0                    0.0000000   82rag1      0
 99 mo g   cm248s   rc    cu        4.5653093 10.0   4.5100000 10.0000000%    0                    0.0000000   77fly1      0
 99 mo g   cm248s   sp    cu        4.0085643  5.0   3.9600000  5.0000000%    0                    0.0000000   77fly1      0
 99 mo g   es253s   rc    cu        3.1041758  5.0   3.0900000  0.1500000     0                    0.0000000   76fly1      0
 99 mo g   es253s   rc    cu    su  0.0000000  0.0   3.1000000  0.2000000     0                    0.0000000   73uni1      0
 99        fm254s   es    re        1.7546776 30.0   1.7500000  0.0000000     0                    0.0000000   75mee1      0
 99 tc m   fm254s   rc    cu        1.5441162  7.1   1.5400000  0.1100000     0                    0.0000000   73har1      0
 99        fm255t   es    cu        0.8568225 30.0   0.9000000  0.0000000     0                    0.0000000   75mee1      0
 99 mo g   fm255t   rc    cu    su  0.0000000  0.0   1.8000000  0.3000000     0                    0.0000000   73uni1      0
 99 mo g   fm255t   rc    cu    x1  0.0000000  0.0   1.5600000  0.1600000     0                    0.0000000   75fly3      0
 99        fm256s   es    cu        1.2083068 30.0   1.2000000  0.0000000     0                    0.0000000   75mee1      0
 99 mo g   np237h   rc    cu    x4  0.0000000  0.0   4.9400000  0.0000000     0                    0.0000000   60col1      0
 99 mo g   np237h   rc    cu    rp  4.8610412 11.3   4.9400000  0.0000000  no. relative values =   11            60col1
 99 mo g   np237h   cm    cu    x3  0.0000000  0.0   4.9400000  5.0000000%    0                    0.0000000   77cro1      0
```

99 u232t rc cu 3.9397713 15.0 3.9400000 0.0000000 0 0.0000000 73man2 0
99 mo g u232t rc cu rp 4.1796317 4.7 4.1500000 0.0000000 no. relative values = 13 79man1
99 mo g u232t rc cu 4.2197550 5.0 4.2200000 0.1600000 0 0.0000000 85had1 0
99 mo g u232t rc cu 4.3197492 11.6 4.3200000 0.5000000 0 0.0000000 90chu1 0
99 mo g u232t rc cu 4.2297545 5.0 4.2300000 0.2000000 0 0.0000000 89had1 0
99 ru g u238s ms cu 5.9333989 6.0 6.0000000 0.0000000 0 0.0000000 80mae2 0
99 u238s es cu 6.4772938 5.0 6.5500000 5.0000000% 0 0.0000000 75mee1 0
99 mo g u238s rc cu x7 0.0000000 0.0 0.0004400 0.0000400 0 dps/g 0.0720000 58par1 0
99 mo g u238s rc cu 6.3289588 10.0 6.4000000 0.5000000 0 0.0000000 58par1 0
99 mo g u238s rc cu 6.2300688 10.0 6.3000000 0.6000000 0 0.0000000 61kur1 0
99 mo g u238s rc cu 6.8629647 14.7 6.9400000 1.0200000 0 0.0000000 67jad1 0
99 mo g u238s rc cu 5.6367289 5.3 5.7000000 0.3000000 0 0.0000000 73pur1 0
99 mo g u238s rc cu rp 5.6362012 23.3 5.7000000 0.0000000 no. relative values = 1 73pur1
99 mo g u238s rc cu 5.9333989 10.0 6.0000000 0.5000000 0 0.0000000 56rus1 0
99 mo g u238s cm cu 0.0000000 0.0 4.9400000 0.0000000 0 0.0000000 69gun2 0
99 mo g ac227f rc re 0.0000000 0.0 0.1100000 20.0000000% 91 sr g ac227f 5.8100000 65iye1 0
99 mo g ac227f cm cu 0.0000000 0.0 0.1100000 10.0000000% 0 0.0000000 77cro1 0
99 mo g pu240s rc cu 0.0000000 0.0 6.8200000 0.0700000 0 0.0000000 62lai1 0
99 mo g pa231h rc cu 0.0000000 0.0 0.7490000 0.0340000 97 zr g pa231h 1.0000000 66bro1 0
99 mo g pu240s rc cu 0.0000000 0.0 6.8200000 0.0700000 0 0.0000000 61lai1 0
99 mo g cm242s rc cu 0.0000000 0.0 5.7000000 0.7000000 0 0.0000000 54ste2 0
99 mo g cf254s rc cu x5 0.0000000 0.0 2.0000000 0.1000000 99 mo g cf252s 2.7000000 74wol3 0
99 np237t es cu 0.0000000 0.0 6.2400000 0.0000000 0 0.0000000 72sid1 0
99 tc g np237t rc cu 0.0000000 0.0 6.6500000 0.3700000 0 0.0000000 80thi1 0
99 pu240t es cu 0.0000000 0.0 5.9700000 0.0000000 0 0.0000000 72sid1 0
99 pu242t es cu 0.0000000 0.0 6.0000000 0.0000000 0 0.0000000 72sid1 0
99 mo g np236t rc cu 0.0000000 0.0 6.4400000 0.2800000 0 0.0000000 81gin2 0
99 mo g cm246s rc cu 0.0000000 0.0 4.2400000 0.3600000 0 0.0000000 81gin3 0
100 cf250s es cu 3.5687976 30.0 3.6000000 0.0000000 0 0.0000000 75mee1 0
100 cm244s es cu 4.9894188 30.0 5.0000000 0.0000000 0 0.0000000 75mee1 0
100 cm248s es cu 4.5109359 30.0 4.3000000 0.0000000 0 0.0000000 75mee1 0
100 es253s es cu 3.4441179 30.0 3.4000000 0.0000000 0 0.0000000 75mee1 0
100 fm254s es cu 2.2166322 30.0 2.2000000 0.0000000 0 0.0000000 75mee1 0
100 fm255t es cu 0.9520250 30.0 1.0000000 0.0000000 0 0.0000000 75mee1 0
100 fm256s es cu 1.5103834 30.0 1.5000000 0.0000000 0 0.0000000 75mee1 0
100 np237h es cu 5.1997931 30.0 5.2000000 0.0000000 0 0.0000000 75mee1 0

100		u232t	es	cu	2.9986068	30.0	3.0000000	0.0000000	0	0.0000000	75mee1	0
100		u238s	es	cu	6.1308035	5.0	6.2700000	5.0000000%	0	0.0000000	75mee1	0
100		np237t	es	cu	0.0000000	0.0	5.4100000	0.0000000	0	0.0000000	72sid1	0
100		pu240t	es	cu	0.0000000	0.0	6.7000000	0.0000000	0	0.0000000	72sid1	0
100		pu242t	es	cu	0.0000000	0.0	6.1600000	0.0000000	0	0.0000000	72sid1	0
101		cf250s	es	cu	4.2627304	30.0	4.3000000	0.0000000	0	0.0000000	75mee1	0
101	tc g	cf250s	rc	cu	3.9554173	27.8	3.9900000	1.1100000	0	0.0000000	81gin4	0
101		cm244s	es	cu	5.7877259	30.0	5.8000000	0.0000000	0	0.0000000	75mee1	0
101		cm248s	es	cu	5.2452743	30.0	5.0000000	0.0000000	0	0.0000000	75mee1	0
101		es253s	es	cu	3.8493082	30.0	3.8000000	0.0000000	0	0.0000000	75mee1	0
101		fm254s	es	cu	2.7144336	30.0	2.7000000	0.0000000	0	0.0000000	75mee1	0
101		fm255t	es	cu	1.1424300	30.0	1.2000000	0.0000000	0	0.0000000	75mee1	0
101		fm256s	es	cu	1.8124601	30.0	1.8000000	0.0000000	0	0.0000000	75mee1	0
101		np237h	es	cu	4.9998010	30.0	5.0000000	0.0000000	0	0.0000000	75mee1	0
101		u232t	es	cu	1.9990712	30.0	2.0000000	0.0000000	0	0.0000000	75mee1	0
101	ru g	u238s	ms	cu	7.1361892	6.0	7.2500000	0.0000000	0	0.0000000	80mae2	0
101		u238s	es	cu	6.1223582	5.0	6.2200000	5.0000000%	0	0.0000000	75mee1	0
101		np237t	es	cu	0.0000000	0.0	5.1500000	0.0000000	0	0.0000000	72sid1	0
101	tc g	np237t	rc	cu	0.0000000	0.0	6.8000000	0.6200000	0	0.0000000	80thi1	0
101		pu240t	es	cu	0.0000000	0.0	5.9300000	0.0000000	0	0.0000000	72sid1	0
101		pu242t	es	cu	0.0000000	0.0	6.1100000	0.0000000	0	0.0000000	72sid1	0
102		cf250s	es	cu	4.9566633	30.0	5.0000000	0.0000000	0	0.0000000	75mee1	0
102		cm244s	es	cu	6.8853980	30.0	6.9000000	0.0000000	0	0.0000000	75mee1	0
102		cm248s	es	cu	5.4550853	30.0	5.2000000	0.0000000	0	0.0000000	75mee1	0
102		es253s	es	cu	4.5583913	30.0	4.5000000	0.0000000	0	0.0000000	75mee1	0
102		fm254s	es	cu	3.0160373	30.0	3.0000000	0.0000000	0	0.0000000	75mee1	0
102		fm255t	es	cu	1.2376325	30.0	1.3000000	0.0000000	0	0.0000000	75mee1	0
102		fm256s	es	cu	2.0097896	30.0	2.0000000	0.0000000	0	0.0000000	75mee1	0
102		np237h	es	cu	4.5998169	30.0	4.6000000	0.0000000	0	0.0000000	75mee1	0
102		u232t	es	cu	1.4993034	30.0	1.5000000	0.0000000	0	0.0000000	75mee1	0
102	ru g	u238s	ms	cu	7.8744156	6.0	8.0000000	0.0000000	0	0.0000000	80mae2	0
102		u238s	es	cu	4.9707249	5.0	5.0500000	5.0000000%	0	0.0000000	75mee1	0
102		np237t	es	cu	0.0000000	0.0	5.1500000	0.0000000	0	0.0000000	72sid1	0
102		pu240t	es	cu	0.0000000	0.0	6.1600000	0.0000000	0	0.0000000	72sid1	0
102		pu242t	es	cu	0.0000000	0.0	6.1500000	0.0000000	0	0.0000000	72sid1	0
103	ru g	cf250s	rc	cu	5.1840653	10.0	5.2000000	10.0000000%	0	0.0000000	77fly1	0

103	ru g	cf250s	sp	cu		5.3336056	5.0	5.3500000	5.0000000%	0		0.0000000	77fly1	0
103	ru g	cm244s	rc	cu		6.9296150	10.1	6.9400000	0.7000000	0		0.0000000	72fly2	0
103	ru g	cm248s	rc	cu		5.3919205	10.0	5.3000000	10.0000000%	0		0.0000000	77fly1	0
103	ru g	cm248s	sp	cu		5.5445221	5.0	5.4500000	5.0000000%	0		0.0000000	77fly1	0
103	ru g	es253s	rc	cu		5.8567460	5.0	5.8300000	0.2900000	0		0.0000000	76fly1	0
103	ru g	es253s	rc	cu	su	0.0000000	0.0	5.8000000	0.3000000	0		0.0000000	73uni1	0
103	ru g	fm254s	rc	cu		3.2160669	6.9	3.2100000	0.2200000	0		0.0000000	73har1	0
103	ru g	fm254s	rc	cu		3.1058590	9.7	3.1000000	0.3000000	0		0.0000000	73uni1	0
103	ru g	fm254s	rc	cu		3.1359157	9.9	3.1300000	0.3100000	0		0.0000000	77gin1	0
103		fm255t	es	cu		1.3328350	30.0	1.4000000	0.0000000	0		0.0000000	75mee1	0
103		fm256s	es	cu		2.2107686	30.0	2.2000000	0.0000000	0		0.0000000	75mee1	0
103		np237h	es	cu		4.3298277	30.0	4.3300000	0.0000000	0		0.0000000	75mee1	0
103		u232t	rc	cu	su	0.0000000	0.0	1.0300000	0.0000000	99 mo g	u232t	3.9400000	73man2	0
103	ru g	u232t	rc	cu		1.0199163	5.0	1.0200000	0.0200000	0		0.0000000	71kem1	0
103	ru g	u232t	rc	cu	x5	0.0000000	0.0	0.5220000	0.0100000	99 mo g	u235t	0.0000000	79man1	7
103	ru g	u232t	rc	cu		1.1152079	5.7	1.1000000	0.0200000	99 mo g	u232t	4.1500000	79man1	0
103		u238s	es	cu		4.5573181	5.0	4.6300000	5.0000000%	0		0.0000000	75mee1	0
103	ru g	u238s	rc	cu	x1	0.0000000	0.0	2.3500000	0.0800000	0		0.0000000	71swi1	0

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nuclide	material	tech.	type	value	err.	value		nuclide	material	value	no.	treatment
103	ru g	cm242s	rc	cu		0.0000000	0.0	7.2000000	1.5000000	0		0.0000000	54ste2	0
103		np237t	es	cu		0.0000000	0.0	4.7600000	0.0000000	0		0.0000000	72sid1	0
103	ru g	np237t	rc	cu		0.0000000	0.0	5.8700000	0.4300000	0		0.0000000	80thi1	0
103		pu240t	es	cu		0.0000000	0.0	5.9700000	0.0000000	0		0.0000000	72sid1	0
103		pu242t	es	cu		0.0000000	0.0	6.2500000	0.0000000	0		0.0000000	72sid1	0
103	ru g	np236t	rc	cu		0.0000000	0.0	5.0800000	0.2500000	0		0.0000000	81gin2	0
103	ru g	cm246s	rc	cu		0.0000000	0.0	6.8600000	0.6000000	0		0.0000000	81gin3	0
104		cf250s	es	cu		5.9632276	30.0	6.0000000	0.0000000	0		0.0000000	75mee1	0
104	tc g	cf250s	rc	cu		6.5197955	14.0	6.5600000	0.9200000	0		0.0000000	81gin4	0
104		cm244s	es	cu		7.6837050	30.0	7.7000000	0.0000000	0		0.0000000	75mee1	0
104		cm248s	es	cu		6.2943292	30.0	6.0000000	0.0000000	0		0.0000000	75mee1	0
104		es253s	es	cu		6.2804502	30.0	6.2000000	0.0000000	0		0.0000000	75mee1	0
104		fm254s	es	cu		4.0213831	30.0	4.0000000	0.0000000	0		0.0000000	75mee1	0
104		fm255t	es	cu		1.5232400	30.0	1.6000000	0.0000000	0		0.0000000	75mee1	0

104		fm256s	es	cu		2.7186902	30.0	2.7000000	0.0000000	0			0.0000000	75mee1	0
104		np237h	es	cu		3.9998408	30.0	4.0000000	0.0000000	0			0.0000000	75mee1	0
104		u232t	es	cu		0.3497701	30.0	0.3500000	0.0000000	0			0.0000000	75mee1	0
104	ru g	u238s	ms	cu		4.1340682	6.0	4.2000000	0.0000000	0			0.0000000	80mae2	0
104		u238s	es	cu		3.4745859	5.0	3.5300000	5.0000000%	0			0.0000000	75mee1	0
104		np237t	es	cu		0.0000000	0.0	4.1700000	0.0000000	0			0.0000000	72sid1	0
104	tc g	np237t	rc	cu		0.0000000	0.0	3.8900000	0.2900000	0			0.0000000	80thi1	0
104		pu240t	es	cu		0.0000000	0.0	6.1100000	0.0000000	0			0.0000000	72sid1	0
104		pu242t	es	cu		0.0000000	0.0	6.2500000	0.0000000	0			0.0000000	72sid1	0
104	tc g	np236t	rc	cu		0.0000000	0.0	2.8400000	0.3500000	0			0.0000000	81gin2	0
105	ru g	cf250s	sp	cu		6.6755039	5.0	6.6900000	5.0000000%	0			0.0000000	77fly1	0
105	ru g	cf250s	rc	cu		6.3661756	8.3	6.3800000	0.5300000	0			0.0000000	81gin4	0
105		cm244s	es	cu		9.1431540	30.0	9.1500000	0.0000000	0			0.0000000	75mee1	0
105	rh g	cm244s	rc	cu		9.0532213	10.0	9.0600000	0.9100000	0			0.0000000	72fly2	0
105	ru g	cm244s	rc	cu		9.4229445	10.0	9.4300000	0.9400000	0			0.0000000	72fly2	0
105	ru g	cm248s	sp	cu		6.3975066	5.0	6.3200000	5.0000000%	0			0.0000000	77fly1	0
105	ru g	es253s	rc	cu		6.2367034	15.0	6.1800000	0.9300000	0			0.0000000	76fly1	0
105	ru g	es253s	rc	cu	su	0.0000000	0.0	7.7000000	1.2000000	0			0.0000000	73uni1	0
105	ru g	fm254s	rc	cu		4.9231239	10.8	4.9100000	0.5300000	0			0.0000000	73har1	0
105	ru g	fm255t	rc	cu	su	0.0000000	0.0	2.9000000	0.3000000	0			0.0000000	73uni1	0
105	ru g	fm255t	rc	cu		2.3887830	9.9	2.4300000	0.2400000	0			0.0000000	75fly3	0
105	ru g	fm256s	rc	cu	su	0.0000000	0.0	2.9000000	0.4000000	0			0.0000000	73uni1	0
105	ru g	fm256s	rc	cu		3.1075869	12.9	3.1000000	0.4000000	0			0.0000000	72fly1	0
105	rh g	np237h	rc	cu		3.4445411	15.1	3.5000000	0.2000000	99 mo g	np237h	4.9400000	60col1	0
105	ru g	np237h	cm	cu		0.0000000	0.0	3.5000000	6.0000000%	0			0.0000000	77cro1	0
105	ru g	u232t	rc	cu	x5	0.0000000	0.0	0.3600000	0.0400000	99 mo g	u235t	0.0000000	79man1	7
105	ru g	u232t	rc	cu		0.2432816	12.8	0.2400000	0.0300000	99 mo g	u232t	4.1500000	79man1	0
105		u238s	es	cu		0.7329446	30.0	0.7670000	0.0000000	0			0.0000000	75mee1	0
105		u238s	cm	cu		0.0000000	0.0	0.4300000	0.0000000	0			0.0000000	69gun2	0
105	rh g	u238s	rc	cu		1.0989391	15.7	1.1500000	0.1800000	0			0.0000000	67jad1	0
105	ru g	u238s	rc	cu		0.6058499	20.0	0.6340000	0.1270000	0			0.0000000	65rao1	0
105	ru g	u238s	rc	cu		0.6574522	20.1	0.6880000	0.1380000	0			0.0000000	65rao1	0
105	ru g	ac227f	rc	re		0.0000000	0.0	0.0840000	20.0000000%	91 sr g	ac227f	5.8100000	65iye1	0
105	ru g	ac227f	cm	cu		0.0000000	0.0	0.0900000	10.0000000%	0			0.0000000	77cro1	0
105	rh g	pu240s	rc	cu		0.0000000	0.0	7.1000000	0.5500000	0			0.0000000	62lai1	0
105	ru g	pa231h	rc	cu		0.0000000	0.0	0.3050000	0.0190000	97 zr g	pa231h	1.0000000	66bro1	0

105	ru	g	pa231h	cm	cu		0.0000000	0.0	1.3100000	7.0000000%	0		0.0000000	77cro1	0				
105	rh	g	pu240s	rc	cu		0.0000000	0.0	7.1000000	0.5500000	0		0.0000000	61lai1	0				
105	ru	g	cm242s	rc	cu		0.0000000	0.0	9.5000000	0.9000000	0		0.0000000	54ste2	0				
105	rh	g	cf254s	rc	cu	x5	0.0000000	0.0	4.8800000	0.2300000	105	rh	g	cf252s	5.9900000	74wol3	0		
105			np237t	es	cu		0.0000000	0.0	3.5000000	0.0000000	0		0.0000000	72sid1	0				
105	rh	g	np237t	rc	cu		0.0000000	0.0	2.6000000	0.2500000	0		0.0000000	80thi1	0				
105			pu240t	es	cu		0.0000000	0.0	5.6600000	0.0000000	0		0.0000000	72sid1	0				
105			pu242t	es	cu		0.0000000	0.0	6.0200000	0.0000000	0		0.0000000	72sid1	0				
105	ru	g	np236t	rc	cu		0.0000000	0.0	2.3000000	0.0900000	0		0.0000000	81gin2	0				
105	ru	g	cm246s	rc	cu		0.0000000	0.0	6.8200000	0.9600000	0		0.0000000	81gin3	0				
106	ru	g	cf250s	rc	cu		7.4471092	10.0	7.4700000	10.0000000%	0		0.0000000	77fly1	0				
106	ru	g	cf250s	sp	cu		6.6595300	5.0	6.6800000	5.0000000%	0		0.0000000	77fly1	0				
106	ru	g	cm244s	rc	cu		7.3889266	10.0	7.4000000	0.7400000	0		0.0000000	72fly2	0				
106	ru	g	cm248s	rc	cu		6.5109984	10.0	6.4000000	10.0000000%	0		0.0000000	77fly1	0				
106	ru	g	cm248s	sp	cu		6.0837141	5.0	5.9800000	5.0000000%	0		0.0000000	77fly1	0				
106	ru	g	es253s	rc	cu		6.4918471	7.4	6.4500000	0.4800000	0		0.0000000	76fly1	0				
106	ru	g	es253s	rc	cu	su	0.0000000	0.0	6.5000000	0.5000000	0		0.0000000	73uni1	0				
106	ru	g	fm254s	rc	cu		4.6925091	12.0	4.6800000	0.5600000	0		0.0000000	73har1	0				
106	ru	g	fm254s	rc	cu		5.8155027	10.3	5.8000000	0.6000000	0		0.0000000	73uni1	0				
106	ru	g	fm254s	rc	cu		5.7653691	10.1	5.7500000	0.5800000	0		0.0000000	77gin1	0				
106			fm255t	es	cu		2.4151914	30.0	2.5000000	0.0000000	0		0.0000000	75mee1	0				
106			fm256s	es	cu		3.6176213	30.0	3.6000000	0.0000000	0		0.0000000	75mee1	0				
106			np237h	es	cu		2.9998806	30.0	3.0000000	0.0000000	0		0.0000000	75mee1	0				
106			u232t	es	cu		0.0999343	30.0	0.1000000	0.0000000	0		0.0000000	75mee1	0				
106			u238s	es	cu		0.2150428	30.0	0.2360000	0.0000000	0		0.0000000	75mee1	0				
106	ru	g	u238s	rc	cu		0.3006954	24.2	0.3300000	0.0800000	0		0.0000000	71swi1	0				
106	ru	g	cm242s	rc	cu		0.0000000	0.0	7.4000000	0.8000000	0		0.0000000	54ste2	0				
106			np237t	es	cu		0.0000000	0.0	3.3400000	0.0000000	0		0.0000000	72sid1	0				
106			pu240t	es	cu		0.0000000	0.0	5.2700000	0.0000000	0		0.0000000	72sid1	0				
106			pu242t	es	cu		0.0000000	0.0	5.9500000	0.0000000	0		0.0000000	72sid1	0				
107			cf250s	es	cu		7.1558731	30.0	7.2000000	0.0000000	0		0.0000000	75mee1	0				
107	rh	g	cf250s	rc	cu		7.2850764	14.5	7.3300000	1.0600000	0		0.0000000	81gin4	0				
107			cm244s	es	cu		6.9851864	30.0	7.0000000	0.0000000	0		0.0000000	75mee1	0				
107			cm248s	es	cu		6.2943292	30.0	6.0000000	0.0000000	0		0.0000000	75mee1	0				
107			es253s	es	cu		6.2804502	30.0	6.2000000	0.0000000	0		0.0000000	75mee1	0				
107			fm254s	es	cu		5.4288672	30.0	5.4000000	0.0000000	0		0.0000000	75mee1	0				

107		fm255t	es	cu		2.6084067	30.0	2.7000000	0.0000000	0				0.0000000	75mee1	0			
107		fm256s	es	cu		4.5220266	30.0	4.5000000	0.0000000	0				0.0000000	75mee1	0			
107		np237h	es	cu		2.4998593	30.0	2.5000000	0.0000000	0				0.0000000	75mee1	0			
107		u232t	es	cu		0.0259829	30.0	0.0260000	0.0000000	0				0.0000000	75mee1	0			
107		u238s	es	cu		0.1390321	30.0	0.1590000	0.0000000	0				0.0000000	75mee1	0			
107		np237t	es	cu		0.0000000	0.0	2.4400000	0.0000000	0				0.0000000	72sid1	0			
107		pu240t	es	cu		0.0000000	0.0	4.2000000	0.0000000	0				0.0000000	72sid1	0			
107		pu242t	es	cu		0.0000000	0.0	5.5000000	0.0000000	0				0.0000000	72sid1	0			
108		cf250s	es	cu		6.9393286	30.0	7.0000000	0.0000000	0				0.0000000	75mee1	0			
108		cm244s	es	cu		5.9873026	30.0	6.0000000	0.0000000	0				0.0000000	75mee1	0			
108		cm248s	es	cu		6.0845182	30.0	5.8000000	0.0000000	0				0.0000000	75mee1	0			
108		es253s	es	cu		5.8752599	30.0	5.8000000	0.0000000	0				0.0000000	75mee1	0			
108		fm254s	es	cu		5.6299363	30.0	5.6000000	0.0000000	0				0.0000000	75mee1	0			
108		fm255t	es	cu		2.7050144	30.0	2.8000000	0.0000000	0				0.0000000	75mee1	0			
108		fm256s	es	cu		5.2254530	30.0	5.2000000	0.0000000	0				0.0000000	75mee1	0			
108		np237h	es	cu		1.8998931	30.0	1.9000000	0.0000000	0				0.0000000	75mee1	0			
108		u232t	es	cu		0.0081946	30.0	0.0082000	0.0000000	0				0.0000000	75mee1	0			
108		u238s	es	cu		0.0813206	30.0	0.0930000	0.0000000	0				0.0000000	75mee1	0			
108		np237t	es	cu		0.0000000	0.0	1.8000000	0.0000000	0				0.0000000	72sid1	0			
108		pu240t	es	cu		0.0000000	0.0	3.2700000	0.0000000	0				0.0000000	72sid1	0			
108		pu242t	es	cu		0.0000000	0.0	4.4600000	0.0000000	0				0.0000000	72sid1	0			
109	pd g	cf250s	rc	cu		6.3309600	10.0	6.3700000	10.0000000%	0				0.0000000	77fly1	0			
109	pd g	cm244s	rc	cu		5.0124881	10.0	5.0200000	0.5000000	0				0.0000000	72fly2	0			
109	pd g	cm248s	rc	cu		6.0549570	10.0	5.9100000	10.0000000%	0				0.0000000	77fly1	0			
109	pd g	es253s	rc	cu		5.5201889	10.1	5.4700000	0.5500000	0				0.0000000	76fly1	0			
109	pd g	es253s	rc	cu	su	0.0000000	0.0	5.5000000	0.5000000	0				0.0000000	73uni1	0			
109	pd g	fm254s	rc	cu		5.7152354	10.5	5.7000000	0.6000000	0				0.0000000	73uni1	0			
109	pd g	fm254s	rc	cu		5.6851553	10.1	5.6700000	0.5700000	0				0.0000000	77gin1	0			
109		fm255t	es	cu		2.8982297	30.0	3.0000000	0.0000000	0				0.0000000	75mee1	0			
109	pd g	fm255t	rc	cu	x1	0.0000000	0.0	2.6000000	0.5200000	0				0.0000000	75fly3	0			
109		fm256s	es	cu		5.4186902	30.0	5.4000000	0.0000000	0				0.0000000	75mee1	0			
109	pd g	fm256s	rc	cu	su	0.0000000	0.0	3.4000000	0.9000000	0				0.0000000	73uni1	0			
109	pd g	fm256s	rc	cu	x1	0.0000000	0.0	3.6000000	1.0000000	0				0.0000000	72fly1	0			
109	pd g	np237h	rc	cu		1.4565318	20.3	1.4800000	0.2500000	99	mo g	np237h		4.9400000	60col1	0			

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nuclide	material	tech.	type	value	err.	value		nuclide	material	value	no.	treatment
109 pd g	np237h	cm	cu	0.0000000	0.0	1.4800000	17.0000000%	0		0.0000000	77cro1	0
109	u232t	es	cu	0.0089958	30.0	0.0090000	0.0000000	0		0.0000000	75mee1	0
109	u238s	es	cu	0.0118456	30.0	0.0130000	0.0000000	0		0.0000000	75mee1	0
109 pd g	u238s	rc	cu	ul 0.0000000	0.0	0.0200000	0.0000000	0		0.0000000	56rus1	0
109 pd g	u238s	cm	cu	0.0000000	0.0	0.0140000	0.0000000	0		0.0000000	69gun2	0
109 pd g	ac227f	rc	re	0.0000000	0.0	0.2400000	20.0000000%	91 sr g	ac227f	5.8100000	65iye1	0
109 pd g	ac227f	cm	cu	0.0000000	0.0	0.2330000	10.0000000%	0		0.0000000	77cro1	0
109 pd g	pu240s	rc	cu	0.0000000	0.0	0.9400000	0.1200000	0		0.0000000	62lai1	0
109 pd g	pu240s	rc	cu	0.0000000	0.0	0.9400000	0.1200000	0		0.0000000	61lai1	0
109 pd g	cm242s	rc	cu	0.0000000	0.0	2.9000000	0.4000000	0		0.0000000	54ste2	0
109 pd g	cf254s	rc	cu	x5 0.0000000	0.0	5.6000000	0.7000000	109 pd g	cf252s	5.6900000	74wol3	0
109	np237t	es	cu	0.0000000	0.0	1.1200000	0.0000000	0		0.0000000	72sid1	0
109	pu240t	es	cu	0.0000000	0.0	2.1500000	0.0000000	0		0.0000000	72sid1	0
109	pu242t	es	cu	0.0000000	0.0	3.5100000	0.0000000	0		0.0000000	72sid1	0
109 pd g	np236t	rc	cu	0.0000000	0.0	0.1700000	0.0300000	0		0.0000000	81gin2	0
110	cf250s	es	cu	5.9479959	30.0	6.0000000	0.0000000	0		0.0000000	75mee1	0
110	cm244s	es	cu	3.9915351	30.0	4.0000000	0.0000000	0		0.0000000	75mee1	0
110	cm248s	es	cu	5.7698017	30.0	5.5000000	0.0000000	0		0.0000000	75mee1	0
110	es253s	es	cu	5.2674744	30.0	5.2000000	0.0000000	0		0.0000000	75mee1	0
110	fm254s	es	cu	6.4342130	30.0	6.4000000	0.0000000	0		0.0000000	75mee1	0
110	fm255t	es	cu	3.2846603	30.0	3.4000000	0.0000000	0		0.0000000	75mee1	0
110	fm256s	es	cu	5.6193824	30.0	5.6000000	0.0000000	0		0.0000000	75mee1	0
110	np237h	es	cu	1.2999268	30.0	1.3000000	0.0000000	0		0.0000000	75mee1	0
110	u232t	es	cu	0.0082945	30.0	0.0083000	0.0000000	0		0.0000000	75mee1	0
110	u238s	es	cu	0.0097935	30.0	0.0112000	0.0000000	0		0.0000000	75mee1	0
110	np237t	es	cu	0.0000000	0.0	0.5500000	0.0000000	0		0.0000000	72sid1	0
110	pu240t	es	cu	0.0000000	0.0	1.4600000	0.0000000	0		0.0000000	72sid1	0
110	pu242t	es	cu	0.0000000	0.0	2.6100000	0.0000000	0		0.0000000	72sid1	0
111	cf250s	es	re	4.8869631	32.1	1.0000000	0.0000000	111 ag g	cf250s	1.0000000	75mee1	0
111 ag g	cf250s	rc	cu	4.9395402	10.0	4.9700000	10.0000000%	0		0.0000000	77fly1	0
111	cm244s	es	re	2.8756572	30.5	1.0035000	0.0000000	111 ag g	cm244s	1.0000000	75mee1	0
111 ag g	cm244s	rc	cu	2.8678527	5.0	2.8700000	0.1400000	0		0.0000000	72fly2	0
111	cm248s	es	re	5.5500455	32.1	1.0030000	0.0000000	111 ag g	cm248s	1.0000000	75mee1	0
111 ag g	cm248s	rc	cu	5.3172973	10.0	5.1900000	10.0000000%	0		0.0000000	77fly1	0

111		es253s	es	re		4.7502620	30.5	1.0030000	0.0000000	111	ag g	es253s	1.0000000	75mee1	0
111	ag g	es253s	rc	cu		4.7115161	5.1	4.6900000	0.2400000	0			0.0000000	76fly1	0
111	ag g	es253s	rc	cu	su	0.0000000	0.0	4.7000000	0.2000000	0			0.0000000	73uni1	0
111		fm254s	es	re		5.5392336	30.5	1.0030000	0.0000000	111	ag g	fm254s	1.0000000	75mee1	0
111	ag g	fm254s	rc	cu	su	0.0000000	0.0	5.5000000	0.3000000	0			0.0000000	73uni1	0
111	ag g	fm254s	rc	cu		5.5103951	5.5	5.5000000	0.3000000	0			0.0000000	77gin1	0
111		fm255t	es	cu		3.1880526	30.0	3.3000000	0.0000000	0			0.0000000	77mee1	0
111	ag g	fm255t	rc	cu	su	0.0000000	0.0	3.3000000	0.4000000	0			0.0000000	73uni1	0
111	ag g	fm255t	rc	cu	x1	0.0000000	0.0	2.8500000	0.5800000	0			0.0000000	75fly3	0
111		fm256s	es	re		5.4468868	31.0	1.0030000	0.0000000	111	ag g	fm256s	1.0000000	75mee1	0
111	ag g	fm256s	rc	cu	su	0.0000000	0.0	5.0000000	0.4000000	0			0.0000000	73uni1	0
111	ag g	fm256s	rc	cu		5.4132160	7.4	5.4000000	0.4000000	0			0.0000000	72fly1	0
111		np237h	es	re		1.2137490	34.0	1.0030000	0.0000000	111	ag g	np237h	1.0000000	75mee1	0
111	ag g	np237h	rc	cu		1.2104960	15.1	1.2300000	0.0500000	99	mo g	np237h	4.9400000	60col1	0
111	ag g	np237h	cm	cu		0.0000000	0.0	1.2300000	5.0000000%	0			0.0000000	77cro1	0
111		u232t	es	cu		0.0089985	30.0	0.0090000	0.0000000	0			0.0000000	75mee1	0
111		u232t	es	re		0.0091375	31.0	1.0030000	0.0000000	111	ag g	u232t	1.0000000	75mee1	0
111	ag g	u232t	rc	cu	x5	0.0000000	0.0	0.7580000	0.0480000	99	mo g	u235t	0.0000000	79man1	7
111	ag g	u232t	rc	cu		0.0091237	7.2	0.0090000	0.0006000	99	mo g	u232t	4.1500000	79man1	0
111		u238s	es	cu		0.0085653	30.0	0.0094000	0.0000000	0			0.0000000	75mee1	0
111	ag g	u238s	rc	cu	ul	0.0000000	0.0	0.0500000	0.0000000	0			0.0000000	56rus1	0
111	ag g	u238s	cm	cu		0.0000000	0.0	0.0350000	0.0000000	0			0.0000000	69gun2	0
111	ag g	ac227f	rc	re		0.0000000	0.0	0.1800000	20.0000000%	91	sr g	ac227f	5.8100000	65iye1	0
111	ag g	ac227f	cm	cu		0.0000000	0.0	0.1430000	10.0000000%	0			0.0000000	77cro1	0
111	ag g	pu240s	rc	cu		0.0000000	0.0	0.0350000	0.0090000	0			0.0000000	62lai1	0
111	ag g	pu240s	rc	cu		0.0000000	0.0	0.0350000	0.0090000	0			0.0000000	61lai1	0
111	ag g	cf254s	rc	cu	x5	0.0000000	0.0	5.3000000	0.3000000	111	ag g	cf252s	5.1900000	74wol3	0
111		np237t	es	cu		0.0000000	0.0	0.1400000	0.0000000	0			0.0000000	72sid1	0
111		pu240t	es	cu		0.0000000	0.0	0.4000000	0.0000000	0			0.0000000	72sid1	0
111		pu242t	es	cu		0.0000000	0.0	1.1100000	0.0000000	0			0.0000000	72sid1	0
111	ag g	np236t	rc	cu		0.0000000	0.0	0.0410000	0.0060000	0			0.0000000	81gin2	0
111	ag g	cm246s	rc	cu		0.0000000	0.0	4.6400000	1.9700000	0			0.0000000	81gin3	0
112	pd g	cf250s	rc	cu		3.4593667	10.0	3.4700000	10.0000000%	0			0.0000000	77fly1	0
112	pd g	cf250s	sp	cu		4.0575280	5.0	4.0700000	5.0000000%	0			0.0000000	77fly1	0
112	pd g	cm244s	rc	cu		2.0269623	9.9	2.0300000	0.2000000	0			0.0000000	72fly2	0
112	pd g	cm248s	rc	cu		4.0083334	10.0	3.9400000	10.0000000%	0			0.0000000	77fly1	0

112	pd g	cm248s	sp	cu		4.8425550	5.0	4.7600000	5.0000000%	0			0.0000000	77fly1	0
112	pd g	es253s	rc	cu		3.8045909	10.1	3.7700000	0.3800000	0			0.0000000	76fly1	0
112	pd g	es253s	rc	cu	su	0.0000000	0.0	3.8000000	0.4000000	0			0.0000000	73uni1	0
112	ag g	fm254s	rc	cu		6.4321339	5.6	6.4200000	0.3600000	0			0.0000000	73har1	0
112	ag g	fm254s	es	fi		0.6240670	30.5	0.1000000	0.0000000	112	fm254s		1.0000000	73har1	0
112	pd g	fm254s	rc	cu		5.1096391	9.8	5.1000000	0.5000000	0			0.0000000	73uni1	0
112	pd g	fm254s	rc	cu		5.0695635	10.1	5.0600000	0.5100000	0			0.0000000	77gin1	0
112	pd g	fm255t	rc	cu	su	0.0000000	0.0	3.6000000	0.4000000	0			0.0000000	73uni1	0
112	pd g	fm255t	rc	cu		3.6131263	19.8	3.7400000	0.7400000	0			0.0000000	75fly3	0
112		fm256s	es	cu		5.6274109	30.0	5.6000000	0.0000000	0			0.0000000	75mee1	0
112	ag g	fm256s	rc	cu	x1	0.0000000	0.0	4.7000000	0.6000000	0			0.0000000	72fly1	0
112	pd g	fm256s	rc	cu	su	0.0000000	0.0	4.4000000	0.6000000	0			0.0000000	73uni1	0
112	pd g	np237h	rc	cu		1.2104960	15.1	1.2300000	0.0500000	99	mo g	np237h	4.9400000	60col1	0
112	pd g	np237h	cm	cu		0.0000000	0.0	1.2300000	5.0000000%	0			0.0000000	77cro1	0
112		u232t	es	cu		0.0109928	30.0	0.0110000	0.0000000	0			0.0000000	75mee1	0
112		u238s	es	cu		0.0058586	30.0	0.0067000	0.0000000	0			0.0000000	75mee1	0
112	ag g	ac227f	rc	re		0.0000000	0.0	0.1700000	20.0000000%	91	sr g	ac227f	5.8100000	65iye1	0
112	ag g	ac227f	cm	cu		0.0000000	0.0	0.1580000	10.0000000%	0			0.0000000	77cro1	0
112	ag g	pa231h	rc	cu		0.0000000	0.0	0.4790000	0.0350000	97	zr g	pa231h	1.0000000	66bro1	0
112	ag g	pa231h	cm	cu		0.0000000	0.0	2.0500000	8.0000000%	0			0.0000000	77cro1	0
112	pd g	cm242s	rc	cu		0.0000000	0.0	0.9500000	0.1500000	0			0.0000000	54ste2	0
112	pd g	cf254s	rc	cu	x5	0.0000000	0.0	4.4000000	0.3000000	112	pd g	cf252s	3.6500000	74wol3	0
112		np237t	es	cu		0.0000000	0.0	0.0600000	0.0000000	0			0.0000000	72sid1	0
112		pu240t	es	cu		0.0000000	0.0	0.2000000	0.0000000	0			0.0000000	72sid1	0
112		pu242t	es	cu		0.0000000	0.0	0.4000000	0.0000000	0			0.0000000	72sid1	0
112	pd g	np236t	rc	cu		0.0000000	0.0	0.0280000	0.0050000	0			0.0000000	81gin2	0
112	ag g	cm246s	rc	cu		0.0000000	0.0	4.0500000	0.5400000	0			0.0000000	81gin3	0
113		cf250s	rc	cu		3.5445721	10.0	3.5600000	10.0000000%	0			0.0000000	77fly1	0
113	ag g	cf250s	rc	cu		2.6285591	10.0	2.6400000	10.0000000%	0			0.0000000	77fly1	0
113		cm244s	es	re		0.8952875	32.1	0.8952000	0.0000000	113	ag g	cm244s	0.7895000	75mee1	0
113	ag g	cm244s	rc	cu		0.7888178	10.1	0.7900000	0.0800000	0			0.0000000	72fly2	0
113		cm248s	rc	cu		2.8891673	10.0	2.8200000	10.0000000%	0			0.0000000	77fly1	0
113	ag g	cm248s	rc	cu		2.1412623	10.0	2.0900000	10.0000000%	0			0.0000000	77fly1	0
113		es253s	es	cu		3.6467130	30.0	3.6000000	0.0000000	0			0.0000000	75mee1	0
113		fm254s	es	cu		5.7304709	30.0	5.7000000	0.0000000	0			0.0000000	75mee1	0
113		fm255t	rc	cu		4.5189379	19.9	4.6300000	0.9200000	0			0.0000000	75fly3	0

113 ag g fm255t rc cu 3.1622805 19.8 3.2400000 0.6400000 0 0.0000000 75fly3 0
113 fm256s es cu 6.0293688 30.0 6.0000000 0.0000000 0 0.0000000 75mee1 0
113 ag g fm256s rc cu x1 0.0000000 0.0 4.0000000 0.3000000 0 0.0000000 72fly1 0
113 np237h es cu 1.2299308 30.0 1.2300000 0.0000000 0 0.0000000 75mee1 0
113 u232t es cu 0.0139908 30.0 0.0140000 0.0000000 0 0.0000000 75mee1 0
113 u238s es cu 0.0051027 30.0 0.0056000 0.0000000 0 0.0000000 75mee1 0
113 ag g pa231h rc cu 0.0000000 0.0 0.5750000 0.0170000 97 zr g pa231h 1.0000000 66bro1 0
113 ag g pa231h cm cu 0.0000000 0.0 2.4600000 5.0000000% 0 0.0000000 77cro1 0
113 ag g cf254s rc cu x5 0.0000000 0.0 5.2000000 0.5000000 113 ag g cf252s 4.2300000 74wol3 0
113 np237t es cu 0.0000000 0.0 0.0400000 0.0000000 0 0.0000000 72sid1 0
113 pu240t es cu 0.0000000 0.0 0.1100000 0.0000000 0 0.0000000 72sid1 0
113 pu242t es cu 0.0000000 0.0 0.2600000 0.0000000 0 0.0000000 72sid1 0
114 cf250s es cu 2.4693563 30.0 2.5000000 0.0000000 0 0.0000000 75mee1 0
114 cm244s es cu 0.3983070 30.0 0.4000000 0.0000000 0 0.0000000 75mee1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

114 cm248s es cu 2.0981097 30.0 2.0000000 0.0000000 0 0.0000000 75mee1 0
114 es253s es cu 3.2415227 30.0 3.2000000 0.0000000 0 0.0000000 75mee1 0
114 fm254s es cu 5.0267289 30.0 5.0000000 0.0000000 0 0.0000000 75mee1 0
114 fm255t es cu 4.8303828 30.0 5.0000000 0.0000000 0 0.0000000 75mee1 0
114 fm256s es cu 6.0293688 30.0 6.0000000 0.0000000 0 0.0000000 75mee1 0
114 np237h es cu 1.2299021 30.0 1.2300000 0.0000000 0 0.0000000 75mee1 0
114 u232t es cu 0.0159895 30.0 0.0160000 0.0000000 0 0.0000000 75mee1 0
114 u238s es cu 0.0041098 30.0 0.0047000 0.0000000 0 0.0000000 75mee1 0
114 np237t es cu 0.0000000 0.0 0.0350000 0.0000000 0 0.0000000 72sid1 0
114 pu240t es cu 0.0000000 0.0 0.1000000 0.0000000 0 0.0000000 72sid1 0
114 pu242t es cu 0.0000000 0.0 0.1500000 0.0000000 0 0.0000000 72sid1 0
115 cf250s rc cu 1.8360130 10.0 1.8400000 10.0000000% 0 0.0000000 77fly1 0
115 cf250s sp cu 2.0854713 5.0 2.0900000 5.0000000% 0 0.0000000 77fly1 0
115 cd g cf250s rc cu 1.6364464 10.0 1.6400000 10.0000000% 0 0.0000000 77fly1 0
115 cd g cf250s sp cu 1.8559697 5.0 1.8600000 5.0000000% 0 0.0000000 77fly1 0
115 cm244s rc cu 0.2578635 5.0 0.2580000 0.0130000 0 0.0000000 72fly2 0
115 cd g cm244s rc cu 0.2328767 5.2 0.2330000 0.0120000 0 0.0000000 72fly2 0
115 cd m cm244s rc cu 0.0249868 8.0 0.0250000 0.0020000 0 0.0000000 72fly2 0

115 cm248s rc cu 1.4070465 10.0 1.3900000 10.0000000% 0 0.0000000 77fly1 0
115 cm248s sp cu 1.4070465 5.0 1.3900000 5.0000000% 0 0.0000000 77fly1 0
115 cd g cm248s rc cu 1.2552070 10.0 1.2400000 10.0000000% 0 0.0000000 77fly1 0
115 cd g cm248s sp cu 1.2552070 5.0 1.2400000 5.0000000% 0 0.0000000 77fly1 0
115 es253s rc cu 2.8291480 5.0 2.8200000 0.1400000 0 0.0000000 76fly1 0
115 cd g es253s rc cu 2.6184667 5.0 2.6100000 0.1300000 0 0.0000000 76fly1 0
115 cd g es253s rc cu su 0.0000000 0.0 2.6000000 0.2000000 0 0.0000000 73uni1 0
115 cd m es253s rc cu 0.2126877 5.7 0.2120000 0.0120000 0 0.0000000 76fly1 0
115 cd m es253s rc cu su 0.0000000 0.0 0.2100000 0.0200000 0 0.0000000 73uni1 0
115 fm254s rc cu 5.0595446 8.9 5.0500000 0.4500000 0 0.0000000 77gin1 0
115 cd g fm254s rc cu 4.5085051 8.9 4.5000000 0.4000000 0 0.0000000 73uni1 0
115 cd g fm254s rc cu 4.4784484 9.8 4.4700000 0.4400000 0 0.0000000 77gin1 0
115 cd m fm254s rc cu 0.5810962 10.3 0.5800000 0.0600000 0 0.0000000 73uni1 0
115 cd m fm254s rc cu 0.5810962 10.3 0.5800000 0.0600000 0 0.0000000 77gin1 0
115 fm255t rc cu su 0.0000000 0.0 5.6000000 0.6000000 0 0.0000000 73uni1 0
115 fm255t rc cu 5.6426398 9.9 5.7400000 0.5700000 0 0.0000000 75fly3 0
115 cd g fm255t rc cu su 0.0000000 0.0 5.2000000 0.6000000 0 0.0000000 73uni1 0
115 cd g fm255t rc cu 5.0429864 9.9 5.1300000 0.5100000 0 0.0000000 75fly3 0
115 fm256s rc cu su 0.0000000 0.0 5.6000000 0.6000000 0 0.0000000 73uni1 0
115 fm256s rc cu 6.0146844 10.0 6.0000000 0.6000000 0 0.0000000 72fly1 0
115 cd g fm256s rc cu su 0.0000000 0.0 5.2000000 0.5000000 0 0.0000000 73uni1 0
115 cd g fm256s rc cu 5.6137054 8.9 5.6000000 0.5000000 0 0.0000000 72fly1 0
115 np237h es cu 1.2299878 4.1 1.2300000 0.0500000 0 0.0000000 60col1 0
115 np237h cm cu x3 0.0000000 0.0 1.2300000 5.0000000% 0 0.0000000 77cro1 0
115 cd g np237h rc cu nr 1.1022732 15.1 1.1200000 0.0500000 99 mo g np237h 4.9400000 60col1 0
115 cd m np237h es cu 0.1099989 30.0 0.1100000 0.0000000 0 0.0000000 60col1 0
115 u232t es cu 0.0169972 30.0 0.0170000 0.0000000 0 0.0000000 75mee1 0
115 cd g u232t rc cu x5 0.0000000 0.0 2.4200000 0.0140000 99 mo g u235t 0.0000000 79man1 7
115 cd g u232t rc cu 0.0172336 5.7 0.0170000 0.0008000 99 mo g u232t 4.1500000 79man1 0
115 u238s es cu 0.0038270 30.0 0.0042000 0.0000000 0 0.0000000 75mee1 0
115 cd g u238s rc cu ul 0.0000000 0.0 0.0500000 0.0000000 0 0.0000000 56rus1 0
115 cd g u238s cm cu lt 0.0000000 0.0 0.0350000 0.0000000 0 0.0000000 69gun2 0
115 cd g pu240s rc cu ul 0.0000000 0.0 0.0300000 0.0000000 0 0.0000000 62lai1 0
115 cd g cm242s rc cu 0.0000000 0.0 0.0330000 0.0100000 0 0.0000000 54ste2 0
115 cd g cf254s rc cu x5 0.0000000 0.0 3.2000000 0.2000000 115 cd g cf252s 2.2800000 74wol3 0
115 np237t es cu 0.0000000 0.0 0.0250000 0.0000000 0 0.0000000 72sid1 0

115	cd	g	np237t	rc	cu		0.0000000	0.0	0.0131000	0.0012000	0	0.0000000	80thi1	0
115			pu240t	es	cu		0.0000000	0.0	0.0700000	0.0000000	0	0.0000000	72sid1	0
115			pu242t	es	cu		0.0000000	0.0	0.1200000	0.0000000	0	0.0000000	72sid1	0
115	cd	g	np236t	rc	cu		0.0000000	0.0	0.0480000	0.0080000	0	0.0000000	81gin2	0
116			cf250s	es	cu		1.1791984	30.0	1.2000000	0.0000000	0	0.0000000	75mee1	0
116			cm244s	es	cu		0.0697037	30.0	0.0700000	0.0000000	0	0.0000000	75mee1	0
116			cm248s	es	cu		0.0768677	30.0	0.0700000	0.0000000	0	0.0000000	75mee1	0
116			es253s	es	cu		2.5458766	30.0	2.5000000	0.0000000	0	0.0000000	75mee1	0
116			fm254s	es	cu		4.0213831	30.0	4.0000000	0.0000000	0	0.0000000	75mee1	0
116			fm255t	es	cu		5.6608726	30.0	5.8000000	0.0000000	0	0.0000000	75mee1	0
116			fm256s	es	cu		5.6193824	30.0	5.6000000	0.0000000	0	0.0000000	75mee1	0
116			np237h	es	cu		1.2299308	30.0	1.2300000	0.0000000	0	0.0000000	77mee1	0
116			u232t	es	cu		0.0154656	30.0	0.0160000	0.0000000	0	0.0000000	75mee1	0
116			u238s	es	cu		0.0035537	30.0	0.0039000	0.0000000	0	0.0000000	75mee1	0
116			np237t	es	cu		0.0000000	0.0	0.0200000	0.0000000	0	0.0000000	72sid1	0
116			pu240t	es	cu		0.0000000	0.0	0.0500000	0.0000000	0	0.0000000	72sid1	0
116			pu242t	es	cu		0.0000000	0.0	0.0800000	0.0000000	0	0.0000000	72sid1	0
117			cf250s	es	cu		0.4938713	30.0	0.5000000	0.0000000	0	0.0000000	75mee1	0
117			cm244s	es	cu		0.0299102	30.0	0.0300000	0.0000000	0	0.0000000	75mee1	0
117			cm248s	es	cu		0.0213875	30.0	0.0200000	0.0000000	0	0.0000000	75mee1	0
117			es253s	es	cu		2.2285469	30.0	2.2000000	0.0000000	0	0.0000000	75mee1	0
117			fm254s	es	cu		3.5187102	30.0	3.5000000	0.0000000	0	0.0000000	75mee1	0
117			fm255t	es	cu		5.8560751	30.0	6.0000000	0.0000000	0	0.0000000	75mee1	0
117			fm256s	es	cu		4.7162674	30.0	4.7000000	0.0000000	0	0.0000000	75mee1	0
117			np237h	es	cu		1.2299511	30.0	1.2300000	0.0000000	0	0.0000000	75mee1	0
117			u232t	es	cu		0.0144990	30.0	0.0150000	0.0000000	0	0.0000000	75mee1	0
117			u238s	es	cu		0.0032803	30.0	0.0036000	0.0000000	0	0.0000000	75mee1	0
117	cd	m	cm242s	rc	cu	lt	0.0000000	0.0	0.0100000	0.0000000	0	0.0000000	54ste2	0
117			np237t	es	cu		0.0000000	0.0	0.0180000	0.0000000	0	0.0000000	72sid1	0
117			pu240t	es	cu		0.0000000	0.0	0.0430000	0.0000000	0	0.0000000	72sid1	0
117			pu242t	es	cu		0.0000000	0.0	0.0500000	0.0000000	0	0.0000000	72sid1	0
118			cf250s	es	cu		0.1965331	30.0	0.2000000	0.0000000	0	0.0000000	75mee1	0
118			cm244s	es	cu		0.0099701	30.0	0.0100000	0.0000000	0	0.0000000	75mee1	0
118			cm248s	es	cu		0.0074856	30.0	0.0070000	0.0000000	0	0.0000000	75mee1	0
118			es253s	es	cu		1.2220207	30.0	1.2000000	0.0000000	0	0.0000000	75mee1	0
118			fm254s	es	cu		2.6196562	30.0	2.6000000	0.0000000	0	0.0000000	75mee1	0

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 118        fm255t   es    cu        5.8930670 30.0   6.1000000  0.0000000     0                    0.0000000   75mee1      0
 118        fm256s   es    cu        4.0195792 30.0   4.0000000  0.0000000     0                    0.0000000   75mee1      0
 118 cd g   fm256s   rc    cu    su   0.0000000  0.0   5.3000000  0.9000000     0                    0.0000000   73uni1      0
 118 cd g   fm256s   rc    cu    x1   0.0000000  0.0   5.7000000  1.0000000     0                    0.0000000   72fly1      0
 118        np237h   es    cu        1.2293583 30.0   1.2300000  0.0000000     0                    0.0000000   75mee1      0
 118        u232t    es    cu        0.0114332 30.0   0.0120000  0.0000000     0                    0.0000000   75mee1      0
 118        u238s    es    cu        0.0031892 30.0   0.0035000  0.0000000     0                    0.0000000   75mee1      0
 118        np237t   es    cu        0.0000000  0.0   0.0170000  0.0000000     0                    0.0000000   72sid1      0
 118        pu240t   es    cu        0.0000000  0.0   0.0420000  0.0000000     0                    0.0000000   72sid1      0
 118        pu242t   es    cu        0.0000000  0.0   0.0500000  0.0000000     0                    0.0000000   72sid1      0
 119        cf250s   es    cu        0.1179198 30.0   0.1200000  0.0000000     0                    0.0000000   75mee1      0
 119        cm244s   es    cu        0.0049850 30.0   0.0050000  0.0000000     0                    0.0000000   75mee1      0
 119        cm248s   es    cu        0.0032081 30.0   0.0030000  0.0000000     0                    0.0000000   75mee1      0
 119        es253s   es    cu        0.6619279 30.0   0.6500000  0.0000000     0                    0.0000000   75mee1      0
 119        fm254s   es    cu        1.8136081 30.0   1.8000000  0.0000000     0                    0.0000000   75mee1      0
 119        fm255t   es    cu        5.9536763 30.0   6.1000000  0.0000000     0                    0.0000000   75mee1      0
 119        fm256s   es    cu        3.2221513 30.0   3.2000000  0.0000000     0                    0.0000000   75mee1      0
 119        np237h   es    cu        1.2293583 30.0   1.2300000  0.0000000     0                    0.0000000   75mee1      0
 119        u232t    es    cu        0.0086994 30.0   0.0090000  0.0000000     0                    0.0000000   75mee1      0
 119        u238s    es    cu        0.0037933 30.0   0.0038000  0.0000000     0                    0.0000000   75mee1      0
 119        np237t   es    cu        0.0000000  0.0   0.0170000  0.0000000     0                    0.0000000   72sid1      0
 119        pu240t   es    cu        0.0000000  0.0   0.0420000  0.0000000     0                    0.0000000   72sid1      0
 119        pu242t   es    cu        0.0000000  0.0   0.0500000  0.0000000     0                    0.0000000   72sid1      0
 120        cf250s   es    cu        0.0589599 30.0   0.0600000  0.0000000     0                    0.0000000   75mee1      0
 120        cm244s   es    cu        0.0019915 30.0   0.0020000  0.0000000     0                    0.0000000   75mee1      0
 120        cm248s   es    cu        0.0021387 30.0   0.0020000  0.0000000     0                    0.0000000   75mee1      0
 120        es253s   es    cu        0.3156887 30.0   0.3100000  0.0000000     0                    0.0000000   75mee1      0
 120        fm254s   es    cu        1.1117607 30.0   1.1000000  0.0000000     0                    0.0000000   75mee1      0
 120        fm255t   es    cu        5.7964594 30.0   6.0000000  0.0000000     0                    0.0000000   75mee1      0
 120        fm256s   es    cu        2.6179980 30.0   2.6000000  0.0000000     0                    0.0000000   75mee1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value       no.   treatment

 120        np237h   es    cu        1.2293583 30.0   1.2300000  0.0000000     0                    0.0000000   75mee1      0
 120        u232t    es    cu        0.0081194 30.0   0.0084000  0.0000000     0                    0.0000000   75mee1      0
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120		u238s	es	cu		0.0037933	30.0	0.0038000	0.0000000	0			0.0000000	75mee1	0
120		np237t	es	cu		0.0000000	0.0	0.0150000	0.0000000	0			0.0000000	72sid1	0
120		pu240t	es	cu		0.0000000	0.0	0.0310000	0.0000000	0			0.0000000	72sid1	0
120		pu242t	es	cu		0.0000000	0.0	0.0360000	0.0000000	0			0.0000000	72sid1	0
121		cf250s	rc	cu		0.0288743	10.0	0.0290000	10.0000000%	0			0.0000000	77fly1	0
121	sn g	cf250s	rc	cu		0.0248917	10.0	0.0250000	10.0000000%	0			0.0000000	77fly1	0
121		cm244s	rc	cu	lt	0.0013979	15.0	0.0014000	0.0000000	0			0.0000000	72fly2	0
121	sn g	cm244s	rc	cu	lt	0.0011982	15.0	0.0012000	0.0000000	0			0.0000000	72fly2	0
121		cm248s	es	cu		0.0018179	30.0	0.0017000	0.0000000	0			0.0000000	75mee1	0
121		es253s	rc	cu		0.1610381	10.0	0.1600000	0.0160000	0			0.0000000	76fly1	0
121		es253s	rc	cu	su	0.0000000	0.0	0.1600000	0.0200000	0			0.0000000	73uni1	0
121	sn g	es253s	rc	cu		0.1399018	10.1	0.1390000	0.0140000	0			0.0000000	76fly1	0
121	sn g	es253s	rc	cu	su	0.0000000	0.0	0.1400000	0.0100000	0			0.0000000	73uni1	0
121		fm254s	rc	cu		0.7620314	10.5	0.7600000	0.0800000	0			0.0000000	73uni1	0
121		fm254s	rc	cu		0.7720581	10.4	0.7700000	0.0800000	0			0.0000000	77gin1	0
121	sn g	fm254s	rc	cu		0.6617641	10.6	0.6600000	0.0700000	0			0.0000000	73uni1	0
121	sn g	fm254s	rc	cu		0.6677801	10.1	0.6660000	0.0670000	0			0.0000000	77gin1	0
121		fm255t	rc	cu	su	0.0000000	0.0	3.7000000	0.4000000	0			0.0000000	73uni1	0
121		fm255t	rc	cu	x1	0.0000000	0.0	3.7600000	0.3800000	0			0.0000000	75fly3	0
121		fm255t	es	cu		5.6998517	30.0	5.9000000	0.0000000	0			0.0000000	75mee1	0
121	sn g	fm255t	rc	cu	su	0.0000000	0.0	3.2000000	0.3000000	0			0.0000000	73uni1	0
121	sn g	fm255t	rc	cu	x1	0.0000000	0.0	3.2700000	0.3300000	0			0.0000000	75fly3	0
121		fm256s	rc	cu	su	0.0000000	0.0	2.5000000	0.3000000	0			0.0000000	73uni1	0
121		fm256s	rc	cu		2.7066080	11.1	2.7000000	0.3000000	0			0.0000000	72fly1	0
121	sn g	fm256s	rc	cu	su	0.0000000	0.0	2.1000000	0.2000000	0			0.0000000	73uni1	0
121	sn g	fm256s	rc	cu		2.3056290	8.7	2.3000000	0.2000000	0			0.0000000	72fly1	0
121		np237h	es	cu		1.2593427	30.0	1.2600000	0.0000000	0			0.0000000	75mee1	0
121		u232t	es	re		0.0073833	43.9	1.2460000	0.0000000	121 in g	u232t		1.0000000	75mee1	0
121	sn g	u232t	rc	cu	x5	0.0000000	0.0	0.9400000	0.0800000	99 mo g	u235t		0.0000000	79man1	7
121	sn g	u232t	rc	cu		0.0079758	9.2	0.0080000	0.0007000	99 mo g	u232t		4.1500000	79man1	0
121		u238s	es	cu		0.0038902	30.0	0.0039000	0.0000000	0			0.0000000	75mee1	0
121	sn g	ac227f	rc	re		0.0000000	0.0	0.1200000	20.0000000%	91 sr g	ac227f		5.8100000	65iye1	0
121	sn g	ac227f	cm	cu		0.0000000	0.0	0.0950000	10.0000000%	0			0.0000000	77cro1	0
121	sn g	cf254s	rc	cu		0.0000000	0.0	0.2500000	0.2500000	0			0.0000000	74wol3	0
121		pu240t	es	cu		0.0000000	0.0	0.0310000	0.0000000	0			0.0000000	72sid1	0
121		pu242t	es	cu		0.0000000	0.0	0.0250000	0.0000000	0			0.0000000	72sid1	0

121	sn g	np236t	rc	cu	0.0000000	0.0	0.0360000	0.0060000	0	0.0000000	81gin2	0
122		cf250s	es	cu	0.0196533	30.0	0.0200000	0.0000000	0	0.0000000	75mee1	0
122		cm244s	es	cu	0.0024332	30.0	0.0025000	0.0000000	0	0.0000000	75mee1	0
122		cm248s	es	cu	0.0016472	30.0	0.0015000	0.0000000	0	0.0000000	75mee1	0
122		es253s	es	cu	0.0656609	30.0	0.0640000	0.0000000	0	0.0000000	75mee1	0
122		fm254s	es	cu	0.4042766	30.0	0.4000000	0.0000000	0	0.0000000	75mee1	0
122		fm255t	es	cu	5.3134211	30.0	5.5000000	0.0000000	0	0.0000000	75mee1	0
122		fm256s	es	cu	1.5103834	30.0	1.5000000	0.0000000	0	0.0000000	75mee1	0
122		np237h	es	cu	1.2993218	30.0	1.3000000	0.0000000	0	0.0000000	75mee1	0
122		u232t	es	cu	0.0142915	30.0	0.0150000	0.0000000	0	0.0000000	75mee1	0
122		u238s	es	cu	0.0041895	30.0	0.0042000	0.0000000	0	0.0000000	75mee1	0
122		np237t	es	cu	0.0000000	0.0	0.0190000	0.0000000	0	0.0000000	72sid1	0
122		pu240t	es	cu	0.0000000	0.0	0.0340000	0.0000000	0	0.0000000	72sid1	0
122		pu242t	es	cu	0.0000000	0.0	0.0250000	0.0000000	0	0.0000000	72sid1	0
123		cf250s	es	cu	0.0186706	30.0	0.0190000	0.0000000	0	0.0000000	75mee1	0
123		cm244s	es	cu	0.0048664	30.0	0.0050000	0.0000000	0	0.0000000	75mee1	0
123		cm248s	es	cu	0.0018668	30.0	0.0017000	0.0000000	0	0.0000000	75mee1	0
123		es253s	es	cu	0.0318045	30.0	0.0310000	0.0000000	0	0.0000000	75mee1	0
123		fm254s	es	cu	0.2526729	30.0	0.2500000	0.0000000	0	0.0000000	75mee1	0
123		fm255t	es	cu	4.9269905	30.0	5.1000000	0.0000000	0	0.0000000	75mee1	0
123		fm256s	es	cu	0.9088106	30.0	0.9000000	0.0000000	0	0.0000000	75mee1	0
123		np237h	es	cu	1.3492957	30.0	1.3500000	0.0000000	0	0.0000000	75mee1	0
123		u232t	es	cu	0.0190553	30.0	0.0200000	0.0000000	0	0.0000000	75mee1	0
123		u238s	es	cu	0.0044887	30.0	0.0045000	0.0000000	0	0.0000000	75mee1	0
123		np237t	es	cu	0.0000000	0.0	0.0210000	0.0000000	0	0.0000000	72sid1	0
123		pu240t	es	cu	0.0000000	0.0	0.0420000	0.0000000	0	0.0000000	72sid1	0
123		pu242t	es	cu	0.0000000	0.0	0.0320000	0.0000000	0	0.0000000	72sid1	0
124		cf250s	es	cu	0.0186706	30.0	0.0190000	0.0000000	0	0.0000000	75mee1	0
124		cm244s	es	cu	0.0087594	30.0	0.0090000	0.0000000	0	0.0000000	75mee1	0
124		cm248s	es	cu	0.0020390	30.0	0.0020000	0.0000000	0	0.0000000	75mee1	0
124		es253s	es	cu	0.0194931	30.0	0.0190000	0.0000000	0	0.0000000	75mee1	0
124		fm254s	es	cu	0.1516037	30.0	0.1500000	0.0000000	0	0.0000000	75mee1	0
124		fm255t	es	cu	3.8081000	30.0	4.0000000	0.0000000	0	0.0000000	75mee1	0
124		fm256s	es	cu	0.4544053	30.0	0.4500000	0.0000000	0	0.0000000	75mee1	0
124		np237h	es	cu	1.3992696	30.0	1.4000000	0.0000000	0	0.0000000	75mee1	0
124		u232t	es	cu	0.0314413	30.0	0.0330000	0.0000000	0	0.0000000	75mee1	0

124		u238s	es	cu		0.0049875	30.0	0.0050000	0.0000000	0			0.0000000	75mee1	0
124		np237t	es	cu		0.0000000	0.0	0.0280000	0.0000000	0			0.0000000	72sid1	0
124		pu240t	es	cu		0.0000000	0.0	0.0610000	0.0000000	0			0.0000000	72sid1	0
124		pu242t	es	cu		0.0000000	0.0	0.0410000	0.0000000	0			0.0000000	72sid1	0
125		cf250s	rc	cu		0.0218219	10.0	0.0220000	10.0000000%	0			0.0000000	77fly1	0
125	sn g	cf250s	rc	cu		0.0104150	10.0	0.0105000	10.0000000%	0			0.0000000	77fly1	0
125		cm244s	rc	cu		0.0165755	17.3	0.0168000	0.0029000	0			0.0000000	72fly2	0
125		cm244s	es	cu		0.0162795	30.0	0.0165000	0.0000000	0			0.0000000	75mee1	0
125	sn g	cm244s	rc	cu		0.0066105	19.4	0.0067000	0.0013000	0			0.0000000	72fly2	0
125		cm248s	rc	cu		0.0066454	10.0	0.0066000	10.0000000%	0			0.0000000	77fly1	0
125	sn g	cm248s	rc	cu		0.0031213	10.0	0.0031000	10.0000000%	0			0.0000000	77fly1	0
125		es253s	rc	cu		0.0194771	10.4	0.0193000	0.0020000	0			0.0000000	76fly1	0
125	sn g	es253s	rc	cu		0.0092642	9.8	0.0091800	0.0009000	0			0.0000000	76fly1	0
125	sn g	es253s	rc	cu	su	0.0000000	0.0	0.0090000	0.0010000	0			0.0000000	73uni1	0
125		fm254s	es	re		0.1143078	30.0	0.1137000	0.0000000	0			0.0000000	75mee1	0
125		fm254s	rc	cu		0.1387377	17.4	0.1380000	0.0240000	0			0.0000000	77gin1	0
125	sn g	fm254s	rc	cu		0.0663528	10.6	0.0660000	0.0070000	0			0.0000000	73uni1	0
125	sn g	fm254s	rc	cu		0.0663528	10.6	0.0660000	0.0070000	0			0.0000000	77gin1	0
125		fm255t	rc	cu		3.3379628	19.9	3.4200000	0.6800000	0			0.0000000	75fly3	0
125	sn g	fm255t	rc	cu	su	0.0000000	0.0	1.6000000	0.2000000	0			0.0000000	73uni1	0
125	sn g	fm255t	rc	cu		1.5909004	19.6	1.6300000	0.3200000	0			0.0000000	75fly3	0
125		fm256s	rc	cu	x1	0.0000000	0.0	1.5000000	0.5000000	0			0.0000000	72fly1	0
125		fm256s	es	cu		0.4430458	30.0	0.4400000	0.0000000	0			0.0000000	75mee1	0
125	sn g	fm256s	rc	cu	su	0.0000000	0.0	0.5600000	0.2000000	0			0.0000000	73uni1	0
125	sn g	fm256s	rc	cu	x1	0.0000000	0.0	0.6000000	0.2000000	0			0.0000000	72fly1	0
125		np237h	es	cu		1.4992174	30.0	1.5000000	0.0000000	0			0.0000000	75mee1	0
125		u232t	es	cu		0.1588599	5.7	0.1580000	5.0000000%	99	mo	g	u232t	4.1500000	75mee1	0
125	sn g	u232t	rc	cu	x5	0.0000000	0.0	5.6000000	0.0200000	99	mo	g	u235t	0.0000000	79man1	7
125	sn g	u232t	rc	cu		0.0925007	5.7	0.0920000	0.0030000	99	mo	g	u232t	4.1500000	79man1	0
125		u238s	es	cu		0.0059894	30.0	0.0060000	0.0000000	0			0.0000000	75mee1	0
125		np237t	es	cu		0.0000000	0.0	0.0310000	0.0000000	0			0.0000000	72sid1	0
125		pu240t	es	cu		0.0000000	0.0	0.0610000	0.0000000	0			0.0000000	72sid1	0
125		pu242t	es	cu		0.0000000	0.0	0.0560000	0.0000000	0			0.0000000	72sid1	0
125	sn g	np236t	rc	cu		0.0000000	0.0	0.0420000	0.0080000	0			0.0000000	81gin2	0
126		cf250s	es	cu		0.0439694	30.0	0.0450000	0.0000000	0			0.0000000	75mee1	0
126		cm244s	es	cu		0.0681290	30.0	0.0700000	0.0000000	0			0.0000000	75mee1	0

126	cm248s	es	cu	0.0132532	30.0	0.0130000	0.0000000	0			0.0000000	75mee1	0
126	es253s	es	cu	0.0299468	30.0	0.0310000	0.0000000	0			0.0000000	75mee1	0
126	fm254s	es	cu	0.1638339	30.0	0.1800000	0.0000000	0			0.0000000	75mee1	0
126	fm255t	es	cu	2.4046357	30.0	2.5500000	0.0000000	0			0.0000000	75mee1	0
126	fm256s	es	cu	0.4186595	30.0	0.4400000	0.0000000	0			0.0000000	75mee1	0
126	np237h	es	cu	1.8992991	30.0	1.9000000	0.0000000	0			0.0000000	75mee1	0
126	u232t	es	cu	0.2286639	30.0	0.2400000	0.0000000	0			0.0000000	75mee1	0
126	u238s	es	cu	0.0069825	30.0	0.0070000	0.0000000	0			0.0000000	75mee1	0
126	np237t	es	cu	0.0000000	0.0	0.0760000	0.0000000	0			0.0000000	72sid1	0
126	pu240t	es	cu	0.0000000	0.0	0.1400000	0.0000000	0			0.0000000	72sid1	0

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nuclide	material	tech.	type	value	err.	value		nuclide	material	value	no.	treatment
126	pu242t	es	cu	0.0000000	0.0	0.1200000	0.0000000	0			0.0000000	72sid1	0
127	cf250s	es	cu	0.1130769	30.0	0.1140000	0.0000000	0			0.0000000	75mee1	0
127 sb g	cf250s	rc	cu	0.1130769	10.0	0.1140000	10.0000000%	0			0.0000000	77fly1	0
127	cm244s	es	cu	0.1986636	30.0	0.2000000	0.0000000	0			0.0000000	75mee1	0
127 sb g	cm244s	rc	cu	0.1986636	10.0	0.2000000	0.0200000	0			0.0000000	72fly2	0
127	cm248s	es	cu	0.0311509	30.0	0.0310000	0.0000000	0			0.0000000	75mee1	0
127 sb g	cm248s	rc	cu	0.0311509	10.0	0.0310000	10.0000000%	0			0.0000000	77fly1	0
127	es253s	es	cu	0.0634564	30.0	0.0640000	0.0000000	0			0.0000000	75mee1	0
127 sb g	es253s	rc	cu	0.0633573	9.4	0.0639000	0.0060000	0			0.0000000	76fly1	0
127 sb g	es253s	rc	cu	su	0.0000000	0.0	0.0640000	0.0050000	0		0.0000000	73uni1	0
127	fm254s	es	cu	0.2330338	32.1	1.0000000	0.0000000	127 sb g	fm254s	0.9924770	75mee1	0
127 sb g	fm254s	rc	cu	0.2614266	22.2	0.2700000	0.0600000	0			0.0000000	73har1	0
127 sb g	fm254s	rc	cu	su	0.0000000	0.0	0.2400000	0.0200000	0		0.0000000	73uni1	0
127 sb g	fm254s	rc	cu	0.2323792	12.5	0.2400000	0.0300000	0			0.0000000	77gin1	0
127	fm255t	es	cu	2.3218784	30.0	2.3900000	0.0000000	0			0.0000000	75mee1	0
127 sb g	fm255t	rc	cu	su	0.0000000	0.0	2.4000000	0.3000000	0		0.0000000	73uni1	0
127 sb g	fm255t	rc	cu	2.3218784	10.0	2.3900000	0.2400000	0			0.0000000	75fly3	0
127	fm256s	es	cu	0.4293297	30.0	0.4400000	0.0000000	0			0.0000000	75mee1	0
127 sb g	fm256s	rc	cu	su	0.0000000	0.0	0.4100000	0.0700000	0		0.0000000	73uni1	0
127 sb g	fm256s	rc	cu	0.4293297	18.2	0.4400000	0.0800000	0			0.0000000	72fly1	0
127	np237h	es	cu	2.5193427	30.0	2.5200000	0.0000000	0			0.0000000	75mee1	0
127 sb g	np237h	rc	cu	2.4794924	15.1	2.5200000	0.1500000	99 mo g	np237h	4.9400000	60col1	0

| | | |

129 sb g es253s rc cu su 0.0000000 0.0 0.3100000 0.0300000 0 0.0000000 73uni1 0
129 sb g fm254s rc cu 0.7722622 10.1 0.7900000 0.0800000 0 0.0000000 73uni1 0
129 sb g fm254s rc cu 0.8602415 10.2 0.8800000 0.0900000 0 0.0000000 77gin1 0
129 sb g fm255t rc cu su 0.0000000 0.0 2.4000000 0.3000000 0 0.0000000 73uni1 0
129 sb g fm255t rc cu 2.2635885 9.9 2.3300000 0.2300000 0 0.0000000 75fly3 0
129 sb g fm256s rc cu su 0.0000000 0.0 0.8200000 0.1400000 0 0.0000000 73uni1 0
129 sb g fm256s rc cu 0.8586595 17.0 0.8800000 0.1500000 0 0.0000000 72fly1 0
129 np237h es cu 3.2987826 30.0 3.3000000 0.0000000 0 0.0000000 75mee1 0
129 u232t es cu 2.0752022 30.0 2.1000000 0.0000000 0 0.0000000 75mee1 0
129 sb g u232t rc cu 1.5613426 9.5 1.5800000 0.1500000 0 0.0000000 85had1 0
129 sb g u232t rc cu 1.5514607 6.4 1.5700000 0.1000000 0 0.0000000 89had1 0
129 xe g u238s rc cu 0.0254728 20.1 0.0290000 0.0020000 136 xe g u238s 6.5000000 53fle1 0
129 xe g u238s ms cu ul 0.0000000 0.0 0.0120000 0.0000000 136 xe g u238s 6.0000000 53wet1 0
129 xe g u238s es cu 0.0299734 30.0 0.0300000 0.0000000 0 0.0000000 75mee1 0
129 xe g u238s rc cu 0.0265663 23.0 0.0880000 0.0130000 129 xe g u238s 0.0880000 50mac2 0
129 xe g u238s rc cu rp 0.0229111 36.9 0.0880000 0.0000000 no. relative values = 3 50mac2
129 u238s cm cu ul 0.0000000 0.0 0.0120000 0.0000000 0 0.0000000 69gun2 0
129 xe g u238s ms cu 0.0285472 33.4 0.0300000 0.0100000 136 xe g u238s 6.0000000 71sab1 0
129 np238t es cu cm 0.0000000 0.0 0.8600000 0.1700000 0 0.0000000 88sol1 0
129 sb g pa231h rc cu 0.0000000 0.0 0.1360000 0.0070000 97 zr g pa231h 1.0000000 66bro1 0
129 sb g pa231h cm cu 0.0000000 0.0 0.5800000 5.0000000% 0 0.0000000 77cro1 0
129 sb g cm242s rc cu 0.0000000 0.0 1.3000000 0.3000000 0 0.0000000 54ste2 0
129 np237t es cu 0.0000000 0.0 1.0300000 0.0000000 0 0.0000000 72sid1 0
129 sb g np237t rc cu 0.0000000 0.0 0.9900000 0.1300000 0 0.0000000 80thi1 0
129 pu240t es cu 0.0000000 0.0 1.3600000 0.0000000 0 0.0000000 72sid1 0
129 pu242t es cu 0.0000000 0.0 0.8500000 0.0000000 0 0.0000000 72sid1 0
129 sb g np236t rc cu 0.0000000 0.0 1.3600000 0.1500000 0 0.0000000 81gin2 0
130 cf250s es cu 0.8793880 30.0 0.9000000 0.0000000 0 0.0000000 75mee1 0
130 cm244s es cu 1.9905500 5.0 2.0000000 5.0000000% 0 0.0000000 75mee1 0
130 cm248s es cu 2.0275426 30.0 2.0000000 0.0000000 0 0.0000000 75mee1 0
130 es253s es cu 0.5796151 30.0 0.6000000 0.0000000 0 0.0000000 75mee1 0
130 fm254s es cu 1.4983898 30.0 1.6000000 0.0000000 0 0.0000000 75mee1 0
130 fm255t es cu 2.4823311 30.0 2.7000000 0.0000000 0 0.0000000 75mee1 0
130 fm256s es cu 1.5451272 30.0 1.6000000 0.0000000 0 0.0000000 75mee1 0
130 np237h es cu 3.5981219 30.0 3.6000000 0.0000000 0 0.0000000 75mee1 0
130 u232t es cu 2.9964617 30.0 3.1000000 0.0000000 0 0.0000000 75mee1 0

130 u238s es cu 0.1396491 30.0 0.1400000 0.0000000 0 0.0000000 75mee1 0
130 np238t es cu cm 0.0000000 0.0 1.6200000 0.3300000 0 0.0000000 88sol1 0
130 i g np238t es fi 0.0000000 0.0 0.0005400 0.0001800 130 np238t 1.0000000 70tra1 0
130 np237t es cu 0.0000000 0.0 1.9300000 0.0000000 0 0.0000000 72sid1 0
130 pu240t es cu 0.0000000 0.0 2.1700000 0.0000000 0 0.0000000 72sid1 0
130 pu242t es cu 0.0000000 0.0 1.6400000 0.0000000 0 0.0000000 72sid1 0
131 xe g cf250s ms re 1.6790353 4.2 0.3433000 0.0045000 136 xe g cf250s 1.0000000 80sri1 0
131 xe g cf250s ms cu x1 0.0000000 0.0 1.1300000 9.7000000% 0 0.0000000 80sri1 0
131 i g cf250s rc cu 1.4458490 10.0 1.4500000 10.0000000% 0 0.0000000 77fly1 0
131 i g cf250s sp cu 1.8048184 5.0 1.8100000 5.0000000% 0 0.0000000 77fly1 0
131 xe g cm244s ms cu 2.9692036 6.4 3.0300000 0.1500000 132 xe g cm244s 4.2700000 72fly2 0
131 xe g cm244s ms re 3.0190662 4.3 40.0000000 0.0000000 136 xe g cm244s 100.0000000 70man1 0
131 cm244s es cu 2.9929125 5.0 3.0000000 5.0000000% 0 0.0000000 75mee1 0
131 i g cm244s rc cu 3.1425582 10.2 3.1500000 0.3200000 0 0.0000000 72fly2 0
131 xe g cm248s ms cu 2.2153801 9.9 2.2100000 9.9000000% 0 0.0000000 80sri1 0
131 i g cm248s rc cu 2.5161105 10.0 2.5100000 10.0000000% 0 0.0000000 77fly1 0
131 i g cm248s sp cu 2.7466704 5.0 2.7400000 5.0000000% 0 0.0000000 77fly1 0
131 i g es253s rc cu 1.1361863 10.4 1.1500000 0.1200000 0 0.0000000 76fly1 0
131 i g es253s rc cu su 0.0000000 0.0 1.2000000 0.1000000 0 0.0000000 73uni1 0
131 i g fm254s rc cu 2.2930076 7.3 2.3300000 0.1700000 0 0.0000000 73har1 0
131 i g fm254s rc cu 2.6571332 11.1 2.7000000 0.3000000 0 0.0000000 73uni1 0
131 i g fm254s rc cu 2.5390384 10.1 2.5800000 0.2600000 0 0.0000000 77gin1 0
131 i g fm255t rc cu su 0.0000000 0.0 3.4000000 0.4000000 0 0.0000000 73uni1 0
131 i g fm255t rc cu 3.2149648 10.1 3.3500000 0.3400000 0 0.0000000 75fly3 0
131 i g fm256s rc cu su 0.0000000 0.0 2.4000000 0.5000000 0 0.0000000 73uni1 0
131 i g fm256s rc cu 2.5369485 19.2 2.6000000 0.5000000 0 0.0000000 72fly1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

131 xe g np237h ms re 4.1092397 4.1 21.7900000 0.1600000 136 xe g np237h 25.9600000 79tep1 0
131 i g np237h rc cu nr 3.4935249 20.1 3.5500000 0.5900000 99 mo g np237h 4.9400000 60col1 0
131 i g np237h cm cu 0.0000000 0.0 3.5500000 17.0000000% 0 0.0000000 77cro1 0
131 u232t rc cu su 0.0000000 0.0 3.5400000 0.0000000 99 mo g u232t 3.9400000 73man2 0
131 i g u232t rc cu x4 0.0000000 0.0 1.4000000 0.1600000 0 0.0000000 90chu1 0
131 i g u232t rc cu 3.5588628 5.6 3.5800000 0.2000000 0 0.0000000 89had1 0

131 i g u232t rc cu 4.0658517 5.0 4.0900000 0.0600000 0 0.0000000 71kem1 0
131 i g u232t rc cu x5 0.0000000 0.0 2.0300000 0.0160000 99 mo g u235t 0.0000000 79man1 7
131 i g u232t rc cu 3.8502630 5.7 3.8200000 0.0300000 99 mo g u232t 4.1500000 79man1 0
131 i g u232t rc cu 3.5091581 5.0 3.5300000 0.1600000 0 0.0000000 85had1 0
131 te m u232t rc cu 1.4016750 37.6 1.4100000 0.5300000 0 0.0000000 90chu1 0
131 xe g u238s rc cu 0.5387519 20.1 0.6130000 0.0100000 136 xe g u238s 6.5000000 53fle1 0
131 xe g u238s rc cu 0.4751519 10.2 0.5240000 0.0310000 136 xe g u238s 6.3000000 60you1 0
131 xe g u238s ms cu 0.4332134 4.8 0.4550000 0.0200000 136 xe g u238s 6.0000000 53wet1 0
131 u238s es cu 0.4518584 5.0 0.4520000 5.0000000% 0 0.0000000 75mee1 0
131 xe g u238s rc cu x4 0.0000000 0.0 0.7400000 0.0200000 136 xe g u238s 6.0000000 50mac2 0
131 xe g u238s ms cu 0.6188763 40.0 0.6500000 40.0000000% 136 xe g u238s 6.0000000 71sab1 36
131 i g u238s rc cu 0.4198684 33.3 0.4200000 0.1400000 0 0.0000000 61kur1 0
131 i g u238s rc cu 0.4798496 62.5 0.4800000 0.3000000 0 0.0000000 66men1 0
131 i g u238s rc cu 0.2981397 71.5 0.2800000 0.2000000 99 mo g u238s 5.7000000 73pur1 0
131 i g u238s rc cu 0.3998747 50.0 0.4000000 0.2000000 0 0.0000000 56kur1 0
131 i g u238s rc cu x7 0.0000000 0.0 0.0000300 0.0000100 0 dps/g 0.0720000 57ash1 0
131 i g u238s rc cu 0.3998747 25.0 0.4000000 0.1000000 0 0.0000000 57ash1 0
131 i g u238s cm cu 0.0000000 0.0 0.3500000 0.0000000 0 0.0000000 69gun2 0
131 xe g np238t ms re 0.0000000 0.0 0.4170000 0.0020000 134 xe g np238t 1.0000000 88sol1 0
131 np238t es cu cm 0.0000000 0.0 2.9900000 0.2100000 0 0.0000000 88sol1 0
131 i g pu240s rc cu 0.0000000 0.0 2.3400000 0.0500000 0 0.0000000 62lai1 0
131 i g pa231h rc cu 0.0000000 0.0 3.3700000 0.3200000 99 mo g pa231h 3.2100000 69bir1 0
131 i g pa231h cm cu 0.0000000 0.0 3.3700000 10.0000000% 0 0.0000000 77cro1 0
131 xe g th232s ms cu 0.0000000 0.0 0.5090000 0.0200000 136 xe g th232s 6.0000000 53wet1 0
131 np238t ms re 0.0000000 0.0 0.6640000 0.0040000 132 np238t 1.0000000 73tra1 0
131 i g pu240s rc cu 0.0000000 0.0 2.3400000 0.0500000 0 0.0000000 61lai1 0
131 am241r ms re 0.0000000 0.0 0.7630000 0.0030000 132 am241r 1.0000000 73tra1 0
131 i g cm242s rc cu 0.0000000 0.0 2.0000000 0.4000000 0 0.0000000 54ste2 0
131 te m cm242s rc cu 0.0000000 0.0 2.3000000 0.5000000 0 0.0000000 54ste2 0
131 te m cm242s rc in 0.0000000 0.0 0.4300000 0.0000000 131 cm242s 1.0000000 60gle1 0
131 xe g pu244s ms re 0.0000000 0.0 33.0000000 3.0000000 136 xe g pu244s 100.0000000 66mar1 0
131 xe g pu244s ms re 0.0000000 0.0 31.0000000 8.0000000 136 xe g pu244s 100.0000000 69was1 0
131 xe g pu244s ms re 0.0000000 0.0 26.0000000 3.0000000 136 xe g pu244s 100.0000000 70row1 0
131 xe g pu244s ms re 0.0000000 0.0 25.1000000 2.2000000 136 xe g pu239s 100.0000000 71ale1 0
131 i g cf254s rc cu x5 0.0000000 0.0 2.6000000 0.2000000 131 i g cf252s 1.8000000 74wol3 0
131 xe g np237t rc re 0.0000000 0.0 0.4437000 0.0160000 136 xe g np237t 1.0000000 72pet2 0

131 np237t ms re 0.0000000 0.0 0.6730000 0.0100000 132 np237t 1.0000000 73tra1 0
131 np237t es cu 0.0000000 0.0 2.9800000 0.0000000 0 0.0000000 72sid1 0
131 i g np237t rc cu 0.0000000 0.0 3.5100000 0.2800000 0 0.0000000 80thi1 0
131 pu240t es cu 0.0000000 0.0 3.3500000 0.0000000 0 0.0000000 72sid1 0
131 pu242t es cu 0.0000000 0.0 2.6300000 0.0000000 0 0.0000000 72sid1 0
131 i g np236t rc cu 0.0000000 0.0 3.9900000 0.3000000 0 0.0000000 81gin2 0
131 te m np236t rc cu 0.0000000 0.0 0.6800000 0.0600000 0 0.0000000 81gin2 0
131 i g cm246s rc cu 0.0000000 0.0 3.3900000 0.2900000 0 0.0000000 81gin3 0
132 xe g cf250s ms re 2.4733124 4.2 0.5057000 0.0068000 136 xe g cf250s 1.0000000 80sri1 0
132 xe g cf250s ms cu x1 0.0000000 0.0 1.6700000 10.2000000% 0 0.0000000 80sri1 0
132 te g cf250s rc cu 2.2435588 10.0 2.2500000 10.0000000% 0 0.0000000 77fly1 0
132 te g cf250s sp cu 2.3333011 5.0 2.3400000 5.0000000% 0 0.0000000 77fly1 0
132 xe g cm244s ms cu rp 4.2098496 7.3 4.2700000 0.0000000 no. relative values = 5 72fly2
132 xe g cm244s ms re 4.2074662 4.3 55.8000000 0.0000000 136 xe g cm244s 100.0000000 70man1 0
132 cm244s es cu x3 0.0000000 0.0 4.2000000 5.0000000% 0 0.0000000 75mee1 0
132 te g cm244s rc cu x1 0.0000000 0.0 4.2700000 0.2200000 0 0.0000000 72fly2 0
132 te g cm244s es fc 4.0226246 5.7 0.9623000 4.0000000% 132 cm244s 1.0000000 89rid1 0
132 xe g cm248s ms cu 3.7390805 9.9 3.7300000 9.9000000% 0 0.0000000 80sri1 0
132 te g cm248s rc cu 4.3204925 10.0 4.3100000 10.0000000% 0 0.0000000 77fly1 0
132 te g cm248s sp cu 4.4608333 5.0 4.4500000 5.0000000% 0 0.0000000 77fly1 0
132 te g es253s rc cu 2.3711714 10.0 2.4000000 0.2400000 0 0.0000000 76fly1 0
132 te g es253s rc cu su 0.0000000 0.0 2.4000000 0.2000000 0 0.0000000 73uni1 0
132 i g fm254s rc fi 0.6725288 18.9 0.2000000 0.0200000 132 fm254s 1.0000000 73har1 0
132 te g fm254s rc cu 2.7984260 10.9 2.9300000 0.3200000 0 0.0000000 73har1 0
132 te g fm254s rc fc 2.6564889 21.9 0.7900000 0.0000000 132 fm254s 1.0000000 73har1 0
132 te g fm254s rc cu 2.8652826 10.0 3.0000000 0.3000000 0 0.0000000 73uni1 0
132 te g fm254s rc cu 2.8843845 9.9 3.0200000 0.3000000 0 0.0000000 77gin1 0
132 te g fm255t rc cu su 0.0000000 0.0 5.3000000 0.5000000 0 0.0000000 73uni1 0
132 te g fm255t rc cu 4.7603364 10.0 4.9000000 0.4900000 0 0.0000000 75fly3 0
132 te g fm256s rc cu su 0.0000000 0.0 3.6000000 0.5000000 0 0.0000000 73uni1 0
132 te g fm256s rc cu 3.8331238 12.8 3.9000000 0.5000000 0 0.0000000 72fly1 0
132 xe g np237h ms re 4.3940011 4.0 23.3000000 0.1400000 136 xe g np237h 25.9600000 79tep1 0
132 te g np237h rc cu nr 4.2217526 20.6 4.2900000 0.7400000 99 mo g np237h 4.9400000 60col1 0
132 te g np237h cm cu 0.0000000 0.0 4.2900000 17.0000000% 0 0.0000000 77cro1 0
132 u232t rc cu su 0.0000000 0.0 4.5200000 0.0000000 99 mo g u232t 3.9400000 73man2 0
132 i g u232t rc cu x5 0.0000000 0.0 1.7170000 0.0370000 99 mo g u235t 0.0000000 79man1 7

132 i g u232t rc cu 4.7155259 5.7 4.6900000 0.1000000 99 mo g u232t 4.1500000 79man1 0
132 i g u232t rc cu 6.4655590 17.2 6.5200000 1.1200000 0 0.0000000 90chu1 0
132 te g u232t rc cu 4.8194197 5.0 4.8600000 0.0800000 0 0.0000000 71kem1 0
132 te g u232t rc cu 5.3053283 5.0 5.3500000 0.1700000 0 0.0000000 85had1 0
132 te g u232t rc cu 4.9086682 5.0 4.9500000 0.1700000 0 0.0000000 89had1 0
132 xe g u238s rc cu 3.2875172 20.1 3.7400000 0.0300000 136 xe g u238s 6.5000000 53fle1 0
132 xe g u238s rc cu 3.2921215 10.2 3.6300000 0.2200000 136 xe g u238s 6.3000000 60you1 0
132 xe g u238s ms cu 3.3995916 2.6 3.5700000 0.0600000 136 xe g u238s 6.0000000 53wet1 0
132 u238s es cu 3.0595206 5.0 3.0600000 5.0000000% 0 0.0000000 75mee1 0
132 xe g u238s rc cu 3.2948423 20.1 3.4600000 0.0250000 136 xe g u238s 6.0000000 50mac2 0
132 u238s cm cu 0.0000000 0.0 2.8100000 0.0000000 0 0.0000000 69gun2 0
132 xe g u238s ms cu 3.3138876 2.1 3.4800000 0.0200000 136 xe g u238s 6.0000000 71sab1 0
132 i g u238s rc cu 3.4694563 12.1 3.4700000 0.4200000 0 0.0000000 61kur1 0
132 i g u238s rc cu 2.8995457 31.0 2.9000000 0.9000000 0 0.0000000 66men1 0
132 i g u238s rc cu x7 0.0000000 0.0 0.0002500 0.0000300 0 dps/g 0.0720000 57ash1 0
132 i g u238s rc cu 3.5994360 11.1 3.6000000 0.4000000 0 0.0000000 57ash1 0
132 te g u238s rc cu x7 0.0000000 0.0 0.0002200 0.0000200 0 dps/g 0.0000000 66rao1 0
132 te g u238s rc cu 3.5194485 9.1 3.5200000 0.3200000 0 0.0000000 66rao1 0
132 te g u238s rc cu 3.9993733 15.0 4.0000000 0.6000000 0 0.0000000 67jad1 0
132 te g u238s rc cu 4.4992950 11.1 4.5000000 0.5000000 0 0.0000000 56rus1 0
132 te g ac227f rc re 0.0000000 0.0 5.1300000 20.0000000% 91 sr g ac227f 5.8100000 65iye1 0
132 te g ac227f cm cu 0.0000000 0.0 4.6200000 10.0000000% 0 0.0000000 77cro1 0
132 xe g np238t ms re 0.0000000 0.0 0.6180000 0.0020000 134 xe g np238t 1.0000000 88sol1 0
132 np238t es cu cm 0.0000000 0.0 4.5200000 0.3200000 0 0.0000000 88sol1 0
132 pa231h cm cu 0.0000000 0.0 4.8000000 3.5000000% 0 0.0000000 77cro1 0
132 i g pa231h rc cu 0.0000000 0.0 4.7200000 0.1600000 99 mo g pa231h 3.2100000 69bir1 0
132 te g pa231h rc cu 0.0000000 0.0 1.1400000 0.0600000 97 zr g pa231h 1.0000000 66bro1 0
132 xe g th232s ms cu 0.0000000 0.0 3.6300000 0.0800000 136 xe g th232s 6.0000000 53wet1 0
132 te g cm242s rc cu 0.0000000 0.0 5.8000000 0.9000000 0 0.0000000 54ste2 0
132 i g pu242s rc cu 0.0000000 0.0 5.0000000 0.7000000 131 i g pu242s 1.0000000 67gan2 0
132 xe g pu244s ms re 0.0000000 0.0 93.0000000 8.0000000 136 xe g pu244s 100.0000000 66mar1 0
132 xe g pu244s ms re 0.0000000 0.0 97.0000000 8.0000000 136 xe g pu244s 100.0000000 69was1 0
132 xe g pu244s ms re 0.0000000 0.0 88.0000000 4.0000000 136 xe g pu244s 100.0000000 70row1 0
132 xe g pu244s ms re 0.0000000 0.0 87.6000000 3.1000000 136 xe g pu239s 100.0000000 71ale1 0
132 te g cf254s rc cu x5 0.0000000 0.0 2.9000000 0.2000000 132 te g cf252s 2.5000000 74wol3 0
132 xe g np237t rc re 0.0000000 0.0 0.6945000 0.0160000 136 xe g np237t 1.0000000 72pet2 0

132 np237t es cu 0.0000000 0.0 4.3500000 0.0000000 0 0.0000000 72sid1 0
132 i g np237t rc cu 0.0000000 0.0 4.3000000 0.3400000 0 0.0000000 80thi1 0
132 pu240t es cu 0.0000000 0.0 4.8300000 0.0000000 0 0.0000000 72sid1 0
132 pu242t es cu 0.0000000 0.0 3.9900000 0.0000000 0 0.0000000 72sid1 0
132 te g np236t rc cu 0.0000000 0.0 4.9700000 0.2300000 0 0.0000000 81gin2 0
132 te g cm246s rc cu 0.0000000 0.0 4.6800000 0.3800000 0 0.0000000 81gin3 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

133 i g cf250s rc cu 3.8290070 10.0 3.8400000 10.0000000% 0 0.0000000 77fly1 0
133 i g cf250s sp cu 3.9486634 5.0 3.9600000 5.0000000% 0 0.0000000 77fly1 0
133 i g cf250s rc cu 3.6495223 11.2 3.6600000 0.4100000 0 0.0000000 81gin4 0
133 cm244s es cu 5.5867700 5.0 5.6000000 5.0000000% 0 0.0000000 75mee1 0
133 xe g cm244s ms cu 5.6640216 6.4 5.7800000 0.2900000 132 xe g cm244s 4.2700000 72fly2 0
133 xe g cm244s ms re 5.7211304 4.3 75.8000000 0.0000000 136 xe g cm244s 100.0000000 70man1 0
133 i g cm244s rc cu x1 0.0000000 0.0 7.4500000 1.5000000 0 0.0000000 72fly2 0
133 i g cm248s rc cu 4.9269043 10.0 4.9100000 10.0000000% 0 0.0000000 77fly1 0
133 i g cm248s sp cu 5.3483503 5.0 5.3300000 5.0000000% 0 0.0000000 77fly1 0
133 i g es253s rc cu 2.6478081 10.1 2.6800000 0.2700000 0 0.0000000 76fly1 0
133 i g es253s rc cu su 0.0000000 0.0 2.7000000 0.3000000 0 0.0000000 73uni1 0
133 i g fm254s rc cu 4.6647450 6.8 4.7400000 0.3200000 0 0.0000000 73har1 0
133 i g fm254s rc cu su 0.0000000 0.0 3.4000000 0.3000000 0 0.0000000 73uni1 0
133 i g fm254s rc cu 3.2377661 10.0 3.2900000 0.3300000 0 0.0000000 77gin1 0
133 i g fm255t rc cu su 0.0000000 0.0 5.7000000 0.6000000 0 0.0000000 73uni1 0
133 i g fm255t rc cu 5.4209545 10.0 5.5800000 0.5600000 0 0.0000000 75fly3 0
133 i g fm256s rc cu su 0.0000000 0.0 3.6000000 0.7000000 0 0.0000000 73uni1 0
133 i g fm256s rc cu 3.8054227 20.5 3.9000000 0.8000000 0 0.0000000 72fly1 0
133 np237h es cu 4.4983400 30.0 4.5000000 0.0000000 0 0.0000000 75mee1 0
133 u232t rc cu su 0.0000000 0.0 5.4700000 0.0000000 99 mo g u232t 3.9400000 73man2 0
133 xe g u232t rc cu x5 0.0000000 0.0 1.2600000 0.0100000 99 mo g u235t 0.0000000 79man1 7
133 xe g u232t rc cu 5.6846815 5.7 5.6400000 0.0500000 99 mo g u232t 4.1500000 79man1 0
133 i g u232t rc cu 5.4774677 5.1 5.5100000 0.2800000 0 0.0000000 71kem1 0
133 i g u232t rc cu 5.4973496 5.0 5.5300000 0.1100000 0 0.0000000 85had1 0
133 i g u232t rc cu 5.8254012 18.1 5.8600000 1.0600000 0 0.0000000 90chu1 0
133 i g u232t rc cu 5.5669363 5.0 5.6000000 0.1000000 0 0.0000000 89had1 0

133 te m u232t rc cu 5.8452831 18.0 5.8800000 1.0600000 0 0.0000000 90chu1 0
133 u238s es cu 5.5991226 2.0 5.6000000 2.0000000% 0 0.0000000 75mee1 0
133 i g u238s rc cu 3.2994830 30.3 3.3000000 1.0000000 0 0.0000000 66men1 0
133 i g u238s rc cu 5.9637278 8.2 5.6000000 0.4000000 99 mo g u238s 5.7000000 73pur1 0
133 i g u238s rc cu x1 0.0000000 0.0 1.4000000 0.3000000 0 0.0000000 61kur1 0
133 i g u238s rc cu x1 0.0000000 0.0 1.6000000 0.4000000 0 0.0000000 56kur1 0
133 i g u238s rc cu x7 0.0000000 0.0 0.0001000 0.0000200 0 dps/g 0.0720000 57ash1 0
133 i g u238s rc cu x1 0.0000000 0.0 1.5000000 0.3000000 0 0.0000000 57ash1 0
133 i g u238s cm cu 0.0000000 0.0 1.1300000 0.0000000 0 0.0000000 69gun2 0
133 cs g np238t ms re 0.0000000 0.0 1.0700000 0.0400000 137 cs g np238t 1.0000000 88sol1 0
133 np238t es cu cm 0.0000000 0.0 6.7500000 0.4700000 0 0.0000000 88sol1 0
133 i g pu240s rc cu 0.0000000 0.0 8.1900000 0.1200000 0 0.0000000 62lai1 0
133 pa231h cm cu 0.0000000 0.0 5.9500000 3.9000000% 0 0.0000000 77cro1 0
133 xe g pa231h rc cu 0.0000000 0.0 6.1900000 0.2200000 99 mo g pa231h 3.2100000 69bir1 0
133 i g pa231h rc cu 0.0000000 0.0 5.7400000 0.1000000 99 mo g pa231h 3.2100000 69bir1 0
133 np238t ms re 0.0000000 0.0 1.4980000 0.0140000 132 np238t 1.0000000 73tra1 0
133 i g pu240s rc cu 0.0000000 0.0 8.1900000 0.1200000 0 0.0000000 61lai1 0
133 i g cm242s rc cu 0.0000000 0.0 5.7000000 0.8000000 0 0.0000000 54ste2 0
133 i g pu242s rc cu 0.0000000 0.0 5.3000000 0.7000000 131 i g pu242s 1.0000000 67gan2 0
133 i g cf254s rc cu x5 0.0000000 0.0 4.9000000 0.4000000 133 i g cf252s 3.9000000 74wol3 0
133 np237t es cu 0.0000000 0.0 6.6000000 0.0000000 0 0.0000000 72sid1 0
133 xe g np237t rc cu 0.0000000 0.0 6.5500000 0.3600000 0 0.0000000 80thi1 0
133 pu240t es cu 0.0000000 0.0 6.7300000 0.0000000 0 0.0000000 72sid1 0
133 pu242t es cu 0.0000000 0.0 5.8800000 0.0000000 0 0.0000000 72sid1 0
133 i g np236t rc cu 0.0000000 0.0 6.1300000 0.3300000 0 0.0000000 81gin2 0
133 te m np236t rc cu 0.0000000 0.0 1.8200000 0.1100000 0 0.0000000 81gin2 0
133 i g cm246s rc cu 0.0000000 0.0 5.8100000 0.5300000 0 0.0000000 81gin3 0
134 cf250s es cu 3.9885489 30.0 4.0000000 0.0000000 0 0.0000000 75mee1 0
134 xe g cf250s ms re 4.1621295 4.1 0.8510000 0.0067000 136 xe g cf250s 1.0000000 80sri1 0
134 xe g cf250s ms cu x1 0.0000000 0.0 2.8100000 10.0000000% 0 0.0000000 80sri1 0
134 xe g cm244s ms cu 6.7940748 6.4 6.9400000 0.3500000 132 xe g cm244s 4.2700000 72fly2 0
134 xe g cm244s ms re 6.8465579 4.3 90.8000000 0.0000000 136 xe g cm244s 100.0000000 70man1 0
134 cm244s es cu 6.7772807 5.0 6.8000000 5.0000000% 0 0.0000000 75mee1 0
134 cm248s es cu 5.5378711 30.0 5.5000000 0.0000000 0 0.0000000 75mee1 0
134 xe g cm248s ms cu 4.9236709 10.0 4.8900000 10.0000000% 0 0.0000000 80sri1 0
134 es253s es cu 2.9490378 30.0 3.0000000 0.0000000 0 0.0000000 75mee1 0

134 fm254s es cu 4.3934334 30.0 4.6000000 0.0000000 0 0.0000000 75mee1 0
134 i g fm254s rc fi 2.8682740 17.2 0.5800000 0.0370000 134 fm254s 1.0000000 73har1 0
134 fm255t es cu 5.8465654 30.0 6.2000000 0.0000000 0 0.0000000 75mee1 0
134 fm256s es cu 4.0981475 30.0 4.2000000 0.0000000 0 0.0000000 75mee1 0
134 xe g np237h ms re 5.4557276 4.0 28.9300000 0.1800000 136 xe g np237h 25.9600000 79tep1 0
134 np237h es cu 4.7995573 30.0 4.8000000 0.0000000 0 0.0000000 75mee1 0
134 u232t es cu 6.0964618 30.0 6.2000000 0.0000000 0 0.0000000 75mee1 0
134 i g u232t rc cu 4.0511972 5.0 4.1200000 0.1000000 0 0.0000000 89had1 0
134 i m u232t rc cu 0.9144693 10.8 0.9300000 0.1000000 0 0.0000000 89had1 0
134 te g u232t rc cu 2.5860798 5.0 2.6300000 0.1000000 0 0.0000000 89had1 0
134 xe g u238s rc cu 4.7556909 20.1 5.4100000 0.0300000 136 xe g u238s 6.5000000 53fle1 0
134 xe g u238s rc cu 4.6617855 10.2 5.1400000 0.3100000 136 xe g u238s 6.3000000 60you1 0
134 xe g u238s ms cu 4.7520282 2.4 4.9900000 0.0700000 136 xe g u238s 6.0000000 53wet1 0
134 u238s es cu 4.9794483 2.0 4.9800000 2.0000000% 0 0.0000000 75mee1 0
134 xe g u238s rc cu 4.8567823 20.1 5.1000000 0.0140000 136 xe g u238s 6.0000000 50mac2 0
134 u238s cm cu x3 0.0000000 0.0 3.9400000 0.0000000 0 0.0000000 69gun2 0
134 xe g u238s ms cu 4.7520282 2.1 4.9900000 0.0100000 136 xe g u238s 6.0000000 71sab1 0
134 i g u238s rc cu 4.9994461 12.0 5.0000000 0.6000000 0 0.0000000 61kur1 0
134 i g u238s rc cu x4 0.0000000 0.0 7.2000000 1.4000000 0 0.0000000 66men1 0
134 i g u238s rc cu x7 0.0000000 0.0 0.0003600 0.0000400 0 dps/g 0.0720000 57ash1 0
134 i g u238s rc cu 5.1994239 10.0 5.2000000 0.5000000 0 0.0000000 57ash1 0
134 np238t es cu cm 0.0000000 0.0 7.3600000 0.5200000 0 0.0000000 88sol1 0
134 i g pa231h rc cu 0.0000000 0.0 9.1800000 0.1900000 99 mo g pa231h 3.2100000 69bir1 0
134 i g pa231h cm cu 0.0000000 0.0 9.1800000 5.0000000% 0 0.0000000 77cro1 0
134 xe g th232s ms cu 0.0000000 0.0 5.1200000 0.1000000 136 xe g th232s 6.0000000 53wet1 0
134 np238t ms re 0.0000000 0.0 1.6340000 0.0140000 132 np238t 1.0000000 73tra1 0
134 am241r ms re 0.0000000 0.0 1.4630000 0.0110000 132 am241r 1.0000000 73tra1 0
134 i g cm242s rc cu 0.0000000 0.0 6.9000000 1.0000000 0 0.0000000 54ste2 0
134 i g pu242s rc cu 0.0000000 0.0 6.7000000 1.0000000 131 i g pu242s 1.0000000 67gan2 0
134 i g pu242s rc cu 0.0000000 0.0 6.9000000 1.0000000 131 i g pu242s 1.0000000 67gan2 0
134 xe g pu244s ms re 0.0000000 0.0 91.0000000 2.5000000 136 xe g pu244s 100.0000000 66mar1 0
134 xe g pu244s ms re 0.0000000 0.0 93.0000000 1.0000000 136 xe g pu244s 100.0000000 69was1 0
134 xe g pu244s ms re 0.0000000 0.0 91.0000000 5.0000000 136 xe g pu244s 100.0000000 70row1 0
134 xe g pu244s ms re 0.0000000 0.0 92.1000000 2.7000000 136 xe g pu239s 100.0000000 71ale1 0
134 i g cf254s rc cu x5 0.0000000 0.0 5.4000000 0.5000000 134 i g cf252s 4.5000000 74wol3 0
134 xe g np237t rc re 0.0000000 0.0 1.0772000 0.0289000 136 xe g np237t 1.0000000 72pet2 0

134 np237t ms re 0.0000000 0.0 1.6400000 0.0300000 132 np237t 1.0000000 73tra1 0
134 np237t es cu 0.0000000 0.0 7.6800000 0.0000000 0 0.0000000 72sid1 0
134 i g np237t rc cu 0.0000000 0.0 6.6200000 0.5500000 0 0.0000000 80thi1 0
134 i g np237t rc fi 0.0000000 0.0 18.9100000 4.2900000 134 np237t 100.0000000 80thi1 0
134 i m np237t rc fi 0.0000000 0.0 13.6900000 3.1100000 134 np237t 100.0000000 80thi1 0
134 pu240t es cu 0.0000000 0.0 7.6500000 0.0000000 0 0.0000000 72sid1 0
134 pu242t es cu 0.0000000 0.0 7.4800000 0.0000000 0 0.0000000 72sid1 0
134 np236t rc cu 0.0000000 0.0 8.9000000 1.3000000 0 0.0000000 81gin2 0
134 i g np236t rc cu 0.0000000 0.0 3.8000000 1.2000000 0 0.0000000 81gin2 0
134 te g np236t rc cu 0.0000000 0.0 5.0600000 0.4600000 0 0.0000000 81gin2 0
135 i g cf250s sp cu 3.9973685 5.0 4.0300000 5.0000000% 0 0.0000000 77fly1 0
135 cm244s es cu 7.3825176 5.0 7.4000000 5.0000000% 0 0.0000000 75mee1 0
135 xe g cm244s ms cu 7.3495090 6.5 7.5000000 0.3800000 132 xe g cm244s 4.2700000 72fly2 0
135 xe g cm244s ms re 7.6080468 4.3 100.8000000 0.0000000 136 xe g cm244s 100.0000000 70man1 0
135 i g cm244s rc cu 5.4670535 20.1 5.4800000 1.1000000 0 0.0000000 72fly2 0
135 i g cm244s es cu cm 6.5844076 5.0 6.6000000 5.0000000% 0 0.0000000 75mee1 0
135 i g cm248s sp cu 5.6393487 5.0 5.6200000 5.0000000% 0 0.0000000 77fly1 0
135 i g es253s rc cu 3.8531536 10.0 3.9000000 0.3900000 0 0.0000000 76fly1 0
135 i g es253s rc cu su 0.0000000 0.0 3.9000000 0.4000000 0 0.0000000 73uni1 0
135 xe g fm254s rc cu 4.2317307 6.0 4.3000000 0.2600000 0 0.0000000 73har1 0
135 xe g fm254s rc fi 1.2341266 7.5 0.2800000 0.0100000 135 fm254s 1.0000000 73har1 0
135 i g fm255t rc cu su 0.0000000 0.0 6.3000000 0.6000000 0 0.0000000 73uni1 0
1
0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special
nuclide material tech. type value err. value nuclide material value no. treatment

135 i g fm255t rc cu 5.9747079 10.1 6.1500000 0.6200000 0 0.0000000 75fly3 0
135 i g fm256s rc cu su 0.0000000 0.0 5.0000000 0.9000000 0 0.0000000 73uni1 0
135 i g fm256s rc cu 5.3074021 18.5 5.4000000 1.0000000 0 0.0000000 72fly1 0
135 np237h es cu 4.9981555 30.0 5.0000000 0.0000000 0 0.0000000 75mee1 0
135 u232t rc cu su 0.0000000 0.0 5.3800000 0.0000000 99 mo g u232t 3.9400000 73man2 0
135 u232t rc cu x4 0.0000000 0.0 6.3300000 0.7000000 0 0.0000000 71kem1 0
135 u232t es cu 5.2289437 30.0 5.2600000 0.0000000 0 0.0000000 89rid1 0
135 xe g u232t rc cu x5 0.0000000 0.0 1.2500000 0.0360000 99 mo g u235t 0.0000000 79man1 7
135 xe g u232t rc cu 5.2815126 5.7 5.2400000 0.0800000 99 mo g u232t 4.1500000 79man1 0
135 xe g u232t rc cu su 0.0000000 0.0 5.2800000 0.2200000 0 0.0000000 85had1 0

135 xe g u232t rc cu 5.2488256 5.3 5.2800000 0.2800000 0 0.0000000 89had1 0
135 xe m u232t rc cu 1.3619112 20.4 1.3700000 0.2800000 0 0.0000000 89had1 0
135 i g u232t rc cu x1 0.0000000 0.0 5.3700000 0.6000000 0 0.0000000 90chu1 0
135 i g u232t rc cu 3.5886857 6.4 3.6100000 0.2300000 0 0.0000000 89had1 0
135 i g u232t es fc 3.3063367 20.4 0.6253000 20.0000000% 135 u232t 1.0000000 89rid1 0
135 u238s es cu 5.2291806 2.0 5.2300000 2.0000000% 0 0.0000000 75mee1 0
135 u238s cm cu 0.0000000 0.0 3.9400000 0.0000000 0 0.0000000 69gun2 0
135 i g u238s rc cu 4.8992323 12.2 4.9000000 0.6000000 0 0.0000000 61kur1 0
135 i g u238s rc cu 4.0993576 14.6 4.1000000 0.6000000 0 0.0000000 66men1 0
135 i g u238s rc cu 4.9992166 16.0 5.0000000 0.8000000 0 0.0000000 56kur1 0
135 i g u238s rc cu x7 0.0000000 0.0 0.0003500 0.0000400 0 dps/g 0.0720000 57ash1 0
135 i g u238s rc cu 5.0992010 10.0 5.1000000 0.5000000 0 0.0000000 57ash1 0
135 np238t es cu cm 0.0000000 0.0 6.2600000 0.5000000 0 0.0000000 88sol1 0
135 cs g np238t ms re 0.0000000 0.0 1.1000000 0.5000000 137 cs g np238t 1.0000000 88sol1 0
135 xe g np238t ms re 0.0000000 0.0 0.7780000 0.0230000 134 xe g np238t 1.0000000 88sol1 0
135 xe g np238t ms re 0.0000000 0.0 0.8170000 0.0270000 134 xe g np238t 1.0000000 88sol1 0
135 i g pu240s rc cu 0.0000000 0.0 6.3900000 0.6700000 0 0.0000000 62lai1 0
135 xe g pa231h rc cu 0.0000000 0.0 6.8000000 0.3800000 99 mo g pa231h 3.2100000 69bir1 0
135 xe g pa231h rc fi 0.0000000 0.0 0.3900000 0.0070000 135 pa231h 1.0000000 69bir1 0
135 xe g pa231h cm cu 0.0000000 0.0 6.5000000 6.0000000% 0 0.0000000 77cro1 0
135 np238t ms re 0.0000000 0.0 1.3900000 0.0500000 132 np238t 1.0000000 73tra1 0
135 i g pu240s rc cu 0.0000000 0.0 6.3900000 0.6700000 0 0.0000000 61lai1 0
135 i g cm242s rc cu 0.0000000 0.0 3.9000000 0.6000000 0 0.0000000 54ste2 0
135 i g pu242s rc cu 0.0000000 0.0 4.9000000 0.8000000 131 i g pu242s 1.0000000 67gan2 0
135 i g pu242s rc cu 0.0000000 0.0 5.0000000 0.8000000 131 i g pu242s 1.0000000 67gan2 0
135 i g cf254s rc cu x5 0.0000000 0.0 4.6000000 0.6000000 135 i g cf252s 4.4000000 74wol3 0
135 np237t es cu 0.0000000 0.0 6.6900000 0.0000000 0 0.0000000 72sid1 0
135 xe g np237t rc cu 0.0000000 0.0 7.7700000 0.3500000 0 0.0000000 80thi1 0
135 xe g np237t rc fi 0.0000000 0.0 2.9600000 0.5200000 135 np237t 100.0000000 80thi1 0
135 xe m np237t rc fi 0.0000000 0.0 7.2400000 1.2800000 135 np237t 100.0000000 80thi1 0
135 pu240t es cu 0.0000000 0.0 7.2500000 0.0000000 0 0.0000000 72sid1 0
135 pu242t es cu 0.0000000 0.0 7.5000000 0.0000000 0 0.0000000 72sid1 0
135 i g np236t rc cu 0.0000000 0.0 6.3100000 0.4000000 0 0.0000000 81gin2 0
135 i g cm246s rc cu 0.0000000 0.0 6.3100000 0.6300000 0 0.0000000 81gin3 0
136 cf250s es cu 5.3845410 30.0 5.4000000 0.0000000 0 0.0000000 75mee1 0
136 xe g cf250s ms cu x1 0.0000000 0.0 3.3000000 10.0000000% 0 0.0000000 80sri1 0

136 xe g cf250s ms re rp 4.8902652 3.2 1.0000000 0.0000000 no. relative values = 3 80sri1
136 cs g cm244s rc fi ul 0.0000000 0.0 0.0016800 0.0027000 136 cm244s 1.0000000 72fly2 0
136 xe g cm244s ms cu 7.4304075 6.4 7.5900000 0.3800000 132 xe g cm244s 4.2700000 72fly2 0
136 xe g cm244s ms re rp 7.4579466 7.3 100.0000000 0.0000000 no. relative values = 5 70man1
136 cm244s es cu 7.6742738 5.0 7.7000000 5.0000000% 0 0.0000000 75mee1 0
136 cm248s es cu 6.2301871 30.0 6.2000000 0.0000000 0 0.0000000 75mee1 0
136 xe g cm248s ms cu 4.5721535 9.9 4.5500000 9.9000000% 0 0.0000000 80sri1 0
136 es253s es cu 4.1286529 30.0 4.2000000 0.0000000 0 0.0000000 75mee1 0
136 fm254s es cu 5.2530182 30.0 5.5000000 0.0000000 0 0.0000000 75mee1 0
136 fm255t es cu 6.1294637 30.0 6.5000000 0.0000000 0 0.0000000 75mee1 0
136 fm256s es cu 4.6835972 30.0 4.8000000 0.0000000 0 0.0000000 75mee1 0
136 xe g np237h ms re rp 4.8856842 2.9 25.9600000 0.0000000 no. relative values = 3 79tep1
136 np237h es cu 4.7995573 30.0 4.8000000 0.0000000 0 0.0000000 75mee1 0
136 u232t es cu 6.7662039 30.0 7.0000000 0.0000000 0 0.0000000 75mee1 0
136 xe g u238s rc cu rp 5.7954967 44.7 6.5000000 0.0000000 no. relative values = 2 53fle1
136 xe g u238s rc cu 5.7135993 10.2 6.3000000 0.3800000 136 xe g u238s 6.3000000 60you1 0
136 xe g u238s rc cu rp 5.8046009 18.3 6.3000000 0.0000000 no. relative values = 3 60you1
136 xe g u238s ms cu rp 5.7246069 3.6 6.0000000 0.0000000 no. relative values = 2 53wet1
136 u238s es cu 5.4591446 5.0 5.4600000 5.0000000% 0 0.0000000 75mee1 0
136 xe g u238s rc cu rp 5.7285818 44.7 6.0000000 0.0000000 no. relative values = 2 50mac2
136 xe g u238s cm cu x3 0.0000000 0.0 4.5800000 0.0000000 0 0.0000000 69gun2 0
136 xe g u238s ms cu rp 5.7672041 2.5 6.0000000 0.0000000 no. relative values = 3 71sab1
136 np238t es cu cm 0.0000000 0.0 7.4200000 0.5600000 0 0.0000000 88sol1 0
136 np238t ms re 0.0000000 0.0 1.6500000 0.0400000 132 np238t 1.0000000 73tra1 0
136 am241r ms re 0.0000000 0.0 1.4830000 0.0100000 132 am241r 1.0000000 73tra1 0
136 cs g cm242s rc cu 0.0000000 0.0 0.8000000 0.1200000 0 0.0000000 54ste2 0
136 np237t ms re 0.0000000 0.0 1.5800000 0.0300000 132 np237t 1.0000000 73tra1 0
136 np237t es cu 0.0000000 0.0 6.5300000 0.0000000 0 0.0000000 72sid1 0
136 pu240t es cu 0.0000000 0.0 6.8400000 0.0000000 0 0.0000000 72sid1 0
136 pu242t es cu 0.0000000 0.0 7.1200000 0.0000000 0 0.0000000 72sid1 0
137 cf250s es cu 5.4370189 30.0 5.5000000 0.0000000 0 0.0000000 75mee1 0
137 cm244s es cu 7.8527199 5.0 7.8900000 5.0000000% 0 0.0000000 75mee1 0
137 cs g cm244s rc cu 8.1015386 10.0 8.1400000 0.8100000 0 0.0000000 72fly2 0
137 cs g cm248s sp cu 6.0708291 5.0 6.0500000 5.0000000% 0 0.0000000 77fly1 0
137 es253s es cu 4.5218579 30.0 4.6000000 0.0000000 0 0.0000000 75mee1 0
137 fm254s es cu 5.5395464 30.0 5.8000000 0.0000000 0 0.0000000 75mee1 0

137		fm255t	es	cu		6.2237631	30.0	6.6000000	0.0000000	0		0.0000000	75mee1	0
137		fm256s	es	cu		5.0738969	30.0	5.2000000	0.0000000	0		0.0000000	75mee1	0
137		np237h	es	cu		5.0981186	30.0	5.1000000	0.0000000	0		0.0000000	75mee1	0
137		u232t	rc	cu		7.8042867	5.0	7.8700000	0.1100000	0		0.0000000	71kem1	0
137		u238s	es	cu		5.7981826	5.0	5.8000000	5.0000000%	0		0.0000000	75mee1	0
137		np238t	es	cu	cm	0.0000000	0.0	6.3300000	0.3100000	0		0.0000000	88sol1	0
137	i g	a242mf	rc	cu		0.0000000	0.0	2.4000000	0.3000000	0		0.0000000	81wal1	0
137	i g	cf249f	rc	cu		0.0000000	0.0	1.2500000	0.1700000	0		0.0000000	81wal1	0
137	i g	cf252f	rc	cu		0.0000000	0.0	3.0000000	0.3000000	0		0.0000000	81wal1	0
137	i g	cm245f	rc	cu		0.0000000	0.0	2.2000000	0.3000000	0		0.0000000	81wal1	0
137	i g	u232f	rc	cu		0.0000000	0.0	0.4800000	0.3400000	0		0.0000000	81wal1	0
137		np237t	es	cu		0.0000000	0.0	6.3300000	0.0000000	0		0.0000000	72sid1	0
137		pu240t	es	cu		0.0000000	0.0	6.5500000	0.0000000	0		0.0000000	72sid1	0
137		pu242t	es	cu		0.0000000	0.0	6.6700000	0.0000000	0		0.0000000	72sid1	0
138		cf250s	es	cu		5.7335836	30.0	5.8000000	0.0000000	0		0.0000000	75mee1	0
138		cm244s	es	cu		7.6636176	5.0	7.7000000	5.0000000%	0		0.0000000	75mee1	0
138		cm248s	es	cu		6.4623219	30.0	6.4000000	0.0000000	0		0.0000000	75mee1	0
138		es253s	es	cu		4.8167617	30.0	4.9000000	0.0000000	0		0.0000000	75mee1	0
138		fm254s	es	cu		5.7305653	30.0	6.0000000	0.0000000	0		0.0000000	75mee1	0
138		fm255t	es	cu		6.0351642	30.0	6.4000000	0.0000000	0		0.0000000	75mee1	0
138		fm256s	es	cu		5.2690468	30.0	5.4000000	0.0000000	0		0.0000000	75mee1	0
138		np237h	es	cu		4.9981555	30.0	5.0000000	0.0000000	0		0.0000000	75mee1	0
138		u232t	es	cu		7.1149790	30.0	7.2000000	0.0000000	0		0.0000000	75mee1	0
138	cs g	u232t	rc	cu	x1	0.0000000	0.0	7.7000000	0.4000000	0		0.0000000	85had1	0
138	cs g	u232t	rc	cu		4.9508395	5.0	5.0100000	0.0300000	0		0.0000000	89had1	0
138	cs m	u232t	rc	cu		0.7411436	22.7	0.7500000	0.1700000	0		0.0000000	89had1	0
138	xe g	u232t	rc	cu		3.8539469	5.0	3.9000000	0.0300000	0		0.0000000	89had1	0
138		u238s	es	cu		6.1972526	5.0	6.2000000	5.0000000%	0		0.0000000	75mee1	0
138	cs g	u238s	rc	cu	x7	0.0000000	0.0	0.0005500	0.0001100	0	dps/g	0.0000000	67rao1	0
138	cs g	u238s	rc	cu		8.2463441	20.0	8.2500000	1.6500000	0		0.0000000	67rao1	0
138	cs g	u238s	rc	cu	x7	0.0000000	0.0	0.0005600	0.0001200	0	dps/g	0.0000000	67rao1	0
138	cs g	u238s	rc	cu		8.3962777	21.4	8.4000000	1.8000000	0		0.0000000	67rao1	0
138	cs g	u238s	cm	cu		0.0000000	0.0	5.4700000	0.0000000	0		0.0000000	69gun2	0
138	xe g	u238s	rc	in		6.9968980	42.9	7.0000000	3.0000000	0		0.0000000	67bor2	0
138		np238t	es	cu	cm	0.0000000	0.0	6.3300000	1.2600000	0		0.0000000	88sol1	0
138		np237t	es	cu		0.0000000	0.0	6.5600000	0.0000000	0		0.0000000	72sid1	0

138 cs g np237t rc cu 0.0000000 0.0 6.2300000 0.3800000 0 0.0000000 80thi1 0
138 pu240t es cu 0.0000000 0.0 6.4200000 0.0000000 0 0.0000000 72sid1 0
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138 pu242t es cu 0.0000000 0.0 6.6000000 0.0000000 0 0.0000000 72sid1 0
139 ba g cf250s sp cu 6.2047774 5.0 6.2300000 5.0000000% 0 0.0000000 77fly1 0
139 ba g cf250s rc cu 6.2944130 9.0 6.3200000 0.5700000 0 0.0000000 81gin4 0
139 xe g cf250s rc fc 1.7262424 29.1 28.0000000 8.0000000 139 ba g cf250s 100.0000000 77mei1 0
139 xe g cf250s rc fc 1.4552915 26.0 23.6000000 6.0000000 139 cf250s 100.0000000 80mei1 0
139 xe g cf250s rc fc 1.4552915 26.0 0.2360000 0.0600000 139 cf250s 1.0000000 83mei1 0
139 cm244s es cu 6.9669251 5.0 7.0000000 5.0000000% 0 0.0000000 75mee1 0
139 ba g cm244s rc cu 7.1261691 10.1 7.1600000 0.7200000 0 0.0000000 72fly2 0
139 ba g cm248s sp cu 6.2213455 5.0 6.2000000 5.0000000% 0 0.0000000 77fly1 0
139 ba g es253s rc cu 5.8587694 10.1 5.9300000 0.6000000 0 0.0000000 76fly1 0
139 ba g es253s rc cu su 0.0000000 0.0 5.9000000 0.6000000 0 0.0000000 73uni1 0
139 ba g fm254s es fi 1.2071682 32.1 0.2500000 0.0000000 139 fm254s 1.0000000 73har1 0
139 ba g fm254s rc cu 4.9671062 9.6 5.1300000 0.4900000 0 0.0000000 73har1 0
139 fm255t es cu 5.6579665 30.0 6.0000000 0.0000000 0 0.0000000 75mee1 0
139 ba g fm256s rc cu su 0.0000000 0.0 5.8000000 0.8000000 0 0.0000000 73uni1 0
139 ba g fm256s rc cu 6.0936839 12.9 6.2000000 0.8000000 0 0.0000000 72fly1 0
139 ba g np237h rc cu 4.7621997 15.1 4.8400000 0.3500000 99 mo g np237h 4.9400000 60col1 0
139 ba g np237h cm cu 0.0000000 0.0 4.8400000 7.0000000% 0 0.0000000 77cro1 0
139 u232t es cu 7.0580799 30.0 7.1000000 0.0000000 0 0.0000000 75mee1 0
139 ba g u232t rc cu x1 0.0000000 0.0 8.2700000 0.2700000 0 0.0000000 85had1 0
139 ba g u232t rc cu 6.8692017 5.0 6.9100000 0.2700000 0 0.0000000 89had1 0
139 cs g u232t rc cu 6.2329805 5.0 6.2700000 0.2700000 0 0.0000000 89had1 0
139 xe g u232t rc cu 2.5647671 5.0 2.5800000 0.0700000 0 0.0000000 89had1 0
139 u238s es cu 6.8169778 5.0 6.8200000 5.0000000% 0 0.0000000 75mee1 0
139 ba g u238s rc cu x7 0.0000000 0.0 0.0004500 0.0001000 0 dps/g 0.0000000 67rao1 0
139 ba g u238s rc cu 6.7470088 22.2 6.7500000 1.5000000 0 0.0000000 67rao1 0
139 ba g u238s cm cu 0.0000000 0.0 6.0300000 0.0000000 0 0.0000000 69gun2 0
139 xe g u238s rc in 4.9977843 60.0 5.0000000 3.0000000 0 0.0000000 67bor2 0
139 np238t es cu cm 0.0000000 0.0 6.2900000 1.2600000 0 0.0000000 88sol1 0
139 ba g cm242s rc cu 0.0000000 0.0 6.6000000 0.7000000 0 0.0000000 54ste2 0

139 ba g cf254s rc cu x5 0.0000000 0.0 5.7000000 0.4000000 139 ba g cf252s 5.7000000 74wol3 0
139 xe g cf254s rc fc 0.0000000 0.0 0.8700000 0.0300000 139 cf254s 1.0000000 74wol3 0
139 np237t es cu 0.0000000 0.0 6.3400000 0.0000000 0 0.0000000 72sid1 0
139 pu240t es cu 0.0000000 0.0 5.9800000 0.0000000 0 0.0000000 72sid1 0
139 pu242t es cu 0.0000000 0.0 6.3800000 0.0000000 0 0.0000000 72sid1 0
139 ba g np236t rc cu 0.0000000 0.0 6.9000000 0.5300000 0 0.0000000 81gin2 0
140 ba g cf250s rc cu 5.6968422 10.0 5.7200000 10.0000000% 0 0.0000000 77fly1 0
140 ba g cf250s sp cu 5.1490689 5.0 5.1700000 5.0000000% 0 0.0000000 77fly1 0
140 xe g cf250s rc fc 0.9389287 39.3 18.0000000 7.0000000 140 ba g cf250s 100.0000000 77mei2 0
140 xe g cf250s rc fc 0.7685015 48.0 14.7000000 7.0000000 140 cf250s 100.0000000 80mei1 0
140 xe g cf250s rc fc 0.7685015 48.0 0.1470000 0.0700000 140 cf250s 1.0000000 83mei1 0
140 cm244s es cu 5.9799536 5.0 6.0000000 5.0000000% 0 0.0000000 75mee1 0
140 ba g cm244s rc cu 6.0198199 5.3 6.0400000 0.3200000 0 0.0000000 72fly2 0
140 ba g cm244s rc cu 6.2789513 5.0 6.3000000 0.1000000 0 0.0000000 82rag1 0
140 ba g cm248s rc cu 6.3818964 10.0 6.3600000 10.0000000% 0 0.0000000 77fly1 0
140 ba g cm248s sp cu 5.6794864 5.0 5.6600000 5.0000000% 0 0.0000000 77fly1 0
140 ba g es253s rc cu 5.5862466 5.0 5.6200000 0.2800000 0 0.0000000 76fly1 0
140 ba g es253s rc cu su 0.0000000 0.0 5.6000000 0.3000000 0 0.0000000 73uni1 0
140 la g fm254s rc cu 4.9438678 8.4 5.0000000 0.4200000 0 0.0000000 73har1 0
140 la g fm254s rc fi 0.1260739 39.3 0.0230000 0.0090000 140 fm254s 1.0000000 73har1 0
140 ba g fm254s rc cu 5.6360093 5.3 5.7000000 0.3000000 0 0.0000000 73uni1 0
140 ba g fm254s rc cu 5.4283669 10.0 5.4900000 0.5500000 0 0.0000000 77gin1 0
140 ba g fm255t rc cu su 0.0000000 0.0 5.2000000 0.5000000 0 0.0000000 73uni1 0
140 ba g fm255t rc cu 4.8272456 9.9 5.0300000 0.5000000 0 0.0000000 75fly3 0
140 ba g fm256s rc cu su 0.0000000 0.0 5.6000000 0.5000000 0 0.0000000 73uni1 0
140 ba g fm256s rc cu 5.9272483 8.3 6.0000000 0.5000000 0 0.0000000 72fly1 0
140 ba g np237h rc cu 4.8113960 15.1 4.8900000 0.3500000 99 mo g np237h 4.9400000 60col1 0
140 ba g np237h cm cu 0.0000000 0.0 4.8900000 7.0000000% 0 0.0000000 77cro1 0
140 u232t rc cu su 0.0000000 0.0 6.1300000 0.0000000 99 mo g u232t 3.9400000 73man2 0
140 u232t rc cu 6.9089656 5.0 6.9500000 0.0900000 0 0.0000000 71kem1 0
140 la g u232t rc cu 7.6744193 5.2 7.7200000 0.4000000 0 0.0000000 89had1 0
140 ba g u232t rc cu x5 0.0000000 0.0 1.7180000 0.0280000 99 mo g u235t 0.0000000 79man1 7
140 ba g u232t rc cu 7.1360896 5.7 7.0800000 0.1100000 99 mo g u232t 4.1500000 79man1 0
140 ba g u232t rc cu 6.5113273 9.9 6.5500000 0.6500000 0 0.0000000 85had1 0
140 u238s es cu 6.7989346 2.0 6.8000000 2.0000000% 0 0.0000000 75mee1 0
140 ba g u238s rc cu x1 0.0000000 0.0 9.6000000 1.2000000 0 0.0000000 61kur1 0

140 ba g u238s rc cu x7 0.0000000 0.0 0.0006200 0.0000700 0 dps/g 0.0720000 59hey1 0
140 ba g u238s rc cu su 0.0000000 0.0 9.6000000 1.2000000 0 0.0000000 59hey1 0
140 ba g u238s cm cu x3 0.0000000 0.0 7.3500000 0.0000000 0 0.0000000 69gun2 0
140 ba g u238s es fc 6.7978196 20.1 0.9999980 20.0000000% 140 u238s 1.0000000 89rid1 0
140 ba g ac227f rc re 0.0000000 0.0 8.4800000 20.0000000% 91 sr g ac227f 5.8100000 65iye1 0
140 ba g ac227f cm cu 0.0000000 0.0 8.2100000 10.0000000% 0 0.0000000 77cro1 0
140 np238t es cu cm 0.0000000 0.0 6.3100000 0.1600000 0 0.0000000 88sol1 0
140 ba g pu240s rc cu 0.0000000 0.0 5.9900000 0.2200000 0 0.0000000 62lai1 0
140 ba g pu240s rc cu 0.0000000 0.0 5.9900000 0.2200000 0 0.0000000 61lai1 0
140 ba g cm242s rc cu 0.0000000 0.0 5.9000000 0.8000000 0 0.0000000 54ste2 0
140 ba g cf254s rc cu x5 0.0000000 0.0 5.9000000 0.4000000 140 ba g cf252s 5.8100000 74wol3 0
140 xe g cf254s rc fc 0.0000000 0.0 0.6900000 0.0300000 140 cf254s 1.0000000 74wol3 0
140 np237t es cu 0.0000000 0.0 6.2700000 0.0000000 0 0.0000000 72sid1 0
140 la g np237t rc cu 0.0000000 0.0 6.1100000 0.4000000 0 0.0000000 80thi1 0
140 pu240t es cu 0.0000000 0.0 5.7200000 0.0000000 0 0.0000000 72sid1 0
140 pu242t es cu 0.0000000 0.0 6.0500000 0.0000000 0 0.0000000 72sid1 0
140 ba g np236t rc cu 0.0000000 0.0 6.2800000 0.2500000 0 0.0000000 81gin2 0
140 ba g cm246s rc cu 0.0000000 0.0 6.5400000 0.6500000 0 0.0000000 81gin3 0
141 ce g cf250s rc cu 5.8761134 10.0 5.9000000 10.0000000% 0 0.0000000 77fly1 0
141 ce g cf250s sp cu 5.8462349 5.0 5.8700000 5.0000000% 0 0.0000000 77fly1 0
141 xe g cf250s rc fc 0.5301407 99.1 9.1000000 9.0000000 141 cf250s 100.0000000 80mei1 0
141 xe g cf250s rc fc 0.5301407 99.9 0.0910000 0.1040000 141 cf250s 1.0000000 83mei1 0
141 cm244s es cu 5.4816241 5.0 5.5000000 5.0000000% 0 0.0000000 75mee1 0
141 ce g cm244s rc cu 5.7706552 5.0 5.7900000 0.2900000 0 0.0000000 72fly2 0
141 ce g cm248s rc cu 6.2012767 10.0 6.1800000 10.0000000% 0 0.0000000 77fly1 0
141 ce g cm248s sp cu 5.4587290 5.0 5.4400000 5.0000000% 0 0.0000000 77fly1 0
141 ce g es253s rc cu 5.7402108 10.0 5.8100000 0.5800000 0 0.0000000 76fly1 0
141 ce g es253s rc cu su 0.0000000 0.0 5.8000000 0.6000000 0 0.0000000 73uni1 0
141 ce g fm254s rc cu 4.7926811 7.8 4.8700000 0.3800000 0 0.0000000 73har1 0
141 ce g fm254s rc cu su 0.0000000 0.0 6.3000000 0.5000000 0 0.0000000 73uni1 0
141 ce g fm254s rc cu 6.1901363 7.9 6.2900000 0.5000000 0 0.0000000 77gin1 0
141 fm255t es cu 4.6206726 30.0 4.9000000 0.0000000 0 0.0000000 75mee1 0
141 fm256s es cu 5.7569215 30.0 5.9000000 0.0000000 0 0.0000000 75mee1 0
141 ce g fm256s rc cu su 0.0000000 0.0 6.6000000 1.3000000 0 0.0000000 73uni1 0
141 la g fm256s rc cu x1 0.0000000 0.0 7.1000000 1.4000000 0 0.0000000 72fly1 0
141 np237h es cu 4.7982293 30.0 4.8000000 0.0000000 0 0.0000000 75mee1 0

141 u232t rc cu su 0.0000000 0.0 7.0000000 0.0000000 99 mo g u232t 3.9400000 73man2 0
141 u232t rc cu 6.4914454 5.0 6.5300000 0.0400000 0 0.0000000 71kem1 0
141 ce g u232t rc cu x5 0.0000000 0.0 1.8650000 0.0100000 99 mo g u235t 0.0000000 79man1 7
141 ce g u232t rc cu 7.1764065 6.8 7.1200000 0.4400000 99 mo g u232t 4.1500000 79man1 0
141 ce g u232t rc cu 6.6703826 11.2 6.7100000 0.7500000 0 0.0000000 85had1 0
141 ce g u232t rc cu 7.2370172 5.0 7.2800000 0.2300000 0 0.0000000 89had1 0
141 u238s es cu 6.8969424 5.0 6.9000000 5.0000000% 0 0.0000000 75mee1 0
141 ce g u238s rc cu 6.8969424 20.3 6.9000000 1.4000000 0 0.0000000 64men1 0
141 ce g u238s rc cu x1 0.0000000 0.0 8.1900000 0.4620000 141 ce g u238s 8.1900000 67ish1 0
141 ce g u238s rc cu rp 6.8362043 12.8 8.1900000 0.0000000 no. relative values = 2 67ish1
141 ce g u238s cm cu x3 0.0000000 0.0 6.5400000 0.0000000 0 0.0000000 69gun2 0
141 np238t es cu cm 0.0000000 0.0 5.8000000 1.2000000 0 0.0000000 88sol1 0
141 ce g pu240s rc cu 0.0000000 0.0 6.0200000 0.3900000 0 0.0000000 62lai1 0
141 ce g pu240s rc cu 0.0000000 0.0 6.0200000 0.3900000 0 0.0000000 61lai1 0
141 ce g cf254s rc cu x5 0.0000000 0.0 5.3000000 0.7000000 141 ce g cf252s 5.8000000 74wol3 0
141 xe g cf254s rc fc 0.0000000 0.0 0.3500000 0.0300000 141 cf254s 1.0000000 74wol3 0
141 np237t es cu 0.0000000 0.0 5.7800000 0.0000000 0 0.0000000 72sid1 0
141 ce g np237t rc cu 0.0000000 0.0 6.1400000 0.4700000 0 0.0000000 80thi1 0
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141 pu240t es cu 0.0000000 0.0 5.5100000 0.0000000 0 0.0000000 72sid1 0
141 pu242t es cu 0.0000000 0.0 5.3200000 0.0000000 0 0.0000000 72sid1 0
141 ce g np236t rc cu 0.0000000 0.0 6.2300000 0.3700000 0 0.0000000 81gin2 0
141 ce g cm246s rc cu 0.0000000 0.0 5.4700000 0.5600000 0 0.0000000 81gin3 0
142 cf250s es cu 5.7530365 30.0 5.8000000 0.0000000 0 0.0000000 75mee1 0
142 la g cf250s rc cu 6.6060730 10.4 6.6600000 0.6900000 0 0.0000000 81gin4 0
142 xe g cf250s rc fc ul 0.0000000 0.0 3.6100000 0.0000000 142 cf250s 100.0000000 80mei1 0
142 xe g cf250s rc fc ul 0.0000000 0.0 0.0361000 0.0000000 142 cf250s 1.0000000 83mei1 0
142 cm244s es cu 4.8768476 5.0 4.9000000 5.0000000% 0 0.0000000 75mee1 0
142 la g cm248s sp cu 6.3016210 5.0 6.2800000 5.0000000% 0 0.0000000 77fly1 0
142 es253s es cu 5.7997743 30.0 5.9000000 0.0000000 0 0.0000000 75mee1 0
142 la g fm254s rc cu 4.9767887 8.6 5.1400000 0.4400000 0 0.0000000 73har1 0
142 la g fm254s es fi 1.4618391 32.1 0.3000000 0.0000000 142 fm254s 1.0000000 73har1 0
142 fm255t es cu 4.3377743 30.0 4.6000000 0.0000000 0 0.0000000 75mee1 0

142		fm256s	es	cu		5.2690468	30.0	5.4000000	0.0000000	0			0.0000000	75mee1	0
142		np237h	es	cu		4.4983400	30.0	4.5000000	0.0000000	0			0.0000000	75mee1	0
142		u232t	es	cu		5.8507359	30.0	5.9000000	0.0000000	0			0.0000000	75mee1	0
142	la g	u232t	rc	cu	x1	0.0000000	0.0	7.1400000	0.0700000	0			0.0000000	85had1	0
142	la g	u232t	rc	cu		6.6043900	5.0	6.6600000	0.2500000	0			0.0000000	89had1	0
142	la g	u232t	rc	cu		4.8194197	10.9	4.8600000	0.5300000	0			0.0000000	90chu1	0
142		u238s	es	cu		6.2972082	5.0	6.3000000	5.0000000%	0			0.0000000	75mee1	0
142	ce g	np238t	ms	re		0.0000000	0.0	0.8550000	0.0040000	140	ce g	np238t	1.0000000	88sol1	0
142		np238t	es	cu	cm	0.0000000	0.0	5.3800000	0.1300000	0			0.0000000	88sol1	0
142		np237t	es	cu		0.0000000	0.0	5.4600000	0.0000000	0			0.0000000	72sid1	0
142	la g	np237t	rc	cu		0.0000000	0.0	5.0300000	0.4000000	0			0.0000000	80thi1	0
142		pu240t	es	cu		0.0000000	0.0	4.8000000	0.0000000	0			0.0000000	72sid1	0
142		pu242t	es	cu		0.0000000	0.0	4.6800000	0.0000000	0			0.0000000	72sid1	0
142	la g	np236t	rc	cu		0.0000000	0.0	4.8800000	0.2300000	0			0.0000000	81gin2	0
142	la g	cm246s	rc	cu		0.0000000	0.0	5.7400000	1.4100000	0			0.0000000	81gin3	0
143	ce g	cf250s	rc	cu		5.7565992	10.0	5.7800000	10.0000000%	0			0.0000000	77fly1	0
143	ce g	cf250s	sp	cu		5.5175709	5.0	5.5400000	5.0000000%	0			0.0000000	77fly1	0
143		cm244s	es	cu		4.0863016	5.0	4.1000000	5.0000000%	0			0.0000000	75mee1	0
143	ce g	cm244s	rc	cu		3.8869698	5.1	3.9000000	0.2000000	0			0.0000000	72fly2	0
143	ce g	cm248s	rc	cu		5.4774580	10.0	5.4400000	10.0000000%	0			0.0000000	77fly1	0
143	ce g	es253s	rc	cu		6.4410814	5.0	6.4800000	0.3200000	0			0.0000000	76fly1	0
143	ce g	es253s	rc	cu	su	0.0000000	0.0	6.5000000	0.3000000	0			0.0000000	73uni1	0
143	ce g	fm254s	rc	cu		4.5269677	10.0	4.6000000	0.4600000	0			0.0000000	73har1	0
143	ce g	fm254s	rc	cu		5.6095035	5.3	5.7000000	0.3000000	0			0.0000000	73uni1	0
143	ce g	fm254s	rc	cu		5.5504561	5.3	5.6400000	0.3000000	0			0.0000000	77gin1	0
143	ce g	fm255t	rc	cu	su	0.0000000	0.0	3.7000000	0.4000000	0			0.0000000	73uni1	0
143	ce g	fm255t	rc	cu		3.1381895	10.1	3.2700000	0.3300000	0			0.0000000	75fly3	0
143		fm256s	es	cu		4.8787470	30.0	5.0000000	0.0000000	0			0.0000000	75mee1	0
143	ce g	fm256s	rc	cu	su	0.0000000	0.0	5.7000000	0.5000000	0			0.0000000	73uni1	0
143	ce g	fm256s	rc	cu	x1	0.0000000	0.0	6.1000000	0.5000000	0			0.0000000	72fly1	0
143	ce g	np237h	rc	cu		3.5417492	23.5	3.6000000	0.7400000	99	mo g	np237h	4.9400000	60col1	0
143	ce g	np237h	cm	cu		0.0000000	0.0	3.6000000	21.0000000%	0			0.0000000	77cro1	0
143		u232t	rc	cu	su	0.0000000	0.0	5.3000000	0.0000000	99	mo g	u232t	3.9400000	73man2	0
143		u232t	rc	cu		4.5708371	5.0	4.5900000	0.0600000	0			0.0000000	71kem1	0
143	ce g	u232t	rc	cu	x5	0.0000000	0.0	1.3530000	0.0830000	99	mo g	u235t	0.0000000	79man1	7
143	ce g	u232t	rc	cu		5.3310873	6.7	5.2800000	0.3200000	99	mo g	u232t	4.1500000	79man1	0

143 ce g u232t rc cu 5.3276642 5.0 5.3500000 0.2200000 0 0.0000000 85had1 0
143 ce g u232t rc cu 5.2280817 5.0 5.2500000 0.2400000 0 0.0000000 89had1 0
143 u238s es cu 7.3077095 5.0 7.3100000 5.0000000% 0 0.0000000 75mee1 0
143 u238s cm cu 0.0000000 0.0 6.0800000 0.0000000 0 0.0000000 69gun2 0
143 pr g u238s rc cu 7.4976499 10.0 7.5000000 0.5000000 0 0.0000000 56rus1 0
143 ce g u238s rc cu 7.8975246 17.7 7.9000000 1.4000000 0 0.0000000 61kur1 0
143 ce g u238s rc cu 6.3979946 15.6 6.4000000 1.0000000 0 0.0000000 64men1 0
143 ce g u238s rc cu 6.2993395 9.4 7.4900000 0.2340000 141 ce g u238s 8.1900000 67ish1 0
143 nd g ac227f cm cu 0.0000000 0.0 6.2700000 10.0000000% 0 0.0000000 77cro1 0
143 ce g ac227f rc re 0.0000000 0.0 6.1000000 20.0000000% 91 sr g ac227f 5.8100000 65iye1 0
143 nd g np238t ms re 0.0000000 0.0 1.6040000 0.0080000 146 nd g np238t 1.0000000 88sol1 0
143 np238t es cu cm 0.0000000 0.0 4.9000000 0.1200000 0 0.0000000 88sol1 0
143 pr g pu240s rc cu 0.0000000 0.0 4.7800000 0.3900000 0 0.0000000 62lai1 0
143 ce g pa231h rc cu 0.0000000 0.0 0.7820000 0.0310000 97 zr g pa231h 1.0000000 66bro1 0
143 ce g pa231h cm cu 0.0000000 0.0 3.0000000 35.0000000% 0 0.0000000 77cro1 0
143 pr g pu240s rc cu 0.0000000 0.0 4.7800000 0.3900000 0 0.0000000 61lai1 0
143 pr g cf254s rc cu x5 0.0000000 0.0 5.9000000 0.3000000 143 pr g cf252s 6.4000000 74wol3 0
143 xe g cf254s rc fc 0.0000000 0.0 0.0100000 0.0100000 143 cf254s 1.0000000 74wol3 0
143 np237t es cu 0.0000000 0.0 5.4900000 0.0000000 0 0.0000000 72sid1 0
143 ce g np237t rc cu 0.0000000 0.0 5.1000000 0.3700000 0 0.0000000 80thi1 0
143 pu240t es cu 0.0000000 0.0 4.5000000 0.0000000 0 0.0000000 72sid1 0
143 pu242t es cu 0.0000000 0.0 4.5600000 0.0000000 0 0.0000000 72sid1 0
143 ce g np236t rc cu 0.0000000 0.0 4.6800000 0.2100000 0 0.0000000 81gin2 0
143 ce g cm246s rc cu 0.0000000 0.0 5.4600000 0.5600000 0 0.0000000 81gin3 0
144 ce g cf250s rc cu 5.1490689 10.0 5.1700000 10.0000000% 0 0.0000000 77fly1 0
144 ce g cf250s sp cu 4.6411336 5.0 4.6600000 5.0000000% 0 0.0000000 77fly1 0
144 cm244s es cu 3.5829900 5.0 3.6000000 5.0000000% 0 0.0000000 75mee1 0
144 ce g cm244s rc cu 4.0209111 9.9 4.0400000 0.4000000 0 0.0000000 72fly2 0
144 ce g cm248s rc cu 6.0607947 10.0 6.0400000 10.0000000% 0 0.0000000 77fly1 0
144 ce g cm248s sp cu 5.7697963 5.0 5.7500000 5.0000000% 0 0.0000000 77fly1 0
144 ce g es253s rc cu 5.0980185 10.1 5.1600000 0.5200000 0 0.0000000 76fly1 0
144 ce g es253s rc cu su 0.0000000 0.0 5.2000000 0.5000000 0 0.0000000 73uni1 0
144 ce g fm254s rc cu 4.1839017 14.0 4.2800000 0.6000000 0 0.0000000 73har1 0
144 ce g fm254s rc cu 4.9854903 9.8 5.1000000 0.5000000 0 0.0000000 73uni1 0
144 ce g fm254s rc cu 4.9757148 9.8 5.0900000 0.5000000 0 0.0000000 77gin1 0
144 fm255t es cu 3.2061810 30.0 3.4000000 0.0000000 0 0.0000000 75mee1 0

144 fm256s es cu 4.4884473 30.0 4.6000000 0.0000000 0 0.0000000 75mee1 0
144 np237h es cu 2.9988933 30.0 3.0000000 0.0000000 0 0.0000000 75mee1 0
144 u232t rc cu 4.1550141 5.0 4.1900000 0.1800000 0 0.0000000 71kem1 0
144 la g u232t rc cu 3.7385211 5.0 3.7700000 0.0500000 0 0.0000000 89had1 0
144 u238s es cu 6.1572703 5.0 6.1600000 5.0000000% 0 0.0000000 75mee1 0
144 ce g u238s rc cu 5.9973412 16.7 6.0000000 1.0000000 0 0.0000000 64men1 0
144 ce g u238s rc cu 6.4971196 10.0 6.5000000 0.5000000 0 0.0000000 56rus1 0
144 ce g u238s cm cu 0.0000000 0.0 5.0800000 0.0000000 0 0.0000000 69gun2 0
144 nd g np238t ms re 0.0000000 0.0 1.4770000 0.0040000 146 nd g np238t 1.0000000 88sol1 0
144 np238t es cu cm 0.0000000 0.0 4.5100000 0.1100000 0 0.0000000 88sol1 0
144 ce g np238t ms re 0.0000000 0.0 0.7150000 0.0050000 140 ce g np238t 1.0000000 88sol1 0
144 np237t es cu 0.0000000 0.0 5.0100000 0.0000000 0 0.0000000 72sid1 0
144 pu240t es cu 0.0000000 0.0 3.9400000 0.0000000 0 0.0000000 72sid1 0
144 pu242t es cu 0.0000000 0.0 4.2100000 0.0000000 0 0.0000000 72sid1 0
144 ce g cm246s rc cu 0.0000000 0.0 5.1900000 0.9100000 0 0.0000000 81gin3 0
145 cf250s es cu 4.9427445 30.0 5.0000000 0.0000000 0 0.0000000 75mee1 0
145 cm244s es cu 3.0853525 5.0 3.1000000 5.0000000% 0 0.0000000 75mee1 0
145 cm248s es cu 4.4428463 30.0 4.4000000 0.0000000 0 0.0000000 75mee1 0
145 es253s es cu 5.7997743 30.0 5.9000000 0.0000000 0 0.0000000 75mee1 0
145 fm254s es cu 4.1069051 30.0 4.3000000 0.0000000 0 0.0000000 75mee1 0
145 fm255t es cu 2.8289832 30.0 3.0000000 0.0000000 0 0.0000000 75mee1 0
145 fm256s es cu 3.9029976 30.0 4.0000000 0.0000000 0 0.0000000 75mee1 0
145 pr g fm256s rc cu su 0.0000000 0.0 4.8000000 0.9000000 0 0.0000000 73uni1 0
145 pr g fm256s rc cu x1 0.0000000 0.0 5.2000000 1.0000000 0 0.0000000 72fly1 0
145 np237h es cu 2.4986957 30.0 2.5000000 0.0000000 0 0.0000000 75mee1 0
145 u232t es cu 2.4791254 30.0 2.5000000 0.0000000 0 0.0000000 75mee1 0
145 ce g u232t rc cu 3.0542825 5.0 3.0800000 0.1000000 0 0.0000000 89had1 0
145 u238s es cu 5.9973412 5.0 6.0000000 5.0000000% 0 0.0000000 75mee1 0
145 nd g np238t ms re 0.0000000 0.0 1.1760000 0.0050000 146 nd g np238t 1.0000000 88sol1 0
145 np238t es cu cm 0.0000000 0.0 3.5900000 0.0900000 0 0.0000000 88sol1 0
145 pr g cf254s rc cu x5 0.0000000 0.0 5.6000000 1.0000000 145 pr g cf252s 5.1960000 74wol3 0
145 np237t es cu 0.0000000 0.0 3.7300000 0.0000000 0 0.0000000 72sid1 0
145 pu240t es cu 0.0000000 0.0 3.0800000 0.0000000 0 0.0000000 72sid1 0
145 pu242t es cu 0.0000000 0.0 3.4600000 0.0000000 0 0.0000000 72sid1 0
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nuclide	material	tech.	type	value	err.	value		nuclide	material	value	no.	treatment
146	cf250s	es	cu	4.4484700	30.0	4.5000000	0.0000000	0		0.0000000	75mee1	0
146	cm244s	es	cu	2.5877150	5.0	2.6000000	5.0000000%	0		0.0000000	75mee1	0
146	cm248s	es	cu	3.7360298	30.0	3.7000000	0.0000000	0		0.0000000	75mee1	0
146	es253s	es	cu	5.4065692	30.0	5.5000000	0.0000000	0		0.0000000	75mee1	0
146	fm254s	es	cu	3.7248674	30.0	3.9000000	0.0000000	0		0.0000000	75mee1	0
146	fm255t	es	cu	2.4823311	30.0	2.7000000	0.0000000	0		0.0000000	75mee1	0
146	fm256s	es	cu	3.4151229	30.0	3.5000000	0.0000000	0		0.0000000	75mee1	0
146	np237h	es	cu	1.9989566	30.0	2.0000000	0.0000000	0		0.0000000	75mee1	0
146	u232t	es	cu	1.6716105	30.0	1.7000000	0.0000000	0		0.0000000	75mee1	0
146 ce g	u232t	rc	cu	2.3795867	6.2	2.4200000	0.1500000	0		0.0000000	89had1	0
146	u238s	es	cu	5.2434198	30.0	5.2500000	0.0000000	0		0.0000000	75mee1	0
146	np238t	es	cu	cm 0.0000000	0.0	3.0600000	0.0700000	0		0.0000000	88sol1	0
146	np237t	es	cu	0.0000000	0.0	2.8900000	0.0000000	0		0.0000000	72sid1	0
146 ce g	np237t	rc	cu	0.0000000	0.0	2.8700000	0.3600000	0		0.0000000	80thi1	0
146	pu240t	es	cu	0.0000000	0.0	2.5800000	0.0000000	0		0.0000000	72sid1	0
146	pu242t	es	cu	0.0000000	0.0	2.8200000	0.0000000	0		0.0000000	72sid1	0
147 nd g	cf250s	sp	cu	3.8144940	5.0	3.8300000	5.0000000%	0		0.0000000	77fly1	0
147	cm244s	es	cu	1.9905500	5.0	2.0000000	5.0000000%	0		0.0000000	75mee1	0
147 nd g	cm244s	rc	cu	1.4331960	20.1	1.4400000	0.2900000	0		0.0000000	72fly2	0
147 nd g	cm248s	sp	cu	3.1307416	5.0	3.1200000	5.0000000%	0		0.0000000	77fly1	0
147	es253s	es	cu	4.8167617	30.0	4.9000000	0.0000000	0		0.0000000	75mee1	0
147 nd g	fm254s	rc	cu	3.4469587	9.8	3.5600000	0.3500000	0		0.0000000	73har1	0
147	fm255t	es	cu	2.0226402	30.0	2.2000000	0.0000000	0		0.0000000	75mee1	0
147	fm256s	es	cu	3.1223981	30.0	3.2000000	0.0000000	0		0.0000000	75mee1	0
147 nd g	np237h	rc	cu	1.7020072	18.4	1.7300000	0.2500000	99 mo g	np237h	4.9400000	60col1	0
147 nd g	np237h	cm	cu	0.0000000	0.0	1.7300000	14.0000000%	0		0.0000000	77cro1	0
147	u232t	rc	cu su	0.0000000	0.0	1.3300000	0.0000000	99 mo g	u232t	3.9400000	73man2	0
147	u232t	rc	cu	1.0935053	5.0	1.1000000	0.0200000	0		0.0000000	71kem1	0
147 nd g	u232t	rc	cu x5	0.0000000	0.0	0.9170000	0.0220000	99 mo g	u235t	0.0000000	79man1	7
147 nd g	u232t	rc	cu	1.4010119	5.7	1.3900000	0.0300000	99 mo g	u232t	4.1500000	79man1	0
147	u238s	es	cu	4.3872488	30.0	4.3900000	0.0000000	0		0.0000000	75mee1	0
147 pm g	u238s	rc	cu	5.1967412	19.2	5.2000000	1.0000000	0		0.0000000	64men1	0
147 nd g	u238s	rc	cu	4.4971799	24.4	4.5000000	1.1000000	0		0.0000000	64men1	0
147 nd g	u238s	rc	cu	4.1973679	10.0	4.2000000	0.4000000	0		0.0000000	56rus1	0

147	nd	g	u238s	cm	cu		0.0000000	0.0	3.2100000	0.0000000	0		0.0000000	69gun2	0				
147	sm	g	np238t	ms	re		0.0000000	0.0	1.6870000	0.0120000	149	sm	g	np238t	1.0000000	88sol1	0		
147			np238t	es	cu	cm	0.0000000	0.0	2.4700000	0.0700000	0		0.0000000	88sol1	0				
147	nd	g	pu240s	rc	cu		0.0000000	0.0	1.2200000	0.3700000	0		0.0000000	62lai1	0				
147	nd	g	pu240s	rc	cu		0.0000000	0.0	1.2200000	0.3700000	0		0.0000000	61lai1	0				
147	nd	g	cf254s	rc	cu	x5	0.0000000	0.0	4.7000000	0.3000000	147	nd	g	cf252s	4.5000000	74wol3	0		
147			np237t	es	cu		0.0000000	0.0	2.1700000	0.0000000	0		0.0000000	72sid1	0				
147	nd	g	np237t	rc	cu		0.0000000	0.0	2.5700000	0.2100000	0		0.0000000	80thi1	0				
147			pu240t	es	cu		0.0000000	0.0	2.1300000	0.0000000	0		0.0000000	72sid1	0				
147			pu242t	es	cu		0.0000000	0.0	2.4000000	0.0000000	0		0.0000000	72sid1	0				
147	nd	g	np236t	rc	cu		0.0000000	0.0	1.5600000	0.0700000	0		0.0000000	81gin2	0				
147	nd	g	cm246s	rc	cu		0.0000000	0.0	2.6200000	0.2400000	0		0.0000000	81gin3	0				
148			cf250s	es	cu		3.4599211	30.0	3.5000000	0.0000000	0		0.0000000	75mee1	0				
148			cm244s	es	cu		1.6919675	5.0	1.7000000	5.0000000%	0		0.0000000	75mee1	0				
148			cm248s	es	cu		2.6253183	30.0	2.6000000	0.0000000	0		0.0000000	75mee1	0				
148			es253s	es	cu		3.8337491	30.0	3.9000000	0.0000000	0		0.0000000	75mee1	0				
148			fm254s	es	cu		2.8652826	30.0	3.0000000	0.0000000	0		0.0000000	75mee1	0				
148			fm255t	es	cu		1.7468256	30.0	1.9000000	0.0000000	0		0.0000000	75mee1	0				
148			fm256s	es	cu		2.7039725	30.0	2.8000000	0.0000000	0		0.0000000	75mee1	0				
148			np237h	es	cu		1.1993740	30.0	1.2000000	0.0000000	0		0.0000000	75mee1	0				
148			u232t	es	cu		0.9527660	30.0	1.0000000	0.0000000	0		0.0000000	75mee1	0				
148			u238s	es	cu		3.0361897	30.0	3.0400000	0.0000000	0		0.0000000	75mee1	0				
148	nd	g	np238t	ms	re		0.0000000	0.0	0.6470000	0.0020000	146	nd	g	np238t	1.0000000	88sol1	0		
148			np238t	es	cu	cm	0.0000000	0.0	1.9800000	0.0500000	0		0.0000000	88sol1	0				
148			np237t	es	cu		0.0000000	0.0	1.7400000	0.0000000	0		0.0000000	72sid1	0				
148			pu240t	es	cu		0.0000000	0.0	1.7800000	0.0000000	0		0.0000000	72sid1	0				
148			pu242t	es	cu		0.0000000	0.0	2.0000000	0.0000000	0		0.0000000	72sid1	0				
149	nd	g	cf250s	sp	cu		3.2567612	5.0	3.2700000	5.0000000%	0		0.0000000	77fly1	0				
149			cm244s	es	cu		1.3933850	5.0	1.4000000	5.0000000%	0		0.0000000	75mee1	0				
149	pm	g	cm244s	rc	cu		1.6521565	10.2	1.6600000	0.1700000	0		0.0000000	72fly2	0				
149	nd	g	cm244s	rc	cu		1.5327235	9.7	1.5400000	0.1500000	0		0.0000000	72fly2	0				
149			cm248s	es	cu		2.0275426	30.0	2.0000000	0.0000000	0		0.0000000	75mee1	0				
149	pm	g	es253s	rc	cu		3.1319222	10.1	3.1700000	0.3200000	0		0.0000000	76fly1	0				
149	pm	g	es253s	rc	cu	su	0.0000000	0.0	3.2000000	0.3000000	0		0.0000000	73uni1	0				
149	nd	g	fm254s	rc	cu		2.8461807	14.4	2.9800000	0.4300000	0		0.0000000	73har1	0				
149	pm	g	fm255t	rc	cu	su	0.0000000	0.0	1.9000000	0.3000000	0		0.0000000	73uni1	0				

149 pm g fm255t rc cu 1.4683272 9.8 1.5300000 0.1500000 0 0.0000000 75fly3 0
149 pm g fm256s rc cu su 0.0000000 0.0 2.5000000 0.4000000 0 0.0000000 73uni1 0
149 pm g fm256s rc cu 2.6537011 14.8 2.7000000 0.4000000 0 0.0000000 72fly1 0
149 np237h es cu 0.8993360 30.0 0.9000000 0.0000000 0 0.0000000 75mee1 0
149 u232t es cu 0.6669362 30.0 0.7000000 0.0000000 0 0.0000000 75mee1 0
149 u238s es cu 2.1890295 5.0 2.1900000 5.0000000% 0 0.0000000 75mee1 0
149 pm g u238s rc cu 2.2989808 13.0 2.3000000 0.3000000 0 0.0000000 64men1 0
149 pm g u238s cm cu 0.0000000 0.0 1.5000000 0.0000000 0 0.0000000 69gun2 0
149 np238t es cu cm 0.0000000 0.0 1.4600000 0.0400000 0 0.0000000 88sol1 0
149 pm g cf254s rc cu x5 0.0000000 0.0 3.0000000 0.2000000 149 pm g cf252s 2.6500000 74wol3 0
149 np237t es cu 0.0000000 0.0 1.1700000 0.0000000 0 0.0000000 72sid1 0
149 nd g np237t rc cu 0.0000000 0.0 1.7000000 0.2500000 0 0.0000000 80thi1 0
149 pu240t es cu 0.0000000 0.0 1.4000000 0.0000000 0 0.0000000 72sid1 0
149 pu242t es cu 0.0000000 0.0 1.6100000 0.0000000 0 0.0000000 72sid1 0
149 nd g np236t rc cu 0.0000000 0.0 1.1100000 0.0600000 0 0.0000000 81gin2 0
150 cf250s es cu 2.3611336 30.0 2.4000000 0.0000000 0 0.0000000 75mee1 0
150 cm244s es cu 0.9952750 5.0 1.0000000 5.0000000% 0 0.0000000 75mee1 0
150 cm248s es cu 1.5206570 30.0 1.5000000 0.0000000 0 0.0000000 75mee1 0
150 es253s es cu 2.4399404 30.0 2.5000000 0.0000000 0 0.0000000 75mee1 0
150 fm254s es cu 2.1539353 30.0 2.3000000 0.0000000 0 0.0000000 75mee1 0
150 fm255t es cu 1.2871347 30.0 1.4000000 0.0000000 0 0.0000000 75mee1 0
150 fm256s es cu 2.2211203 30.0 2.3000000 0.0000000 0 0.0000000 75mee1 0
150 np237h es cu 0.6994835 30.0 0.7000000 0.0000000 0 0.0000000 75mee1 0
150 u232t es cu 0.4954383 30.0 0.5200000 0.0000000 0 0.0000000 75mee1 0
150 u238s es cu 0.9982275 30.0 1.0000000 0.0000000 0 0.0000000 75mee1 0
150 nd g np238t ms re 0.0000000 0.0 0.3700000 0.0020000 146 nd g np238t 1.0000000 88sol1 0
150 np238t es cu cm 0.0000000 0.0 1.1200000 0.0300000 0 0.0000000 88sol1 0
150 np237t es cu 0.0000000 0.0 0.7900000 0.0000000 0 0.0000000 72sid1 0
150 pu240t es cu 0.0000000 0.0 1.0700000 0.0000000 0 0.0000000 72sid1 0
150 pu242t es cu 0.0000000 0.0 1.2700000 0.0000000 0 0.0000000 72sid1 0
151 pm g cf250s sp cu 2.0715790 5.0 2.0800000 5.0000000% 0 0.0000000 77fly1 0
151 cm244s es cu 0.6966925 5.0 0.7000000 5.0000000% 0 0.0000000 75mee1 0
151 pm g cm244s rc cu 0.6966925 10.0 0.7000000 0.0700000 0 0.0000000 72fly2 0
151 pm g cm248s sp cu 1.1840625 5.0 1.1800000 5.0000000% 0 0.0000000 77fly1 0
151 pm g es253s rc cu 1.9068170 9.8 1.9300000 0.1900000 0 0.0000000 76fly1 0
151 pm g es253s rc cu su 0.0000000 0.0 1.9000000 0.2000000 0 0.0000000 73uni1 0

151 fm254s es cu 1.6856885 30.0 1.8000000 0.0000000 0 0.0000000 75mee1 0
151 pm g fm255t rc cu su 0.0000000 0.0 1.4000000 0.2000000 0 0.0000000 73uni1 0
151 pm g fm255t rc cu 1.2859859 9.7 1.3400000 0.1300000 0 0.0000000 75fly3 0
151 pm g fm256s rc cu su 0.0000000 0.0 2.0000000 0.3000000 0 0.0000000 73uni1 0
151 pm g fm256s rc cu 2.0490738 14.3 2.1000000 0.3000000 0 0.0000000 72fly1 0
151 np237h es cu 0.5296090 30.0 0.5300000 0.0000000 0 0.0000000 75mee1 0
151 u232t es cu 0.3429958 30.0 0.3600000 0.0000000 0 0.0000000 75mee1 0
151 u238s es cu 0.1994986 30.0 0.2000000 0.0000000 0 0.0000000 75mee1 0
151 np238t es cu cm 0.0000000 0.0 0.7200000 0.0400000 0 0.0000000 88sol1 0
151 sm g np238t ms re 0.0000000 0.0 0.4930000 0.0160000 149 sm g np238t 1.0000000 88sol1 0
151 pm g cf254s rc cu x5 0.0000000 0.0 2.6000000 0.3000000 151 pm g cf252s 2.1800000 74wol3 0
151 np237t es cu 0.0000000 0.0 0.5800000 0.0000000 0 0.0000000 72sid1 0
151 pm g np237t rc cu 0.0000000 0.0 0.8100000 0.1200000 0 0.0000000 80thi1 0
151 pu240t es cu 0.0000000 0.0 0.8600000 0.0000000 0 0.0000000 72sid1 0
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151 pu242t es cu 0.0000000 0.0 1.0300000 0.0000000 0 0.0000000 72sid1 0
151 pm g np236t rc cu 0.0000000 0.0 0.5400000 0.0300000 0 0.0000000 81gin2 0
152 cf250s es cu 1.5740891 30.0 1.6000000 0.0000000 0 0.0000000 75mee1 0
152 cm244s es cu 0.5971650 5.0 0.6000000 5.0000000% 0 0.0000000 75mee1 0
152 cm248s es cu 0.9685018 30.0 0.9500000 0.0000000 0 0.0000000 75mee1 0
152 es253s es cu 1.5615619 30.0 1.6000000 0.0000000 0 0.0000000 75mee1 0
152 fm254s es cu 1.4983898 30.0 1.6000000 0.0000000 0 0.0000000 75mee1 0
152 fm255t es cu 1.1032583 30.0 1.2000000 0.0000000 0 0.0000000 75mee1 0
152 fm256s es cu 1.6416976 30.0 1.7000000 0.0000000 0 0.0000000 75mee1 0
152 np237h es cu 0.3997049 30.0 0.4000000 0.0000000 0 0.0000000 75mee1 0
152 u232t es cu 0.2667745 30.0 0.2800000 0.0000000 0 0.0000000 75mee1 0
152 u238s es cu 0.0498747 30.0 0.0500000 0.0000000 0 0.0000000 75mee1 0
152 sm g np238t ms re 0.0000000 0.0 0.4800000 0.0250000 149 sm g np238t 1.0000000 88sol1 0
152 np238t es cu cm 0.0000000 0.0 0.7100000 0.0400000 0 0.0000000 88sol1 0
152 np237t es cu 0.0000000 0.0 0.3900000 0.0000000 0 0.0000000 72sid1 0
152 pu240t es cu 0.0000000 0.0 0.6600000 0.0000000 0 0.0000000 72sid1 0
152 pu242t es cu 0.0000000 0.0 0.8100000 0.0000000 0 0.0000000 72sid1 0
153 sm g cf250s sp cu 1.2150607 5.0 1.2200000 5.0000000% 0 0.0000000 77fly1 0

153		cm244s	es	cu		0.4976375	5.0	0.5000000	5.0000000%	0			0.0000000	75mee1	0
153	sm g	cm244s	rc	cu		0.5175430	9.6	0.5200000	0.0500000	0			0.0000000	72fly2	0
153	sm g	cm248s	sp	cu		0.7927198	5.0	0.7900000	5.0000000%	0			0.0000000	77fly1	0
153	sm g	es253s	rc	cu		1.4819821	10.0	1.5000000	0.1500000	0			0.0000000	76fly1	0
153	sm g	es253s	rc	cu	su	0.0000000	0.0	1.5000000	0.2000000	0			0.0000000	73uni1	0
153	sm g	fm254s	rc	cu		1.3777728	7.1	1.4000000	0.1000000	0			0.0000000	73uni1	0
153	sm g	fm254s	rc	cu		1.3974553	9.9	1.4200000	0.1400000	0			0.0000000	77gin1	0
153	sm g	fm255t	rc	cu	su	0.0000000	0.0	1.1000000	0.2000000	0			0.0000000	73uni1	0
153	sm g	fm255t	rc	cu		0.9980786	9.6	1.0400000	0.1000000	0			0.0000000	75fly3	0
153	sm g	fm256s	rc	cu	su	0.0000000	0.0	1.3000000	0.3000000	0			0.0000000	73uni1	0
153	sm g	fm256s	rc	cu		1.3519863	21.4	1.4000000	0.3000000	0			0.0000000	72fly1	0
153	sm g	np237h	rc	cu		0.3148222	15.1	0.3200000	0.0250000	99	mo g	np237h	4.9400000	60col1	0
153	sm g	np237h	cm	cu		0.0000000	0.0	0.3200000	8.0000000%	0			0.0000000	77cro1	0
153		u232t	es	cu		0.1905532	30.0	0.2000000	0.0000000	0			0.0000000	75mee1	0
153		u238s	es	cu		0.0199499	30.0	0.0200000	0.0000000	0			0.0000000	75mee1	0
153	eu g	np238t	ms	re		0.0000000	0.0	2.5000000	0.3000000	155	eu g	np238t	1.0000000	88sol1	0
153		np238t	es	cu	cm	0.0000000	0.0	0.4600000	0.0900000	0			0.0000000	88sol1	0
153	sm g	cf254s	rc	cu	x5	0.0000000	0.0	1.5000000	0.1000000	153	sm g	cf252s	1.4100000	74wol3	0
153		np237t	es	cu		0.0000000	0.0	0.2100000	0.0000000	0			0.0000000	72sid1	0
153		pu240t	es	cu		0.0000000	0.0	0.4600000	0.0000000	0			0.0000000	72sid1	0
153		pu242t	es	cu		0.0000000	0.0	0.6300000	0.0000000	0			0.0000000	72sid1	0
153	pm g	np236t	rc	cu		0.0000000	0.0	0.2600000	0.0500000	0			0.0000000	81gin2	0
154		cf250s	es	cu		0.8362348	30.0	0.8500000	0.0000000	0			0.0000000	75mee1	0
154		cm244s	es	cu		0.3893086	30.0	0.4000000	0.0000000	0			0.0000000	75mee1	0
154		cm248s	es	cu		0.4077902	30.0	0.4000000	0.0000000	0			0.0000000	75mee1	0
154		es253s	es	cu		1.0735738	30.0	1.1000000	0.0000000	0			0.0000000	75mee1	0
154		fm254s	es	cu		1.0301430	30.0	1.1000000	0.0000000	0			0.0000000	75mee1	0
154		fm255t	es	cu		0.7087910	30.0	0.8000000	0.0000000	0			0.0000000	75mee1	0
154		fm256s	es	cu		1.0622749	30.0	1.1000000	0.0000000	0			0.0000000	75mee1	0
154		np237h	es	cu		0.2498156	30.0	0.2500000	0.0000000	0			0.0000000	75mee1	0
154		u232t	es	cu		0.1333872	30.0	0.1400000	0.0000000	0			0.0000000	75mee1	0
154		u238s	es	cu		0.0079799	30.0	0.0080000	0.0000000	0			0.0000000	75mee1	0
154	sm g	np238t	ms	re		0.0000000	0.0	0.1450000	0.0020000	149	sm g	np238t	1.0000000	88sol1	0
154		np238t	es	cu	cm	0.0000000	0.0	0.2100000	0.0100000	0			0.0000000	88sol1	0
154		np237t	es	cu		0.0000000	0.0	0.1100000	0.0000000	0			0.0000000	72sid1	0
154		pu240t	es	cu		0.0000000	0.0	0.3300000	0.0000000	0			0.0000000	72sid1	0

154		pu242t	es	cu		0.0000000	0.0	0.4400000	0.0000000	0	0.0000000	72sid1	0
155		cf250s	es	cu		0.6839684	30.0	0.7000000	0.0000000	0	0.0000000	75mee1	0
155		cm244s	es	cu		0.2919814	30.0	0.3000000	0.0000000	0	0.0000000	75mee1	0
155		cm248s	es	cu		0.2548689	30.0	0.2500000	0.0000000	0	0.0000000	75mee1	0
155		es253s	es	cu		0.9271774	30.0	0.9500000	0.0000000	0	0.0000000	75mee1	0
155		fm254s	es	cu		0.8009658	30.0	0.8800000	0.0000000	0	0.0000000	75mee1	0
155		fm255t	es	cu		0.5315933	30.0	0.6000000	0.0000000	0	0.0000000	75mee1	0
155		fm256s	es	cu		0.8373189	30.0	0.8800000	0.0000000	0	0.0000000	75mee1	0
155		np237h	es	cu		0.1798672	30.0	0.1800000	0.0000000	0	0.0000000	75mee1	0
155		u232t	es	cu		0.1048043	30.0	0.1100000	0.0000000	0	0.0000000	75mee1	0
155		u238s	es	cu		0.0029925	30.0	0.0030000	0.0000000	0	0.0000000	75mee1	0
155		np237t	es	cu		0.0000000	0.0	0.0950000	0.0000000	0	0.0000000	72sid1	0
155		pu240t	es	cu		0.0000000	0.0	0.2600000	0.0000000	0	0.0000000	72sid1	0
155		pu242t	es	cu		0.0000000	0.0	0.3200000	0.0000000	0	0.0000000	72sid1	0
156		cf250s	es	cu		0.5080908	30.0	0.5200000	0.0000000	0	0.0000000	75mee1	0
156		cm244s	es	cu		0.2185299	30.0	0.2200000	0.0000000	0	0.0000000	75mee1	0
156	eu g	cm244s	rc	cu		0.1887304	10.5	0.1900000	0.0200000	0	0.0000000	72fly2	0
156	sm g	cm244s	rc	cu		0.2284631	13.0	0.2300000	0.0300000	0	0.0000000	72fly2	0
156		cm248s	es	cu		0.2038951	30.0	0.2000000	0.0000000	0	0.0000000	75mee1	0
156		es253s	es	cu		0.7728201	30.0	0.8000000	0.0000000	0	0.0000000	75mee1	0
156		fm254s	es	cu		0.6644375	30.0	0.7300000	0.0000000	0	0.0000000	75mee1	0
156		fm255t	es	cu		0.4429944	30.0	0.5000000	0.0000000	0	0.0000000	75mee1	0
156	sm g	fm256s	rc	cu	su	0.0000000	0.0	0.6500000	0.2000000	0	0.0000000	73uni1	0
156	sm g	fm256s	rc	cu		0.6759931	28.6	0.7000000	0.2000000	0	0.0000000	72fly1	0
156		np237h	es	cu		0.1398967	30.0	0.1400000	0.0000000	0	0.0000000	75mee1	0
156		u232t	es	cu		0.0762213	30.0	0.0800000	0.0000000	0	0.0000000	75mee1	0
156		u238s	es	cu		0.0009975	30.0	0.0010000	0.0000000	0	0.0000000	75mee1	0
156		np237t	es	cu		0.0000000	0.0	0.0430000	0.0000000	0	0.0000000	72sid1	0
156	sm g	np237t	rc	cu		0.0000000	0.0	0.1200000	0.0400000	0	0.0000000	80thi1	0
156		pu240t	es	cu		0.0000000	0.0	0.1400000	0.0000000	0	0.0000000	72sid1	0
156		pu242t	es	cu		0.0000000	0.0	0.2400000	0.0000000	0	0.0000000	72sid1	0
156	sm g	np236t	rc	cu		0.0000000	0.0	0.0410000	0.0040000	0	0.0000000	81gin2	0
157		cf250s	es	cu		0.4103811	30.0	0.4200000	0.0000000	0	0.0000000	75mee1	0
157		cm244s	es	cu		0.1557234	30.0	0.1600000	0.0000000	0	0.0000000	75mee1	0
157		cm248s	es	cu		0.1325318	30.0	0.1300000	0.0000000	0	0.0000000	75mee1	0
157	eu g	es253s	rc	cu		0.7409911	10.7	0.7500000	0.0800000	0	0.0000000	76fly1	0

157 eu g es253s rc cu su 0.0000000 0.0 0.7500000 0.0800000 0 0.0000000 73uni1 0
157 eu g fm254s rc cu 0.6158547 9.5 0.6300000 0.0600000 0 0.0000000 73uni1 0
157 eu g fm254s rc cu 0.6060792 9.7 0.6200000 0.0600000 0 0.0000000 77gin1 0
157 eu g fm255t rc cu su 0.0000000 0.0 0.4200000 0.0600000 0 0.0000000 73uni1 0
157 eu g fm255t rc cu 0.3646826 10.5 0.3800000 0.0400000 0 0.0000000 75fly3 0
157 eu g fm256s rc cu su 0.0000000 0.0 0.4900000 0.0700000 0 0.0000000 73uni1 0
157 eu g fm256s rc cu 0.5171472 13.2 0.5300000 0.0700000 0 0.0000000 72fly1 0
157 eu g np237h rc cu 0.0924449 33.9 0.0940000 0.0300000 99 mo g np237h 4.9400000 60col1 0
157 eu g np237h cm cu 0.0000000 0.0 0.0940000 32.0000000% 0 0.0000000 77cro1 0
157 u232t es cu 0.0524021 30.0 0.0550000 0.0000000 0 0.0000000 75mee1 0
157 u238s es cu 0.0003990 30.0 0.0004000 0.0000000 0 0.0000000 75mee1 0
157 eu g cf254s rc cu x5 0.0000000 0.0 0.6000000 0.0400000 157 eu g cf252s 0.5590000 74wol3 0
157 np237t es cu 0.0000000 0.0 0.0310000 0.0000000 0 0.0000000 72sid1 0
157 pu240t es cu 0.0000000 0.0 0.1000000 0.0000000 0 0.0000000 72sid1 0
157 pu242t es cu 0.0000000 0.0 0.1700000 0.0000000 0 0.0000000 72sid1 0
158 cf250s es cu 0.3419842 30.0 0.3500000 0.0000000 0 0.0000000 75mee1 0
158 cm244s es cu 0.0973271 30.0 0.1000000 0.0000000 0 0.0000000 75mee1 0
158 cm248s es cu 0.1019476 30.0 0.1000000 0.0000000 0 0.0000000 75mee1 0
158 es253s es cu 0.5796151 30.0 0.6000000 0.0000000 0 0.0000000 75mee1 0
158 fm254s es cu 0.4732979 30.0 0.5200000 0.0000000 0 0.0000000 75mee1 0
158 fm255t es cu 0.2657966 30.0 0.3000000 0.0000000 0 0.0000000 75mee1 0
158 fm256s es cu 0.3996295 30.0 0.4200000 0.0000000 0 0.0000000 75mee1 0
158 np237h es cu 0.0799410 30.0 0.0800000 0.0000000 0 0.0000000 75mee1 0
158 u232t es cu 0.0333468 30.0 0.0350000 0.0000000 0 0.0000000 75mee1 0
158 u238s es cu 0.0000997 30.0 0.0001000 0.0000000 0 0.0000000 75mee1 0
158 np237t es cu 0.0000000 0.0 0.0190000 0.0000000 0 0.0000000 72sid1 0
158 pu240t es cu 0.0000000 0.0 0.0730000 0.0000000 0 0.0000000 72sid1 0
158 pu242t es cu 0.0000000 0.0 0.1200000 0.0000000 0 0.0000000 72sid1 0
159 cf250s es cu 0.2540454 30.0 0.2600000 0.0000000 0 0.0000000 75mee1 0
159 cm244s es cu 0.0681290 30.0 0.0700000 0.0000000 0 0.0000000 75mee1 0
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nuclide material tech. type value err. value nuclide material value no. treatment

159 cm248s es cu 0.0713633 30.0 0.0700000 0.0000000 0 0.0000000 75mee1 0
159 gd g es253s rc cu 0.5631532 10.5 0.5700000 0.0600000 0 0.0000000 76fly1 0

159	gd	g	es253s	rc	cu	su	0.0000000	0.0	0.5700000	0.0600000	0			0.0000000	73uni1	0
159	gd	g	fm254s	rc	cu		0.4301207	9.1	0.4400000	0.0400000	0			0.0000000	73uni1	0
159	gd	g	fm254s	rc	cu		0.4301207	9.1	0.4400000	0.0400000	0			0.0000000	77gin1	0
159			fm255t	es	cu		0.1949175	30.0	0.2200000	0.0000000	0			0.0000000	75mee1	0
159			fm256s	es	cu		0.3044796	30.0	0.3200000	0.0000000	0			0.0000000	75mee1	0
159	gd	g	fm256s	rc	cu	su	0.0000000	0.0	0.4700000	0.0700000	0			0.0000000	73uni1	0
159	gd	g	fm256s	rc	cu	x1	0.0000000	0.0	0.5000000	0.0700000	0			0.0000000	72fly1	0
159	gd	g	np237h	rc	cu		0.0678585	44.9	0.0690000	0.0300000	99	mo	g	np237h	4.9400000	60col1	0
159			u232t	es	cu		0.0209609	30.0	0.0220000	0.0000000	0			0.0000000	75mee1	0
159			u238s	es	cu		0.0000199	30.0	0.0000200	0.0000000	0			0.0000000	75mee1	0
159			np237t	es	cu		0.0000000	0.0	0.0120000	0.0000000	0			0.0000000	72sid1	0
159			pu240t	es	cu		0.0000000	0.0	0.0450000	0.0000000	0			0.0000000	72sid1	0
159			pu242t	es	cu		0.0000000	0.0	0.0800000	0.0000000	0			0.0000000	72sid1	0
160			cf250s	es	cu		0.2149615	30.0	0.2200000	0.0000000	0			0.0000000	75mee1	0
160			cm244s	es	cu		0.0437972	30.0	0.0450000	0.0000000	0			0.0000000	75mee1	0
160			cm248s	es	cu		0.0509738	30.0	0.0500000	0.0000000	0			0.0000000	75mee1	0
160			es253s	es	cu		0.4347113	30.0	0.4500000	0.0000000	0			0.0000000	75mee1	0
160			fm254s	es	cu		0.2093433	30.0	0.2300000	0.0000000	0			0.0000000	75mee1	0
160			fm255t	es	cu		0.1506181	30.0	0.1700000	0.0000000	0			0.0000000	75mee1	0
160			fm256s	es	cu		0.2283597	30.0	0.2400000	0.0000000	0			0.0000000	75mee1	0
160			np237h	es	cu		0.0499631	30.0	0.0500000	0.0000000	0			0.0000000	75mee1	0
160			u232t	es	cu		0.0142915	30.0	0.0150000	0.0000000	0			0.0000000	75mee1	0
160			u238s	es	cu		0.0000050	30.0	0.0000050	0.0000000	0			0.0000000	75mee1	0
160			np237t	es	cu		0.0000000	0.0	0.0070000	0.0000000	0			0.0000000	72sid1	0
160			pu240t	es	cu		0.0000000	0.0	0.0220000	0.0000000	0			0.0000000	72sid1	0
160			pu242t	es	cu		0.0000000	0.0	0.0520000	0.0000000	0			0.0000000	72sid1	0
161			cf250s	es	cu		0.1661066	30.0	0.1700000	0.0000000	0			0.0000000	75mee1	0
161			cm244s	es	cu		0.0291981	30.0	0.0300000	0.0000000	0			0.0000000	75mee1	0
161			cm248s	es	cu		0.0356816	30.0	0.0350000	0.0000000	0			0.0000000	75mee1	0
161			es253s	es	cu		0.2898075	30.0	0.3000000	0.0000000	0			0.0000000	75mee1	0
161			fm254s	es	cu		0.1183245	30.0	0.1300000	0.0000000	0			0.0000000	75mee1	0
161			fm255t	es	cu		0.1151785	30.0	0.1300000	0.0000000	0			0.0000000	75mee1	0
161			fm256s	es	cu		0.1617548	30.0	0.1700000	0.0000000	0			0.0000000	75mee1	0
161			np237h	es	cu		0.0349742	30.0	0.0350000	0.0000000	0			0.0000000	75mee1	0
161			u232t	es	cu		0.0085749	30.0	0.0090000	0.0000000	0			0.0000000	75mee1	0
161			u238s	es	cu		0.0000015	30.0	0.0000015	0.0000000	0			0.0000000	75mee1	0

161	np237t	es	cu	0.0000000	0.0	0.0030000	0.0000000	0	0.0000000	72sid1	0
161	pu240t	es	cu	0.0000000	0.0	0.0090000	0.0000000	0	0.0000000	72sid1	0
161	pu242t	es	cu	0.0000000	0.0	0.0250000	0.0000000	0	0.0000000	72sid1	0
162	cf250s	es	cu	0.1270227	30.0	0.1300000	0.0000000	0	0.0000000	75mee1	0
162	cm244s	es	cu	0.0194654	30.0	0.0200000	0.0000000	0	0.0000000	75mee1	0
162	cm248s	es	cu	0.0305843	30.0	0.0300000	0.0000000	0	0.0000000	75mee1	0
162	es253s	es	cu	0.2125255	30.0	0.2200000	0.0000000	0	0.0000000	75mee1	0
162	fm254s	es	cu	0.0728151	30.0	0.0800000	0.0000000	0	0.0000000	75mee1	0
162	fm255t	es	cu	0.0885989	30.0	0.1000000	0.0000000	0	0.0000000	75mee1	0
162	fm256s	es	cu	0.1141799	30.0	0.1200000	0.0000000	0	0.0000000	75mee1	0
162	np237h	es	cu	0.0269801	30.0	0.0270000	0.0000000	0	0.0000000	75mee1	0
162	u232t	es	cu	0.0057166	30.0	0.0060000	0.0000000	0	0.0000000	75mee1	0
162	u238s	es	cu	0.0000006	30.0	0.0000006	0.0000000	0	0.0000000	75mee1	0
162	np237t	es	cu	0.0000000	0.0	0.0005000	0.0000000	0	0.0000000	72sid1	0
162	pu240t	es	cu	0.0000000	0.0	0.0012000	0.0000000	0	0.0000000	72sid1	0
162	pu242t	es	cu	0.0000000	0.0	0.0050000	0.0000000	0	0.0000000	72sid1	0
163	cf250s	es	cu	0.1074808	30.0	0.1100000	0.0000000	0	0.0000000	75mee1	0
163	cm244s	es	cu	0.0116793	30.0	0.0120000	0.0000000	0	0.0000000	75mee1	0
163	cm248s	es	cu	0.0234479	30.0	0.0230000	0.0000000	0	0.0000000	75mee1	0
163	es253s	es	cu	0.1449038	30.0	0.1500000	0.0000000	0	0.0000000	75mee1	0
163	fm254s	es	cu	0.0546113	30.0	0.0600000	0.0000000	0	0.0000000	75mee1	0
163	fm255t	es	cu	0.0708791	30.0	0.0800000	0.0000000	0	0.0000000	75mee1	0
163	fm256s	es	cu	0.0799259	30.0	0.0840000	0.0000000	0	0.0000000	75mee1	0
163	np237h	es	cu	0.0199852	30.0	0.0200000	0.0000000	0	0.0000000	75mee1	0
163	u232t	es	cu	0.0035252	30.0	0.0037000	0.0000000	0	0.0000000	75mee1	0
163	u238s	es	cu	0.0000001	30.0	0.0000001	0.0000000	0	0.0000000	75mee1	0
163	pu240t	es	cu	0.0000000	0.0	0.0005000	0.0000000	0	0.0000000	72sid1	0
164	cf250s	es	cu	0.0781678	30.0	0.0800000	0.0000000	0	0.0000000	75mee1	0
164	cm244s	es	cu	0.0077862	30.0	0.0080000	0.0000000	0	0.0000000	75mee1	0
164	cm248s	es	cu	0.0183506	30.0	0.0180000	0.0000000	0	0.0000000	75mee1	0
164	es253s	es	cu	0.1062628	30.0	0.1100000	0.0000000	0	0.0000000	75mee1	0
164	fm254s	es	cu	0.0382279	30.0	0.0420000	0.0000000	0	0.0000000	75mee1	0
164	fm255t	es	cu	0.0531593	30.0	0.0600000	0.0000000	0	0.0000000	75mee1	0
164	fm256s	es	cu	0.0570899	30.0	0.0600000	0.0000000	0	0.0000000	75mee1	0
164	np237h	es	cu	0.0159882	30.0	0.0160000	0.0000000	0	0.0000000	75mee1	0
164	u232t	es	cu	0.0023819	30.0	0.0025000	0.0000000	0	0.0000000	75mee1	0

164	u238s	es	cu	0.0000000	30.0	0.0000003	0.0000000	0	10.0000000	75mee1	0
165	cf250s	es	cu	0.0629636	30.0	0.0640000	0.0000000	0	0.0000000	75mee1	0
165	cm244s	es	cu	0.0049055	30.0	0.0050000	0.0000000	0	0.0000000	75mee1	0
165	cm248s	es	cu	0.0131790	30.0	0.0130000	0.0000000	0	0.0000000	75mee1	0
165	es253s	es	cu	0.0772820	30.0	0.0800000	0.0000000	0	0.0000000	75mee1	0
165	fm254s	es	cu	0.0245751	30.0	0.0270000	0.0000000	0	0.0000000	75mee1	0
165	fm255t	es	cu	0.0459691	30.0	0.0500000	0.0000000	0	0.0000000	75mee1	0
165	fm256s	es	cu	0.0434567	30.0	0.0450000	0.0000000	0	0.0000000	75mee1	0
165	np237h	es	cu	0.0119937	30.0	0.0120000	0.0000000	0	0.0000000	75mee1	0
165	u232t	es	cu	0.0017150	30.0	0.0018000	0.0000000	0	0.0000000	75mee1	0
165	u238s	es	cu	0.0000000	30.0	0.0000001	0.0000000	0	10.0000000	75mee1	0
166	cf250s	es	cu	0.0508091	30.0	0.0520000	0.0000000	0	0.0000000	75mee1	0
166	cm244s	es	cu	0.0034064	30.0	0.0035000	0.0000000	0	0.0000000	75mee1	0
166	cm248s	es	cu	0.0101948	30.0	0.0100000	0.0000000	0	0.0000000	75mee1	0
166	es253s	es	cu	0.0579615	30.0	0.0600000	0.0000000	0	0.0000000	75mee1	0
166	fm254s	es	cu	0.0182038	30.0	0.0200000	0.0000000	0	0.0000000	75mee1	0
166	fm255t	es	cu	0.0354396	30.0	0.0400000	0.0000000	0	0.0000000	75mee1	0
166	fm256s	es	cu	0.0333025	30.0	0.0350000	0.0000000	0	0.0000000	75mee1	0
166	np237h	es	cu	0.0094930	30.0	0.0095000	0.0000000	0	0.0000000	75mee1	0
166	u232t	es	cu	0.0011433	30.0	0.0012000	0.0000000	0	0.0000000	75mee1	0
166	u238s	es	cu	0.0000000	30.0	0.0000004	0.0000000	0	100.0000000	75mee1	0
166	am243t	sp	cu	0.0000000	0.0	0.0020000	0.0000000	0	0.0000000	80asg2	0
167	cf250s	es	cu	0.0400610	30.0	0.0410000	0.0000000	0	0.0000000	75mee1	0
167	cm244s	es	cu	0.0024332	30.0	0.0025000	0.0000000	0	0.0000000	75mee1	0
167	cm248s	es	cu	0.0081558	30.0	0.0080000	0.0000000	0	0.0000000	75mee1	0
167	es253s	es	cu	0.0405731	30.0	0.0420000	0.0000000	0	0.0000000	75mee1	0
167	fm254s	es	cu	0.0118324	30.0	0.0130000	0.0000000	0	0.0000000	75mee1	0
167	fm255t	es	cu	0.0265797	30.0	0.0300000	0.0000000	0	0.0000000	75mee1	0
167	fm256s	es	cu	0.0247390	30.0	0.0260000	0.0000000	0	0.0000000	75mee1	0
167	np237h	es	cu	0.0069948	30.0	0.0070000	0.0000000	0	0.0000000	75mee1	0
167	u232t	es	cu	0.0007622	30.0	0.0008000	0.0000000	0	0.0000000	75mee1	0
167	u238s	es	cu	0.0000000	30.0	0.0000001	0.0000000	0	100.0000000	75mee1	0
167	am243t	sp	cu	0.0000000	0.0	0.0010000	0.0000000	0	0.0000000	80asg2	0
168	cf250s	es	cu	0.0322442	30.0	0.0330000	0.0000000	0	0.0000000	75mee1	0
168	cm244s	es	cu	0.0014599	30.0	0.0015000	0.0000000	0	0.0000000	75mee1	0
168	cm248s	es	cu	0.0061169	30.0	0.0060000	0.0000000	0	0.0000000	75mee1	0

168	es253s	es	cu	0.0289808	30.0	0.0300000	0.0000000	0		0.0000000	75mee1	0	
168	fm254s	es	cu	0.0054611	30.0	0.0060000	0.0000000	0		0.0000000	75mee1	0	
168	fm255t	es	cu	0.0177198	30.0	0.0200000	0.0000000	0		0.0000000	75mee1	0	
168	fm256s	es	cu	0.0190300	30.0	0.0200000	0.0000000	0		0.0000000	75mee1	0	
168	np237h	es	cu	0.0054959	30.0	0.0055000	0.0000000	0		0.0000000	75mee1	0	
168	u232t	es	cu	0.0004764	30.0	0.0005000	0.0000000	0		0.0000000	75mee1	0	
168	u238s	es	cu	0.0000000	30.0	0.0000004	0.0000000	0		1000.0000000	75mee1	0	
168	am243t	sp	cu	0.0000000	0.0	0.0006000	0.0000000	0		0.0000000	80asg2	0	
169	cf250s	es	cu	0.0244274	30.0	0.0250000	0.0000000	0		0.0000000	75mee1	0	
169	cm244s	es	cu	0.0009733	30.0	0.0010000	0.0000000	0		0.0000000	75mee1	0	

1

0measured nuclide	fissile material	meas. tech.	meas. type	note value	updated err.	pct. value	published	error nuclide	normalizing material	normalizing value	normalizing no.	ref. treatment	special
169	cm248s	es	cu	0.0045876	30.0	0.0045000	0.0000000	0		0.0000000	75mee1	0	
169	es253s	es	cu	0.0222186	30.0	0.0230000	0.0000000	0		0.0000000	75mee1	0	
169	fm254s	es	cu	0.0036408	30.0	0.0040000	0.0000000	0		0.0000000	75mee1	0	
169	fm255t	es	cu	0.0150618	30.0	0.0170000	0.0000000	0		0.0000000	75mee1	0	
169	fm256s	es	cu	0.0133210	30.0	0.0140000	0.0000000	0		0.0000000	75mee1	0	
169	np237h	es	cu	0.0041969	30.0	0.0042000	0.0000000	0		0.0000000	75mee1	0	
169	u232t	es	cu	0.0003049	30.0	0.0003200	0.0000000	0		0.0000000	75mee1	0	
169	u238s	es	cu	0.0000000	30.0	0.0000002	0.0000000	0		1000.0000000	75mee1	0	
169	am243t	sp	cu	0.0000000	0.0	0.0004000	0.0000000	0		0.0000000	80asg2	0	
170	cf250s	es	cu	0.0205191	30.0	0.0210000	0.0000000	0		0.0000000	75mee1	0	
170	cm244s	es	cu	0.0005840	30.0	0.0006000	0.0000000	0		0.0000000	75mee1	0	
170	cm248s	es	cu	0.0035682	30.0	0.0035000	0.0000000	0		0.0000000	75mee1	0	
170	es253s	es	cu	0.0164224	30.0	0.0170000	0.0000000	0		0.0000000	75mee1	0	
170	fm254s	es	cu	0.0027306	30.0	0.0030000	0.0000000	0		0.0000000	75mee1	0	
170	fm255t	es	cu	0.0124038	30.0	0.0140000	0.0000000	0		0.0000000	75mee1	0	
170	fm256s	es	cu	0.0095150	30.0	0.0100000	0.0000000	0		0.0000000	75mee1	0	
170	np237h	es	cu	0.0031976	30.0	0.0032000	0.0000000	0		0.0000000	75mee1	0	
170	u232t	es	cu	0.0002096	30.0	0.0002200	0.0000000	0		0.0000000	75mee1	0	
170	u238s	es	cu	0.0000000	30.0	0.0000001	0.0000000	0		1000.0000000	75mee1	0	
170	am243t	sp	cu	0.0000000	0.0	0.0003000	0.0000000	0		0.0000000	80asg2	0	
171	cf250s	es	cu	0.0156336	30.0	0.0160000	0.0000000	0		0.0000000	75mee1	0	
171	cm244s	es	cu	0.0003893	30.0	0.0004000	0.0000000	0		0.0000000	75mee1	0	

171	cm248s	es	cu	0.0025487	30.0	0.0025000	0.0000000	0	0.0000000	75mee1	0
171	es253s	es	cu	0.0106263	30.0	0.0110000	0.0000000	0	0.0000000	75mee1	0
171	fm254s	es	cu	0.0018204	30.0	0.0020000	0.0000000	0	0.0000000	75mee1	0
171	fm255t	es	cu	0.0088599	30.0	0.0100000	0.0000000	0	0.0000000	75mee1	0
171	fm256s	es	cu	0.0070411	30.0	0.0074000	0.0000000	0	0.0000000	75mee1	0
171	np237h	es	cu	0.0023882	30.0	0.0023900	0.0000000	0	0.0000000	75mee1	0
171	u232t	es	cu	0.0001429	30.0	0.0001500	0.0000000	0	0.0000000	75mee1	0
171	u238s	es	cu	0.0000000	30.0	0.0000003	0.0000000	0	10000.0000000	75mee1	0
172	cf250s	es	cu	0.0127023	30.0	0.0130000	0.0000000	0	0.0000000	75mee1	0
172	cm244s	es	cu	0.0002920	30.0	0.0003000	0.0000000	0	0.0000000	75mee1	0
172	cm248s	es	cu	0.0020390	30.0	0.0020000	0.0000000	0	0.0000000	75mee1	0
172	es253s	es	cu	0.0077282	30.0	0.0080000	0.0000000	0	0.0000000	75mee1	0
172	fm254s	es	cu	0.0009102	30.0	0.0010000	0.0000000	0	0.0000000	75mee1	0
172	fm255t	es	cu	0.0070879	30.0	0.0080000	0.0000000	0	0.0000000	75mee1	0
172	fm256s	es	cu	0.0047575	30.0	0.0050000	0.0000000	0	0.0000000	75mee1	0
172	np237h	es	cu	0.0018986	30.0	0.0019000	0.0000000	0	0.0000000	75mee1	0
172	u232t	es	cu	0.0000953	30.0	0.0001000	0.0000000	0	0.0000000	75mee1	0
172	u238s	es	cu	0.0000000	30.0	0.0000001	0.0000000	0	10000.0000000	75mee1	0

1 Appendix F

Set F Yields Evaluated and Compiled
for
Los Alamos report LA-UR-94-3106 (ENDF-349)

T. R. England and B. F. Rider
October, 1994

Set F Contains yields for:
cm243t, cm246s, cm243f, cm244f, cm246f, cm248f, pu242h, np237t, pu240t, pu242t

Note: print landscape with page control parameter set
1

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    mass number     66              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide      24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g
half life                                0.23s    54.6 h    5.10 m    stable     9.49h     2.27h
lambda           0.0       0.0       0.0 3.014e+00 3.526e-06 2.265e-03       0.0 2.029e-05 8.482e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cm243t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  3.42e-06n      0.0       0.0
zp 27.04 ri 3.53e-11p 1.52e-08p 6.60e-07p 1.92e-06p 7.93e-07p 2.24e-08p 6.42e-11p       0.0       0.0
sig0.594 cc 3.53e-11p 1.53e-08p 6.75e-07p 2.60e-06p 3.39e-06p 3.42e-06p 3.42e-06p       0.0       0.0
         rc 3.53e-11p 1.53e-08p 6.75e-07p 2.60e-06p 3.39e-06o 3.42e-06o 3.42e-06n       0.0       0.0
 cm246s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  2.16e-05p      0.0       0.0
zp 26.95 ri 1.38e-10p 8.70e-08p 5.27e-06p 1.20e-05p 4.13e-06p 5.18e-08p 6.11e-11p       0.0       0.0
sig0.557 cc 1.38e-10p 8.72e-08p 5.36e-06p 1.74e-05p 2.15e-05p 2.16e-05p 2.16e-05p       0.0       0.0
         rc 1.38e-10p 8.72e-08p 5.36e-06p 1.74e-05p 2.15e-05o 2.16e-05o 2.16e-05o       0.0       0.0
 cm243f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  9.50e-06n      0.0       0.0
zp 27.22 ri 2.60e-11p 1.78e-08p 1.14e-06p 5.13e-06p 3.07e-06p 1.41e-07p 6.47e-10p       0.0       0.0
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sig0.596 cc 2.60e-11p 1.79e-08p 1.16e-06p 6.29e-06p 9.36e-06p 9.50e-06p 9.50e-06p 0.0 0.0
rc 2.60e-11p 1.79e-08p 1.16e-06p 6.29e-06p 9.36e-06p 9.50e-06o 9.50e-06n 0.0 0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 7.30e-06n 0.0 0.0
zp 27.10 ri 4.55e-11p 2.44e-08p 1.21e-06p 4.14e-06p 1.87e-06p 6.11e-08p 1.90e-10p 0.0 0.0
sig0.592 cc 4.55e-11p 2.45e-08p 1.23e-06p 5.37e-06p 7.24e-06p 7.30e-06p 7.30e-06p 0.0 0.0
rc 4.55e-11p 2.45e-08p 1.23e-06p 5.37e-06p 7.24e-06o 7.30e-06o 7.30e-06n 0.0 0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.11e-06n 0.0 0.0
zp 26.83 ri 1.41e-10p 4.61e-08p 1.16e-06p 2.38e-06p 5.23e-07p 8.74e-09p 1.06e-11p 0.0 0.0
sig0.585 cc 1.41e-10p 4.62e-08p 1.20e-06p 3.58e-06p 4.11e-06p 4.11e-06p 4.11e-06p 0.0 0.0
rc 1.41e-10p 4.62e-08p 1.20e-06p 3.58e-06p 4.11e-06o 4.11e-06o 4.11e-06n 0.0 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.08e-06n 0.0 0.0
zp 26.61 ri 2.48e-10p 5.36e-08p 8.42e-07p 1.05e-06p 1.28e-07p 1.02e-09p 0.0 0.0 0.0
sig0.574 cc 2.48e-10p 5.38e-08p 8.96e-07p 1.95e-06p 2.08e-06p 2.08e-06p 2.08e-06p 0.0 0.0
rc 2.48e-10p 5.38e-08p 8.96e-07p 1.95e-06p 2.08e-06o 2.08e-06o 2.08e-06n 0.0 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.08e-07n 0.0 0.0
zp 26.58 ri 8.27e-11p 8.42e-09p 8.50e-08p 1.00e-07p 1.41e-08p 2.02e-10p 0.0 0.0 0.0
sig0.620 cc 8.27e-11p 8.50e-09p 9.35e-08p 1.94e-07p 2.08e-07p 2.08e-07p 2.08e-07p 0.0 0.0
rc 8.27e-11p 8.50e-09p 9.35e-08p 1.94e-07p 2.08e-07o 2.08e-07o 2.08e-07n 0.0 0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.88e-08n 0.0 0.0
zp 26.74 ri 0.0 5.05e-10p 1.66e-08p 2.75e-08p 4.17e-09p 2.65e-11p 0.0 0.0 0.0
sig0.541 cc 0.0 5.06e-10p 1.71e-08p 4.46e-08p 4.88e-08p 4.88e-08p 4.88e-08p 0.0 0.0
rc 0.0 5.06e-10p 1.71e-08p 4.46e-08p 4.88e-08o 4.88e-08o 4.88e-08n 0.0 0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.60e-07n 0.0 0.0
zp 26.84 ri 2.51e-12p 1.04e-09p 5.34e-08p 8.15e-08p 2.36e-08p 1.84e-10p 0.0 0.0 0.0
sig0.555 cc 2.51e-12p 1.05e-09p 5.45e-08p 1.36e-07p 1.60e-07p 1.60e-07p 1.60e-07p 0.0 0.0
rc 2.51e-12p 1.05e-09p 5.45e-08p 1.36e-07p 1.60e-07o 1.60e-07o 1.60e-07n 0.0 0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.97e-08n 0.0 0.0
zp 26.60 ri 3.99e-12p 9.39e-10p 2.39e-08p 2.18e-08p 3.06e-09p 1.20e-11p 0.0 0.0 0.0
sig0.551 cc 3.99e-12p 9.43e-10p 2.49e-08p 4.67e-08p 4.97e-08p 4.97e-08p 4.97e-08p 0.0 0.0

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        rc 3.99e-12p 9.43e-10p 2.49e-08p 4.67e-08p 4.97e-08o 4.97e-08o 4.97e-08n      0.0       0.0

  co, ni, cu half lives from 89wal1; ga half life 90bur1.
1

    mass number     67              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide      24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g
half life                                        21. s    2.580d    stable    3.261d    19.0 m
lambda          0.0       0.0       0.0       0.0 3.301e-02 3.110e-06       0.0 2.460e-06 6.080e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  8.56e-06n      0.0       0.0
zp 27.42 ri 3.93e-12p 5.01e-09p 5.38e-07p 4.04e-06p 3.69e-06p 2.81e-07p 2.07e-09p      0.0       0.0
sig0.594 cc 3.93e-12p 5.01e-09p 5.43e-07p 4.58e-06p 8.28e-06p 8.56e-06p 8.56e-06p      0.0       0.0
         rc 3.93e-12p 5.01e-09p 5.43e-07p 4.58e-06p 8.28e-06p 8.56e-06o 8.56e-06n      0.0       0.0
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000441p      0.0       0.0
zp 27.33 ri 8.91e-11p 2.04e-07p 3.27e-05p 0.000224p 0.000177p 7.28e-06p 2.40e-08p 2.58e-12p      0.0
sig0.557 cc 8.91e-11p 2.04e-07p 3.29e-05p 0.000257p 0.000434p 0.000441p 0.000441p 2.58e-12p      0.0
         rc 8.91e-11p 2.04e-07p 3.29e-05p 0.000257p 0.000434p 0.000441o 0.000441o 2.58e-12p      0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.80e-05n      0.0       0.0
zp 27.60 ri 1.88e-12p 3.73e-09p 6.09e-07p 6.94e-06p 9.33e-06p 1.10e-06p 1.31e-08p 9.50e-12p      0.0
sig0.596 cc 1.88e-12p 3.73e-09p 6.12e-07p 7.55e-06p 1.69e-05p 1.80e-05p 1.80e-05p 9.50e-12p      0.0
         rc 1.88e-12p 3.73e-09p 6.12e-07p 7.55e-06p 1.69e-05p 1.80e-05o 1.80e-05n 9.50e-12p      0.0
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.30e-05n      0.0       0.0
zp 27.48 ri 3.37e-12p 5.28e-09p 6.67e-07p 5.84e-06p 5.98e-06p 5.17e-07p 4.22e-09p 2.00e-12p      0.0
sig0.592 cc 3.37e-12p 5.28e-09p 6.72e-07p 6.51e-06p 1.25e-05p 1.30e-05p 1.30e-05p 2.00e-12p      0.0
         rc 3.37e-12p 5.28e-09p 6.72e-07p 6.51e-06p 1.25e-05p 1.30e-05o 1.30e-05n 2.00e-12p      0.0
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  7.53e-06n      0.0       0.0
zp 27.21 ri 1.37e-11p 1.27e-08p 8.49e-07p 4.27e-06p 2.29e-06p 1.02e-07p 3.50e-10p      0.0       0.0
sig0.585 cc 1.37e-11p 1.27e-08p 8.62e-07p 5.14e-06p 7.42e-06p 7.53e-06p 7.53e-06p      0.0       0.0
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        rc 1.37e-11p 1.27e-08p 8.62e-07p 5.14e-06p 7.42e-06p 7.53e-06o 7.53e-06n      0.0       0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.66e-06n      0.0       0.0
zp 26.98 ri 2.87e-11p 1.77e-08p 7.35e-07p 2.22e-06p 6.72e-07p 1.47e-08p 2.14e-11p      0.0       0.0
sig0.574 cc 2.87e-11p 1.77e-08p 7.53e-07p 2.98e-06p 3.65e-06p 3.66e-06p 3.66e-06p      0.0       0.0
        rc 2.87e-11p 1.77e-08p 7.53e-07p 2.98e-06p 3.65e-06o 3.66e-06o 3.66e-06n      0.0       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  4.17e-07n      0.0       0.0
zp 26.96 ri 1.52e-11p 3.86e-09p 9.19e-08p 2.42e-07p 7.72e-08p 2.69e-09p 8.65e-12p      0.0       0.0
sig0.620 cc 1.52e-11p 3.88e-09p 9.58e-08p 3.38e-07p 4.15e-07p 4.17e-07p 4.17e-07p      0.0       0.0
        rc 1.52e-11p 3.88e-09p 9.58e-08p 3.38e-07p 4.15e-07o 4.17e-07o 4.17e-07n      0.0       0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  8.78e-08n      0.0       0.0
zp 27.12 ri      0.0  1.25e-10p 1.01e-08p 5.80e-08p 1.92e-08p 4.92e-10p      0.0       0.0       0.0
sig0.541 cc      0.0  1.25e-10p 1.02e-08p 6.82e-08p 8.73e-08p 8.78e-08p 8.78e-08p      0.0       0.0
        rc      0.0  1.25e-10p 1.02e-08p 6.82e-08p 8.73e-08p 8.78e-08o 8.78e-08n      0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.10e-07n      0.0       0.0
zp 27.22 ri      0.0  2.68e-10p 3.46e-08p 1.65e-07p 1.07e-07p 2.91e-09p 7.14e-12p      0.0       0.0
sig0.555 cc      0.0  2.68e-10p 3.49e-08p 2.00e-07p 3.07e-07p 3.10e-07p 3.10e-07p      0.0       0.0
        rc      0.0  2.68e-10p 3.49e-08p 2.00e-07p 3.07e-07p 3.10e-07o 3.10e-07n      0.0       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  9.95e-08n      0.0       0.0
zp 26.98 ri      0.0  3.25e-10p 2.11e-08p 5.83e-08p 1.94e-08p 2.70e-10p      0.0       0.0       0.0
sig0.551 cc      0.0  3.25e-10p 2.15e-08p 7.98e-08p 9.92e-08p 9.95e-08p 9.95e-08p      0.0       0.0
        rc      0.0  3.25e-10p 2.15e-08p 7.98e-08p 9.92e-08o 9.95e-08o 9.95e-08n      0.0       0.0

  ni, cu half lives from 89wal1; ga half life from 90bur1.
1

    mass number     68              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide      24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu m   29 cu g   30 zn g   31 ga g   32 ge g
half life                                   19. s     3.79m     31. s    stable    68.06m    287. d
lambda          0.0       0.0       0.0       0.0 3.648e-02 3.048e-03 2.236e-02       0.0 1.697e-04 2.795e-08
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0   50.0000       0.0       0.0
```

```
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0   50.0000       0.0       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.12e-05n      0.0       0.0
zp 27.80 ri      0.0  1.04e-09p 3.20e-07p 5.65e-06p 1.29e-05p 1.59e-06p 6.80e-07p 4.72e-08p 5.27e-11p       0.0
sig0.594 cc      0.0  1.04e-09p 3.21e-07p 5.97e-06p 1.89e-05p 1.59e-06p 2.03e-05p 2.12e-05p 5.27e-11p       0.0
         rc      0.0  1.04e-09p 3.21e-07p 5.97e-06p 1.89e-05p 1.59e-06p 2.03e-05o 2.12e-05n 5.27e-11p       0.0
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000421p      0.0       0.0
zp 27.71 ri 1.89e-12p 1.24e-08p 6.96e-06p 0.000118p 0.000269p 1.90e-05p 8.15e-06p 3.12e-07p 9.63e-11p       0.0
sig0.557 cc 1.89e-12p 1.24e-08p 6.97e-06p 0.000125p 0.000394p 1.90e-05p 0.000412p 0.000421p 9.63e-11p       0.0
         rc 1.89e-12p 1.24e-08p 6.97e-06p 0.000125p 0.000394p 1.90e-05p 0.000412p 0.000421o 9.63e-11p       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.40e-05n      0.0       0.0
zp 27.99 ri      0.0  4.72e-10p 2.23e-07p 6.33e-06p 2.13e-05p 4.35e-06p 1.61e-06p 1.97e-07p 3.89e-10p       0.0
sig0.596 cc      0.0  4.72e-10p 2.24e-07p 6.55e-06p 2.78e-05p 4.35e-06p 3.16e-05p 3.40e-05p 3.89e-10p       0.0
         rc      0.0  4.72e-10p 2.24e-07p 6.55e-06p 2.78e-05p 4.35e-06p 3.16e-05o 3.40e-05n 3.89e-10p       0.0
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.50e-05n      0.0       0.0
zp 27.86 ri      0.0  8.02e-10p 2.88e-07p 6.11e-06p 1.54e-05p 2.20e-06p 9.42e-07p 7.13e-08p 9.13e-11p       0.0
sig0.592 cc      0.0  8.02e-10p 2.88e-07p 6.40e-06p 2.18e-05p 2.20e-06p 2.38e-05p 2.50e-05p 9.13e-11p       0.0
         rc      0.0  8.02e-10p 2.88e-07p 6.40e-06p 2.18e-05p 2.20e-06p 2.38e-05o 2.50e-05n 9.13e-11p       0.0
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.40e-05n      0.0       0.0
zp 27.58 ri      0.0  2.56e-09p 4.59e-07p 5.67e-06p 7.11e-06p 6.49e-07p 1.42e-07p 7.40e-09p 4.13e-12p       0.0
sig0.585 cc      0.0  2.56e-09p 4.61e-07p 6.13e-06p 1.32e-05p 6.49e-07p 1.37e-05p 1.40e-05p 4.13e-12p       0.0
         rc      0.0  2.56e-09p 4.61e-07p 6.13e-06p 1.32e-05p 6.49e-07p 1.37e-05o 1.40e-05n 4.13e-12p       0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.83e-06n      0.0       0.0
zp 27.36 ri 2.14e-12p 3.95e-09p 4.61e-07p 3.55e-06p 2.66e-06p 1.10e-07p 4.73e-08p 6.76e-10p       0.0       0.0
sig0.574 cc 2.14e-12p 3.95e-09p 4.65e-07p 4.01e-06p 6.67e-06p 1.10e-07p 6.77e-06p 6.83e-06p       0.0       0.0
         rc 2.14e-12p 3.95e-09p 4.65e-07p 4.01e-06p 6.67e-06p 1.10e-07p 6.77e-06o 6.83e-06n       0.0       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  7.33e-07n      0.0       0.0
zp 27.33 ri 1.84e-12p 1.16e-09p 6.52e-08p 3.80e-07p 2.65e-07p 1.50e-08p 6.43e-09p 1.69e-10p       0.0       0.0
sig0.620 cc 1.84e-12p 1.16e-09p 6.64e-08p 4.46e-07p 7.12e-07p 1.50e-08p 7.26e-07p 7.33e-07p       0.0       0.0
         rc 1.84e-12p 1.16e-09p 6.64e-08p 4.46e-07p 7.12e-07p 1.50e-08p 7.26e-07o 7.33e-07n       0.0       0.0
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 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.88e-07n      0.0       0.0
zp 27.50 ri      0.0  4.96e-11p 1.66e-08p 2.14e-07p 2.42e-07p 1.03e-08p 4.43e-09p 5.64e-11p      0.0       0.0
sig0.541 cc      0.0  4.96e-11p 1.66e-08p 2.31e-07p 4.73e-07p 1.03e-08p 4.83e-07p 4.88e-07p      0.0       0.0
         rc      0.0  4.96e-11p 1.66e-08p 2.31e-07p 4.73e-07p 1.03e-08p 4.83e-07o 4.88e-07n      0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.39e-07n      0.0       0.0
zp 27.60 ri      0.0  5.59e-11p 2.64e-08p 2.95e-07p 5.79e-07p 2.66e-08p 1.14e-08p 3.43e-10p      0.0       0.0
sig0.555 cc      0.0  5.59e-11p 2.64e-08p 3.21e-07p 9.00e-07p 2.66e-08p 9.25e-07p 9.39e-07p      0.0       0.0
         rc      0.0  5.59e-11p 2.64e-08p 3.21e-07p 9.00e-07p 2.66e-08p 9.25e-07o 9.39e-07n      0.0       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.29e-07n      0.0       0.0
zp 27.35 ri      0.0  7.40e-11p 1.66e-08p 1.05e-07p 1.03e-07p 2.52e-09p 1.08e-09p 1.34e-11p      0.0       0.0
sig0.551 cc      0.0  7.40e-11p 1.67e-08p 1.22e-07p 2.25e-07p 2.52e-09p 2.28e-07p 2.29e-07p      0.0       0.0
         rc      0.0  7.40e-11p 1.67e-08p 1.22e-07p 2.25e-07p 2.52e-09p 2.28e-07o 2.29e-07n      0.0       0.0

  ni, cu half lives from 89wal1; ga, ge half lives from 90bur1.
1

    mass number     69              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide       25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn m   30 zn g   31 ga g   32 ge g   33 as g
half life                           10. s     2.8 m    13.76h     56. m    stable    39.2 h     15. m
lambda           0.0       0.0       0.0 6.931e-02 4.126e-03 1.399e-05 2.063e-04       0.0 4.912e-06 7.702e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.70e-05n      0.0       0.0
zp 28.19 ri 1.31e-10p 1.08e-07p 5.36e-06p 2.81e-05p 1.28e-05p 5.39e-07p 1.26e-07p 2.23e-09p      0.0       0.0
sig0.594 cc 1.31e-10p 1.08e-07p 5.47e-06p 3.36e-05p 4.64e-05p 5.39e-07p 4.70e-05p 4.70e-05p      0.0       0.0
         rc 1.31e-10p 1.08e-07p 5.47e-06p 3.36e-05p 4.64e-05p 5.39e-07p 4.70e-05o 4.70e-05n      0.0       0.0
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000815p      0.0       0.0
zp 28.09 ri 1.18e-09p 1.84e-06p 0.000103p 0.000542p 0.000164p 4.02e-06p 9.42e-07p 5.53e-09p      0.0       0.0
sig0.557 cc 1.18e-09p 1.85e-06p 0.000105p 0.000646p 0.000810p 4.02e-06p 0.000815p 0.000815p      0.0       0.0
         rc 1.18e-09p 1.85e-06p 0.000105p 0.000646p 0.000810p 4.02e-06p 0.000815o 0.000815o      0.0       0.0
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 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.70e-05n      0.0       0.0
zp 28.37 ri 4.80e-11p 6.00e-08p 4.61e-06p 3.58e-05p 2.45e-05p 1.64e-06p 3.36e-07p 1.10e-08p 5.04e-12p       0.0
sig0.596 cc 4.80e-11p 6.00e-08p 4.67e-06p 4.05e-05p 6.50e-05p 1.64e-06p 6.70e-05p 6.70e-05p 5.04e-12p       0.0
         rc 4.80e-11p 6.00e-08p 4.67e-06p 4.05e-05p 6.50e-05p 1.64e-06p 6.70e-05o 6.70e-05n 5.04e-12p       0.0
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.80e-05n      0.0       0.0
zp 28.24 ri 8.72e-11p 8.35e-08p 4.83e-06p 2.81e-05p 1.42e-05p 6.52e-07p 1.53e-07p 2.97e-09p       0.0       0.0
sig0.592 cc 8.72e-11p 8.36e-08p 4.91e-06p 3.30e-05p 4.72e-05p 6.52e-07p 4.80e-05p 4.80e-05p       0.0       0.0
         rc 8.72e-11p 8.36e-08p 4.91e-06p 3.30e-05p 4.72e-05p 6.52e-07p 4.80e-05o 4.80e-05n       0.0       0.0
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.91e-05n      0.0       0.0
zp 27.96 ri 3.65e-10p 1.84e-07p 5.93e-06p 1.79e-05p 4.94e-06p 1.12e-07p 1.38e-08p 2.01e-10p       0.0       0.0
sig0.585 cc 3.65e-10p 1.84e-07p 6.11e-06p 2.40e-05p 2.90e-05p 1.12e-07p 2.91e-05p 2.91e-05p       0.0       0.0
         rc 3.65e-10p 1.84e-07p 6.11e-06p 2.40e-05p 2.90e-05o 1.12e-07p 2.91e-05o 2.91e-05n       0.0       0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.29e-05n      0.0       0.0
zp 27.73 ri 6.33e-10p 2.08e-07p 4.11e-06p 7.41e-06p 1.12e-06p 1.09e-08p 2.55e-09p 8.81e-12p       0.0       0.0
sig0.574 cc 6.33e-10p 2.08e-07p 4.32e-06p 1.17e-05p 1.29e-05p 1.09e-08p 1.29e-05p 1.29e-05p       0.0       0.0
         rc 6.33e-10p 2.08e-07p 4.32e-06p 1.17e-05p 1.29e-05o 1.09e-08p 1.29e-05o 1.29e-05n       0.0       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.56e-06n      0.0       0.0
zp 27.71 ri 2.84e-10p 3.95e-08p 5.34e-07p 8.28e-07p 1.54e-07p 2.43e-09p 5.71e-10p 5.23e-12p       0.0       0.0
sig0.620 cc 2.84e-10p 3.98e-08p 5.74e-07p 1.40e-06p 1.56e-06p 2.43e-09p 1.56e-06p 1.56e-06p       0.0       0.0
         rc 2.84e-10p 3.98e-08p 5.74e-07p 1.40e-06p 1.56e-06o 2.43e-09p 1.56e-06o 1.56e-06n       0.0       0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.95e-06n      0.0       0.0
zp 27.88 ri 1.13e-11p 9.96e-09p 4.95e-07p 1.18e-06p 2.62e-07p 2.08e-09p 4.87e-10p 1.34e-12p       0.0       0.0
sig0.541 cc 1.13e-11p 9.97e-09p 5.05e-07p 1.69e-06p 1.95e-06p 2.08e-09p 1.95e-06p 1.95e-06p       0.0       0.0
         rc 1.13e-11p 9.97e-09p 5.05e-07p 1.69e-06p 1.95e-06o 2.08e-09p 1.95e-06o 1.95e-06n       0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.98e-06n      0.0       0.0
zp 27.98 ri 9.77e-12p 1.24e-08p 4.74e-07p 2.05e-06p 4.28e-07p 8.08e-09p 1.89e-09p 6.96e-12p       0.0       0.0
sig0.555 cc 9.77e-12p 1.24e-08p 4.86e-07p 2.54e-06p 2.97e-06p 8.08e-09p 2.98e-06p 2.98e-06p       0.0       0.0
         rc 9.77e-12p 1.24e-08p 4.86e-07p 2.54e-06p 2.97e-06p 8.08e-09p 2.98e-06o 2.98e-06n       0.0       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.97e-07n      0.0       0.0
zp 27.73 ri 1.10e-11p 6.76e-09p 1.41e-07p 3.14e-07p 3.55e-08p 2.92e-10p 6.85e-11p      0.0       0.0       0.0
sig0.551 cc 1.10e-11p 6.77e-09p 1.48e-07p 4.62e-07p 4.97e-07p 2.92e-10p 4.97e-07p 4.97e-07p      0.0       0.0
        rc 1.10e-11p 6.77e-09p 1.48e-07p 4.62e-07p 4.97e-07p 2.92e-10p 4.97e-07o 4.97e-07n      0.0       0.0

  ni, cu, zn half lives from 89wal1.
1

    mass number     70              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide      24 cr g   25 mn g   26 fe g   27 co g   28 ni g   29 cu m   29 cu g   30 zn g   31 ga g   32 ge g
half life                                                   47. s      5. s    stable    21.1 m    stable
lambda          0.0       0.0       0.0       0.0       0.0 1.475e-02 1.386e-01       0.0 5.475e-04       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000   50.0000   50.0000  100.0000       0.0  100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  8.56e-05n      0.0       0.0
zp 28.57 ri       0.0  9.30e-12p 2.26e-08p 2.82e-06p 3.85e-05p 2.91e-05p 9.71e-06p 5.37e-06p 4.59e-08p 3.72e-11p
sig0.594 cc       0.0  9.30e-12p 2.26e-08p 2.85e-06p 4.14e-05p 4.98e-05p 3.04e-05p 8.56e-05p 4.59e-08p 4.59e-08p
        rc      0.0  9.30e-12p 2.26e-08p 2.85e-06p 4.14e-05p 4.98e-05p 3.04e-05p 8.56e-05n 4.59e-08p 4.59e-08p
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000801p      0.0       0.0
zp 28.47 ri       0.0  3.20e-11p 1.83e-07p 2.73e-05p 0.000440p 0.000228p 7.58e-05p 2.96e-05p 9.15e-08p 2.47e-11p
sig0.557 cc       0.0  3.20e-11p 1.83e-07p 2.75e-05p 0.000468p 0.000461p 0.000310p 0.000801p 9.15e-08p 9.16e-08p
        rc      0.0  3.20e-11p 1.83e-07p 2.75e-05p 0.000468p 0.000461p 0.000310p 0.000801o 9.15e-08p 9.16e-08p
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000140n      0.0       0.0
zp 28.75 ri       0.0  3.36e-12p 1.22e-08p 2.41e-06p 4.82e-05p 5.79e-05p 1.63e-05p 1.52e-05p 2.16e-07p 2.87e-10p
sig0.596 cc       0.0  3.36e-12p 1.22e-08p 2.42e-06p 5.06e-05p 8.32e-05p 4.16e-05p 0.000140p 2.16e-07p 2.17e-07p
        rc      0.0  3.36e-12p 1.22e-08p 2.42e-06p 5.06e-05p 8.32e-05p 4.16e-05p 0.000140n 2.16e-07p 2.17e-07p
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.60e-05n      0.0       0.0
zp 28.62 ri       0.0  6.41e-12p 1.80e-08p 2.69e-06p 4.02e-05p 3.47e-05p 1.16e-05p 6.83e-06p 6.57e-08p 5.58e-11p
sig0.592 cc       0.0  6.41e-12p 1.80e-08p 2.70e-06p 4.29e-05p 5.62e-05p 3.30e-05p 9.60e-05p 6.57e-08p 6.58e-08p
        rc      0.0  6.41e-12p 1.80e-08p 2.70e-06p 4.29e-05p 5.62e-05p 3.30e-05p 9.60e-05n 6.57e-08p 6.58e-08p
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.72e-05n      0.0       0.0
zp 28.34 ri      0.0  3.31e-11p 4.78e-08p 4.16e-06p 3.10e-05p 1.76e-05p 3.10e-06p 1.38e-06p 6.23e-09p 1.93e-12p
sig0.585 cc      0.0  3.31e-11p 4.78e-08p 4.21e-06p 3.52e-05p 3.51e-05p 2.07e-05p 5.72e-05p 6.23e-09p 6.24e-09p
        rc      0.0  3.31e-11p 4.78e-08p 4.21e-06p 3.52e-05p 3.51e-05p 2.07e-05p 5.72e-05n 6.23e-09p 6.24e-09p
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.58e-05n      0.0       0.0
zp 28.10 ri      0.0  7.30e-11p 6.88e-08p 3.64e-06p 1.60e-05p 4.46e-06p 1.49e-06p 1.93e-07p 3.67e-10p      0.0
sig0.574 cc      0.0  7.30e-11p 6.89e-08p 3.71e-06p 1.97e-05p 1.43e-05p 1.13e-05p 2.58e-05p 3.67e-10p 3.67e-10p
        rc      0.0  7.30e-11p 6.89e-08p 3.71e-06p 1.97e-05p 1.43e-05p 1.13e-05p 2.58e-05m 3.67e-10p 3.67e-10p
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.12e-06n      0.0       0.0
zp 28.08 ri      0.0  4.93e-11p 1.68e-08p 5.29e-07p 1.80e-06p 5.55e-07p 1.85e-07p 3.40e-08p 1.46e-10p      0.0
sig0.620 cc      0.0  4.94e-11p 1.69e-08p 5.45e-07p 2.34e-06p 1.73e-06p 1.36e-06p 3.12e-06p 1.46e-10p 1.46e-10p
        rc      0.0  4.94e-11p 1.69e-08p 5.45e-07p 2.34e-06p 1.73e-06p 1.36e-06p 3.12e-06m 1.46e-10p 1.46e-10p
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.85e-06n      0.0       0.0
zp 28.25 ri      0.0       0.0  3.70e-09p 4.45e-07p 3.65e-06p 1.27e-06p 4.24e-07p 6.39e-08p 8.68e-11p      0.0
sig0.541 cc      0.0       0.0  3.70e-09p 4.49e-07p 4.10e-06p 3.32e-06p 2.47e-06p 5.85e-06p 8.68e-11p 8.68e-11p
        rc      0.0       0.0  3.70e-09p 4.49e-07p 4.10e-06p 3.32e-06p 2.47e-06p 5.85e-06n 8.68e-11p 8.68e-11p
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.99e-06n      0.0       0.0
zp 28.36 ri      0.0       0.0  4.72e-09p 4.63e-07p 6.36e-06p 2.20e-06p 7.32e-07p 2.35e-07p 4.42e-10p      0.0
sig0.555 cc      0.0       0.0  4.72e-09p 4.68e-07p 6.82e-06p 5.61e-06p 4.14e-06p 9.99e-06p 4.42e-10p 4.42e-10p
        rc      0.0       0.0  4.72e-09p 4.68e-07p 6.82e-06p 5.61e-06p 4.14e-06p 9.99e-06n 4.42e-10p 4.42e-10p
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.79e-06n      0.0       0.0
zp 28.10 ri      0.0  1.61e-12p 3.62e-09p 1.90e-07p 1.26e-06p 2.43e-07p 8.11e-08p 1.13e-08p 9.55e-12p      0.0
sig0.551 cc      0.0  1.61e-12p 3.62e-09p 1.94e-07p 1.45e-06p 9.71e-07p 8.09e-07p 1.79e-06p 9.55e-12p 9.55e-12p
        rc      0.0  1.61e-12p 3.62e-09p 1.94e-07p 1.45e-06p 9.71e-07p 8.09e-07p 1.79e-06n 9.55e-12p 9.55e-12p

  cu half life from 89wal1.
1

    mass number     71              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide      25 mn g   26 fe g   27 co g   28 ni g   29 cu g   30 zn m   30 zn g   31 ga g   32 ge m   32 ge g   33 as g
half life                                   20. s    3.97 h     2.4 m    stable    11.8 d    0.020s     64. h
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lambda          0.0       0.0       0.0       0.0 3.466e-02 4.850e-05 4.814e-03       0.0 6.799e-07 3.466e+01 3.008e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000       0.0 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0   99.9500       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0    0.0500       0.0       0.0  100.0000       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000170n      0.0       0.0       0.0
zp 28.95 ri      0.0  3.30e-09p 1.19e-06p 3.88e-05p 9.79e-05p 2.50e-05p 5.87e-06p 7.39e-07p 7.85e-10p 7.85e-10p       0.0
sig0.594 cc      0.0  3.30e-09p 1.19e-06p 4.00e-05p 0.000138p 2.50e-05p 0.000144p 0.000170p 7.85e-10p 1.57e-09p       0.0
         rc      0.0  3.30e-09p 1.19e-06p 4.00e-05p 0.000138p 2.50e-05p 0.000144o 0.000170n 7.85e-10p 1.57e-09p       0.0
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001107p      0.0       0.0       0.0
zp 28.84 ri 1.01e-12p 1.60e-08p 8.21e-06p 0.000323p 0.000630p 0.000117p 2.75e-05p 1.49e-06p 5.57e-10p 5.57e-10p       0.0
sig0.557 cc 1.01e-12p 1.61e-08p 8.22e-06p 0.000331p 0.000961p 0.000117p 0.000989p 0.001107p 5.57e-10p 1.11e-09p       0.0
         rc 1.01e-12p 1.61e-08p 8.22e-06p 0.000331p 0.000961p 0.000117p 0.000989p 0.001107o 5.57e-10p 1.11e-09p       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000270n      0.0       0.0       0.0
zp 29.13 ri      0.0  1.47e-09p 8.25e-07p 4.05e-05p 0.000154p 5.99e-05p 1.23e-05p 2.76e-06p 4.82e-09p 4.82e-09p 1.96e-12p
sig0.596 cc      0.0  1.47e-09p 8.27e-07p 4.14e-05p 0.000195p 5.99e-05p 0.000207p 0.000270p 4.82e-09p 9.64e-09p 1.96e-12p
         rc      0.0  1.47e-09p 8.27e-07p 4.14e-05p 0.000195p 5.99e-05p 0.000207p 0.000270n 4.82e-09p 9.64e-09p 1.96e-12p
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000190n      0.0       0.0       0.0
zp 29.00 ri      0.0  2.48e-09p 1.06e-06p 3.90e-05p 0.000111p 3.09e-05p 7.25e-06p 1.01e-06p 1.15e-09p 1.15e-09p       0.0
sig0.592 cc      0.0  2.48e-09p 1.06e-06p 4.01e-05p 0.000151p 3.09e-05p 0.000158p 0.000190p 1.15e-09p 2.31e-09p       0.0
         rc      0.0  2.48e-09p 1.06e-06p 4.01e-05p 0.000151p 3.09e-05p 0.000158p 0.000190n 1.15e-09p 2.31e-09p       0.0
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000110n      0.0       0.0       0.0
zp 28.72 ri 1.97e-12p 8.23e-09p 1.99e-06p 3.77e-05p 6.03e-05p 9.08e-06p 1.12e-06p 1.28e-07p 5.70e-11p 5.70e-11p       0.0
sig0.585 cc 1.97e-12p 8.23e-09p 2.00e-06p 3.97e-05p 0.000100p 9.08e-06p 0.000101p 0.000110p 5.70e-11p 1.14e-10p       0.0
         rc 1.97e-12p 8.23e-09p 2.00e-06p 3.97e-05p 0.000100p 9.08e-06p 0.000101o 0.000110n 5.70e-11p 1.14e-10p       0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.25e-05n      0.0       0.0       0.0
zp 28.48 ri 5.24e-12p 1.48e-08p 2.23e-06p 2.51e-05p 2.31e-05p 1.63e-06p 3.83e-07p 1.12e-08p 1.92e-12p 1.92e-12p       0.0
sig0.574 cc 5.24e-12p 1.48e-08p 2.24e-06p 2.73e-05p 5.04e-05p 1.63e-06p 5.08e-05p 5.25e-05p 1.92e-12p 3.84e-12p       0.0
         rc 5.24e-12p 1.48e-08p 2.24e-06p 2.73e-05p 5.04e-05p 1.63e-06p 5.08e-05o 5.25e-05n 1.92e-12p 3.84e-12p       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.22e-06n      0.0       0.0       0.0
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zp 28.46 ri 4.71e-12p 4.10e-09p 3.14e-07p 2.43e-06p 2.23e-06p 1.95e-07p 4.57e-08p 2.59e-09p 1.21e-12p 1.21e-12p      0.0
sig0.620 cc 4.71e-12p 4.11e-09p 3.18e-07p 2.75e-06p 4.98e-06p 1.95e-07p 5.02e-06p 5.22e-06p 1.21e-12p 2.43e-12p      0.0
        rc 4.71e-12p 4.11e-09p 3.18e-07p 2.75e-06p 4.98e-06p 1.95e-07p 5.02e-06o 5.22e-06n 1.21e-12p 2.43e-12p      0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.46e-05n      0.0       0.0       0.0
zp 28.63 ri      0.0  5.57e-10p 2.81e-07p 5.28e-06p 8.34e-06p 5.94e-07p 1.39e-07p 4.21e-09p      0.0       0.0       0.0
sig0.541 cc      0.0  5.57e-10p 2.82e-07p 5.56e-06p 1.39e-05p 5.94e-07p 1.40e-05p 1.46e-05p      0.0       0.0       0.0
        rc      0.0  5.57e-10p 2.82e-07p 5.56e-06p 1.39e-05p 5.94e-07p 1.40e-05o 1.46e-05n      0.0       0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.80e-05n      0.0       0.0       0.0
zp 28.74 ri      0.0  5.63e-10p 2.03e-07p 6.66e-06p 9.33e-06p 1.43e-06p 3.35e-07p 1.21e-08p 3.41e-12p 3.41e-12p      0.0
sig0.555 cc      0.0  5.63e-10p 2.04e-07p 6.87e-06p 1.62e-05p 1.43e-06p 1.65e-05p 1.80e-05p 3.41e-12p 6.81e-12p      0.0
        rc      0.0  5.63e-10p 2.04e-07p 6.87e-06p 1.62e-05p 1.43e-06p 1.65e-05o 1.80e-05n 3.41e-12p 6.81e-12p      0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.69e-06n      0.0       0.0       0.0
zp 28.48 ri      0.0  4.70e-10p 8.87e-08p 1.41e-06p 1.09e-06p 7.76e-08p 1.82e-08p 3.01e-10p      0.0       0.0       0.0
sig0.551 cc      0.0  4.70e-10p 8.92e-08p 1.50e-06p 2.59e-06p 7.76e-08p 2.61e-06p 2.69e-06p      0.0       0.0       0.0
        rc      0.0  4.70e-10p 8.92e-08p 1.50e-06p 2.59e-06p 7.76e-08p 2.61e-06o 2.69e-06n      0.0       0.0       0.0

  cu, zn half lives from 89wal1.
1

    mass number     72              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g   33 as g   34 se g
half life              0.124s    3.83 s     6.6 s    46.5 h    14.10h    stable    26.0 h    8.40 d
lambda            0.0 5.590e+00 1.810e-01 1.050e-01 4.141e-06 1.366e-05       0.0 7.405e-06 9.551e-07
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000376n      0.0       0.0
zp 29.34 ri 3.53e-10p 3.41e-07p 3.16e-05p 0.000185p 0.000150p 8.87e-06p 5.62e-08p 1.81e-11p      0.0
sig0.594 cc 3.53e-10p 3.41e-07p 3.20e-05p 0.000217p 0.000367p 0.000376p 0.000376p 1.81e-11p      0.0
        rc 3.53e-10p 3.41e-07p 3.20e-05p 0.000217p 0.000367p 0.000376o 0.000376n 1.81e-11p      0.0
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001499p      0.0       0.0
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zp 29.22 ri 9.06e-10p 1.31e-06p 0.000172p 0.000782p 0.000530p 1.43e-05p 3.82e-08p 2.58e-12p       0.0
sig0.557 cc 9.06e-10p 1.31e-06p 0.000173p 0.000955p 0.001485p 0.001499p 0.001499p 2.58e-12p       0.0
         rc 9.06e-10p 1.31e-06p 0.000173p 0.000955p 0.001485p 0.001499o 0.001499o 2.58e-12p       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000530n      0.0       0.0
zp 29.52 ri 1.16e-10p 1.77e-07p 2.45e-05p 0.000221p 0.000259p 2.44e-05p 2.45e-07p 1.38e-10p       0.0
sig0.596 cc 1.16e-10p 1.77e-07p 2.46e-05p 0.000246p 0.000505p 0.000530p 0.000530p 1.38e-10p       0.0
         rc 1.16e-10p 1.77e-07p 2.46e-05p 0.000246p 0.000505p 0.000530o 0.000530n 1.38e-10p       0.0
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000380n      0.0       0.0
zp 29.38 ri 2.40e-10p 2.75e-07p 2.79e-05p 0.000185p 0.000157p 1.02e-05p 6.69e-08p 2.32e-11p       0.0
sig0.592 cc 2.40e-10p 2.75e-07p 2.82e-05p 0.000213p 0.000370p 0.000380p 0.000380p 2.32e-11p       0.0
         rc 2.40e-10p 2.75e-07p 2.82e-05p 0.000213p 0.000370p 0.000380o 0.000380n 2.32e-11p       0.0
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000231n      0.0       0.0
zp 29.10 ri 1.03e-09p 7.01e-07p 3.52e-05p 0.000136p 5.66e-05p 1.90e-06p 4.85e-09p       0.0       0.0
sig0.585 cc 1.03e-09p 7.02e-07p 3.59e-05p 0.000172p 0.000229p 0.000231p 0.000231p       0.0       0.0
         rc 1.03e-09p 7.02e-07p 3.59e-05p 0.000172p 0.000229o 0.000231o 0.000231n       0.0       0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000109n      0.0       0.0
zp 28.85 ri 2.32e-09p 9.90e-07p 2.91e-05p 6.44e-05p 1.42e-05p 2.18e-07p 2.19e-10p       0.0       0.0
sig0.574 cc 2.32e-09p 9.92e-07p 3.01e-05p 9.45e-05p 0.000109p 0.000109p 0.000109p       0.0       0.0
         rc 2.32e-09p 9.92e-07p 3.01e-05p 9.45e-05p 0.000109o 0.000109o 0.000109n       0.0       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.14e-05n      0.0       0.0
zp 28.84 ri 9.15e-10p 1.74e-07p 3.15e-06p 6.43e-06p 1.59e-06p 4.19e-08p 1.00e-10p       0.0       0.0
sig0.620 cc 9.15e-10p 1.75e-07p 3.33e-06p 9.76e-06p 1.13e-05p 1.14e-05p 1.14e-05p       0.0       0.0
         rc 9.15e-10p 1.75e-07p 3.33e-06p 9.76e-06p 1.13e-05o 1.14e-05o 1.14e-05n       0.0       0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.93e-05n      0.0       0.0
zp 29.02 ri 4.97e-11p 6.90e-08p 5.23e-06p 1.81e-05p 5.83e-06p 8.72e-08p 7.19e-11p       0.0       0.0
sig0.541 cc 4.97e-11p 6.90e-08p 5.30e-06p 2.34e-05p 2.92e-05p 2.93e-05p 2.93e-05p       0.0       0.0
         rc 4.97e-11p 6.90e-08p 5.30e-06p 2.34e-05p 2.92e-05o 2.93e-05o 2.93e-05n       0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  5.99e-05n      0.0       0.0
zp 29.11 ri 9.77e-11p 9.28e-08p 1.03e-05p 3.12e-05p 1.80e-05p 3.06e-07p 6.33e-10p       0.0       0.0
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sig0.555 cc 9.77e-11p 9.29e-08p 1.04e-05p 4.16e-05p 5.96e-05p 5.99e-05p 5.99e-05p      0.0       0.0
         rc 9.77e-11p 9.29e-08p 1.04e-05p 4.16e-05p 5.96e-05o 5.99e-05o 5.99e-05n      0.0       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  9.95e-06n      0.0       0.0
zp 28.86 ri 1.09e-10p 5.72e-08p 3.04e-06p 5.34e-06p 1.50e-06p 1.27e-08p 1.04e-11p      0.0       0.0
sig0.551 cc 1.09e-10p 5.73e-08p 3.10e-06p 8.44e-06p 9.94e-06p 9.95e-06p 9.95e-06p      0.0       0.0
         rc 1.09e-10p 5.73e-08p 3.10e-06p 8.44e-06p 9.94e-06o 9.95e-06o 9.95e-06n      0.0       0.0

  co, ni half lives from 80eng2; cu, zn, ga half lives from 89wal1; as, se half lives 90bur1.

1

    mass number     73              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge m   32 ge g   33 as g   34 se m   34 se g
half life              0.129s    0.491s     3.9 s     24. s    4.87 h    0.53 s    stable    80.30d    39.8 m    7.15 h
lambda            0.0 5.373e+00 1.412e+00 1.777e-01 2.888e-02 3.954e-05 1.308e+00       0.0 9.991e-08 2.903e-04 2.693e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000670n      0.0       0.0       0.0
zp 29.72 ri 2.04e-11p 5.88e-08p 1.38e-05p 0.000213p 0.000383p 5.92e-05p 1.80e-07p 7.67e-07p 9.06e-10p      0.0       0.0
sig0.594 cc 2.04e-11p 5.88e-08p 1.39e-05p 0.000227p 0.000610p 0.000669p 0.000669p 0.000670p 9.07e-10p      0.0       0.0
         rc 2.04e-11p 5.88e-08p 1.39e-05p 0.000227p 0.000610p 0.000669o 0.000669n 0.000670m 9.07e-10p      0.0       0.0
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.002097p      0.0       0.0       0.0
zp 29.60 ri 2.88e-11p 1.52e-07p 5.41e-05p 0.000764p 0.001177p 0.000100p 1.40e-07p 5.99e-07p 1.84e-10p      0.0       0.0
sig0.557 cc 2.88e-11p 1.52e-07p 5.42e-05p 0.000818p 0.001996p 0.002096p 0.002096p 0.002097p 1.84e-10p      0.0       0.0
         rc 2.88e-11p 1.52e-07p 5.42e-05p 0.000818p 0.001996p 0.002096p 0.002096o 0.002097o 1.84e-10p      0.0       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.001000n      0.0       0.0       0.0
zp 29.90 ri 6.14e-12p 2.74e-08p 9.80e-06p 0.000231p 0.000610p 0.000145p 6.24e-07p 3.05e-06p 5.94e-09p      0.0       0.0
sig0.596 cc 6.14e-12p 2.74e-08p 9.83e-06p 0.000241p 0.000852p 0.000996p 0.000997p 0.001000p 5.94e-09p      0.0       0.0
         rc 6.14e-12p 2.74e-08p 9.83e-06p 0.000241p 0.000852p 0.000996o 0.000997n 0.001000m 5.94e-09p      0.0       0.0
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000730n      0.0       0.0       0.0
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zp 29.76 ri 1.43e-11p 4.83e-08p 1.28e-05p 0.000220p 0.000425p 7.14e-05p 2.29e-07p 9.76e-07p 1.23e-09p      0.0       0.0
sig0.592 cc 1.43e-11p 4.83e-08p 1.28e-05p 0.000233p 0.000658p 0.000729p 0.000729p 0.000730p 1.23e-09p      0.0       0.0
         rc 1.43e-11p 4.83e-08p 1.28e-05p 0.000233p 0.000658p 0.000729o 0.000729n 0.000730m 1.23e-09p      0.0       0.0
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000451n      0.0       0.0       0.0
zp 29.47 ri 8.66e-11p 1.66e-07p 2.21e-05p 0.000208p 0.000203p 1.73e-05p 1.32e-08p 1.07e-07p 4.93e-11p      0.0       0.0
sig0.585 cc 8.66e-11p 1.66e-07p 2.23e-05p 0.000231p 0.000434p 0.000451p 0.000451p 0.000451p 4.93e-11p      0.0       0.0
         rc 8.66e-11p 1.66e-07p 2.23e-05p 0.000231p 0.000434p 0.000451o 0.000451n 0.000451m 4.93e-11p      0.0       0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000208n      0.0       0.0       0.0
zp 29.23 ri 2.06e-10p 2.61e-07p 2.13e-05p 0.000119p 6.54e-05p 2.77e-06p 1.56e-09p 6.66e-09p 1.26e-12p      0.0       0.0
sig0.574 cc 2.06e-10p 2.61e-07p 2.16e-05p 0.000140p 0.000206p 0.000208p 0.000208p 0.000208p 1.26e-12p      0.0       0.0
         rc 2.06e-10p 2.61e-07p 2.16e-05p 0.000140p 0.000206p 0.000208o 0.000208n 0.000208m 1.26e-12p      0.0       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.86e-05n      0.0       0.0       0.0
zp 29.21 ri 1.15e-10p 5.42e-08p 2.30e-06p 1.03e-05p 5.61e-06p 3.45e-07p 3.88e-10p 1.65e-09p 1.03e-12p      0.0       0.0
sig0.620 cc 1.15e-10p 5.43e-08p 2.35e-06p 1.27e-05p 1.83e-05p 1.86e-05p 1.86e-05p 1.86e-05p 1.03e-12p      0.0       0.0
         rc 1.15e-10p 5.43e-08p 2.35e-06p 1.27e-05p 1.83e-05p 1.86e-05o 1.86e-05n 1.86e-05m 1.03e-12p      0.0       0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  8.85e-05n      0.0       0.0       0.0
zp 29.39 ri 3.74e-12p 2.20e-08p 4.10e-06p 4.94e-05p 3.30e-05p 1.87e-06p 7.54e-10p 3.21e-09p      0.0       0.0       0.0
sig0.541 cc 3.74e-12p 2.20e-08p 4.12e-06p 5.35e-05p 8.66e-05p 8.85e-05p 8.85e-05p 8.85e-05p      0.0       0.0       0.0
         rc 3.74e-12p 2.20e-08p 4.12e-06p 5.35e-05p 8.66e-05p 8.85e-05o 8.85e-05n 8.85e-05m      0.0       0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000150n      0.0       0.0       0.0
zp 29.49 ri 6.00e-12p 2.18e-08p 6.27e-06p 6.13e-05p 7.77e-05p 4.46e-06p 4.69e-09p 2.00e-08p 3.78e-12p      0.0       0.0
sig0.555 cc 6.00e-12p 2.18e-08p 6.30e-06p 6.76e-05p 0.000145p 0.000150p 0.000150p 0.000150p 3.78e-12p      0.0       0.0
         rc 6.00e-12p 2.18e-08p 6.30e-06p 6.76e-05p 0.000145p 0.000150o 0.000150n 0.000150m 3.78e-12p      0.0       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.99e-05n      0.0       0.0       0.0
zp 29.23 ri 1.18e-11p 2.26e-08p 3.06e-06p 1.63e-05p 1.02e-05p 2.93e-07p 1.24e-10p 5.29e-10p      0.0       0.0       0.0
sig0.551 cc 1.18e-11p 2.26e-08p 3.09e-06p 1.93e-05p 2.96e-05p 2.99e-05p 2.99e-05p 2.99e-05p      0.0       0.0       0.0
         rc 1.18e-11p 2.26e-08p 3.09e-06p 1.93e-05p 2.96e-05p 2.99e-05o 2.99e-05n 2.99e-05m      0.0       0.0       0.0
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co, ni half lives from 80eng2; cu, zn, ga half lives from 89wal1; as half life 73bro1; se half life 90bur1.

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    mass number     74              LA-UR-94-3106 (ENDF-349)                                percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g   33 as m   33 as g   34 se g
half life              0.092s    0.900s    0.648s    1.60 m     8.1 m    stable    8.0  s    17.76d    stable
lambda            0.0 7.534e+00 7.702e-01 1.070e+00 7.220e-03 1.426e-03       0.0 8.664e-02 4.517e-07       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  -67.3000   32.7000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001712n      0.0       0.0       0.0
zp 30.10 ri 1.21e-12p 9.30e-09p 6.37e-06p 0.000238p 0.001075p 0.000376p 1.66e-05p 2.90e-08p 1.24e-08p 9.35e-12p
sig0.594 cc 1.21e-12p 9.30e-09p 6.38e-06p 0.000244p 0.001319p 0.001695p 0.001712p 2.90e-08p 4.14e-08p 1.36e-08p
         rc 1.21e-12p 9.30e-09p 6.38e-06p 0.000244p 0.001319p 0.001695o 0.001712n 2.90e-08p 4.14e-08p 1.36e-08o
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.002871p      0.0       0.0       0.0
zp 29.98 ri       0.0  9.73e-09p 1.23e-05p 0.000444p 0.001999p 0.000405p 1.01e-05p 5.01e-09p 2.15e-09p       0.0
sig0.557 cc       0.0  9.73e-09p 1.23e-05p 0.000457p 0.002456p 0.002861p 0.002871p 5.01e-09p 7.16e-09p 2.34e-09p
         rc       0.0  9.73e-09p 1.23e-05p 0.000457p 0.002456p 0.002861p 0.002871o 5.01e-09p 7.16e-09p 2.34e-09o
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.002000n      0.0       0.0       0.0
zp 30.28 ri       0.0  2.94e-09p 3.00e-06p 0.000177p 0.001156p 0.000623p 4.19e-05p 1.30e-07p 4.79e-08p 6.64e-11p
sig0.596 cc       0.0  2.94e-09p 3.01e-06p 0.000180p 0.001335p 0.001958p 0.002000p 1.30e-07p 1.78e-07p 5.81e-08p
         rc       0.0  2.94e-09p 3.01e-06p 0.000180p 0.001335p 0.001958o 0.002000n 1.30e-07p 1.78e-07p 5.81e-08o
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001401n      0.0       0.0       0.0
zp 30.14 ri       0.0  5.52e-09p 4.19e-06p 0.000180p 0.000865p 0.000336p 1.54e-05p 2.93e-08p 1.26e-08p 9.56e-12p
sig0.592 cc       0.0  5.52e-09p 4.20e-06p 0.000185p 0.001049p 0.001385p 0.001401p 2.93e-08p 4.19e-08p 1.37e-08p
         rc       0.0  5.52e-09p 4.20e-06p 0.000185p 0.001049p 0.001385o 0.001401n 2.93e-08p 4.19e-08p 1.37e-08o
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000863n      0.0       0.0       0.0
zp 29.85 ri 4.39e-12p 2.45e-08p 9.12e-06p 0.000222p 0.000519p 0.000111p 2.11e-06p 2.04e-09p 4.49e-10p       0.0
sig0.585 cc 4.39e-12p 2.45e-08p 9.14e-06p 0.000231p 0.000750p 0.000861p 0.000863p 2.04e-09p 2.49e-09p 8.15e-10p
         rc 4.39e-12p 2.45e-08p 9.14e-06p 0.000231p 0.000750p 0.000861o 0.000863n 2.04e-09p 2.49e-09p 8.15e-10p
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000396n      0.0       0.0       0.0
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zp 29.60 ri 1.31e-11p 4.84e-08p 1.10e-05p 0.000156p 0.000206p 2.26e-05p 1.89e-07p 5.95e-11p 2.55e-11p       0.0
sig0.574 cc 1.31e-11p 4.84e-08p 1.11e-05p 0.000167p 0.000373p 0.000396p 0.000396p 5.95e-11p 8.50e-11p 2.78e-11p
         rc 1.31e-11p 4.84e-08p 1.11e-05p 0.000167p 0.000373p 0.000396o 0.000396n 5.95e-11p 8.50e-11p 2.78e-11o
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  5.22e-05n      0.0       0.0       0.0
zp 29.59 ri 1.63e-11p 1.96e-08p 2.04e-06p 2.11e-05p 2.54e-05p 3.65e-06p 5.35e-08p 4.84e-11p 2.08e-11p       0.0
sig0.620 cc 1.63e-11p 1.96e-08p 2.06e-06p 2.31e-05p 4.85e-05p 5.22e-05p 5.22e-05p 4.84e-11p 6.92e-11p 2.26e-11p
         rc 1.63e-11p 1.96e-08p 2.06e-06p 2.31e-05p 4.85e-05p 5.22e-05o 5.22e-05n 4.84e-11p 6.92e-11p 2.26e-11o
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000263n      0.0       0.0       0.0
zp 29.77 ri       0.0  3.28e-09p 2.59e-06p 7.31e-05p 0.000166p 2.15e-05p 1.91e-07p 3.84e-11p 1.65e-11p       0.0
sig0.541 cc       0.0  3.28e-09p 2.59e-06p 7.56e-05p 0.000242p 0.000263p 0.000263p 3.84e-11p 5.49e-11p 1.79e-11p
         rc      0.0  3.28e-09p 2.59e-06p 7.56e-05p 0.000242p 0.000263o 0.000263n 3.84e-11p 5.49e-11p 1.79e-11o
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000300n      0.0       0.0       0.0
zp 29.87 ri       0.0  2.18e-09p 2.32e-06p 5.52e-05p 0.000213p 2.84e-05p 5.68e-07p 1.68e-10p 7.19e-11p       0.0
sig0.555 cc       0.0  2.18e-09p 2.33e-06p 5.75e-05p 0.000271p 0.000299p 0.000300p 1.68e-10p 2.40e-10p 7.84e-11p
         rc      0.0  2.18e-09p 2.33e-06p 5.75e-05p 0.000271p 0.000299o 0.000300n 1.68e-10p 2.40e-10p 7.84e-11o
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  7.96e-05n      0.0       0.0       0.0
zp 29.61 ri       0.0  4.02e-09p 1.98e-06p 2.56e-05p 4.85e-05p 3.45e-06p 2.82e-08p 3.61e-12p 1.55e-12p       0.0
sig0.551 cc       0.0  4.02e-09p 1.99e-06p 2.76e-05p 7.61e-05p 7.96e-05p 7.96e-05p 3.61e-12p 5.16e-12p 1.69e-12p
         rc      0.0  4.02e-09p 1.99e-06p 2.76e-05p 7.61e-05p 7.96e-05o 7.96e-05n 3.61e-12p 5.16e-12p 1.69e-12o

  co, ni, cu half lives 80eng2; zn, ga half lives 89wal1.
1

    mass number     75              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge m   32 ge g   33 as g   34 se g   35 br g
half life     0.082s    0.231s     1.3 s    10.2 s    2.10 m    48.9 s    1.380h    stable    119.8d     97. m
lambda      8.453e+00 3.001e+00 5.332e-01 6.796e-02 5.501e-03 1.417e-02 1.395e-04       0.0 6.697e-08 1.191e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000    4.0000   96.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.004238n      0.0       0.0
```

zp 30.48 ri 1.05e-09p 1.89e-06p 0.000198p 0.002053p 0.001795p 0.000164p 2.45e-05p 1.36e-06p 8.12e-10p 0.0
sig0.594 cc 1.05e-09p 1.89e-06p 0.000200p 0.002253p 0.004048p 0.000326p 0.004236p 0.004238p 8.12e-10p 0.0
rc 1.05e-09p 1.89e-06p 0.000200p 0.002253p 0.004048p 0.000326p 0.004236o 0.004238n 8.12e-10p 0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.004155p 0.0 0.0
zp 30.36 ri 5.15e-10p 1.85e-06p 0.000226p 0.002407p 0.001428p 7.96e-05p 1.19e-05p 2.30e-07p 3.90e-11p 0.0
sig0.557 cc 5.15e-10p 1.85e-06p 0.000228p 0.002635p 0.004063p 0.000242p 0.004154p 0.004155p 3.90e-11p 0.0
rc 5.15e-10p 1.85e-06p 0.000228p 0.002635p 0.004063p 0.000242o 0.004154o 0.004155o 3.90e-11p 0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.003700n 0.0 0.0
zp 30.66 ri 2.08e-10p 5.69e-07p 9.25e-05p 0.001430p 0.001874p 0.000264p 3.60e-05p 3.53e-06p 3.53e-09p 0.0
sig0.596 cc 2.08e-10p 5.69e-07p 9.31e-05p 0.001523p 0.003397p 0.000400p 0.003697p 0.003700p 3.53e-09p 0.0
rc 2.08e-10p 5.69e-07p 9.31e-05p 0.001523p 0.003397p 0.000400p 0.003697o 0.003700n 3.53e-09p 0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.002601n 0.0 0.0
zp 30.53 ri 3.99e-10p 8.41e-07p 0.000103p 0.001195p 0.001168p 0.000116p 1.74e-05p 1.06e-06p 6.76e-10p 0.0
sig0.592 cc 3.99e-10p 8.42e-07p 0.000104p 0.001299p 0.002467p 0.000215p 0.002600p 0.002601p 6.76e-10p 0.0
rc 3.99e-10p 8.42e-07p 0.000104p 0.001299p 0.002467p 0.000215p 0.002600o 0.002601n 6.76e-10p 0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.001605n 0.0 0.0
zp 30.23 ri 2.36e-09p 2.51e-06p 0.000163p 0.000933p 0.000483p 2.25e-05p 1.95e-06p 8.20e-08p 1.86e-11p 0.0
sig0.585 cc 2.36e-09p 2.51e-06p 0.000166p 0.001098p 0.001581p 8.57e-05p 0.001605p 0.001605p 1.86e-11p 0.0
rc 2.36e-09p 2.51e-06p 0.000166p 0.001098p 0.001581p 8.57e-05o 0.001605o 0.001605n 1.86e-11p 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000762n 0.0 0.0
zp 29.98 ri 5.68e-09p 3.80e-06p 0.000146p 0.000477p 0.000133p 2.73e-06p 4.08e-07p 4.23e-09p 0.0 0.0
sig0.574 cc 5.68e-09p 3.80e-06p 0.000149p 0.000626p 0.000759p 3.31e-05p 0.000762p 0.000762p 0.0 0.0
rc 5.68e-09p 3.80e-06p 0.000149p 0.000626p 0.000759p 3.31e-05o 0.000762o 0.000762n 0.0 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.22e-05n 0.0 0.0
zp 29.96 ri 1.90e-09p 4.83e-07p 1.15e-05p 3.02e-05p 9.66e-06p 2.93e-07p 4.37e-08p 1.08e-09p 0.0 0.0
sig0.620 cc 1.90e-09p 4.85e-07p 1.20e-05p 4.22e-05p 5.19e-05p 2.37e-06p 5.22e-05p 5.22e-05p 0.0 0.0
rc 1.90e-09p 4.85e-07p 1.20e-05p 4.22e-05p 5.19e-05o 2.37e-06o 5.22e-05o 5.22e-05n 0.0 0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000439n 0.0 0.0
zp 30.15 ri 2.25e-10p 4.76e-07p 5.36e-05p 0.000263p 0.000120p 2.30e-06p 3.43e-07p 3.31e-09p 0.0 0.0

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sig0.541 cc 2.25e-10p 4.77e-07p 5.41e-05p 0.000317p 0.000436p 1.98e-05p 0.000439p 0.000439p      0.0       0.0
         rc 2.25e-10p 4.77e-07p 5.41e-05p 0.000317p 0.000436p 1.98e-05o 0.000439o 0.000439n      0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000899n      0.0       0.0
zp 30.25 ri 2.73e-10p 7.96e-07p 6.66e-05p 0.000580p 0.000239p 1.04e-05p 1.56e-06p 1.91e-08p 2.32e-12p      0.0
sig0.555 cc 2.73e-10p 7.96e-07p 6.74e-05p 0.000647p 0.000887p 4.59e-05p 0.000899p 0.000899p 2.32e-12p      0.0
         rc 2.73e-10p 7.96e-07p 6.74e-05p 0.000647p 0.000887p 4.59e-05o 0.000899o 0.000899n 2.32e-12p      0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000199n      0.0       0.0
zp 29.98 ri 5.65e-10p 7.55e-07p 3.23e-05p 0.000136p 2.96e-05p 5.47e-07p 8.17e-08p 4.23e-10p      0.0       0.0
sig0.551 cc 5.65e-10p 7.56e-07p 3.30e-05p 0.000169p 0.000198p 8.48e-06p 0.000199p 0.000199p      0.0       0.0
         rc 5.65e-10p 7.56e-07p 3.30e-05p 0.000169p 0.000198p 8.48e-06o 0.000199o 0.000199n      0.0       0.0

  co, ni half lives 80eng2; cu, zn, ga, ge half lives 89wal1; se, br half lives 90bur1.

1

    mass number     76              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide       26 fe g   27 co g   28 ni g   29 cu g   30 zn g   31 ga g   32 ge g   33 as g   34 se g
half life                     0.305s     0.6 s     5.7 s     29. s    stable    26.3 h    stable
lambda            0.0       0.0 2.273e+00 1.155e+00 1.216e-01 2.390e-02       0.0 7.321e-06       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.008559n      0.0       0.0
zp 30.86 ri       0.0  6.15e-11p 3.30e-07p 8.83e-05p 0.002446p 0.004734p 0.001290p 2.32e-05p 4.11e-08p
sig0.594 cc       0.0  6.15e-11p 3.30e-07p 8.87e-05p 0.002534p 0.007268p 0.008559p 2.32e-05p 2.32e-05p
         rc       0.0  6.15e-11p 3.30e-07p 8.87e-05p 0.002534p 0.007268p 0.008559n 2.32e-05p 2.32e-05p
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.005703p      0.0       0.0
zp 30.74 ri       0.0  1.45e-11p 1.91e-07p 6.41e-05p 0.002156p 0.002902p 0.000580p 3.97e-06p 2.46e-09p
sig0.557 cc       0.0  1.45e-11p 1.91e-07p 6.43e-05p 0.002220p 0.005123p 0.005703p 3.97e-06p 3.97e-06p
         rc       0.0  1.45e-11p 1.91e-07p 6.43e-05p 0.002220p 0.005123p 0.005703o 3.97e-06p 3.97e-06p
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.006600n      0.0       0.0
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zp 31.05 ri       0.0  8.34e-12p 6.84e-08p 2.98e-05p 0.001247p 0.003781p 0.001543p 4.65e-05p 1.37e-07p
sig0.596 cc       0.0  8.34e-12p 6.84e-08p 2.98e-05p 0.001277p 0.005057p 0.006600p 4.65e-05p 4.67e-05p
         rc       0.0  8.34e-12p 6.84e-08p 2.98e-05p 0.001277p 0.005057p 0.006600n 4.65e-05p 4.67e-05p
 cm244f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.004802n      0.0       0.0
zp 30.90 ri       0.0  2.21e-11p 1.34e-07p 4.21e-05p 0.001257p 0.002727p 0.000776p 1.53e-05p 2.78e-08p
sig0.592 cc       0.0  2.21e-11p 1.34e-07p 4.22e-05p 0.001299p 0.004026p 0.004802p 1.53e-05p 1.54e-05p
         rc       0.0  2.21e-11p 1.34e-07p 4.22e-05p 0.001299p 0.004026p 0.004802n 1.53e-05p 1.54e-05p
 cm246f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.003010n      0.0       0.0
zp 30.61 ri       0.0  1.53e-10p 4.71e-07p 8.44e-05p 0.001218p 0.001511p 0.000196p 1.83e-06p 1.20e-09p
sig0.585 cc       0.0  1.53e-10p 4.71e-07p 8.49e-05p 0.001303p 0.002814p 0.003010p 1.83e-06p 1.83e-06p
         rc       0.0  1.53e-10p 4.71e-07p 8.49e-05p 0.001303p 0.002814o 0.003010n 1.83e-06p 1.83e-06p
 cm248f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.001386n      0.0       0.0
zp 30.35 ri       0.0  4.55e-10p 8.83e-07p 9.25e-05p 0.000752p 0.000508p 3.18e-05p 1.23e-07p 2.88e-11p
sig0.574 cc       0.0  4.55e-10p 8.83e-07p 9.34e-05p 0.000845p 0.001354p 0.001386p 1.23e-07p 1.23e-07p
         rc       0.0  4.55e-10p 8.83e-07p 9.34e-05p 0.000845p 0.001354o 0.001386n 1.23e-07p 1.23e-07p
 pu242h  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.000209n      0.0       0.0
zp 30.34 ri       0.0  4.85e-10p 3.14e-07p 1.81e-05p 0.000108p 7.68e-05p 6.34e-06p 5.12e-08p 3.56e-11p
sig0.620 cc       0.0  4.85e-10p 3.15e-07p 1.84e-05p 0.000126p 0.000203p 0.000209p 5.12e-08p 5.13e-08p
         rc       0.0  4.85e-10p 3.15e-07p 1.84e-05p 0.000126p 0.000203o 0.000209n 5.12e-08p 5.13e-08p
 np237t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.001854n      0.0       0.0
zp 30.53 ri       0.0  1.83e-11p 1.71e-07p 4.93e-05p 0.000884p 0.000849p 7.17e-05p 2.37e-07p 3.94e-11p
sig0.541 cc       0.0  1.83e-11p 1.71e-07p 4.95e-05p 0.000934p 0.001782p 0.001854p 2.37e-07p 2.37e-07p
         rc       0.0  1.83e-11p 1.71e-07p 4.95e-05p 0.000934p 0.001782o 0.001854n 2.37e-07p 2.37e-07p
 pu240t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.001797n      0.0       0.0
zp 30.63 ri       0.0  1.22e-11p 1.37e-07p 3.02e-05p 0.000861p 0.000777p 0.000129p 5.46e-07p 2.57e-10p
sig0.555 cc       0.0  1.22e-11p 1.37e-07p 3.03e-05p 0.000891p 0.001668p 0.001797p 5.46e-07p 5.46e-07p
         rc       0.0  1.22e-11p 1.37e-07p 3.03e-05p 0.000891p 0.001668o 0.001797n 5.46e-07p 5.46e-07p
 pu242t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.000418n      0.0       0.0
zp 30.36 ri       0.0  3.40e-11p 1.73e-07p 1.96e-05p 0.000259p 0.000129p 9.36e-06p 1.77e-08p 2.97e-12p
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 sig0.551 cc       0.0  3.40e-11p 1.73e-07p 1.98e-05p 0.000279p 0.000408p 0.000418p 1.77e-08p 1.77e-08p
          rc       0.0  3.40e-11p 1.73e-07p 1.98e-05p 0.000279p 0.000408o 0.000418n 1.77e-08p 1.77e-08p

   ni half lives 80eng2; cu, zn, ga half lives 89wal1.
1

      mass number     77              LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       28 ni g   29 cu g   30 zn g   31 ga g   32 ge m   32 ge g   33 as g   34 se m   34 se g   35 br m   35 br g   36 kr g
 half life     0.103s    0.305s     2.1 s    13.0 s     53. s    11.30h    38.8 h    17.45s    stable    4.3  m    57.04h    74.4 m
 lambda       6.730e+00 2.273e+00 3.301e-01 5.332e-02 1.308e-02 1.704e-05 4.962e-06 3.972e-02       0.0 2.687e-03 3.376e-06
1.553e-04
  z - 1 g    100.0000  100.0000  100.0000  100.0000   88.0000   12.0000  100.0000    0.3000   99.7000       0.0  -99.0000  -80.0000
  z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0   79.0000       0.0       0.0       0.0   -1.0000  -20.0000
  z - 0 m        0.0       0.0       0.0       0.0       0.0   21.0000       0.0       0.0  100.0000       0.0  100.0000       0.0
  cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.017785n      0.0       0.0       0.0
 zp 31.25 ri 3.40e-08p 2.74e-05p 0.001903p 0.009576p 0.000777p 0.005200p 0.000301p 1.23e-06p 1.84e-07p 2.92e-10p 8.72e-11p
0.0
 sig0.594 cc 3.40e-08p 2.74e-05p 0.001930p 0.011506p 0.010902p 0.008870p 0.017784p 5.46e-05p 0.017785p 2.92e-10p 3.79e-10p
0.0
          rc 3.40e-08p 2.74e-05p 0.001930p 0.011506p 0.010902p 0.008870p 0.017784n 5.46e-05n 0.017785m 2.92e-10p 3.79e-10p
0.0
  cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.007492p      0.0       0.0       0.0
 zp 31.12 ri 1.04e-08p 1.25e-05p 0.001089p 0.004322p 0.000263p 0.001759p 4.64e-05p 7.07e-08p 1.06e-08p 3.50e-12p 1.05e-12p
0.0
 sig0.557 cc 1.04e-08p 1.25e-05p 0.001101p 0.005424p 0.005036p 0.003467p 0.007492p 2.25e-05p 0.007492p 3.50e-12p 4.55e-12p
0.0
          rc 1.04e-08p 1.25e-05p 0.001101p 0.005424p 0.005036p 0.003467p 0.007492o 2.25e-05n 0.007492n 3.50e-12p 4.55e-12p
0.0
  cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.012000n      0.0       0.0       0.0
 zp 31.43 ri 5.63e-09p 7.04e-06p 0.000741p 0.005644p 0.000623p 0.004570p 0.000411p 2.76e-06p 3.77e-07p 1.14e-09p 3.03e-10p
0.0
 sig0.596 cc 5.63e-09p 7.05e-06p 0.000749p 0.006393p 0.006249p 0.006650p 0.011997p 3.88e-05p 0.012000p 1.14e-09p 1.44e-09p
0.0
```

rc 5.63e-09p 7.05e-06p 0.000749p 0.006393p 0.006249p 0.006650p 0.011997o 3.88e-05o 0.012000n 1.14e-09p 1.44e-09p
0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.008503n 0.0 0.0 0.0
zp 31.29 ri 1.12e-08p 1.05e-05p 0.000810p 0.004510p 0.000391p 0.002617p 0.000164p 7.05e-07p 1.05e-07p 1.76e-10p 5.26e-11p
0.0
sig0.592 cc 1.12e-08p 1.05e-05p 0.000820p 0.005330p 0.005082p 0.004324p 0.008502p 2.62e-05p 0.008503p 1.76e-10p 2.29e-10p
0.0
rc 1.12e-08p 1.05e-05p 0.000820p 0.005330p 0.005082p 0.004324p 0.008502n 2.62e-05n 0.008503m 1.76e-10p 2.29e-10p
0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.005313n 0.0 0.0 0.0
zp 30.98 ri 6.01e-08p 2.95e-05p 0.001087p 0.003176p 6.97e-05p 0.000926p 2.46e-05p 4.14e-08p 3.60e-09p 4.00e-12p 0.0
0.0
sig0.585 cc 6.01e-08p 2.96e-05p 0.001117p 0.004293p 0.003847p 0.002249p 0.005313p 1.60e-05p 0.005313p 4.00e-12p 4.65e-12p
0.0
rc 6.01e-08p 2.96e-05p 0.001117p 0.004293p 0.003847p 0.002249o 0.005313n 1.60e-05n 0.005313m 4.00e-12p 4.65e-12p
0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.002581n 0.0 0.0 0.0
zp 30.73 ri 1.33e-07p 4.03e-05p 0.000865p 0.001438p 3.06e-05p 0.000205p 2.61e-06p 1.61e-09p 2.41e-10p 0.0 0.0 0.0
sig0.574 cc 1.33e-07p 4.04e-05p 0.000905p 0.002343p 0.002092p 0.000926p 0.002581p 7.74e-06p 0.002581p 0.0 0.0
0.0
rc 1.33e-07p 4.04e-05p 0.000905p 0.002343p 0.002092p 0.000926o 0.002581n 7.74e-06n 0.002581m 0.0 0.0 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.005183n 0.0 0.0 0.0
zp 30.71 ri 9.45e-07p 0.000131p 0.001774p 0.002753p 6.67e-05p 0.000447p 9.99e-06p 1.51e-08p 2.26e-09p 1.92e-12p 0.0
0.0
sig0.620 cc 9.45e-07p 0.000132p 0.001907p 0.004659p 0.004167p 0.001881p 0.005183p 1.56e-05p 0.005183p 1.92e-12p 2.49e-
12p 0.0
rc 9.45e-07p 0.000132p 0.001907p 0.004659o 0.004167p 0.001881o 0.005183n 1.56e-05n 0.005183m 1.92e-12p 2.49e-12p
0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.004325n 0.0 0.0 0.0
zp 30.91 ri 1.66e-08p 2.05e-05p 0.000876p 0.002876p 7.08e-05p 0.000474p 7.42e-06p 2.93e-09p 4.38e-10p 0.0 0.0 0.0

sig0.541 cc 1.66e-08p 2.05e-05p 0.000897p 0.003773p 0.003391p 0.001639p 0.004325p 1.30e-05p 0.004325p 0.0 0.0 0.0
rc 1.66e-08p 2.05e-05p 0.000897p 0.003773p 0.003391p 0.001639o 0.004325n 1.30e-05n 0.004325m 0.0 0.0 0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.005894n 0.0 0.0 0.0
zp 31.01 ri 2.10e-08p 1.73e-05p 0.001214p 0.003365p 0.000166p 0.001112p 1.92e-05p 2.16e-08p 3.23e-09p 0.0 0.0 0.0
sig0.555 cc 2.10e-08p 1.73e-05p 0.001232p 0.004597p 0.004211p 0.002548p 0.005894p 1.77e-05p 0.005894p 0.0 0.0 0.0
rc 2.10e-08p 1.73e-05p 0.001232p 0.004597p 0.004211p 0.002548o 0.005894n 1.77e-05n 0.005894m 0.0 0.0 0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.002690n 0.0 0.0 0.0
zp 30.74 ri 7.05e-08p 2.94e-05p 0.000963p 0.001440p 3.32e-05p 0.000222p 1.75e-06p 7.38e-10p 1.10e-10p 0.0 0.0 0.0
sig0.551 cc 7.05e-08p 2.95e-05p 0.000993p 0.002433p 0.002174p 0.000971p 0.002690p 8.07e-06p 0.002690p 0.0 0.0 0.0
rc 7.05e-08p 2.95e-05p 0.000993p 0.002433p 0.002174p 0.000971o 0.002690n 8.07e-06n 0.002690m 0.0 0.0 0.0

ni, cu half lives from 80eng2; zn, ga, ge, as half lives from 89wal1; kr, br, se half lives 90bur1.

1

mass number 78 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 28 ni g 29 cu g 30 zn g 31 ga d 31 ga g 32 ge d 32 ge g 33 as g 34 se g 35 br g 36 kr g
half life 0.132s 0.118s 1.5 s 0.313s 5.09 s 3.0 s 1.45 h 1.512h stable 6.4 m stable
lambda 5.251e+00 5.874e+00 4.621e-01 2.215e+00 1.362e-01 2.310e-01 1.328e-04 1.273e-04 0.0 1.805e-03 0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 100.0000 0.0 100.0000 100.0000 100.0000 -100.0000 0.0
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 1.1460 100.0000 0.0890 100.0000 0.0 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.029913n 0.0 0.0
zp 31.63 ri 2.16e-09p 4.59e-06p 0.000905p 0.0 0.010571p 0.0 0.016454p 0.001942p 2.62e-05p 1.85e-08p 1.15e-12p
sig0.594 cc 2.16e-09p 4.59e-06p 0.000910p 0.0 0.011481p 0.0 0.027935p 0.029876p 0.029903p 1.85e-08p 1.15e-12p
rc 2.16e-09p 4.59e-06p 0.000910p 3.34e-06o 0.011484p 8.43e-06o 0.027946p 0.029888o 0.029914n 1.85e-08p 1.15e-12p
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.011856p 0.0 0.0
zp 31.50 ri 4.77e-10p 1.63e-06p 0.000488p 0.0 0.004660p 0.0 0.006334p 0.000366p 2.26e-06p 3.66e-10p 0.0
sig0.557 cc 4.77e-10p 1.63e-06p 0.000490p 0.0 0.005150p 0.0 0.011484p 0.011850p 0.011853p 3.66e-10p 0.0

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        rc 4.77e-10p 1.63e-06p 0.000490p 1.37e-06o 0.005152p 3.36e-06o 0.011489p 0.011855p 0.011857o 3.66e-10p      0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.020001n      0.0       0.0
zp 31.81 ri 2.99e-10p 1.00e-06p 0.000295p      0.0  0.005376p      0.0  0.012044p 0.002233p 4.70e-05p 5.75e-08p 5.98e-12p
sig0.596 cc 2.99e-10p 1.00e-06p 0.000296p      0.0  0.005673p      0.0  0.017716p 0.019949p 0.019996p 5.75e-08p 5.98e-12p
        rc 2.99e-10p 1.00e-06p 0.000296p 9.33e-07o 0.005673p 3.59e-06o 0.017721p 0.019954o 0.020001n 5.75e-08p 5.98e-12p
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.015007n      0.0       0.0
zp 31.67 ri 7.02e-10p 1.78e-06p 0.000385p      0.0  0.005121p      0.0  0.008384p 0.001096p 1.53e-05p 1.17e-08p      0.0
sig0.592 cc 7.02e-10p 1.78e-06p 0.000387p      0.0  0.005508p      0.0  0.013892p 0.014987p 0.015002p 1.17e-08p      0.0
        rc 7.02e-10p 1.78e-06p 0.000387p 1.33e-06o 0.005509p 3.79e-06o 0.013897p 0.014992o 0.015008n 1.17e-08p      0.0
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.009432n      0.0       0.0
zp 31.36 ri 4.80e-09p 6.75e-06p 0.000671p      0.0  0.004844p      0.0  0.003664p 0.000237p 1.23e-06p 3.70e-10p      0.0
sig0.585 cc 4.80e-09p 6.76e-06p 0.000678p      0.0  0.005522p      0.0  0.009186p 0.009423p 0.009425p 3.70e-10p      0.0
        rc 4.80e-09p 6.76e-06p 0.000678p 3.16e-06o 0.005525p 4.75e-06o 0.009194p 0.009431o 0.009432n 3.70e-10p      0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.004652n      0.0       0.0
zp 31.10 ri 1.38e-08p 1.20e-05p 0.000689p      0.0  0.002785p      0.0  0.001125p 3.38e-05p 6.94e-08p 7.24e-12p      0.0
sig0.574 cc 1.38e-08p 1.20e-05p 0.000701p      0.0  0.003486p      0.0  0.004611p 0.004645p 0.004645p 7.24e-12p      0.0
        rc 1.38e-08p 1.20e-05p 0.000701p 4.08e-06o 0.003490p 3.59e-06o 0.004618o 0.004652o 0.004652n 7.24e-12p      0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.014566n      0.0       0.0
zp 31.09 ri 2.14e-07p 7.50e-05p 0.002409p      0.0  0.008363p      0.0  0.003522p 0.000165p 7.30e-07p 2.72e-10p      0.0
sig0.620 cc 2.14e-07p 7.52e-05p 0.002485p      0.0  0.010848p      0.0  0.014370p 0.014535p 0.014536p 2.72e-10p      0.0
        rc 2.14e-07p 7.52e-05p 0.002485p 1.97e-05o 0.010868p 1.35e-05o 0.014403o 0.014568o 0.014569n 2.72e-10p      0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.012686n      0.0       0.0
zp 31.30 ri 1.52e-09p 5.24e-06p 0.000936p      0.0  0.006916p      0.0  0.004656p 0.000160p 3.24e-07p 1.99e-11p      0.0
sig0.541 cc 1.52e-09p 5.24e-06p 0.000941p      0.0  0.007858p      0.0  0.012513p 0.012673p 0.012673p 1.99e-11p      0.0
        rc 1.52e-09p 5.24e-06p 0.000941p 4.16e-06o 0.007862p 9.21e-06o 0.012527p 0.012686o 0.012687n 1.99e-11p      0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.016976n      0.0       0.0
zp 31.39 ri 1.99e-09p 4.50e-06p 0.001131p      0.0  0.007170p      0.0  0.008353p 0.000310p 1.50e-06p 1.42e-10p      0.0
sig0.555 cc 1.99e-09p 4.50e-06p 0.001136p      0.0  0.008306p      0.0  0.016659p 0.016969p 0.016971p 1.42e-10p      0.0
        rc 1.99e-09p 4.50e-06p 0.001136p 2.22e-06o 0.008308p 3.81e-06o 0.016665p 0.016975o 0.016977n 1.42e-10p      0.0
```

pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.006466n 0.0 0.0
zp 31.11 ri 8.33e-09p 9.50e-06p 0.001044p 0.0 0.003500p 0.0 0.001875p 3.30e-05p 5.85e-08p 2.19e-12p 0.0
sig0.551 cc 8.33e-09p 9.51e-06p 0.001053p 0.0 0.004553p 0.0 0.006427p 0.006460p 0.006460p 2.19e-12p 0.0
rc 8.33e-09p 9.51e-06p 0.001053p 3.36e-06o 0.004556p 3.04e-06o 0.006434o 0.006467o 0.006467n 2.19e-12p 0.0

ni, cu half lives from 80eng2; zn, ga, ge, as half lives from 89wal1.

1

mass number 79 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 29 cu g 30 zn g 31 ga g 32 ge d 32 ge g 33 as g 34 se m 34 se g 35 br m 35 br g 36 kr g 37 rb g
half life 0.135s 1.0 s 2.85 s 1.66s 19.1s 9.0 m 3.89 m 6.5e4y 4.86 s stable 35.04h 22.9 m
lambda 5.134e+00 6.931e-01 2.432e-01 4.176e-01 3.629e-02 1.284e-03 2.970e-03 3.381e-13 1.426e-01 0.0 5.495e-06
5.045e-04
z - 1 g 100.0000 100.0000 98.8540 0.0 99.9110 100.0000 100.0000 0.0 0.0 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.8300 100.0000 0.0 0.0 100.0000 0.0 100.0000 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.051268n 0.0 0.0
zp 32.01 ri 5.73e-07p 0.000291p 0.009188p 0.0 0.031815p 0.009625p 4.16e-05p 0.000279p 5.14e-07p 1.53e-07p 1.11e-10p
0.0
sig0.594 cc 5.73e-07p 0.000291p 0.009475p 0.0 0.041282p 0.050907p 0.050949p 0.051227p 5.14e-07p 0.051228p 1.11e-10p
0.0
rc 5.73e-07p 0.000291p 0.009475p 4.37e-05o 0.041326p 0.050951o 0.050992o 0.051271o 5.14e-07p 0.051272n 1.11e-10p
0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.017147p 0.0 0.0
zp 31.88 ri 1.44e-07p 0.000119p 0.003657p 0.0 0.011323p 0.002007p 4.34e-06p 2.90e-05p 1.51e-08p 4.52e-09p 0.0 0.0
sig0.557 cc 1.44e-07p 0.000119p 0.003775p 0.0 0.015095p 0.017102p 0.017106p 0.017135p 1.51e-08p 0.017135p 0.0
0.0
rc 1.44e-07p 0.000119p 0.003775p 1.50e-05o 0.015110p 0.017117p 0.017121o 0.017150o 1.51e-08p 0.017150o 0.0
0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.034001n 0.0 0.0

zp 32.19 ri 1.05e-07p 8.13e-05p 0.003958p 0.0 0.020210p 0.009259p 5.78e-05p 0.000424p 1.32e-06p 3.52e-07p 4.72e-10p
0.0
sig0.596 cc 1.05e-07p 8.14e-05p 0.004038p 0.0 0.024245p 0.033504p 0.033562p 0.033985p 1.32e-06p 0.033987p 4.72e-10p
0.0
rc 1.05e-07p 8.14e-05p 0.004038p 1.52e-05o 0.024260p 0.033519o 0.033577o 0.034000o 1.32e-06p 0.034002n 4.72e-10p
0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.025012n 0.0 0.0
zp 32.05 ri 2.03e-07p 0.000116p 0.004138p 0.0 0.015472p 0.005093p 2.33e-05p 0.000156p 3.07e-07p 9.18e-08p 6.82e-11p
0.0
sig0.592 cc 2.03e-07p 0.000116p 0.004253p 0.0 0.019722p 0.024815p 0.024838p 0.024994p 3.07e-07p 0.024995p 6.82e-11p
0.0
rc 2.03e-07p 0.000116p 0.004253p 1.88e-05o 0.019741p 0.024833o 0.024857o 0.025013o 3.07e-07p 0.025013n 6.82e-11p
0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.016054n 0.0 0.0
zp 31.74 ri 9.94e-07p 0.000275p 0.005061p 0.0 0.009174p 0.001502p 1.50e-06p 2.00e-05p 1.61e-08p 2.62e-09p 1.06e-12p
0.0
sig0.585 cc 9.94e-07p 0.000276p 0.005333p 0.0 0.014502p 0.016004p 0.016005p 0.016025p 1.61e-08p 0.016025p 1.06e-12p
0.0
rc 9.94e-07p 0.000276p 0.005333p 3.14e-05o 0.014533p 0.016035o 0.016037o 0.016057o 1.61e-08p 0.016057n 1.06e-12p
0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.008017n 0.0 0.0
zp 31.48 ri 2.17e-06p 0.000353p 0.003679p 0.0 0.003665p 0.000296p 2.31e-07p 1.54e-06p 4.34e-10p 1.30e-10p 0.0 0.0
sig0.574 cc 2.17e-06p 0.000356p 0.004031p 0.0 0.007692p 0.007988p 0.007988p 0.007990p 4.34e-10p 0.007990p 0.0
0.0
rc 2.17e-06p 0.000356p 0.004031p 2.99e-05o 0.007722p 0.008018o 0.008018o 0.008020o 4.34e-10p 0.008020n 0.0
0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.029235n 0.0 0.0
zp 31.47 ri 2.17e-05p 0.001697p 0.013435p 0.0 0.012594p 0.001388p 1.99e-06p 1.33e-05p 1.13e-08p 3.38e-09p 1.15e-12p
0.0
sig0.620 cc 2.17e-05p 0.001719p 0.015134p 0.0 0.027714p 0.029102p 0.029104p 0.029118p 1.13e-08p 0.029118p 1.15e-12p
0.0

rc 2.17e-05p 0.001719p 0.015134p 0.000131o 0.027846p 0.029234o 0.029236o 0.029249o 1.13e-08p 0.029249n 1.15e-12p
0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.026347n 0.0 0.0
zp 31.68 ri 7.78e-07p 0.000362p 0.009994p 0.0 0.014142p 0.001817p 1.25e-06p 8.34e-06p 2.01e-09p 6.01e-10p 0.0 0.0
sig0.541 cc 7.78e-07p 0.000363p 0.010352p 0.0 0.024485p 0.026302p 0.026303p 0.026312p 2.01e-09p 0.026312p 0.0
0.0
rc 7.78e-07p 0.000363p 0.010352p 3.88e-05o 0.024524p 0.026341o 0.026342o 0.026350o 2.01e-09p 0.026350n 0.0
0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.015978n 0.0 0.0
zp 31.77 ri 2.90e-07p 0.000193p 0.004084p 0.0 0.010403p 0.001260p 2.08e-06p 1.39e-05p 4.49e-09p 1.34e-09p 0.0 0.0
sig0.555 cc 2.90e-07p 0.000194p 0.004275p 0.0 0.014675p 0.015935p 0.015937p 0.015951p 4.49e-09p 0.015951p 0.0
0.0
rc 2.90e-07p 0.000194p 0.004275p 2.92e-05o 0.014704p 0.015964p 0.015966o 0.015980o 4.49e-09p 0.015980n 0.0
0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.007461n 0.0 0.0
zp 31.49 ri 9.85e-07p 0.000292p 0.003125p 0.0 0.003794p 0.000224p 1.44e-07p 9.63e-07p 1.23e-10p 3.67e-11p 0.0 0.0
sig0.551 cc 9.85e-07p 0.000293p 0.003415p 0.0 0.007206p 0.007430p 0.007430p 0.007431p 1.23e-10p 0.007431p 0.0
0.0
rc 9.85e-07p 0.000293p 0.003415p 3.30e-05o 0.007239p 0.007463o 0.007463o 0.007464o 1.23e-10p 0.007464n 0.0
0.0

cu half life 80eng2; zn, ga, ge, as, se half lives 89wal1; kr, rb half lives 90bur1.

1

mass number 80 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 28 ni g 29 cu g 30 zn g 31 ga g 32 ge d 32 ge g 33 as g 34 se g 35 br m 35 br g 36 kr g
half life 0.090s 0.55 s 1.68 s 1.23s 29.5 s 16.0 s stable 4.42 h 17.68m stable
lambda 0.0 7.702e+00 1.260e+00 4.126e-01 5.635e-01 2.350e-02 4.332e-02 0.0 4.356e-05 6.534e-04 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 99.1700 100.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 11.9000 100.0000 0.0 0.0 0.0 100.0000 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

```
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.085586n      0.0       0.0       0.0
zp 32.39 ri 2.61e-12p 4.45e-08p 6.65e-05p 0.005199p       0.0  0.046220p 0.031084p 0.002795p 1.12e-05p 3.74e-06p 7.45e-09p
sig0.594 cc 2.61e-12p 4.45e-08p 6.65e-05p 0.005265p       0.0  0.051442p 0.082526p 0.085321p 1.12e-05p 1.50e-05p 1.50e-05p
        rc 2.61e-12p 4.45e-08p 6.65e-05p 0.005265p 0.000283o 0.051725p 0.082809o 0.085604n 1.12e-05p 1.50e-05p 1.50e-05p
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.025574p      0.0       0.0       0.0
zp 32.26 ri       0.0  7.43e-09p 2.22e-05p 0.001790p       0.0  0.016557p 0.006781p 0.000373p 4.61e-07p 1.54e-07p 8.63e-11p
sig0.557 cc       0.0  7.44e-09p 2.22e-05p 0.001813p       0.0  0.018354p 0.025135p 0.025508p 4.61e-07p 6.15e-07p 6.15e-07p
        rc      0.0  7.44e-09p 2.22e-05p 0.001813p 8.66e-05o 0.018441p 0.025222p 0.025594o 4.61e-07p 6.15e-07p 6.15e-07o
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.055002n      0.0       0.0       0.0
zp 32.58 ri       0.0  6.27e-09p 1.43e-05p 0.001820p       0.0  0.024165p 0.025439p 0.003509p 2.52e-05p 7.11e-06p 2.72e-08p
sig0.596 cc       0.0  6.27e-09p 1.43e-05p 0.001835p       0.0  0.025984p 0.051424p 0.054933p 2.52e-05p 3.23e-05p 3.24e-05p
        rc      0.0  6.27e-09p 1.43e-05p 0.001835p 7.27e-05o 0.026057p 0.051496o 0.055006n 2.52e-05p 3.23e-05p 3.24e-05p
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.041020n      0.0       0.0       0.0
zp 32.43 ri       0.0  1.48e-08p 2.47e-05p 0.002242p       0.0  0.021259p 0.015925p 0.001491p 6.55e-06p 2.18e-06p 4.42e-09p
sig0.592 cc       0.0  1.48e-08p 2.47e-05p 0.002267p       0.0  0.023507p 0.039431p 0.040922p 6.55e-06p 8.73e-06p 8.73e-06p
        rc      0.0  1.48e-08p 2.47e-05p 0.002267p 0.000104o 0.023611p 0.039536o 0.041026n 6.55e-06p 8.73e-06p 8.73e-06o
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.027091n      0.0       0.0       0.0
zp 32.12 ri 8.12e-12p 9.71e-08p 7.60e-05p 0.003711p       0.0  0.016331p 0.006550p 0.000251p 5.30e-07p 9.36e-08p 1.04e-10p
sig0.585 cc 8.12e-12p 9.71e-08p 7.61e-05p 0.003787p       0.0  0.020087p 0.026637p 0.026888p 5.30e-07p 6.24e-07p 6.24e-07p
        rc 8.12e-12p 9.71e-08p 7.61e-05p 0.003787p 0.000219o 0.020306p 0.026856o 0.027107n 5.30e-07p 6.24e-07p 6.24e-07p
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.013856n      0.0       0.0       0.0
zp 31.85 ri 3.60e-11p 2.77e-07p 0.000128p 0.003469p       0.0  0.008315p 0.001691p 2.81e-05p 1.95e-08p 6.51e-09p 1.41e-12p
sig0.574 cc 3.60e-11p 2.77e-07p 0.000128p 0.003597p       0.0  0.011882p 0.013573p 0.013601p 1.95e-08p 2.61e-08p 2.61e-08p
        rc 3.60e-11p 2.77e-07p 0.000128p 0.003597p 0.000277o 0.012159p 0.013850o 0.013878n 1.95e-08p 2.61e-08p 2.61e-08p
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.055290n      0.0       0.0       0.0
zp 31.84 ri 1.94e-09p 4.35e-06p 0.000828p 0.015000p       0.0  0.030605p 0.007560p 0.000199p 3.58e-07p 1.19e-07p 9.49e-11p
sig0.620 cc 1.94e-09p 4.36e-06p 0.000833p 0.015832p       0.0  0.046306p 0.053865p 0.054065p 3.58e-07p 4.78e-07p 4.78e-07p
        rc 1.94e-09p 4.36e-06p 0.000833p 0.015832p 0.001350o 0.047656p 0.055215o 0.055415n 3.58e-07p 4.78e-07p 4.78e-07p
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.035129n      0.0       0.0       0.0
```

zp 32.07 ri 0.0 3.20e-08p 6.64e-05p 0.004603p 0.0 0.023122p 0.006705p 0.000148p 8.46e-08p 2.82e-08p 4.11e-12p
sig0.541 cc 0.0 3.20e-08p 6.64e-05p 0.004669p 0.0 0.027752p 0.034457p 0.034605p 8.46e-08p 1.13e-07p 1.13e-07p
rc 0.0 3.20e-08p 6.64e-05p 0.004669p 0.000562o 0.028314p 0.035019o 0.035167n 8.46e-08p 1.13e-07p 1.13e-07p
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.038946n 0.0 0.0 0.0
zp 32.15 ri 1.05e-12p 2.59e-08p 6.52e-05p 0.003458p 0.0 0.027335p 0.007444p 0.000332p 2.48e-07p 8.27e-08p 3.47e-11p
sig0.555 cc 1.05e-12p 2.59e-08p 6.53e-05p 0.003523p 0.0 0.030828p 0.038272p 0.038604p 2.48e-07p 3.31e-07p 3.31e-07p
rc 1.05e-12p 2.59e-08p 6.53e-05p 0.003523p 0.000363o 0.031191p 0.038635o 0.038967n 2.48e-07p 3.31e-07p 3.31e-07p
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.019896n 0.0 0.0 0.0
zp 31.86 ri 1.12e-11p 1.38e-07p 0.000146p 0.003833p 0.0 0.013672p 0.001890p 3.26e-05p 9.81e-09p 3.27e-09p 0.0
sig0.551 cc 1.12e-11p 1.38e-07p 0.000146p 0.003979p 0.0 0.017618p 0.019508p 0.019541p 9.81e-09p 1.31e-08p 1.31e-08p
rc 1.12e-11p 1.38e-07p 0.000146p 0.003979p 0.000379o 0.017997p 0.019887o 0.019920n 9.81e-09p 1.31e-08p 1.31e-08p

ga, cu half lives 80eng2; zn, ga, ge, as half lives 89wal1; br half life 90bur1.

1

mass number 81 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 29 cu g 30 zn g 31 ga g 32 ge d 32 ge g 33 as g 34 se m 34 se g 35 br g 36 kr m 36 kr g 37 rb g
half life 0.074s 0.123s 1.22 s 0.60s 7.6 s 33. s 57.3 m 18.5 m stable 13. s 2.3e5y 4.576h
lambda 9.367e+00 5.635e+00 5.682e-01 1.155e+00 9.120e-02 2.100e-02 2.016e-04 6.245e-04 0.0 5.332e-02 9.556e-14 4.208e-05
z - 1 g 100.0000 100.0000 100.0000 0.0 88.1000 100.0000 0.0 100.0000 100.0000 0.0 -100.0000 -25.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -75.0000
z - 0 m 0.0 0.0 0.0 21.1000 100.0000 0.0 0.0 100.0000 0.0 0.0 100.0000 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.158708n 0.0 0.0 0.0
zp 32.78 ri 2.54e-09p 1.03e-05p 0.002368p 0.0 0.050694p 0.086965p 0.016133p 0.002411p 0.000288p 5.05e-08p 3.38e-07p 2.87e-11p
sig0.594 cc 2.54e-09p 1.03e-05p 0.002379p 0.0 0.052790p 0.139755p 0.016133p 0.158299p 0.158588p 5.05e-08p 3.89e-07p 2.87e-11p
rc 2.54e-09p 1.03e-05p 0.002379p 0.000126o 0.052916p 0.139881p 0.016133p 0.158425o 0.158714n 5.05e-08p 3.89e-07p 2.87e-11p
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.039194p 0.0 0.0 0.0

zp 32.64 ri 3.03e-10p 2.59e-06p 0.000725p 0.0 0.016405p 0.019458p 0.002303p 0.000344p 1.53e-05p 8.01e-10p 5.36e-09p 0.0
sig0.557 cc 3.03e-10p 2.59e-06p 0.000728p 0.0 0.017046p 0.036504p 0.002303p 0.039151p 0.039166p 8.01e-10p 6.16e-09p 0.0
rc 3.03e-10p 2.59e-06p 0.000728p 3.36e-05o 0.017080p 0.036537p 0.002303p 0.039185o 0.039200o 8.01e-10p 6.16e-09p 0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.087002n 0.0 0.0 0.0
zp 32.96 ri 2.77e-10p 1.70e-06p 0.000609p 0.0 0.019578p 0.050363p 0.014161p 0.001931p 0.000404p 1.08e-07p 7.92e-07p 1.15e-10p
sig0.596 cc 2.77e-10p 1.70e-06p 0.000611p 0.0 0.020116p 0.070480p 0.014161p 0.086572p 0.086977p 1.08e-07p 9.00e-07p 1.15e-10p
rc 2.77e-10p 1.70e-06p 0.000611p 2.73e-05o 0.020144p 0.070507p 0.014161p 0.086599o 0.087004n 1.08e-07p 9.00e-07p 1.15e-10p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.066032n 0.0 0.0 0.0
zp 32.81 ri 7.48e-10p 3.40e-06p 0.000874p 0.0 0.020036p 0.036868p 0.007115p 0.001063p 0.000134p 2.38e-08p 1.59e-07p 1.37e-11p
sig0.592 cc 7.48e-10p 3.40e-06p 0.000877p 0.0 0.020809p 0.057677p 0.007115p 0.065855p 0.065989p 2.38e-08p 1.83e-07p 1.37e-11p
rc 7.48e-10p 3.40e-06p 0.000877p 4.48e-05o 0.020854p 0.057722p 0.007115p 0.065900o 0.066034n 2.38e-08p 1.83e-07p 1.37e-11p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.043145n 0.0 0.0 0.0
zp 32.50 ri 6.08e-09p 1.37e-05p 0.001828p 0.0 0.020099p 0.019364p 0.001765p 0.000154p 1.34e-05p 4.53e-10p 6.01e-09p 0.0
sig0.585 cc 6.08e-09p 1.37e-05p 0.001842p 0.0 0.021722p 0.041085p 0.001765p 0.043004p 0.043018p 4.53e-10p 6.47e-09p 0.0
rc 6.08e-09p 1.37e-05p 0.001842p 0.000135o 0.021857p 0.041221p 0.001765p 0.043140o 0.043153n 4.53e-10p 6.47e-09p 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.022763n 0.0 0.0 0.0
zp 32.22 ri 2.35e-08p 3.13e-05p 0.002297p 0.0 0.013509p 0.006707p 0.000261p 3.89e-05p 7.98e-07p 1.67e-11p 1.12e-10p 0.0
sig0.574 cc 2.35e-08p 3.13e-05p 0.002328p 0.0 0.015560p 0.022268p 0.000261p 0.022567p 0.022568p 1.67e-11p 1.28e-10p 0.0

rc 2.35e-08p 3.13e-05p 0.002328p 0.000209o 0.015769p 0.022477p 0.000261p 0.022776o 0.022777n 1.67e-11p 1.28e-10p
0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.091910n 0.0 0.0 0.0
zp 32.22 ri 5.30e-07p 0.000255p 0.011089p 0.0 0.050905p 0.028216p 0.001547p 0.000231p 1.08e-05p 7.21e-10p 4.83e-09p
0.0
sig0.620 cc 5.30e-07p 0.000256p 0.011345p 0.0 0.060900p 0.089116p 0.001547p 0.090894p 0.090905p 7.21e-10p 5.55e-09p
0.0
rc 5.30e-07p 0.000256p 0.011345p 0.001082o 0.061982p 0.090198p 0.001547p 0.091977o 0.091987n 7.21e-10p 5.55e-09p
0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.117098n 0.0 0.0 0.0
zp 32.46 ri 2.74e-09p 1.60e-05p 0.004704p 0.0 0.054357p 0.055369p 0.002622p 0.000392p 1.01e-05p 1.37e-10p 9.19e-10p
0.0
sig0.541 cc 2.74e-09p 1.60e-05p 0.004720p 0.0 0.058515p 0.113885p 0.002622p 0.116898p 0.116908p 1.37e-10p 1.06e-09p
0.0
rc 2.74e-09p 1.60e-05p 0.004720p 0.000200o 0.058715p 0.114084p 0.002622p 0.117098o 0.117108n 1.37e-10p 1.06e-09p
0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.109846n 0.0 0.0 0.0
zp 32.53 ri 2.27e-09p 1.58e-05p 0.003033p 0.0 0.055767p 0.046268p 0.004346p 0.000649p 1.85e-05p 7.02e-10p 4.70e-09p
0.0
sig0.555 cc 2.27e-09p 1.58e-05p 0.003049p 0.0 0.058453p 0.104722p 0.004346p 0.109717p 0.109736p 7.02e-10p 5.40e-09p
0.0
rc 2.27e-09p 1.58e-05p 0.003049p 0.000117o 0.058571p 0.104839p 0.004346p 0.109835o 0.109853n 7.02e-10p 5.40e-09p
0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.040786n 0.0 0.0 0.0
zp 32.24 ri 1.14e-08p 3.43e-05p 0.003150p 0.0 0.026167p 0.011096p 0.000433p 6.47e-05p 7.50e-07p 9.70e-12p 6.49e-11p
0.0
sig0.551 cc 1.14e-08p 3.43e-05p 0.003185p 0.0 0.028973p 0.040069p 0.000433p 0.040567p 0.040568p 9.70e-12p 7.46e-11p
0.0
rc 1.14e-08p 3.43e-05p 0.003185p 0.000233o 0.029206p 0.040302p 0.000433p 0.040800o 0.040801n 9.70e-12p 7.46e-11p
0.0

cu, zn half lives 80eng2; ga, ge, as, se half lives 89wal1; kr, rb half lives 90bur1.

mass number 82 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	28 ni g	29 cu g	30 zn g	31 ga g	32 ge d	32 ge g	33 as m	33 as g	34 se g	35 br m	35 br g	36 kr g
half life		0.127s	0.607s	0.31 s	4.6 s	13.7 s	19. s	stable	6.1 m	35.3 h	stable	
lambda	0.0	0.0	5.458e+00	1.142e+00	2.236e+00	1.507e-01	5.059e-02	3.648e-02	0.0	1.894e-03	5.454e-06	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	0.0	78.9000	0.0	100.0000	100.0000	0.0	0.0	100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	0.0	2.4000
z - 0 m	0.0	0.0	0.0	0.0	56.2000	100.0000	0.0240	0.0	0.0	0.0	97.6000	0.0
cm243t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.243463n	0.0	0.0	0.0
zp 33.16 ri	0.0	8.22e-11p	1.00e-06p	0.000598p	0.0	0.035081p	0.067441p	0.067441p	0.072973p	0.000831p	0.001940p	1.09e-05p
sig0.594 cc	0.0	8.22e-11p	1.00e-06p	0.000599p	0.0	0.035553p	0.067441p	0.102994p	0.243408p	0.000831p	0.002752p	0.002783p
rc	0.0	8.22e-11p	1.00e-06p	0.000599p	5.63e-05o	0.035609p	0.067445p	0.103050p	0.243468n	0.000831p	0.002752p	0.002783p
cm246s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.056929p	0.0	0.0	0.0
zp 33.02 ri	0.0	6.42e-12p	2.03e-07p	0.000159p	0.0	0.011736p	0.015972p	0.015972p	0.013112p	6.03e-05p	0.000141p	2.93e-07p
sig0.557 cc	0.0	6.42e-12p	2.03e-07p	0.000159p	0.0	0.011862p	0.015972p	0.027834p	0.056918p	6.03e-05p	0.000199p	0.000201p
rc	0.0	6.42e-12p	2.03e-07p	0.000159p	1.36e-05o	0.011875p	0.015973p	0.027847p	0.056933o	6.03e-05p	0.000199p	0.000201p
cm243f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.130004n	0.0	0.0	0.0
zp 33.34 ri	0.0	7.55e-12p	1.37e-07p	0.000129p	0.0	0.011238p	0.033267p	0.033267p	0.052120p	0.000862p	0.002330p	2.01e-05p
sig0.596 cc	0.0	7.55e-12p	1.37e-07p	0.000129p	0.0	0.011340p	0.033267p	0.044606p	0.129994p	0.000862p	0.003171p	0.003212p
rc	0.0	7.55e-12p	1.37e-07p	0.000129p	9.97e-06o	0.011349p	0.033268p	0.044616p	0.130005n	0.000862p	0.003171p	0.003212p
cm244f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.100048n	0.0	0.0	0.0

zp 33.19 ri 0.0 2.29e-11p 3.10e-07p 0.000212p 0.0 0.013178p 0.027901p 0.027901p 0.030881p 0.000379p 0.000884p 4.99e-06p
sig0.592 cc 0.0 2.29e-11p 3.10e-07p 0.000212p 0.0 0.013345p 0.027901p 0.041246p 0.100028p 0.000379p 0.001254p 0.001268p
rc 0.0 2.29e-11p 3.10e-07p 0.000212p 2.08e-05o 0.013366p 0.027902p 0.041267p 0.100050n 0.000379p 0.001254p 0.001268p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.068230n 0.0 0.0 0.0
zp 32.87 ri 0.0 2.76e-10p 1.76e-06p 0.000640p 0.0 0.017768p 0.020086p 0.020086p 0.009713p 3.24e-05p 0.000148p 2.44e-07p
sig0.585 cc 0.0 2.76e-10p 1.76e-06p 0.000642p 0.0 0.018274p 0.020086p 0.038360p 0.068159p 3.24e-05p 0.000179p 0.000180p
rc 0.0 2.76e-10p 1.76e-06p 0.000642p 7.60e-05o 0.018350p 0.020089p 0.038436p 0.068238n 3.24e-05p 0.000179p 0.000180p
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.036619n 0.0 0.0 0.0
zp 32.60 ri 0.0 1.17e-09p 4.69e-06p 0.000985p 0.0 0.015084p 0.009211p 0.009211p 0.002182p 5.06e-06p 1.18e-05p 8.22e-09p
sig0.574 cc 0.0 1.17e-09p 4.69e-06p 0.000989p 0.0 0.015864p 0.009211p 0.025075p 0.036469p 5.06e-06p 1.68e-05p 1.69e-05p
rc 0.0 1.17e-09p 4.69e-06p 0.000989p 0.000165o 0.016029p 0.009214p 0.025240p 0.036636n 5.06e-06p 1.68e-05p 1.69e-05p
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.134377n 0.0 0.0 0.0
zp 32.60 ri 2.53e-12p 3.86e-08p 4.76e-05p 0.005081p 0.0 0.053644p 0.033025p 0.033025p 0.009693p 4.37e-05p 0.000102p 1.93e-07p
sig0.620 cc 2.53e-12p 3.86e-08p 4.76e-05p 0.005129p 0.0 0.057690p 0.033025p 0.090715p 0.133433p 4.37e-05p 0.000144p 0.000146p
rc 2.53e-12p 3.86e-08p 4.76e-05p 0.005129p 0.001048o 0.058739p 0.033036p 0.091764p 0.134493n 4.37e-05p 0.000144p 0.000146p
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.175647n 0.0 0.0 0.0
zp 32.87 ri 0.0 3.86e-11p 1.11e-06p 0.000946p 0.0 0.045698p 0.053081p 0.053081p 0.022944p 6.53e-05p 0.000152p 1.10e-07p
sig0.541 cc 0.0 3.86e-11p 1.11e-06p 0.000947p 0.0 0.046445p 0.053081p 0.099526p 0.175552p 6.53e-05p 0.000216p 0.000218p

rc 0.0 3.86e-11p 1.11e-06p 0.000947p 9.99e-05o 0.046545p 0.053087p 0.099626p 0.175657n 6.53e-05p 0.000216p 0.000218p
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.119832n 0.0 0.0 0.0
zp 32.91 ri 0.0 3.99e-11p 1.08e-06p 0.000554p 0.0 0.034552p 0.031477p 0.031477p 0.021823p 6.27e-05p 0.000146p 2.34e-07p
sig0.555 cc 0.0 3.99e-11p 1.08e-06p 0.000555p 0.0 0.034990p 0.031477p 0.066467p 0.119766p 6.27e-05p 0.000207p 0.000209p
rc 0.0 3.99e-11p 1.08e-06p 0.000555p 6.88e-05o 0.035059p 0.031482p 0.066536p 0.119840n 6.27e-05p 0.000207p 0.000209p
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.060682n 0.0 0.0 0.0
zp 32.61 ri 0.0 4.04e-10p 4.53e-06p 0.001099p 0.0 0.028811p 0.013449p 0.013449p 0.003877p 4.69e-06p 1.10e-05p 5.80e-09p
sig0.551 cc 0.0 4.04e-10p 4.53e-06p 0.001104p 0.0 0.029682p 0.013449p 0.043132p 0.060458p 4.69e-06p 1.55e-05p 1.56e-05p
rc 0.0 4.04e-10p 4.53e-06p 0.001104p 0.000242o 0.029924p 0.013456p 0.043373p 0.060707n 4.69e-06p 1.55e-05p 1.56e-05p

zn half life estimated by 80eng2; ga, ge, as half lives from 89wal1; br half life 90bur1.

1

mass number 83 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 30 zn g 31 ga g 32 ge g 33 as d 33 as g 34 se m 34 se g 35 br g 36 kr m 36 kr g 37 rb g 38 sr g
half life 0.084s 0.31s 1.9 s 1.2 s 13.4 s 1.17m 22.3m 2.40h 1.83 h stable 86.2 d 32.4 h
lambda 8.252e+00 2.236e+00 3.648e-01 5.776e-01 5.173e-02 9.874e-03 5.180e-04 8.023e-05 1.052e-04 0.0 9.307e-08 5.943e-06
z - 1 g 100.0000 100.0000 43.8000 0.0 99.9760 64.0000 36.0000 100.0000 100.0000 0.0 -23.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 -77.0000 0.0
z - 0 m 0.0 0.0 0.0 5.2060 100.0000 0.0860 0.0 0.0 0.0 100.0000 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.355702n 0.0 0.0
zp 33.54 ri 5.68e-08p 0.000100p 0.014703p 0.0 0.146826p 0.033417p 0.142458p 0.017813p 3.40e-05p 0.000145p 1.05e-07p 4.80e-12p

sig0.594 cc 5.68e-08p 0.000100p 0.014745p 0.0 0.161598p 0.136834p 0.200614p 0.355258p 0.355292p 0.355437p 1.05e-07p 4.80e-12p
rc 5.68e-08p 0.000100p 0.014747p 0.000189o 0.161758p 0.136943o 0.200691p 0.355447n 0.355481n 0.355626m 1.05e-07p 4.80e-12p
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.083099p 0.0 0.0
zp 33.40 ri 8.54e-09p 2.42e-05p 0.004774p 0.0 0.039392p 0.007031p 0.029975p 0.001843p 1.42e-06p 6.07e-06p 1.00e-09p 0.0
sig0.557 cc 8.54e-09p 2.42e-05p 0.004784p 0.0 0.044175p 0.035303p 0.045878p 0.083025p 0.083026p 0.083032p 1.00e-09p 0.0
rc 8.54e-09p 2.42e-05p 0.004784p 5.65e-05o 0.044231p 0.035339p 0.045899p 0.083081o 0.083083o 0.083089n 1.00e-09p 0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.200004n 0.0 0.0
zp 33.73 ri 6.31e-09p 1.77e-05p 0.004062p 0.0 0.063343p 0.019367p 0.094556p 0.018272p 5.13e-05p 0.000250p 3.10e-07p 2.49e-11p
sig0.596 cc 6.31e-09p 1.77e-05p 0.004070p 0.0 0.067412p 0.062511p 0.118825p 0.199607p 0.199659p 0.199909p 3.10e-07p 2.49e-11p
rc 6.31e-09p 1.77e-05p 0.004070p 5.34e-05o 0.067466p 0.062545p 0.118844p 0.199661o 0.199712n 0.199962m 3.10e-07p 2.49e-11p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.160054n 0.0 0.0
zp 33.57 ri 1.85e-08p 3.71e-05p 0.005928p 0.0 0.064407p 0.015356p 0.065465p 0.008670p 1.70e-05p 7.25e-05p 5.43e-08p 2.46e-12p
sig0.592 cc 1.85e-08p 3.71e-05p 0.005945p 0.0 0.070351p 0.060380p 0.090791p 0.159841p 0.159859p 0.159931p 5.43e-08p 2.46e-12p
rc 1.85e-08p 3.71e-05p 0.005945p 8.41e-05o 0.070435p 0.060434p 0.090822p 0.159926o 0.159943n 0.160015m 5.43e-08p 2.46e-12p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.100239n 0.0 0.0
zp 33.25 ri 1.30e-07p 0.000135p 0.010049p 0.0 0.055625p 0.003593p 0.029069p 0.001605p 6.78e-07p 5.49e-06p 1.36e-09p 0.0
sig0.585 cc 1.30e-07p 0.000135p 0.010108p 0.0 0.065731p 0.045661p 0.052732p 0.099998p 0.099998p 0.100004p 1.36e-09p 0.0
rc 1.30e-07p 0.000135p 0.010108p 0.000197o 0.065928p 0.045787p 0.052803p 0.100195o 0.100195n 0.100201m 1.36e-09p 0.0

cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.057578n 0.0 0.0
zp 32.97 ri 4.88e-07p 0.000292p 0.011816p 0.0 0.034874p 0.001956p 0.008337p 0.000218p 5.88e-08p 2.51e-07p 2.20e-11p
0.0
sig0.574 cc 4.88e-07p 0.000293p 0.011944p 0.0 0.046815p 0.031917p 0.025190p 0.057326p 0.057326p 0.057326p 2.20e-11p
0.0
rc 4.88e-07p 0.000293p 0.011944p 0.000243o 0.047058p 0.032073p 0.025278p 0.057569o 0.057569n 0.057569m 2.20e-11p
0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.218920n 0.0 0.0
zp 32.98 ri 6.95e-06p 0.001859p 0.046322p 0.0 0.126879p 0.008054p 0.034334p 0.001545p 9.92e-07p 4.23e-06p 1.47e-09p
0.0
sig0.620 cc 6.94e-06p 0.001863p 0.047079p 0.0 0.174064p 0.119444p 0.096954p 0.217941p 0.217942p 0.217947p 1.47e-09p
0.0
rc 6.95e-06p 0.001866p 0.047139p 0.000934o 0.174940p 0.120015o 0.097313o 0.218874n 0.218875n 0.218879m 1.47e-09p
0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.341817m 0.0 0.0
zp 33.28 ri 4.32e-08p 0.000178p 0.023471p 0.0 0.208586p 0.019928p 0.084955p 0.004315p 1.23e-06p 5.22e-06p 4.72e-10p
0.0
sig0.541 cc 4.32e-08p 0.000178p 0.023542p 0.0 0.232161p 0.168505p 0.168508p 0.341327p 0.341328p 0.341333p 4.71e-10p
0.0
rc 4.32e-08p 0.000178p 0.023549p 0.000339o 0.232468p 0.168707o 0.168643p 0.341666n 0.341667m 0.341672l 4.72e-10p
0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.249753n 0.0 0.0
zp 33.31 ri 5.88e-08p 0.000122p 0.020600p 0.0 0.124372p 0.019139p 0.081594p 0.003533p 2.16e-06p 9.21e-06p 9.91e-10p
0.0
sig0.555 cc 5.88e-08p 0.000122p 0.020645p 0.0 0.145064p 0.111973p 0.133784p 0.249288p 0.249290p 0.249299p 9.91e-10p
0.0
rc 5.88e-08p 0.000122p 0.020654p 0.000371o 0.145392p 0.112190o 0.133936p 0.249659o 0.249661n 0.249670m 9.91e-10p
0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.139484n 0.0 0.0
zp 32.99 ri 4.74e-07p 0.000429p 0.028783p 0.0 0.081509p 0.005282p 0.022518p 0.000399p 8.03e-08p 3.42e-07p 1.24e-11p
0.0

sig0.551 cc 4.74e-07p 0.000430p 0.028971p 0.0 0.110474p 0.075985p 0.062289p 0.138673p 0.138673p 0.138673p 1.24e-11p 0.0
rc 4.74e-07p 0.000430p 0.028971p 0.000795o 0.111269p 0.076494p 0.062575p 0.139468o 0.139468n 0.139468m 1.24e-11p 0.0

as-to-se branching to fit data; zn half life from 80eng2; ga, ge, as, se half lives 89wal1; kr, rb, sr 90bur1.

1

mass number 84 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 30 zn g 31 ga g 32 ge g 33 as d 33 as g 34 se d 34 se g 35 br m 35 br g 36 kr g 37 rb g 38 sr g
half life 0.098s 1.2 s 0.250s 5.5 s 2.03 s 3.3 m 6.0 m 31.8 m stable 32.87d stable
lambda 0.0 7.073e+00 5.776e-01 2.773e+00 1.260e-01 3.415e-01 3.501e-03 1.925e-03 3.633e-04 0.0 2.441e-07 0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 94.7940 0.0 99.8700 0.0 100.0000 100.0000 -97.0000 3.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 16.4540 100.0000 50.0000 100.0000 0.0 0.0 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.420451n 0.0 0.0
zp 33.92 ri 1.82e-09p 8.54e-06p 0.003620p 0.0 0.086089p 0.0 0.253587p 0.038251p 0.021516p 0.001685p 2.60e-06p 3.58e-10p
sig0.594 cc 1.81e-09p 8.46e-06p 0.003590p 0.0 0.088589p 0.0 0.343647p 0.037850p 0.364938p 0.404458p 2.57e-06p 7.75e-08p
rc 1.82e-09p 8.55e-06p 0.003628p 8.34e-05o 0.089612p 0.017339o 0.360421p 0.038251p 0.381938o 0.421876n 2.60e-06p 7.83e-08p
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.097299p 0.0 0.0
zp 33.78 ri 1.92e-10p 1.57e-06p 0.001083p 0.0 0.022242p 0.0 0.060555p 0.004696p 0.002641p 0.000103p 3.96e-08p 1.24e-12p
sig0.557 cc 1.92e-10p 1.57e-06p 0.001085p 0.0 0.023270p 0.0 0.083795p 0.004696p 0.086436p 0.091235p 3.96e-08p 1.19e-09p
rc 1.92e-10p 1.57e-06p 0.001085p 3.95e-05o 0.023310p 0.008517o 0.092352p 0.004696p 0.094993p 0.099792o 3.96e-08p 1.19e-09p
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.300008n 0.0 0.0
zp 34.12 ri 1.97e-10p 1.53e-06p 0.001023p 0.0 0.040148p 0.0 0.179224p 0.046443p 0.021856p 0.003112p 8.66e-06p 2.10e-09p

sig0.596 cc 1.95e-10p 1.52e-06p 0.001016p 0.0 0.040777p 0.0 0.220886p 0.046056p 0.242560p 0.291711p 8.59e-06p 2.60e-07p
rc 1.97e-10p 1.53e-06p 0.001025p 2.61e-05o 0.041146p 0.009042o 0.229359p 0.046443p 0.251214o 0.300779n 8.66e-06p 2.62e-07p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.230110n 0.0 0.0
zp 33.96 ri 6.12e-10p 3.44e-06p 0.001613p 0.0 0.044001p 0.0 0.136285p 0.022917p 0.012891p 0.001047p 1.76e-06p 2.44e-10p
sig0.592 cc 6.04e-10p 3.40e-06p 0.001594p 0.0 0.044923p 0.0 0.182254p 0.022610p 0.194972p 0.218617p 1.73e-06p 5.22e-08p
rc 6.12e-10p 3.44e-06p 0.001616p 5.31e-05o 0.045586p 0.012521o 0.194333p 0.022917p 0.207224o 0.231189n 1.76e-06p 5.29e-08p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.160541n 0.0 0.0
zp 33.63 ri 6.12e-09p 1.83e-05p 0.003761p 0.0 0.052644p 0.0 0.074069p 0.007257p 0.002047p 9.93e-05p 6.38e-08p 2.64e-12p
sig0.585 cc 6.12e-09p 1.84e-05p 0.003779p 0.0 0.056227p 0.0 0.130223p 0.007257p 0.132270p 0.139627p 6.38e-08p 1.92e-09p
rc 6.12e-09p 1.84e-05p 0.003779p 0.000206o 0.056433p 0.023488o 0.153917p 0.007257p 0.155964o 0.163320n 6.38e-08p 1.92e-09p
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.088083n 0.0 0.0
zp 33.35 ri 2.27e-08p 4.07e-05p 0.004622p 0.0 0.034671p 0.0 0.025392p 0.000939p 0.000528p 6.12e-06p 1.33e-09p 0.0
sig0.574 cc 2.27e-08p 4.07e-05p 0.004663p 0.0 0.039091p 0.0 0.064433p 0.000939p 0.064961p 0.065906p 1.33e-09p 3.99e-11p
rc 2.27e-08p 4.07e-05p 0.004663p 0.000428o 0.039519p 0.026128o 0.090988p 0.000939p 0.091516o 0.092462n 1.33e-09p 3.99e-11p
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.326199n 0.0 0.0
zp 33.37 ri 4.10e-07p 0.000286p 0.017650p 0.0 0.111727p 0.0 0.085279p 0.004818p 0.002710p 6.54e-05p 4.90e-08p 2.96e-12p
sig0.620 cc 4.09e-07p 0.000285p 0.017896p 0.0 0.128938p 0.0 0.213861p 0.004807p 0.216564p 0.221436p 4.89e-08p 1.47e-09p
rc 4.10e-07p 0.000286p 0.017936p 0.002576o 0.131306p 0.129671o 0.346086o 0.004818p 0.348796o 0.353679n 4.90e-08p 1.47e-09p
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.497665n 0.0 0.0
zp 33.69 ri 8.56e-10p 1.07e-05p 0.006503p 0.0 0.145284p 0.0 0.258639p 0.017848p 0.010039p 0.000193p 4.28e-08p 0.0
sig0.541 cc 8.38e-10p 1.04e-05p 0.006370p 0.0 0.148197p 0.0 0.410529p 0.017456p 0.420348p 0.437992p 4.18e-08p 1.26e-09p
rc 8.56e-10p 1.07e-05p 0.006513p 0.000231o 0.151690p 0.066402o 0.476534p 0.017848p 0.486573o 0.504614n 4.28e-08p 1.28e-09p
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.419414n 0.0 0.0
zp 33.70 ri 1.88e-09p 1.12e-05p 0.007118p 0.0 0.104862p 0.0 0.258754p 0.014463p 0.008135p 0.000275p 6.86e-08p 1.74e-12p
sig0.555 cc 1.85e-09p 1.10e-05p 0.007026p 0.0 0.110052p 0.0 0.370567p 0.014253p 0.378585p 0.393109p 6.76e-08p 2.03e-09p
rc 1.88e-09p 1.12e-05p 0.007129p 0.000166o 0.111785p 0.028457o 0.398851p 0.014463p 0.406986o 0.421724n 6.86e-08p 2.06e-09p
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.278542n 0.0 0.0
zp 33.38 ri 2.32e-08p 6.20e-05p 0.015212p 0.0 0.104391p 0.0 0.111029p 0.002685p 0.001511p 1.71e-05p 1.51e-09p 0.0
sig0.551 cc 2.32e-08p 6.20e-05p 0.015263p 0.0 0.118954p 0.0 0.229748p 0.002684p 0.231257p 0.233958p 1.51e-09p 4.52e-11p
rc 2.32e-08p 6.20e-05p 0.015274p 0.000702o 0.119571p 0.051579o 0.282023p 0.002685p 0.283534o 0.286237n 1.51e-09p 4.53e-11p

ga half life from 80eng2; ge, as, se, br half lives from 89wal1; rb half life 90bur1.

1

mass number 85 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 31 ga g 32 ge g 33 as d 33 as g 34 se m 34 se g 35 br g 36 kr m 36 kr g 37 rb g 38 sr g 39 y g
half life 0.087s 0.250s 0.247s 2.03 s 19. s 39. s 2.87m 4.48 h 10.73y stable 64.84d 5.0 h
lambda 7.967e+00 2.773e+00 2.806e+00 3.415e-01 3.648e-02 1.777e-02 4.025e-03 4.298e-05 2.048e-09 0.0 1.237e-07 3.851e-05
z - 1 g 100.0000 100.0000 0.0 83.5460 0.0 50.0000 100.0000 100.0000 0.0 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 80.0210 0.0 0.0
z - 0 m 0.0 0.0 15.2150 100.0000 8.5030 0.0 0.0 0.0 19.9790 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.406768n 0.0 0.0
zp 34.31 ri 4.47e-07p 0.000506p 0.0 0.034244p 0.118250p 0.118726p 0.141649p 0.001878p 0.008005p 4.55e-05p 1.72e-08p
0.0
sig0.594 cc 4.46e-07p 0.000506p 0.0 0.034625p 0.118580p 0.135892p 0.395993p 0.397868p 0.087485p 0.405909p 1.72e-08p
0.0
rc 4.47e-07p 0.000507p 1.00e-05o 0.034678p 0.119211p 0.136065p 0.396925o 0.398802n 0.087682n 0.406853m 1.72e-08p
0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.159692p 0.0 0.0
zp 34.17 ri 1.20e-07p 0.000240p 0.0 0.016831p 0.054531p 0.054531p 0.040299p 0.000290p 0.001237p 2.17e-06p 2.04e-10p
0.0
sig0.557 cc 1.20e-07p 0.000240p 0.0 0.017031p 0.054531p 0.063047p 0.157878p 0.158168p 0.032837p 0.159407p 2.04e-10p
0.0
rc 1.20e-07p 0.000240p 3.58e-06o 0.017035p 0.054912p 0.063049p 0.158260o 0.158550o 0.032914o 0.159789n 2.04e-10p
0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.420008n 0.0 0.0
zp 34.52 ri 8.48e-08p 0.000159p 0.0 0.017949p 0.099207p 0.099207p 0.190138p 0.003718p 0.018154p 0.000180p 1.23e-07p
4.75e-12p
sig0.596 cc 8.48e-08p 0.000159p 0.0 0.018080p 0.099199p 0.108239p 0.397596p 0.401314p 0.098331p 0.419647p 1.23e-07p
4.75e-12p
rc 8.48e-08p 0.000159p 2.34e-06o 0.018084p 0.099612p 0.108249p 0.397999o 0.401717o 0.098413o 0.420051m 1.23e-07p
4.75e-12p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.330112n 0.0 0.0
zp 34.35 ri 2.50e-07p 0.000323p 0.0 0.024767p 0.093287p 0.093287p 0.121377p 0.001708p 0.007283p 4.44e-05p 1.73e-08p
0.0
sig0.592 cc 2.50e-07p 0.000323p 0.0 0.025032p 0.093269p 0.105785p 0.320473p 0.322181p 0.071650p 0.329507p 1.73e-08p
0.0
rc 2.50e-07p 0.000323p 5.86e-06o 0.025043p 0.093961p 0.105808p 0.321146o 0.322854n 0.071786n 0.330181m 1.73e-08p
0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.230550n 0.0 0.0
zp 34.01 ri 2.16e-06p 0.001251p 0.0 0.045899p 0.077932p 0.077932p 0.048370p 0.000154p 0.001243p 2.57e-06p 3.13e-10p
0.0

sig0.585 cc 2.16e-06p 0.001253p 0.0 0.046946p 0.077932p 0.101405p 0.227707p 0.227860p 0.046767p 0.229106p 3.13e-10p
0.0
rc 2.16e-06p 0.001253p 2.97e-05o 0.046975p 0.079594p 0.101419p 0.229384o 0.229538n 0.047102n 0.230783m 3.13e-10p
0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.129053n 0.0 0.0
zp 33.72 ri 8.12e-06p 0.002592p 0.0 0.050010p 0.043968p 0.043968p 0.012979p 2.88e-05p 0.000123p 9.64e-08p 3.56e-12p
0.0
sig0.574 cc 8.12e-06p 0.002600p 0.0 0.052182p 0.043968p 0.070059p 0.127005p 0.127033p 0.025503p 0.127156p 3.56e-12p
0.0
rc 8.12e-06p 0.002600p 7.36e-05o 0.052256p 0.046178p 0.070095p 0.129252o 0.129281n 0.025952n 0.129404m 3.56e-12p
0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.674166j 0.0 0.674166i 0.0 0.0
zp 33.78 ri 9.46e-05p 0.015563p 0.0 0.245868p 0.216751p 0.221101p 0.095987p 0.000418p 0.001782p 4.55e-06p 7.77e-10p
0.0
sig0.620 cc 9.40e-05p 0.015570p 0.0 0.257620p 0.219874p 0.348684p 0.664005p 0.664421p 0.134517p 0.666198p 7.73e-10p
0.0
rc 9.46e-05p 0.015658p 0.000393o 0.259343p 0.225817p 0.350772p 0.672576l 0.672994j 0.136240j 0.674781h 7.77e-10p
0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.033712j 0.0 0.758120m 0.0 0.0
zp 34.09 ri 8.07e-07p 0.001405p 0.0 0.131612p 0.272771p 0.274308p 0.384693p 0.000748p 0.003187p 4.06e-06p 1.25e-10p
0.0
sig0.541 cc 9.60e-07p 0.001671p 0.0 0.157890p 0.326152p 0.405097p 0.984824p 0.985712p 0.200724p 0.989506p 1.48e-10p
0.0
rc 8.07e-07p 0.001405p 1.92e-05o 0.132805p 0.275597p 0.340710p 1.000999l 1.001747j 0.203326j 1.004938j 1.25e-10p
0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.469536n 0.0 0.0
zp 34.11 ri 5.33e-07p 0.001007p 0.0 0.056053p 0.168639p 0.169403p 0.098352p 0.000631p 0.002691p 3.45e-06p 2.71e-10p
0.0
sig0.555 cc 5.32e-07p 0.001006p 0.0 0.056807p 0.169144p 0.197547p 0.464891p 0.465521p 0.095693p 0.468211p 2.70e-10p
0.0
rc 5.33e-07p 0.001008p 1.79e-05o 0.056913p 0.170183p 0.197860p 0.466395o 0.467026n 0.095998n 0.469720m 2.71e-10p
0.0

pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.328785n 0.0 0.0
zp 33.77 ri 6.10e-06p 0.004258p 0.0 0.099496p 0.120587p 0.122340p 0.030784p 6.70e-05p 0.000285p 1.23e-07p 2.72e-12p 0.0
sig0.551 cc 6.07e-06p 0.004244p 0.0 0.102579p 0.121777p 0.173067p 0.325484p 0.325551p 0.065326p 0.325835p 2.70e-12p 0.0
rc 6.10e-06p 0.004264p 9.88e-05o 0.103157p 0.124202p 0.173919p 0.328904o 0.328971n 0.066011n 0.329257m 2.72e-12p 0.0

kr branching to fit data; ga half life from 80eng2; as, se, br, kr half lives from 89wal1.

1

mass number 86 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	30 zn g	31 ga g	32 ge g	33 as g	34 se d	34 se g	35 br m	35 br g	36 kr d	36 kr g	37 rb g	38 sr g
half life		0.247s	0.9 s	0.30 s	15.0 s	4.5 s	55.5 s	55.7 s	stable	18.66d	stable	
lambda	0.0	0.0	2.806e+00	7.702e-01	2.310e+00	4.621e-02	1.540e-01	1.249e-02	1.244e-02	0.0	4.299e-07	0.0
z - 1 g	100.0000	100.0000	100.0000	84.7850	0.0	91.4970	0.0	100.0000	0.0	100.0000	0.0	100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	44.3600	100.0000	0.1880	0.0	2.5400	100.0000	0.0	0.0

cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.545879n 0.0 0.0
zp 34.69 ri 0.0 1.95e-08p 6.58e-05p 0.011243p 0.0 0.204809p 0.135169p 0.134949p 0.0 0.049660p 0.000578p 6.49e-07p
sig0.594 cc 0.0 1.95e-08p 6.57e-05p 0.011282p 0.0 0.215180p 0.135081p 0.350261p 0.0 0.534928p 0.000577p 0.000578p
rc 0.0 1.95e-08p 6.58e-05p 0.011299p 0.001243o 0.216390p 0.135404p 0.351339o 0.013542o 0.549945m 0.000578p 0.000578p

cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.181378p 0.0 0.0
zp 34.55 ri 0.0 3.22e-09p 2.35e-05p 0.004461p 0.0 0.089196p 0.037474p 0.037474p 0.0 0.009067p 3.55e-05p 1.23e-08p
sig0.557 cc 0.0 3.22e-09p 2.35e-05p 0.004481p 0.0 0.093296p 0.037474p 0.130770p 0.0 0.177311p 3.55e-05p 3.55e-05p
rc 0.0 3.22e-09p 2.35e-05p 0.004481p 0.000570o 0.093866p 0.037601p 0.131341p 0.005987o 0.183996n 3.55e-05p 3.55e-05p

cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.580011n 0.0 0.0
zp 34.92 ri 0.0 2.67e-09p 1.54e-05p 0.004744p 0.0 0.143727p 0.162285p 0.162332p 0.0 0.098567p 0.002150p 4.48e-06p
sig0.596 cc 0.0 2.67e-09p 1.54e-05p 0.004755p 0.0 0.148142p 0.162294p 0.310437p 0.0 0.571265p 0.002150p 0.002154p
rc 0.0 2.67e-09p 1.54e-05p 0.004757p 0.000381o 0.148461p 0.162414p 0.310793p 0.011928o 0.583702n 0.002150p 0.002155p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.460156n 0.0 0.0
zp 34.74 ri 0.0 9.87e-09p 3.85e-05p 0.007893p 0.0 0.158345p 0.119491p 0.119455p 0.0 0.046871p 0.000615p 7.24e-07p
sig0.592 cc 0.0 9.86e-09p 3.85e-05p 0.007919p 0.0 0.165662p 0.119463p 0.285126p 0.0 0.451416p 0.000614p 0.000615p
rc 0.0 9.87e-09p 3.85e-05p 0.007926p 0.000767o 0.166364p 0.119664p 0.285819p 0.011367o 0.463721m 0.000615p 0.000616p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.321082n 0.0 0.0
zp 34.39 ri 4.57e-12p 1.18e-07p 0.000195p 0.019387p 0.0 0.162214p 0.060963p 0.060963p 0.0 0.009209p 4.77e-05p 1.70e-08p
sig0.585 cc 4.56e-12p 1.17e-07p 0.000195p 0.019507p 0.0 0.180413p 0.060822p 0.241235p 0.0 0.311245p 4.76e-05p 4.76e-05p
rc 4.57e-12p 1.18e-07p 0.000195p 0.019553p 0.002748o 0.182852p 0.061226p 0.243816o 0.009915o 0.324167n 4.77e-05p 4.77e-05p
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.188043n 0.0 0.0
zp 34.10 ri 3.19e-11p 5.13e-07p 0.000483p 0.025590p 0.0 0.110908p 0.020898p 0.020898p 0.0 0.001360p 2.58e-06p 2.92e-10p
sig0.574 cc 3.17e-11p 5.09e-07p 0.000481p 0.025824p 0.0 0.135007p 0.020756p 0.155763p 0.0 0.177870p 2.56e-06p 2.56e-06p
rc 3.19e-11p 5.13e-07p 0.000484p 0.026001p 0.005368o 0.140066p 0.021159p 0.160964o 0.006555o 0.190038n 2.58e-06p 2.58e-06p
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.820625n 0.0 0.0
zp 34.19 ri 1.07e-09p 5.77e-06p 0.002578p 0.104429p 0.0 0.445326p 0.116512p 0.116623p 0.0 0.013769p 7.75e-05p 3.71e-08p

sig0.620 cc 1.06e-09p 5.73e-06p 0.002568p 0.106000p 0.0 0.543716p 0.116217p 0.659933p 0.0 0.789839p 7.70e-05p 7.71e-05p
rc 1.07e-09p 5.77e-06p 0.002583p 0.106620p 0.017146o 0.560026p 0.117312p 0.676649o 0.022658m 0.830388n 7.75e-05p 7.75e-05p
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.120504n 0.0 0.0
zp 34.50 ri 0.0 1.49e-08p 0.000126p 0.033129p 0.0 0.543984p 0.241760p 0.242049p 0.0 0.037556p 0.000113p 1.70e-08p
sig0.541 cc 0.0 1.49e-08p 0.000126p 0.033187p 0.0 0.574726p 0.241767p 0.816493p 0.0 1.095762p 0.000113p 0.000113p
rc 0.0 1.49e-08p 0.000126p 0.033235p 0.004096o 0.578489o 0.242490p 0.820538o 0.040421m 1.141004m 0.000113p 0.000113p
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.679051n 0.0 0.0
zp 34.51 ri 0.0 1.53e-08p 0.000118p 0.018059p 0.0 0.370350p 0.123930p 0.123980p 0.0 0.029947p 8.84e-05p 2.86e-08p
sig0.555 cc 0.0 1.53e-08p 0.000118p 0.018137p 0.0 0.386975p 0.123970p 0.510945p 0.0 0.664825p 8.83e-05p 8.83e-05p
rc 0.0 1.53e-08p 0.000118p 0.018159p 0.001712o 0.388677p 0.124328p 0.512657o 0.017118o 0.684051n 8.84e-05p 8.84e-05p
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.497396n 0.0 0.0
zp 34.17 ri 7.03e-12p 2.32e-07p 0.000649p 0.041964p 0.0 0.332260p 0.051410p 0.051410p 0.0 0.004359p 4.59e-06p 4.21e-10p
sig0.551 cc 7.00e-12p 2.32e-07p 0.000647p 0.042352p 0.0 0.371584p 0.051213p 0.422797p 0.0 0.478352p 4.57e-06p 4.57e-06p
rc 7.03e-12p 2.32e-07p 0.000650p 0.042515p 0.006552o 0.377712p 0.052003p 0.429121o 0.015846o 0.501329n 4.59e-06p 4.59e-06p

ge half life from 80eng2; as, se, br half lives from 89wal1; rb half life 90bur1.

1

nuclide	32 ge g	33 as g	34 se g	35 br d	35 br g	36 kr d	36 kr g	37 rb g	38 sr m	38 sr g	39 y g	40 zr g
half life	0.134s	0.8 s	5.6 s	1.50s	55.9 s	16.0 s	1.27 h	10.67l	2.81 h	stable	80.3 h	1.6 h

```
 lambda      5.173e+00 8.664e-01 1.238e-01 4.621e-01 1.240e-02 4.332e-02 1.516e-04 4.699e-19 6.852e-05       0.0 2.398e-06
1.203e-04
  z - 1 g    100.0000  100.0000   55.6400       0.0   99.8120       0.0   97.4600  100.0000   -0.3000  100.0000       0.0       0.0
  z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0 -100.0000 -100.0000
  z - 0 m       0.0       0.0       0.0    0.9660  100.0000    6.2600  100.0000       0.0       0.0   99.7000       0.0       0.0
  cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.62e-06n 0.713769n      0.0       0.0
 zp 35.07 ri 5.63e-06p 0.002797p 0.123083p      0.0  0.408336p      0.0  0.168920p 0.005476p 3.04e-06p 1.30e-05p 2.62e-09p      0.0
 sig0.594 cc 5.62e-06p 0.002799p 0.124499p      0.0  0.532237p      0.0  0.688153p 0.693622p 3.04e-06p 0.693638p 2.62e-09p
0.0
          rc 5.63e-06p 0.002802p 0.124642p 0.000421o 0.533165p 0.023779o 0.712322o 0.717797o 3.05e-06o 0.717813n 2.62e-09p
0.0
  cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.39e-07n 0.288825p      0.0       0.0
 zp 34.94 ri 1.85e-06p 0.001284p 0.066924p      0.0  0.167924p      0.0  0.049807p 0.000686p 1.32e-07p 5.63e-07p 2.21e-11p      0.0
 sig0.557 cc 1.85e-06p 0.001285p 0.067625p      0.0  0.235447p      0.0  0.279263p 0.279949p 1.32e-07p 0.279950p 2.21e-11p
0.0
          rc 1.85e-06p 0.001286p 0.067639p 0.000271o 0.235707p 0.012383o 0.291910o 0.292596o 1.32e-07n 0.292597n 2.21e-11p
0.0
  cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.01e-05n 0.780022n      0.0       0.0
 zp 35.32 ri 9.21e-07p 0.000858p 0.068166p      0.0  0.400878p      0.0  0.286894p 0.017525p 1.71e-05p 8.35e-05p 3.43e-08p      0.0
 sig0.596 cc 9.19e-07p 0.000857p 0.068493p      0.0  0.468423p      0.0  0.744428p 0.761915p 1.71e-05p 0.762015p 3.43e-08p
0.0
          rc 9.21e-07p 0.000859p 0.068644p 0.000201o 0.469594p 0.020755o 0.765315o 0.782840o 1.71e-05o 0.782941n 3.43e-08p
0.0
  cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.66e-06n 0.630303n      0.0       0.0
 zp 35.14 ri 2.77e-06p 0.001726p 0.090685p      0.0  0.355716p      0.0  0.167911p 0.006348p 4.00e-06p 1.71e-05p 3.93e-09p      0.0
 sig0.592 cc 2.77e-06p 0.001726p 0.091499p      0.0  0.446559p      0.0  0.603770p 0.610108p 4.00e-06p 0.610129p 3.93e-09p
0.0
          rc 2.77e-06p 0.001729p 0.091647p 0.000344o 0.447534p 0.023732o 0.627809o 0.634157o 4.01e-06m 0.634178n 3.93e-09p
0.0
  cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.59e-08n 0.451521n      0.0       0.0
 zp 34.78 ri 2.17e-05p 0.006173p 0.136345p      0.0  0.250100p      0.0  0.048847p 0.000716p 8.31e-08p 6.72e-07p 4.42e-11p      0.0
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sig0.585 cc 2.17e-05p 0.006192p 0.139747p 0.0 0.389645p 0.0 0.428580p 0.429295p 8.31e-08p 0.429296p 4.42e-11p 0.0
rc 2.17e-05p 0.006194p 0.139792p 0.000742o 0.390370p 0.026494o 0.455796o 0.456512o 8.31e-08m 0.456513n 4.42e-11p 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.36e-09n 0.277116n 0.0 0.0
zp 34.47 ri 8.22e-05p 0.012019p 0.132121p 0.0 0.118553p 0.0 0.010112p 5.45e-05p 3.46e-09p 1.47e-08p 0.0 0.0
sig0.574 cc 8.22e-05p 0.012097p 0.138803p 0.0 0.257152p 0.0 0.260729p 0.260783p 3.45e-09p 0.260783p 0.0 0.0
rc 8.22e-05p 0.012101p 0.138854p 0.000930o 0.258077p 0.019393o 0.281026o 0.281081o 3.46e-09m 0.281081n 0.0 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.999400j 0.0 1.49e-09n 0.0 0.0 0.0
zp 34.60 ri 0.000359p 0.038292p 0.404253p 0.0 0.464839p 0.0 0.073044p 0.001097p 2.76e-07p 1.18e-06p 1.58e-10p 0.0
sig0.620 cc 0.000347p 0.037398p 0.411953p 0.0 0.892783p 0.0 0.940782p 0.941843p 2.68e-07p 0.941845p 1.52e-10p 0.0
rc 0.000359p 0.038651p 0.425758p 0.002266o 0.892063m 0.056148o 0.998596j 0.999693j 2.77e-07g 0.999695j 1.58e-10p 0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.868633k 0.0 2.38e-07n 1.570447n 0.0 0.0
zp 34.90 ri 7.71e-06p 0.009225p 0.383144p 0.0 1.202111n 0.0 0.214069p 0.002748p 2.29e-07p 9.78e-07p 2.50e-11p 0.0
sig0.541 cc 7.56e-06p 0.009060p 0.380999p 0.0 1.582151p 0.0 1.763456p 1.766383p 2.44e-07p 1.766384p 2.66e-11p 0.0
rc 7.71e-06p 0.009233p 0.388281p 0.001702o 1.591365m 0.089893m 1.854906j 1.857654j 2.29e-07n 1.857655j 2.50e-11p 0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.74e-07n 0.828841n 0.0 0.0
zp 34.92 ri 6.16e-06p 0.003852p 0.209575p 0.0 0.461630p 0.0 0.138749p 0.001619p 3.01e-07p 1.28e-06p 4.05e-11p 0.0
sig0.555 cc 6.16e-06p 0.003855p 0.211523p 0.0 0.672533p 0.0 0.794624p 0.796242p 3.01e-07p 0.796244p 4.04e-11p 0.0
rc 6.16e-06p 0.003858p 0.211722p 0.001000o 0.673954p 0.040431o 0.836017o 0.837636o 3.01e-07n 0.837637n 4.05e-11p 0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.15e-08n 0.676459n 0.0 0.0
zp 34.58 ri 5.75e-05p 0.014712p 0.307512p 0.0 0.306875p 0.0 0.035375p 0.000150p 8.36e-09p 3.56e-08p 0.0 0.0
sig0.551 cc 5.75e-05p 0.014765p 0.315622p 0.0 0.622026p 0.0 0.641589p 0.641739p 8.35e-09p 0.641739p 0.0 0.0

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        rc 5.75e-05p 0.014770p 0.315730p 0.001853o 0.623864p 0.041187o 0.684579o 0.684730o 8.36e-09o 0.684730n       0.0
0.0

  ge half life from 80eng2; as, se, br, kr half lives from 89wal1; sr half life 90bur1.

1

     mass number     88              LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       32 ge g   33 as g   34 se g   35 br d   35 br g   36 kr d   36 kr g   37 rb g   38 sr g   39 y  g   40 zr g
 half life     0.129s    0.135s    1.50 s    0.41 s    16.4 s    4.38 s    2.84 h    17.7 m    stable    106.6d    85. d
 lambda       5.373e+00 5.134e+00 4.621e-01 1.691e+00 4.227e-02 1.583e-01 6.780e-05 6.527e-04       0.0 7.526e-08 9.438e-08
  z - 1 g    100.0000  100.0000  100.0000       0.0   99.0340       0.0   93.7400  100.0000  100.0000 -100.0000 -100.0000
  z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
  z - 0 m        0.0       0.0       0.0    7.7000  100.0000   14.0000  100.0000       0.0       0.0       0.0       0.0
  cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.771934n      0.0       0.0
 zp 35.46 ri 2.55e-07p 0.000341p 0.043239p       0.0  0.335709p       0.0  0.352407p 0.028132p 0.000244p 1.09e-07p 4.22e-12p
 sig0.594 cc 2.54e-07p 0.000340p 0.043298p       0.0  0.376685p       0.0  0.707882p 0.735832p 0.736074p 1.08e-07p 4.19e-12p
          rc 2.55e-07p 0.000342p 0.043581p 0.000994o 0.379862p 0.039942o 0.748432p 0.776564o 0.776808n 1.09e-07p 4.22e-12p
  cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.358814p      0.0       0.0
 zp 35.33 ri 7.62e-08p 0.000154p 0.027927p       0.0  0.169358p       0.0  0.148972p 0.005508p 2.05e-05p 1.96e-09p       0.0
 sig0.557 cc 7.57e-08p 0.000153p 0.027888p       0.0  0.195984p       0.0  0.333910p 0.339381p 0.339401p 1.94e-09p       0.0
          rc 7.62e-08p 0.000154p 0.028081p 0.000646o 0.197813p 0.024770o 0.359172o 0.364680o 0.364701n 1.96e-09p       0.0
  cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.000020n      0.0       0.0
 zp 35.73 ri 3.22e-08p 8.70e-05p 0.020740p       0.0  0.310610p       0.0  0.576487p 0.089624p 0.001540p 1.52e-06p 1.27e-10p
 sig0.596 cc 3.20e-08p 8.65e-05p 0.020717p       0.0  0.329590p       0.0  0.887571p 0.976724p 0.978257p 1.51e-06p 1.27e-10p
          rc 3.22e-08p 8.70e-05p 0.020827p 0.000314o 0.331550p 0.025025o 0.912307o 1.001931n 1.003472m 1.52e-06p 1.27e-10p
  cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.840403n      0.0       0.0
 zp 35.54 ri 1.30e-07p 0.000230p 0.035371p       0.0  0.343193p       0.0  0.414486p 0.040207p 0.000399p 2.15e-07p 9.29e-12p
 sig0.592 cc 1.29e-07p 0.000229p 0.035394p       0.0  0.376436p       0.0  0.769610p 0.809583p 0.809980p 2.13e-07p 9.24e-12p
          rc 1.30e-07p 0.000230p 0.035601p 0.000649o 0.379099p 0.033705o 0.803558p 0.843766o 0.844165n 2.15e-07p 9.29e-12p
  cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.612062n      0.0       0.0
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zp 35.17 ri 1.51e-06p 0.001254p 0.075554p 0.0 0.345018p 0.0 0.166841p 0.006767p 2.09e-05p 3.69e-09p 0.0
sig0.585 cc 1.50e-06p 0.001251p 0.076513p 0.0 0.419985p 0.0 0.561665p 0.568405p 0.568426p 3.68e-09p 0.0
rc 1.51e-06p 0.001255p 0.076810p 0.002143o 0.423229p 0.050372o 0.613948o 0.620714o 0.620735n 3.69e-09p 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.376086n 0.0 0.0
zp 34.86 ri 7.05e-06p 0.003088p 0.093210p 0.0 0.210497p 0.0 0.047689p 0.000752p 7.77e-07p 4.00e-11p 0.0
sig0.574 cc 7.04e-06p 0.003089p 0.096109p 0.0 0.305972p 0.0 0.334411p 0.335161p 0.335162p 3.99e-11p 0.0
rc 7.05e-06p 0.003095p 0.096305p 0.003917o 0.309789p 0.046902o 0.384987o 0.385740o 0.385740n 4.00e-11p 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.167477k 0.0 0.0 0.0 0.0
zp 35.02 ri 2.81e-05p 0.008281p 0.226271p 0.0 0.657741p 0.0 0.227090p 0.009813p 3.65e-05p 1.14e-08p 0.0
sig0.620 cc 2.72e-05p 0.008045p 0.227131p 0.0 0.879820p 0.0 1.062453p 1.071954p 1.071990p 1.10e-08p 0.0
rc 2.81e-05p 0.008309p 0.234581p 0.006872o 0.896928o 0.103097o 1.170966j 1.180779j 1.180816j 1.14e-08p 0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.226456j 0.0 2.097242n 0.0 0.0
zp 35.29 ri 3.03e-07p 0.001011p 0.175213p 0.0 1.258547n 0.0 0.724710o 0.026605p 5.22e-05p 3.10e-09p 0.0
sig0.541 cc 2.89e-07p 0.000966p 0.168292p 0.0 1.369331p 0.0 2.072462p 2.098740p 2.098792p 3.06e-09p 0.0
rc 3.03e-07p 0.001011p 0.176224p 0.002921o 1.435989m 0.155589m 2.226396j 2.253001j 2.253053j 3.10e-09p 0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.188825n 0.0 0.0
zp 35.32 ri 2.77e-07p 0.000504p 0.103051p 0.0 0.541790p 0.0 0.524719p 0.016221p 6.35e-05p 4.84e-09p 0.0
sig0.555 cc 2.75e-07p 0.000501p 0.103018p 0.0 0.641403p 0.0 1.129002p 1.145138p 1.145201p 4.81e-09p 0.0
rc 2.77e-07p 0.000504p 0.103555p 0.001523o 0.645868o 0.054820o 1.184975n 1.201196n 1.201259m 4.84e-09p 0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.855521n 0.0 0.0
zp 34.99 ri 3.12e-06p 0.002449p 0.189337p 0.0 0.463979p 0.0 0.181564p 0.002274p 2.78e-06p 7.07e-11p 0.0
sig0.551 cc 3.11e-06p 0.002446p 0.191304p 0.0 0.653078p 0.0 0.794607p 0.796876p 0.796878p 7.05e-11p 0.0
rc 3.12e-06p 0.002452p 0.191789p 0.004025o 0.657941p 0.067865o 0.866183o 0.868457o 0.868460n 7.07e-11p 0.0

ge, as half lives from 80eng2; se, br, kr, rb half lives from 89wal1.

1

nuclide	33 as g	34 se g	35 br d	35 br g	36 kr d	36 kr g	37 rb g	38 sr g	39 y m	39 y g	40 zr g	41 nb g
half life	0.121s	0.41 s	0.427s	4.37 s	1.80 s	3.15 m	15.4 m	50.52d	15.7 s	stable	78.5 h	2.0 h

lambda 5.728e+00 1.691e+00 1.623e+00 1.586e-01 3.851e-01 3.667e-03 7.502e-04 1.588e-07 4.415e-02 0.0 2.453e-06 9.627e-05
z - 1 g 100.0000 100.0000 0.0 92.3000 0.0 86.0000 100.0000 100.0000 0.0100 99.9900 -0.2000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -99.8000 0.0
z - 0 m 0.0 0.0 9.1320 100.0000 24.6000 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.091758n 0.0 0.0 0.977299n 0.0 0.0
zp 35.85 ri 3.88e-05p 0.012866p 0.0 0.273189p 0.0 0.643825p 0.137827p 0.002899p 3.19e-06p 7.48e-07p 4.21e-10p 0.0
sig0.594 cc 3.83e-05p 0.012740p 0.0 0.281531p 0.0 0.891251p 1.027224p 1.030249p 0.000106p 1.030253p 4.40e-10p 0.0
rc 3.88e-05p 0.012905p 0.000201o 0.285301p 0.028583o 0.917768n 1.055594m 1.058493m 0.000109m 1.058497m 4.21e-10p 0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.566807p 0.0 0.0
zp 35.73 ri 1.59e-05p 0.008375p 0.0 0.169065p 0.0 0.356078p 0.043230p 0.000466p 1.40e-07p 3.28e-08p 4.09e-12p 0.0
sig0.557 cc 1.58e-05p 0.008336p 0.0 0.175690p 0.0 0.508583p 0.551530p 0.551992p 5.53e-05p 0.551992p 4.06e-12p 0.0
rc 1.59e-05p 0.008391p 0.000118o 0.176928p 0.017346o 0.525583p 0.568813o 0.569278o 5.71e-05o 0.569279n 4.09e-12p 0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.300026n 0.0 0.0
zp 36.14 ri 6.03e-06p 0.004075p 0.0 0.174934p 0.0 0.792097p 0.325708p 0.014990p 3.80e-05p 7.78e-06p 1.12e-08p 0.0
sig0.596 cc 6.01e-06p 0.004067p 0.0 0.178112p 0.0 0.946753p 1.271622p 1.286561p 0.000167p 1.286607p 1.12e-08p 0.0
rc 6.03e-06p 0.004081p 4.63e-05o 0.178747p 0.014757o 0.960576o 1.286284o 1.301274n 0.000168n 1.301320m 1.12e-08p 0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.100374n 0.0 0.0
zp 35.95 ri 1.92e-05p 0.008408p 0.0 0.232852p 0.0 0.686061p 0.180816p 0.004958p 6.83e-06p 1.60e-06p 1.09e-09p 0.0
sig0.592 cc 1.91e-05p 0.008381p 0.0 0.239332p 0.0 0.894030p 1.074032p 1.078963p 0.000115p 1.078971p 1.09e-09p 0.0
rc 1.92e-05p 0.008428p 0.000118o 0.240748p 0.024281o 0.917385o 1.098201n 1.103159n 0.000117n 1.103167m 1.09e-09p 0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.802704n 0.0 0.0

zp 35.57 ri 0.000159p 0.027669p 0.0 0.333540p 0.0 0.401555p 0.044411p 0.000404p 1.95e-07p 2.41e-08p 7.66e-12p
0.0
sig0.585 cc 0.000157p 0.027567p 0.0 0.356024p 0.0 0.711378p 0.755372p 0.755772p 7.58e-05p 0.755772p 7.58e-12p
0.0
rc 0.000159p 0.027828p 0.000575o 0.359800p 0.052739o 0.763723p 0.808134o 0.808538o 8.10e-05o 0.808538n 7.66e-12p
0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.514644n 0.0 0.0
zp 35.24 ri 0.000599p 0.050271p 0.0 0.286351p 0.0 0.158790p 0.007025p 2.15e-05p 2.74e-09p 6.42e-10p 0.0 0.0
sig0.574 cc 0.000595p 0.050525p 0.0 0.331489p 0.0 0.445760p 0.452738p 0.452759p 4.53e-05p 0.452759p 0.0 0.0
rc 0.000599p 0.050870p 0.001710o 0.335015p 0.072928o 0.519831o 0.526856o 0.526878o 5.27e-05o 0.526878n 0.0
0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.342123k 0.0 0.0 0.0 0.0 0.0
zp 35.44 ri 0.001207p 0.088044p 0.0 0.651948p 0.0 0.541397p 0.059241p 0.000608p 4.39e-07p 1.03e-07p 3.92e-11p
0.0
sig0.620 cc 0.001178p 0.087073p 0.0 0.717001p 0.0 1.176971p 1.234767p 1.235360p 0.000124p 1.235360p 3.82e-11p
0.0
rc 0.001207p 0.089251p 0.002079o 0.736406o 0.111394o 1.286099m 1.345340k 1.345948k 0.000135k 1.345949k 3.92e-11p
0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.785898n 0.0 0.0
zp 35.69 ri 7.89e-05p 0.037854p 0.0 1.075758n 0.0 1.542579n 0.206262p 0.001124p 2.56e-07p 6.01e-08p 2.56e-12p 0.0
sig0.541 cc 7.83e-05p 0.037665p 0.0 1.103132p 0.0 2.500221p 2.705200p 2.706316p 0.000271p 2.706316p 2.54e-12p
0.0
rc 7.89e-05p 0.037933p 0.000584o 1.111354m 0.113882o 2.612225l 2.818487m 2.819611l 0.000282l 2.819611l 2.56e-12p
0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.318697n 0.0 0.0
zp 35.73 ri 3.34e-05p 0.019748p 0.0 0.373004p 0.0 0.849246p 0.093757p 0.001057p 2.76e-07p 6.48e-08p 8.05e-12p 0.0
sig0.555 cc 3.31e-05p 0.019625p 0.0 0.388272p 0.0 1.186912p 1.279929p 1.280977p 0.000128p 1.280977p 7.99e-12p
0.0
rc 3.34e-05p 0.019782p 0.000307o 0.391569p 0.043290o 1.229286o 1.323043n 1.324100n 0.000133n 1.324100m 8.05e-12p
0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000000 0.0 0.0

zp 35.40 ri 0.000230p 0.052046p 0.0 0.435301p 0.0 0.413675p 0.019438p 7.30e-05p 6.41e-09p 1.50e-09p 0.0 0.0
sig0.551 cc 0.000228p 0.051804p 0.0 0.479528p 0.0 0.830306p 0.849568p 0.849640p 8.50e-05p 0.849640p 0.0 0.0
rc 0.000230p 0.052277p 0.001198o 0.484751p 0.074236o 0.904797p 0.924235o 0.924307o 9.24e-05o 0.924307n 0.0
0.0

as half life from 80eng2; se, br, kr, rb, sr half lives 89wal1.
1

mass number 90 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 34 se g 35 br d 35 br g 36 kr d 36 kr g 37 rb m 37 rb g 38 sr g 39 y g 40 zr g 41 nb g 42 mo g
half life 0.427s 0.27s 1.9 s 0.60 s 32.3 s 4.3 m 2.6 m 29.1 y 2.67 d stable 14.59h 5.7 h
lambda 1.623e+00 2.567e+00 3.648e-01 1.155e+00 2.146e-02 2.687e-03 4.443e-03 7.553e-10 3.005e-06 0.0 1.320e-05
3.378e-05
z - 1 g 100.0000 0.0 90.8680 0.0 75.4000 11.0000 89.0000 100.0000 100.0000 100.0000 -3.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 97.4000 0.0 0.0 -97.0000 0.0
z - 0 m 0.0 24.4380 100.0000 18.1000 100.0000 0.0 2.6000 0.0 0.0 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.135780n 0.0 0.0
zp 36.23 ri 0.002199p 0.0 0.114138p 0.0 0.695455p 0.264981p 0.062172p 0.019938p 7.01e-05p 2.26e-08p 0.0 0.0
sig0.594 cc 0.002195p 0.0 0.115953p 0.0 0.783605p 0.350784p 0.768592p 1.130159p 1.130229p 1.130229p 0.0 0.0
rc 0.002199p 5.60e-05o 0.116193p 0.006294o 0.789359o 0.351810p 0.773848n 1.136450n 1.136520n 1.136520m 0.0
0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.634824p 0.0 0.0
zp 36.12 ri 0.001289p 0.0 0.069315p 0.0 0.444775p 0.104216p 0.024454p 0.004788p 5.18e-06p 4.69e-10p 0.0 0.0
sig0.557 cc 0.001287p 0.0 0.070353p 0.0 0.498174p 0.158851p 0.471912p 0.631412p 0.631417p 0.631417p 0.0 0.0
rc 0.001289p 2.65e-05o 0.070513p 0.003857o 0.501799p 0.159413p 0.475199p 0.635256o 0.635261o 0.635261n 0.0
0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.600032n 0.0 0.0
zp 36.55 ri 0.000507p 0.0 0.059517p 0.0 0.734714p 0.601014p 0.123095p 0.093071p 0.000794p 6.15e-07p 2.47e-11p
0.0
sig0.596 cc 0.000507p 0.0 0.059946p 0.0 0.780330p 0.686568p 0.835386p 1.597125p 1.597919p 1.597919p 2.47e-11p
0.0
rc 0.000507p 9.10e-06o 0.059986p 0.002413o 0.782357o 0.687074o 0.837256n 1.599537m 1.600331m 1.600331m 2.47e-11p
0.0

cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.400475n 0.0 0.0
zp 36.36 ri 0.001288p 0.0 0.097503p 0.0 0.781331p 0.405536p 0.095139p 0.039541p 0.000193p 8.04e-08p 1.66e-12p
0.0
sig0.592 cc 0.001287p 0.0 0.098563p 0.0 0.856311p 0.499330p 0.870131p 1.395974p 1.396167p 1.396167p 1.66e-12p
0.0
rc 0.001288p 2.82e-05o 0.098702p 0.004847o 0.860599o 0.500202p 0.874077n 1.400815n 1.401007n 1.401007m 1.66e-12p
0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.002390n 0.0 0.0
zp 35.97 ri 0.006300p 0.0 0.208451p 0.0 0.640705p 0.161990p 0.020040p 0.004744p 7.82e-06p 8.50e-10p 0.0 0.0
sig0.585 cc 0.006274p 0.0 0.213366p 0.0 0.803009p 0.249808p 0.741131p 0.989168p 0.989176p 0.989176p 0.0 0.0
rc 0.006300p 0.000212o 0.214387p 0.015299o 0.817652o 0.251932p 0.754300n 1.004425n 1.004433n 1.004433m 0.0
0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.675047n 0.0 0.0
zp 35.62 ri 0.018726p 0.0 0.278561p 0.0 0.380803p 0.036026p 0.008451p 0.000394p 1.88e-07p 5.15e-12p 0.0 0.0
sig0.574 cc 0.018565p 0.0 0.293308p 0.0 0.604625p 0.102226p 0.549153p 0.649111p 0.649111p 0.649111p 0.0 0.0
rc 0.018726p 0.000880o 0.296457p 0.028311o 0.632643p 0.105617o 0.574249o 0.677513o 0.677513n 0.677513m 0.0
0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.527346n 0.0 0.0
zp 35.86 ri 0.022768p 0.0 0.431056p 0.0 0.908548p 0.191429p 0.044987p 0.006540p 1.65e-05p 3.44e-09p 0.0 0.0
sig0.620 cc 0.022622p 0.0 0.449185p 0.0 1.251008p 0.328168p 1.166628p 1.492762p 1.492778p 1.492779p 0.0 0.0
rc 0.022768p 0.001075o 0.452820p 0.040425o 1.290399o 0.333373p 1.202110n 1.533355n 1.533371n 1.533371m 0.0
0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.437917n 0.0 0.0
zp 36.08 ri 0.006395p 0.0 0.457020p 0.0 2.351096n 0.568534p 0.133397p 0.015986p 1.26e-05p 4.74e-10p 0.0 0.0
sig0.541 cc 0.006381p 0.0 0.461886p 0.0 2.701584p 0.864729p 2.560023p 3.418221p 3.418234p 3.418234p 0.0 0.0
rc 0.006395p 0.000106o 0.462936p 0.024623o 2.724772m 0.868259n 2.581019m 3.442690l 3.442702l 3.442702l 0.0
0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.838715n 0.0 0.0
zp 36.14 ri 0.003358p 0.0 0.172851p 0.0 1.328337n 0.286341p 0.067187p 0.015332p 1.48e-05p 1.50e-09p 0.0 0.0
sig0.555 cc 0.003352p 0.0 0.175603p 0.0 1.461631p 0.446683p 1.379529p 1.829902p 1.829917p 1.829917p 0.0 0.0

rc 0.003358p 7.25e-05o 0.175976p 0.010664o 1.471687m 0.448226p 1.388642m 1.840547m 1.840562m 1.840562l 0.0
0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.235434n 0.0 0.0
zp 35.80 ri 0.013124p 0.0 0.289402p 0.0 0.877976p 0.084775p 0.019885p 0.001511p 5.02e-07p 1.41e-11p 0.0 0.0
sig0.551 cc 0.013037p 0.0 0.299468p 0.0 1.106347p 0.205910p 1.009756p 1.211814p 1.211814p 1.211814p 0.0 0.0
rc 0.013124p 0.000445o 0.301773p 0.027125o 1.132638n 0.209365o 1.033377n 1.238809n 1.238810n 1.238810m 0.0
0.0

kr-rb branching from 70bal1; se half lives from 80eng2; br, kr, rb, sr, y half lives from 89wal1.

1

mass number 91 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 34 se g 35 br g 36 kr d 36 kr g 37 rb d 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb g 42 mo g
half life 0.27s 0.54 s 0.360s 8.6 s 1.84 s 58.0 s 4.53 s 9.5 h 58.5 d stable long 15.5 m
lambda 2.567e+00 1.284e+00 1.925e+00 8.060e-02 3.767e-01 1.195e-02 1.530e-01 2.027e-05 1.371e-07 0.0 0.0 7.453e-
04
z - 1 g 100.0000 75.5620 0.0 81.9000 0.0 100.0000 0.0 100.0000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 42.7300 100.0000 0.0330 100.0000 0.0100 100.0000 0.0 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.535184j 0.979814i 1.755904n 0.0 0.0
zp 36.62 ri 0.000229p 0.034603p 0.0 0.501024p 0.0 0.496582p 0.0 0.125314p 0.000722p 7.51e-07p 3.56e-11p 0.0
sig0.594 cc 0.000216p 0.032861p 0.0 0.501039p 0.0 1.068446p 0.0 1.151614p 1.152473p 1.152474p 3.56e-11p 0.0
rc 0.000229p 0.034776p 0.002880o 0.532385p 9.28e-05o 1.029060n 0.000106n 1.154479k 1.155201i 1.155202i 3.56e-11p
0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.700870p 0.0 0.0
zp 36.52 ri 0.000108p 0.021229p 0.0 0.345913p 0.0 0.305278p 0.0 0.030183p 0.000122p 3.40e-08p 0.0 0.0
sig0.557 cc 0.000108p 0.021289p 0.0 0.363622p 0.0 0.668678p 0.0 0.698830p 0.698952p 0.698952p 0.0 0.0
rc 0.000108p 0.021310p 0.001938o 0.365304p 8.40e-05o 0.670666p 7.88e-05o 0.700927o 0.701050o 0.701050n 0.0
0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.900037n 0.0 0.0
zp 36.96 ri 3.72e-05p 0.013302p 0.0 0.427502p 0.0 1.100320n 0.0 0.351587p 0.008823p 1.97e-05p 2.52e-09p 0.0

sig0.596 cc 3.72e-05p 0.013328p 0.0 0.438607p 0.0 1.538797p 0.0 1.890329p 1.899151p 1.899170p 2.52e-09p 0.0
rc 3.72e-05p 0.013330p 0.000801o 0.439220p 5.85e-05o 1.539599m 0.000130m 1.891316n 1.900139n 1.900159m 2.52e-09p
0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.700577n 0.0 0.0
zp 36.77 ri 0.000115p 0.026690p 0.0 0.553948p 0.0 0.931737p 0.0 0.188244p 0.002777p 3.41e-06p 2.29e-10p 0.0
sig0.592 cc 0.000115p 0.026765p 0.0 0.576239p 0.0 1.507698p 0.0 1.695863p 1.698638p 1.698642p 2.29e-10p 0.0
rc 0.000115p 0.026777p 0.001884o 0.577763o 8.89e-05o 1.509589n 0.000137m 1.697970n 1.700747n 1.700750m 2.29e-10p
0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.303107n 0.0 0.0
zp 36.38 ri 0.000866p 0.083871p 0.0 0.685223p 0.0 0.502808p 0.0 0.037069p 0.000187p 6.46e-08p 1.21e-12p 0.0
sig0.585 cc 0.000864p 0.084326p 0.0 0.755450p 0.0 1.257382p 0.0 1.294364p 1.294550p 1.294550p 1.21e-12p 0.0
rc 0.000866p 0.084525p 0.009160o 0.763610o 0.000164o 1.266583n 0.000141o 1.303792n 1.303979n 1.303979m 1.21e-12p
0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.873590n 0.0 0.0
zp 36.02 ri 0.003602p 0.153694p 0.0 0.548177p 0.0 0.170222p 0.0 0.004482p 6.76e-06p 6.05e-10p 0.0 0.0
sig0.574 cc 0.003575p 0.155251p 0.0 0.677534p 0.0 0.846754p 0.0 0.851203p 0.851210p 0.851210p 0.0 0.0
rc 0.003602p 0.156416p 0.024839o 0.701121o 0.000196o 0.871539o 0.000105o 0.876126n 0.876133n 0.876133m 0.0
0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.123600j 0.0 0.0 0.0 0.0
zp 36.28 ri 0.004400p 0.220017p 0.0 1.142856n 0.0 0.719336o 0.0 0.052190p 0.000365p 2.19e-07p 1.05e-11p 0.0
sig0.620 cc 0.004377p 0.222183p 0.0 1.326041p 0.0 2.045597p 0.0 2.097516p 2.097879p 2.097879p 1.05e-11p 0.0
rc 0.004400p 0.223342p 0.026020o 1.351793m 0.000281o 2.071411l 0.000213m 2.123814j 2.124179j 2.124179j 1.05e-11p
0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.647810j 3.936056n 0.0 0.0
zp 36.48 ri 0.000432p 0.135711p 0.0 1.656459n 0.0 1.781115n 0.0 0.102712p 0.000368p 4.25e-08p 0.0 0.0
sig0.541 cc 0.000432p 0.135983p 0.0 1.770033p 0.0 3.549196p 0.0 3.651710p 3.652078p 3.652078p 0.0 0.0
rc 0.000432p 0.136037p 0.009039o 1.776912m 0.000351m 3.558378l 0.000358m 3.661448k 3.661816j 3.661816j 0.0
0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.207818n 0.0 0.0
zp 36.54 ri 0.000297p 0.058695p 0.0 1.107461n 0.0 0.942945p 0.0 0.104617p 0.000398p 1.20e-07p 0.0 0.0

sig0.555 cc 0.000297p 0.058877p 0.0 1.156273p 0.0 2.098741p 0.0 2.203285p 2.203683p 2.203683p 0.0 0.0
rc 0.000297p 0.058919p 0.004273o 1.159988m 0.000232o 2.103165n 0.000211m 2.207993n 2.208391n 2.208392m 0.0
0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.683776n 0.0 0.0
zp 36.20 ri 0.001822p 0.148486p 0.0 1.104387n 0.0 0.424724p 0.0 0.017014p 2.27e-05p 1.98e-09p 0.0 0.0
sig0.551 cc 0.001817p 0.149410p 0.0 1.228273p 0.0 1.651983p 0.0 1.668946p 1.668969p 1.668969p 0.0 0.0
rc 0.001822p 0.149863p 0.016420o 1.243545m 0.000330o 1.668598n 0.000190n 1.685802n 1.685824n 1.685824m 0.0
0.0

y half life from 80eng2; se,br,kr,rb,sr,y half lives from 89wal1.
1

mass number 92 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 34 se g 35 br g 36 kr d 36 kr g 37 rb d 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb g 42 mo g
half life 0.168s 0.34 s 0.176s 1.84 s 1.29 s 4.48 s 5.86s 2.71 h 3.54 h stable 2.e7y stable
lambda 4.126e+00 2.039e+00 3.938e+00 3.767e-01 5.373e-01 1.547e-01 1.183e-01 7.105e-05 5.439e-05 0.0 1.099e-15
0.0
z - 1 g 100.0000 100.0000 0.0 57.2700 0.0 99.9670 0.0 99.9900 100.0000 100.0000 -100.0000 0.0
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 25.0890 100.0000 2.0100 100.0000 1.3500 100.0000 0.0 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.327425m 0.0 1.519672n 0.0 0.0
zp 37.02 ri 1.64e-05p 0.006723p 0.0 0.277090p 0.0 0.773382p 0.0 0.299448p 0.008725p 2.37e-05p 3.19e-09p 0.0
sig0.594 cc 1.64e-05p 0.006725p 0.0 0.280449p 0.0 1.050971p 0.0 1.354176p 1.362315p 1.362337p 2.97e-09p 0.0
rc 1.64e-05p 0.006740p 0.000259o 0.281209p 0.002244o 1.056742n 0.012730o 1.368814l 1.377539l 1.377563l 3.19e-09p
0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.964065p 0.0 0.0
zp 36.92 ri 7.85e-06p 0.004528p 0.0 0.251925p 0.0 0.531996p 0.0 0.169184p 0.001951p 2.10e-06p 5.56e-11p 0.0
sig0.557 cc 7.84e-06p 0.004533p 0.0 0.254392p 0.0 0.786328p 0.0 0.955543p 0.957492p 0.957494p 5.56e-11p 0.0
rc 7.85e-06p 0.004536p 0.000150o 0.254673p 0.001882o 0.788467o 0.009657o 0.967229n 0.969180n 0.969182n 5.56e-11p
0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.300045n 0.0 0.0

zp 37.37 ri 1.83e-06p 0.001873p 0.0 0.176036p 0.0 1.117873n 0.0 0.935339p 0.061651p 0.000420p 1.57e-07p 4.90e-12p
sig0.596 cc 1.83e-06p 0.001874p 0.0 0.177001p 0.0 1.294298p 0.0 2.230178p 2.291786p 2.292206p 1.57e-07p 4.90e-12p
rc 1.83e-06p 0.001875p 4.11e-05o 0.177151p 0.000863o 1.295828m 0.010748o 2.241786n 2.303437n 2.303857m 1.57e-07p 4.90e-12p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.000679n 0.0 0.0
zp 37.18 ri 6.61e-06p 0.004403p 0.0 0.266632p 0.0 1.102763n 0.0 0.595876p 0.023810p 9.15e-05p 1.83e-08p 0.0
sig0.592 cc 6.60e-06p 0.004406p 0.0 0.269008p 0.0 1.371339p 0.0 1.967589p 1.991382p 1.991473p 1.83e-08p 0.0
rc 6.61e-06p 0.004409p 0.000122o 0.269280p 0.001657o 1.373610m 0.013734o 1.983084m 2.006893m 2.006985m 1.83e-08p 0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.603824n 0.0 0.0
zp 36.79 ri 7.31e-05p 0.021365p 0.0 0.483710p 0.0 0.907614p 0.0 0.181563p 0.002733p 2.97e-06p 1.79e-10p 0.0
sig0.585 cc 7.31e-05p 0.021412p 0.0 0.495673p 0.0 1.403494p 0.0 1.584875p 1.587605p 1.587607p 1.78e-10p 0.0
rc 7.31e-05p 0.021438p 0.000886o 0.496873p 0.004559o 1.408883o 0.017559m 1.607864n 1.610596n 1.610599m 1.79e-10p 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.091988n 0.0 0.0
zp 36.42 ri 0.000453p 0.057678p 0.0 0.557672p 0.0 0.444908p 0.0 0.033434p 0.000157p 4.52e-08p 0.0 0.0
sig0.574 cc 0.000453p 0.058025p 0.0 0.590959p 0.0 1.035784p 0.0 1.069053p 1.069209p 1.069209p 0.0 0.0
rc 0.000453p 0.058131p 0.003514o 0.594477o 0.007856o 1.047046o 0.015872o 1.096246o 1.096403n 1.096403m 0.0 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.274567l 2.506049l 0.0 0.0 0.0
zp 36.71 ri 0.000435p 0.060460p 0.0 0.815318p 0.0 1.273497n 0.0 0.233647p 0.004859p 8.46e-06p 1.21e-09p 0.0
sig0.620 cc 0.000436p 0.060998p 0.0 0.852540p 0.0 2.120676p 0.0 2.357055p 2.361658p 2.361666p 1.15e-09p 0.0
rc 0.000435p 0.060895p 0.002751o 0.852944o 0.007930o 2.134089l 0.025032m 2.392554k 2.397413j 2.397422j 1.21e-09p 0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.162129j 4.520590n 0.0 0.0
zp 36.88 ri 2.39e-05p 0.021130p 0.0 1.051126n 0.0 2.505920n 0.0 0.551357p 0.005443p 2.97e-06p 4.53e-11p 0.0
sig0.541 cc 2.39e-05p 0.021118p 0.0 1.061609p 0.0 3.564388p 0.0 4.119836p 4.125270p 4.125273p 4.34e-11p 0.0
rc 2.39e-05p 0.021154p 0.000616o 1.063856m 0.006553o 3.575979m 0.043274m 4.170252k 4.175695i 4.175698i 4.53e-11p 0.0

pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.668136n 0.0 0.0
zp 36.95 ri 1.72e-05p 0.009982p 0.0 0.697417p 0.0 1.405694n 0.0 0.539542p 0.005808p 7.36e-06p 1.75e-10p 0.0
sig0.555 cc 1.72e-05p 0.009992p 0.0 0.702729p 0.0 2.108109p 0.0 2.647945p 2.653749p 2.653756p 1.75e-10p 0.0
rc 1.72e-05p 0.009999p 0.000302o 0.703446o 0.004742o 2.113649m 0.025039m 2.678019m 2.683827m 2.683834l 1.75e-10p
0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.032487n 0.0 0.0
zp 36.60 ri 0.000162p 0.038265p 0.0 0.974722p 0.0 0.886448p 0.0 0.124565p 0.000488p 1.75e-07p 1.27e-12p 0.0
sig0.551 cc 0.000162p 0.038387p 0.0 0.996298p 0.0 1.882995p 0.0 2.007243p 2.007730p 2.007730p 1.27e-12p 0.0
rc 0.000162p 0.038427p 0.001877o 0.998606o 0.010491o 1.895216n 0.027289m 2.046880n 2.047368n 2.047368m 1.27e-12p
0.0

se half life from 80eng2; br, kr, rb, sr, y half lives from 89wal1.

1

mass number 93 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 35 br g 36 kr g 37 rb d 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb m 41 nb g 42 mo g 43 tc g
half life 0.176s 1.29 s 0.210s 5.85 s 2.76 s 7.4 m 10.2 h 1.5e6y 12. y stable 3.e3 y 2.73 h
lambda 3.938e+00 5.373e-01 3.301e+00 1.185e-01 2.511e-01 1.561e-03 1.888e-05 1.465e-14 1.832e-09 0.0 7.327e-39
7.053e-05
z - 1 g 100.0000 74.9110 0.0 97.9900 0.0 98.6500 100.0000 100.0000 95.0000 5.0000 -15.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -85.0000 0.0
z - 0 m 0.0 0.0 6.1300 100.0000 10.0000 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.654796l 0.0 0.0 0.0 2.209529n 0.0 0.0
zp 37.42 ri 0.001032p 0.110891p 0.0 0.831761p 0.0 0.732551o 0.074556p 0.000550p 4.44e-08p 1.89e-07p 7.63e-12p
0.0
sig0.594 cc 0.001024p 0.110872p 0.0 0.935008p 0.0 1.678350p 1.735809p 1.736231p 1.649420p 1.736231p 5.87e-12p
0.0
rc 0.001032p 0.111663p 0.001749o 0.942929o 0.056838o 1.719588k 1.794143k 1.794693k 1.704958k 1.794693k 7.64e-12p
0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.232190p 0.0 0.0
zp 37.32 ri 0.000598p 0.093204p 0.0 0.622093p 0.0 0.475810p 0.019194p 6.15e-05p 1.22e-09p 5.19e-09p 0.0 0.0

sig0.557 cc 0.000596p 0.093333p 0.0 0.711811p 0.0 1.180136p 1.199265p 1.199326p 1.139360p 1.199326p 0.0 0.0
rc 0.000598p 0.093652p 0.001445o 0.715308o 0.043145o 1.224606o 1.243800o 1.243862o 1.181669o 1.243862n 0.0
0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.600036n 0.0 0.0
zp 37.78 ri 0.000164p 0.042805p 0.0 0.753620p 0.0 1.509808n 0.272983p 0.005117p 1.02e-06p 4.99e-06p 5.54e-10p
0.0
sig0.596 cc 0.000163p 0.042813p 0.0 0.793692p 0.0 2.295399p 2.567777p 2.572881p 2.444238p 2.572887p 5.52e-10p
0.0
rc 0.000164p 0.042928p 0.000452o 0.796136o 0.035127o 2.330324m 2.603307m 2.608424m 2.478003m 2.608430l 5.54e-
10p 0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.400576n 0.0 0.0
zp 37.59 ri 0.000487p 0.082065p 0.0 0.935469p 0.0 1.220133n 0.138153p 0.001502p 1.83e-07p 7.80e-07p 4.60e-11p
0.0
sig0.592 cc 0.000485p 0.082129p 0.0 1.012852p 0.0 2.223158p 2.360867p 2.362364p 2.244246p 2.362365p 4.59e-11p
0.0
rc 0.000487p 0.082430p 0.001103o 1.017345o 0.054553o 2.278297m 2.416450m 2.417953m 2.297055m 2.417954l 4.60e-
11p 0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.903211n 0.0 0.0
zp 37.19 ri 0.003530p 0.224170p 0.0 1.074180n 0.0 0.544516p 0.023201p 7.57e-05p 1.56e-09p 1.26e-08p 0.0 0.0
sig0.585 cc 0.003519p 0.226081p 0.0 1.293259p 0.0 1.823586p 1.846712p 1.846787p 1.754448p 1.846787p 0.0 0.0
rc 0.003530p 0.226814p 0.004250o 1.300686m 0.096180o 1.923823m 1.947024m 1.947100m 1.849745m 1.947100l 0.0
0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.389803n 0.0 0.0
zp 36.82 ri 0.014004p 0.380368p 0.0 0.781370p 0.0 0.160340p 0.002268p 2.09e-06p 1.82e-11p 7.74e-11p 0.0 0.0
sig0.574 cc 0.013984p 0.390279p 0.0 1.164631p 0.0 1.309010p 1.311275p 1.311277p 1.245713p 1.311277p 0.0 0.0
rc 0.014004p 0.390859p 0.011301o 1.175674o 0.118944m 1.439086n 1.441354n 1.441356n 1.369288n 1.441356m 0.0
0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.623700l 0.0 0.0 0.0 0.0 0.0
zp 37.13 ri 0.010964p 0.386322p 0.0 1.459230n 0.0 0.646258p 0.034418p 0.000168p 1.31e-08p 5.58e-08p 2.27e-12p
0.0

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 sig0.620 cc 0.010856p 0.390648p      0.0  1.829452p      0.0  2.467842p 2.501920p 2.502086p 2.376982p 2.502086p 2.24e-12p
0.0
          rc 0.010964p 0.394535p 0.008375o 1.854210m 0.137904m 2.613341l 2.647759k 2.647926k 2.515530k 2.647926k 2.27e-12p
0.0
  np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  4.770977k      0.0       0.0  5.178498n      0.0       0.0
 zp 37.28 ri 0.002453p 0.324199p      0.0  2.881162n      0.0  1.425231n 0.059602p 9.32e-05p 1.29e-09p 5.52e-09p      0.0       0.0
 sig0.541 cc 0.002441p 0.324324p      0.0  3.185149p      0.0  4.583232p 4.642521p 4.642609p 4.410479p 4.642609p      0.0       0.0
          rc 0.002453p 0.326037p 0.004806o 3.205452m 0.177358m 4.764767k 4.824369j 4.824462j 4.583239j 4.824462j      0.0
0.0
  pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.417612n      0.0       0.0
 zp 37.36 ri 0.001204p 0.234995p      0.0  1.620482n      0.0  1.475047n 0.059852p 0.000224p 4.34e-09p 1.85e-08p      0.0       0.0
 sig0.555 cc 0.001199p 0.235052p      0.0  1.845834p      0.0  3.301997p 3.361635p 3.361859p 3.193766p 3.361859p      0.0       0.0
          rc 0.001204p 0.235896p 0.003107o 1.854743m 0.095463o 3.400214l 3.460066l 3.460290l 3.287276l 3.460291l      0.0       0.0
  pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.583256n      0.0       0.0
 zp 37.00 ri 0.007483p 0.516333p      0.0  1.497927n      0.0  0.521475p 0.007757p 8.48e-06p 4.88e-11p 2.08e-10p      0.0       0.0
 sig0.551 cc 0.007464p 0.520670p      0.0  2.007014p      0.0  2.503803p 2.511542p 2.511550p 2.385973p 2.511550p      0.0       0.0
          rc 0.007483p 0.521938o 0.012006o 2.021381m 0.160164m 2.675731m 2.683488m 2.683496m 2.549321m 2.683496l      0.0
0.0

   kr, rb half lives from 80eng2; br, kr, rb, sr, y, zr half lives from 89wal1.

1

     mass number     94              LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       34 se g   35 br g   36 kr g   37 rb d   37 rb g   38 sr d   38 sr g   39 y  g   40 zr g   41 nb m   41 nb g   42 mo g
 half life              0.111s    0.21 s    0.78 s    2.73 s    0.38 s    1.25 m    18.7 m    stable    6.26 m    2.0e4y    stable
 lambda            0.0 6.245e+00 3.301e+00 8.887e-01 2.539e-01 1.824e+00 9.242e-03 6.178e-04       0.0 1.845e-03 1.099e-12       0.0
  z - 1 g    100.0000  100.0000  100.0000       0.0   93.8700       0.0   90.0000  100.0000  100.0000       0.0       0.0  100.0000
  z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0    0.2000
  z - 0 m       0.0       0.0       0.0    7.5050  100.0000    8.6200  100.0000       0.0       0.0       0.0   99.8000       0.0
  cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  1.767623l 2.200126m 2.642032n      0.0       0.0       0.0
```

zp 37.83 ri 2.33e-08p 8.52e-05p 0.028440p 0.0 0.541240p 0.0 1.310186m 0.354796p 0.006660p 3.31e-06p 4.76e-06p 8.68e-10p
sig0.594 cc 2.43e-08p 8.90e-05p 0.029784p 0.0 0.593192p 0.0 1.914451p 2.174424p 2.180263p 2.90e-06p 7.07e-06p 7.08e-06p
rc 2.33e-08p 8.52e-05p 0.028526p 0.000362o 0.568379o 0.023901o 1.845628k 2.200423k 2.207083k 3.31e-06p 8.06e-06p 8.07e-06p
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.458913p 0.0 0.0 0.0
zp 37.72 ri 6.02e-09p 4.08e-05p 0.023529p 0.0 0.409039p 0.0 0.954226p 0.099386p 0.001175p 1.53e-07p 2.21e-07p 9.68e-12p
sig0.557 cc 6.00e-09p 4.06e-05p 0.023490p 0.0 0.429788p 0.0 1.342759p 1.441807p 1.442977p 1.53e-07p 3.73e-07p 3.73e-07p
rc 6.02e-09p 4.08e-05p 0.023570p 0.000285o 0.431450p 0.020184o 1.362715o 1.462101n 1.463276n 1.53e-07p 3.74e-07p 3.74e-07p
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.000059n 0.0 0.0 0.0
zp 38.19 ri 9.69e-10p 9.16e-06p 0.007360p 0.0 0.344296p 0.0 1.827621n 0.805340p 0.043581p 5.39e-05p 9.19e-05p 4.27e-08p
sig0.596 cc 9.68e-10p 9.15e-06p 0.007362p 0.0 0.350919p 0.0 2.144335p 2.949122p 2.992664p 5.39e-05p 0.000146p 0.000146p
rc 9.69e-10p 9.16e-06p 0.007369p 5.48e-05o 0.351268p 0.008810o 2.152572m 2.957912m 3.001493m 5.39e-05p 0.000146p 0.000146p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.800951n 0.0 0.0 0.0
zp 37.99 ri 5.79e-09p 3.54e-05p 0.017964p 0.0 0.528472p 0.0 1.787601n 0.493549p 0.015573p 1.16e-05p 1.67e-05p 4.27e-09p
sig0.592 cc 5.78e-09p 3.53e-05p 0.017972p 0.0 0.544575p 0.0 2.279153p 2.772086p 2.787635p 1.16e-05p 2.82e-05p 2.83e-05p
rc 5.79e-09p 3.54e-05p 0.018000p 0.000161o 0.545529o 0.016285o 2.294862m 2.788410m 2.803983m 1.16e-05p 2.83e-05p 2.83e-05p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.203718n 0.0 0.0 0.0
zp 37.60 ri 1.32e-07p 0.000365p 0.068974p 0.0 0.895798p 0.0 1.171117n 0.137354p 0.001355p 2.08e-07p 5.92e-07p 3.04e-11p
sig0.585 cc 1.32e-07p 0.000364p 0.069158p 0.0 0.958647p 0.0 2.036428p 2.173508p 2.174859p 2.07e-07p 7.97e-07p 7.98e-07p

rc 1.32e-07p 0.000365p 0.069339p 0.000913o 0.961800o 0.038465o 2.075202m 2.212556m 2.213911l 2.08e-07p 8.00e-07p 8.00e-07p
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.687618n 0.0 0.0 0.0
zp 37.23 ri 1.76e-06p 0.002230p 0.182123p 0.0 1.012685n 0.0 0.553237p 0.023620p 7.02e-05p 4.40e-09p 6.33e-09p 0.0
sig0.574 cc 1.76e-06p 0.002224p 0.183726p 0.0 1.182664p 0.0 1.620830p 1.644369p 1.644439p 4.38e-09p 1.07e-08p 1.07e-08p
rc 1.76e-06p 0.002232p 0.184355p 0.003701o 1.189440m 0.070572o 1.694305m 1.717925m 1.717995m 4.40e-09p 1.07e-08p 1.07e-08p
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.815431k 0.0 0.0 0.0 0.0
zp 37.54 ri 1.38e-06p 0.001461p 0.135168p 0.0 1.248299n 0.0 1.342901n 0.171521p 0.002272p 1.07e-06p 1.53e-06p 2.42e-10p
sig0.620 cc 1.37e-06p 0.001454p 0.135849p 0.0 1.369400p 0.0 2.580662p 2.754097p 2.756356p 1.06e-06p 2.58e-06p 2.58e-06p
rc 1.38e-06p 0.001463p 0.136631p 0.002487o 1.379041m 0.069102o 2.653140l 2.824661k 2.826933k 1.07e-06p 2.60e-06p 2.60e-06p
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.977075k 5.353825n 0.0 0.0 0.0
zp 37.68 ri 1.10e-08p 0.000132p 0.078277p 0.0 1.699261n 0.0 3.039588n 0.306045p 0.002154p 1.89e-07p 2.72e-07p 4.59e-12p
sig0.541 cc 1.10e-08p 0.000132p 0.078080p 0.0 1.765651p 0.0 4.634299p 4.942041p 4.944106p 1.82e-07p 4.42e-07p 4.43e-07p
rc 1.10e-08p 0.000132p 0.078409p 0.000715o 1.773578m 0.075356o 4.711165l 5.017210k 5.019364k 1.89e-07p 4.61e-07p 4.62e-07p
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.887284n 0.0 0.0 0.0
zp 37.77 ri 8.66e-09p 6.43e-05p 0.050616p 0.0 0.906552p 0.0 2.714026n 0.279651p 0.004181p 5.31e-07p 7.64e-07p 4.09e-11p
sig0.555 cc 8.64e-09p 6.41e-05p 0.050555p 0.0 0.951922p 0.0 3.573578p 3.852630p 3.856800p 5.30e-07p 1.29e-06p 1.29e-06p
rc 8.66e-09p 6.43e-05p 0.050681p 0.000506o 0.954633o 0.039069o 3.612265m 3.891916m 3.896097l 5.31e-07p 1.29e-06p 1.30e-06p
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.121849n 0.0 0.0 0.0

zp 37.40 ri 2.64e-07p 0.000749p 0.195113p 0.0 1.414998n 0.0 1.567611n 0.063168p 0.000274p 1.05e-08p 1.52e-08p
0.0
sig0.551 cc 2.62e-07p 0.000746p 0.195010p 0.0 1.592677p 0.0 3.007525p 3.070419p 3.070691p 1.05e-08p 2.56e-08p
2.56e-08p
rc 2.64e-07p 0.000749p 0.195863p 0.002783o 1.601637m 0.084306o 3.093390l 3.156558l 3.156832l 1.05e-08p 2.57e-08p
2.57e-08p

br, kr, rb, sr, y half lives from 89wal1.
1

mass number 95 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 36 kr g 37 rb g 38 sr d 38 sr g 39 y g 40 zr g 41 nb m 41 nb g 42 mo g 43 tc m 43 tc g 44 ru g
half life 0.78 s 0.377s 0.204s 25.1s 10.3 m 64.02d 3.61 d 34.97d stable 61. d 20.0 h 1.64 h
lambda 8.887e-01 1.839e+00 3.398e+00 2.762e-02 1.122e-03 1.253e-07 2.222e-06 2.294e-07 0.0 1.315e-07 9.627e-06
1.174e-04
z - 1 g 100.0000 92.4950 0.0 91.3800 100.0000 100.0000 1.0000 99.0000 100.0000 -96.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 14.0000 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0 4.0000 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.660210i 0.0 3.115129i 2.926810n 0.0 0.0 0.0
zp 38.24 ri 0.004824p 0.272811p 0.0 1.603003n 0.978148o 0.048133p 3.82e-05p 0.000163p 6.29e-08p 0.0 0.0 0.0
sig0.594 cc 0.005098p 0.293027p 0.0 1.965224p 2.830416p 2.881284p 0.028850p 2.881479p 2.881479p 0.0 0.0 0.0
rc 0.004824p 0.277273p 0.010690o 1.867066m 2.845214j 2.893347h 0.028972h 2.893548h 2.893548h 0.0 0.0 0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.975823l 0.0 0.0 0.0 0.0 0.0 0.0
zp 38.12 ri 0.003797p 0.230645p 0.0 1.311186n 0.427950p 0.014105p 3.27e-06p 1.40e-05p 1.38e-09p 0.0 0.0 0.0
sig0.557 cc 0.003792p 0.233813p 0.0 1.525533p 1.953161p 1.967245p 0.019676p 1.967262p 1.967262p 0.0 0.0 0.0
rc 0.003797p 0.234157p 0.009077o 1.534237m 1.962187m 1.976292l 0.019766l 1.976309l 1.976309l 0.0 0.0 0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.220032k 0.0 0.0 3.300033n 0.0 0.0 0.0
zp 38.60 ri 0.000730p 0.101525p 0.0 1.357375n 1.556598n 0.216065p 0.000375p 0.001833p 1.88e-06p 1.53e-11p 7.49e-11p
0.0
sig0.596 cc 0.000729p 0.102174p 0.0 1.451304p 3.007307p 3.223457p 0.032605p 3.225639p 3.225641p 1.51e-11p 7.45e-11p
0.0
rc 0.000730p 0.102200p 0.002764o 1.453529m 3.010127l 3.226192k 0.032637k 3.228401k 3.228403k 1.53e-11p 7.55e-11p
0.0

cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.000360k 0.0 0.0 3.200384n 0.0 0.0 0.0
zp 38.40 ri 0.002139p 0.186942p 0.0 1.583541n 1.156555n 0.096609p 0.000107p 0.000456p 2.52e-07p 1.15e-12p 4.90e-12p
0.0
sig0.592 cc 0.002138p 0.188863p 0.0 1.757705p 2.912784p 3.009364p 0.030197p 3.009908p 3.009908p 1.11e-12p 4.78e-12p
0.0
rc 0.002139p 0.188920p 0.006598o 1.762774m 2.919329l 3.015939k 0.030266k 3.016501j 3.016501j 1.15e-12p 4.95e-12p
0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.292737k 0.0 0.0 2.603107n 0.0 0.0 0.0
zp 38.00 ri 0.012164p 0.434984p 0.0 1.436909n 0.445383p 0.012308p 2.59e-06p 2.10e-05p 2.79e-09p 0.0 0.0 0.0
sig0.585 cc 0.012175p 0.446614p 0.0 1.852231p 2.290019p 2.302337p 0.023026p 2.302359p 2.302359p 0.0 0.0 0.0
rc 0.012164p 0.446235p 0.024715o 1.869394m 2.314777m 2.327085k 0.023273k 2.327108k 2.327108k 0.0 0.0 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.054695k 0.0 0.0 1.994850n 0.0 0.0 0.0
zp 37.64 ri 0.049308p 0.773090p 0.0 1.114393n 0.135218p 0.001272p 1.20e-07p 5.13e-07p 1.84e-11p 0.0 0.0 0.0
sig0.574 cc 0.049053p 0.814466p 0.0 1.862883p 1.998127p 1.999392p 0.019994p 1.999393p 1.999393p 0.0 0.0 0.0
rc 0.049308p 0.818697o 0.053401o 1.915920m 2.051138l 2.052410k 0.020524k 2.052410k 2.052410j 0.0 0.0 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.391721k 0.0 0.0 0.0 0.0 0.0 0.0
zp 37.95 ri 0.033137p 0.770993p 0.0 1.975274n 0.617609p 0.021124p 1.26e-05p 5.37e-05p 1.74e-08p 0.0 0.0 0.0
sig0.620 cc 0.033004p 0.798422p 0.0 2.707386p 3.325797p 3.346836p 0.033481p 3.346902p 3.346902p 0.0 0.0 0.0
rc 0.033137p 0.801643o 0.046403o 2.754218m 3.371827l 3.392951j 0.033942j 3.393017j 3.393017j 0.0 0.0 0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.685415j 5.605898n 0.0 0.0 0.0
zp 38.08 ri 0.009521p 0.865393p 0.0 3.504362n 1.328715n 0.023803p 4.52e-06p 1.93e-05p 7.01e-10p 0.0 0.0 0.0
sig0.541 cc 0.009508p 0.872996p 0.0 4.304391p 5.632059p 5.655829p 0.056563p 5.655853p 5.655853p 0.0 0.0 0.0
rc 0.009521p 0.874200o 0.026124o 4.329329m 5.658045l 5.681848k 0.056823l 5.681872j 5.681872j 0.0 0.0 0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.686726n 0.0 0.0 0.0
zp 38.17 ri 0.006748p 0.446993p 0.0 3.152089n 1.065847n 0.042656p 1.01e-05p 4.31e-05p 5.04e-09p 0.0 0.0 0.0
sig0.555 cc 0.006742p 0.452804p 0.0 3.567182p 4.632180p 4.674796p 0.046758p 4.674849p 4.674849p 0.0 0.0 0.0
rc 0.006748p 0.453235p 0.014301o 3.580556m 4.646403l 4.689059l 0.046901l 4.689112l 4.689112l 0.0 0.0 0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.770157n 0.0 0.0 0.0
zp 37.80 ri 0.037082p 0.943729p 0.0 2.493461n 0.341008p 0.004269p 3.11e-07p 1.33e-06p 3.98e-11p 0.0 0.0 0.0

sig0.551 cc 0.036973p 0.975161p 0.0 3.388333p 3.728459p 3.732716p 0.037327p 3.732717p 3.732717p 0.0 0.0 0.0
rc 0.037082p 0.978028o 0.048183o 3.435366m 3.776374m 3.780643m 0.037807m 3.780645m 3.780645l 0.0 0.0
0.0

rb half life from 80eng2; kr, rb, sr, y, zr, nb half lives 89wal; tc half life 90bur1.

1

mass number 96 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 34 se g 35 br g 36 kr g 37 rb g 38 sr d 38 sr g 39 y m 39 y g 40 zr d 40 zr g 41 nb g 42 mo g
half life 0.089s 0.293s 0.199s 0.170s 1.06 s 9.6 s 6.2 s 3.7 s stable 23.4 h stable
lambda 0.0 7.788e+00 2.366e+00 3.483e+00 4.077e+00 6.539e-01 7.220e-02 1.118e-01 1.873e-01 0.0 8.228e-06 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 0.0 86.0000 0.0 100.0000 0.0 100.0000 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 26.6000 100.0000 0.0050 100.0000 0.0540 100.0000 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.341448n 0.0 0.0
zp 38.67 ri 3.96e-12p 1.47e-07p 0.000468p 0.075892p 0.0 1.318016n 1.496892n 0.166320p 0.0 0.291273p 0.003220p
3.43e-06p
sig0.594 cc 3.96e-12p 1.46e-07p 0.000468p 0.076332p 0.0 1.384380p 1.496365p 3.047008p 0.0 3.338175p 0.003218p
0.003222p
rc 3.96e-12p 1.47e-07p 0.000468p 0.076360p 0.003582o 1.387267m 1.496924m 3.050512l 0.001575m 3.343360l 0.003220p
0.003223p
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.276828p 0.0 0.0
zp 38.52 ri 0.0 5.58e-08p 0.000372p 0.064465p 0.0 1.187596n 0.834571p 0.092732p 0.0 0.103527p 0.000371p 1.17e-
07p
sig0.557 cc 0.0 5.58e-08p 0.000372p 0.064807p 0.0 1.243825p 0.834197p 2.170710p 0.0 2.274189p 0.000371p
0.000371p
rc 0.0 5.58e-08p 0.000372p 0.064837p 0.003130o 1.246485m 0.834600o 2.173817m 0.001063m 2.278407m 0.000371p
0.000371p
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.600050n 0.0 0.0
zp 39.01 ri 0.0 6.84e-09p 5.03e-05p 0.019694p 0.0 0.746083p 1.880105n 0.185944p 0.0 0.769965p 0.021023p 5.56e-
05p

sig0.596 cc 0.0 6.84e-09p 5.03e-05p 0.019743p 0.0 0.763254p 1.879982p 2.829167p 0.0 3.599079p 0.021021p 0.021077p
rc 0.0 6.84e-09p 5.03e-05p 0.019745p 0.000703o 0.763766o 1.880118m 2.829829m 0.001180m 3.600973m 0.021023p 0.021078p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.600865n 0.0 0.0
zp 38.81 ri 0.0 4.02e-08p 0.000190p 0.046938p 0.0 1.119945n 1.782835n 0.198092p 0.0 0.457387p 0.007181p 1.02e-05p
sig0.592 cc 0.0 4.02e-08p 0.000190p 0.047119p 0.0 1.160927p 1.782508p 3.141492p 0.0 3.598792p 0.007179p 0.007190p
rc 0.0 4.02e-08p 0.000190p 0.047128p 0.001981o 1.162456m 1.782860m 3.143408l 0.001486m 3.602281l 0.007181p 0.007191p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.904901n 0.0 0.0
zp 38.40 ri 3.79e-11p 1.00e-06p 0.001712p 0.174825p 0.0 1.501947n 1.083530n 0.069163p 0.0 0.089254p 0.000475p 1.74e-07p
sig0.585 cc 3.79e-11p 1.00e-06p 0.001711p 0.176322p 0.0 1.655292p 1.082232p 2.806603p 0.0 2.895748p 0.000475p 0.000475p
rc 3.79e-11p 1.00e-06p 0.001713p 0.176538p 0.011322o 1.665092m 1.083581m 2.817836l 0.001572m 2.908663l 0.000475p 0.000475p
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.288154n 0.0 0.0
zp 38.05 ri 7.13e-10p 9.89e-06p 0.008072p 0.373358p 0.0 1.439762n 0.430895p 0.047881p 0.0 0.013637p 2.24e-05p 2.19e-09p
sig0.574 cc 7.10e-10p 9.85e-06p 0.008050p 0.379969p 0.0 1.769868p 0.429269p 2.246834p 0.0 2.260419p 2.23e-05p 2.23e-05p
rc 7.13e-10p 9.89e-06p 0.008081p 0.381439p 0.034465o 1.802265m 0.430967p 2.281113m 0.001400m 2.296150l 2.24e-05p 2.24e-05p
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.848985n 0.0 0.0
zp 38.35 ri 1.03e-09p 8.34e-06p 0.005528p 0.325913p 0.0 1.976069n 1.300849n 0.144533p 0.0 0.122011p 0.001010p 7.20e-07p
sig0.620 cc 1.03e-09p 8.32e-06p 0.005526p 0.330794p 0.0 2.264263p 1.298313p 3.706833p 0.0 3.828603p 0.001008p 0.001008p
rc 1.03e-09p 8.34e-06p 0.005537p 0.331450p 0.025914o 2.287030m 1.300923m 3.732486l 0.002041m 3.856538l 0.001010p 0.001010p

np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.670588n 0.0 0.0
zp 38.48 ri 0.0 9.51e-08p 0.000753p 0.185847p 0.0 2.886654n 2.193643n 0.243738p 0.0 0.178588p 0.000504p 7.12e-08p
sig0.541 cc 0.0 9.51e-08p 0.000753p 0.186504p 0.0 3.048448p 2.192550p 5.484615p 0.0 5.663112p 0.000503p 0.000503p
rc 0.0 9.51e-08p 0.000753p 0.186600p 0.008678o 3.055808m 2.193708m 5.493253l 0.002790m 5.674632l 0.000504p 0.000504p
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.726698n 0.0 0.0
zp 38.57 ri 0.0 5.95e-08p 0.000554p 0.101598p 0.0 2.454470n 1.718047n 0.190895p 0.0 0.270686p 0.000956p 3.73e-07p
sig0.555 cc 0.0 5.95e-08p 0.000553p 0.102112p 0.0 2.543134p 1.717415p 4.451373p 0.0 4.721955p 0.000955p 0.000956p
rc 0.0 5.95e-08p 0.000554p 0.102151p 0.005278o 2.547598m 1.718108m 4.456601l 0.002251m 4.729539l 0.000956p 0.000956p
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.248907n 0.0 0.0
zp 38.20 ri 4.30e-11p 1.57e-06p 0.004805p 0.339355p 0.0 2.916636n 0.874117p 0.097130p 0.0 0.044856p 5.18e-05p 5.23e-09p
sig0.551 cc 4.29e-11p 1.56e-06p 0.004798p 0.343528p 0.0 3.214519p 0.872562p 4.184032p 0.0 4.228806p 5.17e-05p 5.17e-05p
rc 4.30e-11p 1.57e-06p 0.004806p 0.344161p 0.024626o 3.237241m 0.874222o 4.208593l 0.002294m 4.255742l 5.18e-05p 5.18e-05p

br, kr half lives from 80eng2; rb, sr, y half lives from 89wal1.
1

mass number 97 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 36 kr g 37 rb g 38 sr d 38 sr g 39 y g 40 zr d 40 zr g 41 nb m 41 nb g 42 mo g 43 tc g 44 ru g
half life 0.1 s 0.169s 0.110s 0.42 s 3.76 s 2.0 s 16.8 h 58.1 s 1.23 h stable 2.6e6y 2.9 d
lambda 6.931e+00 4.101e+00 6.301e+00 1.650e+00 1.843e-01 3.466e-01 1.146e-05 1.193e-02 1.565e-04 0.0 8.454e-15 2.766e-06
z - 1 g 100.0000 100.0000 0.0 73.4000 99.9950 0.0 99.9460 94.0000 6.0000 100.0000 -100.0000 -99.9600
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -0.0400
z - 0 m 0.0 0.0 13.3000 100.0000 0.0 0.2280 100.0000 0.0 100.0000 0.0 0.0 0.0

cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.886536i 0.0 4.003307i 4.111239n 0.0 0.0
zp 39.10 ri 2.50e-05p 0.013441p 0.0 0.637983p 2.268535n 0.0 1.007333o 0.006734p 0.028709p 0.000114p 2.03e-08p
0.0
sig0.594 cc 2.50e-05p 0.013463p 0.0 0.647766p 2.915707p 0.0 3.922509p 3.693821p 3.957576p 3.957687p 1.97e-08p
0.0
rc 2.50e-05p 0.013466p 0.000182o 0.648049o 2.916552m 0.002650o 3.924960i 3.696197i 3.960403h 3.960518h 2.03e-08p
0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 2.358061l 0.0 0.0 0.0 0.0 0.0
zp 38.92 ri 1.80e-05p 0.011748p 0.0 0.578680p 1.381216n 0.0 0.388254p 0.000962p 0.004100p 4.83e-06p 1.44e-10p
0.0
sig0.557 cc 1.80e-05p 0.011761p 0.0 0.587152p 1.967797p 0.0 2.355697p 2.215317p 2.360757p 2.360762p 1.44e-10p
0.0
rc 1.80e-05p 0.011766p 0.000218o 0.587534o 1.968721m 0.002481o 2.358393k 2.217851k 2.363455k 2.363460k 1.44e-10p
0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.000056n 0.0 0.0
zp 39.41 ri 2.23e-06p 0.002641p 0.0 0.264141p 1.918247n 0.0 1.687861n 0.021641p 0.105660p 0.000924p 4.02e-07p
1.34e-11p
sig0.596 cc 2.23e-06p 0.002643p 0.0 0.266078p 2.184223p 0.0 3.871001p 3.660381p 3.998296p 3.999221p 4.02e-07p
1.34e-11p
rc 2.23e-06p 0.002643p 2.74e-05o 0.266109p 2.184342m 0.001464o 3.872487l 3.661779l 3.999788l 4.000712l 4.02e-07p
1.34e-11p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.100985n 0.0 0.0
zp 39.22 ri 9.63e-06p 0.007438p 0.0 0.479470p 2.266892n 0.0 1.290057n 0.011239p 0.047915p 0.000243p 5.66e-08p
0.0
sig0.592 cc 9.62e-06p 0.007447p 0.0 0.484947p 2.751718p 0.0 4.040378p 3.809194p 4.099529p 4.099772p 5.66e-08p
0.0
rc 9.63e-06p 0.007448p 9.41e-05o 0.485030p 2.751898m 0.002213o 4.042682l 3.811361l 4.101836l 4.102079l 5.66e-08p
0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.305577n 0.0 0.0
zp 38.80 ri 0.000141p 0.042422p 0.0 0.985364p 1.894622n 0.0 0.387873p 0.000659p 0.005330p 6.68e-06p 4.14e-10p
0.0

sig0.585 cc 0.000141p 0.042558p 0.0 1.016776p 2.911180p 0.0 3.297479p 3.100289p 3.303467p 3.303474p 4.14e-10p 0.0
rc 0.000141p 0.042563p 0.000851o 1.017456o 2.912028m 0.003441m 3.301769m 3.104322m 3.307758m 3.307764l 4.14e-10p 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.686094n 0.0 0.0
zp 38.45 ri 0.000931p 0.128638p 0.0 1.343060n 1.151336n 0.0 0.093247p 9.03e-05p 0.000385p 1.50e-07p 2.29e-12p 0.0
sig0.574 cc 0.000930p 0.129504p 0.0 1.438654p 2.589491p 0.0 2.681294p 2.520506p 2.681768p 2.681769p 2.29e-12p 0.0
rc 0.000931p 0.129569p 0.003702o 1.441865m 2.593129l 0.003975n 2.688951l 2.527704l 2.689426l 2.689426l 2.29e-12p 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.249279j 0.0 4.239233j 0.0 0.0 0.0
zp 38.74 ri 0.000648p 0.096773p 0.0 1.396781n 2.308869n 0.0 0.458545p 0.001819p 0.007756p 1.80e-05p 2.77e-09p 0.0
sig0.620 cc 0.000647p 0.097358p 0.0 1.468194p 3.776181p 0.0 4.233590p 3.981397p 4.243181p 4.243199p 2.77e-09p 0.0
rc 0.000648p 0.097421p 0.002580o 1.470867m 3.779662l 0.004531m 4.240698j 3.988075j 4.250274i 4.250292i 2.77e-09p 0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.854860i 5.775202n 0.0 0.0
zp 38.88 ri 2.91e-05p 0.032596p 0.0 1.275246n 3.868005n 0.0 0.675353p 0.001595p 0.006802p 3.43e-06p 6.66e-11p 0.0
sig0.541 cc 2.90e-05p 0.032624p 0.0 1.299276p 5.167094p 0.0 5.839696p 5.490909p 5.848092p 5.848096p 6.70e-11p 0.0
rc 2.91e-05p 0.032625p 0.000393o 1.299586m 5.167525m 0.004838m 5.844926m 5.495826k 5.853323i 5.853327i 6.66e-11p 0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.166391n 0.0 0.0
zp 38.96 ri 2.80e-05p 0.019813p 0.0 1.207915n 2.946722n 0.0 0.984902p 0.002441p 0.010407p 1.42e-05p 4.12e-10p 0.0
sig0.555 cc 2.80e-05p 0.019840p 0.0 1.222515p 4.169056p 0.0 5.151790p 4.845123p 5.164637p 5.164652p 4.12e-10p 0.0
rc 2.80e-05p 0.019841p 0.000273o 1.222751m 4.169411m 0.004029m 5.156090m 4.849166m 5.168938l 5.168953l 4.12e-10p 0.0

pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.508230n 0.0 0.0
zp 38.60 ri 0.000339p 0.092240p 0.0 2.037357n 2.140350n 0.0 0.260277p 0.000223p 0.000952p 3.66e-07p 3.07e-12p
0.0
sig0.551 cc 0.000339p 0.092562p 0.0 2.105646p 4.245588p 0.0 4.503544p 4.233555p 4.504719p 4.504720p 3.07e-12p
0.0
rc 0.000339p 0.092579p 0.002156o 2.107466m 4.247711l 0.006389m 4.512083l 4.241582l 4.513259l 4.513259l 3.08e-12p
0.0

kr, rb, sr, y, zr, nb half lives from 89wal1; ru half life 90bur1.
1

mass number 98 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 36 kr g 37 rb g 38 sr g 39 y m 39 y g 40 zr d 40 zr g 41 nb m 41 nb g 42 mo g 43 tc g 44 ru g
half life 0.160s 0.107s 0.65 s 2.1 s 0.59 s 1.4 s 30.7 s 51. m 2.9 s stable 1.5e6y stable
lambda 4.332e+00 6.478e+00 1.066e+00 3.301e-01 1.175e+00 4.951e-01 2.258e-02 2.265e-04 2.390e-01 0.0 1.465e-14
0.0
z - 1 g 100.0000 100.0000 86.7000 0.0 100.0000 0.0 99.7720 0.0 100.0000 100.0000 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.1290 0.0 2.0200 100.0000 0.0 0.0 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.338722k 0.0 4.485780n 0.0 0.0
zp 39.53 ri 8.46e-07p 0.001367p 0.207632p 0.953349p 0.953373p 0.0 2.382301n 0.055199p 0.165565p 0.002297p 1.24e-06p
5.83e-11p
sig0.594 cc 8.48e-07p 0.001371p 0.209312p 0.955627p 1.164939p 0.0 4.494626p 0.055329p 4.660613p 4.718245p 1.24e-06p
1.24e-06p
rc 8.46e-07p 0.001368p 0.208818p 0.953395o 1.162191o 0.021165o 4.516403l 0.055199p 4.681968l 4.739463l 1.24e-06p
1.24e-06p
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.326134n 0.0 0.0
zp 39.31 ri 8.62e-07p 0.001639p 0.280136p 0.806657p 0.806700p 0.0 1.367392n 0.011803p 0.035410p 0.000166p 1.48e-08p
0.0
sig0.557 cc 8.61e-07p 0.001639p 0.281370p 0.806162p 1.087532p 0.0 3.259858p 0.011796p 3.295245p 3.307206p 1.48e-08p
1.48e-08p
rc 8.62e-07p 0.001640p 0.281558p 0.806743o 1.088257o 0.027287o 3.287199m 0.011803p 3.322609m 3.334578l 1.48e-08p
1.48e-08p

cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.400061n 0.0 0.0
zp 39.82 ri 5.98e-08p 0.000206p 0.062187p 0.579944p 0.579951p 0.0 2.655558n 0.110940p 0.393305p 0.010880p 1.37e-05p 1.46e-09p
sig0.596 cc 5.97e-08p 0.000206p 0.062338p 0.579693p 0.642031p 0.0 3.876557p 0.110891p 4.269714p 4.391481p 1.37e-05p 1.37e-05p
rc 5.98e-08p 0.000206p 0.062365p 0.579957o 0.642316o 0.010840o 3.887207m 0.110940p 4.280512m 4.402333l 1.37e-05p 1.37e-05p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.601105n 0.0 0.0
zp 39.63 ri 3.12e-07p 0.000707p 0.137878p 0.832205p 0.832221p 0.0 2.486818n 0.073977p 0.221917p 0.003715p 2.55e-06p 1.42e-10p
sig0.592 cc 3.12e-07p 0.000707p 0.138416p 0.831767p 0.970184p 0.0 4.287674p 0.073937p 4.509484p 4.587134p 2.55e-06p 2.55e-06p
rc 3.12e-07p 0.000708p 0.138492p 0.832238o 0.970713o 0.018477o 4.306034m 0.073977p 4.527952m 4.605644l 2.55e-06p 2.55e-06p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.804541n 0.0 0.0
zp 39.21 ri 6.89e-06p 0.006392p 0.427764p 1.075868n 1.075949n 0.0 1.150183n 0.007674p 0.043485p 0.000176p 3.49e-08p 0.0
sig0.585 cc 6.89e-06p 0.006396p 0.433096p 1.075412p 1.508508p 0.0 3.731899p 0.007670p 3.775362p 3.783208p 3.48e-08p 3.48e-08p
rc 6.89e-06p 0.006399p 0.433312p 1.076031m 1.509261m 0.036499o 3.768533l 0.007674p 3.812018l 3.819868k 3.49e-08p 3.49e-08p
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.077421n 0.0 0.0
zp 38.85 ri 6.52e-05p 0.027769p 0.816309p 0.902821p 0.903045p 0.0 0.397474p 0.001527p 0.004581p 6.13e-06p 3.07e-10p 0.0
sig0.574 cc 6.52e-05p 0.027828p 0.840258p 0.902849p 1.743107p 0.0 3.039809p 0.001527p 3.044389p 3.045922p 3.06e-10p 3.06e-10p
rc 6.52e-05p 0.027834p 0.840441o 0.903273o 1.743486n 0.048397o 3.088655n 0.001527p 3.093235n 3.094768m 3.07e-10p 3.07e-10p
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.541018n 0.0 0.0
zp 39.13 ri 5.01e-05p 0.019346p 0.681654p 1.288828n 1.288992n 0.0 1.179758n 0.015182p 0.045547p 0.000296p 1.22e-07p 4.00e-12p

sig0.620 cc 5.01e-05p 0.019387p 0.698154p 1.288408p 1.986562p 0.0 4.451547p 0.015175p 4.497073p 4.512544p 1.22e-07p 1.22e-07p
rc 5.01e-05p 0.019396p 0.698470o 1.289158m 1.987462m 0.050859o 4.502705l 0.015182p 4.548252l 4.563730k 1.22e-07p 1.22e-07p
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.887927n 0.0 0.0
zp 39.27 ri 9.45e-07p 0.002956p 0.481570p 1.637752n 1.637817n 0.0 2.036191n 0.016023p 0.048068p 0.000118p 6.56e-09p 0.0
sig0.541 cc 9.45e-07p 0.002955p 0.483838p 1.636816p 2.120654p 0.0 5.791098p 0.016013p 5.839136p 5.855267p 6.56e-09p 6.56e-09p
rc 9.45e-07p 0.002957p 0.484133p 1.637882m 2.121950m 0.054883o 5.846068l 0.016023p 5.894136l 5.910276l 6.56e-09p 6.56e-09p
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.935853n 0.0 0.0
zp 39.35 ri 1.03e-06p 0.002052p 0.458644p 1.306432n 1.306488n 0.0 2.751445n 0.022882p 0.068646p 0.000392p 3.28e-08p 0.0
sig0.555 cc 1.03e-06p 0.002052p 0.460115p 1.305614p 1.765730p 0.0 5.820825p 0.022867p 5.889425p 5.912683p 3.28e-08p 3.28e-08p
rc 1.03e-06p 0.002053p 0.460424p 1.306545m 1.766912m 0.035335o 5.856209l 0.022882p 5.924855l 5.948129l 3.28e-08p 3.28e-08p
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.589689n 0.0 0.0
zp 38.99 ri 2.06e-05p 0.016190p 1.251807n 1.536275n 1.536510n 0.0 1.207405n 0.003759p 0.011278p 1.84e-05p 4.67e-10p 0.0
sig0.551 cc 2.06e-05p 0.016205p 1.265427p 1.535982p 2.801410p 0.0 5.539670p 0.003758p 5.550944p 5.554720p 4.67e-10p 4.67e-10p
rc 2.06e-05p 0.016210p 1.265861m 1.536747m 2.802371l 0.065951o 5.606084k 0.003759p 5.617363k 5.621140k 4.67e-10p 4.67e-10p

kr half life from 80eng2; rb, sr, y, zr, nb half lives from 89wal1.

1

mass number 99 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	38 sr g	39 y g	40 zr d	40 zr g	41 nb m	41 nb g	42 mo g	43 tc m	43 tc g	44 ru g	45 rh g	46 pd g
half life	0.269s	1.47 s	0.80 s	2.2 s	2.6 m	15.0 s	2.748d	6.01 h	2.1e5y	stable	15.0 d	21.4m

lambda 2.577e+00 4.715e-01 8.664e-01 3.151e-01 4.443e-03 4.621e-02 2.919e-06 3.204e-05 1.047e-13 0.0 5.348e-07
5.398e-04
z - 1 g 100.0000 99.8710 0.0 97.9800 30.0000 70.0000 100.0000 88.0000 12.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.8420 100.0000 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.959445i 5.060739l 0.0 5.618693n 0.0 0.0
zp 39.96 ri 0.036252p 1.011578p 0.0 3.124348n 0.775712p 0.067456p 0.024758p 9.14e-06p 3.90e-05p 6.97e-09p 0.0
0.0
sig0.594 cc 0.036247p 1.047634p 0.0 4.151063p 2.020954p 2.973191p 5.018899p 4.416640p 5.018944p 5.018944p 0.0
0.0
rc 0.036252p 1.047784o 0.002821o 4.153788m 2.021849n 2.975108m 5.021714i 4.419117h 5.021762h 5.021762h 0.0
0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.224897k 0.0 0.0 0.0 0.0 0.0
zp 39.71 ri 0.067193p 1.283750n 0.0 2.598107n 0.272601p 0.023706p 0.003011p 2.00e-07p 8.51e-07p 2.33e-11p 0.0
0.0
sig0.557 cc 0.067176p 1.350501p 0.0 3.921743p 1.449071p 2.768920p 4.221002p 3.714482p 4.221003p 4.221003p 0.0
0.0
rc 0.067193p 1.350857m 0.004442o 3.926119m 1.450437m 2.771989l 4.225437j 3.718385j 4.225438j 4.225438j 0.0
0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.900048n 0.0 0.0
zp 40.22 ri 0.010024p 0.526610p 0.0 2.881525n 1.299371n 0.112991p 0.078990p 5.06e-05p 0.000247p 9.09e-08p 1.53e-12p
0.0
sig0.596 cc 0.010024p 0.536575p 0.0 3.407410p 2.321509p 2.498168p 4.898660p 4.310871p 4.898958p 4.898958p 1.53e-12p
0.0
rc 0.010024p 0.536622o 0.001384o 3.408692m 2.321979l 2.499075m 4.900043l 4.312089l 4.900341k 4.900341k 1.54e-12p
0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.101225n 0.0 0.0
zp 40.03 ri 0.026232p 0.888525p 0.0 3.171950n 0.917662p 0.079800p 0.033430p 1.34e-05p 5.71e-05p 1.14e-08p 0.0
0.0
sig0.592 cc 0.026228p 0.914595p 0.0 4.068305p 2.138062p 2.927602p 5.099090p 4.487212p 5.099160p 5.099160p 0.0
0.0

rc 0.026232p 0.914722o 0.002659o 4.070854m 2.138918n 2.929398m 5.101746l 4.489550l 5.101816l 5.101816l 0.0
0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.305139n 0.0 0.0
zp 39.61 ri 0.126209p 1.680856n 0.0 2.257191n 0.248637p 0.021623p 0.002736p 1.83e-07p 1.48e-06p 6.50e-11p 0.0
0.0
sig0.585 cc 0.126166p 1.806289p 0.0 4.027668p 1.456884p 2.840984p 4.300603p 3.784531p 4.300604p 4.300604p 0.0
0.0
rc 0.126209p 1.806902m 0.007534o 4.035127l 1.459176m 2.846212l 4.308124l 3.791149l 4.308126k 4.308126k 0.0
0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.586889n 0.0 0.0
zp 39.25 ri 0.349932p 2.046409n 0.0 1.180859n 0.048478p 0.004215p 0.000166p 5.10e-09p 2.18e-08p 0.0 0.0 0.0
sig0.574 cc 0.349810p 2.395057p 0.0 3.528386p 1.106977p 2.474084p 3.581227p 3.151480p 3.581227p 3.581227p 0.0
0.0
rc 0.349932p 2.395889m 0.013389n 3.541740l 1.111000l 2.483434l 3.594600k 3.163248k 3.594600k 3.594600k 0.0
0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.992651j 4.721421j 0.0 0.0 0.0 0.0
zp 39.52 ri 0.255891p 2.262213n 0.0 2.356733n 0.266611p 0.023192p 0.003601p 7.44e-07p 3.17e-06p 3.47e-10p 0.0
0.0
sig0.620 cc 0.255973p 2.518579p 0.0 4.823443p 1.713824p 3.399609p 5.117036p 4.502992p 5.117039p 5.117039p 0.0
0.0
rc 0.255891p 2.517774m 0.010880n 4.834528l 1.716970m 3.407361l 5.127932j 4.512581i 5.127936i 5.127936i 0.0 0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 6.621568i 0.0 0.0 6.213321n 0.0 0.0
zp 39.66 ri 0.100447p 2.616655n 0.0 3.514058n 0.393169p 0.034191p 0.002119p 9.97e-08p 4.25e-07p 3.84e-12p 0.0
0.0
sig0.541 cc 0.100424p 2.716355p 0.0 6.176235p 2.245973p 4.357547p 6.605639p 5.812962p 6.605639p 6.605639p 0.0
0.0
rc 0.100447p 2.716973m 0.006431o 6.182579l 2.247942m 4.361996l 6.612057i 5.818611i 6.612058i 6.612058i 0.0 0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.967053n 0.0 0.0
zp 39.73 ri 0.087939p 1.661437n 0.0 3.827187n 0.384079p 0.033400p 0.004706p 2.89e-07p 1.23e-06p 3.59e-11p 0.0
0.0

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 sig0.555 cc 0.087918p 1.748833p       0.0  5.541205p 2.046369p 3.912235p 5.963309p 5.247712p 5.963310p 5.963310p       0.0
0.0
          rc 0.087939p 1.749263m 0.005614o 5.546729m 2.048097m 3.916111m 5.968914l 5.252644l 5.968915k 5.968915k       0.0
0.0
  pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.988952n      0.0       0.0
 zp 39.38 ri 0.365690p 2.899698n       0.0  2.666931n 0.107050p 0.009309p 0.000411p 7.95e-09p 3.39e-08p       0.0       0.0       0.0
 sig0.551 cc 0.365554p 3.263711p       0.0  5.865956p 1.866804p 4.115475p 5.982690p 5.264767p 5.982690p 5.982690p       0.0
0.0
          rc 0.365690p 3.264916m 0.012963n 5.878859l 1.870707l 4.124511l 5.995629k 5.276154k 5.995629k 5.995629k       0.0
0.0

    nb decay from 71har1;  sr, y, zr, nb, mo, tc half lives 89wal1.
1

     mass number    100              LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       36 kr g   37 rb g   38 sr g   39 y  g   40 zr g   41 nb m   41 nb g   42 mo g   43 tc g   44 ru g
 half life              0.053s    0.201s    0.73 s     7.1 s     3.0 s     1.5 s    stable     16. s    stable
 lambda            0.0 1.308e+01 3.448e+00 9.495e-01 9.763e-02 2.310e-01 4.621e-01       0.0 4.332e-02       0.0
  z - 1 g    100.0000  100.0000  100.0000  100.0000   99.1580   50.0000   50.0000  100.0000       0.0  100.0000
  z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
  z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
  cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.428709n      0.0       0.0
 zp 40.39 ri 1.66e-10p 2.83e-06p 0.004228p 0.330794p 2.940877n 0.988896p 0.988896p 0.177835p 0.000951p 4.74e-07p
 sig0.594 cc 1.66e-10p 2.83e-06p 0.004231p 0.335025p 3.273081p 2.625437p 2.625437p 5.428709p 0.000951p 0.000952p
          rc 1.66e-10p 2.83e-06p 0.004231p 0.335025p 3.273081m 2.625437n 2.625437n 5.428709l 0.000951p 0.000952p
  cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.716161n      0.0       0.0
 zp 40.11 ri 2.29e-10p 5.26e-06p 0.009908p 0.517694p 3.246343n 0.456804p 0.456804p 0.033045p 3.47e-05p 3.05e-09p
 sig0.557 cc 2.29e-10p 5.26e-06p 0.009913p 0.527608p 3.769508p 2.341558p 2.341558p 4.716161p 3.47e-05p 3.47e-05p
          rc 2.29e-10p 5.26e-06p 0.009913p 0.527608o 3.769508m 2.341558n 2.341558n 4.716161l 3.47e-05p 3.47e-05p
  cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.500054n      0.0       0.0
 zp 40.61 ri 1.60e-11p 4.79e-07p 0.001190p 0.163224p 2.328222n 1.310412n 1.310412n 0.387977p 0.003860p 3.52e-06p
 sig0.596 cc 1.60e-11p 4.79e-07p 0.001190p 0.164414p 2.491252p 2.556039p 2.556039p 5.500054p 0.003860p 0.003863p
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        rc 1.60e-11p 4.79e-07p 0.001190p 0.164414p 2.491252m 2.556039l 2.556039l 5.500054k 0.003860p 0.003863p
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.700968n      0.0       0.0
zp 40.43 ri 9.96e-11p 2.06e-06p 0.003440p 0.312324p 2.961668n 1.109270n 1.109270n 0.207653p 0.001216p 6.15e-07p
sig0.592 cc 9.96e-11p 2.06e-06p 0.003442p 0.315766p 3.274775p 2.746658p 2.746658p 5.700968p 0.001216p 0.001217p
        rc 9.96e-11p 2.06e-06p 0.003442p 0.315766p 3.274775m 2.746658l 2.746658l 5.700968k 0.001216p 0.001217p
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.908281n      0.0       0.0
zp 40.02 ri 4.33e-09p 3.90e-05p 0.023147p 0.871574p 3.029959n 0.481290p 0.481290p 0.028516p 5.39e-05p 6.75e-09p
sig0.585 cc 4.33e-09p 3.90e-05p 0.023186p 0.894759p 3.917185p 2.439882p 2.439882p 4.908281p 5.39e-05p 5.39e-05p
        rc 4.33e-09p 3.90e-05p 0.023186p 0.894759o 3.917185m 2.439882n 2.439882n 4.908281l 5.39e-05p 5.39e-05p
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.085069n      0.0       0.0
zp 39.65 ri 8.28e-08p 0.000355p 0.093031p 1.496808n 2.229254n 0.138176p 0.138176p 0.002658p 1.38e-06p 4.15e-11p
sig0.574 cc 8.28e-08p 0.000355p 0.093386p 1.590195p 3.806059p 2.041205p 2.041205p 4.085068p 1.38e-06p 1.38e-06p
        rc 8.28e-08p 0.000355p 0.093386p 1.590195m 3.806059l 2.041205l 2.041205l 4.085068k 1.38e-06p 1.38e-06p
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.064454n      0.0       0.0
zp 39.91 ri 9.63e-08p 0.000258p 0.058106p 1.233785n 2.919233n 0.418981p 0.418981p 0.025991p 7.40e-05p 1.75e-08p
sig0.620 cc 9.63e-08p 0.000258p 0.058364p 1.292149p 4.200502p 2.519232p 2.519232p 5.064454p 7.40e-05p 7.40e-05p
        rc 9.63e-08p 0.000258p 0.058364p 1.292149m 4.200502m 2.519232m 2.519232m 5.064454l 7.40e-05p 7.40e-05p
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.344578n      0.0       0.0
zp 40.05 ri 1.45e-10p 5.93e-06p 0.011530p 0.752290p 3.581599n 0.492543p 0.492543p 0.020498p 1.46e-05p 4.99e-10p
sig0.541 cc 1.45e-10p 5.93e-06p 0.011536p 0.763825p 4.338993p 2.662040p 2.662040p 5.344578p 1.46e-05p 1.46e-05p
        rc 1.45e-10p 5.93e-06p 0.011536p 0.763825o 4.338993m 2.662040n 2.662040n 5.344578l 1.46e-05p 1.46e-05p
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.695323n      0.0       0.0
zp 40.12 ri 2.62e-10p 5.85e-06p 0.013449p 0.653283p 4.778384n 0.603193p 0.603193p 0.049430p 4.49e-05p 4.29e-09p
sig0.555 cc 2.62e-10p 5.85e-06p 0.013455p 0.666738p 5.439508p 3.322947p 3.322947p 6.695323p 4.49e-05p 4.49e-05p
        rc 2.62e-10p 5.85e-06p 0.013455p 0.666738o 5.439508m 3.322947m 3.322947m 6.695323l 4.49e-05p 4.49e-05p
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.148657n      0.0       0.0
zp 39.77 ri 9.78e-09p 9.00e-05p 0.072419p 1.467091n 4.162112n 0.226957p 0.226957p 0.005995p 1.81e-06p 4.62e-11p
sig0.551 cc 9.78e-09p 9.00e-05p 0.072509p 1.539600p 5.688749p 3.071331p 3.071331p 6.148657p 1.81e-06p 1.81e-06p
        rc 9.78e-09p 9.00e-05p 0.072509p 1.539600m 5.688749m 3.071331m 3.071331m 6.148657k 1.81e-06p 1.81e-06p
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rb, sr, y, zr, nb half lives from 89wal1.
1

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    mass number    101              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       38 sr g   39 y  g   40 zr g   41 nb g   42 mo g   43 tc g   44 ru g   45 rh m   45 rh g   46 pd g
half life     0.115s    0.43 s     2.1 s     7.1 s    14.6 m    14.2 m    stable    4.47 d     3.  y     8.3 h
lambda      6.027e+00 1.612e+00 3.301e-01 9.763e-02 7.913e-04 8.136e-04       0.0 1.795e-06 7.327e-09 2.320e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  -90.0000 -100.0000       0.0
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0 -100.0000
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   10.0000       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  5.545272l 6.253994k 6.062448n      0.0       0.0       0.0
zp 40.83 ri 0.000272p 0.071275p 1.725299n 3.313729n 0.820932p 0.015002p 2.33e-05p 1.60e-09p 3.75e-10p      0.0
sig0.594 cc 0.000273p 0.071890p 1.805465p 5.135089p 5.932427p 5.946510p 5.946531p 1.49e-09p 4.98e-10p      0.0
         rc 0.000272p 0.071546p 1.796845m 5.110574l 5.931506k 5.946508j 5.946531j 1.60e-09p 5.35e-10p      0.0
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  5.470746n      0.0       0.0       0.0
zp 40.52 ri 0.000843p 0.165072p 2.694667n 2.374516n 0.234697p 0.000951p 2.65e-07p 1.82e-12p      0.0       0.0
sig0.557 cc 0.000843p 0.165914p 2.860582p 5.235098p 5.469795p 5.470746p 5.470746p 1.82e-12p      0.0       0.0
         rc 0.000843p 0.165914p 2.860582m 5.235098l 5.469795l 5.470746l 5.470746l 1.83e-12p      0.0       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  6.100085n      0.0       0.0       0.0
zp 41.01 ri 8.27e-05p 0.033712p 1.227337n 3.536662n 1.266212n 0.035987p 9.15e-05p 1.12e-08p 2.29e-09p      0.0
sig0.596 cc 8.27e-05p 0.033795p 1.261133p 4.797795p 6.064007p 6.099993p 6.100085p 1.12e-08p 3.40e-09p      0.0
         rc 8.27e-05p 0.033795p 1.261133m 4.797795m 6.064007l 6.099993l 6.100085l 1.12e-08p 3.40e-09p      0.0
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  6.201489n      0.0       0.0       0.0
zp 40.82 ri 0.000297p 0.078512p 1.845900n 3.474609n 0.788924p 0.013227p 1.86e-05p 1.16e-09p 2.72e-10p      0.0
sig0.592 cc 0.000297p 0.078810p 1.924710p 5.399320p 6.188244p 6.201470p 6.201489p 1.16e-09p 3.88e-10p      0.0
         rc 0.000297p 0.078810p 1.924710m 5.399320m 6.188244l 6.201470l 6.201489l 1.16e-09p 3.88e-10p      0.0
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  5.409126n      0.0       0.0       0.0
zp 40.42 ri 0.002808p 0.302333p 2.733373n 2.191316n 0.178294p 0.001002p 3.87e-07p 7.24e-12p      0.0       0.0
sig0.585 cc 0.002808p 0.305141p 3.038514p 5.229830p 5.408124p 5.409126p 5.409126p 7.24e-12p 1.62e-12p      0.0
         rc 0.002808p 0.305141p 3.038514m 5.229830l 5.408124l 5.409126l 5.409126l 7.24e-12p 1.62e-12p      0.0
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 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  4.675793n      0.0       0.0       0.0
zp 40.05 ri 0.016249p 0.751640p 2.916466n 0.963939p 0.027454p 4.51e-05p 4.41e-09p      0.0       0.0       0.0
sig0.574 cc 0.016249p 0.767890p 3.684355p 4.648294p 4.675748p 4.675793p 4.675793p      0.0       0.0       0.0
         rc 0.016249p 0.767890o 3.684355m 4.648294m 4.675748m 4.675793m 4.675793l      0.0       0.0       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  5.085941k      0.0       0.0       0.0       0.0
zp 40.29 ri 0.009888p 0.506199p 2.703972n 1.736798n 0.128165p 0.000918p 5.64e-07p 2.25e-11p 5.29e-12p      0.0
sig0.620 cc 0.009888p 0.516088p 3.220059p 4.956858p 5.085022p 5.085940p 5.085941p 2.25e-11p 7.54e-12p      0.0
         rc 0.009888p 0.516088o 3.220059m 4.956858l 5.085022l 5.085940k 5.085941k 2.25e-11p 7.54e-12p      0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  6.758885k 5.118861n      0.0       0.0       0.0
zp 40.43 ri 0.001121p 0.300770p 3.193376n 2.994033n 0.150356p 0.000460p 3.81e-08p      0.0       0.0       0.0
sig0.541 cc 0.001119p 0.301158p 3.486773p 6.489666p 6.639657p 6.640116p 6.640116p      0.0       0.0       0.0
         rc 0.001121p 0.301891p 3.495267m 6.489300l 6.639655k 6.640116j 6.640116j      0.0       0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  5.925860n      0.0       0.0       0.0
zp 40.50 ri 0.001045p 0.183419p 3.108610n 2.393652n 0.238328p 0.000805p 2.14e-07p 1.17e-12p      0.0       0.0
sig0.555 cc 0.001045p 0.184464p 3.293074p 5.686727p 5.925055p 5.925860p 5.925860p 1.17e-12p      0.0       0.0
         rc 0.001045p 0.184464p 3.293074m 5.686727l 5.925055l 5.925860l 5.925860l 1.18e-12p      0.0       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  6.094089n      0.0       0.0       0.0
zp 40.16 ri 0.008299p 0.600634p 4.037811n 1.397377n 0.049910p 5.88e-05p 4.53e-09p      0.0       0.0       0.0
sig0.551 cc 0.008299p 0.608933p 4.646744p 6.044121p 6.094031p 6.094089p 6.094089p      0.0       0.0       0.0
         rc 0.008299p 0.608933o 4.646744m 6.044121l 6.094031l 6.094089l 6.094089l      0.0       0.0       0.0

  sr, y, zr, nb, mo, tc half lives from 89wal1.
1

    mass number    102              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide      38 sr g   39 y  g   40 zr g   41 nb g   42 mo d   42 mo g   43 tc m   43 tc g   44 ru g   45 rh m   45 rh g   46 pd g
half life    0.068s    0.36 s    2.9 s     1.3 s     1.5 s    11.3 m     4.4 m     5.3 s    stable      3. y    207. d    stable
lambda      1.019e+01 1.925e+00 2.390e-01 5.332e-01 4.621e-01 1.022e-03 2.626e-03 1.308e-01       0.0 7.327e-09 3.876e-08
0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000       0.0  100.0000 -100.0000  -84.0000   16.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   95.0000       0.0       0.0       0.0
```

z - 0 m 0.0 0.0 0.0 0.0 0.0140 100.0000 0.0 5.0000 0.0 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.037609p 6.186680m 6.308909n 0.0 0.0 0.0
zp 41.26 ri 1.51e-05p 0.011780p 0.891594p 4.324938n 0.0 3.330320n 0.071190p 0.071190p 0.000898p 1.16e-07p 1.16e-07p 5.18e-12p
sig0.594 cc 1.58e-05p 0.012361p 0.946676p 5.478842p 0.0 8.551957p 8.626558p 0.505929p 8.701926p 9.92e-08p 9.92e-08p 1.59e-08p
rc 1.51e-05p 0.011795p 0.903390n 5.228327l 0.000290n 8.558937k 8.630127k 0.502697p 8.702216k 1.16e-07p 1.16e-07p 1.86e-08o
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.138919m 0.0 0.0 0.0
zp 40.92 ri 5.02e-05p 0.028948p 1.610769n 3.403401n 0.0 1.082974n 0.006236p 0.006236p 1.34e-05p 1.78e-10p 1.78e-10p 0.0
sig0.557 cc 5.02e-05p 0.028998p 1.639763p 5.043157p 0.0 6.126142p 6.132378p 0.312855p 6.138628p 1.78e-10p 1.78e-10p 2.85e-11p
rc 5.02e-05p 0.028998p 1.639767m 5.043167m 0.000564n 6.126706l 6.132942l 0.312884l 6.139192k 1.78e-10p 1.78e-10p 2.85e-11p
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.600092n 0.0 0.0 0.0
zp 41.40 ri 4.08e-06p 0.004528p 0.459502p 3.131232n 0.0 2.804815n 0.099200p 0.099200p 0.001460p 2.97e-07p 2.97e-07p 2.01e-11p
sig0.596 cc 4.08e-06p 0.004532p 0.464032p 3.595246p 0.0 6.400083p 6.499282p 0.424164p 6.599942p 2.97e-07p 2.97e-07p 4.76e-08p
rc 4.08e-06p 0.004532p 0.464034p 3.595266m 0.000286n 6.400368l 6.499568l 0.424178n 6.600228l 2.97e-07p 2.97e-07p 4.76e-08p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.501561n 0.0 0.0 0.0
zp 41.21 ri 1.69e-05p 0.012223p 0.799426p 3.546931n 0.0 2.054144n 0.044135p 0.044135p 0.000367p 4.00e-08p 4.00e-08p 1.38e-12p
sig0.592 cc 1.69e-05p 0.012240p 0.811662p 4.358577p 0.0 6.412741p 6.456875p 0.366978p 6.501378p 4.00e-08p 4.00e-08p 6.40e-09p
rc 1.69e-05p 0.012240p 0.811665o 4.358596m 0.000394n 6.413135l 6.457269l 0.366998m 6.501772l 4.00e-08p 4.00e-08p 6.40e-09p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.010140n 0.0 0.0 0.0

zp 40.82 ri 0.000222p 0.070377p 1.720183n 3.463357n 0.0 0.743666p 0.006049p 0.006049p 1.43e-05p 4.68e-10p 4.68e-10p 0.0
sig0.585 cc 0.000222p 0.070599p 1.790780p 5.254132p 0.0 5.997805p 6.003855p 0.306242p 6.009918p 4.68e-10p 4.68e-10p 7.49e-11p
rc 0.000222p 0.070599p 1.790782m 5.254139m 0.000613n 5.998418l 6.004467l 0.306272l 6.010530l 4.68e-10p 4.68e-10p 7.49e-11p
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.372188n 0.0 0.0 0.0
zp 40.44 ri 0.001959p 0.263377p 2.683563n 2.244984n 0.0 0.177206p 0.000439p 0.000439p 2.69e-07p 2.00e-12p 2.00e-12p 0.0
sig0.574 cc 0.001959p 0.265335p 2.948899p 5.193882p 0.0 5.371089p 5.371528p 0.269015p 5.371968p 2.00e-12p 2.00e-12p 0.0
rc 0.001959p 0.265336p 2.948899m 5.193883l 0.000728n 5.371818l 5.372257l 0.269052l 5.372696l 2.00e-12p 2.00e-12p 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.368321n 0.0 0.0 0.0
zp 40.69 ri 0.001107p 0.146637p 1.892758n 2.815451n 0.0 0.502815p 0.004667p 0.004667p 1.55e-05p 1.05e-09p 1.05e-09p 0.0
sig0.620 cc 0.001107p 0.147744p 2.040500p 4.855949p 0.0 5.358768p 5.363435p 0.272839p 5.368118p 1.05e-09p 1.05e-09p 1.68e-10p
rc 0.001107p 0.147744p 2.040502m 4.855953l 0.000597n 5.359365l 5.364032l 0.272869l 5.368715l 1.05e-09p 1.05e-09p 1.68e-10p
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.087722n 0.0 0.0 0.0
zp 40.82 ri 4.87e-05p 0.035425p 1.474893n 3.005344n 0.0 0.567184p 0.002307p 0.002307p 1.99e-06p 1.24e-11p 1.24e-11p 0.0
sig0.541 cc 4.87e-05p 0.035474p 1.510365p 4.515706p 0.0 5.082896p 5.085203p 0.256567p 5.087512p 1.24e-11p 1.24e-11p 1.99e-12p
rc 4.87e-05p 0.035474p 1.510367m 4.515712m 0.000586n 5.083482l 5.085789l 0.256597l 5.088098l 1.24e-11p 1.24e-11p 1.99e-12p
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.155700n 0.0 0.0 0.0
zp 40.89 ri 6.50e-05p 0.031427p 1.851583n 3.207078n 0.0 1.055792n 0.004770p 0.004770p 1.00e-05p 9.89e-11p 9.89e-11p 0.0
sig0.555 cc 6.50e-05p 0.031492p 1.883071p 5.090143p 0.0 6.145944p 6.150715p 0.312306p 6.155495p 9.89e-11p 9.89e-11p 1.58e-11p

rc 6.50e-05p 0.031492p 1.883074m 5.090152l 0.000510n 6.146454l 6.151225l 0.312332l 6.156005l 9.89e-11p 9.89e-11p 1.58e-11p
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.133985n 0.0 0.0 0.0
zp 40.54 ri 0.000753p 0.147766p 3.189671n 2.497031n 0.0 0.297568p 0.000486p 0.000486p 2.89e-07p 0.0 0.0 0.0
sig0.551 cc 0.000753p 0.148519p 3.338190p 5.835220p 0.0 6.132789p 6.133275p 0.307150p 6.133762p 0.0 0.0 0.0
rc 0.000753p 0.148519p 3.338191m 5.835221l 0.000727n 6.133516l 6.134002l 0.307186l 6.134488l 0.0 0.0 0.0

rb, sr, y, zr, nb, mo, tc half lives from 89wal1.
1

mass number 103 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 39 y g 40 zr g 41 nb d 41 nb g 42 mo d 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g 47 ag g
half life 0.260s 1.3 s 2.573s 1.5 s 4.8 s 1.13 m 54. s 39.27d 56.12m stable 16.99d 1.10 h
lambda 2.666e+00 5.332e-01 2.694e-01 4.621e-01 1.444e-01 1.022e-02 1.284e-02 2.043e-07 2.059e-04 0.0 4.722e-07 1.750e-04
z - 1 g 100.0000 100.0000 0.0 100.0000 0.0 99.9860 100.0000 100.0000 99.0000 1.0000 -0.1000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -99.9000 0.0
z - 0 m 0.0 0.0 0.1820 100.0000 0.0410 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.285878n 6.457079i 0.0 6.333265n 0.0 0.0
zp 41.70 ri 0.000591p 0.131769p 0.0 1.937419n 0.0 3.348740n 0.994247p 0.008839p 7.09e-06p 1.06e-06p 5.77e-10p 0.0
sig0.594 cc 0.000644p 0.144272p 0.0 2.256071p 0.0 5.877977p 6.413166p 6.421291p 6.357084p 6.421298p 5.22e-10p 0.0
rc 0.000591p 0.132360p 3.91e-05o 2.069818m 0.000363o 5.418632l 6.412879k 6.421718i 6.357508i 6.421727h 5.77e-10p 0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.835564k 0.0 0.0 0.0 0.0
zp 41.32 ri 0.003366p 0.524307p 0.0 3.501599n 0.0 2.697591n 0.107974p 0.000346p 3.14e-08p 4.69e-09p 0.0 0.0
sig0.557 cc 0.003366p 0.527656p 0.0 4.029200p 0.0 6.726301p 6.834273p 6.834619p 6.766272p 6.834619p 0.0 0.0
rc 0.003366p 0.527672o 0.000200o 4.029471m 0.000825n 6.727324l 6.835298k 6.835643j 6.767287j 6.835643j 0.0 0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.900096n 0.0 0.0

zp 41.80 ri 0.000381p 0.104734p 0.0 1.936445n 0.0 4.074829n 0.768581p 0.015147p 1.65e-05p 2.25e-06p 1.83e-09p
0.0
sig0.596 cc 0.000381p 0.105114p 0.0 2.041543p 0.0 6.116110p 6.884683p 6.899830p 6.830848p 6.899849p 1.83e-09p
0.0
rc 0.000381p 0.105115p 2.75e-05o 2.041587m 0.000310o 6.116440m 6.885021l 6.900168l 6.831183l 6.900187l 1.83e-09p
0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.701609n 0.0 0.0
zp 41.60 ri 0.001282p 0.221892p 0.0 2.592290n 0.0 3.480630n 0.401052p 0.004474p 2.56e-06p 3.83e-07p 1.45e-10p
0.0
sig0.592 cc 0.001282p 0.223170p 0.0 2.815432p 0.0 6.295706p 6.696751p 6.701226p 6.634216p 6.701229p 1.45e-10p
0.0
rc 0.001282p 0.223174p 7.34e-05o 2.815537m 0.000515n 6.296288l 6.697340l 6.701814l 6.634798l 6.701817l 1.45e-10p
0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.410816n 0.0 0.0
zp 41.21 ri 0.010814p 0.723675p 0.0 3.640405n 0.0 1.948814n 0.086549p 0.000298p 5.42e-08p 4.72e-09p 0.0 0.0
sig0.585 cc 0.010814p 0.734468p 0.0 4.374867p 0.0 6.323099p 6.409645p 6.409943p 6.345844p 6.409944p 0.0 0.0
rc 0.010814p 0.734490o 0.000371o 4.375265m 0.001163n 6.324630l 6.411179l 6.411477l 6.347362l 6.411477l 0.0 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.969098n 0.0 0.0
zp 40.84 ri 0.056857p 1.627854n 0.0 3.516281n 0.0 0.755971p 0.011293p 1.10e-05p 4.65e-10p 6.95e-11p 0.0 0.0
sig0.574 cc 0.056854p 1.684624p 0.0 5.201001p 0.0 5.956235p 5.967527p 5.967538p 5.907863p 5.967538p 0.0 0.0
rc 0.056857p 1.684711m 0.001178o 5.202170m 0.001761n 5.959173l 5.970466l 5.970477l 5.910772l 5.970477l 0.0
0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.676352j 0.0 0.0 0.0 0.0
zp 41.08 ri 0.030680p 0.962770p 0.0 3.271098n 0.0 1.348653n 0.061849p 0.000267p 8.42e-08p 1.26e-08p 2.80e-12p
0.0
sig0.620 cc 0.030679p 0.993409p 0.0 4.264512p 0.0 5.612606p 5.674453p 5.674719p 5.617972p 5.674719p 2.80e-12p
0.0
rc 0.030680p 0.993450o 0.000588o 4.265136m 0.001169n 5.614361l 5.676209k 5.676476j 5.619711j 5.676476j 2.81e-12p
0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.834508j 0.0 4.731219n 0.0 0.0
zp 41.21 ri 0.004714p 0.501726p 0.0 3.681353n 0.0 1.538656n 0.051649p 6.17e-05p 2.82e-09p 4.21e-10p 0.0 0.0

sig0.541 cc 0.004711p 0.506160p 0.0 4.185517p 0.0 5.725892p 5.777513p 5.777574p 5.719799p 5.777574p 0.0 0.0
rc 0.004714p 0.506440o 0.000155o 4.187948m 0.000636n 5.726654l 5.778304k 5.778366j 5.720582j 5.778366j 0.0
0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.965832n 0.0 0.0
zp 41.27 ri 0.003777p 0.565445p 0.0 3.074414n 0.0 2.251240n 0.070655p 0.000202p 1.35e-08p 2.01e-09p 0.0 0.0
sig0.555 cc 0.003776p 0.569206p 0.0 3.643609p 0.0 5.894367p 5.965020p 5.965221p 5.905569p 5.965221p 0.0 0.0
rc 0.003777p 0.569221o 0.000250o 3.643885m 0.000776n 5.895391l 5.966046l 5.966247l 5.906585l 5.966247l 0.0 0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.233725n 0.0 0.0
zp 40.92 ri 0.028029p 1.533878n 0.0 3.627418n 0.0 1.031715n 0.012065p 1.03e-05p 2.10e-10p 3.13e-11p 0.0 0.0
sig0.551 cc 0.028027p 1.561838p 0.0 5.189333p 0.0 6.220313p 6.232378p 6.232388p 6.170064p 6.232388p 0.0 0.0
rc 0.028029p 1.561907m 0.000954o 5.190278m 0.001432n 6.222698l 6.234764l 6.234774l 6.172426l 6.234774l 0.0
0.0

y half life from 80eng2; zr, nb, mo, tc, ru, rh half lives 89wal1; pd half life 90bur1.

1

mass number 104 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 38 sr g 39 y g 40 zr g 41 nb d 41 nb g 42 mo d 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g
half life 0.163s 0.128s 1.2 s 0.493s 4.8 s 2.8 s 60. s 18.2 m stable 4.35 m 42. s stable
lambda 4.252e+00 5.415e+00 5.776e-01 1.406e+00 1.444e-01 2.476e-01 1.155e-02 6.348e-04 0.0 2.656e-03 1.650e-02
0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 99.8180 0.0 99.9590 100.0000 100.0000 0.0 -0.5000 99.5000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1800
z - 0 m 0.0 0.0 0.0 1.0880 100.0000 2.2320 100.0000 0.0 0.0 0.0 99.8200 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.723283k 5.430344n 0.0 0.0 0.0
zp 42.13 ri 3.47e-09p 2.89e-05p 0.021476p 0.0 0.864742p 0.0 4.188608n 1.567828n 0.067179p 0.000136p 4.53e-05p
4.44e-08p
sig0.594 cc 3.47e-09p 2.89e-05p 0.021476p 0.0 0.885019p 0.0 5.068887p 6.634845p 6.709440p 0.000151p 0.000201p
0.000200p
rc 3.47e-09p 2.89e-05p 0.021505p 1.82e-05o 0.886226o 0.004863o 5.079334m 6.647161j 6.714341j 0.000136p 0.000181p
0.000180p
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.950131m 0.0 0.0 0.0
zp 41.72 ri 2.80e-08p 0.000190p 0.109441p 0.0 1.902918n 0.0 4.457305n 0.462236p 0.005464p 1.31e-06p 4.35e-07p 4.50e-11p
sig0.557 cc 2.80e-08p 0.000190p 0.109563p 0.0 2.011145p 0.0 6.469088p 6.931070p 6.936530p 1.30e-06p 1.74e-06p 1.73e-06p
rc 2.80e-08p 0.000190p 0.109631p 0.000134o 2.012483m 0.017393o 6.486356m 6.948592m 6.954055l 1.31e-06p 1.74e-06p 1.73e-06o
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.900096n 0.0 0.0 0.0
zp 42.21 ri 1.78e-09p 1.78e-05p 0.015082p 0.0 0.742151p 0.0 4.130035n 1.901761n 0.108047p 0.000297p 8.38e-05p 1.18e-07p
sig0.596 cc 1.78e-09p 1.78e-05p 0.015097p 0.0 0.757100p 0.0 4.887219p 6.788728p 6.896758p 0.000297p 0.000380p 0.000379p
rc 1.78e-09p 1.78e-05p 0.015100p 1.26e-05o 0.757236o 0.004006o 4.890966m 6.792728l 6.900777l 0.000297p 0.000380p 0.000379p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.701609n 0.0 0.0 0.0
zp 42.00 ri 1.23e-08p 7.72e-05p 0.040274p 0.0 1.215080n 0.0 4.213018n 1.188349n 0.038443p 5.39e-05p 1.80e-05p 1.11e-08p
sig0.592 cc 1.23e-08p 7.72e-05p 0.040338p 0.0 1.254959p 0.0 5.468198p 6.656224p 6.694655p 5.38e-05p 7.17e-05p 7.14e-05p
rc 1.23e-08p 7.72e-05p 0.040351p 4.65e-05o 1.255405m 0.008646o 5.476554m 6.664903l 6.703347l 5.39e-05p 7.17e-05p 7.15e-05o
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.711323n 0.0 0.0 0.0
zp 41.60 ri 3.89e-07p 0.001072p 0.202623p 0.0 2.632252n 0.0 3.451107n 0.403700p 0.003980p 2.00e-06p 3.53e-07p 8.93e-11p
sig0.585 cc 3.89e-07p 0.001071p 0.203516p 0.0 2.833200p 0.0 6.285830p 6.689227p 6.693203p 2.00e-06p 2.34e-06p 2.34e-06p
rc 3.89e-07p 0.001072p 0.203696p 0.000406o 2.835984m 0.029861n 6.315789l 6.719489l 6.723469l 2.00e-06p 2.35e-06p 2.34e-06p
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.466523n 0.0 0.0 0.0
zp 41.24 ri 5.85e-06p 0.007621p 0.639545p 0.0 3.648157n 0.0 2.053698n 0.089375p 0.000273p 3.23e-08p 1.08e-08p 0.0

sig0.574 cc 5.85e-06p 0.007621p 0.646675p 0.0 4.291365p 0.0 6.346159p 6.435466p 6.435739p 3.22e-08p 4.29e-08p 4.28e-08p
rc 5.85e-06p 0.007627p 0.647172o 0.001860o 4.296011m 0.062071n 6.410019l 6.499394l 6.499667l 3.23e-08p 4.29e-08p 4.28e-08p
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.499678l 0.0 0.0 0.0 0.0
zp 41.47 ri 4.57e-06p 0.004076p 0.319178p 0.0 2.526737n 0.0 2.362303n 0.260069p 0.002879p 2.08e-06p 6.92e-07p 2.16e-10p
sig0.620 cc 4.56e-06p 0.004075p 0.322807p 0.0 2.845673p 0.0 5.209880p 5.470617p 5.473492p 2.07e-06p 2.76e-06p 2.75e-06p
rc 4.57e-06p 0.004081p 0.323258p 0.000857o 2.850264m 0.035058n 5.246456l 5.506525k 5.509405k 2.08e-06p 2.76e-06p 2.75e-06p
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.866480j 4.144787n 0.0 0.0 0.0
zp 41.60 ri 2.01e-08p 0.000186p 0.085146p 0.0 1.466571n 0.0 2.145455n 0.172761p 0.000940p 1.16e-07p 3.88e-08p 1.18e-12p
sig0.541 cc 2.01e-08p 0.000186p 0.085324p 0.0 1.551637p 0.0 3.695910p 3.869361p 3.870268p 1.12e-07p 1.49e-07p 1.49e-07p
rc 2.01e-08p 0.000186p 0.085332p 8.09e-05o 1.551829m 0.011642o 3.708289l 3.881050j 3.881990j 1.16e-07p 1.55e-07p 1.54e-07o
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.105735n 0.0 0.0 0.0
zp 41.65 ri 4.91e-08p 0.000250p 0.136851p 0.0 1.756547n 0.0 3.904668n 0.292532p 0.003072p 4.92e-07p 1.64e-07p 1.42e-11p
sig0.555 cc 4.90e-08p 0.000250p 0.137003p 0.0 1.892110p 0.0 5.797484p 6.089824p 6.092893p 4.91e-07p 6.54e-07p 6.52e-07p
rc 4.91e-08p 0.000250p 0.137101p 0.000196o 1.893593m 0.018132o 5.815617m 6.108148l 6.111220l 4.92e-07p 6.55e-07p 6.53e-07o
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.233725n 0.0 0.0 0.0
zp 41.31 ri 1.23e-06p 0.002623p 0.521500p 0.0 2.968780n 0.0 2.637242n 0.082114p 0.000270p 1.43e-08p 4.77e-09p 0.0
sig0.551 cc 1.23e-06p 0.002622p 0.523643p 0.0 3.489037p 0.0 6.127839p 6.209878p 6.210147p 1.43e-08p 1.90e-08p 1.90e-08p
rc 1.23e-06p 0.002624p 0.524125o 0.001080o 3.493031m 0.043480n 6.172321l 6.254435l 6.254705l 1.43e-08p 1.90e-08p 1.90e-08o

sr, y half lives from 80eng2; zr, nb, mo, tc half lives 89wal1.
1

mass number 105 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 40 zr g 41 nb g 42 mo d 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g
half life 0.493s 3.0 s 1.0 s 36. s 7.6 m 4.44 h 40. s 35.4 h stable 7.2 m 41.0d 55.5m
lambda 1.406e+00 2.310e-01 6.931e-01 1.925e-02 1.520e-03 4.337e-05 1.733e-02 5.439e-06 0.0 1.605e-03 1.957e-07
2.082e-04
z - 1 g 100.0000 98.9120 0.0 97.7680 100.0000 100.0000 27.0000 73.0000 100.0000 -50.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.9400 100.0000 0.0 0.0 0.0 100.0000 0.0 0.0 50.0000 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 5.422920k 6.148085j 0.0 6.683518i 5.442497n 0.0 0.0 0.0
zp 42.56 ri 0.001675p 0.216239p 0.0 2.713560n 2.838300m 0.615052p 0.000460p 0.003082p 2.44e-06p 8.52e-11p 1.27e-11p
0.0
sig0.594 cc 0.001744p 0.226928p 0.0 3.048026p 6.004041p 6.379960p 1.723021p 6.383284p 6.383286p 8.65e-11p 5.62e-11p
0.0
rc 0.001675p 0.217896p 0.000336o 2.926928m 5.765228j 6.380280i 1.723136i 6.383822h 6.383824h 8.52e-11p 5.54e-11p
0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 6.795707l 0.0 0.0 0.0 0.0 0.0 0.0
zp 42.13 ri 0.012271p 0.767105p 0.0 4.482989n 1.498595n 0.050763p 8.31e-06p 5.56e-05p 5.29e-09p 0.0 0.0 0.0
sig0.557 cc 0.012270p 0.779186p 0.0 5.244924p 6.743438p 6.794198p 1.834442p 6.794262p 6.794262p 0.0 0.0 0.0
rc 0.012271p 0.779242o 0.001661o 5.246499m 6.745095l 6.795858k 1.834890k 6.795922j 6.795922j 0.0 0.0 0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.600065n 0.0 0.0 0.0
zp 42.64 ri 0.001155p 0.178331p 0.0 2.626150n 3.290536n 0.502089p 0.000674p 0.004940p 5.32e-06p 2.51e-10p 3.42e-11p
0.0
sig0.596 cc 0.001155p 0.179471p 0.0 2.801653p 6.092160p 6.594243p 1.781119p 6.599857p 6.599862p 2.51e-10p 1.59e-10p
0.0
rc 0.001155p 0.179474p 0.000230o 2.801847m 6.092383l 6.594472l 1.781181l 6.600086k 6.600092k 2.51e-10p 1.59e-10p
0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.401087n 0.0 0.0 0.0

zp 42.41 ri 0.004271p 0.383134p 0.0 3.327716n 2.480376n 0.212487p 0.000160p 0.001069p 5.66e-07p 1.21e-11p 1.81e-12p
0.0
sig0.592 cc 0.004271p 0.387345p 0.0 3.706498p 6.186811p 6.399291p 1.727968p 6.400520p 6.400521p 1.21e-11p 7.89e-12p
0.0
rc 0.004271p 0.387358p 0.000664o 3.707092m 6.187467l 6.399955l 1.728148l 6.401184k 6.401184k 1.21e-11p 7.89e-12p
0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.808126n 0.0 0.0 0.0
zp 41.99 ri 0.037331p 1.300937n 0.0 4.214490n 1.248280n 0.034229p 4.17e-06p 5.54e-05p 6.86e-09p 0.0 0.0 0.0
sig0.585 cc 0.037325p 1.337671p 0.0 5.522644p 6.770779p 6.805004p 1.837355p 6.805063p 6.805063p 0.0 0.0 0.0
rc 0.037331p 1.337861m 0.003881o 5.526372m 6.774652l 6.808881l 1.838402l 6.808940k 6.808940k 0.0 0.0 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.874871n 0.0 0.0 0.0
zp 41.63 ri 0.170943p 2.611878n 0.0 3.707486n 0.437420p 0.003981p 2.54e-07p 1.70e-06p 5.52e-11p 0.0 0.0 0.0
sig0.574 cc 0.170881p 2.779952p 0.0 6.426536p 6.863821p 6.867801p 1.854307p 6.867803p 6.867803p 0.0 0.0 0.0
rc 0.170943p 2.780961m 0.011928n 6.438304l 6.875725l 6.879706l 1.857521l 6.879708l 6.879708k 0.0 0.0 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.605431j 0.0 5.444702j 0.0 0.0 0.0 0.0
zp 41.86 ri 0.078786p 1.492780n 0.0 3.176074n 0.810998p 0.022631p 7.30e-06p 4.88e-05p 1.17e-08p 0.0 0.0 0.0
sig0.620 cc 0.078651p 1.568015p 0.0 4.704903p 5.522822p 5.545414p 1.497269p 5.545471p 5.545471p 0.0 0.0 0.0
rc 0.078786p 1.570709m 0.005404o 4.717128m 5.528126l 5.550757j 1.498712j 5.550813i 5.550813i 0.0 0.0 0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.577768k 3.470072n 0.0 0.0 0.0
zp 41.99 ri 0.007432p 0.514229p 0.0 1.640145n 0.489219p 0.006682p 6.50e-07p 4.35e-06p 1.29e-10p 0.0 0.0 0.0
sig0.541 cc 0.007431p 0.521512p 0.0 2.150136p 2.639305p 2.645986p 0.714417p 2.645991p 2.645991p 0.0 0.0 0.0
rc 0.007432p 0.521580o 0.001391o 2.151474m 2.640694m 2.647376m 0.714792m 2.647381k 2.647381k 0.0 0.0
0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.656049n 0.0 0.0 0.0
zp 42.03 ri 0.017989p 0.794566p 0.0 3.909009n 0.926365p 0.024917p 2.64e-06p 1.76e-05p 1.24e-09p 0.0 0.0 0.0
sig0.555 cc 0.017987p 0.812286p 0.0 4.703311p 5.629606p 5.654520p 1.526723p 5.654540p 5.654540p 0.0 0.0 0.0
rc 0.017989p 0.812360o 0.001881o 4.705117m 5.631482m 5.656399m 1.527230m 5.656419l 5.656419l 0.0 0.0 0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.004324n 0.0 0.0 0.0
zp 41.69 ri 0.099229p 1.849898n 0.0 3.714269n 0.377724p 0.003407p 1.20e-07p 8.05e-07p 1.58e-11p 0.0 0.0 0.0
sig0.551 cc 0.099205p 1.947574p 0.0 5.618930p 5.996572p 5.999978p 1.619994p 5.999979p 5.999979p 0.0 0.0 0.0

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        rc 0.099229p 1.948048m 0.006403o 5.625239m 6.002963m 6.006370l 1.621720l 6.006371l 6.006371l      0.0       0.0       0.0

  zr half life from 80eng2; nb, mo, tc, ru, rh half lives 89wal1.
1

    mass number    106              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       40 zr g   41 nb g   42 mo g   43 tc g   44 ru g   45 rh m   45 rh g   46 pd g   47 ag m   47 ag g   48 cd g
half life     0.907s     1.0 s     8.4 s     36. s    1.020y    2.18 h    29.9 s    stable     8.4 d    24.1 m    stable
lambda       7.642e-01 6.931e-01 8.252e-02 1.925e-02 2.155e-08 8.832e-05 2.318e-02       0.0 9.551e-07 4.794e-04       0.0
 z - 1 g    100.0000  100.0000   99.0600  100.0000  100.0000       0.0  100.0000  100.0000 -100.0000 -100.0000       0.0
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0  4.795147l      0.0       0.0       0.0  5.387489n      0.0       0.0       0.0
zp 42.98 ri 9.68e-05p 0.035622p 1.328733n 3.378502l 1.140163n 0.013922p 0.013922p 6.81e-05p 5.73e-09p 2.46e-09p       0.0
sig0.594 cc 9.56e-05p 0.035271p 1.347013p 4.683155p 5.881534p 0.014546p 5.896080p 5.910697p 5.99e-09p 2.57e-09p       0.0
         rc 9.68e-05p 0.035719p 1.364116m 4.742618k 5.882781k 0.013922p 5.896703k 5.910693k 5.73e-09p 2.46e-09p       0.0
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.731699m      0.0       0.0       0.0
zp 42.54 ri 0.000955p 0.175777p 3.420892n 2.804184n 0.330295p 0.000628p 0.000628p 4.21e-07p 2.36e-12p 1.01e-12p       0.0
sig0.557 cc 0.000955p 0.176732p 3.595962p 6.400146p 6.730442p 0.000628p 6.731070p 6.731699p 2.36e-12p 1.01e-12p       0.0
         rc 0.000955p 0.176732p 3.595962m 6.400146l 6.730442l 0.000628p 6.731070l 6.731699l 2.36e-12p 1.01e-12p       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.000084n      0.0       0.0       0.0
zp 43.07 ri 5.31e-05p 0.024368p 1.072458n 3.403866n 1.453383n 0.023021p 0.023021p 0.000143p 1.73e-08p 6.41e-09p       0.0
sig0.596 cc 5.31e-05p 0.024421p 1.096649p 4.500515p 5.953898p 0.023021p 5.976919p 6.000084p 1.73e-08p 6.41e-09p       0.0
         rc 5.31e-05p 0.024421p 1.096649m 4.500515m 5.953898l 0.023021p 5.976919l 6.000084l 1.73e-08p 6.41e-09p       0.0
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.901417n      0.0       0.0       0.0
zp 42.83 ri 0.000270p 0.070336p 1.764513n 3.264218n 0.789675p 0.006524p 0.006524p 1.96e-05p 1.05e-09p 4.48e-10p       0.0
sig0.592 cc 0.000270p 0.070606p 1.834456p 5.098674p 5.888349p 0.006524p 5.894873p 5.901417p 1.05e-09p 4.48e-10p       0.0
         rc 0.000270p 0.070606p 1.834456m 5.098674m 5.888349l 0.006524p 5.894873l 5.901417l 1.05e-09p 4.48e-10p       0.0
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.611154n      0.0       0.0       0.0
zp 42.39 ri 0.004112p 0.408807p 3.435913n 2.571006n 0.194191p 0.000503p 0.000503p 3.58e-07p 5.65e-12p 1.24e-12p       0.0
sig0.585 cc 0.004112p 0.412919p 3.844950p 6.415956p 6.610148p 0.000503p 6.610651p 6.611154p 5.65e-12p 1.24e-12p       0.0
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        rc 0.004112p 0.412919p 3.844950m 6.415956l 6.610148l 0.000503p 6.610651l 6.611154l 5.65e-12p 1.24e-12p      0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.963948n      0.0       0.0       0.0
zp 42.01 ri 0.029828p 1.239125n 4.363696n 1.309658n 0.033520p 2.46e-05p 2.46e-05p 4.27e-09p      0.0       0.0       0.0
sig0.574 cc 0.029828p 1.268953p 5.620721p 6.930378p 6.963899p 2.46e-05p 6.963923p 6.963948p      0.0       0.0       0.0
        rc 0.029828p 1.268953m 5.620721m 6.930378l 6.963899l 2.46e-05p 6.963923l 6.963948l      0.0       0.0       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.064454n      0.0       0.0       0.0
zp 42.25 ri 0.012075p 0.562819p 2.756742n 1.627729n 0.109778p 0.000357p 0.000357p 3.97e-07p 1.24e-11p 5.31e-12p      0.0
sig0.620 cc 0.012075p 0.574894p 3.326232p 4.953961p 5.063740p 0.000357p 5.064097p 5.064454p 1.24e-11p 5.31e-12p      0.0
        rc 0.012075p 0.574894o 3.326232m 4.953961l 5.063740l 0.000357p 5.064097l 5.064454l 1.24e-11p 5.31e-12p      0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.299610n      0.0       0.0       0.0
zp 42.40 ri 0.000767p 0.147195p 1.826765n 1.253096n 0.073019p 7.99e-05p 7.99e-05p 1.74e-08p      0.0       0.0       0.0
sig0.541 cc 0.000767p 0.147961p 1.973335p 3.226431p 3.299450p 7.99e-05p 3.299530p 3.299610p      0.0       0.0       0.0
        rc 0.000767p 0.147961p 1.973335m 3.226431l 3.299450l 7.99e-05p 3.299530l 3.299610l      0.0       0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.266321n      0.0       0.0       0.0
zp 42.42 ri 0.001692p 0.198375p 3.195986n 1.710260n 0.161524p 0.000182p 0.000182p 8.91e-08p      0.0       0.0       0.0
sig0.555 cc 0.001692p 0.200067p 3.394172p 5.104432p 5.265957p 0.000182p 5.266139p 5.266321p      0.0       0.0       0.0
        rc 0.001692p 0.200067p 3.394172m 5.104432l 5.265957l 0.000182p 5.266139l 5.266321l      0.0       0.0       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.934506n      0.0       0.0       0.0
zp 42.08 ri 0.013468p 0.667685p 4.199229n 1.026874n 0.033626p 1.34e-05p 1.34e-05p 1.84e-09p      0.0       0.0       0.0
sig0.551 cc 0.013468p 0.681153p 4.873979p 5.900854p 5.934479p 1.34e-05p 5.934493p 5.934506p      0.0       0.0       0.0
        rc 0.013468p 0.681153o 4.873979m 5.900854l 5.934479l 1.34e-05p 5.934493l 5.934506l      0.0       0.0       0.0

  zr half life from 80eng2; nb, mo, tc, ru, rh half lives 89wal1.
1

    mass number    107              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide      41 nb g   42 mo g   43 tc g   44 ru g   45 rh g   46 pd m   46 pd g   47 ag m   47 ag g   48 cd g   49 in g
half life     0.766s     3.5 s    21.2 s     3.8 m    21.7 m    21.3 s    6.5e6y     44. s    stable     6.5 h     33. m
lambda      9.049e-01 1.980e-01 3.270e-02 3.040e-03 5.324e-04 3.254e-02 3.381e-15 1.575e-02       0.0 2.962e-05 3.501e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000       0.0  100.0000   -0.3400 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  -99.6600       0.0
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 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0  100.0000       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0  5.697763n 5.848199m      0.0       0.0       0.0  4.362644n      0.0       0.0
zp 43.39 ri 0.003954p 0.393432p 2.750480n 2.352297n 0.165759p 0.000640p 0.000345p 3.36e-07p 5.02e-08p 1.16e-11p       0.0
sig0.594 cc 0.003954p 0.397336p 3.147472p 5.499475p 5.665776p 0.000735p 5.666907p 3.86e-07p 5.666908p 1.33e-11p       0.0
         rc 0.003954p 0.397386p 3.147866m 5.500163l 5.665922l 0.000640p 5.666907l 3.36e-07p 5.666908k 1.16e-11p       0.0
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.606551m      0.0       0.0
zp 42.94 ri 0.029585p 1.542226n 3.871134n 1.147778n 0.015812p 1.04e-05p 5.61e-06p 4.44e-10p 6.63e-11p       0.0       0.0
sig0.557 cc 0.029585p 1.571811p 5.442945p 6.590723p 6.606535p 1.04e-05p 6.606551p 4.44e-10p 6.606551p       0.0       0.0
         rc 0.029585p 1.571811m 5.442945m 6.590723l 6.606535l 1.04e-05p 6.606551l 4.44e-10p 6.606551k       0.0       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.200072n      0.0       0.0
zp 43.52 ri 0.001775p 0.235619p 2.219277n 2.496394n 0.244646p 0.001628p 0.000731p 1.22e-06p 1.66e-07p 6.24e-11p       0.0
sig0.596 cc 0.001775p 0.237394p 2.456671p 4.953066p 5.197712p 0.001628p 5.200071p 1.22e-06p 5.200072p 6.24e-11p       0.0
         rc 0.001775p 0.237394p 2.456671m 4.953066l 5.197712l 0.001628p 5.200071l 1.22e-06p 5.200072l 6.24e-11p       0.0
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.201249n      0.0       0.0
zp 43.26 ri 0.007579p 0.541453p 2.811239n 1.751925n 0.088647p 0.000263p 0.000142p 9.15e-08p 1.37e-08p 2.01e-12p       0.0
sig0.592 cc 0.007579p 0.549033p 3.360271p 5.112196p 5.200844p 0.000263p 5.201249p 9.15e-08p 5.201249p 2.01e-12p       0.0
         rc 0.007579p 0.549033o 3.360271m 5.112196l 5.200844l 0.000263p 5.201249l 9.15e-08p 5.201249l 2.01e-12p       0.0
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.210478n      0.0       0.0
zp 42.79 ri 0.082985p 1.879920n 3.531036n 0.705911p 0.010615p 9.10e-06p 2.42e-06p 6.38e-10p 5.55e-11p       0.0       0.0
sig0.585 cc 0.082985p 1.962905p 5.493940p 6.199852p 6.210467p 9.10e-06p 6.210478p 6.38e-10p 6.210478p       0.0       0.0
         rc 0.082985p 1.962905m 5.493940m 6.199852l 6.210467l 9.10e-06p 6.210478l 6.38e-10p 6.210478l       0.0       0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.764978n      0.0       0.0
zp 42.39 ri 0.395043p 3.548592n 2.637444n 0.183110p 0.000789p 1.36e-07p 7.30e-08p 2.32e-12p       0.0       0.0       0.0
sig0.574 cc 0.395043p 3.943635p 6.581079p 6.764189p 6.764978p 1.36e-07p 6.764978p 2.32e-12p 6.764978p       0.0       0.0
         rc 0.395043p 3.943635m 6.581079l 6.764189l 6.764978l 1.36e-07p 6.764978l 2.34e-12p 6.764978l       0.0       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  3.834638k      0.0       0.0       0.0       0.0       0.0       0.0
zp 42.63 ri 0.130235p 1.469939n 1.927546n 0.302050p 0.004868p 4.52e-06p 2.43e-06p 7.07e-10p 1.06e-10p       0.0       0.0
sig0.620 cc 0.130235p 1.600174p 3.527719p 3.829769p 3.834638p 4.52e-06p 3.834644p 7.07e-10p 3.834644p       0.0       0.0
         rc 0.130235p 1.600174m 3.527719l 3.829769l 3.834638k 4.52e-06p 3.834644k 7.07e-10p 3.834644k       0.0       0.0
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 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.410494n      0.0       0.0
zp 42.66 ri 0.001131p 0.716271p 1.674897n 0.018194p 1.81e-07p      0.0       0.0       0.0       0.0       0.0       0.0
sig0.350 cc 0.001131p 0.717403p 2.392299p 2.410493p 2.410494p      0.0  2.410494p      0.0  2.410494p      0.0       0.0
         rc 0.001131p 0.717403o 2.392299m 2.410493m 2.410494m      0.0  2.410494m      0.0  2.410494l      0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.197068n      0.0       0.0
zp 42.82 ri 0.032616p 1.337323n 2.289441n 0.533050p 0.004635p 2.17e-06p 1.17e-06p 5.40e-11p 8.07e-12p      0.0       0.0
sig0.555 cc 0.032616p 1.369939p 3.659380p 4.192430p 4.197065p 2.17e-06p 4.197068p 5.40e-11p 4.197068p      0.0       0.0
         rc 0.032616p 1.369939m 3.659380l 4.192430l 4.197065l 2.17e-06p 4.197068l 5.40e-11p 4.197068l      0.0       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.485678n      0.0       0.0
zp 42.47 ri 0.188313p 2.907287n 2.201769n 0.187737p 0.000572p 7.68e-08p 4.13e-08p      0.0       0.0       0.0       0.0
sig0.551 cc 0.188313p 3.095600p 5.297369p 5.485106p 5.485678p 7.68e-08p 5.485678p      0.0  5.485678p      0.0       0.0
         rc 0.188313p 3.095600m 5.297369l 5.485106l 5.485678l 7.68e-08p 5.485678l      0.0  5.485678l      0.0       0.0

  nb half life from 80eng2; mo, tc, ru, rh, pd half lives 89wal1.
1

    mass number    108              LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide      40 zr g   41 nb g   42 mo g   43 tc d   43 tc g   44 ru d   44 ru g   45 rh m   45 rh g   46 pd g   47 ag g   48 cd g
 half life     0.378s    0.242s     1.5 s    1.41 s     5.1 s     1.4 s     4.5 m     5.9 m     17. s    stable    2.41 m    stable
 lambda      1.834e+00 2.864e+00 4.621e-01 4.916e-01 1.359e-01 4.951e-01 2.567e-03 1.958e-03 4.077e-02       0.0 4.794e-03
0.0
  z - 1 g    100.0000  100.0000  100.0000       0.0  100.0000       0.0  100.0000       0.0  100.0000  100.0000   -2.3000   97.7000
  z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
  z - 0 m       0.0       0.0       0.0    0.1360  100.0000    0.0880  100.0000       0.0       0.0       0.0       0.0       0.0
  cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  3.826645n      0.0       0.0  4.293532n      0.0       0.0
zp 43.81 ri 5.67e-08p 0.000197p 0.062247p      0.0  1.127926n      0.0  2.633053n 0.236227p 0.236203p 0.010086p 1.16e-05p
1.18e-09p
sig0.594 cc 5.67e-08p 0.000197p 0.062428p      0.0  1.190079p      0.0  3.822573p 0.236632p 4.059205p 4.305940p 1.16e-05p
1.13e-05p
         rc 5.67e-08p 0.000197p 0.062444p 1.04e-05o 1.190381m 0.000376o 3.823809l 0.236227p 4.060012l 4.306326l 1.16e-05p
1.13e-05p
  cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.006899m 0.0 0.0
zp 43.35 ri 1.07e-06p 0.002293p 0.440480p 0.0 2.818784n 0.0 2.642319n 0.050834p 0.050834p 0.000402p 4.08e-08p 0.0
sig0.557 cc 1.07e-06p 0.002294p 0.442757p 0.0 3.261465p 0.0 5.903879p 0.050832p 5.954712p 6.005946p 4.08e-08p 3.99e-08p
rc 1.07e-06p 0.002294p 0.442773p 9.40e-05o 3.261651m 0.001393n 5.905363l 0.050834p 5.956197l 6.007434l 4.08e-08p 3.99e-08p
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.200059n 0.0 0.0
zp 43.97 ri 1.30e-08p 6.76e-05p 0.030288p 0.0 0.817288p 0.0 2.627190n 0.351497p 0.351497p 0.022095p 4.14e-05p 6.66e-09p
sig0.596 cc 1.30e-08p 6.76e-05p 0.030355p 0.0 0.847636p 0.0 3.474840p 0.351494p 3.826334p 4.199925p 4.14e-05p 4.04e-05p
rc 1.30e-08p 6.76e-05p 0.030356p 2.92e-06o 0.847647o 0.000167o 3.475004m 0.351497p 3.826501m 4.200095l 4.14e-05p 4.04e-05p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.301033n 0.0 0.0
zp 43.71 ri 1.38e-07p 0.000390p 0.093875p 0.0 1.377709n 0.0 2.468720n 0.177289p 0.177289p 0.005475p 4.67e-06p 3.25e-10p
sig0.592 cc 1.38e-07p 0.000390p 0.094264p 0.0 1.471952p 0.0 3.940700p 0.177286p 4.117986p 4.300747p 4.67e-06p 4.57e-06p
rc 1.38e-07p 0.000390p 0.094265p 1.23e-05o 1.471986m 0.000383o 3.941090l 0.177289p 4.118378l 4.301142l 4.67e-06p 4.57e-06p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.509295n 0.0 0.0
zp 43.21 ri 1.00e-05p 0.009293p 0.621830p 0.0 3.128119n 0.0 1.674511n 0.037184p 0.037184p 0.000256p 5.07e-08p 0.0
sig0.585 cc 1.00e-05p 0.009302p 0.631114p 0.0 3.759188p 0.0 5.433764p 0.037183p 5.470947p 5.508387p 5.07e-08p 4.95e-08p
rc 1.00e-05p 0.009303p 0.631132o 0.000166o 3.759417m 0.001643n 5.435571l 0.037184p 5.472755l 5.510196l 5.07e-08p 4.95e-08p
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.367038n 0.0 0.0
zp 42.78 ri 0.000228p 0.079737p 1.949672n 0.0 3.649821n 0.0 0.676983p 0.004294p 0.004294p 7.05e-06p 2.87e-10p 0.0

sig0.574 cc 0.000228p 0.079962p 2.029558p 0.0 5.679448p 0.0 6.356442p 0.004294p 6.360736p 6.365037p 2.87e-10p 2.80e-10p
rc 0.000228p 0.079965p 2.029638m 0.000973o 5.680433m 0.003610n 6.361025l 0.004294p 6.365319l 6.369620l 2.87e-10p 2.80e-10p
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.038673n 0.0 0.0
zp 43.00 ri 8.40e-05p 0.023579p 0.615275p 0.0 1.762379n 0.0 0.613031p 0.011702p 0.011702p 8.30e-05p 2.46e-08p 0.0
sig0.620 cc 8.40e-05p 0.023662p 0.638914p 0.0 2.401292p 0.0 3.014348p 0.011701p 3.026049p 3.037834p 2.46e-08p 2.41e-08p
rc 8.40e-05p 0.023663p 0.638937o 0.000287o 2.401603m 0.001320n 3.015954m 0.011702p 3.027656m 3.039441l 2.46e-08p 2.41e-08p
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.778233n 0.0 0.0
zp 42.86 ri 1.44e-11p 8.67e-05p 0.296039p 0.0 1.415510n 0.0 0.066102p 1.20e-06p 1.20e-06p 0.0 0.0 0.0
sig0.350 cc 1.44e-11p 8.67e-05p 0.296118p 0.0 1.711637p 0.0 1.777737p 1.20e-06p 1.777738p 1.777739p 0.0 0.0
rc 1.44e-11p 8.67e-05p 0.296125p 6.94e-05o 1.711704m 0.000872o 1.778678m 1.20e-06p 1.778679m 1.778680l 0.0 0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.267717n 0.0 0.0
zp 43.23 ri 1.78e-06p 0.002455p 0.385408p 0.0 1.599921n 0.0 1.249781n 0.014875p 0.014875p 8.87e-05p 5.10e-09p 0.0
sig0.555 cc 1.78e-06p 0.002456p 0.387858p 0.0 1.987756p 0.0 3.237567p 0.014874p 3.252442p 3.267405p 5.09e-09p 4.98e-09p
rc 1.78e-06p 0.002456p 0.387864p 1.77e-06o 1.987787m 0.000546o 3.238114l 0.014875p 3.252989l 3.267952l 5.10e-09p 4.98e-09p
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.448386n 0.0 0.0
zp 42.86 ri 4.88e-05p 0.025566p 1.358146n 0.0 2.388094n 0.0 0.669772p 0.002846p 0.002846p 4.63e-06p 7.77e-11p 0.0
sig0.551 cc 4.88e-05p 0.025615p 1.383725p 0.0 3.771835p 0.0 4.441628p 0.002846p 4.444474p 4.447325p 7.77e-11p 7.59e-11p
rc 4.88e-05p 0.025615p 1.383762m 0.000430o 3.772286m 0.001909n 4.443967m 0.002846p 4.446813l 4.449664l 7.77e-11p 7.59e-11p

zr, nb half lives from 80eng2; mo, tc, ru, rh half lives 89wal1.

mass number 109 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 41 nb g 42 mo g 43 tc g 44 ru d 44 ru g 45 rh m 45 rh g 46 pd m 46 pd g 47 ag g 48 cd g 49 in g
half life 0.315s 1.41 s 1.4 s 0.83 s 34.5 s 50. s 1.34 m 4.69 m 13.5 h stable 462.9d 4.2 h
lambda 2.200e+00 4.916e-01 4.951e-01 8.351e-01 2.009e-02 1.386e-02 8.621e-03 2.463e-03 1.426e-05 0.0 1.733e-08 4.584e-05
z - 1 g 100.0000 100.0000 99.8640 0.0 99.9120 50.0000 50.0000 0.0 100.0000 100.0000 0.0 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -100.0000 0.0
z - 0 m 0.0 0.0 0.0 0.6210 100.0000 0.0 100.0000 0.0 100.0000 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.080576l 0.0 0.0 3.779704n 0.0 0.0
zp 44.23 ri 8.32e-06p 0.007603p 0.419165p 0.0 2.410948n 0.600748p 0.600734p 0.042805p 0.023049p 0.000246p 7.46e-08p 1.20e-12p
sig0.594 cc 8.31e-06p 0.007606p 0.426432p 0.0 2.835222p 2.017892p 4.035785p 0.044771p 4.104663p 4.104920p 7.80e-08p 1.26e-12p
rc 8.32e-06p 0.007612p 0.426766p 0.000401o 2.837740m 2.019618m 4.039222k 0.042805p 4.105075k 4.105321k 7.46e-08p 1.20e-12p
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.512092m 0.0 0.0
zp 43.76 ri 0.000120p 0.069017p 1.514222n 0.0 3.471599n 0.225546p 0.225548p 0.003447p 0.001856p 2.16e-06p 5.61e-11p 0.0
sig0.557 cc 0.000120p 0.069129p 1.583089p 0.0 5.053517p 2.752283p 5.504565p 0.003447p 5.509868p 5.509870p 5.61e-11p 0.0
rc 0.000120p 0.069137p 1.583265m 0.002910o 5.056380m 2.753736m 5.507474l 0.003447p 5.512778l 5.512780k 5.61e-11p 0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.200045n 0.0 0.0
zp 44.42 ri 1.50e-06p 0.002148p 0.187826p 0.0 1.638857n 0.628306p 0.628308p 0.078599p 0.035313p 0.000723p 3.79e-07p 1.11e-11p
sig0.596 cc 1.50e-06p 0.002149p 0.189970p 0.0 1.828679p 1.542639p 3.085278p 0.078598p 3.199188p 3.199911p 3.79e-07p 1.11e-11p
rc 1.50e-06p 0.002149p 0.189973p 0.000155o 1.828817m 1.542715n 3.085431m 0.078599p 3.199343m 3.200066l 3.79e-07p 1.11e-11p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.401155n 0.0 0.0

zp 44.16 ri 1.17e-05p 0.009045p 0.426163p 0.0 2.055618n 0.434927p 0.434929p 0.026222p 0.014120p 0.000120p 2.79e-08p 0.0
sig0.592 cc 1.17e-05p 0.009057p 0.435191p 0.0 2.490471p 1.680150p 3.360300p 0.026221p 3.400640p 3.400760p 2.79e-08p 0.0
rc 1.17e-05p 0.009057p 0.435208p 0.000472o 2.490915m 1.680384n 3.360770m 0.026222p 3.401112m 3.401232m 2.79e-08p 0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.705617n 0.0 0.0
zp 43.64 ri 0.000577p 0.121589p 1.744808n 0.0 2.511380n 0.161643p 0.161645p 0.002800p 0.000744p 2.34e-06p 9.96e-11p 0.0
sig0.585 cc 0.000577p 0.122149p 1.866545p 0.0 4.376586p 2.349917p 4.699834p 0.002800p 4.703378p 4.703380p 9.96e-11p 0.0
rc 0.000577p 0.122167p 1.866808m 0.003605o 4.380150l 2.351718l 4.703438k 0.002800p 4.706983k 4.706985k 9.96e-11p 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.778877n 0.0 0.0
zp 43.17 ri 0.010176p 0.705514p 3.387276n 0.0 1.616328n 0.029217p 0.029217p 9.52e-05p 5.13e-05p 1.88e-08p 0.0 0.0
sig0.574 cc 0.010174p 0.715597p 4.101457p 0.0 5.714719p 2.886573p 5.773145p 9.52e-05p 5.773292p 5.773292p 0.0 0.0
rc 0.010176p 0.715690o 4.101992m 0.013484n 5.728194l 2.893314l 5.786628k 9.52e-05p 5.786775k 5.786775k 0.0 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.546307k 0.0 0.0 0.0
zp 43.36 ri 0.003435p 0.207344p 1.289855n 0.0 0.959340p 0.041425p 0.041425p 0.000457p 0.000246p 5.13e-07p 3.03e-11p 0.0
sig0.620 cc 0.003435p 0.210740p 1.500073p 0.0 2.458382p 1.270608p 2.541216p 0.000456p 2.541918p 2.541919p 3.03e-11p 0.0
rc 0.003435p 0.210779p 1.500347m 0.004704o 2.463071n 1.272960n 2.545920l 0.000457p 2.546622j 2.546623j 3.03e-11p 0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.100846n 0.0 0.0
zp 43.07 ri 3.97e-06p 0.051048p 0.939825o 0.0 0.109068p 1.22e-05p 1.22e-05p 1.21e-12p 0.0 0.0 0.0 0.0
sig0.350 cc 3.96e-06p 0.051032p 0.990840p 0.0 1.099003p 0.549514p 1.099028p 1.21e-12p 1.099028p 1.099028p 0.0 0.0

rc 3.97e-06p 0.051052p 0.990808o 0.002381o 1.101384n 0.550704n 1.101409m 1.21e-12p 1.101409m 1.101409m 0.0
0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.148499n 0.0 0.0
zp 43.64 ri 8.44e-10p 0.001302p 0.618720p 0.0 1.515778n 0.006266p 0.006266p 7.94e-08p 4.28e-08p 0.0 0.0 0.0
sig0.350 cc 8.44e-10p 0.001302p 0.619962p 0.0 2.135254p 1.073892p 2.147785p 7.94e-08p 2.147785p 2.147785p 0.0
0.0
rc 8.44e-10p 0.001302p 0.620020o 0.000959o 2.136212m 1.074372m 2.148744l 7.94e-08p 2.148744l 2.148744l 0.0
0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.503537n 0.0 0.0
zp 43.27 ri 0.002054p 0.314090p 1.853665n 0.0 1.292383n 0.020701p 0.020701p 6.78e-05p 3.65e-05p 7.49e-09p 0.0
0.0
sig0.551 cc 0.002054p 0.316112p 2.169160p 0.0 3.459857p 1.750627p 3.501254p 6.78e-05p 3.501358p 3.501358p 0.0
0.0
rc 0.002054p 0.316144p 2.169379m 0.004181o 3.464034l 1.752718l 3.505435k 6.78e-05p 3.505540k 3.505540k 0.0
0.0

nb, mo half lives from 80eng2; tc, ru, rh, pd half lives 89wal1.
1

mass number 110 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 40 zr g 41 nb g 42 mo g 43 tc g 44 ru g 45 rh m 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g
half life 0.130s 2.77 s 0.83 s 15. s 29. s 3.1 s stable 252. d 24.6 s stable
lambda 0.0 5.332e+00 2.502e-01 8.351e-01 4.621e-02 2.390e-02 2.236e-01 0.0 3.184e-08 2.818e-02 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 99.3790 0.0 100.0000 100.0000 0.0 -0.3000 99.7000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 98.6000
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.4000 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.623740n 0.0 0.0 0.0
zp 44.65 ri 3.94e-12p 1.38e-07p 0.000417p 0.064220p 1.063469n 0.640928o 0.640928p 0.214173p 0.001574p 0.000675p 2.27e-
06p
sig0.594 cc 3.94e-12p 1.38e-07p 0.000418p 0.064637p 1.127705p 0.640928p 1.768634p 2.623742p 0.001574p 0.000697p
0.002249p
rc 3.94e-12p 1.38e-07p 0.000418p 0.064637p 1.127705m 0.640928o 1.768634n 2.623737m 0.001574p 0.000697p 0.002249p
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.845234m 0.0 0.0 0.0
zp 44.16 ri 1.30e-10p 3.48e-06p 0.007637p 0.460879p 3.287203n 0.524387o 0.524387p 0.043647p 3.73e-05p 1.60e-05p 5.47e-09p
sig0.557 cc 1.30e-10p 3.48e-06p 0.007640p 0.468519p 3.752813p 0.524387p 4.277200p 4.845234p 3.73e-05p 1.65e-05p 5.32e-05p
rc 1.30e-10p 3.48e-06p 0.007640p 0.468519p 3.752813m 0.524387o 4.277200m 4.845234l 3.73e-05p 1.65e-05p 5.32e-05p
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.200043n 0.001540l 0.0 0.0
zp 44.85 ri 0.0 2.03e-08p 9.67e-05p 0.024847p 0.634252p 0.611284o 0.611284p 0.316096p 0.004223p 0.001562p 1.00e-05p
sig0.596 cc 0.0 2.03e-08p 9.68e-05p 0.024944p 0.659042p 0.611284p 1.270325p 2.197723p 0.004223p 0.001621p 0.005790p
rc 0.0 2.03e-08p 9.68e-05p 0.024944p 0.659042o 0.611284o 1.270325n 2.197710m 0.004223i 0.001621p 0.005790m
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.600883n 0.0 0.0 0.0
zp 44.61 ri 5.57e-12p 1.90e-07p 0.000519p 0.075538p 1.104557n 0.620872p 0.620872p 0.178993p 0.001174p 0.000503p 1.39e-06p
sig0.592 cc 5.57e-12p 1.90e-07p 0.000520p 0.076057p 1.180142p 0.620872p 1.801014p 2.600884p 0.001174p 0.000520p 0.001678p
rc 5.57e-12p 1.90e-07p 0.000520p 0.076057p 1.180142m 0.620872o 1.801014m 2.600881m 0.001174p 0.000520p 0.001678p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.806422n 0.0 0.0 0.0
zp 44.09 ri 1.59e-09p 1.75e-05p 0.012579p 0.567894p 2.327869n 0.435396p 0.435396p 0.030874p 5.80e-05p 1.27e-05p 1.08e-08p
sig0.585 cc 1.59e-09p 1.75e-05p 0.012597p 0.580491p 2.904755p 0.435396p 3.340152p 3.806422p 5.80e-05p 1.35e-05p 7.07e-05p
rc 1.59e-09p 1.75e-05p 0.012597p 0.580491o 2.904755m 0.435396p 3.340152m 3.806422l 5.80e-05p 1.35e-05p 7.07e-05p
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.974248n 0.0 0.0 0.0
zp 43.58 ri 2.00e-07p 0.000699p 0.150374p 2.020198n 2.549277n 0.132542p 0.132542p 0.002101p 6.24e-07p 2.68e-07p 2.17e-11p
sig0.574 cc 2.00e-07p 0.000699p 0.151072p 2.171271p 4.707064p 0.132542p 4.839606p 4.974248p 6.24e-07p 2.76e-07p 8.91e-07p
rc 2.00e-07p 0.000699p 0.151072p 2.171271m 4.707064l 0.132542p 4.839606l 4.974248l 6.24e-07p 2.76e-07p 8.91e-07p
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.329649n 0.0 0.0 0.0
zp 43.66 ri 0.0 7.76e-10p 0.001071p 0.756445p 1.557932n 0.009452p 0.009452p 1.65e-07p 0.0 0.0 0.0
sig0.350 cc 0.0 7.76e-10p 0.001071p 0.757516p 2.310744p 0.009452p 2.320196p 2.329649p 0.0 0.0 0.0
rc 0.0 7.76e-10p 0.001071p 0.757516o 2.310744m 0.009452p 2.320196m 2.329649l 0.0 0.0 0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.536698n 0.0 0.0 0.0
zp 43.28 ri 0.0 9.23e-08p 0.007513p 0.375866p 0.155572p 6.36e-05p 6.36e-05p 6.47e-11p 0.0 0.0 0.0
sig0.350 cc 0.0 9.23e-08p 0.007513p 0.383379p 0.536571p 6.36e-05p 0.536634p 0.536698p 0.0 0.0 0.0

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          rc      0.0  9.23e-08p 0.007513p 0.383379p 0.536571o 6.36e-05p 0.536634o 0.536698n      0.0       0.0       0.0
  pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.458981n      0.0       0.0       0.0
 zp 43.86 ri      0.0  7.60e-12p 7.85e-05p 0.154379p 1.271229n 0.017126p 0.017126p 2.14e-06p      0.0       0.0       0.0
 sig0.350 cc      0.0  7.60e-12p 7.85e-05p 0.154457p 1.424726p 0.017126p 1.441853p 1.458981p      0.0       0.0       0.0
          rc      0.0  7.60e-12p 7.85e-05p 0.154457p 1.424726m 0.017126p 1.441853m 1.458981l      0.0       0.0       0.0
  pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.603203n      0.0       0.0       0.0
 zp 43.65 ri      0.0  7.52e-10p 0.001412p 0.671919p 1.918312n 0.007871p 0.007871p 1.86e-07p      0.0       0.0       0.0
 sig0.350 cc      0.0  7.52e-10p 0.001412p 0.673331p 2.587462p 0.007871p 2.595332p 2.603203p      0.0       0.0       0.0
          rc      0.0  7.52e-10p 0.001412p 0.673331o 2.587462m 0.007871p 2.595332m 2.603203l      0.0       0.0       0.0

   nb, mo half lives from 80eng2; tc, ru, rh half lives from 89wal1.
1

     mass number    111              LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       42 mo g   43 tc g   44 ru g   45 rh g   46 pd m   46 pd g   47 ag m   47 ag g   48 cd m   48 cd g   49 in g   50 sn g
 half life     0.466s    1.98 s     1.5 s     11. s     5.5 h    23.4 m    1.08 m    7.47 d    48.7 m    stable    2.83 d    35.3 m
 lambda       1.487e+00 3.501e-01 4.621e-01 6.301e-02 3.501e-05 4.937e-04 1.070e-02 1.074e-06 2.372e-04       0.0 2.835e-06
3.273e-04
  z - 1 g    100.0000  100.0000  100.0000  100.0000    0.4300   99.5700   99.3000    0.7000       0.0  100.0000 -100.0000 -100.0000
  z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0   21.7000    7.0000       0.0    0.3000       0.0       0.0
  z - 0 m       0.0       0.0       0.0       0.0       0.0   71.3000       0.0   99.7000       0.0  100.0000       0.0       0.0
  cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.849240n      0.0       0.0
 zp 45.09 ri 1.26e-05p 0.006595p 0.305268p 1.060675n 0.299651p 0.161351p 0.013606p 0.002033p 3.72e-05p 1.11e-05p 8.34e-09p
0.0
 sig0.594 cc 1.26e-05p 0.006608p 0.311876p 1.372551p 0.305553p 1.745859p 1.813549p 1.843751p 3.72e-05p 1.849240p 8.34e-
09p      0.0
          rc 1.26e-05p 0.006608p 0.311876p 1.372551m 0.305553p 1.745859m 1.813549m 1.843751m 3.72e-05p 1.849240l 8.34e-09p
0.0
  cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.606944o      0.0  4.278884o      0.0       0.0
 zp 44.57 ri 0.000469p 0.106550p 1.991236n 1.985768n 0.145828p 0.078523p 0.000917p 0.000137p 2.64e-07p 7.88e-08p 3.41e-
12p      0.0
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sig0.557 cc 0.000469p 0.107019p 2.098255p 4.084022p 0.163389p 4.261480p 4.268022p 4.296622p 2.64e-07p 4.309427p 3.41e-12p 0.0
rc 0.000469p 0.107019p 2.098255m 4.084022l 0.163389p 4.261480l 4.268022l 4.296622l 2.64e-07p 4.309427l 3.41e-12p 0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.500030n 0.0 0.0
zp 45.27 ri 2.68e-06p 0.002187p 0.153048p 0.801315p 0.355758p 0.159833p 0.024417p 0.003330p 0.000110p 2.94e-05p 4.17e-08p 0.0
sig0.596 cc 2.68e-06p 0.002190p 0.155237p 0.956552p 0.359871p 1.368860p 1.461787p 1.495504p 0.000110p 1.500030p 4.17e-08p 0.0
rc 2.68e-06p 0.002190p 0.155237p 0.956552o 0.359871p 1.368860n 1.461787n 1.495504n 0.000110p 1.500030m 4.17e-08p 0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.900456n 0.0 0.0
zp 45.04 ri 1.83e-05p 0.008716p 0.355366p 1.106378n 0.271515p 0.146200p 0.010642p 0.001590p 2.39e-05p 7.15e-06p 4.40e-09p 0.0
sig0.592 cc 1.83e-05p 0.008735p 0.364100p 1.470478p 0.277838p 1.808454p 1.866727p 1.894825p 2.39e-05p 1.900456p 4.40e-09p 0.0
rc 1.83e-05p 0.008735p 0.364100p 1.470478m 0.277838p 1.808454m 1.866727m 1.894825m 2.39e-05p 1.900456l 4.40e-09p 0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.904901n 0.0 0.0
zp 44.54 ri 0.000715p 0.106159p 1.287957n 1.360230n 0.117462p 0.031224p 0.001061p 9.22e-05p 5.36e-07p 8.73e-08p 1.84e-11p 0.0
sig0.585 cc 0.000715p 0.106874p 1.394831p 2.755061p 0.129309p 2.866636p 2.875690p 2.896273p 5.36e-07p 2.904901p 1.84e-11p 0.0
rc 0.000715p 0.106874p 1.394831m 2.755061l 0.129309p 2.866636l 2.875690l 2.896273l 5.36e-07p 2.904901l 1.84e-11p 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.078884n 0.0 0.0
zp 44.02 ri 0.016567p 0.706936p 2.550545n 0.784189p 0.013400p 0.007215p 2.71e-05p 4.04e-06p 2.14e-09p 6.40e-10p 0.0 0.0
sig0.574 cc 0.016567p 0.723503p 3.274048p 4.058237p 0.030850p 4.069998p 4.048230p 4.066739p 2.14e-09p 4.078884p 0.0 0.0
rc 0.016567p 0.723503o 3.274048m 4.058237m 0.030850o 4.069998m 4.048230m 4.066739m 2.14e-09p 4.078884l 0.0 0.0

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  pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.214180k      0.0  2.248628l      0.0       0.0
 zp 43.87 ri 0.000101p 0.325249p 1.829221n 0.079611p 2.26e-06p 1.22e-06p      0.0       0.0       0.0       0.0       0.0       0.0
 sig0.350 cc 0.000101p 0.325222p 2.154602p 2.234182p 0.009609p 2.231428p 2.217893p 2.227532p      0.0  2.234185p      0.0
0.0
          rc 0.000101p 0.325349p 2.154571m 2.234182m 0.009609m 2.231428m 2.217893m 2.227532k      0.0  2.234185j      0.0
0.0
  np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.136614n      0.0       0.0
 zp 43.49 ri 0.000296p 0.073526p 0.062510p 0.000282p 3.81e-10p 2.05e-10p      0.0       0.0       0.0       0.0       0.0       0.0
 sig0.350 cc 0.000296p 0.073822p 0.136332p 0.136614p 0.000587p 0.136445p 0.135618p 0.136207p      0.0  0.136614p      0.0
0.0
          rc 0.000296p 0.073822p 0.136332p 0.136614p 0.000587o 0.136445o 0.135618o 0.136207o      0.0  0.136614n      0.0       0.0
  pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.399442n      0.0       0.0
 zp 44.07 ri 1.48e-06p 0.016459p 0.348026p 0.034946p 5.84e-06p 3.14e-06p      0.0       0.0       0.0       0.0       0.0       0.0
 sig0.350 cc 1.48e-06p 0.016460p 0.364486p 0.399433p 0.001723p 0.398947p 0.396528p 0.398252p      0.0  0.399442p      0.0
0.0
          rc 1.48e-06p 0.016460p 0.364486p 0.399433o 0.001723o 0.398947o 0.396528o 0.398252o      0.0  0.399442n      0.0       0.0
  pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.105912n      0.0       0.0
 zp 43.87 ri 4.92e-05p 0.132471p 0.939493p 0.033897p 1.22e-06p 6.60e-07p      0.0       0.0       0.0       0.0       0.0       0.0
 sig0.350 cc 4.92e-05p 0.132520p 1.072013p 1.105910p 0.004757p 1.104547p 1.097847p 1.102619p      0.0  1.105912p      0.0
0.0
          rc 4.92e-05p 0.132520p 1.072013o 1.105910o 0.004757n 1.104547n 1.097847n 1.102619n      0.0  1.105912m      0.0       0.0

   mo, tc half lives from 80eng2; ru, rh, pd, ag half lives 89wal1.
1

     mass number    112              LA-UR-94-3106 (ENDF-349)                              percent yields
 nuclide       42 mo g   43 tc g   44 ru g   45 rh g   46 pd g   47 ag g   48 cd g   49 in m   49 in g   50 sn g
 half life     0.975s    0.431s     4.5 s      4. s    20.04h    3.13 h    stable    20.8 m    14.4 m    stable
 lambda      7.109e-01 1.608e+00 1.540e-01 1.733e-01 9.608e-06 6.151e-05       0.0 5.554e-04 8.023e-04       0.0
  z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  -56.0000   44.0000
  z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
  z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
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 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  2.510023l 1.015443n      0.0       0.0       0.0
zp 45.51 ri      0.0  9.94e-09p 0.004954p 1.072043n 1.273350n 0.005121p 1.13e-08p      0.0       0.0       0.0
sig0.350 cc      0.0  9.81e-09p 0.004890p 1.063025p 2.350414p 2.355469p 2.355469p      0.0       0.0       0.0
         rc      0.0  9.94e-09p 0.004954p 1.076998m 2.350348l 2.355469k 2.355469k      0.0       0.0       0.0
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  4.029598l      0.0       0.0       0.0       0.0
zp 44.97 ri 2.18e-05p 0.014648p 0.939022p 2.251227n 0.813864p 0.010815p 1.36e-05p 3.40e-10p 7.98e-11p      0.0
sig0.557 cc 2.18e-05p 0.014670p 0.953692p 3.204918p 4.018783p 4.029598p 4.029611p 3.40e-10p 4.20e-10p 1.85e-10p
         rc 2.18e-05p 0.014670p 0.953692o 3.204919m 4.018783l 4.029598k 4.029611k 3.40e-10p 4.20e-10p 1.85e-10p
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.960019n      0.0       0.0       0.0
zp 45.67 ri 5.39e-08p 0.000124p 0.025226p 0.326879p 0.535045p 0.071687p 0.001057p 7.38e-07p 1.51e-07p 6.31e-11p
sig0.596 cc 5.39e-08p 0.000124p 0.025350p 0.352229p 0.887275p 0.958961p 0.960019p 7.38e-07p 8.90e-07p 3.91e-07p
         rc 5.39e-08p 0.000124p 0.025350p 0.352229p 0.887275o 0.958961n 0.960019m 7.38e-07p 8.90e-07p 3.91e-07p
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.300442n      0.0       0.0       0.0
zp 45.46 ri 4.10e-07p 0.000584p 0.072912p 0.584107p 0.595342p 0.047116p 0.000380p 1.33e-07p 3.12e-08p 5.68e-12p
sig0.592 cc 4.10e-07p 0.000584p 0.073496p 0.657604p 1.252946p 1.300062p 1.300442p 1.33e-07p 1.64e-07p 7.22e-08p
         rc 4.10e-07p 0.000584p 0.073496p 0.657604o 1.252946n 1.300062n 1.300442m 1.33e-07p 1.64e-07p 7.22e-08p
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.105019n      0.0       0.0       0.0
zp 44.99 ri 2.21e-05p 0.011148p 0.420872p 1.258889n 0.403847p 0.010222p 1.93e-05p 1.82e-09p 2.25e-10p      0.0
sig0.585 cc 2.21e-05p 0.011170p 0.432042p 1.690931p 2.094778p 2.105000p 2.105019p 1.82e-09p 2.05e-09p 9.01e-10p
         rc 2.21e-05p 0.011170p 0.432042p 1.690931m 2.094778n 2.105000n 2.105019m 1.82e-09p 2.05e-09p 9.01e-10p
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  3.183519n      0.0       0.0       0.0
zp 44.46 ri 0.001022p 0.145297p 1.557273n 1.365861n 0.113471p 0.000594p 1.93e-07p 2.46e-12p      0.0       0.0
sig0.574 cc 0.001022p 0.146319p 1.703593p 3.069453p 3.182924p 3.183519p 3.183519p 2.46e-12p 3.04e-12p 1.34e-12p
         rc 0.001022p 0.146319p 1.703593m 3.069453l 3.182924l 3.183519l 3.183519l 2.46e-12p 3.04e-12p 1.34e-12p
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  1.932375j      0.0       0.0       0.0       0.0       0.0
zp 44.09 ri 5.33e-06p 0.088920p 1.611504m 0.231893p 5.29e-05p 5.24e-12p      0.0       0.0       0.0       0.0
sig0.350 cc 5.33e-06p 0.088925p 1.700429p 1.932322p 1.932375p 1.932375p 1.932375p      0.0       0.0       0.0
         rc 5.33e-06p 0.088925p 1.700429m 1.932322l 1.932375j 1.932375j 1.932375j      0.0       0.0       0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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          xc      0.0       0.0       0.0       0.0       0.0       0.0  0.058549n      0.0       0.0       0.0
 zp 44.02 ri 0.000150p 0.008941p 0.039288p 0.009980p 0.000190p 1.23e-07p 3.80e-12p      0.0       0.0       0.0
 sig0.541 cc 0.000150p 0.009091p 0.048379p 0.058359p 0.058549p 0.058549p 0.058549p      0.0       0.0       0.0
          rc 0.000150p 0.009091p 0.048379p 0.058359p 0.058549o 0.058549o 0.058549n      0.0       0.0       0.0
  pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  0.199721n      0.0       0.0       0.0
 zp 44.28 ri 3.95e-08p 0.001855p 0.159658p 0.038155p 5.37e-05p 1.57e-11p      0.0       0.0       0.0       0.0
 sig0.350 cc 3.95e-08p 0.001855p 0.161512p 0.199667p 0.199721p 0.199721p 0.199721p      0.0       0.0       0.0
          rc 3.95e-08p 0.001855p 0.161512p 0.199667o 0.199721o 0.199721o 0.199721n      0.0       0.0       0.0
  pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  0.397917n      0.0       0.0       0.0
 zp 44.08 ri 1.25e-06p 0.014001p 0.349628p 0.034276p 1.07e-05p      0.0       0.0       0.0       0.0       0.0
 sig0.350 cc 1.25e-06p 0.014003p 0.363631p 0.397906p 0.397917p 0.397917p 0.397917p      0.0       0.0       0.0
          rc 1.25e-06p 0.014003p 0.363631p 0.397906o 0.397917o 0.397917o 0.397917n      0.0       0.0       0.0

   mo, tc half lives from 80eng2; ru, rh, pd, ag half lives 89wal1.
1

     mass number    113              LA-UR-94-3106 (ENDF-349)                              percent yields
 nuclide       43 tc g   44 ru g   45 rh g   46 pd g   47 ag m   47 ag g   48 cd m   48 cd g   49 in m   49 in g   50 sn g   51 sb g
 half life     0.652s     2.7 s     0.9 s    1.64 m    1.14 m     5.3 h    14.6 y    9.e15y    1.658h    stable    115.1d     6.7 m
 lambda       1.063e+00 2.567e-01 7.702e-01 7.044e-03 1.013e-02 3.633e-05 1.505e-09 2.442e-24 1.161e-04       0.0 6.970e-08
1.724e-03
  z - 1 g    100.0000  100.0000  100.0000  100.0000   10.0000   90.0000    1.3000   98.7000       0.0  100.0000       0.0 -100.0000
  z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0   99.9000 -100.0000       0.0
  z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0    0.1000       0.0  100.0000       0.0       0.0
  cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.466983n      0.0       0.0
 zp 45.72 ri 4.75e-11p 0.000116p 0.115525p 0.345714p 0.004897p 0.000732p 6.61e-08p 1.97e-08p      0.0       0.0       0.0       0.0
 sig0.350 cc 4.75e-11p 0.000116p 0.115640p 0.461354p 0.051032p 0.415950p 0.005407p 0.461581p      0.0  0.466983p      0.0
0.0
          rc 4.75e-11p 0.000116p 0.115640p 0.461354p 0.051032o 0.415950o 0.005407o 0.461581o      0.0  0.466983n      0.0       0.0
  cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.752167p      0.0       0.0
 zp 45.39 ri 0.000546p 0.104521p 0.839902p 0.769737p 0.032462p 0.004851p 0.000113p 3.39e-05p 3.63e-09p 1.55e-08p      0.0
0.0
```

sig0.557 cc 0.000546p 0.105068p 0.944970p 1.714707p 0.203933p 1.548087p 0.020239p 1.731949p 3.63e-09p 1.752167p 0.0
0.0
rc 0.000546p 0.105068p 0.944970o 1.714707n 0.203933n 1.548087n 0.020239n 1.731949n 3.63e-09p 1.752167m 0.0
0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.590016n 0.0 0.0
zp 45.85 ri 5.34e-12p 3.52e-05p 0.088759p 0.484140p 0.015031p 0.002050p 5.38e-07p 1.43e-07p 0.0 0.0 0.0 0.0
sig0.350 cc 5.34e-12p 3.52e-05p 0.088794p 0.572935p 0.072325p 0.517691p 0.006731p 0.583293p 0.0 0.590016p 0.0
0.0
rc 5.34e-12p 3.52e-05p 0.088794p 0.572935o 0.072325o 0.517691o 0.006731o 0.583293o 0.0 0.590016n 0.0 0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.850289n 0.0 0.0
zp 45.77 ri 3.73e-11p 0.000129p 0.179142p 0.656777p 0.012390p 0.001851p 2.34e-07p 6.99e-08p 0.0 0.0 0.0 0.0
sig0.350 cc 3.73e-11p 0.000129p 0.179270p 0.836047p 0.095995p 0.754294p 0.009806p 0.840492p 0.0 0.850289p 0.0
0.0
rc 3.73e-11p 0.000129p 0.179270p 0.836047o 0.095995n 0.754294o 0.009806n 0.840492n 0.0 0.850289m 0.0 0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.503585n 0.0 0.0
zp 45.42 ri 0.000752p 0.087672p 0.731692p 0.635452p 0.043909p 0.003818p 0.000250p 4.07e-05p 1.14e-08p 9.23e-08p 2.36e-12p
0.0
sig0.585 cc 0.000752p 0.088424p 0.820116p 1.455567p 0.189466p 1.313829p 0.017330p 1.486273p 1.14e-08p 1.503585p 2.36e-
12p 0.0
rc 0.000752p 0.088424p 0.820116o 1.455567n 0.189466n 1.313829n 0.017330n 1.486273n 1.14e-08p 1.503585m 2.36e-12p
0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.387639n 0.0 0.0
zp 44.91 ri 0.016314p 0.562185p 1.436152n 0.366365p 0.005755p 0.000860p 6.08e-06p 1.81e-06p 8.95e-11p 3.81e-10p 0.0
0.0
sig0.574 cc 0.016314p 0.578499p 2.014651p 2.381016p 0.243857p 2.143774p 0.027875p 2.359792p 8.95e-11p 2.387639p 0.0
0.0
rc 0.016314p 0.578499o 2.014651m 2.381016m 0.243857m 2.143774m 0.027875m 2.359792m 8.95e-11p 2.387639l 0.0
0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.607292k 0.0 0.0 0.0 1.778067j 0.0 0.0
zp 44.30 ri 0.019845p 1.256661n 0.503132p 0.000530p 2.40e-10p 3.59e-11p 0.0 0.0 0.0 0.0 0.0 0.0

sig0.350 cc 0.019847p 1.276600p 1.779638p 1.780168p 0.178017p 1.602151p 0.020828p 1.759360p 0.0 1.780168p 0.0
0.0
rc 0.019845p 1.276506m 1.779638m 1.780168l 0.178017m 1.602151k 0.020828k 1.759360j 0.0 1.780168i 0.0 0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.039033n 0.0 0.0
zp 44.54 ri 0.001118p 0.016214p 0.020308p 0.001387p 5.23e-06p 7.81e-07p 6.27e-10p 1.87e-10p 0.0 0.0 0.0 0.0
sig0.541 cc 0.001118p 0.017332p 0.037639p 0.039027p 0.003908p 0.035125p 0.000457p 0.038576p 0.0 0.039033p 0.0
0.0
rc 0.001118p 0.017332p 0.037639p 0.039027o 0.003908o 0.035125o 0.000457o 0.038576o 0.0 0.039033n 0.0 0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.109891n 0.0 0.0
zp 44.48 ri 0.000241p 0.064231p 0.045201p 0.000218p 3.16e-10p 4.72e-11p 0.0 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.000241p 0.064472p 0.109673p 0.109891p 0.010989p 0.098902p 0.001286p 0.108607p 0.0 0.109891p 0.0
0.0
rc 0.000241p 0.064472p 0.109673p 0.109891o 0.010989o 0.098902o 0.001286o 0.108607n 0.0 0.109891m 0.0 0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.259043n 0.0 0.0
zp 44.29 ri 0.002586p 0.194903p 0.061476p 7.66e-05p 2.69e-11p 4.02e-12p 0.0 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.002586p 0.197489p 0.258966p 0.259042p 0.025904p 0.233138p 0.003031p 0.256015p 0.0 0.259042p 0.0
0.0
rc 0.002586p 0.197489p 0.258966o 0.259042o 0.025904o 0.233138o 0.003031o 0.256015n 0.0 0.259042m 0.0 0.0

tc half life from 80eng2; ru, rh, pd, ag half lives 89wal1; sn, in half lives 90bur1.

1

mass number 114 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	42 mo g	43 tc g	44 ru g	45 rh g	46 pd g	47 ag g	48 cd g	49 in m	49 in g	50 sn g
half life	0.377s	0.202s	8.14 s	1.8 s	2.48 m	4.6 s	stable	49.51d	71.9 s	stable
lambda	1.839e+00	3.431e+00	8.515e-02	3.851e-01	4.658e-03	1.507e-01	0.0	1.620e-07	9.640e-03	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	-3.5000	-2.0000	98.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	96.5000	0.0

cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.177819n 0.0 0.0 0.0
zp 45.92 ri 0.0 0.0 4.44e-06p 0.017968p 0.152229p 0.007617p 5.69e-07p 0.0 0.0 0.0

```
sig0.350 cc      0.0       0.0  4.44e-06p 0.017972p 0.170201p 0.177818p 0.177819p      0.0       0.0       0.0
         rc      0.0       0.0  4.44e-06p 0.017972p 0.170201p 0.177818o 0.177819n      0.0       0.0       0.0
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.242047p      0.0       0.0       0.0
zp 45.72 ri      0.0  1.04e-10p 0.000319p 0.259851p 0.968986p 0.012892p 2.46e-07p      0.0       0.0       0.0
sig0.350 cc      0.0  1.04e-10p 0.000319p 0.260169p 1.229155p 1.242046p 1.242047p      0.0       0.0       0.0
         rc      0.0  1.04e-10p 0.000319p 0.260169p 1.229155n 1.242046n 1.242047n      0.0       0.0       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.350010n      0.0       0.0       0.0
zp 46.02 ri      0.0       0.0  2.57e-06p 0.022015p 0.301601p 0.026387p 3.96e-06p      0.0       0.0       0.0
sig0.350 cc      0.0       0.0  2.57e-06p 0.022017p 0.323618p 0.350006p 0.350010p      0.0       0.0       0.0
         rc      0.0       0.0  2.57e-06p 0.022017p 0.323618p 0.350006o 0.350010n      0.0       0.0       0.0
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.540259n      0.0       0.0       0.0
zp 45.97 ri      0.0       0.0  7.68e-06p 0.044724p 0.464765p 0.030760p 3.13e-06p      0.0       0.0       0.0
sig0.350 cc      0.0       0.0  7.68e-06p 0.044731p 0.509496p 0.540256p 0.540259p      0.0       0.0       0.0
         rc      0.0       0.0  7.68e-06p 0.044731p 0.509496p 0.540256o 0.540259n      0.0       0.0       0.0
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.002390n      0.0       0.0       0.0
zp 45.73 ri      0.0  8.61e-11p 0.000218p 0.247276p 0.741310p 0.013585p 2.15e-07p      0.0       0.0       0.0
sig0.350 cc      0.0  8.61e-11p 0.000218p 0.247494p 0.988805p 1.002390p 1.002390p      0.0       0.0       0.0
         rc      0.0  8.61e-11p 0.000218p 0.247494p 0.988805n 1.002390n 1.002390m      0.0       0.0       0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.687618n      0.0       0.0       0.0
zp 45.37 ri 4.84e-07p 0.000918p 0.110155p 0.868686p 0.667075p 0.040605p 0.000179p 3.09e-08p 1.03e-08p      0.0
sig0.574 cc 4.84e-07p 0.000919p 0.111074p 0.979759p 1.646834p 1.687439p 1.687618p 3.09e-08p 4.01e-08p 3.93e-08p
         rc 4.84e-07p 0.000919p 0.111074p 0.979759o 1.646834n 1.687439n 1.687618m 3.09e-08p 4.01e-08p 3.93e-08o
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.425523n      0.0       0.0       0.0
zp 44.51 ri 6.54e-09p 0.002783p 0.695083p 0.724373p 0.003283p 8.90e-09p      0.0       0.0       0.0       0.0
sig0.350 cc 6.54e-09p 0.002783p 0.697866p 1.422239p 1.425522p 1.425522p 1.425522p      0.0       0.0       0.0
         rc 6.54e-09p 0.002783p 0.697866o 1.422239n 1.425522n 1.425522n 1.425522m      0.0       0.0       0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.034154n      0.0       0.0       0.0
zp 45.02 ri 5.80e-08p 8.05e-05p 0.006097p 0.021069p 0.006805p 0.000102p 8.39e-08p 1.53e-12p      0.0       0.0
sig0.541 cc 5.80e-08p 8.05e-05p 0.006178p 0.027246p 0.034052p 0.034153p 0.034154p 1.53e-12p 1.98e-12p 1.94e-12p
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        rc 5.80e-08p 8.05e-05p 0.006178p 0.027246p 0.034052o 0.034153o 0.034154n 1.53e-12p 1.98e-12p 1.94e-12o
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.099860n      0.0       0.0       0.0
zp 44.71 ri 4.26e-06p 0.001191p 0.042349p 0.046662p 0.009603p 5.13e-05p 3.10e-08p      0.0       0.0       0.0
sig0.555 cc 4.26e-06p 0.001195p 0.043544p 0.090206p 0.099809p 0.099860p 0.099860p      0.0       0.0       0.0
        rc 4.26e-06p 0.001195p 0.043544p 0.090206p 0.099809o 0.099860o 0.099860n      0.0       0.0       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.149219n      0.0       0.0       0.0
zp 44.49 ri 1.05e-09p 0.000277p 0.088386p 0.060207p 0.000349p 5.87e-10p      0.0       0.0       0.0       0.0
sig0.350 cc 1.05e-09p 0.000277p 0.088663p 0.148870p 0.149219p 0.149219p 0.149219p      0.0       0.0       0.0
        rc 1.05e-09p 0.000277p 0.088663p 0.148870p 0.149219o 0.149219o 0.149219n      0.0       0.0       0.0

  mo, tc, ru half lives from 80eng2; rh, pd, ag half lives 89wal1.
1

    mass number    115              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide      44 ru g   45 rh g   46 pd g   47 ag m   47 ag g   48 cd m   48 cd g   49 in m   49 in g   50 sn g   51 sb g   52 te g
half life     0.878s    0.99 s     47. s    18.7 s     20. m    44.6 d    2.228d    4.486h    5.e14y    stable     32. m      6. m
lambda      7.895e-01 7.001e-01 1.475e-02 3.707e-02 5.776e-04 1.799e-07 3.601e-06 4.292e-05 4.396e-23       0.0 3.610e-04
1.925e-03
 z - 1 g    100.0000  100.0000  100.0000   27.0000   73.0000    9.5000   90.5000  100.0000       0.0  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0    5.0000   95.0000    0.0100   99.9900    3.7000       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   96.3000       0.0       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.308157p      0.0  0.125904n      0.0       0.0
zp 46.10 ri 3.63e-07p 0.006020p 0.139039p 0.008838p 0.008838p 3.69e-06p 1.10e-06p      0.0       0.0       0.0       0.0       0.0
sig0.350 cc 3.92e-07p 0.006499p 0.143655p 0.048327p 0.114408p 0.013289p 0.149450p 0.149452p 0.157210p 0.162740p      0.0
0.0
        rc 3.63e-07p 0.006021p 0.145060o 0.048004o 0.114731o 0.013303n 0.149436n 0.149438n 0.157210n 0.162740m      0.0
0.0
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.813718p      0.0       0.0
zp 45.92 ri 2.00e-05p 0.079472p 0.699924o 0.017149p 0.017149p 2.06e-06p 6.15e-07p      0.0       0.0       0.0       0.0       0.0
sig0.350 cc 2.00e-05p 0.079492p 0.779416p 0.227592p 0.586123p 0.067063p 0.746654p 0.746661p 0.786091p 0.813718p      0.0
0.0
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rc 2.00e-05p 0.079492p 0.779416n 0.227592n 0.586123n 0.067063n 0.746654m 0.746661m 0.786091m 0.813718m 0.0
0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.210004n 0.0 0.0
zp 46.19 ri 1.50e-07p 0.004878p 0.168620p 0.018244p 0.018244p 1.46e-05p 3.88e-06p 0.0 3.05e-12p 0.0 0.0 0.0
sig0.350 cc 1.50e-07p 0.004878p 0.173498p 0.065088p 0.144897p 0.017034p 0.192970p 0.192972p 0.202864p 0.210004p 0.0
0.0
rc 1.50e-07p 0.004878p 0.173498p 0.065088o 0.144897o 0.017034o 0.192970n 0.192972n 0.202864n 0.210004m 0.0
0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.340115n 0.0 0.0
zp 46.15 ri 4.39e-07p 0.010360p 0.280336p 0.024700p 0.024700p 1.42e-05p 4.24e-06p 0.0 2.13e-12p 0.0 0.0 0.0
sig0.350 cc 4.39e-07p 0.010361p 0.290696p 0.103188p 0.236909p 0.027680p 0.312436p 0.312438p 0.328555p 0.340115p 0.0
0.0
rc 4.39e-07p 0.010361p 0.290696p 0.103188o 0.236909o 0.027680o 0.312436n 0.312438n 0.328555n 0.340115m 0.0
0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.651099n 0.0 0.0
zp 45.93 ri 1.40e-05p 0.068470p 0.549932o 0.016340p 0.016340p 2.04e-06p 3.33e-07p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 1.40e-05p 0.068484p 0.618416p 0.183312p 0.467784p 0.053607p 0.597491p 0.597497p 0.628991p 0.651098p 0.0
0.0
rc 1.40e-05p 0.068484p 0.618416n 0.183312n 0.467784n 0.053607n 0.597491m 0.597497m 0.628991m 0.651098l 0.0
0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.094335n 0.0 0.0
zp 45.73 ri 0.000237p 0.269703p 0.809535o 0.007430p 0.007430p 1.81e-07p 5.41e-08p 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.000237p 0.269940p 1.079475p 0.298888p 0.795446p 0.090512p 1.003823p 1.003832p 1.057193p 1.094334p 0.0
0.0
rc 0.000237p 0.269940p 1.079475n 0.298888n 0.795446n 0.090512n 1.003823m 1.003832m 1.057193m 1.094334l 0.0
0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.111003o 1.130209l 0.0 0.0 0.0 0.0 0.0
zp 44.73 ri 0.316890p 0.903474p 0.017029p 1.27e-07p 1.27e-07p 0.0 0.0 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.316740p 1.220372p 1.237393p 0.334096p 0.903297p 0.102518p 1.134875p 1.134885p 1.195402p 1.237393p 0.0
0.0

rc 0.316890p 1.220364n 1.237393n 0.334096n 0.903297n 0.102518m 1.134875k 1.134885k 1.195402k 1.237393k 0.0
0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.012988k 0.0 0.0 0.024786n 0.0 0.0
zp 45.46 ri 0.000575p 0.008447p 0.006766p 0.000234p 0.000234p 9.55e-07p 2.85e-07p 3.12e-11p 1.33e-10p 0.0 0.0 0.0
sig0.541 cc 0.000575p 0.009022p 0.015788p 0.004497p 0.011759p 0.001343p 0.014914p 0.014914p 0.015705p 0.016257p 0.0
0.0
rc 0.000575p 0.009022p 0.015788p 0.004497p 0.011759p 0.001343p 0.014914k 0.014914k 0.015705k 0.016257k 0.0
0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.069931n 0.0 0.0
zp 45.22 ri 0.007828p 0.037328p 0.024115p 0.000329p 0.000329p 1.24e-06p 3.71e-07p 2.01e-11p 8.58e-11p 0.0 0.0 0.0
sig0.555 cc 0.007828p 0.045156p 0.069271p 0.019032p 0.050897p 0.005788p 0.064143p 0.064143p 0.067558p 0.069931p 0.0
0.0
rc 0.007828p 0.045156p 0.069271o 0.019032o 0.050897o 0.005788o 0.064143n 0.064143n 0.067558n 0.069931m 0.0
0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.119558n 0.0 0.0
zp 44.67 ri 0.042553p 0.075764p 0.001242p 4.88e-09p 4.88e-09p 0.0 0.0 0.0 0.0 0.0 0.0 0.0
sig0.350 cc 0.042553p 0.118316p 0.119558p 0.032281p 0.087277p 0.009905p 0.109653p 0.109654p 0.115501p 0.119558p 0.0
0.0
rc 0.042553p 0.118316p 0.119558o 0.032281o 0.087277o 0.009905o 0.109653o 0.109654n 0.115501n 0.119558m 0.0
0.0

ru half life 80eng2; ag-115g branching 80tob1; ag-115m branching to fit data; rh, pd, ag, cd, in half lives 89wal1.

1

mass number 116 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 42 mo g 43 tc g 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd g 49 in m 49 in g 50 sn g
half life 0.115s 1.70 s 0.7 s 12.7 s 10.5 s 2.68 m stable 54.2 m 14.2 s stable
lambda 0.0 6.027e+00 4.077e-01 9.902e-01 5.458e-02 6.601e-02 4.311e-03 0.0 2.131e-04 4.881e-02 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 50.0000 50.0000 100.0000 0.0 0.0 100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 100.0000
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.069466n 0.0 0.0 0.0
zp 46.28 ri 0.0 0.0 1.29e-08p 0.000799p 0.052200p 0.008225p 0.008225p 1.76e-05p 3.40e-12p 3.40e-12p 0.0
sig0.350 cc 0.0 0.0 1.29e-08p 0.000799p 0.052998p 0.034724p 0.034724p 0.069466p 3.40e-12p 3.40e-12p 6.79e-12p
rc 0.0 0.0 1.29e-08p 0.000799p 0.052998p 0.034724p 0.034724p 0.069466n 3.40e-12p 3.40e-12p 6.79e-12o
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.070974p 0.0 0.0 0.0
zp 46.11 ri 0.0 0.0 1.50e-07p 0.002203p 0.061435p 0.003667p 0.003667p 2.68e-06p 0.0 0.0 0.0
sig0.350 cc 0.0 0.0 1.50e-07p 0.002203p 0.063638p 0.035486p 0.035486p 0.070974p 0.0 0.0 0.0
rc 0.0 0.0 1.50e-07p 0.002203p 0.063638p 0.035486p 0.035486p 0.070974n 0.0 0.0 0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.130004n 0.0 0.0 0.0
zp 46.35 ri 0.0 0.0 8.67e-09p 0.000926p 0.089425p 0.019793p 0.019793p 6.59e-05p 2.22e-11p 2.22e-11p 0.0
sig0.350 cc 0.0 0.0 8.67e-09p 0.000926p 0.090351p 0.064969p 0.064969p 0.130004p 2.22e-11p 2.22e-11p 4.44e-11p
rc 0.0 0.0 8.67e-09p 0.000926p 0.090351p 0.064969p 0.064969p 0.130004n 2.22e-11p 2.22e-11p 4.44e-11o
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.210071n 0.0 0.0 0.0
zp 46.34 ri 0.0 0.0 1.68e-08p 0.001637p 0.146773p 0.030783p 0.030783p 9.44e-05p 2.90e-11p 2.90e-11p 0.0
sig0.350 cc 0.0 0.0 1.68e-08p 0.001637p 0.148410p 0.104988p 0.104988p 0.210071p 2.90e-11p 2.90e-11p 5.80e-11p
rc 0.0 0.0 1.68e-08p 0.001637p 0.148410p 0.104988o 0.104988o 0.210071m 2.90e-11p 2.90e-11p 5.80e-11o
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.400956n 0.0 0.0 0.0
zp 46.12 ri 0.0 0.0 7.17e-07p 0.014678p 0.332218p 0.027021p 0.027021p 1.63e-05p 0.0 0.0 0.0
sig0.350 cc 0.0 0.0 7.17e-07p 0.014679p 0.346897p 0.200470p 0.200470p 0.400956p 0.0 0.0 2.00e-12p
rc 0.0 0.0 7.17e-07p 0.014679p 0.346897o 0.200470o 0.200470o 0.400956m 0.0 0.0 2.00e-12o
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.734610n 0.0 0.0 0.0
zp 45.95 ri 0.0 0.0 1.23e-05p 0.069840p 0.623307o 0.020724p 0.020724p 3.51e-06p 0.0 0.0 0.0
sig0.350 cc 0.0 0.0 1.23e-05p 0.069852p 0.693159p 0.367303p 0.367303p 0.734610p 0.0 0.0 0.0
rc 0.0 0.0 1.23e-05p 0.069852p 0.693159n 0.367303n 0.367303n 0.734610m 0.0 0.0 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.916407n 0.0 0.0 0.0
zp 44.98 ri 2.90e-05p 0.007767p 0.193581p 0.531407p 0.177142p 0.003229p 0.003229p 2.18e-05p 3.08e-09p 3.08e-09p 0.0
sig0.620 cc 2.90e-05p 0.007796p 0.201378p 0.732784p 0.909927p 0.458193p 0.458193p 0.916407p 3.08e-09p 3.08e-09p 6.16e-09p
rc 2.90e-05p 0.007796p 0.201378p 0.732785o 0.909927n 0.458193n 0.458193n 0.916407m 3.08e-09p 3.08e-09p 6.16e-09o
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.019658n 0.0 0.0 0.0
zp 45.89 ri 3.71e-12p 8.95e-08p 0.000104p 0.004179p 0.013011p 0.001167p 0.001167p 2.99e-05p 6.36e-09p 6.36e-09p 0.0
sig0.541 cc 3.71e-12p 8.95e-08p 0.000104p 0.004283p 0.017294p 0.009814p 0.009814p 0.019658p 6.36e-09p 6.36e-09p 1.27e-08p
rc 3.71e-12p 8.95e-08p 0.000104p 0.004283p 0.017294p 0.009814p 0.009814p 0.019658m 6.36e-09p 6.36e-09p 1.27e-08o
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.049930n 0.0 0.0 0.0
zp 45.70 ri 2.35e-10p 1.40e-06p 0.000890p 0.013115p 0.033064p 0.001413p 0.001413p 3.44e-05p 4.29e-09p 4.29e-09p 0.0
sig0.555 cc 2.35e-10p 1.40e-06p 0.000891p 0.014006p 0.047071p 0.024948p 0.024948p 0.049930p 4.29e-09p 4.29e-09p 8.57e-09p
rc 2.35e-10p 1.40e-06p 0.000891p 0.014006p 0.047071p 0.024948p 0.024948p 0.049930n 4.29e-09p 4.29e-09p 8.57e-09o
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.079705n 0.0 0.0 0.0
zp 45.16 ri 6.51e-08p 8.69e-05p 0.011063p 0.042294p 0.025738p 0.000261p 0.000261p 1.08e-06p 2.37e-11p 2.37e-11p 0.0
sig0.551 cc 6.51e-08p 8.70e-05p 0.011150p 0.053444p 0.079182p 0.039852p 0.039852p 0.079705p 2.37e-11p 2.37e-11p 4.74e-11p
rc 6.51e-08p 8.70e-05p 0.011150p 0.053444p 0.079182o 0.039852o 0.039852o 0.079705m 2.37e-11p 2.37e-11p 4.74e-11o

tc, ru half lives from 80eng2; rh, pd, ag half lives from 89wal1.
1

mass number 117 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag m 47 ag g 48 cd m 48 cd g 49 in m 49 in g 50 sn g 51 sb g 52 te g
half life 0.343s 1.22 s 5. s 5.3 s 1.22 m 3.4 h 2.49 h 1.94 h 44. m stable 2.80 h 64. m
lambda 2.021e+00 5.682e-01 1.386e-01 1.308e-01 9.469e-03 5.663e-05 7.733e-05 9.925e-05 2.626e-04 0.0 6.876e-05
1.805e-04
z - 1 g 100.0000 100.0000 100.0000 50.0000 50.0000 50.0000 50.0000 92.0000 8.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 1.0000 99.0000 53.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 47.0000 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.045783n 0.0 0.0
zp 46.44 ri 6.87e-10p 0.000156p 0.026841p 0.009364p 0.009364p 4.47e-05p 1.33e-05p 1.59e-11p 6.79e-11p 0.0 0.0 0.0
sig0.350 cc 6.87e-10p 0.000156p 0.026997p 0.022863p 0.022863p 0.011476p 0.034307p 0.031678p 0.028994p 0.045783p 0.0
0.0
rc 6.87e-10p 0.000156p 0.026997p 0.022863p 0.022863p 0.011476o 0.034307o 0.031678o 0.028994n 0.045783m 0.0
0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.025342p 0.0 0.0
zp 46.30 ri 3.43e-09p 0.000243p 0.018748p 0.003172p 0.003172p 6.28e-06p 1.88e-06p 0.0 2.94e-12p 0.0 0.0 0.0

sig0.350 cc 3.43e-09p 0.000243p 0.018991p 0.012667p 0.012667p 0.006340p 0.019002p 0.017546p 0.016043p 0.025342p 0.0
0.0
rc 3.43e-09p 0.000243p 0.018991p 0.012667p 0.012667p 0.006340o 0.019002o 0.017546o 0.016043n 0.025342m 0.0
0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.088002n 0.0 0.0
zp 46.50 ri 5.16e-10p 0.000184p 0.045876p 0.020876p 0.020876p 0.000149p 3.96e-05p 7.29e-11p 3.56e-10p 0.0 0.0 0.0
sig0.350 cc 5.16e-10p 0.000184p 0.046061p 0.043907p 0.043907p 0.022102p 0.065899p 0.060849p 0.055752p 0.088002p 0.0
0.0
rc 5.16e-10p 0.000184p 0.046061p 0.043907p 0.043907p 0.022102p 0.065899o 0.060849o 0.055752n 0.088002m 0.0
0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.140048n 0.0 0.0
zp 46.52 ri 6.04e-10p 0.000249p 0.070129p 0.034657p 0.034657p 0.000273p 8.15e-05p 1.77e-10p 7.53e-10p 0.0 0.0 0.0
sig0.350 cc 6.04e-10p 0.000249p 0.070378p 0.069847p 0.069847p 0.035196p 0.104851p 0.096815p 0.088735p 0.140048p 0.0
0.0
rc 6.04e-10p 0.000249p 0.070378p 0.069847p 0.069847p 0.035196p 0.104851o 0.096815o 0.088735n 0.140048m 0.0
0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.250423n 0.0 0.0
zp 46.30 ri 3.29e-08p 0.002673p 0.178409p 0.034632p 0.034632p 6.62e-05p 1.08e-05p 4.32e-12p 3.49e-11p 0.0 0.0 0.0
sig0.350 cc 3.29e-08p 0.002673p 0.181082p 0.125173p 0.125173p 0.062653p 0.187770p 0.173375p 0.158534p 0.250423p 0.0
0.0
rc 3.29e-08p 0.002673p 0.181082p 0.125173o 0.125173o 0.062653o 0.187770n 0.173375n 0.158534m 0.250423l 0.0
0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.457631n 0.0 0.0
zp 46.16 ri 4.67e-07p 0.012974p 0.370884p 0.036871p 0.036871p 2.30e-05p 6.86e-06p 0.0 4.08e-12p 0.0 0.0 0.0
sig0.350 cc 4.67e-07p 0.012974p 0.383858p 0.228800p 0.228800p 0.114423p 0.343208p 0.316895p 0.289676p 0.457631p 0.0
0.0
rc 4.67e-07p 0.012974p 0.383858o 0.228800o 0.228800o 0.114423o 0.343208n 0.316895n 0.289676m 0.457631l 0.0
0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.810313n 0.0 0.0
zp 45.55 ri 0.036309p 0.343031p 0.380294p 0.025005p 0.025005p 0.000514p 0.000153p 1.49e-07p 6.33e-07p 7.46e-11p 0.0
0.0

sig0.620 cc 0.036309p 0.379340p 0.759635p 0.404822p 0.404822p 0.202925p 0.607387p 0.560825p 0.513075p 0.810312p 0.0
0.0
rc 0.036309p 0.379340p 0.759635o 0.404822o 0.404822o 0.202925o 0.607387n 0.560825n 0.513075m 0.810312l 0.0
0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.017782n 0.0 0.0
zp 46.32 ri 6.42e-06p 0.001222p 0.009542p 0.003383p 0.003383p 0.000189p 5.66e-05p 1.01e-07p 4.30e-07p 3.49e-11p 0.0
0.0
sig0.541 cc 6.42e-06p 0.001228p 0.010770p 0.008768p 0.008768p 0.004573p 0.013208p 0.012198p 0.011318p 0.017782p 0.0
0.0
rc 6.42e-06p 0.001228p 0.010770p 0.008768p 0.008768p 0.004573o 0.013208o 0.012198o 0.011318n 0.017782l 0.0
0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.042970n 0.0 0.0
zp 46.17 ri 6.14e-05p 0.004070p 0.028742p 0.004854p 0.004854p 0.000299p 8.93e-05p 9.21e-08p 3.93e-07p 4.59e-11p 0.0
0.0
sig0.555 cc 6.14e-05p 0.004132p 0.032874p 0.021291p 0.021291p 0.010944p 0.032025p 0.029573p 0.027296p 0.042970p 0.0
0.0
rc 6.14e-05p 0.004132p 0.032874p 0.021291p 0.021291p 0.010944o 0.032025o 0.029573o 0.027296n 0.042970l 0.0
0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.049870n 0.0 0.0
zp 45.65 ri 0.000983p 0.016389p 0.029759p 0.001359p 0.001359p 1.67e-05p 5.00e-06p 9.88e-10p 4.21e-09p 0.0 0.0 0.0
sig0.551 cc 0.000983p 0.017372p 0.047131p 0.024924p 0.024924p 0.012479p 0.037391p 0.034525p 0.031572p 0.049870p 0.0
0.0
rc 0.000983p 0.017372p 0.047131p 0.024924p 0.024924p 0.012479o 0.037391o 0.034525n 0.031572n 0.049870l 0.0
0.0

ag-to-cd branching from 80eng2; ru half life from 80eng2; rh, pd, ag, cd, in half lives 89wal1.

1

mass number 118 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	44 ru g	45 rh g	46 pd g	47 ag m	47 ag g	48 cd g	49 in m	49 in g	50 sn g	51 sb m	51 sb g	52 te g
half life	0.662s	0.316s	2.4 s	2.4 s	4.0 s	50.3 m	4.4 m	5.0 s	stable	5.00 h	3.6 m	6.00 d

lambda 1.047e+00 2.194e+00 2.888e-01 2.888e-01 1.733e-01 2.297e-04 2.626e-03 1.386e-01 0.0 3.851e-05 3.209e-03 1.337e-06
z - 1 g 100.0000 100.0000 100.0000 50.0000 50.0000 100.0000 0.0 100.0000 100.0000 -100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 54.0000 0.0 0.0 100.0000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 46.0000 0.0 0.0 0.0 0.0 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.032313n 0.0 0.0 0.0
zp 46.95 ri 6.52e-07p 0.000221p 0.007661p 0.009096p 0.009096p 0.006100p 3.43e-05p 0.000103p 3.10e-07p 2.03e-11p 1.41e-11p 0.0
sig0.594 cc 6.52e-07p 0.000222p 0.007883p 0.013037p 0.019034p 0.032175p 3.43e-05p 0.032278p 0.032313p 2.03e-11p 1.41e-11p 0.0
rc 6.52e-07p 0.000222p 0.007883p 0.013037p 0.019034p 0.032175o 3.43e-05p 0.032278n 0.032313m 2.03e-11p 1.41e-11p 0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.008606p 0.0 0.0 0.0
zp 46.48 ri 7.14e-11p 1.81e-05p 0.005098p 0.001736p 0.001736p 1.77e-05p 7.16e-12p 2.15e-11p 0.0 0.0 0.0 0.0
sig0.350 cc 7.14e-11p 1.81e-05p 0.005116p 0.004294p 0.006269p 0.008606p 7.16e-12p 0.008606p 0.008606p 0.0 0.0 0.0
rc 7.14e-11p 1.81e-05p 0.005116p 0.004294p 0.006269o 0.008606n 7.16e-12p 0.008606n 0.008606n 0.0 0.0 0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.068001n 0.0 0.0 0.0
zp 46.65 ri 3.05e-11p 3.39e-05p 0.024735p 0.021346p 0.021346p 0.000540p 8.34e-10p 2.96e-09p 0.0 0.0 0.0 0.0
sig0.350 cc 3.05e-11p 3.39e-05p 0.024769p 0.033731p 0.049247p 0.068001p 8.34e-10p 0.068001p 0.068001p 0.0 0.0 0.0
rc 3.05e-11p 3.39e-05p 0.024769p 0.033731p 0.049247o 0.068001o 8.34e-10p 0.068001n 0.068001m 0.0 0.0 0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.095032n 0.0 0.0 0.0
zp 46.74 ri 8.07e-06p 0.001655p 0.033255p 0.025078p 0.025078p 0.009830p 3.22e-05p 9.67e-05p 1.52e-07p 5.32e-12p 3.69e-12p 0.0
sig0.592 cc 8.07e-06p 0.001663p 0.034918p 0.042537p 0.062104p 0.094903p 3.22e-05p 0.095000p 0.095032p 5.32e-12p 3.69e-12p 0.0
rc 8.07e-06p 0.001663p 0.034918p 0.042537p 0.062104o 0.094903n 3.22e-05p 0.095000n 0.095032m 5.32e-12p 3.70e-12p 0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.150359n 0.0 0.0 0.0
zp 46.46 ri 1.57e-09p 0.000440p 0.082859p 0.033416p 0.033416p 0.000228p 6.11e-11p 3.46e-10p 0.0 0.0 0.0 0.0

sig0.350 cc 1.57e-09p 0.000440p 0.083299p 0.075065p 0.109596p 0.150359p 6.11e-11p 0.150359p 0.150359p 0.0 0.0 0.0
rc 1.57e-09p 0.000440p 0.083299p 0.075065p 0.109596o 0.150359n 6.11e-11p 0.150359n 0.150359m 0.0 0.0 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.277961n 0.0 0.0 0.0
zp 46.35 ri 1.68e-08p 0.002017p 0.185121p 0.045339p 0.045339p 0.000144p 2.72e-11p 8.17e-11p 0.0 0.0 0.0 0.0
sig0.350 cc 1.68e-08p 0.002017p 0.187138p 0.138908p 0.202806p 0.277961p 2.72e-11p 0.277961p 0.277961p 0.0 0.0 0.0
rc 1.68e-08p 0.002017p 0.187138p 0.138908o 0.202806o 0.277961n 2.72e-11p 0.277961n 0.277961m 0.0 0.0 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.712761n 0.0 0.0 0.0
zp 46.11 ri 0.003351p 0.112720p 0.408402p 0.089718p 0.089718p 0.008811p 1.02e-05p 3.06e-05p 1.60e-08p 0.0 0.0 0.0
sig0.620 cc 0.003351p 0.116071p 0.524472p 0.351955p 0.513854p 0.712720p 1.02e-05p 0.712751p 0.712761p 0.0 0.0 0.0
rc 0.003351p 0.116071p 0.524472p 0.351955o 0.513854o 0.712720n 1.02e-05p 0.712751n 0.712761m 0.0 0.0 0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.016709n 0.0 0.0 0.0
zp 46.76 ri 2.61e-07p 0.000157p 0.005475p 0.004769p 0.004769p 0.001528p 2.58e-06p 7.75e-06p 3.66e-09p 0.0 0.0 0.0
sig0.541 cc 2.61e-07p 0.000157p 0.005632p 0.007585p 0.011075p 0.016699p 2.58e-06p 0.016707p 0.016709p 0.0 0.0 0.0
rc 2.61e-07p 0.000157p 0.005632p 0.007585p 0.011075o 0.016699n 2.58e-06p 0.016707n 0.016709m 0.0 0.0 0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.041959n 0.0 0.0 0.0
zp 46.64 ri 2.98e-06p 0.000676p 0.019807p 0.009163p 0.009163p 0.003133p 3.40e-06p 1.02e-05p 6.61e-09p 0.0 0.0 0.0
sig0.555 cc 2.98e-06p 0.000679p 0.020486p 0.019406p 0.028333p 0.041945p 3.40e-06p 0.041955p 0.041959p 0.0 0.0 0.0
rc 2.98e-06p 0.000679p 0.020486p 0.019406p 0.028333o 0.041945n 3.40e-06p 0.041955n 0.041959m 0.0 0.0 0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.049816n 0.0 0.0 0.0
zp 46.12 ri 8.97e-05p 0.005001p 0.034918p 0.004730p 0.004730p 0.000348p 7.84e-08p 2.35e-07p 2.45e-11p 0.0 0.0 0.0
sig0.551 cc 8.97e-05p 0.005091p 0.040009p 0.024734p 0.036112p 0.049816p 7.84e-08p 0.049816p 0.049816p 0.0 0.0 0.0
rc 8.97e-05p 0.005091p 0.040009p 0.024734p 0.036112o 0.049816n 7.84e-08p 0.049816n 0.049816m 0.0 0.0 0.0

ru, rh, ag half lives 80eng2; pd, ag, cd, in half lives 89wal1; sb half life 90bur1.

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     mass number    119              LA-UR-94-3106 (ENDF-349)                              percent yields
 nuclide       44 ru g   45 rh g   46 pd g   47 ag g   48 cd m   48 cd g   49 in m   49 in g   50 sn m   50 sn g   51 sb g   52  te g
 half life     0.195s    0.465s    1.76 s      2.1s    2.20 m    2.69 m    17.9 m     2.3 m    293. d    stable    38.1 h     16. h
 lambda       3.555e+00 1.491e+00 3.938e-01 3.301e-01 5.251e-03 4.295e-03 6.454e-04 5.023e-03 2.738e-08       0.0 5.054e-06
1.203e-05
  z - 1 g    100.0000  100.0000  100.0000  100.0000   50.0000   50.0000  100.0000       0.0    5.0000   95.0000 -100.0000 -100.0000
  z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0   95.0000       0.0       0.0
  z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0    5.0000       0.0  100.0000       0.0       0.0
  cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.027294n      0.0       0.0
 zp 47.56 ri 3.64e-09p 6.78e-06p 0.001049p 0.010993p 0.006884p 0.006884p 0.000278p 0.001184p 1.19e-05p 3.56e-06p 9.62e-09p
0.0
 sig0.594 cc 3.64e-09p 6.79e-06p 0.001056p 0.012049p 0.012908p 0.012908p 0.013186p 0.014752p 0.000750p 0.027294p 9.62e-
09p      0.0
          rc 3.64e-09p 6.79e-06p 0.001056p 0.012049p 0.012908p 0.012908p 0.013186p 0.014752o 0.000750o 0.027294m 9.62e-09p
0.0
  cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.004022p      0.0       0.0
 zp 46.82 ri 6.82e-08p 3.28e-05p 0.001222p 0.002268p 0.000247p 0.000247p 9.16e-07p 3.90e-06p 2.60e-09p 7.78e-10p       0.0
0.0
 sig0.557 cc 6.82e-08p 3.29e-05p 0.001255p 0.003523p 0.002009p 0.002009p 0.002009p 0.002113p 0.000106p 0.004022p       0.0
0.0
          rc 6.82e-08p 3.29e-05p 0.001255p 0.003523p 0.002009o 0.002009o 0.002009o 0.002113o 0.000106o 0.004022n       0.0
0.0
  cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.060001n      0.0       0.0
 zp 47.28 ri 9.90e-08p 8.28e-05p 0.005944p 0.031853p 0.010480p 0.010480p 0.000196p 0.000959p 4.72e-06p 1.26e-06p 1.83e-09p
0.0
 sig0.596 cc 9.90e-08p 8.29e-05p 0.006027p 0.037880p 0.029420p 0.029420p 0.029616p 0.031860p 0.001598p 0.060001p 1.83e-
09p      0.0
          rc 9.90e-08p 8.29e-05p 0.006027p 0.037880p 0.029420p 0.029420p 0.029616o 0.031860o 0.001598o 0.060001m 1.83e-09p
0.0
  cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.074025n 0.0 0.0
zp 47.44 ri 2.72e-08p 3.83e-05p 0.004358p 0.034642p 0.016212p 0.016212p 0.000484p 0.002062p 1.44e-05p 4.30e-06p 7.96e-09p 0.0
sig0.592 cc 2.72e-08p 3.83e-05p 0.004396p 0.039037p 0.035731p 0.035731p 0.036214p 0.039603p 0.001995p 0.074025p 7.96e-09p 0.0
rc 2.72e-08p 3.83e-05p 0.004396p 0.039037p 0.035731p 0.035731p 0.036214o 0.039603o 0.001995o 0.074025m 7.96e-09p 0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.098234n 0.0 0.0
zp 46.62 ri 6.62e-11p 6.51e-05p 0.036642p 0.060924p 0.000301p 0.000301p 4.13e-10p 3.34e-09p 0.0 0.0 0.0 0.0
sig0.350 cc 6.62e-11p 6.51e-05p 0.036707p 0.097631p 0.049117p 0.049117p 0.049117p 0.051573p 0.002579p 0.098234p 0.0 0.0
rc 6.62e-11p 6.51e-05p 0.036707p 0.097631p 0.049117p 0.049117p 0.049117o 0.051573o 0.002579o 0.098234m 0.0 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.168762n 0.0 0.0
zp 46.52 ri 6.42e-10p 0.000289p 0.081636p 0.086395p 0.000221p 0.000221p 2.41e-10p 1.03e-09p 0.0 0.0 0.0 0.0
sig0.350 cc 6.42e-10p 0.000289p 0.081925p 0.168319p 0.084381p 0.084381p 0.084381p 0.088600p 0.004430p 0.168762p 0.0 0.0
rc 6.42e-10p 0.000289p 0.081925p 0.168319p 0.084381p 0.084381p 0.084381o 0.088600o 0.004430o 0.168762m 0.0 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.610938n 0.0 0.0
zp 46.66 ri 0.000151p 0.018625p 0.224789p 0.313940p 0.026261p 0.026261p 0.000173p 0.000736p 1.08e-06p 3.22e-07p 1.76e-10p 0.0
sig0.620 cc 0.000151p 0.018776p 0.243565p 0.557505p 0.305014p 0.305014p 0.305187p 0.321009p 0.016052p 0.610938p 1.76e-10p 0.0
rc 0.000151p 0.018776p 0.243566p 0.557505o 0.305014o 0.305014o 0.305187o 0.321009o 0.016052o 0.610938m 1.76e-10p 0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.016200n 0.0 0.0
zp 47.20 ri 4.44e-09p 1.41e-05p 0.001452p 0.010366p 0.002115p 0.002115p 2.61e-05p 0.000111p 1.23e-07p 3.66e-08p 8.93e-12p 0.0
sig0.541 cc 4.44e-09p 1.41e-05p 0.001466p 0.011832p 0.008031p 0.008031p 0.008057p 0.008545p 0.000427p 0.016200p 8.93e-12p 0.0

rc 4.44e-09p 1.41e-05p 0.001466p 0.011832p 0.008031p 0.008031p 0.008057o 0.008545o 0.000427o 0.016200m 8.93e-12p
0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.041959n 0.0 0.0
zp 47.11 ri 6.25e-08p 7.00e-05p 0.006573p 0.023551p 0.005767p 0.005767p 4.39e-05p 0.000187p 3.12e-07p 9.31e-08p 1.88e-11p
0.0
sig0.555 cc 6.25e-08p 7.01e-05p 0.006643p 0.030194p 0.020864p 0.020864p 0.020907p 0.022096p 0.001105p 0.041959p 1.88e-
11p 0.0
rc 6.25e-08p 7.01e-05p 0.006643p 0.030194p 0.020864p 0.020864o 0.020907o 0.022096o 0.001105o 0.041959m 1.88e-11p
0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.049816n 0.0 0.0
zp 46.58 ri 4.31e-06p 0.001102p 0.023039p 0.023009p 0.001325p 0.001325p 2.14e-06p 9.13e-06p 2.54e-09p 7.58e-10p 0.0
0.0
sig0.551 cc 4.31e-06p 0.001107p 0.024146p 0.047154p 0.024902p 0.024902p 0.024904p 0.026157p 0.001308p 0.049816p 0.0
0.0
rc 4.31e-06p 0.001107p 0.024146p 0.047154o 0.024902o 0.024902o 0.024904o 0.026157o 0.001308o 0.049816m 0.0
0.0

ru, rh, pd half lives 80eng2; ag, cd, in, sn half lives 89wal1.
1

mass number 120 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 44 ru g 45 rh g 46 pd g 47 ag g 48 cd g 49 in m 49 in g 50 sn g 51 sb m 51 sb g 52 te g
half life 0.350s 0.172s 3.91 s 1.23 s 50.8 s 46. s 3.1 s stable 5.76 d 16.0 m stable
lambda 1.980e+00 4.030e+00 1.773e-01 5.635e-01 1.364e-02 1.507e-02 2.236e-01 0.0 1.393e-06 7.220e-04 0.0
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 50.0000 50.0000 100.0000 -100.0000 -100.0000 0.0
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.035218n 0.0 0.0 0.0
zp 48.17 ri 1.19e-11p 1.11e-07p 9.16e-05p 0.004081p 0.021690p 0.004443p 0.004443p 0.000467p 8.27e-07p 5.75e-07p 3.83e-10p
sig0.594 cc 1.19e-11p 1.11e-07p 9.17e-05p 0.004173p 0.025862p 0.017375p 0.017375p 0.035218p 8.27e-07p 5.75e-07p 3.83e-10p
rc 1.19e-11p 1.11e-07p 9.17e-05p 0.004173p 0.025862p 0.017375p 0.017375p 0.035218m 8.27e-07p 5.75e-07p 3.83e-10p
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.002031p 0.0 0.0 0.0

zp 47.48 ri 1.00e-10p 3.22e-07p 9.07e-05p 0.000820p 0.001061p 2.91e-05p 2.91e-05p 3.39e-07p 3.03e-11p 2.11e-11p 0.0
sig0.557 cc 1.00e-10p 3.22e-07p 9.10e-05p 0.000911p 0.001972p 0.001015p 0.001015p 0.002031p 3.03e-11p 2.11e-11p 0.0
rc 1.00e-10p 3.22e-07p 9.10e-05p 0.000911p 0.001972p 0.001015p 0.001015p 0.002031n 3.03e-11p 2.11e-11p 0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.057001n 0.0 0.0 0.0
zp 47.93 ri 2.64e-10p 1.23e-06p 0.000495p 0.012090p 0.035498p 0.004335p 0.004335p 0.000247p 2.62e-07p 1.54e-07p 6.00e-11p
sig0.596 cc 2.64e-10p 1.23e-06p 0.000496p 0.012586p 0.048084p 0.028377p 0.028377p 0.057001p 2.62e-07p 1.54e-07p 6.00e-11p
rc 2.64e-10p 1.23e-06p 0.000496p 0.012586p 0.048084p 0.028377p 0.028377p 0.057001m 2.62e-07p 1.54e-07p 6.00e-11p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.065022n 0.0 0.0 0.0
zp 48.08 ri 5.21e-11p 4.08e-07p 0.000264p 0.009753p 0.040680p 0.006889p 0.006889p 0.000545p 7.44e-07p 5.17e-07p 2.44e-10p
sig0.592 cc 5.21e-11p 4.08e-07p 0.000265p 0.010017p 0.050698p 0.032238p 0.032238p 0.065022p 7.44e-07p 5.17e-07p 2.44e-10p
rc 5.21e-11p 4.08e-07p 0.000265p 0.010017p 0.050698p 0.032238p 0.032238p 0.065022m 7.44e-07p 5.17e-07p 2.44e-10p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.070167n 0.0 0.0 0.0
zp 47.01 ri 6.31e-07p 0.000337p 0.013386p 0.041961p 0.014107p 0.000188p 0.000188p 7.49e-07p 6.23e-11p 2.19e-11p 0.0
sig0.585 cc 6.31e-07p 0.000337p 0.013723p 0.055684p 0.069791p 0.035083p 0.035083p 0.070167p 6.23e-11p 2.19e-11p 0.0
rc 6.31e-07p 0.000337p 0.013723p 0.055684p 0.069791o 0.035083o 0.035083o 0.070167m 6.23e-11p 2.19e-11p 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.109199n 0.0 0.0 0.0
zp 46.68 ri 2.49e-11p 3.93e-05p 0.033844p 0.074235p 0.001080p 5.36e-09p 5.36e-09p 0.0 0.0 0.0 0.0
sig0.350 cc 2.49e-11p 3.93e-05p 0.033884p 0.108119p 0.109199p 0.054599p 0.054599p 0.109199p 0.0 0.0 0.0
rc 2.49e-11p 3.93e-05p 0.033884p 0.108119p 0.109199o 0.054599o 0.054599o 0.109199m 0.0 0.0 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.610938n 0.0 0.0 0.0
zp 47.21 ri 3.78e-06p 0.001776p 0.075375p 0.338617p 0.183776p 0.005662p 0.005662p 6.69e-05p 1.98e-08p 1.38e-08p 1.35e-12p
sig0.620 cc 3.78e-06p 0.001779p 0.077154p 0.415771p 0.599547p 0.305436p 0.305436p 0.610938p 1.98e-08p 1.38e-08p 1.35e-12p
rc 3.78e-06p 0.001779p 0.077154p 0.415771p 0.599547o 0.305436o 0.305436o 0.610938m 1.98e-08p 1.38e-08p 1.35e-12p
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.014294n 0.0 0.0 0.0
zp 47.64 ri 4.77e-11p 5.03e-07p 0.000262p 0.005066p 0.008218p 0.000372p 0.000372p 4.40e-06p 4.89e-10p 3.39e-10p 0.0
sig0.541 cc 4.77e-11p 5.03e-07p 0.000263p 0.005328p 0.013546p 0.007145p 0.007145p 0.014294p 4.89e-10p 3.39e-10p 0.0
rc 4.77e-11p 5.03e-07p 0.000263p 0.005328p 0.013546p 0.007145p 0.007145p 0.014294m 4.89e-10p 3.39e-10p 0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.030865n 0.0 0.0 0.0

zp 47.59 ri 4.69e-10p 1.98e-06p 0.000905p 0.009856p 0.018887p 0.000602p 0.000602p 1.06e-05p 1.11e-09p 7.69e-10p 0.0
sig0.555 cc 4.69e-10p 1.98e-06p 0.000907p 0.010763p 0.029650p 0.015427p 0.015427p 0.030865p 1.11e-09p 7.69e-10p 0.0
rc 4.69e-10p 1.98e-06p 0.000907p 0.010763p 0.029650p 0.015427p 0.015427p 0.030865m 1.11e-09p 7.69e-10p 0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.035867n 0.0 0.0 0.0
zp 47.04 ri 8.62e-08p 7.90e-05p 0.007069p 0.019751p 0.008841p 6.36e-05p 6.36e-05p 1.82e-07p 3.20e-12p 2.22e-12p 0.0
sig0.551 cc 8.62e-08p 7.91e-05p 0.007148p 0.026899p 0.035740p 0.017934p 0.017934p 0.035867p 3.20e-12p 2.22e-12p 0.0
rc 8.62e-08p 7.91e-05p 0.007148p 0.026899p 0.035740o 0.017934o 0.017934o 0.035867m 3.20e-12p 2.22e-12p 0.0

ru, rh, pd half lives from 80eng2; ag, cd, in half lives 89wal1.
1

mass number 121 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 45 rh g 46 pd g 47 ag g 48 cd d 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te g 53 i g
half life 0.250s 0.644s 0.78 s 1.5 s 13.5 s 3.8 m 23. s 55. y 1.128d stable 17. d 2.12 h
lambda 2.773e+00 1.076e+00 8.887e-01 4.621e-01 5.134e-02 3.040e-03 3.014e-02 3.996e-10 7.112e-06 0.0 4.719e-07
9.082e-05
z - 1 g 100.0000 100.0000 100.0000 0.0 100.0000 18.0000 82.0000 0.0 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.1840 100.0000 0.0 0.0 0.0 0.0 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.037392n 0.0 0.0
zp 48.77 ri 6.57e-10p 2.60e-06p 0.000581p 0.0 0.012140p 0.003869p 0.016493p 0.003012p 0.001230p 6.43e-05p 8.44e-08p
6.05e-12p
sig0.594 cc 6.57e-10p 2.60e-06p 0.000584p 0.0 0.012724p 0.006159p 0.026927p 0.003012p 0.034316p 0.037392p 8.44e-08p
6.05e-12p
rc 6.57e-10p 2.60e-06p 0.000584p 1.70e-11o 0.012724p 0.006159p 0.026927p 0.003012p 0.034316o 0.037392n 8.44e-08p
6.05e-12p
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.001548p 0.0 0.0
zp 48.07 ri 2.65e-09p 3.92e-06p 0.000206p 0.0 0.001033p 5.64e-05p 0.000240p 6.03e-06p 2.46e-06p 8.91e-09p 0.0 0.0
sig0.557 cc 2.65e-09p 3.92e-06p 0.000210p 0.0 0.001243p 0.000280p 0.001260p 6.03e-06p 0.001542p 0.001548p 0.0
0.0
rc 2.65e-09p 3.92e-06p 0.000210p 6.27e-08o 0.001243p 0.000280p 0.001260p 6.03e-06p 0.001542o 0.001548o 0.0 0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.059002n 0.0 0.0

zp 48.58 ri 6.86e-09p 1.51e-05p 0.001993p 0.0 0.025416p 0.004735p 0.023116p 0.002731p 0.000960p 3.54e-05p 2.86e-08p 1.30e-12p
sig0.596 cc 6.86e-09p 1.51e-05p 0.002008p 0.0 0.027424p 0.009671p 0.045604p 0.002731p 0.056235p 0.059001p 2.86e-08p 1.30e-12p
rc 6.86e-09p 1.51e-05p 0.002008p 2.26e-07o 0.027424p 0.009671p 0.045604p 0.002731p 0.056235o 0.059002n 2.86e-08p 1.30e-12p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.064031n 0.0 0.0
zp 48.67 ri 2.74e-09p 8.48e-06p 0.001504p 0.0 0.024456p 0.006226p 0.026544p 0.003715p 0.001517p 5.96e-05p 5.58e-08p 2.84e-12p
sig0.592 cc 2.74e-09p 8.49e-06p 0.001513p 0.0 0.025968p 0.010901p 0.047838p 0.003715p 0.060256p 0.064031p 5.58e-08p 2.84e-12p
rc 2.74e-09p 8.49e-06p 0.001513p 2.31e-07o 0.025969p 0.010901p 0.047838p 0.003715p 0.060256o 0.064031n 5.58e-08p 2.84e-12p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.057193n 0.0 0.0
zp 47.67 ri 5.73e-06p 0.001310p 0.020253p 0.0 0.031243p 0.000476p 0.003848p 4.21e-05p 9.24e-06p 3.68e-08p 1.71e-12p 0.0
sig0.585 cc 5.73e-06p 0.001315p 0.021568p 0.0 0.052811p 0.009982p 0.047153p 4.21e-05p 0.057143p 0.057185p 1.71e-12p 0.0
rc 5.73e-06p 0.001315p 0.021568p 8.36e-06o 0.052819p 0.009983p 0.047159p 4.21e-05p 0.057152o 0.057194n 1.71e-12p 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.072468n 0.0 0.0
zp 47.05 ri 0.000244p 0.012240p 0.043840p 0.0 0.015697p 7.84e-05p 0.000334p 5.22e-07p 2.13e-07p 6.62e-11p 0.0 0.0
sig0.574 cc 0.000244p 0.012484p 0.056324p 0.0 0.072021p 0.013042p 0.059391p 5.22e-07p 0.072434p 0.072434p 0.0 0.0
rc 0.000244p 0.012484p 0.056324p 3.89e-05o 0.072060o 0.013049o 0.059423o 5.22e-07p 0.072472n 0.072473m 0.0 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.003327n 0.643831m 0.0 0.0 0.0
zp 47.74 ri 9.81e-05p 0.014660p 0.211723p 0.0 0.349866p 0.013233p 0.056413p 0.001032p 0.000422p 2.73e-06p 4.21e-10p 0.0
sig0.620 cc 9.81e-05p 0.014758p 0.226481p 0.0 0.576347p 0.116975p 0.529017p 0.001032p 0.646414p 0.647449p 4.21e-10p 0.0

rc 9.81e-05p 0.014758p 0.226481p 0.000149o 0.576496p 0.117002o 0.529139o 0.001032p 0.646563m 0.647598m 4.21e-10p
0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.015868n 0.0 0.0
zp 48.08 ri 1.56e-08p 2.63e-05p 0.002392p 0.0 0.009707p 0.000698p 0.002977p 4.67e-05p 1.91e-05p 6.58e-08p 1.95e-12p
0.0
sig0.541 cc 1.56e-08p 2.63e-05p 0.002419p 0.0 0.012126p 0.002881p 0.012920p 4.67e-05p 0.015820p 0.015867p 1.95e-12p
0.0
rc 1.56e-08p 2.63e-05p 0.002419p 9.47e-07o 0.012127p 0.002881p 0.012921p 4.67e-05p 0.015821o 0.015868n 1.95e-12p
0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.030809n 0.0 0.0
zp 48.06 ri 5.10e-08p 8.27e-05p 0.003984p 0.0 0.021169p 0.001029p 0.004385p 0.000113p 4.60e-05p 1.42e-07p 9.48e-12p
0.0
sig0.555 cc 5.10e-08p 8.28e-05p 0.004066p 0.0 0.025235p 0.005571p 0.025078p 0.000113p 0.030695p 0.030808p 9.48e-12p
0.0
rc 5.10e-08p 8.28e-05p 0.004066p 1.57e-06o 0.025237p 0.005571p 0.025079p 0.000113p 0.030697o 0.030810n 9.48e-12p
0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.024744n 0.0 0.0
zp 47.50 ri 3.05e-06p 0.000933p 0.010256p 0.0 0.012767p 0.000147p 0.000628p 2.80e-06p 1.14e-06p 5.88e-10p 0.0 0.0
sig0.551 cc 3.05e-06p 0.000936p 0.011191p 0.0 0.023958p 0.004460p 0.020274p 2.80e-06p 0.024735p 0.024738p 0.0
0.0
rc 3.05e-06p 0.000936p 0.011191p 7.22e-06o 0.023965p 0.004461p 0.020280p 2.80e-06p 0.024742o 0.024745n 0.0
0.0

in branching from 71erd1; rh, pd half lives 80eng2; ag, cd, in, sn half lives 89wal1.

1

mass number 122 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	44 ru g	45 rh g	46 pd g	47 ag g	48 cd d	48 cd g	49 in m	49 in g	50 sn g	51 sb m	51 sb g	52 te g
half life	0.107s	1.41 s	0.56 s	0.39s	5.3 s	10. s	1.5 s	stable	4.2 m	2.72 d	stable	
lambda	0.0	6.478e+00	4.916e-01	1.238e+00	1.777e+00	1.308e-01	6.931e-02	4.621e-01	0.0	2.751e-03	2.949e-06	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	0.0	99.8160	0.0	100.0000	100.0000	0.0	-3.0000	97.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	0.0	0.0

z - 0 m 0.0 0.0 0.0 0.0 0.5450 100.0000 0.0 0.0 0.0 0.0 100.0000 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.054109n 0.0 0.0 0.0
zp 49.28 ri 0.0 0.0 0.0 9.25e-09p 0.0 0.000773p 0.018706p 0.018706p 0.015924p 6.67e-06p 5.92e-06p 6.58e-12p
sig0.350 cc 0.0 0.0 0.0 9.25e-09p 0.0 0.000773p 0.018706p 0.019479p 0.054109p 6.67e-06p 1.26e-05p 1.22e-05p
rc 0.0 0.0 0.0 9.25e-09p 7.55e-12o 0.000773p 0.018706p 0.019479p 0.054109n 6.67e-06p 1.26e-05p 1.22e-05p
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.001950p 0.0 0.0 0.0
zp 48.64 ri 0.0 1.41e-11p 1.37e-07p 3.39e-05p 0.0 0.000866p 0.000455p 0.000455p 0.000140p 3.79e-07p 3.36e-07p 3.25e-10p
sig0.557 cc 0.0 1.41e-11p 1.37e-07p 3.41e-05p 0.0 0.000900p 0.000455p 0.001355p 0.001950p 3.79e-07p 7.14e-07p 6.93e-07p
rc 0.0 1.41e-11p 1.37e-07p 3.41e-05p 1.65e-08o 0.000900p 0.000455p 0.001355p 0.001950o 3.79e-07p 7.14e-07p 6.93e-07p
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.064494n 0.0 0.0 0.0
zp 49.22 ri 0.0 1.38e-11p 1.79e-07p 0.000123p 0.0 0.007883p 0.017658p 0.017658p 0.021144p 0.000552p 0.000416p 4.45e-06p
sig0.596 cc 0.0 1.38e-11p 1.79e-07p 0.000123p 0.0 0.008006p 0.017658p 0.025664p 0.064494p 0.000552p 0.000968p 0.000943p
rc 0.0 1.38e-11p 1.79e-07p 0.000123p 1.67e-12o 0.008006p 0.017658p 0.025664p 0.064495n 0.000552p 0.000968p 0.000943o
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.069368n 0.0 0.0 0.0
zp 49.22 ri 0.0 1.15e-11p 1.69e-07p 0.000125p 0.0 0.008407p 0.019092p 0.019092p 0.022622p 0.000528p 0.000468p 4.26e-06p
sig0.592 cc 0.0 1.15e-11p 1.69e-07p 0.000125p 0.0 0.008532p 0.019092p 0.027624p 0.069367p 0.000528p 0.000996p 0.000971p
rc 0.0 1.15e-11p 1.69e-07p 0.000125p 4.33e-12o 0.008532p 0.019092p 0.027624p 0.069368n 0.000528p 0.000996p 0.000971p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.056189n 0.0 0.0 0.0
zp 48.31 ri 2.05e-12p 4.21e-08p 5.58e-05p 0.004490p 0.0 0.031096p 0.009678p 0.009678p 0.001198p 3.50e-06p 1.50e-06p 1.42e-09p
sig0.585 cc 2.05e-12p 4.21e-08p 5.59e-05p 0.004546p 0.0 0.035633p 0.009678p 0.045311p 0.056187p 3.50e-06p 5.00e-06p 4.85e-06p

rc 2.05e-12p 4.21e-08p 5.59e-05p 0.004546p 2.37e-06o 0.035636p 0.009678p 0.045314o 0.056190n 3.50e-06p 5.00e-06p 4.85e-06o
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.057403n 0.0 0.0 0.0
zp 47.68 ri 8.62e-10p 4.03e-06p 0.001149p 0.019988p 0.0 0.031963p 0.002135p 0.002135p 4.46e-05p 1.34e-08p 1.19e-08p 0.0
sig0.574 cc 8.62e-10p 4.03e-06p 0.001153p 0.021141p 0.0 0.053065p 0.002135p 0.055201p 0.057381p 1.34e-08p 2.53e-08p 2.45e-08p
rc 8.62e-10p 4.03e-06p 0.001153p 0.021141p 2.40e-05o 0.053089p 0.002135p 0.055225o 0.057405n 1.34e-08p 2.53e-08p 2.45e-08p
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.775638n 0.0 0.0 0.0
zp 48.28 ri 4.19e-10p 2.85e-06p 0.001588p 0.079385p 0.0 0.414924p 0.130489p 0.130488p 0.018831p 6.98e-05p 6.19e-05p 7.89e-08p
sig0.620 cc 4.19e-10p 2.85e-06p 0.001590p 0.080973p 0.0 0.495759p 0.130485p 0.626244p 0.775563p 6.98e-05p 0.000132p 0.000128p
rc 4.19e-10p 2.85e-06p 0.001590p 0.080975p 8.32e-05o 0.495834p 0.130489p 0.626322o 0.775646n 6.98e-05p 0.000132p 0.000128p
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.017735n 0.0 0.0 0.0
zp 48.51 ri 0.0 2.16e-10p 1.89e-06p 0.000513p 0.0 0.008679p 0.003955p 0.003955p 0.000631p 1.04e-06p 9.20e-07p 3.05e-10p
sig0.541 cc 0.0 2.16e-10p 1.89e-06p 0.000515p 0.0 0.009192p 0.003955p 0.013148p 0.017734p 1.04e-06p 1.96e-06p 1.90e-06p
rc 0.0 2.16e-10p 1.89e-06p 0.000515p 4.54e-07o 0.009193p 0.003955p 0.013148p 0.017735n 1.04e-06p 1.96e-06p 1.90e-06p
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.033791n 0.0 0.0 0.0
zp 48.53 ri 0.0 6.34e-10p 5.21e-06p 0.000847p 0.0 0.018369p 0.006462p 0.006462p 0.001646p 2.73e-06p 2.42e-06p 1.78e-09p
sig0.555 cc 0.0 6.34e-10p 5.21e-06p 0.000852p 0.0 0.019220p 0.006462p 0.025682p 0.033790p 2.73e-06p 5.16e-06p 5.00e-06p
rc 0.0 6.34e-10p 5.21e-06p 0.000852p 7.43e-07o 0.019221p 0.006462p 0.025683p 0.033791n 2.73e-06p 5.16e-06p 5.00e-06p
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.024744n 0.0 0.0 0.0

zp 47.96 ri 4.47e-12p 7.53e-08p 0.000109p 0.003816p 0.0 0.017589p 0.001578p 0.001578p 7.30e-05p 2.12e-08p 1.88e-08p 1.88e-12p
sig0.551 cc 4.47e-12p 7.53e-08p 0.000109p 0.003926p 0.0 0.021508p 0.001578p 0.023086p 0.024737p 2.12e-08p 4.00e-08p 3.88e-08p
rc 4.47e-12p 7.53e-08p 0.000109p 0.003926p 7.20e-06o 0.021515p 0.001578p 0.023093o 0.024744n 2.12e-08p 4.00e-08p 3.88e-08p

ru, rh pd half lives from 80eng2; ag, cd, in half lives 89wal1.
1

mass number 123 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 45 rh g 46 pd g 47 ag g 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te m 52 te g 53 i g
half life 0.134s 0.300s 0.31 s 2.09 s 47. s 6.0 s 40.1 m 129.2d stable 119.7d 1e+13y 13.2 h
lambda 5.173e+00 2.310e+00 2.236e+00 3.316e-01 1.475e-02 1.155e-01 2.881e-04 6.209e-08 0.0 6.702e-08 2.198e-21 1.459e-05
z - 1 g 100.0000 100.0000 100.0000 99.4550 23.0000 77.0000 100.0000 0.0 100.0000 0.0 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 100.0000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.061131n 0.0 0.0 0.0
zp 49.41 ri 0.0 0.0 1.38e-09p 0.000298p 0.006678p 0.028469p 0.007433p 0.018199p 5.39e-05p 5.67e-11p 1.69e-11p 0.0
sig0.350 cc 0.0 0.0 1.38e-09p 0.000298p 0.006746p 0.028698p 0.042878p 0.018199p 0.061131p 5.67e-11p 7.37e-11p 0.0
rc 0.0 0.0 1.38e-09p 0.000298p 0.006746p 0.028698p 0.042878p 0.018199p 0.061131n 5.67e-11p 7.37e-11p 0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.002919p 0.0 0.0 0.0
zp 49.20 ri 0.0 1.98e-09p 3.03e-06p 0.000333p 0.000309p 0.001317p 0.000270p 0.000660p 2.67e-05p 4.59e-08p 1.37e-08p 4.28e-12p
sig0.557 cc 0.0 1.98e-09p 3.04e-06p 0.000336p 0.000386p 0.001576p 0.002232p 0.000660p 0.002919p 4.59e-08p 5.96e-08p 4.28e-12p
rc 0.0 1.98e-09p 3.04e-06p 0.000336p 0.000386p 0.001576p 0.002232o 0.000660p 0.002919o 4.59e-08p 5.96e-08p 4.28e-12p
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.079378n 0.0 0.0 0.0
zp 49.52 ri 0.0 0.0 3.06e-10p 0.000150p 0.006195p 0.030248p 0.011075p 0.031522p 0.000188p 4.62e-10p 1.23e-10p 0.0

sig0.350 cc 0.0 0.0 3.06e-10p 0.000150p 0.006230p 0.030364p 0.047669p 0.031522p 0.079378p 4.62e-10p 5.85e-10p 0.0
rc 0.0 0.0 3.06e-10p 0.000150p 0.006230p 0.030364p 0.047669p 0.031522p 0.079378n 4.62e-10p 5.85e-10p 0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.086214n 0.0 0.0 0.0
zp 49.47 ri 0.0 0.0 7.95e-10p 0.000260p 0.008467p 0.036096p 0.011966p 0.029297p 0.000128p 2.05e-10p 6.13e-11p 0.0
sig0.350 cc 0.0 0.0 7.95e-10p 0.000260p 0.008527p 0.036297p 0.056790p 0.029297p 0.086214p 2.05e-10p 2.67e-10p 0.0
rc 0.0 0.0 7.95e-10p 0.000260p 0.008527p 0.036297p 0.056790p 0.029297p 0.086214n 2.05e-10p 2.67e-10p 0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.064226n 0.0 0.0 0.0
zp 48.94 ri 1.26e-10p 9.84e-07p 0.000433p 0.014377p 0.004209p 0.034052p 0.001964p 0.008949p 0.000243p 3.43e-07p 5.58e-08p 3.68e-11p
sig0.585 cc 1.26e-10p 9.84e-07p 0.000434p 0.014809p 0.007615p 0.045455p 0.055034p 0.008949p 0.064226p 3.43e-07p 3.99e-07p 3.68e-11p
rc 1.26e-10p 9.84e-07p 0.000434p 0.014809p 0.007615p 0.045455p 0.055034o 0.008949p 0.064226n 3.43e-07p 3.99e-07p 3.68e-11p
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.055423n 0.0 0.0 0.0
zp 48.30 ri 2.84e-08p 4.77e-05p 0.004356p 0.031245p 0.003565p 0.015197p 0.000299p 0.000733p 3.45e-06p 5.40e-10p 1.61e-10p 0.0
sig0.574 cc 2.84e-08p 4.77e-05p 0.004404p 0.035625p 0.011759p 0.042629p 0.054687p 0.000733p 0.055423p 5.40e-10p 7.01e-10p 0.0
rc 2.84e-08p 4.77e-05p 0.004404p 0.035625p 0.011759p 0.042629p 0.054687o 0.000733p 0.055423n 5.40e-10p 7.01e-10p 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.880620n 0.0 0.0 0.0
zp 48.81 ri 4.12e-08p 8.58e-05p 0.015184p 0.256839p 0.093458p 0.398427p 0.033032p 0.080872p 0.002801p 4.80e-06p 1.43e-06p 1.15e-09p
sig0.620 cc 4.12e-08p 8.59e-05p 0.015270p 0.272025p 0.156024p 0.607887p 0.796943p 0.080872p 0.880621p 4.80e-06p 6.24e-06p 1.15e-09p
rc 4.12e-08p 8.59e-05p 0.015270p 0.272025p 0.156024p 0.607887p 0.796943n 0.080872p 0.880621m 4.80e-06p 6.24e-06p 1.15e-09p
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.019602n 0.0 0.0 0.0

zp 48.93 ri 2.29e-12p 6.31e-08p 8.32e-05p 0.003782p 0.002486p 0.010599p 0.000758p 0.001856p 3.78e-05p 1.41e-08p 4.22e-09p 0.0
sig0.541 cc 2.29e-12p 6.31e-08p 8.33e-05p 0.003865p 0.003375p 0.013575p 0.017708p 0.001856p 0.019602p 1.41e-08p 1.83e-08p 0.0
rc 2.29e-12p 6.31e-08p 8.33e-05p 0.003865p 0.003375p 0.013575p 0.017708o 0.001856p 0.019602n 1.41e-08p 1.83e-08p 0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.041742n 0.0 0.0 0.0
zp 48.99 ri 5.96e-12p 1.76e-07p 0.000136p 0.009051p 0.004528p 0.019303p 0.002495p 0.006107p 0.000122p 1.14e-07p 3.42e-08p 4.73e-12p
sig0.555 cc 5.96e-12p 1.76e-07p 0.000136p 0.009186p 0.006641p 0.026376p 0.035512p 0.006107p 0.041742p 1.14e-07p 1.49e-07p 4.73e-12p
rc 5.96e-12p 1.76e-07p 0.000136p 0.009186p 0.006641p 0.026376p 0.035512o 0.006107p 0.041742n 1.14e-07p 1.49e-07p 4.73e-12p
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.031672n 0.0 0.0 0.0
zp 48.42 ri 1.57e-09p 8.34e-06p 0.001312p 0.017676p 0.002243p 0.009562p 0.000254p 0.000622p 2.29e-06p 3.11e-10p 9.30e-11p 0.0
sig0.551 cc 1.57e-09p 8.34e-06p 0.001320p 0.018989p 0.006610p 0.024183p 0.031048p 0.000622p 0.031672p 3.11e-10p 4.04e-10p 0.0
rc 1.57e-09p 8.34e-06p 0.001320p 0.018989p 0.006610p 0.024183p 0.031048o 0.000622p 0.031672n 3.11e-10p 4.04e-10p 0.0

rh, pd half lives from 80eng2; ag, cd, in, sn half lives 89wal1; i, te half lives 90bur1.

1

mass number 124 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	44 ru g	45 rh g	46 pd g	47 ag g	48 cd g	49 in g	50 sn g	51 sb m	51 sb g	52 te g
half life		0.514s	0.22 s	1.24 s	3.18 s	stable	20.2 m	60.20d	stable	
lambda	0.0	0.0	1.349e+00	3.151e+00	5.590e-01	2.180e-01	0.0	5.719e-04	1.333e-07	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	0.0	0.0	100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0
cm243t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.072283n	0.0	0.0	0.0

zp 49.55	ri	0.0	0.0	0.0	1.52e-10p	0.000103p	0.029375p	0.042805p	0.000110p	0.000110p	9.53e-10p
sig0.350	cc	0.0	0.0	0.0	1.52e-10p	0.000103p	0.029478p	0.072283p	0.000110p	0.000220p	0.000220p
	rc	0.0	0.0	0.0	1.52e-10p	0.000103p	0.029478p	0.072283n	0.000110p	0.000220p	0.000220p
cm246s	xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	xc	0.0	0.0	0.0	0.0	0.0	0.0	0.004360p	0.0	0.0	0.0
zp 49.48	ri	0.0	0.0	0.0	2.71e-11p	1.26e-05p	0.001935p	0.002412p	3.36e-06p	3.36e-06p	1.99e-11p
sig0.350	cc	0.0	0.0	0.0	2.71e-11p	1.26e-05p	0.001948p	0.004360p	3.36e-06p	6.71e-06p	6.71e-06p
	rc	0.0	0.0	0.0	2.71e-11p	1.26e-05p	0.001948p	0.004360p	3.36e-06p	6.71e-06p	6.71e-06p
cm243f	xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	xc	0.0	0.0	0.0	0.0	0.0	0.0	0.109144n	0.0	0.0	0.0
zp 49.67	ri	0.0	0.0	0.0	2.93e-11p	4.84e-05p	0.032027p	0.077069p	0.000435p	0.000435p	9.07e-09p
sig0.350	cc	0.0	0.0	0.0	2.93e-11p	4.84e-05p	0.032075p	0.109144p	0.000435p	0.000871p	0.000871p
	rc	0.0	0.0	0.0	2.93e-11p	4.84e-05p	0.032075p	0.109144n	0.000435p	0.000871p	0.000871p
cm244f	xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	xc	0.0	0.0	0.0	0.0	0.0	0.0	0.118916n	0.0	0.0	0.0
zp 49.60	ri	0.0	0.0	0.0	1.15e-10p	0.000109p	0.043464p	0.075343p	0.000268p	0.000268p	3.20e-09p
sig0.350	cc	0.0	0.0	0.0	1.15e-10p	0.000109p	0.043573p	0.118916p	0.000268p	0.000536p	0.000536p
	rc	0.0	0.0	0.0	1.15e-10p	0.000109p	0.043573p	0.118916n	0.000268p	0.000536p	0.000536p
cm246f	xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	xc	0.0	0.0	0.0	0.0	0.0	0.0	0.085964n	0.0	0.0	0.0
zp 49.34	ri	0.0	0.0	0.0	5.95e-09p	0.000713p	0.056600p	0.028650p	1.95e-05p	1.95e-05p	2.95e-11p
sig0.350	cc	0.0	0.0	0.0	5.95e-09p	0.000713p	0.057314p	0.085964p	1.95e-05p	3.91e-05p	3.91e-05p
	rc	0.0	0.0	0.0	5.95e-09p	0.000713p	0.057314p	0.085964n	1.95e-05p	3.91e-05p	3.91e-05p
cm248f	xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	xc	0.0	0.0	0.0	0.0	0.0	0.0	0.066168n	0.0	0.0	0.0
zp 48.89	ri	0.0	1.12e-10p	1.05e-06p	0.000499p	0.016309p	0.039711p	0.009648p	8.25e-05p	8.25e-05p	1.86e-07p
sig0.574	cc	0.0	1.12e-10p	1.05e-06p	0.000500p	0.016809p	0.056520p	0.066169p	8.25e-05p	0.000165p	0.000165p
	rc	0.0	1.12e-10p	1.05e-06p	0.000500p	0.016809p	0.056520p	0.066169n	8.25e-05p	0.000165p	0.000165p
pu242h	xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	xc	0.0	0.0	0.0	0.0	0.0	0.0	1.076314n	0.0	0.0	0.0
zp 49.11	ri	0.0	0.0	0.0	2.26e-06p	0.043869p	0.890551o	0.141891p	1.88e-05p	1.88e-05p	4.36e-12p
sig0.350	cc	0.0	0.0	0.0	2.26e-06p	0.043872p	0.934423p	1.076314p	1.88e-05p	3.75e-05p	3.75e-05p
	rc	0.0	0.0	0.0	2.26e-06p	0.043872p	0.934423n	1.076314m	1.88e-05p	3.75e-05p	3.75e-05p
np237t	xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	xc	0.0	0.0	0.0	0.0	0.0	0.0	0.026136n	0.0	0.0	0.0
zp 49.30	ri	0.0	0.0	0.0	3.30e-09p	0.000313p	0.017753p	0.008069p	3.81e-06p	3.81e-06p	4.53e-12p

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 sig0.350 cc      0.0       0.0       0.0  3.30e-09p 0.000313p 0.018067p 0.026136p 3.81e-06p 7.61e-06p 7.61e-06p
          rc      0.0       0.0       0.0  3.30e-09p 0.000313p 0.018067p 0.026136n 3.81e-06p 7.61e-06p 7.61e-06p
  pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  0.060625n      0.0       0.0       0.0
 zp 49.39 ri      0.0       0.0       0.0  1.64e-09p 0.000422p 0.031167p 0.029036p 1.90e-05p 1.90e-05p 6.20e-11p
 sig0.350 cc      0.0       0.0       0.0  1.64e-09p 0.000422p 0.031589p 0.060625p 1.90e-05p 3.79e-05p 3.79e-05p
          rc      0.0       0.0       0.0  1.64e-09p 0.000422p 0.031589p 0.060625n 1.90e-05p 3.79e-05p 3.79e-05p
  pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  0.040580n      0.0       0.0       0.0
 zp 48.88 ri      0.0  1.43e-11p 3.79e-07p 0.000211p 0.011882p 0.021988p 0.006499p 2.93e-05p 2.93e-05p 5.08e-08p
 sig0.551 cc      0.0  1.43e-11p 3.79e-07p 0.000212p 0.012093p 0.034081p 0.040580p 2.93e-05p 5.86e-05p 5.86e-05p
          rc      0.0  1.43e-11p 3.79e-07p 0.000212p 0.012093p 0.034081p 0.040580n 2.93e-05p 5.86e-05p 5.86e-05p

   pd, sb half lives from 80eng2; ag, cd, in half lives from 89wal1.
1

     mass number    125              LA-UR-94-3106 (ENDF-349)                              percent yields
 nuclide       46 pd g   47 ag g   48 cd g   49 in m   49 in g   50 sn m   50 sn g   51 sb g   52 te m   52 te g   53 i  g   54 xe g
 half life     0.166s    0.334s    0.68 s    12.2 s    2.36 s    9.5 m     9.63 d    2.758y    58. d     stable    60.14d    17. h
 lambda       4.176e+00 2.075e+00 1.019e+00 5.682e-02 2.937e-01 1.216e-03 8.331e-07 7.969e-09 1.383e-07       0.0 1.334e-07
1.133e-05
  z - 1 g    100.0000  100.0000  100.0000   30.0000   70.0000   50.0000   50.0000  100.0000   22.5000   77.5000 -100.0000 -
100.0000
  z - 1 m        0.0       0.0       0.0       0.0       0.0   50.0000   50.0000  100.0000       0.0       0.0       0.0       0.0
  z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0
  cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.102306n      0.0       0.0
 zp 49.69 ri      0.0  1.81e-11p 3.50e-05p 0.014062p 0.014062p 0.021216p 0.051943p 0.000987p 9.20e-09p 2.75e-09p       0.0       0.0
 sig0.350 cc      0.0  1.81e-11p 3.50e-05p 0.014073p 0.014087p 0.035296p 0.066023p 0.102306p 0.023019p 0.102306p       0.0
0.0
          rc      0.0  1.81e-11p 3.50e-05p 0.014073p 0.014087p 0.035296p 0.066023p 0.102306o 0.023019o 0.102306m       0.0       0.0
  cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.010165p      0.0       0.0
 zp 49.61 ri      0.0  7.02e-12p 8.00e-06p 0.001692p 0.001692p 0.001949p 0.004773p 5.02e-05p 2.79e-10p 8.34e-11p       0.0       0.0
 sig0.350 cc      0.0  7.02e-12p 8.00e-06p 0.001695p 0.001698p 0.003646p 0.006469p 0.010165p 0.002287p 0.010165p       0.0
0.0
```

rc 0.0 7.02e-12p 8.00e-06p 0.001695p 0.001698p 0.003646p 0.006469p 0.010165o 0.002287o 0.010165n 0.0 0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.214409l 0.0 0.179505n 0.0 0.0
zp 49.82 ri 0.0 3.45e-12p 1.79e-05p 0.018146p 0.018146p 0.044406p 0.125442p 0.005051p 1.16e-07p 3.09e-08p 0.0 0.0
sig0.350 cc 0.0 3.44e-12p 1.78e-05p 0.018071p 0.018078p 0.062283p 0.143899p 0.211210p 0.047522p 0.211210p 0.0
0.0
rc 0.0 3.45e-12p 1.79e-05p 0.018152p 0.018159p 0.062562p 0.143598o 0.211210l 0.047522l 0.211210k 0.0 0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.179425l 0.0 0.179425n 0.0 0.0
zp 49.73 ri 0.0 1.67e-11p 4.21e-05p 0.021958p 0.021958p 0.038630p 0.094577p 0.002260p 2.73e-08p 8.16e-09p 0.0 0.0
sig0.350 cc 0.0 1.67e-11p 4.21e-05p 0.021971p 0.021988p 0.060609p 0.116556p 0.179425p 0.040371p 0.179425p 0.0
0.0
rc 0.0 1.67e-11p 4.21e-05p 0.021971p 0.021988p 0.060609p 0.116556p 0.179425l 0.040371l 0.179425k 0.0 0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.115511l 0.0 0.129452n 0.0 0.0
zp 49.49 ri 0.0 7.14e-10p 0.000275p 0.029214p 0.029214p 0.010520p 0.047925p 0.000225p 5.04e-10p 8.21e-11p 0.0
0.0
sig0.350 cc 0.0 7.14e-10p 0.000275p 0.029296p 0.029406p 0.039872p 0.077277p 0.117374p 0.026409p 0.117374p 0.0
0.0
rc 0.0 7.14e-10p 0.000275p 0.029296p 0.029406p 0.039872o 0.077277o 0.117374l 0.026409l 0.117374k 0.0 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.086618l 0.0 0.094583n 0.0 0.0
zp 49.27 ri 0.0 1.76e-08p 0.001231p 0.031515p 0.031515p 0.006688p 0.016373p 1.91e-05p 6.73e-12p 2.01e-12p 0.0 0.0
sig0.350 cc 0.0 1.76e-08p 0.001231p 0.031884p 0.032377p 0.038818p 0.048504p 0.087341p 0.019652p 0.087341p 0.0
0.0
rc 0.0 1.76e-08p 0.001231p 0.031884p 0.032377p 0.038818o 0.048504o 0.087341l 0.019652l 0.087341k 0.0 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.329445m 0.0 0.0 0.0 0.0
zp 49.32 ri 0.0 1.31e-07p 0.012734p 0.457254p 0.457254p 0.116497p 0.285218p 0.000488p 2.29e-10p 6.85e-11p 0.0
0.0
sig0.350 cc 0.0 1.31e-07p 0.012735p 0.461074p 0.466168p 0.580118p 0.748839p 1.329445p 0.299125p 1.329445p 0.0
0.0
rc 0.0 1.31e-07p 0.012735p 0.461074p 0.466168p 0.580118o 0.748839o 1.329445l 0.299125l 1.329445l 0.0 0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.029540n 0.0 0.0
zp 49.45 ri 0.0 3.79e-10p 9.05e-05p 0.008600p 0.008600p 0.003541p 0.008668p 4.19e-05p 4.91e-11p 1.47e-11p 0.0 0.0

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 sig0.350 cc       0.0  3.79e-10p 9.05e-05p 0.008627p 0.008663p 0.012185p 0.017313p 0.029540p 0.006647p 0.029540p       0.0
0.0
          rc      0.0  3.79e-10p 9.05e-05p 0.008627p 0.008663p 0.012185o 0.017313p 0.029540n 0.006647n 0.029540m       0.0       0.0
  pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.060735n      0.0       0.0
 zp 49.54 ri       0.0  1.42e-10p 9.97e-05p 0.011831p 0.011831p 0.010676p 0.026139p 0.000158p 5.45e-10p 1.63e-10p       0.0       0.0
 sig0.350 cc       0.0  1.42e-10p 9.97e-05p 0.011861p 0.011901p 0.022557p 0.038019p 0.060735p 0.013665p 0.060735p       0.0
0.0
          rc      0.0  1.42e-10p 9.97e-05p 0.011861p 0.011901p 0.022557p 0.038019p 0.060735o 0.013665o 0.060735m       0.0       0.0
  pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.055594n      0.0       0.0
 zp 49.30 ri       0.0  6.53e-09p 0.000693p 0.018249p 0.018249p 0.005332p 0.013054p 1.61e-05p 8.28e-12p 2.47e-12p       0.0       0.0
 sig0.350 cc       0.0  6.53e-09p 0.000693p 0.018457p 0.018735p 0.023928p 0.031650p 0.055594p 0.012509p 0.055594p       0.0
0.0
          rc      0.0  6.53e-09p 0.000693p 0.018457p 0.018735p 0.023928o 0.031650o 0.055594n 0.012509n 0.055594m       0.0       0.0

   pd, ag half lives from 80eng2;  cd, in, sn, sb, te half lives from 89wal1; i half life 90bur1.

1

     mass number    126              LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       46 pd g   47 ag g   48 cd g   49 in g   50 sn d   50 sn g   51 sb m   51 sb g   52 te g   53 i  g   54 xe g
 half life     0.252s    0.140s    0.52 s    1.63 s    3.76 s     1.e5y    19.0 m    12.4 d    stable    13.02d    stable
 lambda       2.751e+00 4.951e+00 1.333e+00 4.252e-01 1.843e-01 2.198e-13 6.080e-04 6.470e-07       0.0 6.162e-07       0.0
  z - 1 g    100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000       0.0  100.0000  -56.0000   44.0000
  z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   86.0000       0.0       0.0
  z - 0 m       0.0       0.0       0.0       0.0    0.6600  100.0000       0.0   14.0000       0.0       0.0       0.0
  cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.166251n      0.0       0.0
 zp 49.83 ri       0.0  1.97e-12p 1.22e-05p 0.025368p       0.0  0.136642p 0.002568p 0.001508p 1.54e-07p       0.0       0.0
 sig0.350 cc       0.0  1.97e-12p 1.22e-05p 0.025371p       0.0  0.162024p 0.164591p 0.024551p 0.166099p       0.0       0.0
          rc      0.0  1.97e-12p 1.22e-05p 0.025380p 0.000162o 0.162184p 0.164752o 0.024574o 0.166261n       0.0       0.0
  cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.034635p      0.0       0.0
 zp 49.74 ri       0.0  1.99e-12p 7.12e-06p 0.006705p       0.0  0.027475p 0.000261p 0.000153p 9.22e-09p       0.0       0.0
 sig0.350 cc       0.0  1.99e-12p 7.12e-06p 0.006712p       0.0  0.034186p 0.034447p 0.004976p 0.034600p       0.0       0.0
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        rc      0.0  1.99e-12p 7.12e-06p 0.006712p 4.11e-05o 0.034228p 0.034488p 0.004981o 0.034641o      0.0       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.297667n      0.0       0.0
zp 49.98 ri      0.0       0.0  3.65e-06p 0.023190p      0.0  0.256337p 0.010489p 0.007596p 2.01e-06p      0.0       0.0
sig0.350 cc      0.0       0.0  3.65e-06p 0.023192p      0.0  0.279531p 0.290020p 0.048198p 0.297617p      0.0       0.0
        rc      0.0       0.0  3.65e-06p 0.023194p 5.27e-05o 0.279583p 0.290072o 0.048206o 0.297670n      0.0       0.0
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.287380n      0.0       0.0
zp 49.87 ri      0.0  1.75e-12p 1.39e-05p 0.038545p      0.0  0.239699p 0.005694p 0.003344p 4.31e-07p      0.0       0.0
sig0.350 cc      0.0  1.75e-12p 1.39e-05p 0.038554p      0.0  0.278258p 0.283951p 0.043097p 0.287295p      0.0       0.0
        rc      0.0  1.76e-12p 1.39e-05p 0.038558p 9.07e-05o 0.278348p 0.284041o 0.043110o 0.287386n      0.0       0.0
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.207498n      0.0       0.0
zp 49.64 ri      0.0  9.28e-11p 0.000116p 0.069213p      0.0  0.136550p 0.000610p 0.000809p 1.12e-08p      0.0       0.0
sig0.350 cc      0.0  9.28e-11p 0.000116p 0.069310p      0.0  0.205880p 0.206490p 0.029718p 0.207299p      0.0       0.0
        rc      0.0  9.28e-11p 0.000116p 0.069329p 0.000216o 0.206095p 0.206706o 0.029748o 0.207515n      0.0       0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.148138n      0.0       0.0
zp 49.42 ri      0.0  2.85e-09p 0.000637p 0.085010p      0.0  0.062066p 9.35e-05p 5.49e-05p 2.11e-10p      0.0       0.0
sig0.350 cc      0.0  2.85e-09p 0.000637p 0.085647p      0.0  0.147713p 0.147807p 0.020748p 0.147862p      0.0       0.0
        rc      0.0  2.85e-09p 0.000637p 0.085647p 0.000313o 0.148026p 0.148120o 0.020792o 0.148175n      0.0       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.565547n      0.0       0.0
zp 49.53 ri      0.0  5.11e-09p 0.002543p 0.727794p      0.0  0.829809p 0.002711p 0.001592p 1.36e-08p      0.0       0.0
sig0.350 cc      0.0  5.11e-09p 0.002543p 0.730242p      0.0  1.560146p 1.562857p 0.220392p 1.564449p      0.0       0.0
        rc      0.0  5.11e-09p 0.002543p 0.730337o 0.001393o 1.561539n 1.564249n 0.220587n 1.565842m      0.0       0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.070939n      0.0       0.0
zp 49.60 ri      0.0  6.21e-11p 6.10e-05p 0.025355p      0.0  0.045057p 0.000209p 0.000123p 2.07e-09p      0.0       0.0
sig0.350 cc      0.0  6.21e-11p 6.10e-05p 0.025416p      0.0  0.070473p 0.070683p 0.010019p 0.070806p      0.0       0.0
        rc      0.0  6.21e-11p 6.10e-05p 0.025416p 0.000145o 0.070619p 0.070828o 0.010039o 0.070951n      0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.139139n      0.0       0.0
zp 49.70 ri      0.0  1.59e-11p 4.65e-05p 0.028652p      0.0  0.109185p 0.000706p 0.000415p 2.05e-08p      0.0       0.0
sig0.350 cc      0.0  1.59e-11p 4.64e-05p 0.028688p      0.0  0.137884p 0.138589p 0.019817p 0.139004p      0.0       0.0
        rc      0.0  1.59e-11p 4.65e-05p 0.028698p 0.000144o 0.138027p 0.138733o 0.019837o 0.139148n      0.0       0.0
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  pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.118771n      0.0       0.0
 zp 49.46 ri      0.0  9.80e-10p 0.000415p 0.053476p      0.0  0.064545p 9.47e-05p 5.56e-05p 4.06e-10p      0.0       0.0
 sig0.350 cc      0.0  9.80e-10p 0.000415p 0.053892p      0.0  0.118437p 0.118531p 0.016650p 0.118587p      0.0       0.0
          rc      0.0  9.80e-10p 0.000415p 0.053892p 0.000204o 0.118640p 0.118735o 0.016679o 0.118791n      0.0       0.0

   pd, ag half lives from 80eng2; cd, in, sn, sb half lives 89wal1; i half life 90bur1.

1

     mass number    127              LA-UR-94-3106 (ENDF-349)                          percent yields
 nuclide      47 ag g   48 cd g   49 in m   49 in g   50 sn m   50 sn g   51 sb g   52 te m   52 te g   53 i  g   54 xe g   55 cs g
 half life     0.175s     0.4 s     3.73 s     1.14 s     4.15 m     2.12 h     3.84 d     109. d      9.4 h     stable     36.41d      6.2 h
 lambda      3.961e+00 1.733e+00 1.858e-01 6.080e-01 2.784e-03 9.082e-05 2.089e-06 7.360e-08 2.048e-05       0.0 2.203e-07
3.105e-05
  z - 1 g    100.0000  100.0000   50.0000   50.0000   49.6700   49.6700  100.0000   16.0000   84.0000  100.0000 -100.0000 -
100.0000
  z - 1 m       0.0       0.0       0.0       0.0       0.0  100.0000  100.0000       0.0       0.0    2.4000       0.0       0.0
  z - 0 m       0.0       0.0    0.1220       0.0    0.0610       0.0       0.0       0.0   97.6000       0.0       0.0       0.0
  cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  0.658244i      0.0       0.0  0.482961n      0.0       0.0
 zp 49.99 ri      0.0  6.77e-06p 0.024492p 0.024492p 0.163570p 0.398824p 0.044073p 3.23e-06p 1.32e-06p      0.0       0.0       0.0
 sig0.350 cc      0.0  6.75e-06p 0.024434p 0.024434p 0.175298p 0.436035p 0.655296p 0.104851p 0.652785p 0.655301p      0.0
0.0
          rc      0.0  6.77e-06p 0.024495p 0.024495p 0.175737p 0.435486o 0.655296i 0.104851i 0.652784h 0.655301h      0.0       0.0
  cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.105347p      0.0       0.0
 zp 49.88 ri      0.0  4.22e-06p 0.006225p 0.006225p 0.025935p 0.063497p 0.003493p 1.43e-07p 5.83e-08p      0.0       0.0       0.0
 sig0.350 cc      0.0  4.22e-06p 0.006227p 0.006227p 0.029028p 0.072817p 0.105339p 0.016854p 0.104935p 0.105339p      0.0
0.0
          rc      0.0  4.22e-06p 0.006227p 0.006227p 0.029028p 0.072817p 0.105339o 0.016854o 0.104935o 0.105339n      0.0       0.0
  cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.497250n      0.0       0.0
 zp 50.14 ri      0.0  7.21e-07p 0.007983p 0.007983p 0.107042p 0.304658p 0.069605p 1.81e-05p 6.36e-06p 3.27e-12p      0.0       0.0
 sig0.350 cc      0.0  7.21e-07p 0.007984p 0.007984p 0.111008p 0.316608p 0.497220p 0.079573p 0.495335p 0.497245p      0.0
0.0
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rc 0.0 7.21e-07p 0.007984p 0.007984p 0.111008p 0.316608p 0.497220o 0.079573o 0.495335n 0.497245m 0.0 0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.466998n 0.0 0.0
zp 50.04 ri 0.0 2.68e-06p 0.013736p 0.013736p 0.115857p 0.283651p 0.040089p 4.71e-06p 1.92e-06p 0.0 0.0 0.0
sig0.350 cc 0.0 2.68e-06p 0.013737p 0.013737p 0.122681p 0.304211p 0.466981p 0.074722p 0.465194p 0.466987p 0.0
0.0
rc 0.0 2.68e-06p 0.013737p 0.013737p 0.122681p 0.304211p 0.466981o 0.074722o 0.465194n 0.466987m 0.0 0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.347052n 0.0 0.0
zp 49.80 ri 7.89e-12p 3.48e-05p 0.032714p 0.032714p 0.049336p 0.224751p 0.007686p 1.70e-07p 3.74e-08p 0.0 0.0 0.0
sig0.350 cc 7.89e-12p 3.48e-05p 0.032731p 0.032731p 0.065593p 0.273740p 0.347019p 0.055523p 0.345686p 0.347019p 0.0
0.0
rc 7.89e-12p 3.48e-05p 0.032731p 0.032731p 0.065593p 0.273740p 0.347019o 0.055523o 0.345686n 0.347019m 0.0
0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.237894n 0.0 0.0
zp 49.58 ri 3.08e-10p 0.000240p 0.047317p 0.047317p 0.041259p 0.101013p 0.001003p 3.53e-09p 1.44e-09p 0.0 0.0
0.0
sig0.350 cc 3.08e-10p 0.000240p 0.047437p 0.047437p 0.064821p 0.172013p 0.237836p 0.038054p 0.236923p 0.237836p 0.0
0.0
rc 3.08e-10p 0.000240p 0.047437p 0.047437p 0.064821p 0.172013p 0.237836o 0.038054o 0.236923n 0.237836m 0.0
0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.647362k 1.855764l 0.0 0.0 0.0 0.0 0.0
zp 49.74 ri 1.30e-10p 0.000337p 0.210878p 0.210878p 0.365798p 1.174467m 0.025271p 2.90e-07p 1.18e-07p 0.0 0.0
0.0
sig0.350 cc 1.51e-10p 0.000392p 0.245492p 0.245492p 0.547438p 1.409174p 1.986008p 0.317762p 1.978382p 1.986008p 0.0
0.0
rc 1.30e-10p 0.000337p 0.211046p 0.211046p 0.470625p 1.490340k 1.986235k 0.317798k 1.978609j 1.986236j 0.0
0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.164340n 0.0 0.0 0.222342n 0.0 0.0
zp 49.77 ri 8.45e-12p 2.49e-05p 0.022026p 0.022026p 0.039356p 0.096355p 0.003716p 5.71e-08p 2.33e-08p 0.0 0.0 0.0
sig0.350 cc 8.45e-12p 2.49e-05p 0.022039p 0.022039p 0.050303p 0.129341p 0.183360p 0.029338p 0.182656p 0.183360p 0.0
0.0

rc 8.45e-12p 2.49e-05p 0.022039p 0.022039p 0.050303p 0.129341p 0.183360m 0.029338m 0.182656l 0.183360l 0.0
0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.358435n 0.0 0.0
zp 49.86 ri 2.15e-12p 1.88e-05p 0.021849p 0.021849p 0.088492p 0.216652p 0.009695p 3.64e-07p 1.49e-07p 0.0 0.0 0.0
sig0.350 cc 2.15e-12p 1.88e-05p 0.021859p 0.021859p 0.099349p 0.249368p 0.358412p 0.057346p 0.357036p 0.358412p 0.0
0.0
rc 2.15e-12p 1.88e-05p 0.021859p 0.021859p 0.099349p 0.249368p 0.358412o 0.057346o 0.357036n 0.358412m 0.0
0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.208479n 0.0 0.0
zp 49.64 ri 8.01e-11p 0.000120p 0.030803p 0.030803p 0.042231p 0.103393p 0.001293p 8.72e-09p 3.56e-09p 0.0 0.0
0.0
sig0.350 cc 8.01e-11p 0.000120p 0.030863p 0.030863p 0.057561p 0.149587p 0.208440p 0.033350p 0.207640p 0.208440p 0.0
0.0
rc 8.01e-11p 0.000120p 0.030863p 0.030863p 0.057561p 0.149587p 0.208440o 0.033350o 0.207640n 0.208440m 0.0
0.0

ag half life from 80eng2; cd, in, sn, sb, te half lives 89wal1.
1

mass number 128 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 46 pd g 47 ag g 48 cd g 49 in g 50 sn d 50 sn g 51 sb m 51 sb g 52 te g 53 i g 54 xe g
half life 0.094s 0.28 s 0.80 s 2.5 s 59.1 m 10.1 m 9.1 h stable 25.00m stable
lambda 0.0 7.374e+00 2.476e+00 8.664e-01 2.773e-01 1.955e-04 1.144e-03 2.116e-05 0.0 4.621e-04 0.0
z - 1 g 100.0000 100.0000 100.0000 99.8780 0.0 99.9390 99.8000 0.2000 100.0000 -6.3000 93.7000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 2.9200 100.0000 0.0 0.0 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.343921n 0.586689l 0.212422k 0.673680n 0.0 0.0
zp 50.15 ri 0.0 0.0 7.64e-07p 0.017451p 0.0 0.551867m 0.110541p 0.064921p 6.51e-05p 9.00e-12p 0.0
sig0.350 cc 0.0 0.0 9.08e-07p 0.020738p 0.0 0.640431p 0.704896p 0.039893p 0.744833p 6.00e-12p 5.63e-12p
rc 0.0 0.0 7.64e-07o 0.017452o 0.000961o 0.570268k 0.679669k 0.066061n 0.745795k 9.00e-12o 8.44e-12o
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.250835p 0.0 0.0
zp 50.04 ri 0.0 0.0 1.36e-06p 0.011715p 0.0 0.220633p 0.011569p 0.006795p 3.99e-06p 0.0 0.0

sig0.350 cc 0.0 0.0 1.36e-06p 0.011714p 0.0 0.232345p 0.243447p 0.007258p 0.250709p 0.0 0.0
rc 0.0 0.0 1.36e-06p 0.011716p 0.000140o 0.232482p 0.243586p 0.007260p 0.250849o 0.0 0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.825435n 0.0 0.0
zp 50.32 ri 0.0 0.0 8.73e-08p 0.007392p 0.0 0.589824p 0.131887p 0.095508p 0.000306p 1.63e-10p 0.0
sig0.350 cc 0.0 0.0 8.73e-08p 0.007391p 0.0 0.597263p 0.727928p 0.096679p 0.824913p 1.63e-10p 1.53e-10p
rc 0.0 0.0 8.73e-08p 0.007393p 0.000579o 0.597791o 0.728482n 0.096704p 0.825492m 1.63e-10p 1.53e-10p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.745210n 0.0 0.0
zp 50.21 ri 0.0 0.0 4.13e-07p 0.014817p 0.0 0.594315o 0.085127p 0.049995p 8.15e-05p 1.80e-11p 0.0
sig0.350 cc 0.0 0.0 4.13e-07p 0.014810p 0.0 0.609188p 0.693055p 0.051190p 0.744326p 1.79e-11p 1.68e-11p
rc 0.0 0.0 4.13e-07p 0.014817p 0.000976o 0.610099o 0.694005n 0.051215p 0.745302m 1.80e-11p 1.68e-11p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.553329n 0.0 0.0
zp 49.98 ri 0.0 0.0 6.34e-06p 0.045128p 0.0 0.471046p 0.015854p 0.021015p 3.91e-06p 0.0 0.0
sig0.350 cc 0.0 0.0 6.34e-06p 0.045125p 0.0 0.516161p 0.530979p 0.022043p 0.553027p 0.0 0.0
rc 0.0 0.0 6.34e-06p 0.045134p 0.000317o 0.516471p 0.531292o 0.022048p 0.553344n 0.0 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.395036n 0.0 0.0
zp 49.77 ri 0.0 1.59e-11p 5.52e-05p 0.083680p 0.0 0.303476p 0.004487p 0.002635p 1.53e-07p 0.0 0.0
sig0.350 cc 0.0 1.58e-11p 5.52e-05p 0.083679p 0.0 0.387164p 0.390874p 0.003408p 0.394281p 0.0 0.0
rc 0.0 1.59e-11p 5.52e-05p 0.083735p 0.000796o 0.387956p 0.391666o 0.003411p 0.395077n 0.0 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.461935n 0.0 0.0
zp 49.97 ri 0.0 2.04e-12p 3.27e-05p 0.221180p 0.0 2.081383n 0.100036p 0.058751p 1.48e-05p 0.0 0.0
sig0.350 cc 0.0 2.04e-12p 3.27e-05p 0.221189p 0.0 2.302478p 2.397898p 0.063350p 2.461263p 0.0 0.0
rc 0.0 2.04e-12p 3.27e-05p 0.221213p 0.000826o 2.303287m 2.398716m 0.063358p 2.462089l 0.0 0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.522711n 0.0 0.0
zp 49.94 ri 0.0 0.0 1.01e-05p 0.048969p 0.0 0.447319p 0.016300p 0.009573p 2.19e-06p 0.0 0.0
sig0.350 cc 0.0 0.0 1.01e-05p 0.048958p 0.0 0.496280p 0.511580p 0.010561p 0.522144p 0.0 0.0
rc 0.0 0.0 1.01e-05p 0.048979p 0.000594o 0.496863p 0.512169o 0.010567p 0.522738n 0.0 0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.696956n 0.0 0.0
zp 50.03 ri 0.0 0.0 4.46e-06p 0.031143p 0.0 0.622495o 0.027098p 0.015915p 9.68e-06p 0.0 0.0
sig0.350 cc 0.0 0.0 4.46e-06p 0.031141p 0.0 0.653631p 0.679417p 0.017219p 0.696645p 0.0 0.0

rc 0.0 0.0 4.46e-06p 0.031147p 0.000340o 0.653962n 0.679752n 0.017223p 0.696985m 0.0 0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.415698n 0.0 0.0
zp 49.82 ri 0.0 4.75e-12p 3.41e-05p 0.055123p 0.0 0.351653p 0.005181p 0.003043p 3.60e-07p 0.0 0.0
sig0.350 cc 0.0 4.75e-12p 3.41e-05p 0.055121p 0.0 0.406782p 0.411146p 0.003854p 0.415000p 0.0 0.0
rc 0.0 4.75e-12p 3.41e-05p 0.055157p 0.000731o 0.407508p 0.411873o 0.003858p 0.415731n 0.0 0.0

ag half life from 80eng2; cd, in, sn, sb half lives from 89wal1.
1

mass number 129 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 48 cd g 49 in m 49 in g 50 sn m 50 sn g 51 sb g 52 te m 52 te g 53 i g 54 xe g 55 cs g 56 ba g
half life 0.27 s 1.23 s 0.63s 6.9 m 2.4 m 4.40 h 33.6 d 1.16 h 1.6e7y stable 32.06h 2.1 h
lambda 2.567e+00 5.635e-01 1.100e+00 1.674e-03 4.814e-03 4.376e-05 2.388e-07 1.660e-04 1.374e-15 0.0 6.006e-06
9.169e-05
z - 1 g 100.0000 0.0 100.0000 0.0 97.0800 100.0000 16.6000 83.4000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 100.0000 100.0000 0.0 0.0 36.4000 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 1.0400 0.0 0.0 0.0 63.6000 0.0 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 1.143031l 0.0 0.0 0.0 1.284646n 0.0 0.0
zp 50.44 ri 0.000681p 0.032213p 0.032213p 0.176003p 0.431026p 0.485089p 0.035514p 0.014506p 0.000324p 1.74e-07p 5.02e-
12p 0.0
sig0.594 cc 0.000683p 0.032310p 0.032994p 0.176587p 0.496673p 1.159842p 0.225523p 1.124215p 1.206606p 1.206606p 4.66e-
12p 0.0
rc 0.000681p 0.032213p 0.032894p 0.176102p 0.495173p 1.156363l 0.227471m 1.123584l 1.206708k 1.206708k 5.02e-12p
0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.566469p 0.0 0.0
zp 50.22 ri 2.50e-07p 0.004795p 0.004795p 0.130723p 0.320886p 0.104753p 5.38e-05p 2.20e-05p 1.79e-11p 0.0 0.0 0.0
sig0.350 cc 2.50e-07p 0.004792p 0.004792p 0.130985p 0.330131p 0.565813p 0.093979p 0.531680p 0.565889p 0.565889p 0.0
0.0
rc 2.50e-07p 0.004795p 0.004795p 0.131413p 0.330337p 0.566502o 0.094093o 0.532328n 0.566578n 0.566578n 0.0
0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.292850n 0.0 0.0

zp 50.61 ri 0.000274p 0.019553p 0.019553p 0.139272p 0.396551p 0.627901p 0.066082p 0.023218p 0.000925p 8.09e-07p 3.99e-11p 0.0
sig0.596 cc 0.000274p 0.019552p 0.019826p 0.139322p 0.435330p 1.202528p 0.265698p 1.195109p 1.292748p 1.292749p 3.99e-11p 0.0
rc 0.000274p 0.019553p 0.019827p 0.139385p 0.435351p 1.202637n 0.265719o 1.195215n 1.292861n 1.292862m 3.99e-11p 0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.092974n 0.0 0.0
zp 50.41 ri 0.000729p 0.032694p 0.032694p 0.164598p 0.403251p 0.423308p 0.025748p 0.010517p 0.000210p 9.65e-08p 2.38e-12p 0.0
sig0.592 cc 0.000729p 0.032690p 0.033419p 0.164690p 0.468341p 1.056302p 0.201091p 1.019366p 1.092772p 1.092773p 2.38e-12p 0.0
rc 0.000729p 0.032694p 0.033423p 0.164818p 0.468392p 1.056518o 0.201130o 1.019571o 1.092992n 1.092992m 2.38e-12p 0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.872587n 0.0 0.0
zp 50.18 ri 6.72e-07p 0.010867p 0.010867p 0.125253p 0.572311p 0.152897p 5.86e-05p 1.29e-05p 1.41e-11p 0.0 0.0 0.0
sig0.350 cc 6.72e-07p 0.010862p 0.010863p 0.125574p 0.593467p 0.871878p 0.144790p 0.819246p 0.871950p 0.871950p 0.0 0.0
rc 6.72e-07p 0.010867p 0.010868p 0.126010p 0.593728o 0.872635n 0.144916n 0.819957n 0.872706n 0.872706m 0.0 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.634384n 0.0 0.0
zp 49.97 ri 8.24e-06p 0.027254p 0.027254p 0.156603p 0.383720p 0.040107p 2.81e-06p 1.15e-06p 0.0 0.0 0.0 0.0
sig0.350 cc 8.24e-06p 0.027249p 0.027257p 0.156699p 0.437353p 0.634151p 0.105272p 0.595836p 0.634155p 0.634155p 0.0 0.0
rc 8.24e-06p 0.027254p 0.027262p 0.156859p 0.437441p 0.634407o 0.105314o 0.596077o 0.634411n 0.634411m 0.0 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.658890n 0.0 0.0
zp 50.21 ri 1.36e-06p 0.028302p 0.028302p 0.597682p 1.465040n 0.538985p 0.000211p 8.60e-05p 7.61e-11p 0.0 0.0 0.0
sig0.350 cc 1.36e-06p 0.028294p 0.028295p 0.598231p 1.520399p 2.657487p 0.441353p 2.497131p 2.657783p 2.657783p 0.0 0.0
rc 1.36e-06p 0.028302p 0.028303p 0.599113o 1.520819m 2.658917m 0.441591m 2.498475l 2.659214l 2.659214l 0.0 0.0

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 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.966693l      0.0       0.0       0.0  1.005751n      0.0       0.0
zp 50.12 ri 1.70e-06p 0.020336p 0.020336p 0.226296p 0.555127p 0.148869p 2.75e-05p 1.12e-05p 5.56e-12p       0.0       0.0       0.0
sig0.350 cc 1.70e-06p 0.020327p 0.020328p 0.226639p 0.594935p 0.970373p 0.161109p 0.911767p 0.970411p 0.970411p       0.0
0.0
         rc 1.70e-06p 0.020336p 0.020338p 0.227187p 0.595207o 0.971262l 0.161257l 0.912603k 0.971301k 0.971301k       0.0
0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.354087n      0.0       0.0
zp 50.21 ri 7.20e-07p 0.011629p 0.011629p 0.320703p 0.786071p 0.223615p 0.000114p 4.67e-05p 3.20e-11p       0.0       0.0
0.0
sig0.350 cc 7.20e-07p 0.011626p 0.011627p 0.320982p 0.808767p 1.353308p 0.224763p 1.271655p 1.353469p 1.353469p       0.0
0.0
         rc 7.20e-07p 0.011629p 0.011630p 0.321441p 0.808991o 1.354046n 0.224886n 1.272349n 1.354207n 1.354207m       0.0
0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.843844n      0.0       0.0
zp 50.01 ri 6.56e-06p 0.025036p 0.025036p 0.213496p 0.523020p 0.057753p 6.56e-06p 2.68e-06p       0.0       0.0       0.0       0.0
sig0.350 cc 6.56e-06p 0.025033p 0.025039p 0.213594p 0.572278p 0.843617p 0.140047p 0.792649p 0.843626p 0.843626p       0.0
0.0
         rc 6.56e-06p 0.025036p 0.025043p 0.213760p 0.572368o 0.843881n 0.140091n 0.792897n 0.843891m 0.843891m       0.0
0.0

  cd, in, sn, sb, te, i half lives  89wal1. sb-te branching to fit data; cs half life 90bur1.

1

    mass number    130              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide       46 pd g   47 ag g   48 cd g   49 in g   50 sn d   50 sn g   51 sb m   51 sb g   52 te g   53 i  m   53 i  g   54  xe g
half life                       0.20 s    0.29 s    0.28 s     3.7 m     6.5 m    38.4 m    stable     8.9 m    12.36h    stable
lambda            0.0       0.0 3.466e+00 2.390e+00 2.476e+00 3.122e-03 1.777e-03 3.008e-04       0.0 1.298e-03 1.558e-05       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000       0.0   98.9600   90.0000   10.0000  100.0000       0.0       0.0  100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0   15.0000
 z - 0 m         0.0       0.0       0.0       0.0    1.8400  100.0000       0.0       0.0       0.0       0.0   85.0000       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.264240o 0.966662k 0.921350j 1.890334n       0.0       0.0       0.0
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zp 50.84 ri 0.0 7.32e-09p 3.72e-05p 0.009438p 0.0 0.248671o 0.713315l 0.871676j 0.285617p 0.001462p 0.003410p 8.19e-06p
sig0.594 cc 0.0 1.86e-08p 9.45e-05p 0.024067p 0.0 0.655516p 1.326132p 0.497904p 2.128188p 0.001556p 0.004954p 0.005197p
rc 0.0 7.32e-09p 3.72e-05p 0.009476p 6.91e-05o 0.258117n 0.945621j 0.897488i 2.128725l 0.001462p 0.004653p 0.004880p
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.792740p 0.0 0.0 0.0
zp 50.45 ri 1.30e-12p 8.71e-08p 0.000467p 0.065836p 0.0 1.005798n 0.415770p 0.244184p 0.061017p 5.33e-05p 0.000124p 4.50e-08p
sig0.557 cc 1.30e-12p 8.71e-08p 0.000467p 0.066298p 0.0 1.071450p 1.380054p 0.351315p 1.792382p 5.33e-05p 0.000170p 0.000178p
rc 1.30e-12p 8.71e-08p 0.000467p 0.066303p 0.000412o 1.071823m 1.380411n 0.351366p 1.792794n 5.33e-05p 0.000170p 0.000178p
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.989000n 0.0 0.0 0.0
zp 51.01 ri 0.0 3.78e-09p 2.78e-05p 0.010875p 0.0 0.412117p 0.661714p 0.479173p 0.425179p 0.003134p 0.008475p 3.07e-05p
sig0.596 cc 0.0 3.78e-09p 2.78e-05p 0.010903p 0.0 0.422913p 1.042334p 0.521462p 1.988973p 0.003134p 0.011139p 0.011640p
rc 0.0 3.78e-09p 2.78e-05p 0.010903p 2.94e-05o 0.422936p 1.042356o 0.521466p 1.989002m 0.003134p 0.011139p 0.011640p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.689142n 0.0 0.0 0.0
zp 50.82 ri 0.0 1.71e-08p 8.31e-05p 0.021066p 0.0 0.515527p 0.587337p 0.344945p 0.220340p 0.001065p 0.002484p 5.19e-06p
sig0.592 cc 0.0 1.71e-08p 8.31e-05p 0.021149p 0.0 0.536468p 1.070153p 0.398588p 1.689079p 0.001065p 0.003389p 0.003554p
rc 0.0 1.71e-08p 8.31e-05p 0.021149p 6.78e-05o 0.536524o 1.070209n 0.398597p 1.689146m 0.001065p 0.003389p 0.003554p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.289049n 0.0 0.0 0.0
zp 50.42 ri 1.32e-11p 3.71e-07p 0.000669p 0.072092p 0.0 0.651688p 0.224681p 0.297836p 0.042515p 4.30e-05p 0.000196p 9.23e-08p
sig0.585 cc 1.32e-11p 3.71e-07p 0.000670p 0.072756p 0.0 0.723729p 0.876024p 0.370189p 1.288725p 4.30e-05p 0.000232p 0.000239p

rc 1.32e-11p 3.71e-07p 0.000670p 0.072762p 0.000357o 0.724050o 0.876326o 0.370241p 1.289082m 4.30e-05p 0.000232p 0.000239p
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.991224n 0.0 0.0 0.0
zp 50.18 ri 0.0 0.0 7.61e-07p 0.024633p 0.0 0.791906o 0.109484p 0.064302p 8.14e-05p 4.83e-12p 1.13e-11p 0.0
sig0.350 cc 0.0 0.0 7.60e-07p 0.024625p 0.0 0.816344p 0.844157p 0.145913p 0.990152p 4.83e-12p 1.54e-11p 1.61e-11p
rc 0.0 0.0 7.61e-07p 0.024634p 0.001169o 0.817453o 0.845192n 0.146048o 0.991321m 4.83e-12p 1.54e-11p 1.61e-11p
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.935401n 0.0 0.0 0.0
zp 50.54 ri 1.06e-10p 1.39e-06p 0.001471p 0.136115p 0.0 1.257628n 0.860224p 0.505215p 0.175656p 0.000686p 0.001602p 2.62e-06p
sig0.620 cc 1.06e-10p 1.39e-06p 0.001473p 0.137580p 0.0 1.393853p 2.114658p 0.644576p 2.934881p 0.000686p 0.002185p 0.002290p
rc 1.06e-10p 1.39e-06p 0.001473p 0.137588p 0.000583o 1.394368m 2.115155n 0.644652o 2.935463m 0.000686p 0.002185p 0.002291p
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.839127n 0.0 0.0 0.0
zp 50.39 ri 0.0 7.77e-08p 0.000458p 0.085185p 0.0 1.027872n 0.432905p 0.254247p 0.038905p 2.48e-05p 5.78e-05p 8.68e-09p
sig0.541 cc 0.0 7.77e-08p 0.000458p 0.085636p 0.0 1.112668p 1.434281p 0.365498p 1.838681p 2.48e-05p 7.88e-05p 8.25e-05p
rc 0.0 7.77e-08p 0.000458p 0.085643p 0.000494o 1.113118m 1.434711n 0.365559p 1.839175m 2.48e-05p 7.88e-05p 8.25e-05p
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.160565n 0.0 0.0 0.0
zp 50.46 ri 1.23e-12p 8.09e-08p 0.000534p 0.070466p 0.0 1.264009n 0.470766p 0.276482p 0.078710p 6.00e-05p 0.000140p 5.54e-08p
sig0.555 cc 1.23e-12p 8.09e-08p 0.000534p 0.070996p 0.0 1.334304p 1.671621p 0.409901p 2.160228p 6.00e-05p 0.000191p 0.000200p
rc 1.23e-12p 8.09e-08p 0.000534p 0.071000p 0.000374o 1.334645m 1.671946n 0.409947p 2.160603m 6.00e-05p 0.000191p 0.000200p
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.631602n 0.0 0.0 0.0
zp 50.21 ri 0.0 0.0 8.41e-07p 0.025411p 0.0 1.352003n 0.159400p 0.093618p 0.000204p 1.14e-11p 2.66e-11p 0.0

sig0.350 cc 0.0 0.0 8.41e-07p 0.025406p 0.0 1.377211p 1.398853p 0.231316p 1.630373p 1.14e-11p 3.63e-11p 3.80e-11p
rc 0.0 0.0 8.41e-07p 0.025412p 0.001422o 1.378572m 1.400116m 0.231475o 1.631795l 1.14e-11p 3.63e-11p 3.80e-11p

cd, in, sn, sb half lives from 89wal1; i half life 90bur1.
1

mass number 131 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 48 cd g 49 in g 50 sn d 50 sn g 51 sb g 52 te m 52 te g 53 i g 54 xe m 54 xe g 55 cs g 56 ba g
half life 0.106s 0.28 s 0.12s 39. s 23.0 m 1.35 d 25.0 m 8.040d 11.9 d stable 9.69 d 11.7 d
lambda 6.539e+00 2.476e+00 5.776e+00 1.777e-02 5.023e-04 5.943e-06 4.621e-04 9.978e-07 6.742e-07 0.0 8.279e-07 6.857e-07
z - 1 g 100.0000 100.0000 0.0 98.1600 100.0000 7.0000 93.0000 100.0000 1.4000 98.6000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 82.0000 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 5.3600 100.0000 0.0 0.0 18.0000 0.0 0.0 100.0000 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.594584m 1.173373k 1.364431i 3.580833h 0.0 2.958505n 0.0 0.0
zp 51.27 ri 4.41e-06p 0.003752p 0.0 0.274299p 1.446562m 1.131459k 0.266083p 0.071088p 0.000215p 8.80e-05p 8.57e-08p 1.85e-12p
sig0.594 cc 5.18e-06p 0.004412p 0.0 0.326464p 2.025270p 0.929368p 2.372483p 3.193179p 0.044911p 3.193470p 8.22e-08p 1.77e-12p
rc 4.41e-06p 0.003756p 9.81e-06o 0.277996p 1.724559k 1.252178j 2.095315h 3.193189g 0.044920g 3.193492g 8.57e-08p 1.85e-12p
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.325669k 0.0 0.0 0.0 0.0
zp 50.86 ri 4.11e-05p 0.022344p 0.0 0.929673p 1.908047n 0.327169p 0.133632p 0.005045p 2.84e-06p 1.16e-06p 9.92e-11p 0.0
sig0.557 cc 4.11e-05p 0.022385p 0.0 0.951676p 2.859700p 0.527343p 2.888073p 3.325539p 0.046560p 3.325543p 9.92e-11p 0.0
rc 4.11e-05p 0.022386p 0.000132o 0.951778o 2.859825m 0.527357p 2.888194l 3.325671j 0.046562j 3.325675j 9.92e-11p 0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.888722n 0.0 0.0
zp 51.44 ri 1.24e-06p 0.001598p 0.0 0.172614p 1.345305n 0.936737p 0.329124p 0.102562p 0.000595p 0.000209p 3.80e-07p 1.38e-11p

sig0.596 cc 1.24e-06p 0.001599p 0.0 0.174186p 1.519490p 1.043101p 1.930007p 2.887912p 0.041026p 2.888717p 3.80e-07p 1.38e-11p
rc 1.24e-06p 0.001599p 5.97e-06o 0.174190p 1.519495m 1.043102o 1.930012m 2.887918m 0.041026m 2.888722l 3.80e-07p 1.38e-11p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.389161n 0.0 0.0
zp 51.25 ri 4.39e-06p 0.003678p 0.0 0.256100p 1.298880n 0.561829p 0.229479p 0.039067p 0.000123p 5.04e-05p 4.39e-08p 0.0
sig0.592 cc 4.39e-06p 0.003683p 0.0 0.259721p 1.558598p 0.670929p 1.799742p 2.388970p 0.033569p 2.389144p 4.39e-08p 0.0
rc 4.39e-06p 0.003683p 1.77e-05o 0.259733p 1.558613m 0.670932o 1.799757m 2.388988m 0.033569m 2.389162l 4.39e-08p 0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.888683n 0.0 0.0
zp 50.85 ri 5.62e-05p 0.019339p 0.0 0.510081p 1.101055n 0.208192p 0.045701p 0.004468p 4.70e-06p 1.03e-06p 4.09e-10p 0.0
sig0.585 cc 5.62e-05p 0.019395p 0.0 0.529154p 1.630183p 0.322298p 1.619783p 1.888536p 0.026444p 1.888541p 4.09e-10p 0.0
rc 5.62e-05p 0.019396p 0.000155o 0.529275o 1.630330m 0.322315p 1.619924m 1.888690l 0.026446l 1.888696l 4.09e-10p 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.486837n 0.0 0.0
zp 50.48 ri 0.000420p 0.063136p 0.0 0.711651p 0.654586p 0.040634p 0.016597p 0.000317p 7.74e-08p 3.16e-08p 1.82e-12p 0.0
sig0.574 cc 0.000420p 0.063545p 0.0 0.774133p 1.428635p 0.140631p 1.370538p 1.486172p 0.020806p 1.486172p 1.82e-12p 0.0
rc 0.000420p 0.063556p 0.000728o 0.774766o 1.429352n 0.140688o 1.371218n 1.486900n 0.020817n 1.486900m 1.83e-12p 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 2.387080l 0.0 0.0 3.888952j 0.0 0.0 0.0 0.0
zp 50.96 ri 0.000124p 0.031548p 0.0 0.750900p 1.975816m 0.606653p 0.387376p 0.028944p 6.61e-05p 2.70e-05p 2.50e-08p 0.0
sig0.620 cc 0.000137p 0.035104p 0.0 0.866869p 3.056843p 0.710648p 3.173645p 3.780731p 0.052986p 3.780809p 2.10e-08p 0.0
rc 0.000124p 0.031672p 0.000345o 0.782334n 2.758150k 0.799724n 3.096406k 3.781124i 0.053002i 3.781217i 2.50e-08p 0.0

```
  np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.480785j      0.0  3.084792i      0.0       0.0
 zp 50.80 ri 3.09e-05p 0.026821p       0.0  0.827690p 2.013248n 0.203639p 0.082964p 0.002783p 5.77e-07p 2.36e-07p 1.21e-11p
0.0
 sig0.541 cc 3.07e-05p 0.026668p       0.0  0.848247p 2.869797p 0.402614p 2.823778p 3.156685p 0.044194p 3.156686p 1.30e-11p
0.0
          rc 3.09e-05p 0.026852p 0.000158o 0.854205o 2.867453m 0.404361p 2.822481l 3.156839j 0.044196j 3.156840h 1.21e-11p
0.0
  pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.339701n      0.0       0.0
 zp 50.87 ri 3.78e-05p 0.020311p       0.0  0.958890p 1.862104n 0.350491p 0.143158p 0.004964p 2.96e-06p 1.21e-06p 9.08e-11p
0.0
 sig0.555 cc 3.78e-05p 0.020349p       0.0  0.978893p 2.840977p 0.549354p 2.884148p 3.339583p 0.046757p 3.339587p 9.08e-11p
0.0
          rc 3.78e-05p 0.020349p 0.000124o 0.978989o 2.841094m 0.549368p 2.884262m 3.339707l 0.046759l 3.339711l 9.08e-11p
0.0
  pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.616532n      0.0       0.0
 zp 50.51 ri 0.000372p 0.076899p       0.0  1.324570n 1.109459n 0.074968p 0.030621p 0.000363p 6.05e-08p 2.47e-08p       0.0
0.0
 sig0.551 cc 0.000372p 0.077262p       0.0  1.400526p 2.509890p 0.250652p 2.409932p 2.615830p 0.036622p 2.615830p       0.0
0.0
          rc 0.000372p 0.077271p 0.000811o 1.401230m 2.510690l 0.250716n 2.410691l 2.616641l 0.036633l 2.616641l       0.0       0.0

   cd half life from 80eng2; in, sn, sb, te, i, xe half lives from 89wal1.

1

     mass number    132              LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       48 cd g   49 in g   50 sn g   51 sb m   51 sb g   52 te g   53 i  g   54 xe g   55 cs g   56 ba g
 half life     0.136s    0.20 s     40. s     2.8 m     4.2 m    3.26 d    2.28 h    stable    6.475d    stable
 lambda      5.097e+00 3.466e+00 1.733e-02 4.126e-03 2.751e-03 2.461e-06 8.445e-05       0.0 1.239e-06       0.0
  z - 1 g    100.0000  100.0000   94.6400   50.0000   50.0000  100.0000  100.0000  100.0000  -97.8000    2.2000
  z - 1 m        0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0       0.0
  z - 0 m        0.0       0.0       0.0    0.2550       0.0       0.0       0.0       0.0       0.0       0.0
  cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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xc 0.0 0.0 0.0 0.351427m 0.391590l 4.865603i 4.645418i 4.237206n 0.0 0.0
zp 51.71 ri 6.93e-08p 0.000183p 0.044472p 0.295958m 0.334551m 3.718387i 0.374522p 0.005617p 4.93e-06p 3.81e-10p
sig0.594 cc 1.64e-07p 0.000432p 0.105453p 0.678554p 0.916965p 4.371756p 4.767126p 4.773672p 5.74e-06p 1.27e-07p
rc 6.93e-08p 0.000183p 0.044645p 0.318281l 0.356873l 4.393541h 4.768063h 4.773686h 4.93e-06p 1.09e-07p
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 4.591189k 0.0 0.0 0.0 0.0
zp 51.30 ri 1.33e-06p 0.002457p 0.407704p 0.960641p 1.326600n 1.893917n 0.063518p 0.000216p 1.88e-08p 0.0
sig0.557 cc 1.33e-06p 0.002458p 0.410031p 1.165657p 1.531615p 4.591188p 4.654706p 4.654923p 1.88e-08p 4.13e-10p
rc 1.33e-06p 0.002458p 0.410031p 1.165657o 1.531615m 4.591188j 4.654706j 4.654923j 1.88e-08p 4.13e-10p
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.884833n 0.0 0.0
zp 51.89 ri 2.67e-08p 0.000111p 0.040410p 0.420614p 0.474310p 2.400571n 0.535037p 0.013767p 2.08e-05p 2.70e-09p
sig0.596 cc 2.67e-08p 0.000111p 0.040515p 0.440872p 0.494567p 3.336010p 3.871046p 3.884834p 2.08e-05p 4.61e-07p
rc 2.67e-08p 0.000111p 0.040515p 0.440872p 0.494567p 3.336010m 3.871046m 3.884834l 2.08e-05p 4.61e-07p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.185547n 0.0 0.0
zp 51.69 ri 1.23e-07p 0.000330p 0.075415p 0.442635p 0.611258p 1.804997n 0.247301p 0.003626p 2.93e-06p 1.93e-10p
sig0.592 cc 1.23e-07p 0.000330p 0.075728p 0.480499p 0.649122p 2.934618p 3.181918p 3.185548p 2.93e-06p 6.47e-08p
rc 1.23e-07p 0.000330p 0.075728p 0.480499p 0.649122o 2.934618m 3.181918m 3.185548l 2.93e-06p 6.47e-08p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.677256n 0.0 0.0
zp 51.29 ri 2.49e-06p 0.002883p 0.238145p 0.885128p 0.565901p 0.934375p 0.050758p 0.000217p 5.38e-08p 0.0
sig0.585 cc 2.49e-06p 0.002885p 0.240876p 1.005566p 0.686339p 2.626280p 2.677038p 2.677255p 5.38e-08p 1.19e-09p
rc 2.49e-06p 0.002885p 0.240876p 1.005566o 0.686339o 2.626280n 2.677038n 2.677255m 5.38e-08p 1.19e-09p
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.081571n 0.0 0.0
zp 50.92 ri 2.61e-05p 0.013553p 0.479606p 0.527091p 0.727888p 0.328039p 0.006085p 7.47e-06p 4.59e-10p 0.0
sig0.574 cc 2.61e-05p 0.013579p 0.492457p 0.773319p 0.974116p 2.075474p 2.081560p 2.081567p 4.59e-10p 1.01e-11p
rc 2.61e-05p 0.013579p 0.492457p 0.773319o 0.974116o 2.075474n 2.081560n 2.081567m 4.59e-10p 1.01e-11p
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 5.126491g 5.255048g 0.0 0.0 0.0
zp 51.38 ri 8.99e-06p 0.006422p 0.406368p 1.109149n 1.531682n 2.049379m 0.164742p 0.001636p 1.26e-06p 7.80e-11p
sig0.620 cc 8.96e-06p 0.006407p 0.410876p 1.310343p 1.731259p 5.083140p 5.267405p 5.269045p 1.26e-06p 2.78e-08p
rc 8.99e-06p 0.006431p 0.412454p 1.315376m 1.737909m 5.102665g 5.267406g 5.269044g 1.26e-06p 2.77e-08p
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.249384j 4.881878j 0.0 0.0

zp 51.23 ri 1.07e-06p 0.002946p 0.424046p 1.085435n 1.498934n 1.515943n 0.040518p 7.10e-05p 3.46e-09p 0.0
sig0.541 cc 1.09e-06p 0.002990p 0.433079p 1.317855p 1.737404p 4.526556p 4.567667p 4.567733p 3.25e-09p 7.14e-11p
rc 1.07e-06p 0.002947p 0.426834p 1.298852m 1.712351m 4.527147k 4.567665j 4.567736i 3.46e-09p 7.62e-11p
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.815151n 0.0 0.0
zp 51.30 ri 1.36e-06p 0.002317p 0.446882p 0.936642p 1.293458n 2.075707n 0.060045p 0.000221p 1.58e-08p 0.0
sig0.555 cc 1.36e-06p 0.002319p 0.449076p 1.161181p 1.517997p 4.754884p 4.814929p 4.815150p 1.58e-08p 3.49e-10p
rc 1.36e-06p 0.002319p 0.449076p 1.161181o 1.517997m 4.754884l 4.814929l 4.815150l 1.58e-08p 3.49e-10p
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.969568n 0.0 0.0
zp 50.94 ri 2.25e-05p 0.015116p 1.011017n 0.916430p 1.265546n 0.754129p 0.008106p 8.47e-06p 1.84e-10p 0.0
sig0.551 cc 2.25e-05p 0.015138p 1.025344p 1.429102p 1.778218p 3.961449p 3.969555p 3.969563p 1.84e-10p 4.04e-12p
rc 2.25e-05p 0.015138p 1.025344m 1.429102n 1.778218m 3.961449m 3.969555m 3.969563l 1.84e-10p 4.04e-12p

cd half life from 80eng2; in, sn, sb, te, i half lives 89wal1; cs half life 90bur1.

1

mass number 133 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 49 in g 50 sn g 51 sb d 51 sb g 52 te m 52 te g 53 i g 54 xe m 54 xe g 55 cs g 56 ba g 57 la g
half life 0.18 s 1.44 s 1.04s 2.5 m 55.4 m 12.4 m 20.8 h 2.19 d 5.243d stable 10.74y 4. h
lambda 3.851e+00 4.814e-01 6.665e-01 4.621e-03 2.085e-04 9.316e-04 9.257e-06 3.663e-06 1.530e-06 0.0 2.047e-09
4.814e-05
z - 1 g 100.0000 100.0000 0.0 99.7450 42.0000 58.0000 100.0000 2.8000 97.2000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 87.0000 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 18.3000 100.0000 0.0 13.0000 0.0 0.0 100.0000 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.676265i 0.0 0.0 5.532465n 0.0 0.0
zp 52.16 ri 2.03e-05p 0.015383p 0.0 0.709710p 2.464040n 1.006436n 1.476444n 0.049684p 0.020294p 0.000217p 5.44e-08p
0.0
sig0.594 cc 2.03e-05p 0.015399p 0.0 0.724962p 2.767918p 1.786498p 5.670672p 0.209399p 5.741968p 5.742189p 5.54e-08p
0.0
rc 2.03e-05p 0.015403p 0.000284o 0.725357o 2.768690m 1.787073l 5.672278i 0.208508n 5.742255h 5.742473h 5.44e-08p
0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.699745k 0.0 0.0 0.0 0.0 0.0

zp 51.76 ri 0.000124p 0.071427p 0.0 1.566788n 2.551301n 1.042075n 0.466814p 0.003897p 0.001592p 2.23e-06p 5.80e-11p
0.0
sig0.557 cc 0.000124p 0.071546p 0.0 1.638344p 3.239267p 2.413368p 5.698346p 0.163450p 5.703834p 5.703837p 5.80e-11p
0.0
rc 0.000124p 0.071551p 0.001251o 1.639408m 3.239852m 2.414112l 5.699597j 0.163486j 5.705086j 5.705088j 5.80e-11p
0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.880944n 0.0 0.0
zp 52.34 ri 4.49e-06p 0.005176p 0.0 0.368806p 1.974057n 0.693587p 1.710621n 0.094696p 0.033271p 0.000660p 2.79e-07p
6.54e-12p
sig0.596 cc 4.49e-06p 0.005180p 0.0 0.373989p 2.131125p 1.187545p 4.752238p 0.227758p 4.880204p 4.880864p 2.79e-07p
6.54e-12p
rc 4.49e-06p 0.005180p 7.04e-05o 0.374043p 2.131155m 1.187582n 4.752307l 0.227760o 4.880275l 4.880935l 2.79e-07p
6.54e-12p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.981934n 0.0 0.0
zp 52.14 ri 1.61e-05p 0.011747p 0.0 0.525867p 1.719404n 0.702290p 0.979090p 0.030675p 0.012529p 0.000122p 2.68e-08p
0.0
sig0.592 cc 1.61e-05p 0.011763p 0.0 0.537642p 1.945194p 1.266991p 3.938385p 0.140949p 3.981589p 3.981711p 2.68e-08p
0.0
rc 1.61e-05p 0.011763p 0.000202o 0.537803o 1.945282m 1.267102n 3.938587m 0.140956n 3.981791m 3.981913l 2.68e-08p
0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.479152n 0.0 0.0
zp 51.74 ri 0.000216p 0.059555p 0.0 1.097441n 1.631805n 0.358199p 0.325867p 0.003817p 0.000838p 4.06e-06p 2.30e-10p
0.0
sig0.585 cc 0.000216p 0.059764p 0.0 1.157286p 2.117709p 1.304695p 3.472930p 0.101058p 3.477584p 3.477588p 2.30e-10p
0.0
rc 0.000216p 0.059771p 0.001553o 1.158613m 2.118422m 1.305589n 3.474483m 0.101102l 3.479137l 3.479142l 2.30e-10p
0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.882005n 0.0 0.0
zp 51.36 ri 0.001664p 0.194246p 0.0 1.492249n 0.795311p 0.324860p 0.066457p 0.000202p 8.26e-05p 6.37e-08p 0.0
0.0
sig0.574 cc 0.001663p 0.195785p 0.0 1.688243p 1.503999p 1.499394p 2.874288p 0.080682p 2.874573p 2.874573p 0.0
0.0

rc 0.001664p 0.195910p 0.007754o 1.695413m 1.507384n 1.504159n 2.882041m 0.080899m 2.882326m 2.882326l 0.0
0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.490285j 0.0 5.629531j 0.0 0.0 0.0
zp 51.81 ri 0.000541p 0.095791p 0.0 1.619654n 2.203173n 0.899878p 0.719856p 0.012688p 0.005182p 3.98e-05p 7.33e-09p
0.0
sig0.620 cc 0.000541p 0.096344p 0.0 1.716623p 2.924501p 2.275856p 5.538847p 0.167633p 5.556517p 5.556557p 7.24e-09p
0.0
rc 0.000541p 0.096332p 0.002835o 1.718576m 2.924975m 2.276898n 5.541482j 0.167849k 5.559352i 5.559392i 7.33e-09p
0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 6.472899i 0.0 0.0 6.522310n 0.0 0.0
zp 51.66 ri 0.000224p 0.097619p 0.0 2.542473n 2.425716n 0.990784p 0.415304p 0.001468p 0.000599p 5.28e-07p 3.86e-12p
0.0
sig0.541 cc 0.000224p 0.097834p 0.0 2.640326p 3.534470p 2.981580p 6.471879p 0.182675p 6.473938p 6.473939p 3.85e-12p
0.0
rc 0.000224p 0.097843p 0.002123o 2.642190m 3.535436m 2.982860m 6.473994i 0.182740i 6.476061i 6.476061i 3.87e-12p
0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.715369n 0.0 0.0
zp 51.74 ri 0.000154p 0.093867p 0.0 1.823086n 3.059099n 1.249482n 0.482367p 0.003975p 0.001624p 1.86e-06p 4.54e-11p
0.0
sig0.555 cc 0.000154p 0.094014p 0.0 1.917160p 3.864119p 2.863703p 6.707816p 0.191794p 6.713414p 6.713416p 4.54e-11p
0.0
rc 0.000154p 0.094021p 0.001864o 1.918732m 3.864966m 2.864792l 6.709680l 0.191846l 6.715278l 6.715280k 4.54e-11p
0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.858709n 0.0 0.0
zp 51.38 ri 0.001662p 0.353493p 0.0 2.800426n 1.831664n 0.748159p 0.112484p 0.000282p 0.000115p 4.04e-08p 0.0
0.0
sig0.551 cc 0.001662p 0.354981p 0.0 3.155686p 3.156384p 2.988499p 5.846984p 0.163997p 5.847381p 5.847381p 0.0
0.0
rc 0.001662p 0.355155p 0.011835o 3.166510m 3.161598l 2.995743m 5.858818l 0.164329l 5.859215l 5.859215k 0.0
0.0

sb-te branching 66str1; in, sn, sb, te, i, xe half lives 89wal1; ba half life 90bur1.

mass number 134 LA-UR-94-3106 (ENDF-349) percent yields

nuclide 48 cd g 49 in g 50 sn g 51 sb g 52 te d 52 te g 53 i m 53 i g 54 xe m 54 xe g 55 cs g 56 ba g

half life 0.081s 1.04 s 0.8 s 1.82 s 42. m 3.7 m 52.6 m 0.29 s stable 2.062y stable

lambda 0.0 8.557e+00 6.665e-01 8.664e-01 3.809e-01 2.751e-04 3.122e-03 2.196e-04 2.390e+00 0.0 1.066e-08 0.0

z - 1 g 100.0000 100.0000 100.0000 81.7000 0.0 100.0000 0.0 100.0000 0.0 100.0000 0.0 100.0000

z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.0000 0.0 0.0 0.0

z - 0 m 0.0 0.0 0.0 0.0 17.8700 100.0000 0.0 98.0000 0.0 100.0000 0.0 0.0

cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 1.932026k 0.0 0.0 7.161647n 0.0 0.0

zp 52.60 ri 1.93e-11p 5.87e-07p 0.001550p 0.209129p 0.0 3.067590n 1.856267k 1.894236n 0.343663p 0.147284p 0.004532p 3.99e-06p

sig0.594 cc 2.05e-11p 6.24e-07p 0.001647p 0.223554p 0.0 3.484456p 1.475471p 6.967973p 0.394665p 7.519133p 0.004815p 0.004819p

rc 1.93e-11p 5.87e-07p 0.001550p 0.210396p 0.004275o 3.282260m 1.856267j 6.995638l 0.380788p 7.523710k 0.004532p 0.004536p

cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.830001m 0.0 0.0

zp 52.21 ri 8.51e-11p 2.67e-06p 0.006835p 0.476745p 0.0 3.864333n 0.587709p 0.811498p 0.046869p 0.020087p 9.50e-05p 1.14e-08p

sig0.557 cc 8.50e-11p 2.67e-06p 0.006830p 0.481817p 0.0 4.348125p 0.587083p 5.734201p 0.058561p 5.812827p 9.49e-05p 9.49e-05p

rc 8.51e-11p 2.67e-06p 0.006837p 0.482331p 0.020187o 4.366851m 0.587709o 5.754303m 0.058623p 5.833013l 9.50e-05p 9.50e-05p

cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.784051n 0.0 0.0

zp 52.79 ri 1.94e-12p 9.52e-08p 0.000385p 0.084385p 0.0 1.859372n 1.472459m 1.660385n 0.514931p 0.190454p 0.011095p 1.64e-05p

sig0.596 cc 1.94e-12p 9.52e-08p 0.000385p 0.084689p 0.0 1.944521p 1.472269p 5.047563p 0.544310p 5.782302p 0.011094p 0.011110p

rc 1.94e-12p 9.52e-08p 0.000385p 0.084700p 0.002098o 1.946170m 1.472459m 5.049565l 0.544381o 5.784399k 0.011095p 0.011112p

cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.877869n 0.0 0.0

zp 52.59 ri 1.32e-11p 4.28e-07p 0.001106p 0.152534p 0.0 2.123254n 0.959002o 1.324249n 0.219683p 0.094150p 0.002793p 2.19e-06p
sig0.592 cc 1.32e-11p 4.27e-07p 0.001106p 0.153385p 0.0 2.277495p 0.958673p 4.540877p 0.238781p 4.873776p 0.002792p 0.002794p
rc 1.32e-11p 4.28e-07p 0.001106p 0.153437p 0.004897o 2.281588m 0.959002o 4.545658l 0.238863p 4.878672l 0.002793p 0.002795p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.373791n 0.0 0.0
zp 52.19 ri 6.12e-10p 8.92e-06p 0.008480p 0.497054p 0.0 2.575924n 0.743317o 0.475152p 0.045698p 0.010031p 0.000168p 3.40e-08p
sig0.585 cc 6.11e-10p 8.91e-06p 0.008476p 0.503204p 0.0 3.081817p 0.742159p 4.283628p 0.060470p 4.354113p 0.000168p 0.000168p
rc 6.12e-10p 8.92e-06p 0.008489p 0.503989p 0.024617o 3.104529m 0.743317o 4.308132m 0.060564p 4.378727l 0.000168p 0.000168p
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.776420n 0.0 0.0
zp 51.81 ri 1.50e-08p 0.000103p 0.042267p 1.032215n 0.0 2.232209n 0.174107p 0.240337p 0.004328p 0.001855p 5.11e-06p 2.46e-10p
sig0.574 cc 1.49e-08p 0.000102p 0.042183p 1.062135p 0.0 3.300831p 0.173340p 3.710078p 0.007775p 3.719700p 5.08e-06p 5.08e-06p
rc 1.50e-08p 0.000103p 0.042370p 1.066831m 0.078636o 3.377676m 0.174107p 3.788638l 0.007810p 3.798302l 5.11e-06p 5.11e-06p
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.944398l 0.0 5.794438m 0.0 0.0
zp 52.23 ri 5.24e-09p 3.13e-05p 0.015463p 0.687785p 0.0 3.216109n 0.767067o 1.093296n 0.082419p 0.035322p 0.000730p 3.86e-07p
sig0.620 cc 5.26e-09p 3.15e-05p 0.015557p 0.703293p 0.0 3.942644p 0.770187p 5.761018p 0.098158p 5.894642p 0.000733p 0.000733p
rc 5.24e-09p 3.13e-05p 0.015494p 0.700444o 0.036443o 3.952996m 0.767067o 5.798017k 0.097760p 5.931100j 0.000730p 0.000730p
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.998041n 1.378594n 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 6.069060k 0.495838n 6.564899k 0.024792n 7.286234h 0.0 0.0
zp 52.09 ri 1.12e-10p 5.24e-06p 0.011594p 0.854293p 0.0 4.506164l 0.683735m 1.224766n 0.021899p 0.009385p 2.54e-05p 9.90e-10p
sig0.541 cc 1.20e-10p 5.63e-06p 0.012452p 0.927326p 0.0 5.788594p 0.624164p 7.262215p 0.036886p 7.309560p 2.83e-05p 2.83e-05p

rc 1.12e-10p 5.24e-06p 0.011599p 0.863769o 0.041760o 5.411693k 0.683735l 7.306519i 0.035574m 7.351479h 2.54e-05p 2.54e-05p
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.626481n 0.0 0.0
zp 52.19 ri 1.28e-10p 3.57e-06p 0.010183p 0.606322p 0.0 5.311688n 0.672789o 0.929003p 0.055972p 0.023988p 8.99e-05p 1.07e-08p
sig0.555 cc 1.28e-10p 3.57e-06p 0.010177p 0.614067p 0.0 5.927825p 0.672158p 7.514758p 0.069363p 7.608086p 8.99e-05p 8.99e-05p
rc 1.28e-10p 3.57e-06p 0.010186p 0.614644o 0.022833o 5.949165m 0.672789o 7.537501m 0.069428p 7.630917l 8.99e-05p 9.00e-05p
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.441696n 0.0 0.0
zp 51.83 ri 5.99e-09p 6.67e-05p 0.064604p 1.552653n 0.0 5.102632n 0.275350p 0.380161p 0.007240p 0.003103p 3.78e-06p 1.17e-10p
sig0.551 cc 5.97e-09p 6.64e-05p 0.064428p 1.599469p 0.0 6.710579p 0.274317p 7.358229p 0.012700p 7.374020p 3.76e-06p 3.76e-06p
rc 5.99e-09p 6.67e-05p 0.064671p 1.605490m 0.095032o 6.803153m 0.275350p 7.453156m 0.012747p 7.469007l 3.78e-06p 3.78e-06p

in half life from 80eng2; sn, sb, te, i half lives 89wal1; cs half life 90bur1.

1

mass number 135 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 50 sn g 51 sb g 52 te d 52 te g 53 i d 53 i g 54 xe m 54 xe g 55 cs g 56 ba g 57 la g 58 ce g
half life 0.418s 1.71 s 0.82s 19.0 s 19.0 s 6.57 h 15.3 m 9.10 h 2.3e6y stable 19.5 h 17.7 h
lambda 1.658e+00 4.053e-01 8.453e-01 3.648e-02 3.648e-02 2.931e-05 7.551e-04 2.116e-05 9.556e-15 0.0 9.874e-06 1.088e-05
z - 1 g 100.0000 100.0000 0.0 82.1300 0.0 100.0000 14.7000 85.3000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 28.9790 100.0000 1.1400 100.0000 0.0 100.0000 0.0 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 3.910213j 0.728303k 6.018616l 0.0 6.837957n 0.0 0.0
zp 53.04 ri 5.20e-05p 0.023871p 0.0 0.974141p 0.0 3.016840l 0.296642o 1.554888o 0.043677p 0.000118p 1.78e-08p 0.0

sig0.594 cc 5.89e-05p 0.027075p 0.0 1.124917p 0.0 4.540664p 1.608177p 5.865593p 5.905282p 5.905389p 1.61e-08p
0.0
rc 5.20e-05p 0.023923p 0.000397o 0.994186o 0.002039o 4.013065j 0.886562j 5.864594k 5.908271k 5.908389k 1.78e-08p
0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 6.140657k 0.0 0.0 0.0 0.0 0.0 0.0
zp 52.66 ri 0.000379p 0.112587p 0.0 2.688309n 0.0 3.344575m 0.341350p 0.139430p 0.002942p 1.26e-06p 1.67e-11p
0.0
sig0.557 cc 0.000378p 0.112813p 0.0 2.778579p 0.0 6.126328p 1.241474p 6.606474p 6.609412p 6.609413p 1.67e-11p
0.0
rc 0.000379p 0.112965p 0.003707o 2.784794m 0.013258o 6.142627j 1.244316n 6.623408k 6.626350k 6.626351k 1.67e-11p
0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.474722n 0.0 0.0
zp 53.23 ri 1.60e-05p 0.011727p 0.0 0.741410p 0.0 3.537981n 1.540278n 0.541186p 0.101636p 0.000461p 1.23e-07p
2.51e-12p
sig0.596 cc 1.60e-05p 0.011741p 0.0 0.751069p 0.0 4.289253p 2.170650p 6.370510p 6.472135p 6.472596p 1.23e-07p
2.51e-12p
rc 1.60e-05p 0.011743p 0.000295o 0.751349o 0.002312o 4.291642m 2.171149m 6.373106l 6.474742l 6.475204l 1.23e-07p
2.51e-12p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.674256n 0.0 0.0
zp 53.03 ri 5.91e-05p 0.027342p 0.0 1.086647n 0.0 3.305946n 0.866326p 0.353866p 0.034845p 8.62e-05p 1.19e-08p
0.0
sig0.592 cc 5.91e-05p 0.027395p 0.0 1.109175p 0.0 4.415347p 1.515222p 5.635300p 5.670137p 5.670223p 1.19e-08p
0.0
rc 5.91e-05p 0.027401p 0.000844o 1.109996m 0.004166o 4.420108m 1.516082n 5.640301l 5.675146l 5.675232l 1.19e-08p
0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.268430n 0.0 0.0
zp 52.63 ri 0.000724p 0.137029p 0.0 2.075627n 0.0 2.696075n 0.301050p 0.066102p 0.003619p 2.52e-06p 9.62e-11p
0.0
sig0.585 cc 0.000724p 0.137629p 0.0 2.188940p 0.0 4.885115p 1.018971p 5.252017p 5.255632p 5.255635p 9.61e-11p
0.0
rc 0.000724p 0.137753p 0.006492o 2.195256m 0.011721o 4.903052l 1.021799n 5.270204l 5.273823l 5.273826l 9.62e-11p
0.0

```
  cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.679378n      0.0       0.0
 zp 52.25 ri 0.005458p 0.434587p       0.0  2.744055n       0.0  1.465879n 0.050334p 0.020559p 0.000206p 3.61e-08p       0.0       0.0
 sig0.574 cc 0.005445p 0.438991p       0.0  3.107121p       0.0  4.571701p 0.722253p 4.642423p 4.642629p 4.642629p       0.0       0.0
          rc 0.005458p 0.440045p 0.030654o 3.136118m 0.023512o 4.625509l 0.730283l 4.696401l 4.696607l 4.696607k       0.0
0.0
  pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0  5.072546k 3.898898k 1.591387k       0.0       0.0       0.0       0.0
 zp 52.65 ri 0.001681p 0.202253p       0.0  2.383439n       0.0  3.255711m 0.244250p 0.099764p 0.005812p 8.73e-06p 1.07e-09p
0.0
 sig0.620 cc 0.001627p 0.197371p       0.0  2.472333p       0.0  5.631723p 1.195057p 6.148897p 6.157635p 6.157648p 1.61e-09p
0.0
          rc 0.001681p 0.203933p 0.009693o 2.560622l 0.011406o 5.827740j 1.100927n 6.171753i 6.177566i 6.177574i 1.07e-09p
0.0
  np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0  0.549201m 0.224535m       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  1.531755h 7.678538i       0.0       0.0       0.0       0.0
 zp 52.51 ri 0.000676p 0.233012p       0.0  3.099700n       0.0  3.585582m 0.548022m 0.224053m 0.000889p 1.09e-07p       0.0       0.0
 sig0.541 cc 0.000726p 0.251110p       0.0  3.539790p       0.0  7.403659p 1.260474p 7.646105p 7.647060p 7.647061p       0.0       0.0
          rc 0.000676p 0.233688p 0.007829o 3.299456m 0.017997o 6.903036k 1.562768h 7.675110i 7.676000i 7.676000i       0.0
0.0
  pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  7.227711n      0.0       0.0
 zp 52.64 ri 0.000477p 0.127294p       0.0  3.160913n       0.0  3.447439n 0.355052p 0.145050p 0.002563p 1.06e-06p 1.11e-11p
0.0
 sig0.555 cc 0.000476p 0.127702p       0.0  3.265333p       0.0  6.713492p 1.341822p 7.213406p 7.215967p 7.215968p 1.11e-11p
0.0
          rc 0.000477p 0.127770p 0.003651o 3.269502m 0.014662o 6.731603l 1.344598n 7.231705l 7.234268l 7.234269l 1.11e-11p
0.0
  pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  7.472843n      0.0       0.0
 zp 52.27 ri 0.005248p 0.526546p       0.0  4.729205n       0.0  2.164815n 0.075116p 0.030681p 0.000175p 1.91e-08p       0.0       0.0
 sig0.551 cc 0.005241p 0.531088p       0.0  5.166763p       0.0  7.331049p 1.152681p 7.436706p 7.436881p 7.436881p       0.0       0.0
          rc 0.005248p 0.531794o 0.024169o 5.190136m 0.033562o 7.388513l 1.161227l 7.494310l 7.494485l 7.494485k       0.0
0.0
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xe branching from 74dan1; sn half life from 80eng2; sb, te, i, xe, cs half lives 89wal1.

mass number 136 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	48 cd g	49 in g	50 sn g	51 sb g	52 te d	52 te g	53 i m	53 i g	54 xe d	54 xe g	55 cs g	56 ba g
half life		0.717s	0.82 s	0.478s	17.5 s	47. s	1.39 m	24.5 s	stable	13.00d	stable	
lambda	0.0	0.0	9.667e-01	8.453e-01	1.450e+00	3.961e-02	1.475e-02	8.311e-03	2.829e-02	0.0	6.171e-07	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	0.0	71.0210	0.0	98.8600	0.0	100.0000	0.0	100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	18.0320	100.0000	2.6900	0.0	6.9700	100.0000	0.0	0.0
cm243t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.818670l	0.691090n	0.0	4.990076n	0.509913i	0.0
zp 53.47 ri	0.0	3.47e-11p	9.97e-07p	0.001369p	0.0	0.177899p	0.855613l	0.599090o	0.0	2.586715o	0.537462i	0.003205p
sig0.594 cc	0.0	5.07e-11p	1.46e-06p	0.002002p	0.0	0.261337p	1.034150p	1.292508p	0.0	4.574778p	0.181402p	0.183016p
rc	0.0	3.47e-11p	9.97e-07p	0.001370p	3.11e-05o	0.178903p	0.857328k	0.775953m	0.108282m	4.328279m	0.537462h	0.540667h
cm246s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.812139m	0.0	0.0
zp 53.09 ri	0.0	3.35e-10p	1.32e-05p	0.012778p	0.0	1.153747n	1.874052n	1.877504n	0.0	1.839420n	0.034356p	6.21e-05p
sig0.557 cc	0.0	3.35e-10p	1.32e-05p	0.012784p	0.0	1.162284p	1.876539p	3.025573p	0.0	6.740578p	0.034338p	0.034400p
rc	0.0	3.35e-10p	1.32e-05p	0.012791p	0.000172o	1.163003m	1.881065m	3.027249m	0.218448m	6.966181k	0.034356p	0.034418p
cm243f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.873166n	0.0	0.0
zp 53.66 ri	0.0	1.04e-11p	4.55e-07p	0.001017p	0.0	0.202110p	1.277908n	1.278294n	0.0	4.092166n	0.535615p	0.007700p
sig0.596 cc	0.0	1.04e-11p	4.55e-07p	0.001018p	0.0	0.202825p	1.278227p	1.478740p	0.0	6.848917p	0.535586p	0.543286p
rc	0.0	1.05e-11p	4.55e-07p	0.001018p	9.01e-06o	0.202842p	1.278684m	1.478823m	0.076080m	6.925753m	0.535615o	0.543314o
cm244f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.271546n	0.0	0.0

zp 53.46 ri 0.0 7.14e-11p 2.04e-06p 0.002911p 0.0 0.363363p 1.454539n 1.455522n 0.0 2.967043o 0.234814p 0.001892p
sig0.592 cc 0.0 7.14e-11p 2.04e-06p 0.002913p 0.0 0.365388p 1.455300p 1.816523p 0.0 6.238407p 0.234778p 0.236670p
rc 0.0 7.14e-11p 2.04e-06p 0.002913p 3.75e-05o 0.365469p 1.456523m 1.816825m 0.121315m 6.361706l 0.234814p 0.236706p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.974729n 0.0 0.0
zp 53.06 ri 0.0 3.34e-09p 3.65e-05p 0.022367p 0.0 1.011782n 1.779404n 1.783764n 0.0 1.348064n 0.040856p 9.34e-05p
sig0.585 cc 0.0 3.34e-09p 3.65e-05p 0.022387p 0.0 1.027056p 1.782434p 2.797781p 0.0 5.927252p 0.040825p 0.040919p
rc 0.0 3.34e-09p 3.65e-05p 0.022404p 0.000444o 1.028137m 1.788275m 2.800180m 0.238008m 6.174526k 0.040856p 0.040950p
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.465871n 0.0 0.0
zp 52.68 ri 0.0 7.90e-08p 0.000401p 0.105381p 0.0 1.984130n 1.451932n 1.465088n 0.0 0.424143p 0.004090p 2.51e-06p
sig0.574 cc 0.0 7.88e-08p 0.000400p 0.105502p 0.0 2.054842p 1.461323p 3.492740p 0.0 5.377086p 0.004080p 0.004082p
rc 0.0 7.90e-08p 0.000401p 0.105781p 0.003230o 2.062488m 1.479194m 3.504063l 0.344641m 5.752041l 0.004090p 0.004093p
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.341861n 0.0 0.0
zp 53.05 ri 0.0 2.76e-08p 0.000105p 0.033343p 0.0 0.976005p 1.551122n 1.555494n 0.0 1.203604n 0.051532p 0.000206p
sig0.620 cc 0.0 2.76e-08p 0.000105p 0.033419p 0.0 0.999140p 1.554173p 2.541923p 0.0 5.298644p 0.051487p 0.051694p
rc 0.0 2.76e-08p 0.000105p 0.033448p 0.000794o 1.000554o 1.560054m 2.544642m 0.196219m 5.504519k 0.051532p 0.051739p
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.106232j 0.0 0.0
zp 52.93 ri 0.0 7.43e-10p 2.60e-05p 0.026989p 0.0 1.559132n 2.116965n 2.121407n 0.0 1.077788o 0.012272p 7.56e-06p
sig0.541 cc 0.0 7.43e-10p 2.60e-05p 0.026997p 0.0 1.577389p 2.120015p 3.679422p 0.0 6.876508p 0.012264p 0.012272p

rc 0.0 7.43e-10p 2.60e-05p 0.027015p 0.000375o 1.578694m 2.126209m 3.682103m 0.280778m 7.166878i 0.012272p 0.012280p
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.825130n 0.0 0.0
zp 53.08 ri 0.0 3.14e-10p 1.45e-05p 0.012583p 0.0 1.277039n 1.792077n 1.795680n 0.0 1.922278o 0.029972p 5.65e-05p
sig0.555 cc 0.0 3.14e-10p 1.45e-05p 0.012591p 0.0 1.285349p 1.794723p 3.065419p 0.0 6.781386p 0.029955p 0.030012p
rc 0.0 3.14e-10p 1.45e-05p 0.012598p 0.000165o 1.286151m 1.799367m 3.067169l 0.207762m 6.996576k 0.029972p 0.030028p
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7.094218n 0.0 0.0
zp 52.71 ri 0.0 1.64e-08p 0.000252p 0.083149p 0.0 2.883027n 1.719337n 1.732251n 0.0 0.653346p 0.003558p 1.81e-06p
sig0.551 cc 0.0 1.63e-08p 0.000252p 0.083241p 0.0 2.937192p 1.728979p 4.632687p 0.0 7.013762p 0.003551p 0.003553p
rc 0.0 1.64e-08p 0.000252p 0.083401p 0.001744o 2.944003m 1.745808m 4.642692l 0.344869m 7.386715k 0.003558p 0.003560p

sn half life from 80eng2; sb, te, i half lives from 89wal1.
1

mass number 137 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 50 sn g 51 sb g 52 te g 53 i d 53 i g 54 xe d 54 xe g 55 cs g 56 ba m 56 ba g 57 la g 58 ce g
half life 0.478s 2.5 s 1.6 s 24.5 s 6.50 s 3.82 m 30.17y 2.552m stable 6.e4y 9.0 h
lambda 0.0 1.450e+00 2.773e-01 4.332e-01 2.829e-02 1.066e-01 3.024e-03 7.285e-10 4.527e-03 0.0 3.663e-13 2.139e-05
z - 1 g 100.0000 100.0000 81.9680 0.0 97.3100 0.0 93.0300 100.0000 94.6000 5.4000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 6.7800 100.0000 5.3800 100.0000 0.0 0.0 100.0000 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.311278n 0.0 0.0
zp 53.89 ri 3.77e-08p 0.000173p 0.063597p 0.0 1.491020n 0.0 3.922720n 0.902370p 0.015774p 0.006443p 3.36e-05p 4.01e-09p
sig0.594 cc 3.76e-08p 0.000173p 0.063676p 0.0 1.551679p 0.0 5.368361p 6.270005p 5.947184p 6.292235p 3.36e-05p 4.01e-09p

rc 3.77e-08p 0.000173p 0.063738p 0.000506o 1.553549m 0.024631o 5.392618m 6.294988m 5.970833m 6.317239l 3.36e-05p 4.01e-09p
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.734286m 0.0 0.0
zp 53.51 ri 2.39e-07p 0.000953p 0.259898p 0.0 2.877630n 0.0 3.536262n 0.238065p 0.000954p 0.000390p 2.53e-07p 2.99e-12p
sig0.557 cc 2.39e-07p 0.000951p 0.260121p 0.0 3.125424p 0.0 6.450208p 6.687801p 6.327611p 6.689141p 2.52e-07p 2.98e-12p
rc 2.39e-07p 0.000953p 0.260679p 0.002817o 3.134115m 0.068104m 6.520033l 6.758098l 6.394114l 6.759441k 2.53e-07p 2.99e-12p
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.746855k 0.0 6.886583n 0.0 0.0
zp 54.08 ri 6.86e-09p 5.00e-05p 0.028787p 0.0 1.063267n 0.0 4.213453n 1.507232n 0.044532p 0.015646p 0.000157p 3.28e-08p
sig0.596 cc 6.86e-09p 4.99e-05p 0.028806p 0.0 1.090554p 0.0 5.229494p 6.736396p 6.416865p 6.796330p 0.000156p 3.25e-08p
rc 6.86e-09p 5.00e-05p 0.028828p 0.000218o 1.091537m 0.017112o 5.246023m 6.753254k 6.433111k 6.813590j 0.000157p 3.28e-08p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.664915k 0.0 6.684870n 0.0 0.0
zp 53.87 ri 4.55e-08p 0.000208p 0.073557p 0.0 1.668137n 0.0 4.120789n 0.894933p 0.014248p 0.005820p 2.75e-05p 2.86e-09p
sig0.592 cc 4.54e-08p 0.000208p 0.073600p 0.0 1.737077p 0.0 5.738573p 6.634572p 6.290526p 6.654629p 2.74e-05p 2.85e-09p
rc 4.55e-08p 0.000208p 0.073727p 0.000654o 1.740536m 0.032431o 5.772441m 6.667374k 6.321585k 6.687470j 2.75e-05p 2.86e-09p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.500582k 0.0 6.480641n 0.0 0.0
zp 53.47 ri 1.28e-06p 0.002458p 0.327759p 0.0 3.089361n 0.0 2.989187n 0.254088p 0.001460p 0.000321p 7.31e-07p 1.92e-11p
sig0.585 cc 1.28e-06p 0.002451p 0.328556p 0.0 3.398952p 0.0 6.161765p 6.416673p 6.071628p 6.418449p 7.29e-07p 1.91e-11p
rc 1.28e-06p 0.002460p 0.329775p 0.004479o 3.414745m 0.094175m 6.260098l 6.514186k 6.163880k 6.515968j 7.31e-07p 1.92e-11p
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.340267k 0.0 6.280454n 0.0 0.0

zp 53.09 ri 2.12e-05p 0.017894p 0.998786n 0.0 3.937926n 0.0 1.534473n 0.045453p 6.43e-05p 2.63e-05p 9.18e-09p 0.0
sig0.574 cc 2.11e-05p 0.017847p 1.009624p 0.0 4.910510p 0.0 6.116632p 6.161913p 5.829233p 6.162003p 9.16e-09p
0.0
rc 2.12e-05p 0.017915p 1.013470m 0.020501o 4.944635m 0.183634m 6.318101k 6.363553j 6.019986j 6.363644j 9.18e-09p
0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.120825n 0.0 0.0
zp 53.45 ri 5.18e-06p 0.004398p 0.328433p 0.0 2.486858n 0.0 2.224917n 0.235787p 0.001761p 0.000719p 2.27e-06p
1.68e-10p
sig0.620 cc 5.16e-06p 0.004392p 0.331213p 0.0 2.804412p 0.0 4.839963p 5.075235p 4.802928p 5.077710p 2.26e-06p
1.68e-10p
rc 5.18e-06p 0.004403p 0.332042p 0.005229o 2.815197m 0.078640m 4.922534l 5.158321l 4.881532l 5.160803l 2.27e-06p
1.68e-10p
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.119250n 0.0 0.0
zp 53.35 ri 4.03e-07p 0.002082p 0.341944p 0.0 3.689341n 0.0 2.214405n 0.112189p 0.000149p 6.08e-05p 1.93e-08p
0.0
sig0.541 cc 4.02e-07p 0.002078p 0.343041p 0.0 4.017973p 0.0 5.958316p 6.070306p 5.742658p 6.070515p 1.93e-08p
0.0
rc 4.03e-07p 0.002082p 0.343651p 0.004636o 4.028383m 0.101305m 6.063315l 6.175504l 5.842176l 6.175714l 1.93e-08p
0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.529863n 0.0 0.0
zp 53.50 ri 2.43e-07p 0.000913p 0.270263p 0.0 2.714318n 0.0 3.514157n 0.208135p 0.000843p 0.000344p 1.87e-07p
2.13e-12p
sig0.555 cc 2.42e-07p 0.000911p 0.270461p 0.0 2.972795p 0.0 6.285407p 6.493145p 6.143356p 6.494329p 1.87e-07p
2.13e-12p
rc 2.43e-07p 0.000913p 0.271012p 0.002762o 2.980801m 0.060256m 6.347452l 6.555587l 6.202428l 6.556774l 1.87e-07p
2.13e-12p
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.635844n 0.0 0.0
zp 53.13 ri 6.90e-06p 0.009667p 0.976130p 0.0 3.974941n 0.0 1.935579n 0.041808p 4.86e-05p 1.98e-05p 3.14e-09p 0.0
sig0.551 cc 6.88e-06p 0.009656p 0.982278p 0.0 4.927419p 0.0 6.524793p 6.566525p 6.211981p 6.566593p 3.13e-09p
0.0
rc 6.90e-06p 0.009674p 0.984059o 0.015370o 4.947899m 0.140930m 6.679539l 6.721346l 6.358442l 6.721415l 3.14e-09p
0.0

sb half life from 80eng2; te, i, xe, cs, ba half lives 89wal1.
1

mass number 138 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 50 sn g 51 sb g 52 te g 53 i d 53 i g 54 xe d 54 xe g 55 cs m 55 cs g 56 ba g 57 la g 58 ce g
half life 0.173s 1.4 s 0.580s 6.5 s 2.38 s 14.1 m 2.9 m 32.2 m stable 11.02l stable
lambda 0.0 4.007e+00 4.951e-01 1.195e+00 1.066e-01 2.912e-01 8.193e-04 3.984e-03 3.588e-04 0.0 2.099e-19 0.0
z - 1 g 100.0000 100.0000 100.0000 0.0 93.2200 0.0 94.6200 0.0 100.0000 100.0000 -70.0000 30.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 25.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 7.9620 100.0000 9.8100 100.0000 0.0 75.0000 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 3.520920k 0.0 0.0 6.372256n 0.0 0.0
zp 54.29 ri 5.05e-10p 6.53e-06p 0.007451p 0.0 0.450820p 0.0 3.161436l 1.012316p 1.050603p 0.144293p 0.000594p
2.25e-07p
sig0.594 cc 5.40e-10p 6.99e-06p 0.007976p 0.0 0.489602p 0.0 3.851672p 0.910013p 5.444195p 5.800482p 0.000528p
0.000159p
rc 5.05e-10p 6.53e-06p 0.007458p 4.85e-05o 0.457820p 0.010892o 3.605517j 1.012316o 5.415357l 5.813135l 0.000594p
0.000178p
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.647741m 0.0 0.0
zp 53.91 ri 3.31e-09p 4.05e-05p 0.041515p 0.0 1.226806n 0.0 4.615814n 0.392021p 0.391978p 0.016061p 9.16e-06p
4.31e-10p
sig0.557 cc 3.30e-09p 4.05e-05p 0.041485p 0.0 1.263493p 0.0 5.814707p 0.391353p 6.499575p 6.613454p 9.15e-06p
2.75e-06p
rc 3.31e-09p 4.05e-05p 0.041556p 0.000328o 1.265872m 0.041768o 5.855350m 0.392021p 6.541344m 6.655417l 9.16e-06p
2.75e-06p
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.681576n 0.0 0.0
zp 54.48 ri 8.79e-11p 1.84e-06p 0.003214p 0.0 0.315061p 0.0 3.295160n 1.388352m 1.388280n 0.302316p 0.002153p
1.38e-06p
sig0.596 cc 8.79e-11p 1.84e-06p 0.003215p 0.0 0.317968p 0.0 3.596973p 1.387932p 6.025854p 6.676569p 0.002152p
0.000647p
rc 8.79e-11p 1.84e-06p 0.003216p 1.71e-05o 0.318076p 0.006117o 3.602240m 1.388352m 6.031784l 6.682695k 0.002153p
0.000647p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.769288n 0.0 0.0
zp 54.28 ri 6.37e-10p 8.68e-06p 0.009644p 0.0 0.593744p 0.0 3.942654n 1.053455m 1.053358n 0.136801p 0.000539p 1.81e-07p
sig0.592 cc 6.36e-10p 8.68e-06p 0.009646p 0.0 0.602346p 0.0 4.514455p 1.052722p 6.356719p 6.756986p 0.000539p 0.000162p
rc 6.37e-10p 8.68e-06p 0.009653p 6.95e-05o 0.602812o 0.015254o 4.528289m 1.053455m 6.371738l 6.772281l 0.000539p 0.000162p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.759496n 0.0 0.0
zp 53.87 ri 2.84e-08p 0.000167p 0.065896p 0.0 1.688157n 0.0 4.118321n 0.461492p 0.461380p 0.018537p 2.32e-05p 1.90e-09p
sig0.585 cc 2.83e-08p 0.000167p 0.065895p 0.0 1.745511p 0.0 5.776452p 0.460317p 6.582006p 6.715591p 2.31e-05p 6.94e-06p
rc 2.84e-08p 0.000167p 0.066064p 0.000717o 1.750458m 0.063014o 5.837618m 0.461492p 6.645118m 6.779044l 2.32e-05p 6.96e-06p
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.658425n 0.0 0.0
zp 53.48 ri 7.07e-07p 0.001846p 0.300528p 0.0 3.126559n 0.0 3.087705n 0.125735p 0.125735p 0.001509p 4.79e-07p 8.68e-12p
sig0.574 cc 7.04e-07p 0.001839p 0.301054p 0.0 3.394975p 0.0 6.314684p 0.125185p 6.533758p 6.566557p 4.77e-07p 1.43e-07p
rc 7.07e-07p 0.001847p 0.302375p 0.004842o 3.413275m 0.175815m 6.493162l 0.125735p 6.713197l 6.746140l 4.79e-07p 1.44e-07p
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.694671n 4.961935k 0.0 0.0 0.0
zp 53.84 ri 1.80e-07p 0.000403p 0.076721p 0.0 1.388772n 0.0 2.790663n 0.630740n 0.350053p 0.018459p 4.43e-05p 8.79e-09p
sig0.620 cc 1.88e-07p 0.000422p 0.080762p 0.0 1.529903p 0.0 4.415560p 0.366567p 5.057053p 5.168057p 4.63e-05p 1.39e-05p
rc 1.80e-07p 0.000403p 0.077124p 0.001038o 1.461705m 0.057940o 4.231668l 0.630740m 5.054776j 5.230953j 4.43e-05p 1.33e-05p
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.156666j 6.225842j 0.0 0.0
zp 53.75 ri 6.09e-09p 9.24e-05p 0.068281p 0.0 1.818721n 0.0 3.884095m 0.240616p 0.239521p 0.004012p 1.08e-06p 1.36e-11p

sig0.541 cc 6.05e-09p 9.17e-05p 0.067906p 0.0 1.869751p 0.0 5.668219p 0.238970p 6.086416p 6.150144p 1.07e-06p 3.22e-07p
rc 6.09e-09p 9.24e-05p 0.068374p 0.000535o 1.882995m 0.074834o 5.740619k 0.240616p 6.160602i 6.224769i 1.08e-06p 3.24e-07p
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.400262n 0.0 0.0
zp 53.91 ri 2.93e-09p 3.37e-05p 0.040699p 0.0 1.081735n 0.0 4.613987n 0.341636p 0.341604p 0.015348p 7.33e-06p 3.60e-10p
sig0.555 cc 2.92e-09p 3.37e-05p 0.040669p 0.0 1.118026p 0.0 5.674622p 0.341095p 6.271538p 6.372140p 7.31e-06p 2.19e-06p
rc 2.93e-09p 3.37e-05p 0.040733p 0.000292o 1.119998m 0.036227o 5.709955m 0.341636p 6.307786m 6.408548l 7.33e-06p 2.20e-06p
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.566202n 0.0 0.0
zp 53.54 ri 1.28e-07p 0.000568p 0.226132p 0.0 2.405624n 0.0 3.793004n 0.112248p 0.112248p 0.001488p 2.18e-07p 2.65e-12p
sig0.551 cc 1.28e-07p 0.000566p 0.225714p 0.0 2.606330p 0.0 6.270788p 0.111760p 6.466367p 6.495788p 2.17e-07p 6.51e-08p
rc 1.28e-07p 0.000568p 0.226701p 0.002555o 2.619509m 0.119108m 6.390692l 0.112248p 6.587126l 6.616675l 2.18e-07p 6.54e-08p

sb half life from 80eng2; te, i, xe, cs half lives from 89wal1.
1

mass number 139 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 51 sb g 52 te g 53 i g 54 xe d 54 xe g 55 cs g 56 ba g 57 la g 58 ce m 58 ce g 59 pr g
half life 0.218s 0.580s 2.30 s 0.86 s 39.7 s 9.3 m 1.396h stable 56. s 137.7d 4.41 h
lambda 3.180e+00 1.195e+00 3.014e-01 8.060e-01 1.746e-02 1.242e-03 1.379e-04 0.0 1.238e-02 5.826e-08 4.366e-05
z - 1 g 100.0000 100.0000 92.0380 0.0 90.1900 100.0000 100.0000 100.0000 0.0 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 9.2700 100.0000 0.0 0.0 0.0 0.0 100.0000 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 1.992718m 6.392883l 6.918880n 5.917463n 0.0 0.0 0.0
zp 54.69 ri 1.92e-07p 0.000609p 0.110472p 0.0 1.897403m 4.171467m 0.622535p 0.007119p 5.34e-06p 2.18e-06p 4.33e-10p
sig0.594 cc 2.54e-07p 0.000808p 0.147302p 0.0 2.651011p 6.178038p 6.787558p 6.795098p 5.65e-06p 7.96e-06p 4.58e-10p
rc 1.92e-07p 0.000609p 0.111032p 0.001382o 1.998925l 6.170392k 6.792928k 6.800054k 5.34e-06p 7.53e-06p 4.33e-10p

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 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.291784m      0.0       0.0       0.0
zp 54.30 ri 1.38e-06p 0.004121p 0.421976p       0.0  3.833739n 1.960037n 0.106537p 0.000224p 2.24e-08p 9.13e-09p       0.0
sig0.557 cc 1.38e-06p 0.004120p 0.425582p       0.0  4.218493p 6.177842p 6.284332p 6.284556p 2.24e-08p 3.15e-08p       0.0
         rc 1.38e-06p 0.004122p 0.425770p 0.008317o 4.226057m 6.186094l 6.292630l 6.292854l 2.24e-08p 3.15e-08p       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.175889n      0.0       0.0       0.0
zp 54.88 ri 4.33e-08p 0.000215p 0.062152p       0.0  1.640382n 3.522053n 0.937246p 0.019252p 2.57e-05p 9.01e-06p 3.58e-09p
sig0.596 cc 4.33e-08p 0.000215p 0.062347p       0.0  1.696786p 5.218716p 6.155916p 6.175202p 2.57e-05p 3.47e-05p 3.58e-09p
         rc 4.33e-08p 0.000215p 0.062350p 0.000755o 1.697370m 5.219424m 6.156669m 6.175956l 2.57e-05p 3.47e-05p 3.58e-09p
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.570192n      0.0       0.0       0.0
zp 54.67 ri 2.82e-07p 0.000872p 0.154688p       0.0  2.514009n 3.369700n 0.537996p 0.006132p 4.07e-06p 1.66e-06p 2.92e-10p
sig0.592 cc 2.82e-07p 0.000872p 0.155469p       0.0  2.654661p 6.024022p 6.561945p 6.568082p 4.07e-06p 5.74e-06p 2.92e-10p
         rc 2.82e-07p 0.000873p 0.155491p 0.002381o 2.656627m 6.026327l 6.564323l 6.570461l 4.07e-06p 5.74e-06p 2.92e-10p
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.759496n      0.0       0.0       0.0
zp 54.26 ri 7.80e-06p 0.008999p 0.634052p       0.0  3.889882n 2.159748n 0.117886p 0.000430p 8.69e-08p 1.91e-08p 1.41e-12p
sig0.585 cc 7.79e-06p 0.009001p 0.641896p       0.0  4.470490p 6.629083p 6.746888p 6.747318p 8.68e-08p 1.06e-07p 1.41e-12p
         rc 7.80e-06p 0.009007p 0.642342o 0.014665o 4.483875m 6.643622l 6.761509l 6.761938l 8.69e-08p 1.06e-07p 1.41e-12p
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.956563n      0.0       0.0       0.0
zp 53.87 ri 0.000124p 0.060688p 1.736235n       0.0  4.348897n 0.931982p 0.016367p 1.61e-05p 6.55e-10p 2.68e-10p       0.0
sig0.574 cc 0.000124p 0.060667p 1.787943p       0.0  5.967582p 6.897738p 6.914066p 6.914082p 6.54e-10p 9.21e-10p       0.0
         rc 0.000124p 0.060812p 1.792205m 0.059451o 6.024738m 6.956720m 6.973087l 6.973103l 6.55e-10p 9.23e-10p       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  4.892468j      0.0       0.0       0.0       0.0
zp 54.23 ri 2.64e-05p 0.013009p 0.578622p       0.0  2.709635n 1.535548n 0.099054p 0.000614p 2.30e-07p 9.41e-08p 1.38e-11p
sig0.620 cc 2.63e-05p 0.013021p 0.589966p       0.0  3.243261p 4.778039p 4.876983p 4.877597p 2.30e-07p 3.24e-07p 1.37e-11p
         rc 2.64e-05p 0.013035p 0.590620o 0.016055o 3.258370m 4.793919k 4.892972j 4.893587j 2.30e-07p 3.25e-07p 1.38e-11p
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  6.128917n      0.0       0.0       0.0
zp 54.15 ri 3.18e-06p 0.006722p 0.756648p       0.0  3.704557n 1.687801n 0.037236p 4.67e-05p 1.24e-09p 5.06e-10p       0.0
sig0.541 cc 3.18e-06p 0.006721p 0.762325p       0.0  4.393530p 6.080438p 6.117648p 6.117695p 1.24e-09p 1.74e-09p       0.0
         rc 3.18e-06p 0.006726p 0.762839o 0.013703o 4.406264m 6.094065l 6.131301l 6.131347l 1.24e-09p 1.74e-09p       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.961615n 0.0 0.0 0.0
zp 54.31 ri 1.04e-06p 0.003665p 0.365907p 0.0 3.727797n 1.789118n 0.105862p 0.000202p 2.11e-08p 8.61e-09p 0.0
sig0.555 cc 1.04e-06p 0.003665p 0.369144p 0.0 4.061443p 5.850023p 5.955846p 5.956048p 2.11e-08p 2.97e-08p 0.0
rc 1.04e-06p 0.003666p 0.369282p 0.006618o 4.067470m 5.856588l 5.962450l 5.962652l 2.11e-08p 2.97e-08p 0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.347329n 0.0 0.0 0.0
zp 53.93 ri 2.80e-05p 0.032057p 1.184621n 0.0 4.373112n 0.838948p 0.015402p 8.88e-06p 2.33e-10p 9.50e-11p 0.0
sig0.551 cc 2.80e-05p 0.032042p 1.212514p 0.0 5.469315p 6.307288p 6.322670p 6.322679p 2.32e-10p 3.27e-10p 0.0
rc 2.80e-05p 0.032085p 1.214152m 0.031524o 5.499680m 6.338628m 6.354030m 6.354039l 2.33e-10p 3.28e-10p 0.0

sb half life from 80eng2; i, xe, cs, ba half lives from 89wal1; cehalf life 90bur1.

1

mass number 140 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 52 te g 53 i g 54 xe d 54 xe g 55 cs d 55 cs g 56 ba d 56 ba g 57 la g 58 ce g 59 pr g 60 nd g
half life 0.894s 0.86 s 0.46s 13.6 s 1.72 s 1.06 m 24.9 s 12.75d 1.678d stable 3.39 m 3.37 d
lambda 7.753e-01 8.060e-01 1.507e+00 5.097e-02 4.030e-01 1.090e-02 2.784e-02 6.292e-07 4.781e-06 0.0 3.408e-03
2.381e-06
z - 1 g 100.0000 100.0000 0.0 90.7300 0.0 100.0000 0.0 100.0000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 21.3000 100.0000 0.0350 100.0000 0.0470 100.0000 0.0 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 2.721049l 0.0 5.240435i 6.214498j 5.552547n 0.0 0.0
zp 55.08 ri 3.10e-05p 0.014881p 0.0 0.713153p 0.0 2.280478m 0.0 2.481479l 0.049835p 0.000154p 2.44e-08p 0.0
sig0.594 cc 4.22e-05p 0.020297p 0.0 0.989365p 0.0 4.093604p 0.0 5.494347p 5.537990p 5.538130p 2.20e-08p 0.0
rc 3.10e-05p 0.014912p 0.000475o 0.727158o 9.60e-05o 3.007731k 0.001212o 5.490423h 5.540257h 5.540412h 2.44e-08p
0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.364485k 0.0 0.0 0.0 0.0
zp 54.69 ri 0.000310p 0.089407p 0.0 2.618925n 0.0 3.114140n 0.0 0.545843p 0.003229p 1.72e-06p 2.21e-11p 0.0
sig0.557 cc 0.000310p 0.089701p 0.0 2.700648p 0.0 5.814437p 0.0 6.360311p 6.363540p 6.363541p 2.21e-11p 0.0
rc 0.000310p 0.089717p 0.002377o 2.702703m 0.000307o 5.817149l 0.001872o 6.364864k 6.368094k 6.368095k 2.21e-11p
0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.677833n 0.0 0.0

zp 55.27 ri 1.04e-05p 0.008130p 0.0 0.592166p 0.0 2.978772n 0.0 1.995029n 0.103144p 0.000541p 1.55e-07p 3.66e-12p
sig0.596 cc 1.04e-05p 0.008140p 0.0 0.599589p 0.0 3.578324p 0.0 5.573356p 5.676498p 5.677039p 1.55e-07p 3.66e-12p
rc 1.04e-05p 0.008140p 0.000145o 0.599698o 4.58e-05o 3.578516m 0.000868o 5.574413l 5.677557l 5.678098l 1.55e-07p 3.66e-12p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.271546n 0.0 0.0
zp 55.06 ri 5.32e-05p 0.025635p 0.0 1.144125n 0.0 3.584121n 0.0 1.474599n 0.043619p 0.000122p 1.75e-08p 0.0
sig0.592 cc 5.32e-05p 0.025687p 0.0 1.167580p 0.0 4.751595p 0.0 6.226154p 6.269770p 6.269892p 1.75e-08p 0.0
rc 5.32e-05p 0.025688p 0.000615o 1.168046m 0.000119o 4.752286m 0.001450o 6.228335l 6.271954l 6.272075l 1.75e-08p 0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.560687n 0.0 0.0
zp 54.65 ri 0.000788p 0.157408p 0.0 2.506933n 0.0 3.411353n 0.0 0.487297p 0.005064p 3.72e-06p 1.51e-10p 0.0
sig0.585 cc 0.000788p 0.158143p 0.0 2.651372p 0.0 6.061976p 0.0 6.549121p 6.554183p 6.554187p 1.51e-10p 0.0
rc 0.000788p 0.158196p 0.005490o 2.655955m 0.000385n 6.067692l 0.002183o 6.557172l 6.562236l 6.562240l 1.51e-10p 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.857184n 0.0 0.0
zp 54.25 ri 0.007955p 0.633372p 0.0 4.002541n 0.0 2.138807n 0.0 0.103319p 0.000300p 5.27e-08p 0.0 0.0
sig0.574 cc 0.007943p 0.640324p 0.0 4.587202p 0.0 6.723478p 0.0 6.826636p 6.826935p 6.826936p 0.0 0.0
rc 0.007955p 0.641327o 0.033658o 4.618074m 0.000960n 6.757841l 0.002902o 6.864062l 6.864362l 6.864362l 0.0 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.813945k 4.923353j 0.0 0.0 0.0
zp 54.62 ri 0.001533p 0.171663p 0.0 1.892469n 0.0 2.441502n 0.0 0.372910p 0.005945p 8.29e-06p 9.44e-10p 0.0
sig0.620 cc 0.001535p 0.173411p 0.0 2.054501p 0.0 4.490582p 0.0 4.864069p 4.869948p 4.869956p 9.34e-10p 0.0
rc 0.001533p 0.173196p 0.007304o 2.056914m 0.000338o 4.498753l 0.001770o 4.873434j 4.879379i 4.879387i 9.44e-10p 0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.008287j 0.0 6.165624n 0.0 0.0
zp 54.55 ri 0.000479p 0.147342p 0.0 2.794214n 0.0 2.826430n 0.0 0.252227p 0.000899p 1.60e-07p 0.0 0.0
sig0.541 cc 0.000479p 0.147784p 0.0 2.929312p 0.0 5.754574p 0.0 6.007004p 6.007892p 6.007892p 0.0 0.0
rc 0.000479p 0.147821p 0.005156o 2.933488m 0.000403n 5.760322l 0.002434o 6.014983j 6.015882j 6.015882j 0.0 0.0

pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.702414n 0.0 0.0
zp 54.70 ri 0.000262p 0.071129p 0.0 2.458791n 0.0 2.642984n 0.0 0.529778p 0.002748p 1.61e-06p 1.74e-11p 0.0
sig0.555 cc 0.000262p 0.071379p 0.0 2.523905p 0.0 5.166622p 0.0 5.696327p 5.699074p 5.699076p 1.73e-11p 0.0
rc 0.000262p 0.071391p 0.002192o 2.525755m 0.000322o 5.169061l 0.001890o 5.700730l 5.703478l 5.703479l 1.74e-11p
0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.019019n 0.0 0.0
zp 54.31 ri 0.003435p 0.336631p 0.0 3.882939n 0.0 1.705555n 0.0 0.107518p 0.000174p 2.50e-08p 0.0 0.0
sig0.551 cc 0.003432p 0.339783p 0.0 4.192718p 0.0 5.897151p 0.0 6.004580p 6.004754p 6.004754p 0.0 0.0
rc 0.003435p 0.340066p 0.014862o 4.206343m 0.000733n 5.912631l 0.002281o 6.022430l 6.022604l 6.022604l 0.0
0.0

te half life from 80eng2; i, xe, cs, ba, la half lives from 89wal1.

1

mass number 141 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 53 i g 54 xe d 54 xe g 55 cs d 55 cs g 56 ba d 56 ba g 57 la g 58 ce g 59 pr g 60 nd g 61 pm g
half life 0.45s 0.20 s 1.72 s 1.22s 24.9 s 1.69 s 18.3 m 3.90 h 32.50d stable 2.46 h 20.9 m
lambda 1.540e+00 3.466e+00 4.030e-01 5.682e-01 2.784e-02 4.101e-01 6.313e-04 4.937e-05 2.468e-07 0.0 7.827e-05
5.527e-04
z - 1 g 100.0000 0.0 78.7000 0.0 99.9650 0.0 99.9530 100.0000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 13.8610 100.0000 0.4040 100.0000 0.0950 100.0000 0.0 0.0 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.895815l 5.229621n 5.229621n 5.189160l 0.0 0.0
zp 55.47 ri 0.002228p 0.0 0.272632p 0.0 2.304151n 0.0 2.357981n 0.211355p 0.001720p 8.35e-07p 3.13e-11p 0.0
sig0.594 cc 0.002232p 0.0 0.274874p 0.0 2.583039p 0.0 4.944137p 5.146584p 5.148281p 5.148282p 3.10e-11p 0.0
rc 0.002228p 1.38e-05o 0.274399p 0.000150o 2.578604m 0.000774o 4.936147k 5.147503k 5.149222k 5.149223k 3.13e-11p
0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.323200k 0.0 0.0 0.0
zp 55.08 ri 0.011160p 0.0 0.866891p 0.0 3.105981n 0.0 1.313547n 0.026942p 4.18e-05p 2.06e-09p 0.0 0.0
sig0.557 cc 0.011159p 0.0 0.875651p 0.0 3.981373p 0.0 5.293026p 5.319966p 5.320008p 5.320008p 0.0 0.0

rc 0.011160p 0.000130o 0.875803o 0.001039o 3.982517m 0.002390o 5.296582l 5.323525l 5.323566k 5.323566k 0.0
0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.826691k 5.085976n 0.0 0.0
zp 55.66 ri 0.000683p 0.0 0.130301p 0.0 1.715648n 0.0 2.638139n 0.360685p 0.004964p 4.35e-06p 2.88e-10p 0.0
sig0.596 cc 0.000683p 0.0 0.130870p 0.0 1.846900p 0.0 4.484872p 4.844396p 4.849361p 4.849365p 2.81e-10p 0.0
rc 0.000683p 5.64e-06o 0.130844p 9.12e-05o 1.846537m 0.000727o 4.484535l 4.845220l 4.850184k 4.850189k 2.88e-10p
0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.940966l 5.781477n 0.0 0.0
zp 55.45 ri 0.002886p 0.0 0.337177p 0.0 2.745254n 0.0 2.628087n 0.211191p 0.001594p 6.88e-07p 2.23e-11p 0.0
sig0.592 cc 0.002886p 0.0 0.339436p 0.0 3.084486p 0.0 5.711081p 5.922412p 5.924005p 5.924006p 2.26e-11p 0.0
rc 0.002886p 2.52e-05o 0.339473p 0.000257o 3.084866m 0.001309o 5.712812l 5.924003l 5.925596k 5.925597k 2.23e-11p
0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.914981l 6.074307n 0.0 0.0
zp 55.03 ri 0.025776p 0.0 1.078835n 0.0 3.544392n 0.0 1.248728n 0.035041p 7.38e-05p 8.89e-09p 0.0 0.0
sig0.585 cc 0.025773p 0.0 1.099139p 0.0 4.643178p 0.0 5.889678p 5.924715p 5.924789p 5.924789p 0.0 0.0
rc 0.025776p 0.000363o 1.099484m 0.001275o 4.644766m 0.002846o 5.894157l 5.929198l 5.929272k 5.929272k 0.0
0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.619399k 6.579523n 0.0 0.0
zp 54.63 ri 0.158019p 0.0 2.614469n 0.0 3.428339n 0.0 0.438031p 0.003680p 1.96e-06p 5.09e-11p 0.0 0.0
sig0.574 cc 0.157966p 0.0 2.738967p 0.0 6.166346p 0.0 6.601355p 6.605035p 6.605037p 6.605037p 0.0 0.0
rc 0.158019p 0.003311o 2.742141m 0.004538m 6.174059l 0.004559o 6.613747l 6.617427l 6.617429k 6.617429j 0.0
0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.823001k 0.0 0.0 0.0
zp 55.02 ri 0.034290p 0.0 0.936731p 0.0 2.800272n 0.0 1.016472n 0.040631p 0.000151p 4.72e-08p 1.17e-12p 0.0
sig0.620 cc 0.034286p 0.0 0.963783p 0.0 3.763692p 0.0 4.778361p 4.818987p 4.819139p 4.819139p 1.17e-12p 0.0
rc 0.034290p 0.000584o 0.964301o 0.001197o 3.765433m 0.002254o 4.782390l 4.823021k 4.823173j 4.823173j 1.18e-12p
0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.037788j 5.683781n 0.0 0.0
zp 54.94 ri 0.024208p 0.0 1.133229n 0.0 4.026121n 0.0 0.826079p 0.012332p 6.17e-06p 1.42e-10p 0.0 0.0
sig0.541 cc 0.024205p 0.0 1.152245p 0.0 5.177947p 0.0 6.001646p 6.013976p 6.013983p 6.013983p 0.0 0.0

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        rc 0.024208p 0.000216o 1.152497m 0.001282o 5.179497m 0.002780o 6.005922m 6.018254l 6.018260j 6.018260j      0.0
0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.493060n      0.0       0.0
zp 55.09 ri 0.010291p      0.0  0.911633p      0.0  3.101897n      0.0  1.444111n 0.027318p 4.51e-05p 1.97e-09p      0.0       0.0
sig0.555 cc 0.010290p      0.0  0.919707p      0.0  4.021328p      0.0  5.463531p 5.490847p 5.490893p 5.490893p      0.0       0.0
        rc 0.010291p 9.42e-05o 0.919826o 0.000905o 4.022307m 0.001926o 5.466453l 5.493772l 5.493817l 5.493817l      0.0       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.292757n      0.0       0.0
zp 54.70 ri 0.069773p      0.0  2.038984n      0.0  2.755300n      0.0  0.438630p 0.002674p 1.14e-06p 1.32e-11p      0.0       0.0
sig0.551 cc 0.069759p      0.0  2.093832p      0.0  4.848535p      0.0  5.284818p 5.287492p 5.287493p 5.287493p      0.0       0.0
        rc 0.069773p 0.001130o 2.095026m 0.003338o 4.852932l 0.003199o 5.292480m 5.295154m 5.295156l 5.295156l      0.0
0.0

  i, xe, cs, ba, la, ce half lives from 89wal1.
1

    mass number    142              LA-UR-94-3106 (ENDF-349)                                  percent yields
nuclide      52 te g   53 i  g   54 xe g   55 cs d   55 cs g   56 ba d   56 ba g   57 la g   58 ce g   59 pr g   60 nd g
half life     0.590s     0.2 s    1.22 s    0.96 s     1.8 s    1.78 s    10.7 m    1.54 h    5.e16y    19.16h    stable
lambda      1.175e+00 3.466e+00 5.682e-01 7.220e-01 3.851e-01 3.894e-01 1.080e-03 1.250e-04 4.396e-25 1.005e-05       0.0
 z - 1 g    100.0000  100.0000   86.1390       0.0   99.5960       0.0   99.9050  100.0000  100.0000       0.0  100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0    3.0560  100.0000    1.6000  100.0000       0.0       0.0       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.581424m      0.0  4.837630n      0.0       0.0
zp 55.87 ri 2.44e-08p 9.98e-05p 0.037016p      0.0  0.777645p      0.0  2.076955m 0.858975p 0.017367p 2.34e-05p 2.81e-09p
sig0.594 cc 2.76e-08p 0.000113p 0.041923p      0.0  0.920533p      0.0  3.269564p 3.754941p 3.767006p 1.63e-05p 1.63e-05p
        rc 2.44e-08p 9.98e-05p 0.037102p 0.000206o 0.814803o 0.006533o 2.897517l 3.756492l 3.773859l 2.34e-05p 2.34e-05p
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.522146n      0.0       0.0       0.0
zp 55.47 ri 3.01e-07p 0.000937p 0.256460p      0.0  2.258099n      0.0  2.846017n 0.151846p 0.000860p 1.27e-07p 1.49e-12p
sig0.557 cc 3.00e-07p 0.000937p 0.257068p      0.0  2.512729p      0.0  5.357983p 5.509804p 5.510663p 1.26e-07p 1.26e-07p
        rc 3.01e-07p 0.000937p 0.257267p 0.001191o 2.515518m 0.019204m 5.378348l 5.530194l 5.531054l 1.27e-07p 1.27e-07p
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.582111n      0.0       0.0
```

zp 56.05 ri 6.32e-09p 4.07e-05p 0.022547p 0.0 0.742317p 0.0 2.861493n 0.918525p 0.035218p 8.15e-05p 1.63e-08p
sig0.596 cc 6.31e-09p 4.07e-05p 0.022578p 0.0 0.764669p 0.0 3.625729p 4.544107p 4.579318p 8.15e-05p 8.15e-05p
rc 6.32e-09p 4.07e-05p 0.022582p 6.63e-05o 0.764874o 0.003396o 3.629037m 4.547562m 4.582780l 8.15e-05p 8.15e-05p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.276063n 0.0 0.0
zp 55.85 ri 4.37e-08p 0.000182p 0.063405p 0.0 1.314453n 0.0 3.234480n 0.644985p 0.014263p 1.78e-05p 1.82e-09p
sig0.592 cc 4.37e-08p 0.000182p 0.063538p 0.0 1.377345p 0.0 4.611125p 5.255919p 5.270177p 1.78e-05p 1.78e-05p
rc 4.37e-08p 0.000182p 0.063561p 0.000241o 1.377998m 0.007599o 4.618768m 5.263754l 5.278017l 1.78e-05p 1.78e-05p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5.566643n 0.0 0.0
zp 55.43 ri 1.53e-06p 0.002616p 0.313393p 0.0 2.679493n 0.0 2.378332n 0.183345p 0.001147p 4.21e-07p 9.85e-12p
sig0.585 cc 1.53e-06p 0.002616p 0.315430p 0.0 2.992335p 0.0 5.369470p 5.552702p 5.553848p 4.21e-07p 4.21e-07p
rc 1.53e-06p 0.002617p 0.315648p 0.001843o 2.995708m 0.022706m 5.393900l 5.577246l 5.578392l 4.21e-07p 4.21e-07p
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.062148n 0.0 0.0
zp 55.02 ri 3.45e-05p 0.023855p 1.102763n 0.0 3.670426n 0.0 1.221702n 0.029685p 4.85e-05p 4.00e-09p 0.0
sig0.574 cc 3.45e-05p 0.023875p 1.122626p 0.0 4.788462p 0.0 6.006406p 6.036072p 6.036120p 4.00e-09p 4.00e-09p
rc 3.45e-05p 0.023890p 1.123341m 0.009408o 4.798637m 0.048852m 6.064632l 6.094318l 6.094366l 4.00e-09p 4.00e-09p
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.306960j 0.0 0.0 0.0
zp 55.42 ri 5.34e-06p 0.004209p 0.292761p 0.0 2.076176n 0.0 1.747762n 0.172503p 0.001692p 1.44e-06p 9.86e-11p
sig0.620 cc 5.33e-06p 0.004209p 0.295986p 0.0 2.368623p 0.0 4.116699p 4.289390p 4.291080p 1.43e-06p 1.43e-06p
rc 5.34e-06p 0.004215p 0.296391p 0.001772o 2.373142m 0.017326m 4.135976l 4.308478j 4.310171j 1.44e-06p 1.44e-06p
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.946266j 5.369108n 0.0 0.0
zp 55.34 ri 3.97e-07p 0.001561p 0.316033p 0.0 2.608413n 0.0 1.946068n 0.075067p 0.000180p 1.26e-08p 0.0
sig0.541 cc 3.97e-07p 0.001560p 0.317208p 0.0 2.923405p 0.0 4.867848p 4.942875p 4.943048p 1.21e-08p 1.21e-08p
rc 3.97e-07p 0.001561p 0.317378p 0.001598o 2.926106m 0.028335m 4.897730k 4.972797j 4.972978j 1.26e-08p 1.26e-08p
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.785243n 0.0 0.0
zp 55.48 ri 2.27e-07p 0.000679p 0.223430p 0.0 1.802968n 0.0 2.625262n 0.124595p 0.000789p 9.92e-08p 1.25e-12p
sig0.555 cc 2.27e-07p 0.000679p 0.223862p 0.0 2.024981p 0.0 4.649500p 4.774013p 4.774802p 9.91e-08p 9.91e-08p
rc 2.27e-07p 0.000680p 0.224016p 0.001016o 2.027095m 0.015402o 4.665834l 4.790428l 4.791217l 9.92e-08p 9.92e-08p
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.656034n 0.0 0.0
zp 55.08 ri 7.84e-06p 0.008147p 0.819289p 0.0 2.538834n 0.0 1.258048n 0.020341p 3.29e-05p 1.12e-09p 0.0

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 sig0.551 cc 7.83e-06p 0.008149p 0.825718p       0.0  3.360748p       0.0  4.616683p 4.637010p 4.637042p 1.11e-09p 1.11e-09p
          rc 7.84e-06p 0.008155p 0.826314o 0.005942o 3.367751m 0.034538m 4.657138l 4.677479l 4.677512l 1.12e-09p 1.12e-09p

   te half life from 80eng2; i, xe, cs, ba, la half lives 89wal1.
1

     mass number    143              LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       54 xe g   55 cs d   55 cs g   56 ba d   56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm m   62 sm g
 half life     0.30 s    1.1  s    1.78 s    1.001s    14.3 s    14.1 m    1.38 d    13.57d    stable    265. d     64. s    8.83 m
 lambda       2.310e+00 6.301e-01 3.894e-01 6.925e-01 4.847e-02 8.193e-04 5.813e-06 5.912e-07        0.0 3.027e-08 1.083e-02
1.308e-03
  z - 1 g    100.0000       0.0   96.9440       0.0   98.4000  100.0000  100.0000  100.0000  100.0000 -100.0000       0.0 -100.0000
  z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
  z - 0 m        0.0    4.6120  100.0000    3.1300  100.0000       0.0       0.0       0.0       0.0       0.0       0.0  100.0000
  cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  4.281536i      0.0  4.465601n      0.0       0.0       0.0
 zp 56.26 ri 0.006750p       0.0  0.401723p       0.0  2.477342n 1.322096n 0.081583p 0.000337p 1.11e-07p 1.94e-12p       0.0       0.0
 sig0.594 cc 0.006750p       0.0  0.408268p       0.0  2.879844p 4.201181p 4.282763p 4.283092p 4.283093p 1.90e-12p       0.0       0.0
          rc 0.006750p 2.65e-05o 0.408293p 0.002784o 2.881886m 4.203983k 4.285566i 4.285902i 4.285902i 1.95e-12p       0.0       0.0
  cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  5.313469k      0.0       0.0       0.0       0.0       0.0
 zp 55.87 ri 0.038970p       0.0  1.162283n       0.0  3.506847n 0.605976p 0.009799p 5.59e-06p 2.05e-10p       0.0       0.0       0.0
 sig0.557 cc 0.038949p       0.0  1.199472p       0.0  4.687882p 5.293700p 5.303494p 5.303499p 5.303499p       0.0       0.0       0.0
          rc 0.038970p 0.000180o 1.200242m 0.010535o 4.698420m 5.304396l 5.314195k 5.314201k 5.314201k       0.0       0.0       0.0
  cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.084055n      0.0       0.0       0.0
 zp 56.46 ri 0.002169p       0.0  0.210168p       0.0  2.014912n 1.689494n 0.168503p 0.001186p 6.93e-07p 2.26e-11p       0.0       0.0
 sig0.596 cc 0.002169p       0.0  0.212249p       0.0  2.223941p 3.913299p 4.081784p 4.082969p 4.082970p 2.26e-11p       0.0       0.0
          rc 0.002169p 6.99e-06o 0.212277p 0.001255o 2.225048m 3.914542l 4.083045l 4.084231l 4.084231l 2.26e-11p       0.0       0.0
  cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.778321n      0.0       0.0       0.0
 zp 56.25 ri 0.007877p       0.0  0.467295p       0.0  2.780553n 1.443795n 0.083658p 0.000317p 9.41e-08p 1.49e-12p       0.0       0.0
 sig0.592 cc 0.007875p       0.0  0.474843p       0.0  3.248136p 4.691699p 4.775340p 4.775657p 4.775657p 1.49e-12p       0.0       0.0
          rc 0.007877p 2.86e-05o 0.474960p 0.003158o 3.251072m 4.694867l 4.778525l 4.778842l 4.778842l 1.49e-12p       0.0       0.0
  cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.970217n      0.0       0.0       0.0
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 zp 55.82 ri 0.060295p      0.0  1.360313n      0.0  2.963780n 0.588069p 0.010365p 1.13e-05p 8.02e-10p      0.0       0.0       0.0
 sig0.585 cc 0.060251p      0.0  1.417854p      0.0  4.360219p 4.947937p 4.958295p 4.958306p 4.958306p      0.0       0.0       0.0
          rc 0.060295p 0.000356o 1.419121m 0.015556o 4.375752m 4.963820l 4.974185l 4.974197l 4.974197l      0.0       0.0       0.0
  cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  5.565251n      0.0       0.0       0.0
 zp 55.42 ri 0.307864p      0.0  2.752386n      0.0  2.373565n 0.164717p 0.000836p 2.23e-07p 3.38e-12p      0.0       0.0       0.0
 sig0.574 cc 0.307487p      0.0  3.047804p      0.0  5.375838p 5.540371p 5.541206p 5.541206p 5.541206p      0.0       0.0       0.0
          rc 0.307864p 0.002402o 3.053244m 0.043512m 5.421469l 5.586185l 5.587021l 5.587022l 5.587022l      0.0       0.0       0.0
  pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  3.632136j      0.0       0.0       0.0       0.0       0.0
 zp 55.83 ri 0.057989p      0.0  1.026261n      0.0  2.048007n 0.494490p 0.012769p 2.99e-05p 5.78e-09p      0.0       0.0       0.0
 sig0.620 cc 0.057929p      0.0  1.081478p      0.0  3.112490p 3.607686p 3.620442p 3.620472p 3.620472p      0.0       0.0       0.0
          rc 0.057989p 0.000366o 1.082844m 0.011554o 3.125079m 3.619570l 3.632339j 3.632369j 3.632369j      0.0       0.0       0.0
  np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  5.015101j      0.0  5.398608n      0.0       0.0       0.0
 zp 55.74 ri 0.052291p      0.0  1.719986n      0.0  2.840896n 0.433196p 0.002742p 9.45e-07p 9.03e-12p      0.0       0.0       0.0
 sig0.541 cc 0.052270p      0.0  1.770079p      0.0  4.585240p 5.016451p 5.019192p 5.019193p 5.019193p      0.0       0.0       0.0
          rc 0.052291p 0.000282o 1.770960m 0.016604o 4.600125l 5.033320l 5.036063j 5.036064j 5.036064j      0.0       0.0       0.0
  pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.486165n      0.0       0.0       0.0
 zp 55.87 ri 0.033243p      0.0  0.930267p      0.0  3.045719n 0.478891p 0.008124p 4.04e-06p 1.49e-10p      0.0       0.0       0.0
 sig0.555 cc 0.033228p      0.0  0.962111p      0.0  3.993011p 4.471714p 4.479834p 4.479839p 4.479839p      0.0       0.0       0.0
          rc 0.033243p 0.000150o 0.962644o 0.007761o 4.000721m 4.479612m 4.487736m 4.487740m 4.487740l      0.0       0.0
0.0
  pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.536649n      0.0       0.0       0.0
 zp 55.47 ri 0.194421p      0.0  1.968694n      0.0  2.268789n 0.127146p 0.000591p 8.00e-08p      0.0       0.0       0.0       0.0
 sig0.551 cc 0.194215p      0.0  2.155317p      0.0  4.391610p 4.518631p 4.519221p 4.519221p 4.519221p      0.0       0.0       0.0
          rc 0.194421p 0.001448o 2.158622m 0.026668o 4.419540l 4.546686l 4.547277l 4.547277l 4.547277l      0.0       0.0       0.0

   xe, cs, ba, la, ce, pr half lives from 89wal1.
1

     mass number    144              LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       54 xe g   55 cs g   56 ba d   56 ba g   57 la g   58 ce g   59 pr m   59 pr g   60 nd g   61 pm g   62 sm g
 half life      1.2 s    1.01 s    0.59 s    11.4 s    40.7 s    284.6d     7.2 m    17.28m    15.32l    363. d    stable
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lambda      5.776e-01 6.863e-01 1.175e+00 6.080e-02 1.703e-02 2.819e-08 1.605e-03 6.685e-04 1.052e-23 2.210e-08       0.0
 z - 1 g    100.0000   95.3880       0.0   96.8700  100.0000  100.0000    0.5000   99.5000  100.0000 -100.0000       0.0
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0    0.0500       0.0       0.0
 z - 0 m       0.0       0.0   13.5900  100.0000       0.0       0.0       0.0   99.9500       0.0       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  3.181047l      0.0       0.0       0.0  4.370128n      0.0       0.0
zp 56.65 ri 0.000575p 0.088392p      0.0  1.463097n 1.764069m 0.401882p 0.003511p 0.000390p 3.93e-06p 1.91e-10p      0.0
sig0.594 cc 0.000592p 0.091571p      0.0  1.595775p 3.412327p 3.715837p 0.021447p 3.719013p 3.719027p 1.56e-10p      0.0
         rc 0.000575p 0.088940p 0.001942o 1.551195m 3.315264k 3.717147l 0.022097m 3.721037l 3.721052l 1.91e-10p      0.0
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  5.050715m      0.0       0.0       0.0       0.0       0.0
zp 56.28 ri 0.003892p 0.332861p      0.0  3.241267n 1.395928n 0.081106p 0.000128p 1.42e-05p 2.12e-08p      0.0       0.0
sig0.557 cc 0.003890p 0.336414p      0.0  3.567850p 4.963279p 5.044346p 0.025350p 5.044476p 5.044489p      0.0       0.0
         rc 0.003892p 0.336574p 0.007135o 3.574442m 4.970370l 5.051476k 0.025385k 5.051606k 5.051618k      0.0       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  3.689825k      0.0       0.0  3.689825n      0.0       0.0
zp 56.86 ri 0.000151p 0.039941p      0.0  1.044636n 2.059885n 0.544961p 0.009294p 0.000919p 1.82e-05p 1.70e-09p      0.0
sig0.596 cc 0.000151p 0.040083p      0.0  1.083604p 3.143365p 3.688300p 0.027748p 3.698513p 3.698545p 1.71e-09p      0.0
         rc 0.000151p 0.040086p 0.000672o 1.084139m 3.144024m 3.688985k 0.027739o 3.699185k 3.699217k 1.70e-09p      0.0
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  4.007162k      0.0       0.0  4.186587n      0.0       0.0
zp 56.65 ri 0.000621p 0.100312p      0.0  1.615984n 1.989573n 0.315113p 0.003016p 0.000335p 3.09e-06p 1.43e-10p      0.0
sig0.592 cc 0.000621p 0.100891p      0.0  1.714217p 3.703228p 4.018489p 0.023043p 4.021756p 4.021770p 1.40e-10p      0.0
         rc 0.000621p 0.100904p 0.002141o 1.715871m 3.705445l 4.020558k 0.023118l 4.023897k 4.023911k 1.43e-10p      0.0
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  4.690162k      0.0       0.0  4.481046n      0.0       0.0
zp 56.22 ri 0.007721p 0.489634p      0.0  2.728795n 1.380383n 0.068190p 0.000205p 1.31e-05p 4.80e-08p      0.0       0.0
sig0.585 cc 0.007712p 0.496397p      0.0  3.210332p 4.590718p 4.658826p 0.023503p 4.659037p 4.659049p      0.0       0.0
         rc 0.007721p 0.496999p 0.014131o 3.224370m 4.604752l 4.672943k 0.023570k 4.673149k 4.673161k      0.0       0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  5.064239k      0.0       0.0  4.884797n      0.0       0.0
zp 55.83 ri 0.052075p 1.340498n      0.0  3.050554n 0.591485p 0.009340p 7.23e-06p 8.03e-07p 4.10e-10p      0.0       0.0
sig0.574 cc 0.051931p 1.386314p      0.0  4.397380p 4.988851p 4.998166p 0.024998p 4.998162p 4.998174p      0.0       0.0
         rc 0.052075p 1.390172m 0.056343o 4.453556m 5.045042l 5.054382k 0.025279k 5.054377k 5.054390j      0.0       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  3.165715k      0.0       0.0       0.0       0.0       0.0
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zp 56.24 ri 0.007941p 0.361553p      0.0  1.730000n 1.001311n 0.066067p 0.000378p 4.20e-05p 2.27e-07p 9.88e-12p      0.0
sig0.620 cc 0.007932p 0.368703p      0.0  2.088186p 3.088974p 3.154965p 0.016152p 3.155376p 3.155385p 9.87e-12p      0.0
        rc 0.007941p 0.369127p 0.011134o 2.098707m 3.100018k 3.166085j 0.016208j 3.166497j 3.166505j 9.88e-12p      0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.843198n      0.0       0.0
zp 56.14 ri 0.006112p 0.524639p      0.0  3.178428n 1.109503n 0.030215p 2.60e-05p 2.88e-06p 1.33e-09p      0.0       0.0
sig0.541 cc 0.006106p 0.530015p      0.0  3.693121p 4.801837p 4.832026p 0.024186p 4.832043p 4.832055p      0.0       0.0
        rc 0.006112p 0.530469o 0.013523o 3.705817m 4.815320l 4.845535l 0.024254l 4.845552l 4.845564l      0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.927887n      0.0       0.0
zp 56.27 ri 0.003253p 0.244840p      0.0  2.646231n 0.974731p 0.060862p 7.86e-05p 8.73e-06p 1.33e-08p      0.0       0.0
sig0.555 cc 0.003251p 0.247801p      0.0  2.886911p 3.861184p 3.922012p 0.019689p 3.922089p 3.922099p      0.0       0.0
        rc 0.003253p 0.247943p 0.006770o 2.893183m 3.867915m 3.928777m 0.019722m 3.928854m 3.928864l      0.0       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.188441n      0.0       0.0
zp 55.86 ri 0.031390p 0.822059p      0.0  2.923447n 0.405329p 0.006989p 2.52e-06p 2.80e-07p 9.54e-11p      0.0       0.0
sig0.551 cc 0.031324p 0.850211p      0.0  3.749613p 4.154184p 4.161159p 0.020808p 4.161151p 4.161161p      0.0       0.0
        rc 0.031390p 0.852002o 0.034331o 3.783112m 4.188442m 4.195431m 0.020980m 4.195423m 4.195433l      0.0       0.0

  xe, cs, ba, la, ce, pr, half lives from 89wal1.
1

    mass number    145              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide      54 xe g   55 cs g   56 ba d   56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g
half life     0.9 s    0.59 s    0.340s     4.0 s     24. s    3.00 m    5.98 h    stable    17.7 y    340. d
lambda      7.702e-01 1.175e+00 2.039e+00 1.733e-01 2.888e-02 3.851e-03 3.220e-05       0.0 1.242e-09 2.360e-08
 z - 1 g    100.0000  100.0000       0.0   86.4100  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0   13.3000  100.0000       0.0       0.0       0.0       0.0       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  3.277364l      0.0  3.064942n      0.0       0.0
zp 57.05 ri 3.03e-05p 0.014258p      0.0  0.596694p 1.891399n 0.750558p 0.022228p 6.17e-05p 9.55e-09p      0.0
sig0.594 cc 3.03e-05p 0.014284p      0.0  0.608929p 2.499821p 3.250180p 3.273224p 3.273288p 9.90e-09p      0.0
        rc 3.03e-05p 0.014288p 0.000164o 0.609205o 2.500604m 3.251162k 3.273390k 3.273451k 9.55e-09p      0.0
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.511469n      0.0       0.0
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zp 56.69 ri 0.000161p 0.052340p       0.0  1.357537n 1.823129n 0.282966p 0.001891p 8.90e-07p 1.29e-11p       0.0
sig0.557 cc 0.000161p 0.052497p       0.0  1.403020p 3.226052p 3.508998p 3.510889p 3.510890p 1.29e-11p       0.0
         rc 0.000161p 0.052501p 0.000649o 1.403552m 3.226680l 3.509646m 3.511537l 3.511538l 1.29e-11p       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.386778n      0.0       0.0
zp 57.27 ri 6.06e-06p 0.004939p       0.0  0.345601p 1.809556n 1.164327n 0.062658p 0.000316p 9.41e-08p 2.14e-12p
sig0.596 cc 6.06e-06p 0.004945p       0.0  0.349889p 2.159437p 3.323757p 3.386415p 3.386731p 9.41e-08p 2.14e-12p
         rc 6.06e-06p 0.004945p 4.96e-05o 0.349923p 2.159479m 3.323806l 3.386465l 3.386780l 9.41e-08p 2.14e-12p
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.782838n      0.0       0.0
zp 57.06 ri 3.13e-05p 0.015726p       0.0  0.674355p 2.198780n 0.869082p 0.026759p 7.17e-05p 1.07e-08p       0.0
sig0.592 cc 3.13e-05p 0.015757p       0.0  0.688020p 2.886770p 3.755835p 3.782593p 3.782664p 1.07e-08p       0.0
         rc 3.13e-05p 0.015758p 0.000185o 0.688156o 2.886936m 3.756019m 3.782777m 3.782849l 1.07e-08p       0.0
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.976174n      0.0       0.0
zp 56.63 ri 0.000547p 0.103436p       0.0  1.567766n 2.036919n 0.277202p 0.002732p 1.90e-06p 7.26e-11p       0.0
sig0.585 cc 0.000547p 0.103963p       0.0  1.657941p 3.694590p 3.971742p 3.974473p 3.974475p 7.26e-11p       0.0
         rc 0.000547p 0.103982p 0.001916o 1.659534m 3.696453l 3.973655l 3.976386l 3.976388l 7.26e-11p       0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.273318n      0.0       0.0
zp 56.24 ri 0.005284p 0.409310p       0.0  2.526261n 1.316963n 0.061965p 0.000175p 2.98e-08p       0.0       0.0
sig0.574 cc 0.005279p 0.414243p       0.0  2.885478p 4.201574p 4.263487p 4.263661p 4.263661p       0.0       0.0
         rc 0.005284p 0.414593p 0.011550o 2.896061m 4.213024l 4.274988l 4.275163l 4.275163l       0.0       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.560412n      0.0       0.0
zp 56.65 ri 0.000675p 0.081252p       0.0  0.958408p 1.311352n 0.214674p 0.003627p 5.45e-06p 6.69e-10p       0.0
sig0.620 cc 0.000675p 0.081907p       0.0  1.029497p 2.340610p 2.555231p 2.558857p 2.558863p 6.69e-10p       0.0
         rc 0.000675p 0.081927p 0.001706o 1.030908o 2.342260m 2.556934m 2.560561m 2.560566l 6.69e-10p       0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.605814n      0.0       0.0
zp 56.55 ri 0.000254p 0.099256p       0.0  1.480747n 1.903628n 0.133759p 0.000598p 8.37e-08p       0.0       0.0
sig0.541 cc 0.000254p 0.099497p       0.0  1.566934p 3.470380p 3.604122p 3.604720p 3.604720p       0.0       0.0
         rc 0.000254p 0.099510p 0.001238o 1.567971m 3.471599l 3.605358l 3.605956l 3.605956l       0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.070531n      0.0       0.0
zp 56.66 ri 0.000175p 0.049640p       0.0  1.302806n 1.494331n 0.228479p 0.001242p 5.44e-07p 6.10e-12p       0.0
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sig0.555 cc 0.000175p 0.049810p      0.0  1.345970p 2.840203p 3.068662p 3.069904p 3.069904p 6.10e-12p      0.0
         rc 0.000175p 0.049815p 0.000706o 1.346557m 2.840888l 3.069367l 3.070609l 3.070610l 6.11e-12p      0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.434943n      0.0       0.0
zp 56.26 ri 0.002568p 0.250053p      0.0  2.188715n 0.976971p 0.046371p 7.44e-05p 7.88e-09p      0.0       0.0
sig0.551 cc 0.002566p 0.252494p      0.0  2.407435p 3.384016p 3.430364p 3.430438p 3.430438p      0.0       0.0
         rc 0.002568p 0.252621p 0.005255o 2.412260m 3.389231m 3.435601m 3.435676m 3.435676m      0.0       0.0

  xe, cs, ba, la, ce, pr half lives from 89wal1; pm, sm half lives 90bur1.

1

    mass number    146              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide      54 xe g   55 cs g   56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g
half life     0.563s    0.322s    2.20 s     6.3 s    13.5 m    24.2 m    stable    5.53 y    1.0e8y
lambda      1.231e+00 2.153e+00 3.151e-01 1.100e-01 8.557e-04 4.774e-04       0.0 3.975e-09 2.198e-16
 z - 1 g    100.0000  100.0000   86.7000  100.0000  100.0000  100.0000  100.0000  -65.0000   35.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  2.296858m      0.0  2.794849n      0.0       0.0
zp 57.44 ri 9.71e-07p 0.001230p 0.147893p 1.095866n 1.113610n 0.098112p 0.000809p 3.42e-07p 1.25e-11p
sig0.594 cc 9.77e-07p 0.001238p 0.149852p 1.252272p 2.372543p 2.456663p 2.457356p 2.93e-07p 1.02e-07p
         rc 9.71e-07p 0.001231p 0.148961p 1.244827m 2.358436l 2.456548l 2.457357l 3.42e-07p 1.20e-07p
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.905219n      0.0       0.0
zp 57.11 ri 4.73e-06p 0.004872p 0.465984p 1.596374n 0.822352p 0.016250p 3.12e-05p 1.50e-09p      0.0
sig0.557 cc 4.73e-06p 0.004877p 0.470213p 2.066587p 2.888939p 2.905188p 2.905219p 1.50e-09p 5.24e-10p
         rc 4.73e-06p 0.004877p 0.470213p 2.066587m 2.888939m 2.905188m 2.905219m 1.50e-09p 5.24e-10p
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  3.087944n      0.0       0.0
zp 57.68 ri 1.58e-07p 0.000373p 0.077996p 1.035341n 1.733007n 0.237678p 0.003596p 3.11e-06p 2.27e-10p
sig0.596 cc 1.58e-07p 0.000373p 0.078319p 1.113661p 2.846668p 3.084346p 3.087943p 3.11e-06p 1.09e-06p
         rc 1.58e-07p 0.000373p 0.078319p 1.113661m 2.846668l 3.084346m 3.087943l 3.11e-06p 1.09e-06p
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  3.285096n      0.0       0.0
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zp 57.47 ri 9.48e-07p 0.001389p 0.177911p 1.459785n 1.521798n 0.123376p 0.001021p 4.53e-07p 1.61e-11p
sig0.592 cc 9.48e-07p 0.001389p 0.179115p 1.638900p 3.160698p 3.284075p 3.285096p 4.53e-07p 1.59e-07p
        rc 9.48e-07p 0.001389p 0.179115p 1.638900m 3.160698l 3.284075l 3.285096l 4.53e-07p 1.59e-07p
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.479152n      0.0       0.0
zp 57.04 ri 2.48e-05p 0.014382p 0.617786p 2.077908n 0.749347p 0.021574p 4.67e-05p 5.71e-09p       0.0
sig0.585 cc 2.48e-05p 0.014406p 0.630276p 2.708184p 3.457531p 3.479105p 3.479152p 5.71e-09p 2.00e-09p
        rc 2.48e-05p 0.014406p 0.630276o 2.708184m 3.457531m 3.479105m 3.479152l 5.71e-09p 2.00e-09p
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.776420n      0.0       0.0
zp 56.64 ri 0.000368p 0.086471p 1.468704n 1.971926n 0.258268p 0.002231p 1.22e-06p 3.28e-11p       0.0
sig0.574 cc 0.000368p 0.086839p 1.543994p 3.515920p 3.774188p 3.776419p 3.776420p 3.28e-11p 1.15e-11p
        rc 0.000368p 0.086839p 1.543994m 3.515920l 3.774188l 3.776419l 3.776420l 3.28e-11p 1.15e-11p
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0  2.156529k      0.0       0.0       0.0
zp 57.06 ri 3.93e-05p 0.012790p 0.383219p 1.247576n 0.493015p 0.021597p 8.87e-05p 3.06e-08p       0.0
sig0.620 cc 3.93e-05p 0.012829p 0.394341p 1.641917p 2.134932p 2.156529p 2.156618p 3.06e-08p 1.07e-08p
        rc 3.93e-05p 0.012829p 0.394341p 1.641917m 2.134932m 2.156529k 2.156618k 3.06e-08p 1.07e-08p
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  2.802434l      0.0  2.821963n      0.0       0.0
zp 56.96 ri 8.14e-06p 0.009297p 0.587759p 1.731504n 0.476643p 0.005959p 4.04e-06p 8.05e-11p       0.0
sig0.541 cc 8.14e-06p 0.009306p 0.595830p 2.327342p 2.803988p 2.809933p 2.809937p 8.03e-11p 2.81e-11p
        rc 8.14e-06p 0.009306p 0.595827o 2.327330m 2.803974k 2.809933k 2.809937k 8.05e-11p 2.82e-11p
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.568782n      0.0       0.0
zp 57.06 ri 6.51e-06p 0.005300p 0.507740p 1.356250n 0.690010p 0.010163p 1.80e-05p 6.07e-10p       0.0
sig0.555 cc 6.51e-06p 0.005307p 0.512341p 1.868591p 2.558601p 2.568764p 2.568782p 6.07e-10p 2.13e-10p
        rc 6.51e-06p 0.005307p 0.512341o 1.868591m 2.558601m 2.568764m 2.568782m 6.07e-10p 2.13e-10p
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.805559n      0.0       0.0
zp 56.67 ri 0.000135p 0.039376p 1.220333n 1.325338n 0.224546p 0.001085p 4.86e-07p 4.43e-12p       0.0
sig0.551 cc 0.000135p 0.039511p 1.254590p 2.579928p 2.804474p 2.805559p 2.805559p 4.43e-12p 1.55e-12p
        rc 0.000135p 0.039511p 1.254590m 2.579928l 2.804474l 2.805559l 2.805559l 4.43e-12p 1.55e-12p

  xe half life from 80eng2; cs, ba, la, ce, pr half lives 89wal1.
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    mass number    147              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g
half life     0.892s    4.02 s     56. s     13.4 m    10.98d    2.623y    11.03l    24.3 d    38.0 h
lambda       7.771e-01 1.724e-01 1.238e-02 8.621e-04 7.306e-07 8.380e-09 2.051e-19 3.301e-07 5.067e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  2.080330i      0.0  2.454069n      0.0       0.0
zp 57.84 ri 0.025887p 0.536409p 1.262766n 0.261539p 0.005602p 8.07e-06p 8.41e-10p      0.0       0.0
sig0.594 cc 0.025939p 0.563428p 1.827799p 2.086590p 2.092203p 2.092211p 2.092211p      0.0       0.0
         rc 0.025887p 0.562296o 1.825062m 2.086600k 2.092203i 2.092211i 2.092211i      0.0       0.0
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  2.570281k      0.0       0.0       0.0       0.0
zp 57.54 ri 0.085309p 1.024496n 1.360948n 0.098918p 0.000610p 1.26e-07p 1.64e-12p      0.0       0.0
sig0.557 cc 0.085309p 1.109805p 2.470753p 2.569671p 2.570280p 2.570281p 2.570281p      0.0       0.0
         rc 0.085309p 1.109805m 2.470753l 2.569671k 2.570280j 2.570281j 2.570281j      0.0       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.689500n      0.0       0.0
zp 58.09 ri 0.010711p 0.405669p 1.646476n 0.602097p 0.024481p 6.55e-05p 1.41e-08p      0.0       0.0
sig0.596 cc 0.010711p 0.416380p 2.062856p 2.664953p 2.689434p 2.689500p 2.689500p      0.0       0.0
         rc 0.010711p 0.416380p 2.062856m 2.664953m 2.689434m 2.689500m 2.689500l      0.0       0.0
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.881477n      0.0       0.0
zp 57.88 ri 0.029848p 0.694053p 1.757625n 0.390973p 0.008966p 1.26e-05p 1.35e-09p      0.0       0.0
sig0.592 cc 0.029848p 0.723902p 2.481526p 2.872499p 2.881464p 2.881477p 2.881477p      0.0       0.0
         rc 0.029848p 0.723902o 2.481526m 2.872499m 2.881464m 2.881477m 2.881477m      0.0       0.0
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  3.081535n      0.0       0.0
zp 57.45 ri 0.162061p 1.455228n 1.353999n 0.109524p 0.000723p 2.81e-07p 6.95e-12p      0.0       0.0
sig0.585 cc 0.162061p 1.617289p 2.971288p 3.080812p 3.081534p 3.081535p 3.081535p      0.0       0.0
         rc 0.162061p 1.617289m 2.971288l 3.080812l 3.081534l 3.081535l 3.081535l      0.0       0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  3.279523n      0.0       0.0
zp 57.05 ri 0.556040p 1.991610n 0.713091p 0.018748p 3.34e-05p 3.01e-09p      0.0       0.0       0.0
```

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 sig0.574 cc 0.556040p 2.547650p 3.260742p 3.279489p 3.279523p 3.279523p 3.279523p       0.0       0.0
          rc 0.556040o 2.547650m 3.260742m 3.279489m 3.279523m 3.279523m 3.279523l       0.0       0.0
  pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  1.956934n      0.0       0.0
 zp 57.46 ri 0.117686p 0.911454p 0.836620p 0.090202p 0.000971p 9.11e-07p 6.92e-11p       0.0       0.0
 sig0.620 cc 0.117686p 1.029140p 1.865760p 1.955962p 1.956933p 1.956934p 1.956934p       0.0       0.0
          rc 0.117686p 1.029140o 1.865760n 1.955962n 1.956933n 1.956934n 1.956934m       0.0       0.0
  np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0  2.527217k      0.0  2.133876n      0.0       0.0
 zp 57.36 ri 0.129495p 1.437148n 0.887120p 0.046149p 8.90e-05p 7.81e-09p       0.0       0.0       0.0
 sig0.541 cc 0.129404p 1.565541p 2.453795p 2.499912p 2.500001p 2.500001p 2.500001p       0.0       0.0
          rc 0.129495p 1.566643m 2.453763m 2.499912l 2.500001j 2.500001j 2.500001j       0.0       0.0
  pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  2.123452n      0.0       0.0
 zp 57.46 ri 0.100228p 0.903804p 1.062860n 0.056276p 0.000285p 3.96e-08p       0.0       0.0       0.0
 sig0.555 cc 0.100228p 1.004032p 2.066891p 2.123167p 2.123451p 2.123452p 2.123452p       0.0       0.0
          rc 0.100228p 1.004032o 2.066891m 2.123167m 2.123451m 2.123452m 2.123452l       0.0       0.0
  pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0  2.387710n      0.0       0.0
 zp 57.07 ri 0.399846p 1.393324n 0.583961p 0.010565p 1.44e-05p 5.44e-10p       0.0       0.0       0.0
 sig0.551 cc 0.399846p 1.793169p 2.377130p 2.387696p 2.387710p 2.387710p 2.387710p       0.0       0.0
          rc 0.399846p 1.793169m 2.377130m 2.387696m 2.387710m 2.387710m 2.387710l       0.0       0.0

   cs, ba, la, ce, pr, nd, pm half lives from 89wal1.
1

     mass number    148              LA-UR-94-3106 (ENDF-349)                                  percent yields
 nuclide       54 xe g   55 cs g   56 ba g   57 la d   57 la g   58 ce d   58 ce g   59 pr g   60 nd g   61 pm m   61 pm g   62 sm g
 half life              0.15 s    0.64 s    0.695s     1.1 s    2.41 s     56. s    2.27 m    stable    41.3 d    5.37 d    8.e15y
 lambda            0.0 4.621e+00 1.083e+00 9.973e-01 6.301e-01 2.876e-01 1.238e-02 5.089e-03       0.0 1.943e-07 1.494e-06 2.747e-
24
  z - 1 g    100.0000  100.0000  100.0000       0.0  100.0000       0.0  100.0000  100.0000  100.0000       0.0       0.0  100.0000
  z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   95.4000
  z - 0 m        0.0       0.0       0.0    0.5750  100.0000    1.0600  100.0000       0.0       0.0       0.0    4.6000       0.0
  cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
          xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.353048n      0.0       0.0       0.0
```

zp 58.23 ri 4.19e-10p 4.59e-06p 0.004457p 0.0 0.231338p 0.0 1.413093n 0.663102p 0.040405p 9.94e-05p 4.26e-05p 4.57e-08p
sig0.594 cc 4.18e-10p 4.59e-06p 0.004461p 0.0 0.235781p 0.0 1.648935p 2.311997p 2.352399p 9.94e-05p 4.72e-05p 0.000142p
rc 4.19e-10p 4.59e-06p 0.004461p 2.13e-06o 0.235801p 0.000598o 1.649492m 2.312594m 2.352999m 9.94e-05p 4.72e-05p 0.000142p
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.977820n 0.0 0.0 0.0
zp 57.96 ri 5.53e-10p 7.92e-06p 0.009443p 0.0 0.321449p 0.0 1.375165n 0.264807p 0.006260p 2.91e-06p 1.25e-06p 2.29e-10p
sig0.557 cc 5.53e-10p 7.92e-06p 0.009450p 0.0 0.330864p 0.0 1.706091p 1.970872p 1.977131p 2.91e-06p 1.38e-06p 4.16e-06p
rc 5.53e-10p 7.92e-06p 0.009451p 3.48e-06o 0.330903p 0.000837o 1.706905m 1.971712m 1.977972m 2.91e-06p 1.38e-06p 4.16e-06p
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.390667n 0.0 0.0 0.0
zp 58.50 ri 2.50e-11p 5.52e-07p 0.001018p 0.0 0.105050p 0.0 1.152627n 1.015048n 0.115893p 0.000634p 0.000235p 5.89e-07p
sig0.596 cc 2.50e-11p 5.52e-07p 0.001018p 0.0 0.106065p 0.0 1.258719p 2.273747p 2.389637p 0.000634p 0.000264p 0.000869p
rc 2.50e-11p 5.52e-07p 0.001018p 3.21e-07o 0.106068p 0.000186o 1.258881m 2.273930l 2.389823l 0.000634p 0.000264p 0.000870p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.484032n 0.0 0.0 0.0
zp 58.28 ri 2.33e-10p 3.17e-06p 0.003525p 0.0 0.217041p 0.0 1.442713n 0.770133p 0.050005p 0.000138p 5.91e-05p 6.61e-08p
sig0.592 cc 2.33e-10p 3.17e-06p 0.003528p 0.0 0.220556p 0.0 1.663321p 2.433418p 2.483421p 0.000138p 6.55e-05p 0.000197p
rc 2.33e-10p 3.17e-06p 0.003528p 1.40e-06o 0.220571p 0.000484o 1.663767m 2.433901m 2.483906m 0.000138p 6.55e-05p 0.000197p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.677256n 0.0 0.0 0.0
zp 57.86 ri 1.23e-08p 7.05e-05p 0.027020p 0.0 0.674891p 0.0 1.614614n 0.352021p 0.006888p 6.87e-06p 1.51e-06p 6.67e-10p
sig0.585 cc 1.23e-08p 7.05e-05p 0.027086p 0.0 0.701859p 0.0 2.316649p 2.668618p 2.675505p 6.87e-06p 1.82e-06p 8.38e-06p

rc 1.23e-08p 7.06e-05p 0.027091p 1.64e-05o 0.701998o 0.002215o 2.318827m 2.670848m 2.677736m 6.87e-06p 1.82e-06p 8.38e-06p
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.782625n 0.0 0.0 0.0
zp 57.46 ri 3.49e-07p 0.000859p 0.132204p 0.0 1.307956n 0.0 1.241909n 0.095307p 0.000541p 1.13e-07p 4.86e-08p 2.77e-12p
sig0.574 cc 3.48e-07p 0.000859p 0.133020p 0.0 1.440584p 0.0 2.682959p 2.778235p 2.778776p 1.13e-07p 5.38e-08p 1.62e-07p
rc 3.49e-07p 0.000859p 0.133063p 0.000123o 1.441142m 0.006529o 2.689580l 2.784887l 2.785428l 1.13e-07p 5.38e-08p 1.62e-07p
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.761241n 0.0 0.0 0.0
zp 57.87 ri 4.81e-08p 0.000116p 0.023804p 0.0 0.461389p 0.0 1.002739n 0.264254p 0.007471p 1.35e-05p 5.78e-06p 4.13e-09p
sig0.620 cc 4.81e-08p 0.000116p 0.023916p 0.0 0.485223p 0.0 1.488087p 1.752303p 1.759772p 1.35e-05p 6.40e-06p 1.93e-05p
rc 4.81e-08p 0.000116p 0.023920p 1.88e-05o 0.485327p 0.001764o 1.489830m 1.754084m 1.761555m 1.35e-05p 6.41e-06p 1.93e-05p
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.658073n 0.0 0.0 0.0
zp 57.77 ri 1.27e-09p 2.06e-05p 0.016263p 0.0 0.459434p 0.0 1.044342n 0.135271p 0.001200p 2.42e-07p 1.04e-07p 4.64e-12p
sig0.541 cc 1.27e-09p 2.06e-05p 0.016280p 0.0 0.475614p 0.0 1.520086p 1.655331p 1.656531p 2.42e-07p 1.15e-07p 3.45e-07p
rc 1.27e-09p 2.06e-05p 0.016284p 8.67e-06o 0.475726p 0.001928o 1.521996m 1.657267m 1.658467m 2.42e-07p 1.15e-07p 3.45e-07p
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.772261n 0.0 0.0 0.0
zp 57.85 ri 1.59e-09p 1.51e-05p 0.015217p 0.0 0.341279p 0.0 1.253257n 0.158603p 0.002994p 8.31e-07p 3.56e-07p 4.83e-11p
sig0.555 cc 1.59e-09p 1.51e-05p 0.015229p 0.0 0.356458p 0.0 1.609791p 1.768372p 1.771365p 8.31e-07p 3.94e-07p 1.19e-06p
rc 1.59e-09p 1.52e-05p 0.015232p 7.11e-06o 0.356518p 0.001109o 1.610885m 1.769488m 1.772482m 8.31e-07p 3.94e-07p 1.19e-06p
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.989758n 0.0 0.0 0.0

zp 57.47 ri 7.90e-08p 0.000280p 0.090156p 0.0 0.791533p 0.0 1.053614n 0.051114p 0.000274p 2.25e-08p 9.65e-09p
0.0
sig0.551 cc 7.90e-08p 0.000280p 0.090413p 0.0 0.881759p 0.0 1.935596p 1.986697p 1.986971p 2.25e-08p 1.07e-08p
3.22e-08p
rc 7.90e-08p 0.000280p 0.090436p 6.26e-05o 0.882032o 0.003704o 1.939350m 1.990464m 1.990738l 2.25e-08p 1.07e-08p
3.22e-08p

cs, ba, la, ce, pr half lives 89wal1.
1

mass number 149 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 56 ba g 57 la d 57 la g 58 ce d 58 ce g 59 pr g 60 nd g 61 pm g 62 sm g 63 eu g 64 gd g
half life 0.36 s 0.962s 1.10 s 0.608s 5.2 s 2.3 m 1.72 h 2.212d 1.e16y 93. d 9.3 d
lambda 1.925e+00 7.205e-01 6.301e-01 1.140e+00 1.333e-01 5.023e-03 1.119e-04 3.627e-06 2.198e-24 8.626e-08 8.626e-07
z - 1 g 100.0000 0.0 99.4250 0.0 98.9400 100.0000 100.0000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 10.9280 100.0000 0.3990 100.0000 0.0 0.0 0.0 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.984745n 0.0 0.0
zp 58.62 ri 0.000371p 0.0 0.056034p 0.0 0.812517p 0.972384p 0.142529p 0.001471p 1.29e-06p 6.11e-11p 0.0
sig0.594 cc 0.000371p 0.0 0.056403p 0.0 0.868328p 1.840707p 1.983235p 1.984707p 1.984708p 6.11e-11p 0.0
rc 0.000371p 2.43e-06o 0.056406p 3.64e-05o 0.868361o 1.840745n 1.983274n 1.984746n 1.984747m 6.11e-11p 0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.543235p 0.0 0.0
zp 58.38 ri 0.000605p 0.0 0.078355p 0.0 0.879698p 0.548180p 0.037100p 9.91e-05p 1.79e-08p 0.0 0.0
sig0.557 cc 0.000605p 0.0 0.078956p 0.0 0.957821p 1.505997p 1.543096p 1.543195p 1.543195p 0.0 0.0
rc 0.000605p 3.03e-06o 0.078959p 4.18e-05o 0.957862o 1.506042n 1.543141n 1.543240n 1.543240n 0.0 0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.989000n 0.0 0.0
zp 58.91 ri 5.59e-05p 0.0 0.017490p 0.0 0.497066p 1.141871n 0.325475p 0.007208p 1.41e-05p 1.57e-09p 0.0
sig0.596 cc 5.59e-05p 0.0 0.017545p 0.0 0.514426p 1.656296p 1.981771p 1.988979p 1.988993p 1.57e-09p 0.0
rc 5.59e-05p 2.29e-07o 0.017545p 7.49e-06o 0.514433p 1.656304m 1.981779n 1.988987m 1.989001m 1.57e-09p 0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.090515n 0.0 0.0
zp 58.69 ri 0.000243p 0.0 0.045392p 0.0 0.774909p 1.086411n 0.181838p 0.002183p 2.16e-06p 1.16e-10p 0.0
sig0.592 cc 0.000243p 0.0 0.045633p 0.0 0.820063p 1.906471p 2.088307p 2.090490p 2.090492p 1.16e-10p 0.0

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        rc 0.000243p 1.23e-06o 0.045635p 2.41e-05o 0.820084o 1.906495m 2.088333m 2.090515m 2.090518l 1.16e-10p      0.0
 cm246f  xi      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
        xc      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0  2.280625n      0.0      0.0
zp 58.27 ri 0.002849p      0.0  0.206085p      0.0  1.296471n 0.735942p 0.041187p 0.000154p 3.91e-08p      0.0      0.0
sig0.585 cc 0.002849p      0.0  0.208919p      0.0  1.503190p 2.239117p 2.280303p 2.280457p 2.280458p      0.0      0.0
        rc 0.002849p 2.13e-05o 0.208939p 0.000169o 1.503364m 2.239306m 2.280494m 2.280648m 2.280648m      0.0      0.0
 cm248f  xi      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
        xc      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0  2.378939n      0.0      0.0
zp 57.86 ri 0.021341p      0.0  0.594533p      0.0  1.459497n 0.304218p 0.005198p 4.96e-06p 2.77e-10p      0.0      0.0
sig0.574 cc 0.021338p      0.0  0.615763p      0.0  2.068749p 2.372940p 2.378137p 2.378142p 2.378142p      0.0      0.0
        rc 0.021341p 0.000234o 0.615985o 0.000725o 2.069678m 2.373896m 2.379094m 2.379099m 2.379099m      0.0      0.0
 pu242h  xi      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
        xc      0.0      0.0      0.0      0.0      0.0      0.0  1.592666k      0.0      0.0      0.0      0.0
zp 58.28 ri 0.003263p      0.0  0.163149p      0.0  0.852796p 0.536372p 0.038702p 0.000271p 1.62e-07p 7.80e-12p      0.0
sig0.620 cc 0.003263p      0.0  0.166396p      0.0  1.017435p 1.553798p 1.592499p 1.592770p 1.592770p 7.80e-12p      0.0
        rc 0.003263p 2.87e-05o 0.166422p 0.000140o 1.017593o 1.553965m 1.592667k 1.592938k 1.592938k 7.80e-12p      0.0
 np237t  xi      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
        xc      0.0      0.0      0.0      0.0      0.0      0.0  1.643400l      0.0  1.131046n      0.0      0.0
zp 58.17 ri 0.001507p      0.0  0.180365p      0.0  0.933294p 0.423377p 0.010479p 1.18e-05p 4.70e-10p      0.0      0.0
sig0.541 cc 0.001484p      0.0  0.179052p      0.0  1.096030p 1.536797p 1.547114p 1.547128p 1.547128p      0.0      0.0
        rc 0.001507p 5.52e-06o 0.181869p 6.63e-05o 1.113302o 1.536679n 1.547158l 1.547169l 1.547169l      0.0      0.0
 pu240t  xi      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
        xc      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0  1.393913n      0.0      0.0
zp 58.25 ri 0.001236p      0.0  0.103419p      0.0  0.900059p 0.371606p 0.018608p 2.96e-05p 3.61e-09p      0.0      0.0
sig0.555 cc 0.001236p      0.0  0.104648p      0.0  1.003603p 1.375204p 1.393812p 1.393841p 1.393841p      0.0      0.0
        rc 0.001236p 8.27e-06o 0.104656p 6.87e-05o 1.003674o 1.375281o 1.393888o 1.393918n 1.393918m      0.0      0.0
 pu242t  xi      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
        xc      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0  1.598340n      0.0      0.0
zp 57.87 ri 0.010890p      0.0  0.338518p      0.0  1.073800n 0.175832p 0.002706p 1.29e-06p 3.94e-11p      0.0      0.0
sig0.551 cc 0.010889p      0.0  0.349353p      0.0  1.419453p 1.595274p 1.597980p 1.597981p 1.597981p      0.0      0.0
        rc 0.010890p 0.000101o 0.349446p 0.000323o 1.419865m 1.595697m 1.598403m 1.598404m 1.598404m      0.0      0.0

  ba, la, ce, pr, nd, pm half lives from 89wal1.
1
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nuclide       54 xe g   55 cs g   56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g
half life              0.124s    0.962s    0.608s     4.4 s     6.2 s    stable    2.68 h    stable
lambda            0.0 5.590e+00 7.205e-01 1.140e+00 1.575e-01 1.118e-01       0.0 7.184e-05       0.0
 z - 1 g    100.0000  100.0000  100.0000   89.0720   99.6010  100.0000  100.0000       0.0  100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.841516n      0.0       0.0
zp 59.02 ri      0.0  2.67e-09p 2.22e-05p 0.009103p 0.375296p 1.045592n 0.411541p 0.011042p 3.00e-05p
sig0.594 cc      0.0  2.67e-09p 2.22e-05p 0.009123p 0.384382p 1.429975p 1.841516p 0.011042p 0.011072p
         rc      0.0  2.67e-09p 2.22e-05p 0.009123p 0.384382p 1.429975m 1.841516m 0.011042p 0.011072p
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.118152p      0.0       0.0
zp 58.78 ri      0.0  1.85e-09p 2.77e-05p 0.010461p 0.393190p 0.584815p 0.129703p 0.000997p 6.99e-07p
sig0.557 cc      0.0  1.85e-09p 2.77e-05p 0.010486p 0.403634p 0.988449p 1.118152p 0.000997p 0.000998p
         rc      0.0  1.85e-09p 2.77e-05p 0.010486p 0.403634p 0.988449o 1.118152n 0.000997p 0.000998p
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.690650n      0.0       0.0
zp 59.32 ri      0.0  1.22e-10p 2.10e-06p 0.001876p 0.155170p 0.876801p 0.656809p 0.038326p 0.000229p
sig0.596 cc      0.0  1.22e-10p 2.10e-06p 0.001878p 0.157040p 1.033842p 1.690650p 0.038326p 0.038555p
         rc      0.0  1.22e-10p 2.10e-06p 0.001878p 0.157040p 1.033842o 1.690650m 0.038326p 0.038555p
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.788503n      0.0       0.0
zp 59.10 ri      0.0  1.07e-09p 1.12e-05p 0.006029p 0.297861p 1.023294n 0.461334p 0.015082p 4.68e-05p
sig0.592 cc      0.0  1.07e-09p 1.12e-05p 0.006039p 0.303876p 1.327169p 1.788503p 0.015082p 0.015129p
         rc      0.0  1.07e-09p 1.12e-05p 0.006039p 0.303876p 1.327169m 1.788503m 0.015082p 0.015129p
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.988087n      0.0       0.0
zp 58.68 ri      0.0  5.22e-08p 0.000195p 0.042252p 0.725796p 1.057623n 0.162411p 0.001827p 1.46e-06p
sig0.585 cc      0.0  5.22e-08p 0.000195p 0.042425p 0.768052p 1.825676p 1.988087p 0.001827p 0.001829p
         rc      0.0  5.22e-08p 0.000195p 0.042425p 0.768052o 1.825676m 1.988087l 0.001827p 0.001829p
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  2.081571n      0.0       0.0
zp 58.27 ri 5.24e-11p 1.39e-06p 0.002138p 0.179823p 1.197095n 0.669415p 0.034057p 0.000105p 1.95e-08p
sig0.574 cc 5.24e-11p 1.39e-06p 0.002140p 0.181728p 1.378099p 2.047514p 2.081571p 0.000105p 0.000105p
         rc 5.24e-11p 1.39e-06p 0.002140p 0.181728p 1.378099m 2.047514m 2.081571m 0.000105p 0.000105p
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 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.272007n      0.0       0.0
zp 58.69 ri 8.88e-12p 1.70e-07p 0.000263p 0.034812p 0.449342p 0.668390p 0.119370p 0.002216p 3.67e-06p
sig0.620 cc 8.88e-12p 1.70e-07p 0.000263p 0.035046p 0.484248p 1.152638p 1.272007p 0.002216p 0.002220p
         rc 8.88e-12p 1.70e-07p 0.000263p 0.035046p 0.484248p 1.152638n 1.272007m 0.002216p 0.002220p
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.737396n      0.0       0.0
zp 58.57 ri       0.0  4.75e-09p 5.05e-05p 0.016570p 0.332959p 0.354390p 0.033499p 0.000125p 2.38e-08p
sig0.541 cc       0.0  4.75e-09p 5.05e-05p 0.016615p 0.349507p 0.703897p 0.737396p 0.000125p 0.000125p
         rc      0.0  4.75e-09p 5.05e-05p 0.016615p 0.349507p 0.703897o 0.737396n 0.000125p 0.000125p
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.063421n      0.0       0.0
zp 58.64 ri       0.0  6.54e-09p 7.57e-05p 0.017144p 0.502201p 0.464640p 0.079437p 0.000345p 1.68e-07p
sig0.555 cc       0.0  6.54e-09p 7.57e-05p 0.017211p 0.519344p 0.983984p 1.063421p 0.000345p 0.000345p
         rc      0.0  6.54e-09p 7.57e-05p 0.017211p 0.519344o 0.983984o 1.063421n 0.000345p 0.000345p
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.260803n      0.0       0.0
zp 58.27 ri 5.28e-12p 2.41e-07p 0.000921p 0.080145p 0.831721p 0.329863p 0.018576p 2.66e-05p 3.36e-09p
sig0.551 cc 5.28e-12p 2.41e-07p 0.000922p 0.080966p 0.912364p 1.242226p 1.260803p 2.66e-05p 2.66e-05p
         rc 5.28e-12p 2.41e-07p 0.000922p 0.080966p 0.912364o 1.242226n 1.260803m 2.66e-05p 2.66e-05p

  cs, ba, la half lives from 80eng2; ce, pr half lives from 89wal1.
1

    mass number    151              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       57 la g   58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g
half life     0.719s     1.0 s    22.4 s    12.4 m    1.183d     90. y    stable    120. d    17.6 h
lambda      9.640e-01 6.931e-01 3.094e-02 9.316e-04 6.782e-06 2.442e-10       0.0 6.685e-08 1.094e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  1.246428i      0.0  1.156631n      0.0       0.0
zp 59.42 ri 0.000729p 0.078330p 0.587881p 0.536747o 0.040876p 0.000290p 1.23e-07p 4.03e-12p       0.0
sig0.594 cc 0.000728p 0.078991p 0.666371p 1.203711p 1.244553p 1.244853p 1.244853p 4.17e-12p       0.0
         rc 0.000729p 0.079058p 0.666940o 1.203687k 1.244563i 1.244853i 1.244853i 4.03e-12p       0.0
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 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.857558p      0.0       0.0
zp 59.17 ri 0.001067p 0.107408p 0.485103p 0.257174p 0.006792p 1.38e-05p 9.05e-10p      0.0       0.0
sig0.557 cc 0.001067p 0.108475p 0.593578p 0.850752p 0.857544p 0.857558p 0.857558p      0.0       0.0
         rc 0.001067p 0.108475p 0.593578p 0.850752o 0.857544o 0.857558o 0.857558n      0.0       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.392300n      0.0       0.0
zp 59.73 ri 0.000123p 0.028289p 0.441142p 0.793395p 0.127249p 0.002100p 2.16e-06p 1.73e-10p      0.0
sig0.596 cc 0.000123p 0.028413p 0.469554p 1.262949p 1.390198p 1.392298p 1.392300p 1.73e-10p      0.0
         rc 0.000123p 0.028413p 0.469554p 1.262949o 1.390198n 1.392298n 1.392300m 1.73e-10p      0.0
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.490419n      0.0       0.0
zp 59.51 ri 0.000503p 0.068752p 0.646344p 0.708416p 0.065823p 0.000581p 2.99e-07p 1.15e-11p      0.0
sig0.592 cc 0.000503p 0.069255p 0.715599p 1.424015p 1.489838p 1.490419p 1.490419p 1.15e-11p      0.0
         rc 0.000503p 0.069255p 0.715599o 1.424015n 1.489838n 1.490419n 1.490419m 1.15e-11p      0.0
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.685679n      0.0       0.0
zp 59.08 ri 0.005681p 0.270723p 1.000506n 0.396103p 0.012636p 3.05e-05p 4.18e-09p      0.0       0.0
sig0.585 cc 0.005681p 0.276404p 1.276910p 1.673013p 1.685649p 1.685679p 1.685679p      0.0       0.0
         rc 0.005681p 0.276404p 1.276910m 1.673013n 1.685649n 1.685679n 1.685679m      0.0       0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.685082n      0.0       0.0
zp 58.67 ri 0.033982p 0.623768p 0.899197p 0.126943p 0.001191p 7.11e-07p 2.09e-11p      0.0       0.0
sig0.574 cc 0.033982p 0.657750p 1.556947p 1.683890p 1.685081p 1.685082p 1.685082p      0.0       0.0
         rc 0.033982p 0.657750o 1.556947n 1.683890n 1.685081n 1.685082n 1.685082m      0.0       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  0.905149k      0.0       0.0       0.0       0.0
zp 59.10 ri 0.004459p 0.146571p 0.519794p 0.223592p 0.010732p 4.86e-05p 1.85e-08p      0.0       0.0
sig0.620 cc 0.004459p 0.151031p 0.670824p 0.894417p 0.905149p 0.905197p 0.905197p      0.0       0.0
         rc 0.004459p 0.151031p 0.670824o 0.894417m 0.905149k 0.905197k 0.905197k      0.0       0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0  0.783032l      0.0  0.560690n      0.0       0.0
zp 58.97 ri 0.002526p 0.129435p 0.497361p 0.110705p 0.001810p 8.54e-07p 2.23e-11p      0.0       0.0
sig0.541 cc 0.002525p 0.131864p 0.629405p 0.740028p 0.741837p 0.741838p 0.741838p      0.0       0.0
         rc 0.002526p 0.131961p 0.629322o 0.740027n 0.741837l 0.741838l 0.741838l      0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.854712n      0.0       0.0
zp 59.03 ri 0.002243p 0.167115p 0.487405p 0.194838p 0.003106p 4.26e-06p 1.54e-10p      0.0       0.0
sig0.555 cc 0.002243p 0.169358p 0.656763p 0.851601p 0.854708p 0.854712p 0.854712p      0.0       0.0
        rc 0.002243p 0.169358p 0.656763p 0.851601o 0.854708o 0.854712o 0.854712n      0.0       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.022541n      0.0       0.0
zp 58.67 ri 0.015378p 0.413134p 0.517587p 0.076018p 0.000424p 1.65e-07p 1.73e-12p      0.0       0.0
sig0.551 cc 0.015378p 0.428511p 0.946099p 1.022117p 1.022541p 1.022541p 1.022541p      0.0       0.0
        rc 0.015378p 0.428511p 0.946099o 1.022117n 1.022541n 1.022541n 1.022541m      0.0       0.0

  la half life from 80eng2; ce, pr, nd, pm, sm half lives 89wal1.
1

    mass number    152              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm m   61 pm g   62 sm g   63 eu m   63 eu g   64 gd g
half life     0.420s    0.285s     3.1 s     3.2 s    11.4 m     7.5 m     4.1 m    stable     9.3 h     13. y    14.04l
lambda       1.650e+00 2.432e+00 2.236e-01 2.166e-01 1.013e-03 1.540e-03 2.818e-03       0.0 2.070e-05 1.691e-09 2.005e-22
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000       0.0  100.0000  100.0000  -23.0000  -72.0000   28.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0   77.0000
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.237908n      0.0       0.0       0.0
zp 59.82 ri 1.48e-08p 5.27e-05p 0.017131p 0.318157p 0.759717p 0.069892p 0.069892p 0.003061p 1.81e-06p 1.81e-06p 3.78e-10p
sig0.594 cc 1.48e-08p 5.27e-05p 0.017184p 0.335341p 1.095058p 0.069892p 1.164950p 1.237906p 1.81e-06p 1.81e-06p 1.90e-06p
        rc 1.48e-08p 5.27e-05p 0.017184p 0.335341p 1.095058n 0.069892p 1.164950n 1.237905m 1.81e-06p 1.81e-06p 1.90e-06p
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.571297p      0.0       0.0       0.0
zp 59.56 ri 1.25e-08p 5.13e-05p 0.018351p 0.205965p 0.324723p 0.011021p 0.011021p 0.000163p 1.58e-08p 1.58e-08p       0.0
sig0.557 cc 1.25e-08p 5.13e-05p 0.018403p 0.224368p 0.549091p 0.011021p 0.560112p 0.571297p 1.58e-08p 1.58e-08p 1.66e-08p
        rc 1.25e-08p 5.13e-05p 0.018403p 0.224368p 0.549091p 0.011021p 0.560112o 0.571297o 1.58e-08p 1.58e-08p 1.66e-08p
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.093950n      0.0       0.0       0.0
zp 60.14 ri 5.93e-10p 4.89e-06p 0.003438p 0.141802p 0.671807p 0.132105p 0.132105p 0.012647p 1.85e-05p 1.85e-05p 9.49e-09p
sig0.596 cc 5.93e-10p 4.89e-06p 0.003443p 0.145244p 0.817052p 0.132105p 0.949157p 1.093935p 1.85e-05p 1.85e-05p 1.95e-05p
        rc 5.93e-10p 4.89e-06p 0.003443p 0.145244p 0.817051o 0.132105p 0.949157n 1.093926m 1.85e-05p 1.85e-05p 1.95e-05p
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.192335n 0.0 0.0 0.0
zp 59.91 ri 5.45e-09p 2.67e-05p 0.010938p 0.263338p 0.743347p 0.085145p 0.085145p 0.004387p 3.22e-06p 3.22e-06p 7.78e-10p
sig0.592 cc 5.45e-09p 2.67e-05p 0.010965p 0.274303p 1.017651p 0.085145p 1.102796p 1.192333p 3.22e-06p 3.22e-06p 3.38e-06p
rc 5.45e-09p 2.67e-05p 0.010965p 0.274303p 1.017651o 0.085145p 1.102796n 1.192331m 3.22e-06p 3.22e-06p 3.38e-06p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.388207n 0.0 0.0 0.0
zp 59.48 ri 2.44e-07p 0.000479p 0.065641p 0.634322p 0.632299p 0.027535p 0.027535p 0.000394p 8.32e-08p 8.32e-08p 4.49e-12p
sig0.585 cc 2.44e-07p 0.000480p 0.066121p 0.700443p 1.332742p 0.027535p 1.360277p 1.388207p 8.32e-08p 8.32e-08p 8.73e-08p
rc 2.44e-07p 0.000480p 0.066121p 0.700443o 1.332742n 0.027535p 1.360277n 1.388207m 8.32e-08p 8.32e-08p 8.73e-08p
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.387714n 0.0 0.0 0.0
zp 59.07 ri 5.28e-06p 0.004211p 0.222710p 0.837428p 0.314619p 0.004362p 0.004362p 1.65e-05p 7.86e-10p 7.86e-10p 0.0
sig0.574 cc 5.28e-06p 0.004217p 0.226927p 1.064355p 1.378974p 0.004362p 1.383336p 1.387714p 7.86e-10p 7.86e-10p 8.26e-10p
rc 5.28e-06p 0.004217p 0.226927p 1.064355o 1.378974o 0.004362p 1.383336n 1.387714m 7.86e-10p 7.86e-10p 8.26e-10p
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.872593n 0.0 0.0 0.0
zp 59.51 ri 5.26e-07p 0.000518p 0.044638p 0.385996p 0.393484p 0.023691p 0.023691p 0.000575p 3.05e-07p 3.05e-07p 5.26e-11p
sig0.620 cc 5.26e-07p 0.000519p 0.045157p 0.431152p 0.824636p 0.023691p 0.848327p 0.872593p 3.05e-07p 3.05e-07p 3.20e-07p
rc 5.26e-07p 0.000519p 0.045157p 0.431152p 0.824636p 0.023691p 0.848327o 0.872593n 3.05e-07p 3.05e-07p 3.20e-07p
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.364031n 0.0 0.0 0.0
zp 59.36 ri 2.38e-08p 0.000100p 0.021569p 0.188246p 0.148055p 0.003022p 0.003022p 1.48e-05p 5.55e-10p 5.55e-10p 0.0
sig0.541 cc 2.38e-08p 0.000100p 0.021669p 0.209916p 0.357971p 0.003022p 0.360993p 0.364031p 5.55e-10p 5.55e-10p 5.83e-10p
rc 2.38e-08p 0.000100p 0.021669p 0.209916p 0.357971o 0.003022p 0.360993o 0.364031n 5.55e-10p 5.55e-10p 5.83e-10p
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.655942n 0.0 0.0 0.0
zp 59.43 ri 5.16e-08p 0.000132p 0.037452p 0.264193p 0.340020p 0.007034p 0.007034p 7.67e-05p 4.12e-09p 4.12e-09p 0.0
sig0.555 cc 5.16e-08p 0.000132p 0.037584p 0.301777p 0.641797p 0.007034p 0.648831p 0.655942p 4.12e-09p 4.12e-09p 4.33e-09p
rc 5.16e-08p 0.000132p 0.037584p 0.301777p 0.641797p 0.007034p 0.648831o 0.655942n 4.12e-09p 4.12e-09p 4.33e-09p
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.801704n 0.0 0.0 0.0

zp 59.06 ri 1.61e-06p 0.001577p 0.149523p 0.440068p 0.207371p 0.001580p 0.001580p 4.80e-06p 7.64e-11p 7.64e-11p 0.0
sig0.551 cc 1.61e-06p 0.001578p 0.151101p 0.591169p 0.798540p 0.001580p 0.800120p 0.801704p 7.64e-11p 7.64e-11p 8.02e-11p
rc 1.61e-06p 0.001578p 0.151101p 0.591169p 0.798540o 0.001580p 0.800120o 0.801704n 7.64e-11p 7.64e-11p 8.02e-11p

ba, la half lives from 80eng2; ce, pr, nd, pm half lives 89wal1.
1

mass number 153 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 57 la g 58 ce g 59 pr g 60 nd g 61 pm g 62 sm g 63 eu g 64 gd g 65 tb g
half life 0.326s 1.47 s 4.3 s 28.9 s 5.4 m 1.929d stable 241.6d 2.34 d
lambda 2.126e+00 4.715e-01 1.612e-01 2.398e-02 2.139e-03 4.159e-06 0.0 3.321e-08 3.428e-06
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.309522n 0.0 0.0
zp 60.23 ri 2.65e-06p 0.002423p 0.133602p 0.768482p 0.382959p 0.021971p 8.20e-05p 2.49e-08p 0.0
sig0.594 cc 2.65e-06p 0.002426p 0.136028p 0.904510p 1.287469p 1.309440p 1.309522p 2.49e-08p 0.0
rc 2.65e-06p 0.002426p 0.136028p 0.904510o 1.287469o 1.309440n 1.309522m 2.49e-08p 0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.589571p 0.0 0.0
zp 59.94 ri 3.03e-06p 0.003012p 0.109427p 0.394080p 0.081439p 0.001610p 1.14e-06p 5.20e-11p 0.0
sig0.557 cc 3.03e-06p 0.003015p 0.112442p 0.506521p 0.587960p 0.589570p 0.589571p 5.20e-11p 0.0
rc 3.03e-06p 0.003015p 0.112442p 0.506521p 0.587960o 0.589570o 0.589571n 5.20e-11p 0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.843389n 0.0 0.0
zp 60.55 ri 1.28e-07p 0.000260p 0.031750p 0.376948p 0.386309p 0.047699p 0.000423p 3.15e-07p 1.32e-11p
sig0.596 cc 1.28e-07p 0.000260p 0.032010p 0.408958p 0.795266p 0.842965p 0.843389p 3.15e-07p 1.32e-11p
rc 1.28e-07p 0.000260p 0.032010p 0.408958p 0.795266p 0.842965o 0.843389n 3.15e-07p 1.32e-11p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.904188n 0.0 0.0
zp 60.32 ri 8.50e-07p 0.001010p 0.071790p 0.503787p 0.306420p 0.021083p 9.62e-05p 3.46e-08p 0.0
sig0.592 cc 8.50e-07p 0.001011p 0.072801p 0.576589p 0.883009p 0.904091p 0.904188p 3.46e-08p 0.0
rc 8.50e-07p 0.001011p 0.072801p 0.576589o 0.883009o 0.904091n 0.904188m 3.46e-08p 0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

```
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.090734n      0.0       0.0
zp 59.88 ri 2.48e-05p 0.010049p 0.264114p 0.662106p 0.151317p 0.003119p 4.01e-06p 3.38e-10p       0.0
sig0.585 cc 2.48e-05p 0.010073p 0.274187p 0.936294p 1.087611p 1.090730p 1.090734p 3.38e-10p       0.0
        rc 2.48e-05p 0.010073p 0.274187p 0.936294o 1.087611n 1.090730n 1.090734m 3.38e-10p       0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.189469n      0.0       0.0
zp 59.47 ri 0.000345p 0.054544p 0.553491p 0.538480p 0.042363p 0.000247p 7.62e-08p 1.34e-12p       0.0
sig0.574 cc 0.000345p 0.054888p 0.608379p 1.146859p 1.189222p 1.189469p 1.189469p 1.34e-12p       0.0
        rc 0.000345p 0.054888p 0.608379o 1.146859n 1.189222n 1.189469n 1.189469m 1.34e-12p       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.659293n      0.0       0.0
zp 59.91 ri 3.35e-05p 0.007548p 0.160268p 0.379207p 0.108851p 0.003376p 9.61e-06p 2.28e-09p       0.0
sig0.620 cc 3.35e-05p 0.007581p 0.167849p 0.547056p 0.655907p 0.659283p 0.659293p 2.28e-09p       0.0
        rc 3.35e-05p 0.007581p 0.167849p 0.547056p 0.655907o 0.659283o 0.659293n 2.28e-09p       0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.196017n      0.0       0.0
zp 59.75 ri 3.33e-06p 0.001933p 0.065486p 0.111154p 0.017326p 0.000114p 3.89e-08p       0.0       0.0
sig0.541 cc 3.33e-06p 0.001937p 0.067423p 0.178577p 0.195903p 0.196017p 0.196017p       0.0       0.0
        rc 3.33e-06p 0.001937p 0.067423p 0.178577p 0.195903o 0.196017o 0.196017n       0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.457172n      0.0       0.0
zp 59.82 ri 5.58e-06p 0.004340p 0.105491p 0.304669p 0.042048p 0.000617p 2.63e-07p 8.26e-12p       0.0
sig0.555 cc 5.58e-06p 0.004346p 0.109837p 0.414506p 0.456555p 0.457171p 0.457172p 8.26e-12p       0.0
        rc 5.58e-06p 0.004346p 0.109837p 0.414506p 0.456555o 0.457171o 0.457172n 8.26e-12p       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.623548n      0.0       0.0
zp 59.45 ri 0.000110p 0.028761p 0.275804p 0.302776p 0.016028p 7.01e-05p 8.91e-09p       0.0       0.0
sig0.551 cc 0.000110p 0.028870p 0.304674p 0.607450p 0.623478p 0.623548p 0.623548p       0.0       0.0
        rc 0.000110p 0.028870p 0.304674p 0.607450p 0.623478o 0.623548o 0.623548n       0.0       0.0

  la, ce half lives from 80eng2; pr, nd, pm, sm half lives 89wal1; gd half life 90bur1.

1

    mass number    154              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide       56 ba g   57 la g   58 ce g   59 pr g   60 nd g   61 pm m   61 pm g   62 sm g   63 eu g   64 gd g
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half life          0.149s    2.02 s    2.3 s    25.9 s    2.7 m    1.7 m    stable    8.8 y    stable
lambda          0.0 4.652e+00 3.431e-01 3.014e-01 2.676e-02 4.279e-03 6.796e-03      0.0 2.498e-09      0.0
 z - 1 g   100.0000  100.0000  100.0000  100.0000  100.0000      0.0  100.0000  100.0000      0.0  100.0000
 z - 1 m      0.0      0.0      0.0      0.0      0.0      0.0      0.0  100.0000      0.0      0.0
 z - 0 m      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
 cm243t  xi     0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
         xc     0.0      0.0      0.0      0.0      0.0      0.0      0.0  0.903366n      0.0      0.0
zp 60.65 ri 1.36e-12p 4.75e-08p 0.000144p 0.022108p 0.366102p 0.220641p 0.220641p 0.073730p 0.000774p 7.80e-07p
sig0.594 cc 1.36e-12p 4.75e-08p 0.000144p 0.022252p 0.388354p 0.220641p 0.608995p 0.903366p 0.000774p 0.000775p
         rc 1.36e-12p 4.75e-08p 0.000144p 0.022252p 0.388354p 0.220641p 0.608995o 0.903366m 0.000774p 0.000775p
 cm246s  xi     0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
         xc     0.0      0.0      0.0      0.0      0.0      0.0      0.0  0.335637p      0.0      0.0
zp 60.32 ri 1.27e-12p 5.62e-08p 0.000202p 0.019387p 0.209826p 0.049876p 0.049876p 0.006470p 1.28e-05p 2.16e-09p
sig0.557 cc 1.27e-12p 5.62e-08p 0.000202p 0.019589p 0.229414p 0.049876p 0.279290p 0.335637p 1.28e-05p 1.28e-05p
         rc 1.27e-12p 5.62e-08p 0.000202p 0.019589p 0.229414p 0.049876p 0.279290o 0.335637o 1.28e-05p 1.28e-05p
 cm243f  xi     0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
         xc     0.0      0.0      0.0      0.0      0.0      0.0      0.0  0.635022n      0.0      0.0
zp 60.96 ri      0.0  1.99e-09p 1.28e-05p 0.004388p 0.146888p 0.181501p 0.181501p 0.120732p 0.002911p 6.75e-06p
sig0.596 cc      0.0  1.99e-09p 1.28e-05p 0.004401p 0.151289p 0.181501p 0.332790p 0.635022p 0.002911p 0.002917p
         rc     0.0  1.99e-09p 1.28e-05p 0.004401p 0.151289p 0.181501p 0.332790p 0.635022n 0.002911p 0.002917p
 cm244f  xi     0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
         xc     0.0      0.0      0.0      0.0      0.0      0.0      0.0  0.685593n      0.0      0.0
zp 60.72 ri      0.0  1.81e-08p 6.67e-05p 0.012971p 0.248086p 0.178801p 0.178801p 0.066866p 0.000833p 9.29e-07p
sig0.592 cc      0.0  1.81e-08p 6.67e-05p 0.013038p 0.261124p 0.178801p 0.439925p 0.685593p 0.000833p 0.000834p
         rc     0.0  1.81e-08p 6.67e-05p 0.013038p 0.261124p 0.178801p 0.439925o 0.685593m 0.000833p 0.000834p
 cm246f  xi     0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
         xc     0.0      0.0      0.0      0.0      0.0      0.0      0.0  0.849755n      0.0      0.0
zp 60.27 ri 4.88e-11p 8.94e-07p 0.001061p 0.076723p 0.482662p 0.136987p 0.136987p 0.015333p 5.74e-05p 1.46e-08p
sig0.585 cc 4.88e-11p 8.94e-07p 0.001062p 0.077784p 0.560447p 0.136987p 0.697434p 0.849755p 5.74e-05p 5.74e-05p
         rc 4.88e-11p 8.94e-07p 0.001062p 0.077784p 0.560447p 0.136987p 0.697434o 0.849755n 5.74e-05p 5.74e-05p
 cm248f  xi     0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
         xc     0.0      0.0      0.0      0.0      0.0      0.0      0.0  0.941663n      0.0      0.0
zp 59.86 ri 2.24e-09p 1.78e-05p 0.008426p 0.234760p 0.576296p 0.060056p 0.060056p 0.002052p 1.96e-06p 1.09e-10p
sig0.574 cc 2.24e-09p 1.78e-05p 0.008443p 0.243203p 0.819500p 0.060056p 0.879556p 0.941663p 1.96e-06p 1.96e-06p
         rc 2.24e-09p 1.78e-05p 0.008443p 0.243203p 0.819500n 0.060056p 0.879556n 0.941663m 1.96e-06p 1.96e-06p
 pu242h  xi     0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.455688n      0.0       0.0
zp 60.30 ri 2.01e-10p 1.44e-06p 0.000842p 0.044116p 0.240830p 0.078988p 0.078988p 0.011922p 8.75e-05p 5.51e-08p
sig0.620 cc 2.01e-10p 1.44e-06p 0.000843p 0.044959p 0.285789p 0.078988p 0.364777p 0.455688p 8.75e-05p 8.76e-05p
        rc 2.01e-10p 1.44e-06p 0.000843p 0.044959p 0.285789p 0.078988p 0.364777o 0.455688n 8.75e-05p 8.76e-05p
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.104821m      0.0       0.0
zp 60.14 ri       0.0  5.07e-08p 0.000132p 0.011332p 0.068737p 0.011984p 0.011984p 0.000653p 6.23e-07p 2.86e-11p
sig0.541 cc       0.0  5.07e-08p 0.000132p 0.011464p 0.080201p 0.011984p 0.092184p 0.104821p 6.23e-07p 6.23e-07p
        rc      0.0  5.07e-08p 0.000132p 0.011464p 0.080201p 0.011984p 0.092184o 0.104821m 6.23e-07p 6.23e-07p
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.327971n      0.0       0.0
zp 60.20 ri 4.88e-12p 1.40e-07p 0.000413p 0.025338p 0.228142p 0.035230p 0.035230p 0.003617p 4.19e-06p 5.15e-10p
sig0.555 cc 4.88e-12p 1.40e-07p 0.000413p 0.025751p 0.253894p 0.035230p 0.289124p 0.327971p 4.19e-06p 4.20e-06p
        rc 4.88e-12p 1.40e-07p 0.000413p 0.025751p 0.253894p 0.035230p 0.289124o 0.327971n 4.19e-06p 4.20e-06p
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.435494n      0.0       0.0
zp 59.85 ri 2.80e-10p 3.33e-06p 0.003428p 0.087230p 0.303299p 0.020425p 0.020425p 0.000684p 2.66e-07p 8.76e-12p
sig0.551 cc 2.80e-10p 3.33e-06p 0.003431p 0.090661p 0.393960p 0.020425p 0.414385p 0.435494p 2.66e-07p 2.66e-07p
        rc 2.80e-10p 3.33e-06p 0.003431p 0.090661p 0.393960p 0.020425p 0.414385o 0.435494n 2.66e-07p 2.66e-07p

  la, ce half lives 80eng2; pr, nd, pm half lives 89wal1; eu half life 90bur1.

1

    mass number    155              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g
half life     0.528s    1.12 s     8.9 s     48. s    22.2 m    4.71 y    stable     5.3 d     9.6 h
lambda      1.313e+00 6.189e-01 7.788e-02 1.444e-02 5.204e-04 4.667e-09       0.0 1.514e-06 2.006e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.708376n      0.0       0.0
zp 61.06 ri 6.07e-06p 0.002934p 0.125942p 0.408443p 0.165814p 0.005221p 1.49e-05p 2.37e-09p       0.0
sig0.594 cc 6.07e-06p 0.002941p 0.128883p 0.537326p 0.703140p 0.708361p 0.708376p 2.37e-09p       0.0
        rc 6.07e-06p 0.002941p 0.128883p 0.537326p 0.703140o 0.708361o 0.708376n 2.37e-09p       0.0
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 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.228519p      0.0       0.0
zp 60.71 ri 9.00e-06p 0.003110p 0.085260p 0.120319p 0.019680p 0.000139p 6.98e-08p 1.08e-12p       0.0
sig0.557 cc 9.00e-06p 0.003119p 0.088379p 0.208699p 0.228379p 0.228519p 0.228519p 1.08e-12p       0.0
         rc 9.00e-06p 0.003119p 0.088379p 0.208699p 0.228379o 0.228519o 0.228519o 1.08e-12p       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.456422n      0.0       0.0
zp 61.36 ri 3.88e-07p 0.000402p 0.035398p 0.228603p 0.179908p 0.012033p 7.67e-05p 2.92e-08p       0.0
sig0.596 cc 3.88e-07p 0.000403p 0.035801p 0.264404p 0.444312p 0.456345p 0.456422p 2.92e-08p       0.0
         rc 3.88e-07p 0.000403p 0.035801p 0.264404p 0.444312o 0.456345o 0.456422n 2.92e-08p       0.0
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.530593l 0.507697n      0.0       0.0
zp 61.13 ri 2.54e-06p 0.001538p 0.078791p 0.302037p 0.139319p 0.005138p 1.62e-05p 2.95e-09p       0.0
sig0.592 cc 2.53e-06p 0.001538p 0.080213p 0.381814p 0.521696p 0.526826p 0.526842p 3.01e-09p       0.0
         rc 2.54e-06p 0.001541p 0.080332p 0.382369p 0.521688n 0.526826l 0.526842l 2.95e-09p       0.0
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.701795l 0.656069n      0.0       0.0
zp 60.67 ri 7.29e-05p 0.015363p 0.257384p 0.364818p 0.054942p 0.000602p 4.53e-07p 1.94e-11p       0.0
sig0.585 cc 7.27e-05p 0.015398p 0.272152p 0.637774p 0.692581p 0.693182p 0.693182p 2.00e-11p       0.0
         rc 7.29e-05p 0.015436p 0.272819p 0.637638o 0.692580n 0.693182l 0.693182l 1.94e-11p       0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0  0.738390l 0.735408n      0.0       0.0
zp 60.25 ri 0.000851p 0.067767p 0.429314p 0.228877p 0.011055p 3.21e-05p 5.62e-09p       0.0       0.0
sig0.574 cc 0.000851p 0.068613p 0.497899p 0.726810p 0.737864p 0.737896p 0.737896p       0.0       0.0
         rc 0.000851p 0.068618p 0.497932p 0.726809o 0.737864n 0.737896l 0.737896l       0.0       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.368428n      0.0       0.0
zp 60.69 ri 7.60e-05p 0.010064p 0.129905p 0.193232p 0.034510p 0.000641p 1.06e-06p 1.44e-10p       0.0
sig0.620 cc 7.60e-05p 0.010140p 0.140045p 0.333277p 0.367787p 0.368427p 0.368428p 1.44e-10p       0.0
         rc 7.60e-05p 0.010140p 0.140045p 0.333277p 0.367787o 0.368427o 0.368428n 1.44e-10p       0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.078616m      0.0       0.0
zp 60.52 ri 6.89e-06p 0.002453p 0.033600p 0.039965p 0.002580p 1.05e-05p 1.33e-09p       0.0       0.0
sig0.541 cc 6.89e-06p 0.002460p 0.036060p 0.076025p 0.078605p 0.078616p 0.078616p       0.0       0.0
         rc 6.89e-06p 0.002460p 0.036060p 0.076025p 0.078605o 0.078616n 0.078616m       0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.258401n      0.0       0.0
zp 60.59 ri 2.44e-05p 0.005596p 0.121179p 0.116727p 0.014809p 6.54e-05p 2.31e-08p      0.0       0.0
sig0.555 cc 2.44e-05p 0.005620p 0.126800p 0.243527p 0.258336p 0.258401p 0.258401p      0.0       0.0
        rc 2.44e-05p 0.005620p 0.126800p 0.243527p 0.258336o 0.258401o 0.258401n      0.0       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.316723n      0.0       0.0
zp 60.23 ri 0.000282p 0.025158p 0.203482p 0.084127p 0.003668p 5.36e-06p 5.16e-10p      0.0       0.0
sig0.551 cc 0.000282p 0.025440p 0.228922p 0.313050p 0.316717p 0.316723p 0.316723p      0.0       0.0
        rc 0.000282p 0.025440p 0.228922p 0.313050o 0.316717o 0.316723o 0.316723n      0.0       0.0

  ce, pr half lives from 80eng2; nd, pm, sm, eu half lives 89wal1.
1

    mass number    156              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb m   65 tb g   66 dy g
half life     0.596s    0.379s     5.5 s    26.7 s     9.4 h    15.2 d    stable     5.0 h     5.1 d    2.e14y
lambda      1.163e+00 1.829e+00 1.260e-01 2.596e-02 2.048e-05 5.278e-07       0.0 3.851e-05 1.573e-06 1.099e-22
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  -50.0000 -100.0000       0.0
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   50.0000       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.445058n      0.0       0.0       0.0
zp 61.48 ri 1.25e-07p 0.000176p 0.023460p 0.191181p 0.212517p 0.017563p 0.000160p 7.56e-09p 6.80e-08p 3.10e-12p
sig0.594 cc 1.25e-07p 0.000176p 0.023636p 0.214817p 0.427334p 0.444898p 0.445058p 7.56e-09p 7.18e-08p 3.10e-12p
        rc 1.25e-07p 0.000176p 0.023636p 0.214817p 0.427334p 0.444898o 0.445058n 7.56e-09p 7.18e-08p 3.10e-12p
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.181208p      0.0       0.0       0.0
zp 61.08 ri 3.84e-07p 0.000361p 0.031644p 0.100382p 0.047949p 0.000871p 1.53e-06p 6.67e-12p 6.00e-11p      0.0
sig0.557 cc 3.84e-07p 0.000361p 0.032005p 0.132387p 0.180336p 0.181207p 0.181208p 6.67e-12p 6.34e-11p      0.0
        rc 3.84e-07p 0.000361p 0.032005p 0.132387p 0.180336o 0.181207o 0.181208o 6.67e-12p 6.34e-11p      0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.327433n      0.0       0.0       0.0
zp 61.76 ri 7.91e-09p 2.32e-05p 0.005974p 0.096261p 0.192745p 0.031839p 0.000590p 5.69e-08p 5.75e-07p 5.74e-11p
sig0.596 cc 7.91e-09p 2.32e-05p 0.005997p 0.102258p 0.295003p 0.326842p 0.327433p 5.69e-08p 6.03e-07p 5.74e-11p
        rc 7.91e-09p 2.32e-05p 0.005997p 0.102258p 0.295003p 0.326842o 0.327433n 5.69e-08p 6.03e-07p 5.74e-11p
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.366658n      0.0       0.0       0.0
zp 61.52 ri 6.78e-08p 0.000114p 0.016628p 0.153836p 0.179511p 0.016413p 0.000155p 7.87e-09p 7.09e-08p 3.22e-12p
sig0.592 cc 6.78e-08p 0.000114p 0.016742p 0.170579p 0.350090p 0.366503p 0.366658p 7.87e-09p 7.48e-08p 3.22e-12p
        rc 6.78e-08p 0.000114p 0.016742p 0.170579p 0.350090p 0.366503o 0.366658n 7.87e-09p 7.48e-08p 3.22e-12p
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.484163n      0.0       0.0       0.0
zp 61.06 ri 2.95e-06p 0.001808p 0.081780p 0.288318p 0.108945p 0.003302p 7.55e-06p 5.86e-11p 9.19e-10p       0.0
sig0.585 cc 2.95e-06p 0.001811p 0.083590p 0.371908p 0.480853p 0.484155p 0.484163p 5.86e-11p 9.48e-10p       0.0
        rc 2.95e-06p 0.001811p 0.083590p 0.371908p 0.480853o 0.484155o 0.484163n 5.86e-11p 9.48e-10p       0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.562926n      0.0       0.0       0.0
zp 60.64 ri 5.47e-05p 0.012850p 0.218262p 0.293046p 0.038381p 0.000332p 1.81e-07p       0.0  4.39e-12p       0.0
sig0.574 cc 5.47e-05p 0.012905p 0.231168p 0.524213p 0.562594p 0.562926p 0.562926p       0.0  4.63e-12p       0.0
        rc 5.47e-05p 0.012905p 0.231168p 0.524213p 0.562594o 0.562926o 0.562926n       0.0  4.63e-12p       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.271473n      0.0       0.0       0.0
zp 61.08 ri 4.30e-06p 0.001467p 0.046051p 0.156468p 0.064512p 0.002958p 1.28e-05p 4.63e-10p 4.17e-09p       0.0
sig0.620 cc 4.30e-06p 0.001472p 0.047522p 0.203990p 0.268502p 0.271461p 0.271473p 4.63e-10p 4.40e-09p       0.0
        rc 4.30e-06p 0.001472p 0.047522p 0.203990p 0.268502o 0.271461o 0.271473n 4.63e-10p 4.40e-09p       0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0  0.114350o      0.0  0.034781m      0.0       0.0       0.0
zp 60.91 ri 2.75e-07p 0.000267p 0.014545p 0.037543p 0.009038p 6.31e-05p 3.64e-08p       0.0       0.0       0.0
sig0.541 cc 2.75e-07p 0.000267p 0.014805p 0.052327p 0.061360p 0.061457p 0.061457p       0.0       0.0       0.0
        rc 2.75e-07p 0.000268p 0.014813p 0.052356p 0.061394p 0.061457o 0.061457m       0.0       0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.139139n      0.0       0.0       0.0
zp 60.98 ri 6.99e-07p 0.000445p 0.033907p 0.073804p 0.030622p 0.000359p 4.98e-07p 1.30e-12p 1.17e-11p       0.0
sig0.555 cc 6.99e-07p 0.000446p 0.034353p 0.108158p 0.138780p 0.139139p 0.139139p 1.30e-12p 1.24e-11p       0.0
        rc 6.99e-07p 0.000446p 0.034353p 0.108158p 0.138780o 0.139139o 0.139139n 1.30e-12p 1.24e-11p       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.237542n      0.0       0.0       0.0
zp 60.62 ri 1.65e-05p 0.004125p 0.111154p 0.106422p 0.015759p 6.55e-05p 2.51e-08p       0.0       0.0       0.0
sig0.551 cc 1.65e-05p 0.004141p 0.115295p 0.221717p 0.237476p 0.237542p 0.237542p       0.0       0.0       0.0
        rc 1.65e-05p 0.004141p 0.115295p 0.221717p 0.237476o 0.237542o 0.237542n       0.0       0.0       0.0

  ce, pr half lives from 80eng2; nd, pm, sm, eu half lives 89wal1.
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    mass number    157              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g
half life     0.214s    0.380s    2.48 s    10.9 s     8.0 m    15.13h    stable    160. y     8.1 h
lambda      3.239e+00 1.824e+00 2.795e-01 6.359e-02 1.444e-03 1.273e-05       0.0 1.374e-10 2.377e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cm243t  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.455384n      0.0       0.0
zp 61.89 ri 2.68e-09p 1.23e-05p 0.004519p 0.105964p 0.279174p 0.064134p 0.001579p 2.39e-06p 2.85e-10p
sig0.594 cc 2.68e-09p 1.23e-05p 0.004531p 0.110495p 0.389669p 0.453803p 0.455385p 2.39e-06p 2.85e-10p
         rc 2.68e-09p 1.23e-05p 0.004531p 0.110495p 0.389669p 0.453803o 0.455385n 2.39e-06p 2.85e-10p
 cm246s  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.120508p      0.0       0.0
zp 61.46 ri 6.86e-09p 2.34e-05p 0.005512p 0.053375p 0.058171p 0.003410p 1.66e-05p 2.67e-09p       0.0
sig0.557 cc 6.86e-09p 2.34e-05p 0.005535p 0.058910p 0.117082p 0.120491p 0.120508p 2.67e-09p       0.0
         rc 6.86e-09p 2.34e-05p 0.005535p 0.058910p 0.117082p 0.120491o 0.120508o 2.67e-09p       0.0
 cm243f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.228211n      0.0       0.0
zp 62.15 ri 1.10e-10p 9.67e-07p 0.000671p 0.029553p 0.137634p 0.057628p 0.002716p 8.51e-06p 2.15e-09p
sig0.596 cc 1.10e-10p 9.67e-07p 0.000672p 0.030225p 0.167860p 0.225487p 0.228212p 8.52e-06p 2.15e-09p
         rc 1.10e-10p 9.67e-07p 0.000672p 0.030225p 0.167860p 0.225487o 0.228212n 8.52e-06p 2.15e-09p
 cm244f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.257651n      0.0       0.0
zp 61.92 ri 1.05e-09p 5.50e-06p 0.002225p 0.057157p 0.158581p 0.038700p 0.000982p 1.54e-06p 1.84e-10p
sig0.592 cc 1.05e-09p 5.50e-06p 0.002230p 0.059387p 0.217967p 0.256668p 0.257652p 1.54e-06p 1.84e-10p
         rc 1.05e-09p 5.50e-06p 0.002230p 0.059387p 0.217967p 0.256668o 0.257652n 1.54e-06p 1.84e-10p
 cm246f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.355711n      0.0       0.0
zp 61.45 ri 8.18e-08p 0.000148p 0.018699p 0.167912p 0.156231p 0.012637p 8.34e-05p 3.24e-08p       0.0
sig0.585 cc 8.18e-08p 0.000148p 0.018848p 0.186759p 0.342990p 0.355628p 0.355711p 3.24e-08p       0.0
         rc 8.18e-08p 0.000148p 0.018848p 0.186759p 0.342990o 0.355628o 0.355711n 3.24e-08p       0.0
 cm248f  xi     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc     0.0       0.0       0.0       0.0       0.0       0.0  0.414788n      0.0       0.0
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zp 61.02 ri 2.36e-06p 0.001635p 0.075576p 0.251702p 0.083835p 0.002034p 3.33e-06p 2.74e-10p       0.0
sig0.574 cc 2.36e-06p 0.001637p 0.077213p 0.328915p 0.412750p 0.414784p 0.414788p 2.74e-10p       0.0
         rc 2.36e-06p 0.001637p 0.077213p 0.328915p 0.412750o 0.414784o 0.414788n 2.74e-10p       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.178397n      0.0       0.0
zp 61.46 ri 1.61e-07p 0.000140p 0.010720p 0.083024p 0.076207p 0.008216p 8.85e-05p 8.29e-08p 6.30e-12p
sig0.620 cc 1.61e-07p 0.000140p 0.010860p 0.093884p 0.170092p 0.178308p 0.178397p 8.30e-08p 6.30e-12p
         rc 1.61e-07p 0.000140p 0.010860p 0.093884p 0.170092p 0.178308o 0.178397n 8.30e-08p 6.30e-12p
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.024299m      0.0       0.0
zp 61.28 ri 3.08e-09p 1.26e-05p 0.001670p 0.014847p 0.007462p 0.000307p 4.59e-07p 3.35e-11p       0.0
sig0.541 cc 3.08e-09p 1.26e-05p 0.001683p 0.016530p 0.023992p 0.024299p 0.024299p 3.35e-11p       0.0
         rc 3.08e-09p 1.26e-05p 0.001683p 0.016530p 0.023992o 0.024299n 0.024299m 3.35e-11p       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.099385n      0.0       0.0
zp 61.37 ri 1.31e-08p 3.29e-05p 0.006614p 0.046862p 0.044047p 0.001823p 7.04e-06p 7.40e-10p       0.0
sig0.555 cc 1.31e-08p 3.29e-05p 0.006647p 0.053508p 0.097555p 0.099378p 0.099385p 7.40e-10p       0.0
         rc 1.31e-08p 3.29e-05p 0.006647p 0.053508p 0.097555p 0.099378o 0.099385n 7.40e-10p       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.168259n      0.0       0.0
zp 61.00 ri 5.27e-07p 0.000492p 0.033974p 0.098727p 0.034554p 0.000510p 5.58e-07p 1.69e-11p       0.0
sig0.551 cc 5.27e-07p 0.000493p 0.034467p 0.133193p 0.167748p 0.168258p 0.168259p 1.69e-11p       0.0
         rc 5.27e-07p 0.000493p 0.034467p 0.133193p 0.167748o 0.168258o 0.168259n 1.69e-11p       0.0

  ce, pr, nd half lives from 80eng2; pm, sm, eu half lives 89wal1.
1

    mass number    158              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       58 ce g   59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb m   65 tb g   66 dy g
half life              0.169s    2.69 s     4.8 s     5.5 m    45.9 m    stable    10.9 s    150. y    stable
lambda            0.0 4.101e+00 2.577e-01 1.444e-01 2.100e-03 2.517e-04       0.0 6.359e-02 1.465e-10       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  -84.0000   16.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.344894n      0.0       0.0       0.0
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zp 62.30 ri 2.86e-11p 3.81e-07p 0.000446p 0.027705p 0.199308p 0.109495p 0.007916p 3.34e-06p 3.01e-05p 1.30e-08p
sig0.594 cc 2.86e-11p 3.81e-07p 0.000447p 0.028152p 0.227461p 0.336954p 0.344898p 3.34e-06p 3.34e-05p 5.36e-06p
rc 2.86e-11p 3.81e-07p 0.000447p 0.028152p 0.227459p 0.336954o 0.344897n 3.34e-06p 3.34e-05p 5.36e-06p
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.083017p 0.0 0.0 0.0
zp 61.84 ri 8.99e-11p 8.86e-07p 0.000734p 0.017816p 0.056356p 0.007976p 0.000134p 6.15e-09p 5.54e-08p 2.32e-12p
sig0.557 cc 8.99e-11p 8.86e-07p 0.000735p 0.018551p 0.074907p 0.082883p 0.083017p 6.15e-09p 6.15e-08p 9.84e-09p
rc 8.99e-11p 8.86e-07p 0.000735p 0.018551p 0.074907p 0.082883p 0.083017o 6.15e-09p 6.15e-08p 9.84e-09p
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.148833n 0.0 0.0 0.0
zp 62.54 ri 0.0 2.42e-08p 4.97e-05p 0.005689p 0.068649p 0.066097p 0.008297p 6.21e-06p 6.28e-05p 5.20e-08p
sig0.596 cc 0.0 2.42e-08p 4.97e-05p 0.005739p 0.074388p 0.140484p 0.148839p 6.21e-06p 6.90e-05p 1.11e-05p
rc 0.0 2.42e-08p 4.97e-05p 0.005739p 0.074388p 0.140484o 0.148839n 6.21e-06p 6.90e-05p 1.11e-05p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.178374n 0.0 0.0 0.0
zp 62.31 ri 1.20e-11p 1.78e-07p 0.000214p 0.014258p 0.101719p 0.058108p 0.004061p 1.73e-06p 1.56e-05p 6.31e-09p
sig0.592 cc 1.20e-11p 1.78e-07p 0.000215p 0.014472p 0.116192p 0.174300p 0.178375p 1.73e-06p 1.73e-05p 2.78e-06p
rc 1.20e-11p 1.78e-07p 0.000215p 0.014472p 0.116192p 0.174300o 0.178375n 1.73e-06p 1.73e-05p 2.78e-06p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.247022n 0.0 0.0 0.0
zp 61.84 ri 1.39e-09p 7.53e-06p 0.002731p 0.064826p 0.148100p 0.030785p 0.000572p 3.95e-08p 6.18e-07p 4.95e-11p
sig0.585 cc 1.39e-09p 7.53e-06p 0.002738p 0.067565p 0.215665p 0.246450p 0.247022p 3.95e-08p 6.58e-07p 1.05e-07p
rc 1.39e-09p 7.53e-06p 0.002738p 0.067565p 0.215665p 0.246450o 0.247022n 3.95e-08p 6.58e-07p 1.05e-07p
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.306153n 0.0 0.0 0.0
zp 61.40 ri 6.68e-08p 0.000138p 0.018025p 0.153275p 0.126364p 0.008310p 3.99e-05p 1.00e-09p 9.02e-09p 0.0
sig0.574 cc 6.68e-08p 0.000138p 0.018164p 0.171439p 0.297803p 0.306113p 0.306153p 1.00e-09p 1.00e-08p 1.60e-09p
rc 6.68e-08p 0.000138p 0.018164p 0.171439p 0.297803o 0.306113o 0.306153n 1.00e-09p 1.00e-08p 1.60e-09p
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.119254n 0.0 0.0 0.0
zp 61.84 ri 4.27e-09p 9.58e-06p 0.001823p 0.033005p 0.067343p 0.016635p 0.000439p 1.05e-07p 9.46e-07p 2.09e-10p
sig0.620 cc 4.27e-09p 9.58e-06p 0.001832p 0.034838p 0.102180p 0.118815p 0.119254p 1.05e-07p 1.05e-06p 1.68e-07p
rc 4.27e-09p 9.58e-06p 0.001832p 0.034838p 0.102180p 0.118815o 0.119254n 1.05e-07p 1.05e-06p 1.68e-07p
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.012864m 0.0 0.0 0.0
zp 61.66 ri 3.44e-11p 3.87e-07p 0.000215p 0.004403p 0.007522p 0.000719p 4.53e-06p 9.11e-11p 8.20e-10p 0.0

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sig0.541 cc 3.44e-11p 3.87e-07p 0.000215p 0.004618p 0.012141p 0.012860p 0.012864p 9.11e-11p 9.11e-10p 1.46e-10p
         rc 3.44e-11p 3.87e-07p 0.000215p 0.004618p 0.012141p 0.012860o 0.012864m 9.11e-11p 9.11e-10p 1.46e-10p
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.072551n      0.0       0.0       0.0
zp 61.76 ri 1.77e-10p 1.27e-06p 0.000972p 0.016934p 0.049608p 0.004964p 7.20e-05p 2.16e-09p 1.95e-08p       0.0
sig0.555 cc 1.77e-10p 1.27e-06p 0.000973p 0.017908p 0.067516p 0.072479p 0.072551p 2.16e-09p 2.16e-08p 3.46e-09p
         rc 1.77e-10p 1.27e-06p 0.000973p 0.017908p 0.067516p 0.072479o 0.072551n 2.16e-09p 2.16e-08p 3.46e-09p
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.118771n      0.0       0.0       0.0
zp 61.38 ri 1.17e-08p 3.13e-05p 0.007686p 0.052829p 0.056097p 0.002120p 8.64e-06p 7.62e-11p 6.86e-10p       0.0
sig0.551 cc 1.17e-08p 3.13e-05p 0.007717p 0.060546p 0.116642p 0.118762p 0.118771p 7.62e-11p 7.62e-10p 1.22e-10p
         rc 1.17e-08p 3.13e-05p 0.007717p 0.060546p 0.116642p 0.118762o 0.118771n 7.62e-11p 7.62e-10p 1.22e-10p

  pr, nd half lives from 80eng2; pm, sm, eu half lives from 89wal1.
1

    mass number    159              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       59 pr g   60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g
half life     0.181s    0.642s     3.0 s    11.3 s    18.1 m    18.6 h    stable    144.4d     8.3 s     33. m
lambda       3.830e+00 1.080e+00 2.310e-01 6.134e-02 6.383e-04 1.035e-05       0.0 5.556e-08 8.351e-02 3.501e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000       0.0 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.233372n      0.0       0.0       0.0
zp 62.70 ri 7.94e-09p 2.59e-05p 0.004827p 0.084978p 0.121732p 0.021536p 0.000273p 2.97e-07p 2.28e-12p 1.53e-11p
sig0.594 cc 7.94e-09p 2.59e-05p 0.004853p 0.089831p 0.211562p 0.233098p 0.233372p 2.97e-07p 2.28e-12p 1.75e-11p
         rc 7.94e-09p 2.59e-05p 0.004853p 0.089831p 0.211562p 0.233098o 0.233372n 2.97e-07p 2.28e-12p 1.75e-11p
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.058022p      0.0       0.0       0.0
zp 62.22 ri 2.64e-08p 6.16e-05p 0.004997p 0.036859p 0.015432p 0.000672p 1.11e-06p 1.22e-10p       0.0       0.0
sig0.557 cc 2.64e-08p 6.16e-05p 0.005058p 0.041917p 0.057349p 0.058021p 0.058022p 1.22e-10p       0.0       0.0
         rc 2.64e-08p 6.16e-05p 0.005058p 0.041917p 0.057349p 0.058021o 0.058022o 1.22e-10p       0.0       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.099222n      0.0       0.0       0.0
zp 62.92 ri 4.69e-10p 2.59e-06p 0.000834p 0.024289p 0.057073p 0.016644p 0.000378p 7.57e-07p 1.05e-11p 7.66e-11p
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sig0.596 cc 4.69e-10p 2.59e-06p 0.000836p 0.025126p 0.082199p 0.098844p 0.099222p 7.57e-07p 1.05e-11p 8.71e-11p
         rc 4.69e-10p 2.59e-06p 0.000836p 0.025126p 0.082199p 0.098844o 0.099222n 7.57e-07p 1.05e-11p 8.71e-11p
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.118916n      0.0       0.0       0.0
zp 62.69 ri 4.23e-09p 1.38e-05p 0.002581p 0.044070p 0.061785p 0.010341p 0.000124p 1.23e-07p       0.0  5.74e-12p
sig0.592 cc 4.23e-09p 1.38e-05p 0.002595p 0.046665p 0.108451p 0.118792p 0.118916p 1.23e-07p       0.0  6.59e-12p
         rc 4.23e-09p 1.38e-05p 0.002595p 0.046665p 0.108451p 0.118792o 0.118916n 1.23e-07p       0.0  6.59e-12p
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.177856n      0.0       0.0       0.0
zp 62.22 ri 2.84e-07p 0.000293p 0.018605p 0.103841p 0.052516p 0.002591p 8.47e-06p 1.87e-09p       0.0       0.0
sig0.585 cc 2.84e-07p 0.000294p 0.018899p 0.122740p 0.175256p 0.177847p 0.177856p 1.87e-09p       0.0       0.0
         rc 2.84e-07p 0.000294p 0.018899p 0.122740p 0.175256o 0.177847o 0.177856n 1.87e-09p       0.0       0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.217270n      0.0       0.0       0.0
zp 61.78 ri 7.43e-06p 0.002811p 0.063445p 0.128672p 0.022031p 0.000303p 2.29e-07p 1.01e-11p       0.0       0.0
sig0.574 cc 7.43e-06p 0.002818p 0.066264p 0.194935p 0.216967p 0.217269p 0.217270p 1.01e-11p       0.0       0.0
         rc 7.43e-06p 0.002818p 0.066264p 0.194935p 0.216967o 0.217269o 0.217270n 1.01e-11p       0.0       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.073589n      0.0       0.0       0.0
zp 62.22 ri 4.23e-07p 0.000204p 0.008845p 0.040605p 0.022507p 0.001419p 8.58e-06p 4.42e-09p       0.0       0.0
sig0.620 cc 4.23e-07p 0.000204p 0.009049p 0.049655p 0.072162p 0.073580p 0.073589p 4.42e-09p       0.0       0.0
         rc 4.23e-07p 0.000204p 0.009049p 0.049655p 0.072162p 0.073580o 0.073589n 4.42e-09p       0.0       0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001027n      0.0       0.0       0.0
zp 62.04 ri 1.46e-09p 2.16e-06p 0.000173p 0.000632p 0.000215p 3.42e-06p 3.01e-09p       0.0       0.0       0.0
sig0.541 cc 1.46e-09p 2.16e-06p 0.000176p 0.000808p 0.001023p 0.001027p 0.001027p       0.0       0.0       0.0
         rc 1.46e-09p 2.16e-06p 0.000176p 0.000808p 0.001023o 0.001027o 0.001027n       0.0       0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.044723n      0.0       0.0       0.0
zp 62.15 ri 3.36e-08p 7.19e-05p 0.004493p 0.030120p 0.009673p 0.000366p 4.30e-07p 3.82e-11p       0.0       0.0
sig0.555 cc 3.36e-08p 7.19e-05p 0.004565p 0.034685p 0.044357p 0.044723p 0.044723p 3.82e-11p       0.0       0.0
         rc 3.36e-08p 7.19e-05p 0.004565p 0.034685p 0.044357p 0.044723o 0.044723n 3.82e-11p       0.0       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.079181n      0.0       0.0       0.0
zp 61.75 ri 1.49e-06p 0.000978p 0.021604p 0.050506p 0.006025p 6.50e-05p 2.13e-08p       0.0       0.0       0.0
sig0.551 cc 1.49e-06p 0.000980p 0.022584p 0.073090p 0.079116p 0.079181p 0.079181p       0.0       0.0       0.0
```

rc 1.49e-06p 0.000980p 0.022584p 0.073090p 0.079116p 0.079181o 0.079181n 0.0 0.0 0.0

pr, nd, pm half lives from 80eng2; sm, eu, gd half lives 89wal1; dy half life 90bur1.

1

mass number 160 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	58 ce g	59 pr g	60 nd g	61 pm g	62 sm g	63 eu g	64 gd g	65 tb g	66 dy g
half life		0.789s	0.729s	9.6 s	38. s	stable	72.3 d	stable	
lambda	0.0	0.0	8.785e-01	9.508e-01	7.220e-02	1.824e-02	0.0	1.110e-07	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	0.0	100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
cm243t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.182773n	0.0	0.0
zp 63.09 ri	0.0	1.29e-10p	1.30e-06p	0.000641p	0.031502p	0.103057p	0.047572p	0.001520p	4.98e-06p
sig0.594 cc	0.0	1.29e-10p	1.30e-06p	0.000642p	0.032144p	0.135201p	0.182773p	0.001520p	0.001524p
rc	0.0	1.29e-10p	1.30e-06p	0.000642p	0.032144p	0.135201p	0.182773n	0.001520p	0.001524p
cm246s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.039277p	0.0	0.0
zp 62.60 ri	0.0	4.29e-10p	3.67e-06p	0.000807p	0.018472p	0.017566p	0.002428p	1.10e-05p	4.44e-09p
sig0.557 cc	0.0	4.29e-10p	3.67e-06p	0.000810p	0.019282p	0.036849p	0.039277p	1.10e-05p	1.10e-05p
rc	0.0	4.29e-10p	3.67e-06p	0.000810p	0.019282p	0.036849p	0.039277o	1.10e-05p	1.10e-05p
cm243f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.062510n	0.0	0.0
zp 63.31 ri	0.0	5.04e-12p	8.41e-08p	7.33e-05p	0.005910p	0.032627p	0.023900p	0.001361p	7.93e-06p
sig0.596 cc	0.0	5.04e-12p	8.41e-08p	7.34e-05p	0.005984p	0.038610p	0.062510p	0.001361p	0.001369p
rc	0.0	5.05e-12p	8.41e-08p	7.34e-05p	0.005984p	0.038610p	0.062510n	0.001361p	0.001369p
cm244f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.074323n	0.0	0.0
zp 63.07 ri	0.0	6.07e-11p	5.88e-07p	0.000291p	0.013328p	0.042720p	0.017983p	0.000545p	1.56e-06p
sig0.592 cc	0.0	6.07e-11p	5.88e-07p	0.000292p	0.013620p	0.056340p	0.074323p	0.000545p	0.000547p
rc	0.0	6.07e-11p	5.88e-07p	0.000292p	0.013620p	0.056340p	0.074323n	0.000545p	0.000547p
cm246f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.118570n	0.0	0.0
zp 62.61 ri	0.0	6.05e-09p	1.86e-05p	0.003326p	0.047986p	0.059523p	0.007716p	7.21e-05p	4.74e-08p

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sig0.585 cc       0.0  6.05e-09p 1.86e-05p 0.003345p 0.051331p 0.110854p 0.118570p 7.21e-05p 7.22e-05p
         rc       0.0  6.05e-09p 1.86e-05p 0.003345p 0.051331p 0.110854o 0.118570n 7.21e-05p 7.22e-05p
 cm248f  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.148138n      0.0       0.0
zp 62.16 ri 1.32e-11p 2.54e-07p 0.000285p 0.017724p 0.089950p 0.038704p 0.001476p 3.32e-06p 4.48e-10p
sig0.574 cc 1.32e-11p 2.54e-07p 0.000285p 0.018009p 0.107959p 0.146663p 0.148138p 3.32e-06p 3.32e-06p
         rc 1.32e-11p 2.54e-07p 0.000285p 0.018009p 0.107959p 0.146663o 0.148138n 3.32e-06p 3.32e-06p
 pu242h  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.045763n      0.0       0.0
zp 62.60 ri       0.0  1.31e-08p 1.62e-05p 0.001729p 0.018250p 0.022470p 0.003298p 4.95e-05p 6.57e-08p
sig0.620 cc       0.0  1.31e-08p 1.62e-05p 0.001745p 0.019995p 0.042465p 0.045763p 4.95e-05p 4.96e-05p
         rc       0.0  1.31e-08p 1.62e-05p 0.001745p 0.019995p 0.042465o 0.045763n 4.95e-05p 4.96e-05p
 np237t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.000373n      0.0       0.0
zp 62.42 ri       0.0  1.16e-11p 7.55e-08p 1.54e-05p 0.000203p 0.000146p 9.03e-06p 2.11e-08p 2.44e-12p
sig0.541 cc       0.0  1.16e-11p 7.55e-08p 1.55e-05p 0.000218p 0.000364p 0.000373p 2.11e-08p 2.11e-08p
         rc       0.0  1.16e-11p 7.55e-08p 1.55e-05p 0.000218p 0.000364o 0.000373n 2.11e-08p 2.11e-08p
 pu240t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.021865n      0.0       0.0
zp 62.54 ri       0.0  3.71e-10p 3.14e-06p 0.000527p 0.011750p 0.008475p 0.001109p 3.58e-06p 1.27e-09p
sig0.555 cc       0.0  3.71e-10p 3.15e-06p 0.000531p 0.012281p 0.020756p 0.021865p 3.58e-06p 3.58e-06p
         rc       0.0  3.71e-10p 3.15e-06p 0.000531p 0.012281p 0.020756o 0.021865n 3.58e-06p 3.58e-06p
 pu242t  xi       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc       0.0       0.0       0.0       0.0       0.0       0.0  0.051467n      0.0       0.0
zp 62.13 ri 1.22e-12p 3.55e-08p 8.74e-05p 0.005020p 0.035982p 0.010000p 0.000378p 3.52e-07p 2.84e-11p
sig0.551 cc 1.22e-12p 3.55e-08p 8.75e-05p 0.005108p 0.041090p 0.051089p 0.051467p 3.52e-07p 3.52e-07p
         rc 1.22e-12p 3.55e-08p 8.75e-05p 0.005108p 0.041090p 0.051089o 0.051467n 3.52e-07p 3.52e-07p

  nd, pm half lives from 80eng2; sm, eu half lives from 89wal1.
1

    mass number    161              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide       60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g
half life     0.311s    0.790s    4.78 s     27. s    3.66 m    6.91 d    stable     6.8 s     2.5 h     3.1 h
lambda      2.229e+00 8.774e-01 1.450e-01 2.567e-02 3.156e-03 1.161e-06       0.0 1.019e-01 7.702e-05 6.211e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000  -73.0000
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 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  -27.0000
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.121849n      0.0       0.0       0.0
zp 63.48 ri 3.32e-08p 4.97e-05p 0.006241p 0.054017p 0.056536p 0.004962p 4.27e-05p 2.78e-09p 1.86e-08p       0.0
sig0.594 cc 3.32e-08p 4.97e-05p 0.006291p 0.060308p 0.116844p 0.121806p 0.121849p 2.78e-09p 2.14e-08p       0.0
         rc 3.32e-08p 4.97e-05p 0.006291p 0.060308p 0.116844p 0.121806o 0.121849n 2.78e-09p 2.14e-08p       0.0
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.026780p      0.0       0.0       0.0
zp 62.98 ri 1.24e-07p 9.72e-05p 0.005673p 0.015756p 0.005173p 7.99e-05p 9.15e-08p       0.0  2.87e-12p       0.0
sig0.557 cc 1.24e-07p 9.73e-05p 0.005770p 0.021527p 0.026700p 0.026779p 0.026780p       0.0  3.30e-12p       0.0
         rc 1.24e-07p 9.73e-05p 0.005770p 0.021527p 0.026700o 0.026779o 0.026780o       0.0  3.30e-12p       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.038697n      0.0       0.0       0.0
zp 63.69 ri 1.77e-09p 4.48e-06p 0.000924p 0.013076p 0.021503p 0.003142p 4.68e-05p 5.19e-09p 3.81e-08p 3.12e-12p
sig0.596 cc 1.77e-09p 4.48e-06p 0.000928p 0.014005p 0.035508p 0.038650p 0.038697p 5.20e-09p 4.33e-08p 3.12e-12p
         rc 1.77e-09p 4.48e-06p 0.000928p 0.014005p 0.035508p 0.038650o 0.038697n 5.20e-09p 4.33e-08p 3.12e-12p
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.046575n      0.0       0.0       0.0
zp 63.45 ri 1.57e-08p 2.27e-05p 0.002650p 0.021575p 0.020654p 0.001661p 1.25e-05p 7.12e-10p 4.77e-09p       0.0
sig0.592 cc 1.57e-08p 2.27e-05p 0.002673p 0.024248p 0.044902p 0.046563p 0.046575p 7.12e-10p 5.48e-09p       0.0
         rc 1.57e-08p 2.27e-05p 0.002673p 0.024248p 0.044902p 0.046563o 0.046575n 7.12e-10p 5.48e-09p       0.0
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.076083n      0.0       0.0       0.0
zp 62.99 ri 7.98e-07p 0.000403p 0.015212p 0.045501p 0.014596p 0.000369p 6.97e-07p 5.18e-12p 6.88e-11p       0.0
sig0.585 cc 7.98e-07p 0.000404p 0.015616p 0.061116p 0.075713p 0.076082p 0.076083p 5.18e-12p 7.40e-11p       0.0
         rc 7.98e-07p 0.000404p 0.015616p 0.061116p 0.075713o 0.076082o 0.076083n 5.18e-12p 7.40e-11p       0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.098759n      0.0       0.0       0.0
zp 62.53 ri 2.01e-05p 0.003479p 0.044548p 0.046105p 0.004577p 2.91e-05p 1.16e-08p       0.0       0.0       0.0
sig0.574 cc 2.01e-05p 0.003499p 0.048047p 0.094153p 0.098730p 0.098759p 0.098759p       0.0       0.0       0.0
         rc 2.01e-05p 0.003499p 0.048047p 0.094153p 0.098730o 0.098759o 0.098759n       0.0       0.0       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.026856n      0.0       0.0       0.0
zp 62.97 ri 9.11e-07p 0.000238p 0.005792p 0.015565p 0.005079p 0.000181p 5.97e-07p 2.14e-11p 1.43e-10p       0.0
sig0.620 cc 9.11e-07p 0.000239p 0.006031p 0.021596p 0.026675p 0.026856p 0.026856p 2.14e-11p 1.64e-10p       0.0
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        rc 9.11e-07p 0.000239p 0.006031p 0.021596p 0.026675o 0.026856o 0.026856n 2.14e-11p 1.64e-10p      0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000233n      0.0       0.0       0.0
zp 62.80 ri 2.27e-09p 1.97e-06p 6.08e-05p 0.000149p 2.10e-05p 2.04e-07p 6.48e-11p      0.0       0.0       0.0
sig0.541 cc 2.27e-09p 1.97e-06p 6.27e-05p 0.000212p 0.000233p 0.000233p 0.000233p      0.0       0.0       0.0
        rc 2.27e-09p 1.97e-06p 6.27e-05p 0.000212p 0.000233p 0.000233o 0.000233n      0.0       0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.008945n      0.0       0.0       0.0
zp 62.92 ri 6.75e-08p 4.22e-05p 0.002297p 0.005061p 0.001527p 1.77e-05p 1.74e-08p      0.0       0.0       0.0
sig0.555 cc 6.75e-08p 4.23e-05p 0.002339p 0.007400p 0.008927p 0.008945p 0.008945p      0.0       0.0       0.0
        rc 6.75e-08p 4.23e-05p 0.002339p 0.007400p 0.008927o 0.008945o 0.008945n      0.0       0.0       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.024744n      0.0       0.0       0.0
zp 62.50 ri 3.77e-06p 0.000756p 0.012673p 0.010350p 0.000958p 3.20e-06p 7.26e-10p      0.0       0.0       0.0
sig0.551 cc 3.77e-06p 0.000760p 0.013433p 0.023782p 0.024741p 0.024744p 0.024744p      0.0       0.0       0.0
        rc 3.77e-06p 0.000760p 0.013433p 0.023782p 0.024741o 0.024744o 0.024744n      0.0       0.0       0.0

  nd, pm, sm half lives from 80eng2; eu, gd, tb half lives 89wal1.
1

    mass number    162              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide      60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb m   65 tb g   66 dy g   67 ho m   67 ho g   68 er g
half life              0.324s    5.26 s     11. s     8.4 m    2.23 h     7.6 m    stable     66. m     13. m    stable
lambda           0.0 2.139e+00 1.318e-01 6.301e-02 1.375e-03 8.634e-05 1.520e-03       0.0 1.750e-04 8.887e-04       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000    2.0000   98.0000  100.0000  -37.0000 -100.0000       0.0
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0   63.0000       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.081060n      0.0       0.0       0.0
zp 63.87 ri 5.94e-10p 2.43e-06p 0.000900p 0.018905p 0.050552p 0.005221p 0.005221p 0.000260p 2.45e-07p 1.05e-07p 4.21e-11p
sig0.594 cc 5.94e-10p 2.43e-06p 0.000902p 0.019807p 0.070359p 0.006628p 0.074173p 0.081061p 2.45e-07p 2.59e-07p 4.21e-11p
        rc 5.94e-10p 2.43e-06p 0.000902p 0.019807p 0.070359p 0.006628p 0.074173o 0.081061n 2.45e-07p 2.59e-07p 4.21e-11p
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.020531p      0.0       0.0       0.0
zp 63.36 ri 3.31e-09p 7.34e-06p 0.001452p 0.009540p 0.009168p 0.000181p 0.000181p 1.48e-06p 1.08e-10p 4.64e-11p      0.0
sig0.557 cc 3.31e-09p 7.34e-06p 0.001459p 0.010999p 0.020167p 0.000585p 0.019945p 0.020531p 1.08e-10p 1.15e-10p      0.0
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rc 3.31e-09p 7.34e-06p 0.001459p 0.010999p 0.020167p 0.000585o 0.019945o 0.020531o 1.08e-10p 1.15e-10p 0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.023813n 0.0 0.0 0.0
zp 64.07 ri 2.67e-11p 1.82e-07p 0.000106p 0.003678p 0.014844p 0.002492p 0.002492p 0.000201p 3.58e-07p 1.32e-07p 1.04e-10p
sig0.596 cc 2.67e-11p 1.82e-07p 0.000106p 0.003784p 0.018628p 0.002865p 0.020747p 0.023813p 3.58e-07p 3.57e-07p 1.04e-10p
rc 2.67e-11p 1.82e-07p 0.000106p 0.003784p 0.018628p 0.002865p 0.020747o 0.023813n 3.58e-07p 3.57e-07p 1.04e-10p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.028738n 0.0 0.0 0.0
zp 63.83 ri 2.90e-10p 1.14e-06p 0.000377p 0.007445p 0.017513p 0.001666p 0.001666p 7.00e-05p 5.79e-08p 2.48e-08p 8.01e-12p
sig0.592 cc 2.90e-10p 1.14e-06p 0.000379p 0.007823p 0.025336p 0.002173p 0.026495p 0.028738p 5.79e-08p 6.13e-08p 8.01e-12p
rc 2.90e-10p 1.14e-06p 0.000379p 0.007823p 0.025336p 0.002173p 0.026495o 0.028738n 5.79e-08p 6.13e-08p 8.01e-12p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.048416n 0.0 0.0 0.0
zp 63.36 ri 2.46e-08p 3.47e-05p 0.003449p 0.024883p 0.018825p 0.000609p 0.000609p 6.31e-06p 1.56e-09p 3.42e-10p 0.0
sig0.585 cc 2.46e-08p 3.47e-05p 0.003484p 0.028366p 0.047192p 0.001553p 0.046857p 0.048416p 1.56e-09p 1.32e-09p 0.0
rc 2.46e-08p 3.47e-05p 0.003484p 0.028366p 0.047192p 0.001553o 0.046857o 0.048416n 1.56e-09p 1.32e-09p 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.065181n 0.0 0.0 0.0
zp 62.91 ri 8.82e-07p 0.000445p 0.015347p 0.039205p 0.010001p 9.03e-05p 9.03e-05p 2.15e-07p 9.00e-12p 3.86e-12p 0.0
sig0.574 cc 8.82e-07p 0.000446p 0.015793p 0.054999p 0.065000p 0.001390p 0.063790p 0.065181p 9.00e-12p 9.53e-12p 0.0
rc 8.82e-07p 0.000446p 0.015793p 0.054999p 0.065000o 0.001390o 0.063790o 0.065181n 9.00e-12p 9.53e-12p 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.013961n 0.0 0.0 0.0
zp 63.35 ri 3.00e-08p 1.99e-05p 0.001172p 0.007131p 0.005196p 0.000219p 0.000219p 3.63e-06p 1.81e-09p 7.76e-10p 0.0
sig0.620 cc 3.00e-08p 1.99e-05p 0.001192p 0.008323p 0.013519p 0.000490p 0.013468p 0.013961p 1.81e-09p 1.92e-09p 0.0
rc 3.00e-08p 1.99e-05p 0.001192p 0.008323p 0.013519p 0.000490p 0.013468o 0.013961n 1.81e-09p 1.92e-09p 0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000140n 0.0 0.0 0.0
zp 63.18 ri 5.40e-11p 1.26e-07p 1.55e-05p 8.27e-05p 4.07e-05p 4.91e-07p 4.91e-07p 1.35e-09p 0.0 0.0 0.0
sig0.541 cc 5.40e-11p 1.26e-07p 1.57e-05p 9.83e-05p 0.000139p 3.27e-06p 0.000137p 0.000140p 0.0 0.0 0.0
rc 5.40e-11p 1.26e-07p 1.57e-05p 9.83e-05p 0.000139o 3.27e-06o 0.000137o 0.000140n 0.0 0.0 0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.001193n 0.0 0.0 0.0
zp 63.31 ri 3.05e-10p 5.38e-07p 0.000107p 0.000547p 0.000522p 7.77e-06p 7.77e-06p 5.90e-08p 3.05e-12p 1.31e-12p 0.0
sig0.555 cc 3.05e-10p 5.38e-07p 0.000107p 0.000655p 0.001177p 3.13e-05p 0.001161p 0.001193p 3.05e-12p 3.23e-12p 0.0
rc 3.05e-10p 5.38e-07p 0.000107p 0.000655p 0.001177p 3.13e-05o 0.001161o 0.001193n 3.05e-12p 3.23e-12p 0.0

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 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.008908n      0.0       0.0       0.0
zp 62.88 ri 8.30e-08p 4.63e-05p 0.002604p 0.004820p 0.001424p 6.42e-06p 6.42e-06p 1.11e-08p      0.0       0.0       0.0
sig0.551 cc 8.30e-08p 4.64e-05p 0.002651p 0.007470p 0.008895p 0.000184p 0.008723p 0.008908p      0.0       0.0       0.0
         rc 8.30e-08p 4.64e-05p 0.002651p 0.007470p 0.008895o 0.000184o 0.008723o 0.008908n      0.0       0.0       0.0

  pm, sm half lives from 80eng2; eu, gd, tb half lives from 89wal1.
1

    mass number    163              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g
half life                     1.27 s    7.60 s    1.13 m    19.5 m    stable    1.07 s     33. y     75. m
lambda           0.0       0.0 5.458e-01 9.120e-02 1.022e-02 5.924e-04       0.0 6.478e-01 6.660e-10 1.540e-04
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.055761n      0.0       0.0       0.0
zp 64.25 ri 7.80e-12p 9.61e-08p 9.26e-05p 0.005374p 0.032388p 0.016885p 0.001017p 5.20e-07p 3.48e-06p 1.28e-09p
sig0.594 cc 7.80e-12p 9.61e-08p 9.27e-05p 0.005467p 0.037856p 0.054740p 0.055762p 5.20e-07p 4.00e-06p 1.28e-09p
         rc 7.80e-12p 9.61e-08p 9.27e-05p 0.005467p 0.037856p 0.054740o 0.055762n 5.20e-07p 4.00e-06p 1.28e-09p
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.014282p      0.0       0.0       0.0
zp 63.74 ri 4.45e-11p 3.62e-07p 0.000196p 0.004078p 0.008898p 0.001097p 1.22e-05p 6.05e-10p 4.05e-09p       0.0
sig0.557 cc 4.45e-11p 3.62e-07p 0.000197p 0.004275p 0.013173p 0.014270p 0.014282p 6.05e-10p 4.66e-09p       0.0
         rc 4.45e-11p 3.62e-07p 0.000197p 0.004275p 0.013173p 0.014270p 0.014282o 6.05e-10p 4.66e-09p       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.013891n      0.0       0.0       0.0
zp 64.45 ri       0.0  5.05e-09p 7.82e-06p 0.000739p 0.006918p 0.005671p 0.000552p 4.55e-07p 3.33e-06p 2.15e-09p
sig0.596 cc       0.0  5.05e-09p 7.83e-06p 0.000746p 0.007664p 0.013335p 0.013891p 4.55e-07p 3.79e-06p 2.15e-09p
         rc       0.0  5.05e-09p 7.83e-06p 0.000746p 0.007664p 0.013335o 0.013891n 4.55e-07p 3.79e-06p 2.15e-09p
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.016846n      0.0       0.0       0.0
zp 64.21 ri 3.34e-12p 3.90e-08p 3.44e-05p 0.001842p 0.009986p 0.004734p 0.000249p 1.10e-07p 7.37e-07p 2.25e-10p
sig0.592 cc 3.34e-12p 3.90e-08p 3.45e-05p 0.001877p 0.011863p 0.016597p 0.016847p 1.10e-07p 8.47e-07p 2.25e-10p
         rc 3.34e-12p 3.90e-08p 3.45e-05p 0.001877p 0.011863p 0.016597o 0.016847n 1.10e-07p 8.47e-07p 2.25e-10p
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 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.030631n      0.0       0.0       0.0
zp 63.74 ri 4.65e-10p 1.90e-06p 0.000524p 0.009668p 0.017526p 0.002870p 4.10e-05p 2.50e-09p 3.32e-08p 2.02e-12p
sig0.585 cc 4.65e-10p 1.90e-06p 0.000526p 0.010194p 0.027720p 0.030590p 0.030631p 2.50e-09p 3.57e-08p 2.02e-12p
         rc 4.65e-10p 1.90e-06p 0.000526p 0.010194p 0.027720p 0.030590o 0.030631n 2.50e-09p 3.57e-08p 2.02e-12p
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.041479n      0.0       0.0       0.0
zp 63.28 ri 2.66e-08p 3.88e-05p 0.003636p 0.022907p 0.014210p 0.000685p 2.34e-06p 5.39e-11p 3.61e-10p       0.0
sig0.574 cc 2.66e-08p 3.89e-05p 0.003675p 0.026582p 0.040791p 0.041476p 0.041479p 5.39e-11p 4.15e-10p       0.0
         rc 2.66e-08p 3.89e-05p 0.003675p 0.026582p 0.040791p 0.041476o 0.041479n 5.39e-11p 4.15e-10p       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.006118n      0.0       0.0       0.0
zp 63.72 ri 6.31e-10p 1.05e-06p 0.000149p 0.002063p 0.003269p 0.000623p 1.24e-05p 2.88e-09p 1.93e-08p 3.25e-12p
sig0.620 cc 6.31e-10p 1.05e-06p 0.000150p 0.002214p 0.005482p 0.006105p 0.006118p 2.88e-09p 2.22e-08p 3.25e-12p
         rc 6.31e-10p 1.05e-06p 0.000150p 0.002214p 0.005482p 0.006105o 0.006118n 2.88e-09p 2.22e-08p 3.25e-12p
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  5.60e-05n      0.0       0.0       0.0
zp 63.56 ri      0.0  4.13e-09p 1.31e-06p 2.56e-05p 2.66e-05p 2.44e-06p 8.87e-09p      0.0  1.42e-12p       0.0
sig0.541 cc      0.0  4.13e-09p 1.32e-06p 2.70e-05p 5.36e-05p 5.60e-05p 5.60e-05p      0.0  1.63e-12p       0.0
         rc      0.0  4.13e-09p 1.32e-06p 2.70e-05p 5.36e-05p 5.60e-05o 5.60e-05n      0.0  1.63e-12p       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000914n      0.0       0.0       0.0
zp 63.69 ri 4.52e-12p 3.08e-08p 1.61e-05p 0.000273p 0.000569p 5.58e-05p 5.59e-07p 2.07e-11p 1.39e-10p       0.0
sig0.555 cc 4.52e-12p 3.08e-08p 1.62e-05p 0.000289p 0.000858p 0.000914p 0.000914p 2.07e-11p 1.59e-10p       0.0
         rc 4.52e-12p 3.08e-08p 1.62e-05p 0.000289p 0.000858p 0.000914o 0.000914n 2.07e-11p 1.59e-10p       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.003959n      0.0       0.0       0.0
zp 63.26 ri 1.17e-09p 2.47e-06p 0.000367p 0.002110p 0.001435p 4.47e-05p 1.09e-07p      0.0  6.60e-12p       0.0
sig0.551 cc 1.17e-09p 2.47e-06p 0.000370p 0.002480p 0.003914p 0.003959p 0.003959p      0.0  7.59e-12p       0.0
         rc 1.17e-09p 2.47e-06p 0.000370p 0.002480p 0.003914p 0.003959o 0.003959n      0.0  7.59e-12p       0.0

  sm, eu half lives from 80eng2; gd, tb half lives from 89wal1.
1

    mass number    164              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide       60 nd g   61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho m   67 ho g   68 er g
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half life                    1.39 s    1.58 s     45. s     3.0 m    stable     37. m     24. m    stable
lambda          0.0       0.0 4.987e-01 4.387e-01 1.540e-02 3.851e-03       0.0 3.122e-04 4.814e-04       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0  -47.0000   53.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.025402n      0.0       0.0       0.0
zp 64.64 ri      0.0  1.46e-09p 4.31e-06p 0.000646p 0.010436p 0.012300p 0.002007p 1.44e-05p 6.16e-06p 2.02e-08p
sig0.594 cc      0.0  1.46e-09p 4.31e-06p 0.000650p 0.011086p 0.023386p 0.025403p 1.44e-05p 2.05e-05p 1.09e-05p
         rc      0.0  1.46e-09p 4.31e-06p 0.000650p 0.011086p 0.023386o 0.025403n 1.44e-05p 2.05e-05p 1.09e-05o
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.010712p      0.0       0.0       0.0
zp 64.12 ri      0.0  1.09e-08p 2.12e-05p 0.001142p 0.007349p 0.002121p 7.89e-05p 5.97e-08p 2.56e-08p 7.73e-12p
sig0.557 cc      0.0  1.09e-08p 2.13e-05p 0.001163p 0.008512p 0.010633p 0.010712p 5.97e-08p 8.53e-08p 4.52e-08p
         rc      0.0  1.09e-08p 2.13e-05p 0.001163p 0.008512p 0.010633p 0.010712o 5.97e-08p 8.53e-08p 4.52e-08o
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.007839n      0.0       0.0       0.0
zp 64.83 ri      0.0  8.79e-11p 3.96e-07p 9.65e-05p 0.002345p 0.004321p 0.001067p 1.36e-05p 5.01e-06p 3.05e-08p
sig0.596 cc      0.0  8.79e-11p 3.96e-07p 9.69e-05p 0.002442p 0.006763p 0.007839p 1.36e-05p 1.86e-05p 9.87e-06p
         rc      0.0  8.79e-11p 3.96e-07p 9.69e-05p 0.002442p 0.006763p 0.007839n 1.36e-05p 1.86e-05p 9.87e-06o
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.009910n      0.0       0.0       0.0
zp 64.60 ri      0.0  7.93e-10p 2.11e-06p 0.000299p 0.004262p 0.004685p 0.000659p 4.22e-06p 1.81e-06p 4.85e-09p
sig0.592 cc      0.0  7.93e-10p 2.11e-06p 0.000301p 0.004563p 0.009248p 0.009910p 4.22e-06p 6.02e-06p 3.20e-06p
         rc      0.0  7.93e-10p 2.11e-06p 0.000301p 0.004563p 0.009248o 0.009910n 4.22e-06p 6.02e-06p 3.20e-06o
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.018774n      0.0       0.0       0.0
zp 64.12 ri 5.66e-12p 6.77e-08p 5.30e-05p 0.002588p 0.011389p 0.004568p 0.000175p 3.57e-07p 7.83e-08p 7.23e-11p
sig0.585 cc 5.66e-12p 6.77e-08p 5.31e-05p 0.002641p 0.014030p 0.018599p 0.018774p 3.57e-07p 4.35e-07p 2.31e-07p
         rc 5.66e-12p 6.77e-08p 5.31e-05p 0.002641p 0.014030p 0.018599o 0.018774n 3.57e-07p 4.35e-07p 2.31e-07p
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.025677n      0.0       0.0       0.0
zp 63.66 ri 4.70e-10p 2.08e-06p 0.000559p 0.009231p 0.014078p 0.001789p 1.77e-05p 6.63e-09p 2.84e-09p       0.0
sig0.574 cc 4.70e-10p 2.08e-06p 0.000561p 0.009792p 0.023870p 0.025660p 0.025677p 6.63e-09p 9.47e-09p 5.02e-09p
         rc 4.70e-10p 2.08e-06p 0.000561p 0.009792p 0.023870p 0.025660o 0.025677n 6.63e-09p 9.47e-09p 5.02e-09o
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.003054n      0.0       0.0       0.0
zp 64.10 ri 9.73e-12p 4.20e-08p 1.50e-05p 0.000495p 0.001754p 0.000754p 3.62e-05p 1.15e-07p 4.92e-08p 6.25e-11p
sig0.620 cc 9.73e-12p 4.20e-08p 1.51e-05p 0.000510p 0.002263p 0.003018p 0.003054p 1.15e-07p 1.64e-07p 8.69e-08p
        rc 9.73e-12p 4.20e-08p 1.51e-05p 0.000510p 0.002263p 0.003018o 0.003054n 1.15e-07p 1.64e-07p 8.69e-08o
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.33e-05n      0.0       0.0       0.0
zp 63.94 ri      0.0  6.89e-11p 9.38e-08p 4.39e-06p 1.56e-05p 3.20e-06p 4.78e-08p 1.67e-11p 7.17e-12p       0.0
sig0.541 cc      0.0  6.89e-11p 9.39e-08p 4.49e-06p 2.01e-05p 2.33e-05p 2.33e-05p 1.67e-11p 2.39e-11p 1.27e-11p
        rc      0.0  6.89e-11p 9.39e-08p 4.49e-06p 2.01e-05p 2.33e-05o 2.33e-05n 1.67e-11p 2.39e-11p 1.27e-11o
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000318n      0.0       0.0       0.0
zp 64.07 ri      0.0  4.30e-10p 8.47e-07p 3.56e-05p 0.000229p 5.09e-05p 1.81e-06p 9.88e-10p 4.24e-10p       0.0
sig0.555 cc      0.0  4.30e-10p 8.47e-07p 3.64e-05p 0.000265p 0.000316p 0.000318p 9.88e-10p 1.41e-09p 7.48e-10p
        rc      0.0  4.30e-10p 8.47e-07p 3.64e-05p 0.000265p 0.000316o 0.000318n 9.88e-10p 1.41e-09p 7.48e-10o
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001485n      0.0       0.0       0.0
zp 63.63 ri 1.10e-11p 6.45e-08p 3.38e-05p 0.000462p 0.000920p 6.90e-05p 5.99e-07p 8.17e-11p 3.50e-11p       0.0
sig0.551 cc 1.10e-11p 6.45e-08p 3.39e-05p 0.000496p 0.001415p 0.001484p 0.001485p 8.17e-11p 1.17e-10p 6.19e-11p
        rc 1.10e-11p 6.45e-08p 3.39e-05p 0.000496p 0.001415p 0.001484o 0.001485n 8.17e-11p 1.17e-10p 6.19e-11o

  sm, eu half lives from 80eng2; gd, tb half lives from 89wal1.
1

    mass number    165              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       61 pm g   62 sm g   63 eu g   64 gd g   65 tb g   66 dy m   66 dy g   67 ho g   68 er g   69 tm g
half life              0.454s    1.35 s    0.705m     2.1 m    1.26 m    2.33 h    stable    10.36h    30.06h
lambda            0.0 1.527e+00 5.134e-01 1.639e-02 5.501e-03 9.169e-03 8.264e-05       0.0 1.859e-05 6.405e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000    50.0000    50.0000  100.0000 -100.0000 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0    2.5000       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0   97.5000       0.0       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.011049n      0.0       0.0
zp 65.02 ri 1.63e-11p 1.28e-07p 5.57e-05p 0.002161p 0.006395p 0.000308p 0.002062p 6.75e-05p 1.73e-07p 2.47e-11p
sig0.594 cc 1.63e-11p 1.28e-07p 5.58e-05p 0.002217p 0.008612p 0.004614p 0.010866p 0.011049p 1.73e-07p 2.47e-11p
        rc 1.63e-11p 1.28e-07p 5.58e-05p 0.002217p 0.008612p 0.004614p 0.010866n 0.011049m 1.73e-07p 2.47e-11p
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

```
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.007393p      0.0       0.0
zp 64.50 ri 2.36e-10p 1.31e-06p 0.000241p 0.003729p 0.003127p 3.81e-05p 0.000255p 1.12e-06p 2.93e-10p       0.0
sig0.557 cc 2.36e-10p 1.31e-06p 0.000242p 0.003971p 0.007099p 0.003587p 0.007302p 0.007393p 2.93e-10p       0.0
        rc 2.36e-10p 1.31e-06p 0.000242p 0.003971p 0.007099p 0.003587o 0.007302n 0.007393n 2.93e-10p       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.004366n      0.0       0.0
zp 65.22 ri       0.0  1.17e-08p 8.34e-06p 0.000514p 0.002398p 0.000166p 0.001214p 6.57e-05p 2.91e-07p 7.56e-11p
sig0.596 cc       0.0  1.17e-08p 8.35e-06p 0.000523p 0.002921p 0.001626p 0.004259p 0.004366p 2.91e-07p 7.56e-11p
        rc      0.0  1.17e-08p 8.35e-06p 0.000523p 0.002921p 0.001626p 0.004259o 0.004366n 2.91e-07p 7.56e-11p
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.005664n      0.0       0.0
zp 64.98 ri 1.18e-11p 8.58e-08p 3.47e-05p 0.001217p 0.003300p 0.000141p 0.000944p 2.73e-05p 5.91e-08p 7.10e-12p
sig0.592 cc 1.18e-11p 8.58e-08p 3.48e-05p 0.001251p 0.004551p 0.002417p 0.005576p 0.005664p 5.91e-08p 7.10e-12p
        rc 1.18e-11p 8.58e-08p 3.48e-05p 0.001251p 0.004551p 0.002417p 0.005576n 0.005664m 5.91e-08p 7.10e-12p
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.010907n      0.0       0.0
zp 64.50 ri 1.53e-09p 3.46e-06p 0.000461p 0.005070p 0.004885p 3.39e-05p 0.000450p 3.37e-06p 1.63e-09p       0.0
sig0.585 cc 1.53e-09p 3.46e-06p 0.000465p 0.005535p 0.010420p 0.005244p 0.010773p 0.010907p 1.63e-09p       0.0
        rc 1.53e-09p 3.46e-06p 0.000465p 0.005535p 0.010420p 0.005244o 0.010773n 0.010907m 1.63e-09p       0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.015860n      0.0       0.0
zp 64.03 ri 7.93e-08p 6.12e-05p 0.002681p 0.009911p 0.003122p 1.10e-05p 7.33e-05p 1.31e-07p 1.20e-11p       0.0
sig0.574 cc 7.93e-08p 6.12e-05p 0.002743p 0.012654p 0.015775p 0.007899p 0.015662p 0.015860p 1.20e-11p       0.0
        rc 7.93e-08p 6.12e-05p 0.002743p 0.012654p 0.015775o 0.007899o 0.015662n 0.015860m 1.20e-11p       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.002035n      0.0       0.0
zp 64.47 ri 1.69e-09p 1.51e-06p 0.000118p 0.000938p 0.000879p 1.26e-05p 8.43e-05p 1.07e-06p 1.03e-09p       0.0
sig0.620 cc 1.69e-09p 1.51e-06p 0.000120p 0.001058p 0.001937p 0.000981p 0.002010p 0.002035p 1.03e-09p       0.0
        rc 1.69e-09p 1.51e-06p 0.000120p 0.001058p 0.001937p 0.000981o 0.002010n 0.002035m 1.03e-09p       0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.05e-05n      0.0       0.0
zp 64.32 ri 1.03e-12p 3.79e-09p 7.20e-07p 5.62e-06p 3.99e-06p 1.88e-08p 1.26e-07p 3.13e-10p       0.0       0.0
sig0.541 cc 1.03e-12p 3.79e-09p 7.24e-07p 6.35e-06p 1.03e-05p 5.19e-06p 1.04e-05p 1.05e-05p       0.0       0.0
        rc 1.03e-12p 3.79e-09p 7.24e-07p 6.35e-06p 1.03e-05p 5.19e-06o 1.04e-05n 1.05e-05m       0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000110n      0.0       0.0
```

zp 64.45 ri 4.99e-12p 2.71e-08p 4.09e-06p 6.06e-05p 4.12e-05p 4.66e-07p 3.12e-06p 1.04e-08p 2.37e-12p 0.0
sig0.555 cc 4.99e-12p 2.71e-08p 4.12e-06p 6.47e-05p 0.000106p 5.34e-05p 0.000108p 0.000110p 2.37e-12p 0.0
rc 4.99e-12p 2.71e-08p 4.12e-06p 6.47e-05p 0.000106p 5.34e-05o 0.000108n 0.000110m 2.37e-12p 0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000298n 0.0 0.0
zp 64.01 ri 6.53e-10p 9.59e-07p 4.47e-05p 0.000203p 4.79e-05p 1.44e-07p 9.65e-07p 8.21e-10p 0.0 0.0
sig0.551 cc 6.53e-10p 9.60e-07p 4.57e-05p 0.000249p 0.000297p 0.000149p 0.000294p 0.000298p 0.0 0.0
rc 6.53e-10p 9.60e-07p 4.57e-05p 0.000249p 0.000297p 0.000149o 0.000294n 0.000298m 0.0 0.0

sm, eu, gd half lives from 80eng2; tb, dy half lives from 89wal1.

mass number 166 LA-UR-94-3106 (ENDF-349) percent yields
nuclide 62 sm g 63 eu g 64 gd g 65 tb g 66 dy g 67 ho m 67 ho g 68 er g 69 tm g 70 yb g
half life 3.400d 1.2e3y 1.117d stable 7.70 h 56.7 h
lambda 0.0 0.0 0.0 0.0 2.360e-06 1.832e-11 7.182e-06 0.0 2.501e-05 3.396e-06
z - 1 g 100.0000 100.0000 100.0000 100.0000 100.0000 0.0 100.0000 100.0000 -100.0000 -100.0000
z - 1 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100.0000 0.0 0.0
z - 0 m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
cm243t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.004544n 0.0 0.0
zp 65.40 ri 2.55e-09p 2.90e-06p 0.000315p 0.002121p 0.001970p 9.40e-05p 4.03e-05p 9.96e-07p 3.78e-10p 0.0
sig0.594 cc 2.55e-09p 2.90e-06p 0.000318p 0.002438p 0.004408p 9.40e-05p 0.004448p 0.004544p 3.78e-10p 0.0
rc 2.55e-09p 2.90e-06p 0.000318p 0.002438p 0.004408p 9.40e-05p 0.004448o 0.004544n 3.78e-10p 0.0
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.005356p 0.0 0.0
zp 64.88 ri 6.05e-08p 3.09e-05p 0.001537p 0.002936p 0.000843p 6.06e-06p 2.60e-06p 8.25e-09p 0.0 0.0
sig0.557 cc 6.05e-08p 3.10e-05p 0.001568p 0.004504p 0.005347p 6.06e-06p 0.005350p 0.005356p 0.0 0.0
rc 6.05e-08p 3.10e-05p 0.001568p 0.004504p 0.005347o 6.06e-06p 0.005350o 0.005356o 0.0 0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.002381n 0.0 0.0
zp 65.60 ri 2.54e-10p 4.82e-07p 8.20e-05p 0.000898p 0.001257p 0.000104p 3.86e-05p 1.76e-06p 1.23e-09p 0.0
sig0.596 cc 2.54e-10p 4.82e-07p 8.24e-05p 0.000980p 0.002237p 0.000104p 0.002275p 0.002381p 1.23e-09p 0.0
rc 2.54e-10p 4.82e-07p 8.24e-05p 0.000980p 0.002237p 0.000104p 0.002275o 0.002381n 1.23e-09p 0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.003072n 0.0 0.0

zp 65.36 ri 2.30e-09p 2.50e-06p 0.000240p 0.001518p 0.001234p 5.37e-05p 2.30e-05p 4.75e-07p 1.56e-10p 0.0
sig0.592 cc 2.30e-09p 2.50e-06p 0.000243p 0.001761p 0.002995p 5.37e-05p 0.003018p 0.003072p 1.56e-10p 0.0
rc 2.30e-09p 2.50e-06p 0.000243p 0.001761p 0.002995p 5.37e-05p 0.003018o 0.003072n 1.56e-10p 0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.006225n 0.0 0.0
zp 64.88 ri 1.49e-07p 5.56e-05p 0.001583p 0.003663p 0.000907p 1.41e-05p 3.11e-06p 2.40e-08p 1.87e-12p 0.0
sig0.585 cc 1.49e-07p 5.57e-05p 0.001638p 0.005301p 0.006208p 1.41e-05p 0.006211p 0.006225p 1.87e-12p 0.0
rc 1.49e-07p 5.57e-05p 0.001638p 0.005301p 0.006208o 1.41e-05p 0.006211o 0.006225n 1.87e-12p 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.009481n 0.0 0.0
zp 64.40 ri 4.44e-06p 0.000535p 0.004925p 0.003748p 0.000267p 8.28e-07p 3.55e-07p 3.22e-10p 0.0 0.0
sig0.574 cc 4.44e-06p 0.000539p 0.005464p 0.009213p 0.009480p 8.28e-07p 0.009480p 0.009481p 0.0 0.0
rc 4.44e-06p 0.000539p 0.005464p 0.009213p 0.009480o 8.28e-07p 0.009480o 0.009481n 0.0 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.001028n 0.0 0.0
zp 64.85 ri 7.74e-08p 1.51e-05p 0.000279p 0.000582p 0.000147p 2.78e-06p 1.19e-06p 9.74e-09p 1.98e-12p 0.0
sig0.620 cc 7.74e-08p 1.52e-05p 0.000295p 0.000877p 0.001024p 2.78e-06p 0.001025p 0.001028p 1.98e-12p 0.0
rc 7.74e-08p 1.52e-05p 0.000295p 0.000877p 0.001024o 2.78e-06p 0.001025o 0.001028n 1.98e-12p 0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.52e-06n 0.0 0.0
zp 64.70 ri 6.37e-11p 3.16e-08p 9.24e-07p 1.38e-06p 1.87e-07p 7.35e-10p 3.15e-10p 0.0 0.0 0.0
sig0.541 cc 6.37e-11p 3.16e-08p 9.55e-07p 2.33e-06p 2.52e-06p 7.35e-10p 2.52e-06p 2.52e-06p 0.0 0.0
rc 6.37e-11p 3.16e-08p 9.55e-07p 2.33e-06p 2.52e-06o 7.35e-10p 2.52e-06o 2.52e-06n 0.0 0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.46e-05n 0.0 0.0
zp 64.82 ri 1.19e-09p 4.65e-07p 2.25e-05p 3.26e-05p 8.96e-06p 4.62e-08p 1.98e-08p 5.60e-11p 0.0 0.0
sig0.555 cc 1.19e-09p 4.66e-07p 2.29e-05p 5.56e-05p 6.45e-05p 4.62e-08p 6.46e-05p 6.46e-05p 0.0 0.0
rc 1.19e-09p 4.66e-07p 2.29e-05p 5.56e-05p 6.45e-05o 4.62e-08p 6.46e-05o 6.46e-05n 0.0 0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000139n 0.0 0.0
zp 64.38 ri 5.02e-08p 6.07e-06p 8.47e-05p 4.43e-05p 3.40e-06p 4.78e-09p 2.05e-09p 1.22e-12p 0.0 0.0
sig0.551 cc 5.02e-08p 6.12e-06p 9.08e-05p 0.000135p 0.000139p 4.78e-09p 0.000139p 0.000139p 0.0 0.0
rc 5.02e-08p 6.12e-06p 9.08e-05p 0.000135p 0.000139o 4.78e-09p 0.000139o 0.000139n 0.0 0.0

dy, ho half lives from 89wal1.

mass number 167 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	62 sm g	63 eu g	64 gd g	65 tb g	66 dy g	67 ho g	68 er m	68 er g	69 tm g	70 yb g
half life				6.2 m	3.1 h	2.28 s	stable	9.24 d	17.5 m	
lambda	0.0	0.0	0.0	0.0	1.863e-03	6.211e-05	3.040e-01	0.0	8.682e-07	6.601e-04
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	10.0000	90.0000	-2.0000	-100.0000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-98.0000	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	0.0
cm243t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.002272n	0.0	0.0

zp 65.78 ri 3.91e-11p 1.33e-07p 3.65e-05p 0.000652p 0.001340p 0.000239p 5.78e-07p 3.87e-06p 5.00e-09p 0.0
sig0.594 cc 3.91e-11p 1.33e-07p 3.66e-05p 0.000689p 0.002029p 0.002267p 0.000227p 0.002272p 5.00e-09p 0.0
rc 3.91e-11p 1.33e-07p 3.66e-05p 0.000689p 0.002029p 0.002267o 0.000227o 0.002272n 5.00e-09p 0.0

cm246s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.004463p	0.0	0.0

zp 65.26 ri 1.74e-09p 3.21e-06p 0.000420p 0.002396p 0.001590p 5.39e-05p 1.87e-08p 1.25e-07p 1.25e-11p 0.0
sig0.557 cc 1.74e-09p 3.21e-06p 0.000423p 0.002819p 0.004409p 0.004463p 0.000446p 0.004463p 1.25e-11p 0.0
rc 1.74e-09p 3.21e-06p 0.000423p 0.002819p 0.004409p 0.004463o 0.000446o 0.004463o 1.25e-11p 0.0

cm243f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001290n	0.0	0.0

zp 65.98 ri 3.57e-12p 1.98e-08p 8.75e-06p 0.000252p 0.000796p 0.000227p 8.42e-07p 6.18e-06p 1.40e-08p 2.23e-12p
sig0.596 cc 3.57e-12p 1.98e-08p 8.77e-06p 0.000261p 0.001056p 0.001283p 0.000129p 0.001290p 1.40e-08p 2.23e-12p
rc 3.57e-12p 1.98e-08p 8.77e-06p 0.000261p 0.001056p 0.001283o 0.000129o 0.001290n 1.40e-08p 2.23e-12p

cm244f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001685n	0.0	0.0

zp 65.74 ri 4.00e-11p 1.28e-07p 3.20e-05p 0.000526p 0.000969p 0.000155p 3.24e-07p 2.17e-06p 2.40e-09p 0.0
sig0.592 cc 4.00e-11p 1.28e-07p 3.21e-05p 0.000558p 0.001527p 0.001682p 0.000169p 0.001685p 2.40e-09p 0.0
rc 4.00e-11p 1.28e-07p 3.21e-05p 0.000558p 0.001527p 0.001682o 0.000169o 0.001685n 2.40e-09p 0.0

cm246f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.003557n	0.0	0.0

zp 65.25 ri 4.64e-09p 4.80e-06p 0.000357p 0.001977p 0.001161p 5.70e-05p 1.53e-08p 2.04e-07p 4.85e-11p 0.0
sig0.585 cc 4.64e-09p 4.81e-06p 0.000362p 0.002339p 0.003500p 0.003557p 0.000356p 0.003557p 4.85e-11p 0.0
rc 4.64e-09p 4.81e-06p 0.000362p 0.002339p 0.003500p 0.003557o 0.000356o 0.003557n 4.85e-11p 0.0

cm248f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.005432n	0.0	0.0

zp 64.78 ri 1.95e-07p 6.80e-05p 0.001664p 0.003115p 0.000578p 7.33e-06p 7.82e-10p 5.23e-09p 0.0 0.0

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sig0.574 cc 1.95e-07p 6.82e-05p 0.001732p 0.004847p 0.005424p 0.005432p 0.000543p 0.005432p      0.0       0.0
         rc 1.95e-07p 6.82e-05p 0.001732p 0.004847p 0.005424o 0.005432o 0.000543o 0.005432n      0.0       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000398n      0.0       0.0
zp 65.23 ri 2.12e-09p 1.05e-06p 4.65e-05p 0.000218p 0.000124p 7.97e-06p 6.42e-09p 4.30e-08p 2.61e-11p      0.0
sig0.620 cc 2.12e-09p 1.05e-06p 4.76e-05p 0.000266p 0.000389p 0.000397p 3.98e-05p 0.000398p 2.61e-11p      0.0
         rc 2.12e-09p 1.05e-06p 4.76e-05p 0.000266p 0.000389p 0.000397o 3.98e-05o 0.000398n 2.61e-11p      0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.33e-07n      0.0       0.0
zp 65.08 ri      0.0  1.69e-09p 1.21e-07p 6.22e-07p 1.85e-07p 4.22e-09p      0.0  2.89e-12p      0.0       0.0
sig0.541 cc      0.0  1.69e-09p 1.22e-07p 7.44e-07p 9.29e-07p 9.33e-07p 9.33e-08p 9.33e-07p      0.0       0.0
         rc      0.0  1.69e-09p 1.22e-07p 7.44e-07p 9.29e-07p 9.33e-07o 9.33e-08o 9.33e-07n      0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  2.39e-05n      0.0       0.0
zp 65.20 ri 1.58e-11p 2.33e-08p 2.84e-06p 1.29e-05p 7.91e-06p 2.04e-07p 6.12e-11p 4.10e-10p      0.0       0.0
sig0.555 cc 1.58e-11p 2.33e-08p 2.87e-06p 1.57e-05p 2.36e-05p 2.39e-05p 2.39e-06p 2.39e-05p      0.0       0.0
         rc 1.58e-11p 2.33e-08p 2.87e-06p 1.57e-05p 2.36e-05p 2.39e-05o 2.39e-06o 2.39e-05n      0.0       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  3.96e-05n      0.0       0.0
zp 64.76 ri 8.89e-10p 3.95e-07p 1.37e-05p 2.15e-05p 4.01e-06p 2.93e-08p 1.96e-12p 1.31e-11p      0.0       0.0
sig0.551 cc 8.89e-10p 3.95e-07p 1.41e-05p 3.55e-05p 3.96e-05p 3.96e-05p 3.96e-06p 3.96e-05p      0.0       0.0
         rc 8.89e-10p 3.95e-07p 1.41e-05p 3.55e-05p 3.96e-05o 3.96e-05o 3.96e-06o 3.96e-05n      0.0       0.0

  dy, ho half lives from 89wal1; er, tm half life 90bur1.
1

    mass number    168              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide       62 sm g   63 eu g   64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb g
half life                                          8.5 m     3.0 m    stable    93.1 d    stable
lambda            0.0       0.0       0.0       0.0 1.359e-03 3.851e-03       0.0 8.617e-08       0.0
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000 -100.0000       0.0
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001342n      0.0       0.0
zp 66.17 ri      0.0  4.23e-09p 3.49e-06p 0.000156p 0.000827p 0.000339p 1.78e-05p 5.34e-08p 1.46e-11p
```

sig0.594 cc 0.0 4.23e-09p 3.50e-06p 0.000159p 0.000986p 0.001325p 0.001342p 5.34e-08p 1.46e-11p
rc 0.0 4.23e-09p 3.50e-06p 0.000159p 0.000986p 0.001325o 0.001342n 5.34e-08p 1.46e-11p
cm246s xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.002678p 0.0 0.0
zp 65.64 ri 2.54e-11p 1.34e-07p 6.08e-05p 0.000848p 0.001631p 0.000137p 1.28e-06p 3.19e-10p 0.0
sig0.557 cc 2.54e-11p 1.34e-07p 6.09e-05p 0.000909p 0.002540p 0.002677p 0.002678p 3.19e-10p 0.0
rc 2.54e-11p 1.34e-07p 6.09e-05p 0.000909p 0.002540p 0.002677p 0.002678o 3.19e-10p 0.0
cm243f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000645n 0.0 0.0
zp 66.36 ri 0.0 4.91e-10p 6.22e-07p 4.48e-05p 0.000353p 0.000228p 1.86e-05p 9.70e-08p 4.51e-11p
sig0.596 cc 0.0 4.91e-10p 6.22e-07p 4.54e-05p 0.000399p 0.000626p 0.000645p 9.70e-08p 4.51e-11p
rc 0.0 4.91e-10p 6.22e-07p 4.54e-05p 0.000399p 0.000626o 0.000645n 9.70e-08p 4.51e-11p
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000882n 0.0 0.0
zp 66.12 ri 0.0 4.06e-09p 2.93e-06p 0.000120p 0.000547p 0.000203p 8.88e-06p 2.29e-08p 4.94e-12p
sig0.592 cc 0.0 4.06e-09p 2.93e-06p 0.000123p 0.000670p 0.000873p 0.000882p 2.29e-08p 4.94e-12p
rc 0.0 4.06e-09p 2.93e-06p 0.000123p 0.000670p 0.000873o 0.000882n 2.29e-08p 4.94e-12p
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.001877n 0.0 0.0
zp 65.63 ri 8.22e-11p 2.46e-07p 5.05e-05p 0.000706p 0.000994p 0.000125p 1.33e-06p 8.56e-10p 0.0
sig0.585 cc 8.22e-11p 2.46e-07p 5.07e-05p 0.000757p 0.001751p 0.001876p 0.001877p 8.56e-10p 0.0
rc 8.22e-11p 2.46e-07p 5.07e-05p 0.000757p 0.001751p 0.001876o 0.001877n 8.56e-10p 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.003062n 0.0 0.0
zp 65.15 ri 6.00e-09p 6.02e-06p 0.000396p 0.001809p 0.000823p 2.82e-05p 6.68e-08p 8.08e-12p 0.0
sig0.574 cc 6.00e-09p 6.03e-06p 0.000402p 0.002210p 0.003033p 0.003061p 0.003062p 8.08e-12p 0.0
rc 6.00e-09p 6.03e-06p 0.000402p 0.002210p 0.003033o 0.003061o 0.003062n 8.08e-12p 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000173n 0.0 0.0
zp 65.60 ri 4.95e-11p 6.10e-08p 6.51e-06p 6.87e-05p 8.46e-05p 1.24e-05p 1.87e-07p 2.47e-10p 0.0
sig0.620 cc 4.95e-11p 6.10e-08p 6.57e-06p 7.53e-05p 0.000160p 0.000172p 0.000173p 2.47e-10p 0.0
rc 4.95e-11p 6.10e-08p 6.57e-06p 7.53e-05p 0.000160p 0.000172o 0.000173n 2.47e-10p 0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.87e-07n 0.0 0.0
zp 65.46 ri 0.0 2.54e-11p 7.48e-09p 8.64e-08p 8.80e-08p 4.79e-09p 1.61e-11p 0.0 0.0
sig0.541 cc 0.0 2.54e-11p 7.50e-09p 9.39e-08p 1.82e-07p 1.87e-07p 1.87e-07p 0.0 0.0

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        rc      0.0  2.54e-11p 7.50e-09p 9.39e-08p 1.82e-07p 1.87e-07o 1.87e-07n      0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  9.24e-06n      0.0       0.0
zp 65.58 ri      0.0  6.39e-10p 2.83e-07p 3.00e-06p 5.61e-06p 3.48e-07p 2.97e-09p      0.0       0.0
sig0.555 cc      0.0  6.39e-10p 2.84e-07p 3.28e-06p 8.89e-06p 9.24e-06p 9.24e-06p      0.0       0.0
        rc      0.0  6.39e-10p 2.84e-07p 3.28e-06p 8.89e-06p 9.24e-06o 9.24e-06n      0.0       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  1.29e-05n      0.0       0.0
zp 65.13 ri 1.38e-11p 1.68e-08p 1.96e-06p 6.92e-06p 3.90e-06p 7.27e-08p 1.37e-10p      0.0       0.0
sig0.551 cc 1.38e-11p 1.68e-08p 1.97e-06p 8.89e-06p 1.28e-05p 1.29e-05p 1.29e-05p      0.0       0.0
        rc 1.38e-11p 1.68e-08p 1.97e-06p 8.89e-06p 1.28e-05o 1.29e-05o 1.29e-05n      0.0       0.0

  dy, ho half lives from 89wal1.
1

    mass number    169              LA-UR-94-3106 (ENDF-349)                              percent yields
nuclide      63 eu g   64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb m   70 yb g   71 lu m   71 lu g
half life                                    4.7 m    9.40 d    stable     46. s    32.02d     2.7 m    1.42 d
lambda          0.0       0.0       0.0       0.0 2.458e-03 8.535e-07       0.0 1.507e-02 2.505e-07 4.279e-03 5.650e-06
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000       0.0 -100.0000
 z - 1 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m        0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0  100.0000
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000609n      0.0       0.0       0.0       0.0
zp 66.55 ri 8.16e-11p 1.77e-07p 2.23e-05p 0.000273p 0.000279p 3.47e-05p 2.99e-07p 2.81e-11p 1.88e-10p      0.0       0.0
sig0.594 cc 8.16e-11p 1.77e-07p 2.24e-05p 0.000295p 0.000574p 0.000609p 0.000609p 2.81e-11p 2.16e-10p      0.0       0.0
        rc 8.16e-11p 1.77e-07p 2.24e-05p 0.000295p 0.000574p 0.000609o 0.000609n 2.81e-11p 2.16e-10p      0.0       0.0
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001785p      0.0       0.0       0.0       0.0
zp 66.01 ri 5.11e-09p 6.28e-06p 0.000279p 0.001198p 0.000296p 7.14e-06p 6.24e-09p      0.0       0.0       0.0       0.0
sig0.557 cc 5.11e-09p 6.29e-06p 0.000285p 0.001482p 0.001778p 0.001785p 0.001785p      0.0       0.0       0.0       0.0
        rc 5.11e-09p 6.29e-06p 0.000285p 0.001482p 0.001778p 0.001785o 0.001785o      0.0       0.0       0.0       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000327n      0.0       0.0       0.0       0.0
zp 66.75 ri 7.99e-12p 2.78e-08p 5.73e-06p 0.000110p 0.000176p 3.48e-05p 5.14e-07p 7.86e-11p 5.77e-10p      0.0       0.0
sig0.596 cc 7.99e-12p 2.79e-08p 5.76e-06p 0.000116p 0.000292p 0.000327p 0.000327p 7.86e-11p 6.55e-10p      0.0       0.0
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        rc 7.99e-12p 2.79e-08p 5.76e-06p 0.000116p 0.000292p 0.000327o 0.000327n 7.86e-11p 6.55e-10p      0.0       0.0
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000456n      0.0       0.0       0.0       0.0
zp 66.50 ri 9.13e-11p 1.77e-07p 2.01e-05p 0.000217p 0.000198p 2.11e-05p 1.54e-07p 1.18e-11p 7.90e-11p      0.0       0.0
sig0.592 cc 9.13e-11p 1.77e-07p 2.03e-05p 0.000237p 0.000435p 0.000456p 0.000456p 1.18e-11p 9.08e-11p      0.0       0.0
        rc 9.13e-11p 1.77e-07p 2.03e-05p 0.000237p 0.000435p 0.000456o 0.000456n 1.18e-11p 9.08e-11p      0.0       0.0
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000988n      0.0       0.0       0.0       0.0
zp 66.01 ri 8.46e-09p 4.89e-06p 0.000179p 0.000609p 0.000189p 5.46e-06p 1.00e-08p      0.0  1.14e-12p      0.0       0.0
sig0.585 cc 8.46e-09p 4.90e-06p 0.000184p 0.000794p 0.000983p 0.000988p 0.000988p      0.0  1.22e-12p      0.0       0.0
        rc 8.46e-09p 4.90e-06p 0.000184p 0.000794p 0.000983o 0.000988o 0.000988n      0.0  1.22e-12p      0.0       0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001679n      0.0       0.0       0.0       0.0
zp 65.53 ri 3.29e-07p 6.15e-05p 0.000727p 0.000815p 7.47e-05p 5.15e-07p 1.89e-10p      0.0       0.0       0.0       0.0
sig0.574 cc 3.29e-07p 6.18e-05p 0.000789p 0.001604p 0.001678p 0.001679p 0.001679p      0.0       0.0       0.0       0.0
        rc 3.29e-07p 6.18e-05p 0.000789p 0.001604p 0.001678o 0.001679o 0.001679n      0.0       0.0       0.0       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  9.68e-05n      0.0       0.0       0.0       0.0
zp 65.98 ri 3.07e-09p 8.20e-07p 2.04e-05p 5.61e-05p 1.87e-05p 6.82e-07p 2.30e-09p      0.0       0.0       0.0       0.0
sig0.620 cc 3.07e-09p 8.23e-07p 2.13e-05p 7.74e-05p 9.61e-05p 9.68e-05p 9.68e-05p      0.0       0.0       0.0       0.0
        rc 3.07e-09p 8.23e-07p 2.13e-05p 7.74e-05p 9.61e-05o 9.68e-05o 9.68e-05n      0.0       0.0       0.0       0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  7.00e-08n      0.0       0.0       0.0       0.0
zp 65.84 ri      0.0  4.40e-10p 1.94e-08p 4.17e-08p 8.32e-09p 7.19e-11p      0.0       0.0       0.0       0.0       0.0
sig0.541 cc      0.0  4.41e-10p 1.99e-08p 6.16e-08p 6.99e-08p 7.00e-08p 7.00e-08p      0.0       0.0       0.0       0.0
        rc      0.0  4.41e-10p 1.99e-08p 6.16e-08p 6.99e-08o 7.00e-08o 7.00e-08n      0.0       0.0       0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.68e-06n      0.0       0.0       0.0       0.0
zp 65.96 ri 1.43e-11p 1.70e-08p 6.15e-07p 2.53e-06p 5.02e-07p 1.10e-08p 7.25e-12p      0.0       0.0       0.0       0.0
sig0.555 cc 1.43e-11p 1.70e-08p 6.32e-07p 3.16e-06p 3.67e-06p 3.68e-06p 3.68e-06p      0.0       0.0       0.0       0.0
        rc 1.43e-11p 1.70e-08p 6.32e-07p 3.16e-06p 3.67e-06p 3.68e-06o 3.68e-06n      0.0       0.0       0.0       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  3.46e-06n      0.0       0.0       0.0       0.0
zp 65.51 ri 3.98e-10p 1.25e-07p 1.42e-06p 1.81e-06p 1.13e-07p 5.92e-10p      0.0       0.0       0.0       0.0       0.0
sig0.551 cc 3.98e-10p 1.26e-07p 1.54e-06p 3.35e-06p 3.46e-06p 3.46e-06p 3.46e-06p      0.0       0.0       0.0       0.0
        rc 3.98e-10p 1.26e-07p 1.54e-06p 3.35e-06p 3.46e-06o 3.46e-06o 3.46e-06n      0.0       0.0       0.0       0.0
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ho, er half lives from 89wal1; yb half life 90bur1.
1

mass number 170 LA-UR-94-3106 (ENDF-349) percent yields

nuclide	62 sm g	63 eu g	64 gd g	65 tb g	66 dy g	67 ho m	67 ho g	68 er g	69 tm g	70 yb g
half life						43. s	2.8 m	stable	128.6d	stable
lambda	0.0	0.0	0.0	0.0	0.0	1.612e-02	4.126e-03	0.0	6.238e-08	0.0
z - 1 g	100.0000	100.0000	100.0000	100.0000	100.0000	0.0	100.0000	100.0000	-0.2000	99.8000
z - 1 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0000	0.0	0.0
z - 0 m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
cm243t xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000299n	0.0	0.0
zp 66.93 ri	0.0	1.08e-12p	7.01e-09p	2.26e-06p	7.44e-05p	8.44e-05p	8.44e-05p	5.41e-05p	1.16e-06p	2.48e-09p
sig0.594 cc	0.0	1.08e-12p	7.01e-09p	2.27e-06p	7.66e-05p	8.44e-05p	0.000161p	0.000299p	1.16e-06p	1.16e-06p
rc	0.0	1.08e-12p	7.01e-09p	2.27e-06p	7.66e-05p	8.44e-05p	0.000161p	0.000299n	1.16e-06p	1.16e-06p
cm246s xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001696p	0.0	0.0
zp 66.39 ri	0.0	1.47e-10p	6.54e-07p	7.72e-05p	0.001005p	0.000284p	0.000284p	4.47e-05p	1.09e-07p	2.29e-11p
sig0.557 cc	0.0	1.47e-10p	6.54e-07p	7.78e-05p	0.001083p	0.000284p	0.001367p	0.001696p	1.09e-07p	1.09e-07p
rc	0.0	1.47e-10p	6.54e-07p	7.78e-05p	0.001083p	0.000284p	0.001367p	0.001696o	1.09e-07p	1.09e-07p
cm243f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000169n	0.0	0.0
zp 67.13 ri	0.0	0.0	9.50e-10p	5.12e-07p	2.62e-05p	4.77e-05p	4.77e-05p	4.66e-05p	1.71e-06p	6.22e-09p
sig0.596 cc	0.0	0.0	9.50e-10p	5.13e-07p	2.67e-05p	4.77e-05p	7.44e-05p	0.000169p	1.71e-06p	1.72e-06p
rc	0.0	0.0	9.50e-10p	5.13e-07p	2.67e-05p	4.77e-05p	7.44e-05p	0.000169n	1.71e-06p	1.72e-06p
cm244f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000228n	0.0	0.0
zp 66.88 ri	0.0	1.28e-12p	7.34e-09p	2.19e-06p	6.21e-05p	6.43e-05p	6.43e-05p	3.50e-05p	6.56e-07p	1.13e-09p
sig0.592 cc	0.0	1.28e-12p	7.35e-09p	2.19e-06p	6.43e-05p	6.43e-05p	0.000129p	0.000228p	6.56e-07p	6.56e-07p
rc	0.0	1.28e-12p	7.35e-09p	2.19e-06p	6.43e-05p	6.43e-05p	0.000129p	0.000228n	6.56e-07p	6.56e-07p
cm246f xi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
xc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000543n	0.0	0.0
zp 66.39 ri	0.0	2.04e-10p	3.38e-07p	3.36e-05p	0.000282p	0.000106p	0.000106p	1.60e-05p	8.27e-08p	2.94e-11p
sig0.585 cc	0.0	2.04e-10p	3.38e-07p	3.39e-05p	0.000316p	0.000106p	0.000422p	0.000543p	8.27e-08p	8.26e-08p
rc	0.0	2.04e-10p	3.38e-07p	3.39e-05p	0.000316p	0.000106p	0.000422p	0.000543n	8.27e-08p	8.26e-08p

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 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  0.000918n      0.0       0.0
zp 65.90 ri 1.43e-12p 1.28e-08p 6.79e-06p 0.000210p 0.000568p 6.53e-05p 6.53e-05p 2.49e-06p 2.66e-09p       0.0
sig0.574 cc 1.43e-12p 1.28e-08p 6.80e-06p 0.000217p 0.000785p 6.53e-05p 0.000851p 0.000918p 2.66e-09p 2.66e-09p
         rc 1.43e-12p 1.28e-08p 6.80e-06p 0.000217p 0.000785p 6.53e-05p 0.000851o 0.000918n 2.66e-09p 2.66e-09p
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  4.59e-05n      0.0       0.0
zp 66.35 ri       0.0  9.85e-11p 6.53e-08p 3.85e-06p 2.34e-05p 8.54e-06p 8.54e-06p 1.44e-06p 1.19e-08p 8.50e-12p
sig0.620 cc       0.0  9.85e-11p 6.54e-08p 3.91e-06p 2.73e-05p 8.54e-06p 3.59e-05p 4.59e-05p 1.19e-08p 1.19e-08p
         rc      0.0  9.85e-11p 6.54e-08p 3.91e-06p 2.73e-05p 8.54e-06p 3.59e-05p 4.59e-05n 1.19e-08p 1.19e-08p
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.33e-09n      0.0       0.0
zp 66.22 ri       0.0       0.0  7.14e-12p 7.84e-10p 5.91e-09p 1.27e-09p 1.27e-09p 8.77e-11p       0.0       0.0
sig0.541 cc       0.0       0.0  7.15e-12p 7.91e-10p 6.70e-09p 1.27e-09p 7.98e-09p 9.33e-09p       0.0       0.0
         rc      0.0       0.0  7.15e-12p 7.91e-10p 6.70e-09p 1.27e-09p 7.98e-09o 9.33e-09n       0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  9.94e-07n      0.0       0.0
zp 66.34 ri       0.0       0.0  5.33e-10p 4.93e-08p 6.41e-07p 1.41e-07p 1.41e-07p 2.13e-08p 3.78e-11p       0.0
sig0.555 cc       0.0       0.0  5.33e-10p 4.98e-08p 6.91e-07p 1.41e-07p 8.32e-07p 9.94e-07p 3.78e-11p 3.77e-11p
         rc      0.0       0.0  5.33e-10p 4.98e-08p 6.91e-07p 1.41e-07p 8.32e-07o 9.94e-07n 3.78e-11p 3.77e-11p
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0       0.0  1.98e-06n      0.0       0.0
zp 65.88 ri       0.0  1.18e-11p 1.33e-08p 3.70e-07p 1.39e-06p 1.01e-07p 1.01e-07p 3.70e-09p 1.58e-12p       0.0
sig0.551 cc       0.0  1.18e-11p 1.34e-08p 3.84e-07p 1.77e-06p 1.01e-07p 1.87e-06p 1.98e-06p 1.58e-12p 1.58e-12p
         rc      0.0  1.18e-11p 1.34e-08p 3.84e-07p 1.77e-06p 1.01e-07p 1.87e-06o 1.98e-06n 1.58e-12p 1.58e-12p

  ho half life from 89wal1; tm half life 90bur1.
1

    mass number    171              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide       64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb g   71 lu m   71 lu g   72 hf g
half life                                   7.52 h    1.92 y    stable     78. s    8.24 d    12.2 h
lambda           0.0       0.0       0.0       0.0 2.560e-05 1.145e-08       0.0 8.887e-03 9.736e-07 1.578e-05
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000 -100.0000
 z - 1 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
```

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 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000176n      0.0       0.0       0.0
zp 67.31 ri 2.05e-10p 1.94e-07p 1.57e-05p 9.09e-05p 6.49e-05p 3.78e-06p 2.09e-08p 3.29e-12p 3.29e-12p       0.0
sig0.594 cc 2.05e-10p 1.94e-07p 1.59e-05p 0.000107p 0.000172p 0.000176p 0.000176p 3.29e-12p 6.58e-12p       0.0
         rc 2.05e-10p 1.94e-07p 1.59e-05p 0.000107p 0.000172p 0.000176o 0.000176n 3.29e-12p 6.58e-12p       0.0
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.001160p      0.0       0.0       0.0
zp 66.77 ri 2.90e-08p 1.20e-05p 0.000389p 0.000637p 0.000122p 1.03e-06p 6.19e-10p       0.0       0.0       0.0
sig0.557 cc 2.90e-08p 1.20e-05p 0.000401p 0.001038p 0.001159p 0.001160p 0.001160p       0.0       0.0       0.0
         rc 2.90e-08p 1.20e-05p 0.000401p 0.001038p 0.001159o 0.001160o 0.001160o       0.0       0.0       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  8.24e-05n      0.0       0.0       0.0
zp 67.51 ri 1.93e-11p 2.99e-08p 3.87e-06p 3.56e-05p 3.91e-05p 3.74e-06p 3.52e-08p 1.00e-11p 1.00e-11p       0.0
sig0.596 cc 1.93e-11p 2.99e-08p 3.90e-06p 3.95e-05p 7.86e-05p 8.23e-05p 8.24e-05p 1.00e-11p 2.01e-11p       0.0
         rc 1.93e-11p 2.99e-08p 3.90e-06p 3.95e-05p 7.86e-05p 8.23e-05o 8.24e-05n 1.00e-11p 2.01e-11p       0.0
 cm244f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000119n      0.0       0.0       0.0
zp 67.26 ri 2.01e-10p 1.73e-07p 1.24e-05p 6.43e-05p 4.01e-05p 2.03e-06p 9.26e-09p 1.20e-12p 1.20e-12p       0.0
sig0.592 cc 2.01e-10p 1.73e-07p 1.26e-05p 7.68e-05p 0.000117p 0.000119p 0.000119p 1.20e-12p 2.41e-12p       0.0
         rc 2.01e-10p 1.73e-07p 1.26e-05p 7.68e-05p 0.000117p 0.000119o 0.000119n 1.20e-12p 2.41e-12p       0.0
 cm246f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000277n      0.0       0.0       0.0
zp 66.76 ri 1.56e-08p 4.21e-06p 8.84e-05p 0.000155p 2.88e-05p 4.00e-07p 4.00e-10p       0.0       0.0       0.0
sig0.585 cc 1.56e-08p 4.22e-06p 9.26e-05p 0.000247p 0.000276p 0.000277p 0.000277p       0.0       0.0       0.0
         rc 1.56e-08p 4.22e-06p 9.26e-05p 0.000247p 0.000276o 0.000277o 0.000277n       0.0       0.0       0.0
 cm248f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000484n      0.0       0.0       0.0
zp 66.28 ri 4.69e-07p 4.05e-05p 0.000276p 0.000158p 8.26e-06p 2.61e-08p 5.01e-12p       0.0       0.0       0.0
sig0.574 cc 4.69e-07p 4.10e-05p 0.000317p 0.000476p 0.000484p 0.000484p 0.000484p       0.0       0.0       0.0
         rc 4.69e-07p 4.10e-05p 0.000317p 0.000476p 0.000484o 0.000484o 0.000484n       0.0       0.0       0.0
 pu242h  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
         xc      0.0       0.0       0.0       0.0       0.0       0.0  1.97e-05n      0.0       0.0       0.0
zp 66.73 ri 3.17e-09p 4.63e-07p 6.54e-06p 1.06e-05p 2.06e-06p 4.20e-08p 7.69e-11p       0.0       0.0       0.0
sig0.620 cc 3.17e-09p 4.66e-07p 7.00e-06p 1.76e-05p 1.96e-05p 1.97e-05p 1.97e-05p       0.0       0.0       0.0
         rc 3.17e-09p 4.66e-07p 7.00e-06p 1.76e-05p 1.96e-05o 1.97e-05o 1.97e-05n       0.0       0.0       0.0
 np237t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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        xc      0.0       0.0       0.0       0.0       0.0       0.0  4.67e-09n      0.0       0.0       0.0
zp 66.60 ri      0.0  1.03e-10p 1.77e-09p 2.59e-09p 2.09e-10p 1.09e-12p      0.0       0.0       0.0       0.0
sig0.541 cc      0.0  1.03e-10p 1.87e-09p 4.46e-09p 4.67e-09p 4.67e-09p 4.67e-09p      0.0       0.0       0.0
        rc      0.0  1.03e-10p 1.87e-09p 4.46e-09p 4.67e-09p 4.67e-09o 4.67e-09n      0.0       0.0       0.0
 pu240t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  2.39e-07n      0.0       0.0       0.0
zp 66.72 ri 8.68e-12p 2.95e-09p 9.16e-08p 1.22e-07p 2.19e-08p 1.42e-10p      0.0       0.0       0.0       0.0
sig0.555 cc 8.68e-12p 2.96e-09p 9.45e-08p 2.17e-07p 2.38e-07p 2.39e-07p 2.39e-07p      0.0       0.0       0.0
        rc 8.68e-12p 2.96e-09p 9.45e-08p 2.17e-07p 2.38e-07o 2.39e-07o 2.39e-07n      0.0       0.0       0.0
 pu242t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  9.90e-07n      0.0       0.0       0.0
zp 66.26 ri 7.33e-10p 7.14e-08p 6.25e-07p 2.79e-07p 1.32e-08p 2.12e-11p      0.0       0.0       0.0       0.0
sig0.551 cc 7.33e-10p 7.21e-08p 6.98e-07p 9.76e-07p 9.90e-07p 9.90e-07p 9.90e-07p      0.0       0.0       0.0
        rc 7.33e-10p 7.21e-08p 6.98e-07p 9.76e-07p 9.90e-07o 9.90e-07o 9.90e-07n      0.0       0.0       0.0

  er, tm half lives from 89wal1.
1

    mass number    172              LA-UR-94-3106 (ENDF-349)                          percent yields
nuclide      64 gd g   65 tb g   66 dy g   67 ho g   68 er g   69 tm g   70 yb g   71 lu m   71 lu g   72 hf g
half life                                   2.05 d    2.65 d    stable      4. m    6.70 d    1.87 y
lambda          0.0       0.0       0.0       0.0 3.913e-06 3.027e-06       0.0 2.888e-03 1.197e-06 1.175e-08
 z - 1 g    100.0000  100.0000  100.0000  100.0000  100.0000  100.0000  100.0000       0.0 -100.0000 -100.0000
 z - 1 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
 z - 0 m       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0  100.0000       0.0
 cm243t  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  9.57e-05n      0.0       0.0       0.0
zp 67.70 ri 3.61e-12p 9.26e-09p 2.19e-06p 3.04e-05p 5.53e-05p 7.70e-06p 1.24e-07p 5.30e-11p 5.30e-11p      0.0
sig0.594 cc 3.61e-12p 9.26e-09p 2.20e-06p 3.26e-05p 8.79e-05p 9.56e-05p 9.57e-05p 5.30e-11p 1.06e-10p      0.0
        rc 3.61e-12p 9.26e-09p 2.20e-06p 3.26e-05p 8.79e-05p 9.56e-05o 9.57e-05n 5.30e-11p 1.06e-10p      0.0
 cm246s  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
        xc      0.0       0.0       0.0       0.0       0.0       0.0  0.000982p      0.0       0.0       0.0
zp 67.15 ri 1.12e-09p 1.30e-06p 0.000140p 0.000531p 0.000303p 6.69e-06p 1.45e-08p      0.0       0.0       0.0
sig0.557 cc 1.12e-09p 1.30e-06p 0.000141p 0.000673p 0.000975p 0.000982p 0.000982p      0.0       0.0       0.0
        rc 1.12e-09p 1.30e-06p 0.000141p 0.000673p 0.000975o 0.000982o 0.000982o      0.0       0.0       0.0
 cm243f  xi      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

xc 0.0 0.0 0.0 0.0 0.0 0.0 4.17e-05n 0.0 0.0 0.0
zp 67.90 ri 0.0 1.11e-09p 4.14e-07p 9.41e-06p 2.58e-05p 5.89e-06p 1.55e-07p 1.21e-10p 1.21e-10p 0.0
sig0.596 cc 0.0 1.11e-09p 4.16e-07p 9.82e-06p 3.56e-05p 4.15e-05p 4.17e-05p 1.21e-10p 2.41e-10p 0.0
rc 0.0 1.11e-09p 4.16e-07p 9.82e-06p 3.56e-05p 4.15e-05o 4.17e-05n 1.21e-10p 2.41e-10p 0.0
cm244f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 5.85e-05n 0.0 0.0 0.0
zp 67.64 ri 3.62e-12p 8.44e-09p 1.69e-06p 2.09e-05p 3.19e-05p 3.89e-06p 5.01e-08p 1.77e-11p 1.77e-11p 0.0
sig0.592 cc 3.62e-12p 8.44e-09p 1.70e-06p 2.26e-05p 5.45e-05p 5.84e-05p 5.85e-05p 1.77e-11p 3.54e-11p 0.0
rc 3.62e-12p 8.44e-09p 1.70e-06p 2.26e-05p 5.45e-05p 5.84e-05o 5.85e-05n 1.77e-11p 3.54e-11p 0.0
cm246f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000138n 0.0 0.0 0.0
zp 67.14 ri 4.46e-10p 3.41e-07p 1.90e-05p 8.08e-05p 3.68e-05p 1.37e-06p 3.89e-09p 0.0 0.0 0.0
sig0.585 cc 4.46e-10p 3.41e-07p 1.93e-05p 0.000100p 0.000137p 0.000138p 0.000138p 0.0 0.0 0.0
rc 4.46e-10p 3.41e-07p 1.93e-05p 0.000100p 0.000137o 0.000138o 0.000138n 0.0 0.0 0.0
cm248f xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 0.000247n 0.0 0.0 0.0
zp 66.65 ri 2.24e-08p 5.41e-06p 9.43e-05p 0.000130p 1.74e-05p 1.55e-07p 8.71e-11p 0.0 0.0 0.0
sig0.574 cc 2.24e-08p 5.43e-06p 9.97e-05p 0.000229p 0.000247p 0.000247p 0.000247p 0.0 0.0 0.0
rc 2.24e-08p 5.43e-06p 9.97e-05p 0.000229p 0.000247o 0.000247o 0.000247n 0.0 0.0 0.0
pu242h xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 1.53e-05n 0.0 0.0 0.0
zp 67.10 ri 2.11e-10p 7.55e-08p 2.48e-06p 8.80e-06p 3.78e-06p 1.82e-07p 8.22e-10p 0.0 0.0 0.0
sig0.620 cc 2.11e-10p 7.57e-08p 2.56e-06p 1.14e-05p 1.51e-05p 1.53e-05p 1.53e-05p 0.0 0.0 0.0
rc 2.11e-10p 7.57e-08p 2.56e-06p 1.14e-05p 1.51e-05o 1.53e-05o 1.53e-05n 0.0 0.0 0.0
np237t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 9.33e-10n 0.0 0.0 0.0
zp 66.98 ri 0.0 2.76e-12p 1.85e-10p 5.76e-10p 1.67e-10p 2.22e-12p 0.0 0.0 0.0 0.0
sig0.541 cc 0.0 2.76e-12p 1.88e-10p 7.64e-10p 9.31e-10p 9.33e-10p 9.33e-10p 0.0 0.0 0.0
rc 0.0 2.76e-12p 1.88e-10p 7.64e-10p 9.31e-10o 9.33e-10o 9.33e-10n 0.0 0.0 0.0
pu240t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 7.65e-08n 0.0 0.0 0.0
zp 67.10 ri 0.0 1.26e-10p 1.35e-08p 4.00e-08p 2.25e-08p 3.72e-10p 0.0 0.0 0.0 0.0
sig0.555 cc 0.0 1.26e-10p 1.36e-08p 5.36e-08p 7.62e-08p 7.65e-08p 7.65e-08p 0.0 0.0 0.0
rc 0.0 1.26e-10p 1.36e-08p 5.36e-08p 7.62e-08o 7.65e-08o 7.65e-08n 0.0 0.0 0.0
pu242t xi 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
xc 0.0 0.0 0.0 0.0 0.0 0.0 4.95e-07n 0.0 0.0 0.0

zp 66.64 ri 2.96e-11p 7.89e-09p 2.25e-07p 2.26e-07p 3.54e-08p 1.56e-10p 0.0 0.0 0.0 0.0
sig0.551 cc 2.96e-11p 7.92e-09p 2.33e-07p 4.59e-07p 4.95e-07p 4.95e-07p 4.95e-07p 0.0 0.0 0.0
rc 2.96e-11p 7.92e-09p 2.33e-07p 4.59e-07p 4.95e-07o 4.95e-07o 4.95e-07n 0.0 0.0 0.0

er, tm half lives from 89wal1.
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measured nuclide	fissile material	meas. tech.	meas. type	note	value	updated err.	pct.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
66	cm243t	es	cu		0.0000034	30.0		0.0000041	0.0000000	0		0.0000000	87rid2	0
66	cm246s	es	cu	cm	0.0000216	99.0		0.0000220	99.0000000%	0		0.0000000	86rid1	0
66	cm243f	es	cu		0.0000095	30.0		0.0000095	0.0000000	0		0.0000000	87dic1	0
66	cm244f	es	cu		0.0000073	30.0		0.0000073	0.0000000	0		0.0000000	87dic1	0
66	cm246f	es	cu		0.0000041	30.0		0.0000041	0.0000000	0		0.0000000	87dic1	0
66	cm248f	es	cu		0.0000021	30.0		0.0000021	0.0000000	0		0.0000000	87dic1	0
66	pu242h	es	cu		0.0000002	30.0		0.0000002	0.0000000	0		0.0000000	87rid1	0
66	np237t	es	cu		0.0000000	30.0		0.0000005	0.0000000	0		10.0000000	87rid1	0
66	pu240t	es	cu		0.0000002	30.0		0.0000002	0.0000000	0		0.0000000	87rid1	0
66	pu242t	es	cu		0.0000000	30.0		0.0000005	0.0000000	0		10.0000000	87rid1	0
67	cm243t	es	cu		0.0000086	30.0		0.0000103	0.0000000	0		0.0000000	87rid2	0
67	cm246s	es	cu	cm	0.0004409	99.0		0.0004500	99.0000000%	0		0.0000000	86rid1	0
67	cm243f	es	cu		0.0000180	30.0		0.0000180	0.0000000	0		0.0000000	87dic1	0
67	cm244f	es	cu		0.0000130	30.0		0.0000130	0.0000000	0		0.0000000	87dic1	0
67	cm246f	es	cu		0.0000075	30.0		0.0000075	0.0000000	0		0.0000000	87dic1	0
67	cm248f	es	cu		0.0000037	30.0		0.0000037	0.0000000	0		0.0000000	87dic1	0
67	pu242h	es	cu		0.0000004	30.0		0.0000004	0.0000000	0		0.0000000	87rid1	0
67	np237t	es	cu		0.0000001	30.0		0.0000001	0.0000000	0		0.0000000	87rid1	0
67	pu240t	es	cu		0.0000003	30.0		0.0000003	0.0000000	0		0.0000000	87rid1	0
67	pu242t	es	cu		0.0000001	30.0		0.0000001	0.0000000	0		0.0000000	87rid1	0
68	cm243t	es	cu		0.0000212	30.0		0.0000255	0.0000000	0		0.0000000	87rid2	0
68	cm246s	es	cu	cm	0.0004213	99.0		0.0004300	99.0000000%	0		0.0000000	86rid1	0
68	cm243f	es	cu		0.0000340	30.0		0.0000340	0.0000000	0		0.0000000	87dic1	0
68	cm244f	es	cu		0.0000250	30.0		0.0000250	0.0000000	0		0.0000000	87dic1	0
68	cm246f	es	cu		0.0000140	30.0		0.0000140	0.0000000	0		0.0000000	87dic1	0
68	cm248f	es	cu		0.0000068	30.0		0.0000069	0.0000000	0		0.0000000	87dic1	0
68	pu242h	es	cu		0.0000007	30.0		0.0000007	0.0000000	0		0.0000000	87rid1	0

68	np237t	es	cu		0.0000005	30.0	0.0000005	0.0000000	0		0.0000000	87rid1	0
68	pu240t	es	cu		0.0000009	30.0	0.0000009	0.0000000	0		0.0000000	87rid1	0
68	pu242t	es	cu		0.0000002	30.0	0.0000002	0.0000000	0		0.0000000	87rid1	0
69	cm243t	es	cu		0.0000470	30.0	0.0000566	0.0000000	0		0.0000000	87rid2	0
69	cm246s	es	cu	cm	0.0008152	99.0	0.0008320	99.0000000%	0		0.0000000	86rid1	0
69	cm243f	es	cu		0.0000670	30.0	0.0000670	0.0000000	0		0.0000000	87dic1	0
69	cm244f	es	cu		0.0000480	30.0	0.0000480	0.0000000	0		0.0000000	87dic1	0
69	cm246f	es	cu		0.0000291	30.0	0.0000290	0.0000000	0		0.0000000	87dic1	0
69	cm248f	es	cu		0.0000129	30.0	0.0000130	0.0000000	0		0.0000000	87dic1	0
69	pu242h	es	cu		0.0000016	30.0	0.0000015	0.0000000	0		0.0000000	87rid1	0
69	np237t	es	cu		0.0000020	30.0	0.0000020	0.0000000	0		0.0000000	87rid1	0
69	pu240t	es	cu		0.0000030	30.0	0.0000030	0.0000000	0		0.0000000	87rid1	0
69	pu242t	es	cu		0.0000005	30.0	0.0000005	0.0000000	0		0.0000000	87rid1	0
70	cm243t	es	cu		0.0000856	30.0	0.0001030	0.0000000	0		0.0000000	87rid2	0
70	cm246s	es	cu	cm	0.0008005	99.0	0.0008170	99.0000000%	0		0.0000000	86rid1	0
70	cm243f	es	cu		0.0001400	30.0	0.0001400	0.0000000	0		0.0000000	87dic1	0
70	cm244f	es	cu		0.0000960	30.0	0.0000960	0.0000000	0		0.0000000	87dic1	0
70	cm246f	es	cu		0.0000572	30.0	0.0000570	0.0000000	0		0.0000000	87dic1	0
70	cm248f	es	cu		0.0000258	30.0	0.0000260	0.0000000	0		0.0000000	87dic1	0
70	pu242h	es	cu		0.0000031	30.0	0.0000031	0.0000000	0		0.0000000	87rid1	0
70	np237t	es	cu		0.0000059	30.0	0.0000060	0.0000000	0		0.0000000	87rid1	0
70	pu240t	es	cu		0.0000100	30.0	0.0000100	0.0000000	0		0.0000000	87rid1	0
70	pu242t	es	cu		0.0000018	30.0	0.0000018	0.0000000	0		0.0000000	87rid1	0
71	cm243t	es	cu		0.0001695	30.0	0.0002040	0.0000000	0		0.0000000	87rid2	0
71	cm246s	es	cu	cm	0.0011072	99.0	0.0011300	99.0000000%	0		0.0000000	86rid1	0
71	cm243f	es	cu		0.0002700	30.0	0.0002700	0.0000000	0		0.0000000	87dic1	0
71	cm244f	es	cu		0.0001901	30.0	0.0001900	0.0000000	0		0.0000000	87dic1	0
71	cm246f	es	cu		0.0001104	30.0	0.0001100	0.0000000	0		0.0000000	87dic1	0
71	cm248f	es	cu		0.0000525	30.0	0.0000530	0.0000000	0		0.0000000	87dic1	0
71	pu242h	es	cu		0.0000052	30.0	0.0000051	0.0000000	0		0.0000000	87rid1	0
71	np237t	es	cu		0.0000146	30.0	0.0000150	0.0000000	0		0.0000000	87rid1	0
71	pu240t	es	cu		0.0000180	30.0	0.0000180	0.0000000	0		0.0000000	87rid1	0
71	pu242t	es	cu		0.0000027	30.0	0.0000027	0.0000000	0		0.0000000	87rid1	0
72	cm243t	es	cu		0.0003764	30.0	0.0004530	0.0000000	0		0.0000000	87rid2	0
72	cm246s	es	cu	cm	0.0014992	99.0	0.0015300	99.0000000%	0		0.0000000	86rid1	0
72	cm243f	es	cu		0.0005300	30.0	0.0005300	0.0000000	0		0.0000000	87dic1	0

72	cm244f	es	cu		0.0003802	30.0	0.0003800	0.0000000	0		0.0000000	87dic1	0	
72	cm246f	es	cu		0.0002308	30.0	0.0002300	0.0000000	0		0.0000000	87dic1	0	
72	cm248f	es	cu		0.0001089	30.0	0.0001100	0.0000000	0		0.0000000	87dic1	0	
72	pu242h	es	cu		0.0000114	30.0	0.0000111	0.0000000	0		0.0000000	87rid1	0	
72	np237t	es	cu		0.0000293	30.0	0.0000300	0.0000000	0		0.0000000	72sid1	0	
72	pu240t	es	cu		0.0000599	30.0	0.0000600	0.0000000	0		0.0000000	72sid1	0	
72	pu242t	es	cu		0.0000099	30.0	0.0000100	0.0000000	0		0.0000000	72sid1	0	
73	cm243t	es	cu		0.0006700	30.0	0.0007610	0.0000000	0		0.0000000	87rid2	0	
73	cm246s	es	cu	cm	0.0020969	99.0	0.0021400	99.0000000%	0		0.0000000	86rid1	0	
73	cm243f	es	cu		0.0010000	30.0	0.0010000	0.0000000	0		0.0000000	87dic1	0	
73	cm244f	es	cu		0.0007302	30.0	0.0007300	0.0000000	0		0.0000000	87dic1	0	
73	cm246f	es	cu		0.0004511	30.0	0.0004500	0.0000000	0		0.0000000	87dic1	0	
73	cm248f	es	cu		0.0002085	30.0	0.0002100	0.0000000	0		0.0000000	87dic1	0	
73	pu242h	es	cu		0.0000186	30.0	0.0000183	0.0000000	0		0.0000000	87rid1	0	
73	np237t	es	cu		0.0000885	30.0	0.0000900	0.0000000	0		0.0000000	72sid1	0	
73	pu240t	es	cu		0.0001499	30.0	0.0001500	0.0000000	0		0.0000000	72sid1	0	
73	pu242t	es	cu		0.0000299	30.0	0.0000300	0.0000000	0		0.0000000	72sid1	0	
74	cm243t	es	cu		0.0017117	30.0	0.0020600	0.0000000	0		0.0000000	87rid2	0	
74	cm246s	es	cu	cm	0.0028710	99.0	0.0029300	99.0000000%	0		0.0000000	86rid1	0	
74	cm243f	es	cu		0.0020001	30.0	0.0020000	0.0000000	0		0.0000000	87dic1	0	
74	cm244f	es	cu		0.0014007	30.0	0.0014000	0.0000000	0		0.0000000	87dic1	0	
74	cm246f	es	cu		0.0008629	30.0	0.0008600	0.0000000	0		0.0000000	87dic1	0	
74	cm248f	es	cu		0.0003959	30.0	0.0004000	0.0000000	0		0.0000000	87dic1	0	
74	pu242h	es	cu		0.0000522	30.0	0.0000509	0.0000000	0		0.0000000	87rid1	0	
74	np237t	es	cu		0.0002635	30.0	0.0002700	0.0000000	0		0.0000000	72sid1	0	
74	pu240t	es	cu		0.0002996	30.0	0.0003000	0.0000000	0		0.0000000	72sid1	0	
74	pu242t	es	cu		0.0000796	30.0	0.0000800	0.0000000	0		0.0000000	72sid1	0	
75	cm243t	es	cu		0.0042377	30.0	0.0051000	0.0000000	0		0.0000000	87rid2	0	
75	cm246s	es	cu	cm	0.0041546	99.0	0.0042400	99.0000000%	0		0.0000000	86rid1	0	
75	cm243f	es	cu		0.0037001	30.0	0.0037000	0.0000000	0		0.0000000	87dic1	0	
75	cm244f	es	cu		0.0026012	30.0	0.0026000	0.0000000	0		0.0000000	87dic1	0	
75	cm246f	es	cu		0.0016054	30.0	0.0016000	0.0000000	0		0.0000000	87dic1	0	
75	cm248f	es	cu		0.0007621	30.0	0.0007700	0.0000000	0		0.0000000	87dic1	0	
75	pu242h	es	cu		0.0000522	30.0	0.0000509	0.0000000	0		0.0000000	87rid1	0	
75	np237t	es	cu		0.0004391	30.0	0.0004500	0.0000000	0		0.0000000	72sid1	0	
75	pu240t	es	cu		0.0008987	30.0	0.0009000	0.0000000	0		0.0000000	72sid1	0	

75	pu242t	es	cu		0.0001990	30.0	0.0002000	0.0000000	0			0.0000000	72sid1	0		
76	cm243t	es	cu		0.0085586	30.0	0.0103000	0.0000000	0			0.0000000	87rid2	0		
76	cm246s	es	cu	cm	0.0057027	99.0	0.0058200	99.0000000%	0			0.0000000	86rid1	0		
76	cm243f	es	cu		0.0066002	30.0	0.0066000	0.0000000	0			0.0000000	87dic1	0		
76	cm244f	es	cu		0.0048023	30.0	0.0048000	0.0000000	0			0.0000000	87dic1	0		
76	cm246f	es	cu		0.0030101	30.0	0.0030000	0.0000000	0			0.0000000	87dic1	0		
76	cm248f	es	cu		0.0013856	30.0	0.0014000	0.0000000	0			0.0000000	87dic1	0		
76	pu242h	es	cu		0.0002093	30.0	0.0002040	0.0000000	0			0.0000000	87rid1	0		
76	np237t	es	cu		0.0018540	30.0	0.0019000	0.0000000	0			0.0000000	72sid1	0		
76	pu240t	es	cu		0.0017975	30.0	0.0018000	0.0000000	0			0.0000000	72sid1	0		
76	pu242t	es	cu		0.0004178	30.0	0.0004200	0.0000000	0			0.0000000	72sid1	0		
77	cm243t	es	cu		0.0177851	30.0	0.0202000	0.0000000	0			0.0000000	87rid2	0		
77	cm246s	es	cu	cm	0.0074917	99.0	0.0076000	99.0000000%	0			0.0000000	86rid1	0		
77	cm243f	es	cu		0.0120003	30.0	0.0120000	0.0000000	0			0.0000000	87dic1	0		
77	cm244f	es	cu		0.0085029	30.0	0.0085000	0.0000000	0			0.0000000	87dic1	0		
77	cm246f	es	cu		0.0053127	30.0	0.0053000	0.0000000	0			0.0000000	87dic1	0		
77	cm248f	es	cu		0.0025811	30.0	0.0026000	0.0000000	0			0.0000000	87dic1	0		
77	pu242h	es	cu		0.0051828	30.0	0.0050900	0.0000000	0			0.0000000	87rid1	0		
77	np237t	es	cu		0.0043248	30.0	0.0044000	0.0000000	0			0.0000000	72sid1	0		
77	pu240t	es	cu		0.0058942	30.0	0.0059000	0.0000000	0			0.0000000	72sid1	0		
77	pu242t	es	cu		0.0026901	30.0	0.0027000	0.0000000	0			0.0000000	72sid1	0		

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0measured nuclide	fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment
78	cm243t	es	cu		0.0299135	30.0	0.0360000	0.0000000	0			0.0000000	87rid2	0		
78	cm246s	es	cu	cm	0.0118562	99.0	0.0121000	99.0000000%	0			0.0000000	86rid1	0		
78	cm243f	es	cu		0.0200006	30.0	0.0200000	0.0000000	0			0.0000000	87dic1	0		
78	cm244f	es	cu		0.0150072	30.0	0.0150000	0.0000000	0			0.0000000	87dic1	0		
78	cm246f	es	cu		0.0094318	30.0	0.0094000	0.0000000	0			0.0000000	87dic1	0		
78	cm248f	es	cu		0.0046516	30.0	0.0047000	0.0000000	0			0.0000000	87dic1	0		
78	pu242h	es	cu		0.0145661	30.0	0.0142000	0.0000000	0			0.0000000	87rid1	0		
78	np237t	es	cu		0.0126856	30.0	0.0130000	0.0000000	0			0.0000000	72sid1	0		
78	pu240t	es	cu		0.0169763	30.0	0.0170000	0.0000000	0			0.0000000	72sid1	0		
78	pu242t	es	cu		0.0064661	30.0	0.0065000	0.0000000	0			0.0000000	72sid1	0		
79	cm243t	es	cu		0.0512684	30.0	0.0617000	0.0000000	0			0.0000000	87rid2	0		

79	cm246s	es	cu	cm	0.0171474	99.0	0.0175000	99.0000000%	0	0.0000000	86rid1	0
79	cm243f	es	cu		0.0340009	30.0	0.0340000	0.0000000	0	0.0000000	87dic1	0
79	cm244f	es	cu		0.0250120	30.0	0.0250000	0.0000000	0	0.0000000	87dic1	0
79	cm246f	es	cu		0.0160541	30.0	0.0160000	0.0000000	0	0.0000000	87dic1	0
79	cm248f	es	cu		0.0080166	30.0	0.0081000	0.0000000	0	0.0000000	87dic1	0
79	pu242h	es	cu		0.0292348	30.0	0.0285000	0.0000000	0	0.0000000	87rid1	0
79	np237t	es	cu		0.0263470	30.0	0.0270000	0.0000000	0	0.0000000	72sid1	0
79	pu240t	es	cu		0.0159777	30.0	0.0160000	0.0000000	0	0.0000000	72sid1	0
79	pu242t	es	cu		0.0074609	30.0	0.0075000	0.0000000	0	0.0000000	72sid1	0
80	cm243t	es	cu		0.0855858	30.0	0.1030000	0.0000000	0	0.0000000	87rid2	0
80	cm246s	es	cu	cm	0.0255741	99.0	0.0261000	99.0000000%	0	0.0000000	86rid1	0
80	cm243f	es	cu		0.0550015	30.0	0.0550000	0.0000000	0	0.0000000	87dic1	0
80	cm244f	es	cu		0.0410197	30.0	0.0410000	0.0000000	0	0.0000000	87dic1	0
80	cm246f	es	cu		0.0270913	30.0	0.0270000	0.0000000	0	0.0000000	87dic1	0
80	cm248f	es	cu		0.0138558	30.0	0.0140000	0.0000000	0	0.0000000	87dic1	0
80	pu242h	es	cu		0.0552896	30.0	0.0539000	0.0000000	0	0.0000000	87rid1	0
80	np237t	es	cu		0.0351293	30.0	0.0360000	0.0000000	0	0.0000000	72sid1	0
80	pu240t	es	cu		0.0389455	30.0	0.0390000	0.0000000	0	0.0000000	72sid1	0
80	pu242t	es	cu		0.0198958	30.0	0.0200000	0.0000000	0	0.0000000	72sid1	0
81	cm243t	es	cu		0.1587077	30.0	0.1910000	0.0000000	0	0.0000000	87rid2	0
81	cm246s	es	cu	cm	0.0391940	99.0	0.0400000	99.0000000%	0	0.0000000	86rid1	0
81	cm243f	es	cu		0.0870024	30.0	0.0870000	0.0000000	0	0.0000000	87dic1	0
81	cm244f	es	cu		0.0660317	30.0	0.0660000	0.0000000	0	0.0000000	87dic1	0
81	cm246f	es	cu		0.0431453	30.0	0.0430000	0.0000000	0	0.0000000	87dic1	0
81	cm248f	es	cu		0.0227631	30.0	0.0230000	0.0000000	0	0.0000000	87dic1	0
81	pu242h	es	cu		0.0919100	30.0	0.0896000	0.0000000	0	0.0000000	87rid1	0
81	np237t	es	cu		0.1170977	30.0	0.1200000	0.0000000	0	0.0000000	72sid1	0
81	pu240t	es	cu		0.1098464	30.0	0.1100000	0.0000000	0	0.0000000	72sid1	0
81	pu242t	es	cu		0.0407865	30.0	0.0410000	0.0000000	0	0.0000000	72sid1	0
82	cm243t	es	cu		0.2434626	30.0	0.2930000	0.0000000	0	0.0000000	87rid2	0
82	cm246s	es	cu	cm	0.0569293	99.0	0.0581000	99.0000000%	0	0.0000000	86rid1	0
82	cm243f	es	cu		0.1300036	30.0	0.1300000	0.0000000	0	0.0000000	87dic1	0
82	cm244f	es	cu		0.1000480	30.0	0.1000000	0.0000000	0	0.0000000	87dic1	0
82	cm246f	es	cu		0.0682298	30.0	0.0680000	0.0000000	0	0.0000000	87dic1	0
82	cm248f	es	cu		0.0366189	30.0	0.0370000	0.0000000	0	0.0000000	87dic1	0
82	pu242h	es	cu		0.1343774	30.0	0.1310000	0.0000000	0	0.0000000	87rid1	0

82		np237t	es	cu		0.1756466	30.0	0.1800000	0.0000000	0			0.0000000	72sid1	0
82		pu240t	es	cu		0.1198325	30.0	0.1200000	0.0000000	0			0.0000000	72sid1	0
82		pu242t	es	cu		0.0606823	30.0	0.0610000	0.0000000	0			0.0000000	72sid1	0
83		cm243t	es	cu		0.3557017	30.0	0.4040000	0.0000000	0			0.0000000	87rid2	0
83		cm246s	es	cu	cm	0.0830989	99.0	0.0843000	99.0000000%	0			0.0000000	86rid1	0
83		cm243f	es	cu		0.2000039	30.0	0.2000000	0.0000000	0			0.0000000	87dic1	0
83		cm244f	es	cu		0.1600543	30.0	0.1600000	0.0000000	0			0.0000000	87dic1	0
83		cm246f	es	cu		0.1002390	30.0	0.1000000	0.0000000	0			0.0000000	87dic1	0
83		cm248f	es	cu		0.0575775	30.0	0.0580000	0.0000000	0			0.0000000	87dic1	0
83		pu242h	es	cu		0.2189195	30.0	0.2150000	0.0000000	0			0.0000000	87rid1	0
83		np237t	es	cu		0.2963722	30.0	0.3000000	0.0000000	0			0.0000000	72sid1	0
83		np237t	ms	re		0.3685962	23.0	0.3270000	0.0140000	86		np237t	1.0000000	73tra1	0
83		pu240t	es	cu		0.2497532	30.0	0.2500000	0.0000000	0			0.0000000	72sid1	0
83		pu242t	es	cu		0.1394844	30.0	0.1400000	0.0000000	0			0.0000000	72sid1	0
84		cm243t	es	cu		0.4204508	30.0	0.5060000	0.0000000	0			0.0000000	87rid2	0
84		cm246s	es	cu	cm	0.0972991	99.0	0.0993000	99.0000000%	0			0.0000000	86rid1	0
84		cm243f	es	cu		0.3000084	30.0	0.3000000	0.0000000	0			0.0000000	87dic1	0
84		cm244f	es	cu		0.2301105	30.0	0.2300000	0.0000000	0			0.0000000	87dic1	0
84		cm246f	es	cu		0.1605408	30.0	0.1600000	0.0000000	0			0.0000000	87dic1	0
84		cm248f	es	cu		0.0880832	30.0	0.0890000	0.0000000	0			0.0000000	87dic1	0
84		pu242h	es	cu		0.3261986	30.0	0.3180000	0.0000000	0			0.0000000	87rid1	0
84		np237t	es	cu		0.4976654	30.0	0.5100000	0.0000000	0			0.0000000	72sid1	0
84		pu240t	es	cu		0.4194136	30.0	0.4200000	0.0000000	0			0.0000000	72sid1	0
84		pu242t	es	cu		0.2785417	30.0	0.2800000	0.0000000	0			0.0000000	72sid1	0
85		cm243t	es	cu		0.4067678	30.0	0.4620000	0.0000000	0			0.0000000	87rid2	0
85		cm246s	es	cu	cm	0.1596918	50.0	0.1620000	50.0000000%	0			0.0000000	86rid1	0
85		cm243f	es	cu		0.4200083	30.0	0.4200000	0.0000000	0			0.0000000	87dic1	0
85		cm244f	es	cu		0.3301121	30.0	0.3300000	0.0000000	0			0.0000000	87dic1	0
85		cm246f	es	cu		0.2305497	30.0	0.2300000	0.0000000	0			0.0000000	87dic1	0
85		cm248f	es	cu		0.1290531	30.0	0.1300000	0.0000000	0			0.0000000	87dic1	0
85		pu242h	es	cu		0.6741657	7.0	0.6720000	7.0000000%	0			0.0000000	89rid1	0
85		pu242h	es	cu		0.6741657	7.0	0.6720000	7.0000000%	0			0.0000000	89rid1	0
85	kr m	pu242h	rc	cu		0.6741657	7.1	0.6720000	7.1000000%	0			0.0000000	84win1	0
85		np237t	es	cu		0.7355257	30.0	0.7400000	0.0000000	0			0.0000000	72sid1	0
85		np237t	ms	re		0.7711911	22.8	0.6800000	0.0200000	86		np237t	1.0000000	73tra1	0
85	kr m	np237t	rc	cu		1.0337118	7.7	1.0400000	0.0800000	0			0.0000000	80thi1	0

85		pu240t	es	cu		0.4695360	30.0	0.4700000	0.0000000	0		0.0000000	72sid1	0
85		pu242t	es	cu		0.3287847	30.0	0.3300000	0.0000000	0		0.0000000	72sid1	0
85		pu242t	es	cu		0.0000000	0.0	0.3300000	0.0000000	0		0.0000000	72sid1	0
86		cm243t	es	cu		0.5458789	30.0	0.6200000	0.0000000	0		0.0000000	87rid2	0
86		cm246s	es	cu	cm	0.1813783	50.0	0.1840000	50.0000000%	0		0.0000000	86rid1	0
86		cm243f	es	cu		0.5800114	30.0	0.5800000	0.0000000	0		0.0000000	87dic1	0
86		cm244f	es	cu		0.4601562	30.0	0.4600000	0.0000000	0		0.0000000	87dic1	0
86		cm246f	es	cu		0.3210816	30.0	0.3200000	0.0000000	0		0.0000000	87dic1	0
86		cm248f	es	cu		0.1880429	30.0	0.1900000	0.0000000	0		0.0000000	87dic1	0
86		pu242h	es	cu		0.8206254	30.0	0.8000000	0.0000000	0		0.0000000	87rid1	0
86		np237t	es	cu		1.1205040	30.0	1.1400000	0.0000000	0		0.0000000	72sid1	0
86		pu240t	es	cu		0.6790506	30.0	0.6800000	0.0000000	0		0.0000000	72sid1	0
86		pu242t	es	cu		0.4973960	30.0	0.5000000	0.0000000	0		0.0000000	72sid1	0
87		cm243t	es	cu		0.7137692	30.0	0.8590000	0.0000000	0		0.0000000	87rid2	0
87	sr m	cm243t	es	cu		0.0000036	30.0	0.0000044	0.0000000	0		1.0000000	89rid1	0
87		cm246s	es	cu	cm	0.2888253	50.0	0.2930000	50.0000000%	0		0.0000000	86rid1	0
87	sr m	cm246s	es	cu		0.0000001	30.0	0.0000014	0.0000000	0		10.0000000	89rid1	0
87		cm243f	es	cu		0.7800217	30.0	0.7800000	0.0000000	0		0.0000000	87dic1	0
87	sr m	cm243f	es	cu		0.0000201	30.0	0.0000201	0.0000000	0		1.0000000	89rid1	0
87		cm244f	es	cu		0.6303026	30.0	0.6300000	0.0000000	0		0.0000000	87dic1	0
87	sr m	cm244f	es	cu		0.0000027	30.0	0.0000027	0.0000000	0		1.0000000	89rid1	0
87		cm246f	es	cu		0.4515210	30.0	0.4500000	0.0000000	0		0.0000000	87dic1	0
87	sr m	cm246f	es	cu		0.0000001	30.0	0.0000056	0.0000000	0		100.0000000	89rid1	0
87		cm248f	es	cu		0.2771158	30.0	0.2800000	0.0000000	0		0.0000000	87dic1	0
87	sr m	cm248f	es	cu		0.0000000	30.0	0.0000024	0.0000000	0		1000.0000000	89rid1	0
87	sr m	pu242h	es	cu		0.0000000	30.0	0.0000015	0.0000000	0		1000.0000000	89rid1	0
87	kr g	pu242h	rc	cu		0.9994003	7.6	0.9930000	7.6000000%	0		0.0000000	84win1	0
87		np237t	es	cu		1.5704467	30.0	1.5800000	0.0000000	0		0.0000000	72sid1	0
87	sr m	np237t	es	cu		0.0000002	30.0	0.0000024	0.0000000	0		10.0000000	89rid1	0
87	kr g	np237t	rc	cu		1.8686328	8.5	1.8800000	0.1600000	0		0.0000000	80thi1	0
87		pu240t	es	cu		0.8288411	30.0	0.8300000	0.0000000	0		0.0000000	72sid1	0
87	sr m	pu240t	es	cu		0.0000003	30.0	0.0000027	0.0000000	0		10.0000000	89rid1	0
87		pu242t	es	cu		0.6764585	30.0	0.6800000	0.0000000	0		0.0000000	72sid1	0
87	sr m	pu242t	es	cu		0.0000000	30.0	0.0000012	0.0000000	0		100.0000000	89rid1	0
88		cm243t	es	cu		0.7719343	30.0	0.9290000	0.0000000	0		0.0000000	87rid2	0
88		cm246s	es	cu	cm	0.3588137	50.0	0.3640000	50.0000000%	0		0.0000000	86rid1	0

88 cm243f es cu 1.0000197 30.0 1.0000000 0.0000000 0 0.0000000 87dic1 0
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88 cm244f es cu 0.8404035 30.0 0.8400000 0.0000000 0 0.0000000 87dic1 0
88 cm246f es cu 0.6120619 30.0 0.6100000 0.0000000 0 0.0000000 87dic1 0
88 cm248f es cu 0.3760858 30.0 0.3800000 0.0000000 0 0.0000000 87dic1 0
88 kr g pu242h rc cu 1.1674767 8.1 1.1600000 8.1000000% 0 0.0000000 84win1 0
88 np237t es cu 2.0972421 30.0 2.1100000 0.0000000 0 0.0000000 72sid1 0
88 kr g np237t rc cu 2.2264561 7.6 2.2400000 0.1700000 0 0.0000000 80thi1 0
88 pu240t es cu 1.1888251 30.0 1.1900000 0.0000000 0 0.0000000 72sid1 0
88 pu242t es cu 0.8555211 30.0 0.8600000 0.0000000 0 0.0000000 72sid1 0
89 cm243t es cu 0.9772992 30.0 1.1100000 0.0000000 0 0.0000000 87rid2 0
89 rb g cm243t rc cu 1.0917577 25.8 1.2400000 0.3200000 0 0.0000000 86dic1 0
89 cm246s es cu cm 0.5668073 50.0 0.5750000 50.0000000% 0 0.0000000 86rid1 0
89 cm243f es cu 1.3000256 30.0 1.3000000 0.0000000 0 0.0000000 87dic1 0
89 cm244f es cu 1.1003736 30.0 1.1000000 0.0000000 0 0.0000000 87dic1 0
89 cm246f es cu 0.8027041 30.0 0.8000000 0.0000000 0 0.0000000 87dic1 0
89 cm248f es cu 0.5146437 30.0 0.5200000 0.0000000 0 0.0000000 87dic1 0
89 rb g pu242h rc cu 1.3421232 11.0 1.3300000 11.0000000% 0 0.0000000 84win1 0
89 np237t es cu 2.7858984 30.0 2.8200000 0.0000000 0 0.0000000 72sid1 0
89 pu240t es cu 1.3186968 30.0 1.3200000 0.0000000 0 0.0000000 72sid1 0
89 pu242t es cu 0.9152086 30.0 0.9200000 0.0000000 0 0.0000000 72sid1 0
90 cm243t es cu 1.1357802 30.0 1.2900000 0.0000000 0 0.0000000 87rid2 0
90 cm246s es cu cm 0.6348242 50.0 0.6440000 50.0000000% 0 0.0000000 86rid1 0
90 cm243f es cu 1.6000315 30.0 1.6000000 0.0000000 0 0.0000000 87dic1 0
90 cm244f es cu 1.4004755 30.0 1.4000000 0.0000000 0 0.0000000 87dic1 0
90 cm246f es cu 1.0023901 30.0 1.0000000 0.0000000 0 0.0000000 87dic1 0
90 cm248f es cu 0.6750471 30.0 0.6800000 0.0000000 0 0.0000000 87dic1 0
90 pu242h es cu 1.5273456 30.0 1.5000000 0.0000000 0 0.0000000 87rid1 0
90 np237t es cu 3.4379172 30.0 3.4800000 0.0000000 0 0.0000000 72sid1 0
90 pu240t es cu 1.8387155 30.0 1.8400000 0.0000000 0 0.0000000 72sid1 0
90 pu242t es cu 1.2354335 30.0 1.2400000 0.0000000 0 0.0000000 72sid1 0
91 cm243t es cu 1.7559036 30.0 1.8100000 0.0000000 0 0.0000000 87rid2 0
91 y g cm243t rc cu 0.9798136 5.0 1.0100000 0.0200000 0 0.0000000 82bre1 0

91	y	m	cm243t	rc	cu	x6	0.0000000	0.0	0.8400000	0.0800000	0	0.0000000	86dic1	0
91	sr	g	cm243t	rc	cu		1.6976968	10.9	1.7500000	0.1900000	0	0.0000000	82bre1	0
91	sr	g	cm243t	rc	cu		1.4066631	9.7	1.4500000	0.1400000	0	0.0000000	86dic1	0
91			cm246s	es	cu	cm	0.7008695	50.0	0.7110000	50.0000000%	0	0.0000000	86rid1	0
91			cm243f	es	cu		1.9000374	30.0	1.9000000	0.0000000	0	0.0000000	87dic1	0
91			cm244f	es	cu		1.7005774	30.0	1.7000000	0.0000000	0	0.0000000	87dic1	0
91			cm246f	es	cu		1.3031071	30.0	1.3000000	0.0000000	0	0.0000000	87dic1	0
91			cm248f	es	cu		0.8735904	30.0	0.8800000	0.0000000	0	0.0000000	87dic1	0
91	y	m	pu242h	rc	cu	x6	0.0000000	0.0	2.0300000	7.9000000%	0	0.0000000	84win1	0
91	sr	g	pu242h	rc	cu		2.1235998	7.1	2.1100000	7.1000000%	0	0.0000000	84win1	0
91			np237t	es	cu		3.9360564	30.0	3.9600000	0.0000000	0	0.0000000	72sid1	0
91	y	g	np237t	rc	cu		3.6478098	7.1	3.6700000	0.2600000	0	0.0000000	80thi1	0
91			pu240t	es	cu		2.2078181	30.0	2.2100000	0.0000000	0	0.0000000	72sid1	0
91			pu242t	es	cu		1.6837763	30.0	1.6900000	0.0000000	0	0.0000000	72sid1	0
92			cm243t	es	cu		1.5196723	30.0	1.6600000	0.0000000	0	0.0000000	87rid2	0
92	sr	g	cm243t	rc	cu		1.3274246	17.9	1.4500000	0.2600000	0	0.0000000	86dic1	0
92			cm246s	es	cu	cm	0.9640653	50.0	0.9780000	50.0000000%	0	0.0000000	86rid1	0
92			cm243f	es	cu		2.3000453	30.0	2.3000000	0.0000000	0	0.0000000	87dic1	0
92			cm244f	es	cu		2.0006793	30.0	2.0000000	0.0000000	0	0.0000000	87dic1	0
92			cm246f	es	cu		1.6038241	30.0	1.6000000	0.0000000	0	0.0000000	87dic1	0
92			cm248f	es	cu		1.0919880	30.0	1.1000000	0.0000000	0	0.0000000	87dic1	0
92	y	g	pu242h	rc	cu		2.5060491	12.0	2.4900000	12.0000000%	0	0.0000000	84win1	0
92	sr	g	pu242h	rc	cu		2.2745666	13.0	2.2600000	13.0000000%	0	0.0000000	84win1	0
92			np237t	es	cu		4.5205895	30.0	4.5400000	0.0000000	0	0.0000000	72sid1	0
92	y	g	np237t	rc	cu		4.1621287	5.7	4.1800000	0.2400000	0	0.0000000	80thi1	0
92			pu240t	es	cu		2.6681360	30.0	2.6700000	0.0000000	0	0.0000000	72sid1	0
92			pu242t	es	cu		2.0324874	30.0	2.0400000	0.0000000	0	0.0000000	72sid1	0
93			cm243t	es	cu		2.2095286	30.0	2.3500000	0.0000000	0	0.0000000	87rid2	0
93	sr	g	cm243t	rc	cu		1.6547959	11.4	1.7600000	0.2000000	0	0.0000000	86dic1	0
93			cm246s	es	cu	cm	1.2321897	50.0	1.2500000	50.0000000%	0	0.0000000	86rid1	0
93			cm243f	es	cu		2.6000362	30.0	2.6000000	0.0000000	0	0.0000000	87dic1	0
93			cm244f	es	cu		2.4005764	30.0	2.4000000	0.0000000	0	0.0000000	87dic1	0
93			cm246f	es	cu		1.9032111	30.0	1.9000000	0.0000000	0	0.0000000	87dic1	0
93			cm248f	es	cu		1.3898029	30.0	1.4000000	0.0000000	0	0.0000000	87dic1	0
93	y	g	pu242h	rc	cu		2.6236995	13.0	2.6000000	13.0000000%	0	0.0000000	84win1	0
93			np237t	es	cu		5.1784984	30.0	5.2100000	0.0000000	0	0.0000000	72sid1	0

93	y	g	np237t	rc	cu		4.7709774	9.4	4.8000000	0.4500000	0	0.0000000	80thi1	0
93			pu240t	es	cu		3.4176124	30.0	3.4200000	0.0000000	0	0.0000000	72sid1	0
93			pu242t	es	cu		2.5832556	30.0	2.5900000	0.0000000	0	0.0000000	72sid1	0
94			cm243t	es	cu		2.6420320	30.0	2.8100000	0.0000000	0	0.0000000	87rid2	0
94	y	g	cm243t	rc	cu		2.2001263	16.7	2.3400000	0.3900000	0	0.0000000	86dic1	0
94	sr	g	cm243t	rc	cu		1.7676228	11.7	1.8800000	0.2200000	0	0.0000000	86dic1	0
94			cm246s	es	cu	cm	1.4589127	50.0	1.4800000	50.0000000%	0	0.0000000	86rid1	0
94			cm243f	es	cu		3.0000591	30.0	3.0000000	0.0000000	0	0.0000000	87dic1	0
94			cm244f	es	cu		2.8009510	30.0	2.8000000	0.0000000	0	0.0000000	87dic1	0
94			cm246f	es	cu		2.2037181	30.0	2.2000000	0.0000000	0	0.0000000	87dic1	0
94			cm248f	es	cu		1.6876178	30.0	1.7000000	0.0000000	0	0.0000000	87dic1	0
94	y	g	pu242h	rc	cu		2.8154314	10.0	2.7900000	10.0000000%	0	0.0000000	84win1	0
94			np237t	es	cu		5.3538253	30.0	5.4000000	0.0000000	0	0.0000000	72sid1	0
94	y	g	np237t	rc	cu		4.9770746	11.0	5.0200000	0.5500000	0	0.0000000	80thi1	0
94			pu240t	es	cu		3.8872843	30.0	3.8900000	0.0000000	0	0.0000000	72sid1	0
94			pu242t	es	cu		3.1218494	30.0	3.1300000	0.0000000	0	0.0000000	72sid1	0
95			cm243t	es	cu		2.9268103	30.0	2.9900000	0.0000000	0	0.0000000	87rid2	0
95	nb	g	cm243t	rc	cu		3.2302589	5.0	3.3000000	0.0300000	0	0.0000000	82bre1	0
95	nb	g	cm243t	rc	cu		2.7506144	8.9	2.8100000	0.2500000	0	0.0000000	86dic1	0
95	zr	g	cm243t	rc	cu		2.7701917	5.0	2.8300000	0.0400000	0	0.0000000	82bre1	0
95	zr	g	cm243t	rc	cu		2.2611812	9.5	2.3100000	0.2200000	0	0.0000000	86dic1	0
95	zr	g	cm246s	rc	cu		1.9758230	14.1	1.9900000	0.2800000	0	0.0000000	81gin3	0
95			cm243f	es	cu		3.3000325	30.0	3.3000000	0.0000000	0	0.0000000	87dic1	0
95	zr	g	cm243f	rc	cu		3.2200317	10.2	3.2200000	0.3300000	0	0.0000000	87dic1	0
95			cm244f	es	cu		3.2003842	30.0	3.2000000	0.0000000	0	0.0000000	87dic1	0
95	zr	g	cm244f	rc	cu		3.0003602	10.0	3.0000000	0.3000000	0	0.0000000	87dic1	0
95			cm246f	es	cu		2.6031071	30.0	2.6000000	0.0000000	0	0.0000000	87dic1	0
95	zr	g	cm246f	rc	cu		2.2927366	10.9	2.2900000	0.2500000	0	0.0000000	87dic1	0
95			cm248f	es	cu		1.9948497	30.0	2.0000000	0.0000000	0	0.0000000	87dic1	0
95	zr	g	cm248f	rc	cu		2.0546952	9.2	2.0600000	0.1900000	0	0.0000000	87dic1	0
95	zr	g	pu242h	rc	cu		3.3917211	8.9	3.3700000	8.9000000%	0	0.0000000	84win1	0
95			np237t	es	cu		5.6058984	30.0	5.6400000	0.0000000	0	0.0000000	72sid1	0
95	nb	g	np237t	rc	cu		5.6854147	7.7	5.7200000	0.4400000	0	0.0000000	80thi1	0
95			pu240t	es	cu		4.6867258	30.0	4.6900000	0.0000000	0	0.0000000	72sid1	0
95			pu242t	es	cu		3.7701568	30.0	3.7800000	0.0000000	0	0.0000000	72sid1	0
96			cm243t	es	cu		3.3414481	30.0	3.6500000	0.0000000	0	0.0000000	87rid2	0

96	cm246s	es	cu	cm	2.2768275	50.0	2.3000000	50.0000000%	0		0.0000000	86rid1	0
96	cm243f	es	cu		3.6000502	30.0	3.6000000	0.0000000	0		0.0000000	87dic1	0
96	cm244f	es	cu		3.6008645	30.0	3.6000000	0.0000000	0		0.0000000	87dic1	0
96	cm246f	es	cu		2.9049011	30.0	2.9000000	0.0000000	0		0.0000000	87dic1	0
96	cm248f	es	cu		2.2881543	30.0	2.3000000	0.0000000	0		0.0000000	87dic1	0
96	pu242h	es	cu		3.8489852	30.0	3.8000000	0.0000000	0		0.0000000	87rid1	0
96	np237t	es	cu		5.6705876	30.0	5.7400000	0.0000000	0		0.0000000	72sid1	0
96	pu240t	es	cu		4.7266979	30.0	4.7300000	0.0000000	0		0.0000000	72sid1	0
96	pu242t	es	cu		4.2489068	30.0	4.2600000	0.0000000	0		0.0000000	72sid1	0
97	cm243t	es	cu		4.1112386	30.0	4.2000000	0.0000000	0		0.0000000	87rid2	0
97 nb g	cm243t	rc	cu		4.1308159	5.0	4.2200000	0.0400000	0		0.0000000	82bre1	0
97 nb g	cm243t	rc	cu		3.6218054	8.6	3.7000000	0.3200000	0		0.0000000	86dic1	0
97 zr g	cm243t	rc	cu		3.9546200	5.0	4.0400000	0.0400000	0		0.0000000	82bre1	0
97 zr g	cm243t	rc	cu		3.6903261	8.5	3.7700000	0.3200000	0		0.0000000	86dic1	0
97 zr g	cm246s	rc	cu		2.3580611	12.2	2.3700000	0.2900000	0		0.0000000	81gin3	0
97	cm243f	es	cu		4.0000557	30.0	4.0000000	0.0000000	0		0.0000000	87dic1	0
97	cm244f	es	cu		4.1009846	30.0	4.1000000	0.0000000	0		0.0000000	87dic1	0

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0measured fissile meas. meas. note updated pct. published error normalizing normalizing normalizing ref. special

nuclide	material	tech.	type	value	err.	value		nuclide	material	value	no.	treatment
97	cm246f	es	cu		3.3055771	30.0	3.3000000	0.0000000	0		0.0000000	87dic1	0
97	cm248f	es	cu		2.6860941	30.0	2.7000000	0.0000000	0		0.0000000	87dic1	0
97 nb g	pu242h	rc	cu		4.2392331	7.1	4.2200000	7.1000000%	0		0.0000000	84win1	0
97 zr g	pu242h	rc	cu		4.2492786	7.5	4.2300000	7.5000000%	0		0.0000000	84win1	0
97	np237t	es	cu		5.7752025	30.0	5.8000000	0.0000000	0		0.0000000	72sid1	0
97 nb g	np237t	rc	cu		5.8548605	5.0	5.8800000	0.2900000	0		0.0000000	80thi1	0
97	pu240t	es	cu		5.1663907	30.0	5.1700000	0.0000000	0		0.0000000	72sid1	0
97	pu242t	es	cu		4.5082298	30.0	4.5200000	0.0000000	0		0.0000000	72sid1	0
98	cm243t	es	cu		4.4857797	30.0	4.9000000	0.0000000	0		0.0000000	87rid2	0
98 nb m	cm243t	rc	cu		0.3387221	10.8	0.3700000	0.0400000	0		0.0000000	86dic1	0
98	cm246s	es	cu	cm	3.3261343	30.0	3.3500000	30.0000000%	0		0.0000000	86rid1	0
98	cm243f	es	cu		4.4000613	30.0	4.4000000	0.0000000	0		0.0000000	87dic1	0
98	cm244f	es	cu		4.6011047	30.0	4.6000000	0.0000000	0		0.0000000	87dic1	0
98	cm246f	es	cu		3.8045412	30.0	3.8000000	0.0000000	0		0.0000000	87dic1	0
98	cm248f	es	cu		3.0774207	30.0	3.1000000	0.0000000	0		0.0000000	87dic1	0

98		pu242h	es	cu		4.5410184	30.0	4.5000000	0.0000000	0	0.0000000	87rid1	0
98		np237t	es	cu		5.8879272	30.0	5.9600000	0.0000000	0	0.0000000	72sid1	0
98		pu240t	es	cu		5.9358532	30.0	5.9400000	0.0000000	0	0.0000000	72sid1	0
98		pu242t	es	cu		5.5896886	30.0	5.6000000	0.0000000	0	0.0000000	72sid1	0
99		cm243t	es	cu		5.6186928	30.0	5.7400000	0.0000000	0	0.0000000	87rid2	0
99	tc m	cm243t	rc	cu		5.0607390	14.3	5.1700000	0.7400000	0	0.0000000	86dic1	0
99	mo g	cm243t	rc	cu		5.0998936	5.0	5.2100000	0.0700000	0	0.0000000	82bre1	0
99	mo g	cm243t	rc	cu		4.5419398	8.6	4.6400000	0.4000000	0	0.0000000	86dic1	0
99	mo g	cm246s	rc	cu		4.2248969	8.5	4.2400000	0.3600000	0	0.0000000	81gin3	0
99		cm243f	es	cu		4.9000483	30.0	4.9000000	0.0000000	0	0.0000000	87dic1	0
99		cm244f	es	cu		5.1012248	30.0	5.1000000	0.0000000	0	0.0000000	87dic1	0
99		cm246f	es	cu		4.3051387	30.0	4.3000000	0.0000000	0	0.0000000	87dic1	0
99		cm248f	es	cu		3.5868894	30.0	3.6000000	0.0000000	0	0.0000000	87dic1	0
99	tc m	pu242h	rc	cu		4.7214207	7.4	4.7000000	7.4000000%	0	0.0000000	84win1	0
99	mo g	pu242h	rc	cu		4.9926513	7.2	4.9700000	7.2000000%	0	0.0000000	84win1	0
99		np237t	es	cu		6.2133213	30.0	6.2400000	0.0000000	0	0.0000000	72sid1	0
99	mo g	np237t	rc	cu		6.6215684	5.6	6.6500000	0.3700000	0	0.0000000	80thi1	0
99		pu240t	es	cu		5.9670530	30.0	5.9700000	0.0000000	0	0.0000000	72sid1	0
99		pu242t	es	cu		5.9889520	30.0	6.0000000	0.0000000	0	0.0000000	72sid1	0
100		cm243t	es	cu		5.4287089	30.0	5.9300000	0.0000000	0	0.0000000	87rid2	0
100		cm246s	es	cu	cm	4.7161605	30.0	4.7500000	30.0000000%	0	0.0000000	86rid1	0
100		cm243f	es	cu		5.5000542	30.0	5.5000000	0.0000000	0	0.0000000	87dic1	0
100		cm244f	es	cu		5.7009679	30.0	5.7000000	0.0000000	0	0.0000000	87dic1	0
100		cm246f	es	cu		4.9082812	30.0	4.9000000	0.0000000	0	0.0000000	87dic1	0
100		cm248f	es	cu		4.0850685	30.0	4.1000000	0.0000000	0	0.0000000	87dic1	0
100		pu242h	es	cu		5.0644542	30.0	5.0000000	0.0000000	0	0.0000000	87rid1	0
100		np237t	es	cu		5.3445782	30.0	5.4100000	0.0000000	0	0.0000000	72sid1	0
100		pu240t	es	cu		6.6953226	30.0	6.7000000	0.0000000	0	0.0000000	72sid1	0
100		pu242t	es	cu		6.1486574	30.0	6.1600000	0.0000000	0	0.0000000	72sid1	0
101		cm243t	es	cu		6.0624477	30.0	6.3300000	0.0000000	0	0.0000000	87rid2	0
101	tc g	cm243t	rc	cu		6.2539942	11.0	6.5300000	0.7200000	0	0.0000000	86dic1	0
101	mo g	cm243t	rc	cu		5.5452720	14.3	5.7900000	0.8300000	0	0.0000000	86dic1	0
101		cm246s	es	cu	cm	5.4707462	30.0	5.5100000	30.0000000%	0	0.0000000	86rid1	0
101		cm243f	es	cu		6.1000850	30.0	6.1000000	0.0000000	0	0.0000000	87dic1	0
101		cm244f	es	cu		6.2014889	30.0	6.2000000	0.0000000	0	0.0000000	87dic1	0
101		cm246f	es	cu		5.4091262	30.0	5.4000000	0.0000000	0	0.0000000	87dic1	0

101		cm248f	es	cu		4.6757935	30.0	4.7000000	0.0000000	0	0.0000000	87dic1	0
101	tc g	pu242h	rc	cu		5.0859406	9.9	5.0400000	9.9000000%	0	0.0000000	84win1	0
101		np237t	es	cu		5.1188612	30.0	5.1500000	0.0000000	0	0.0000000	72sid1	0
101	tc g	np237t	rc	cu		6.7588846	9.1	6.8000000	0.6200000	0	0.0000000	80thi1	0
101		pu240t	es	cu		5.9258602	30.0	5.9300000	0.0000000	0	0.0000000	72sid1	0
101		pu242t	es	cu		6.0940894	30.0	6.1100000	0.0000000	0	0.0000000	72sid1	0
102		cm243t	es	cu		6.3089092	30.0	6.7100000	0.0000000	0	0.0000000	87rid2	0
102	tc g	cm243t	rc	cu		6.1866800	21.1	6.5800000	1.3900000	0	0.0000000	86dic1	0
102	tc m	cm243t	rc	cu		0.0376090	99.9	0.0400000	0.0400000	0	0.0000000	86dic1	0
102		cm246s	es	cu	cm	6.1389186	20.0	6.1700000	20.0000000%	0	0.0000000	86rid1	0
102		cm243f	es	cu		6.6000920	30.0	6.6000000	0.0000000	0	0.0000000	87dic1	0
102		cm244f	es	cu		6.5015610	30.0	6.5000000	0.0000000	0	0.0000000	87dic1	0
102		cm246f	es	cu		6.0101403	30.0	6.0000000	0.0000000	0	0.0000000	87dic1	0
102		cm248f	es	cu		5.3721883	30.0	5.4000000	0.0000000	0	0.0000000	87dic1	0
102		pu242h	es	cu		5.3683215	30.0	5.3000000	0.0000000	0	0.0000000	87rid1	0
102		np237t	es	cu		5.0877223	30.0	5.1500000	0.0000000	0	0.0000000	72sid1	0
102		pu240t	es	cu		6.1556996	30.0	6.1600000	0.0000000	0	0.0000000	72sid1	0
102		pu242t	es	cu		6.1339852	30.0	6.1500000	0.0000000	0	0.0000000	72sid1	0
103		cm243t	es	cu		6.3332652	30.0	6.4700000	0.0000000	0	0.0000000	87rid2	0
103	ru g	cm243t	rc	cu		6.6367138	5.0	6.7800000	0.0700000	0	0.0000000	82bre1	0
103	ru g	cm243t	rc	cu		5.9515073	8.4	6.0800000	0.5100000	0	0.0000000	86dic1	0
103	tc g	cm243t	rc	cu		5.2858782	23.9	5.4000000	1.2900000	0	0.0000000	86dic1	0
103	ru g	cm246s	rc	cu		6.8355644	8.7	6.8600000	0.6000000	0	0.0000000	81gin3	0
103		cm243f	es	cu		6.9000962	30.0	6.9000000	0.0000000	0	0.0000000	87dic1	0
103		cm244f	es	cu		6.7016090	30.0	6.7000000	0.0000000	0	0.0000000	87dic1	0
103		cm246f	es	cu		6.4108163	30.0	6.4000000	0.0000000	0	0.0000000	87dic1	0
103		cm248f	es	cu		5.9690981	30.0	6.0000000	0.0000000	0	0.0000000	87dic1	0
103	ru g	pu242h	rc	cu		5.6763522	7.9	5.6400000	7.9000000%	0	0.0000000	84win1	0
103		np237t	es	cu		4.7312193	30.0	4.7600000	0.0000000	0	0.0000000	72sid1	0
103	ru g	np237t	rc	cu		5.8345078	7.3	5.8700000	0.4300000	0	0.0000000	80thi1	0
103		pu240t	es	cu		5.9658322	30.0	5.9700000	0.0000000	0	0.0000000	72sid1	0
103		pu242t	es	cu		6.2337248	30.0	6.2500000	0.0000000	0	0.0000000	72sid1	0
104		cm243t	es	cu		5.4303441	30.0	5.6700000	0.0000000	0	0.0000000	87rid2	0
104	tc g	cm243t	rc	cu		6.7232832	8.4	7.0200000	0.5900000	0	0.0000000	86dic1	0
104		cm246s	es	cu	cm	6.9501313	20.0	7.0000000	20.0000000%	0	0.0000000	86rid1	0
104		cm243f	es	cu		6.9000962	30.0	6.9000000	0.0000000	0	0.0000000	87dic1	0

104		cm244f	es	cu		6.7016090	30.0	6.7000000	0.0000000	0		0.0000000	87dic1	0
104		cm246f	es	cu		6.7113233	30.0	6.7000000	0.0000000	0		0.0000000	87dic1	0
104		cm248f	es	cu		6.4665229	30.0	6.5000000	0.0000000	0		0.0000000	87dic1	0
104	tc g	pu242h	rc	cu		5.4996778	12.0	5.4500000	12.0000000%	0		0.0000000	84win1	0
104		np237t	es	cu		4.1447866	30.0	4.1700000	0.0000000	0		0.0000000	72sid1	0
104	tc g	np237t	rc	cu		3.8664796	7.5	3.8900000	0.2900000	0		0.0000000	80thi1	0
104		pu240t	es	cu		6.1057345	30.0	6.1100000	0.0000000	0		0.0000000	72sid1	0
104		pu242t	es	cu		6.2337248	30.0	6.2500000	0.0000000	0		0.0000000	72sid1	0
105		cm243t	es	cu		5.4424968	30.0	5.5600000	0.0000000	0		0.0000000	87rid2	0
105	rh g	cm243t	rc	cu		6.7933324	5.0	6.9400000	0.0800000	0		0.0000000	82bre1	0
105	rh g	cm243t	rc	cu		6.3822085	8.3	6.5200000	0.5400000	0		0.0000000	86dic1	0
105	ru g	cm243t	rc	cu		6.0004506	10.1	6.1300000	0.6200000	0		0.0000000	86dic1	0
105	ru g	cm243t	rc	cu		6.2745332	9.4	6.4100000	0.6000000	0		0.0000000	86dic1	0
105	tc g	cm243t	rc	cu		5.4229195	8.5	5.5400000	0.4700000	0		0.0000000	86dic1	0
105	ru g	cm246s	rc	cu		6.7957068	14.1	6.8200000	0.9600000	0		0.0000000	81gin3	0
105		cm243f	es	cu		6.6000650	30.0	6.6000000	0.0000000	0		0.0000000	87dic1	0
105		cm244f	es	cu		6.4010868	30.0	6.4000000	0.0000000	0		0.0000000	87dic1	0
105		cm246f	es	cu		6.8081263	30.0	6.8000000	0.0000000	0		0.0000000	87dic1	0
105		cm248f	es	cu		6.8748714	30.0	6.9000000	0.0000000	0		0.0000000	87dic1	0
105	rh g	pu242h	rc	cu		5.4447022	7.9	5.4200000	7.9000000%	0		0.0000000	84win1	0
105	ru g	pu242h	rc	cu		5.6054314	7.5	5.5800000	7.5000000%	0		0.0000000	84win1	0
105		np237t	es	cu		3.4700720	30.0	3.5000000	0.0000000	0		0.0000000	72sid1	0
105	rh g	np237t	rc	cu		2.5777677	9.6	2.6000000	0.2500000	0		0.0000000	80thi1	0
105		pu240t	es	cu		5.6560487	30.0	5.6600000	0.0000000	0		0.0000000	72sid1	0
105		pu242t	es	cu		6.0043237	30.0	6.0200000	0.0000000	0		0.0000000	72sid1	0
106		cm243t	es	cu		5.3874888	30.0	5.7300000	0.0000000	0		0.0000000	87rid2	0
106	tc g	cm243t	rc	cu		4.7951471	11.6	5.1000000	0.5900000	0		0.0000000	86dic1	0
106		cm246s	es	cu	cm	6.7316986	20.0	6.7800000	20.0000000%	0		0.0000000	86rid1	0
106		cm243f	es	cu		6.0000836	30.0	6.0000000	0.0000000	0		0.0000000	87dic1	0
106		cm244f	es	cu		5.9014169	30.0	5.9000000	0.0000000	0		0.0000000	87dic1	0
106		cm246f	es	cu		6.6111543	30.0	6.6000000	0.0000000	0		0.0000000	87dic1	0
106		cm248f	es	cu		6.9639477	30.0	7.0000000	0.0000000	0		0.0000000	87dic1	0
106		pu242h	es	cu		5.0644542	30.0	5.0000000	0.0000000	0		0.0000000	87rid1	0

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0measured nuclide	fissile material	meas. tech. type	meas. value	note err.	updated value	pct.	published nuclide	error material	normalizing value	normalizing no.	normalizing treatment	ref.	special

106		np237t	es	cu		3.2996102	30.0	3.3400000	0.0000000	0		0.0000000	72sid1	0
106		pu240t	es	cu		5.2663209	30.0	5.2700000	0.0000000	0		0.0000000	72sid1	0
106		pu242t	es	cu		5.9345060	30.0	5.9500000	0.0000000	0		0.0000000	72sid1	0
107		cm243t	es	cu		4.3626436	30.0	4.6400000	0.0000000	0		0.0000000	87rid2	0
107	rh g	cm243t	rc	cu		5.8481990	19.6	6.2200000	1.2200000	0		0.0000000	86dic1	0
107	ru g	cm243t	rc	cu		5.6977630	28.4	6.0600000	1.7200000	0		0.0000000	86dic1	0
107		cm246s	es	cu	cm	6.6065510	20.0	6.6400000	20.0000000%	0		0.0000000	86rid1	0
107		cm243f	es	cu		5.2000725	30.0	5.2000000	0.0000000	0		0.0000000	87dic1	0
107		cm244f	es	cu		5.2012488	30.0	5.2000000	0.0000000	0		0.0000000	87dic1	0
107		cm246f	es	cu		6.2104783	30.0	6.2000000	0.0000000	0		0.0000000	87dic1	0
107		cm248f	es	cu		6.7649778	30.0	6.8000000	0.0000000	0		0.0000000	87dic1	0
107	rh g	pu242h	rc	cu		3.8346378	10.0	3.8000000	10.0000000%	0		0.0000000	84win1	0
107		np237t	es	cu		2.4104937	30.0	2.4400000	0.0000000	0		0.0000000	72sid1	0
107		pu240t	es	cu		4.1970679	30.0	4.2000000	0.0000000	0		0.0000000	72sid1	0
107		pu242t	es	cu		5.4856778	30.0	5.5000000	0.0000000	0		0.0000000	72sid1	0
108		cm243t	es	cu		4.2935320	30.0	4.6900000	0.0000000	0		0.0000000	87rid2	0
108	ru g	cm243t	rc	cu		3.8266447	28.2	4.1800000	1.1800000	0		0.0000000	86dic1	0
108		cm246s	es	cu	cm	6.0068992	20.0	6.0500000	20.0000000%	0		0.0000000	86rid1	0
108		cm243f	es	cu		4.2000585	30.0	4.2000000	0.0000000	0		0.0000000	87dic1	0
108		cm244f	es	cu		4.3010327	30.0	4.3000000	0.0000000	0		0.0000000	87dic1	0
108		cm246f	es	cu		5.5092952	30.0	5.5000000	0.0000000	0		0.0000000	87dic1	0
108		cm248f	es	cu		6.3670379	30.0	6.4000000	0.0000000	0		0.0000000	87dic1	0
108		pu242h	es	cu		3.0386725	30.0	3.0000000	0.0000000	0		0.0000000	87rid1	0
108		np237t	es	cu		1.7782330	30.0	1.8000000	0.0000000	0		0.0000000	72sid1	0
108		pu240t	es	cu		3.2677172	30.0	3.2700000	0.0000000	0		0.0000000	72sid1	0
108		pu242t	es	cu		4.4483860	30.0	4.4600000	0.0000000	0		0.0000000	72sid1	0
109		cm243t	es	cu		3.7797042	30.0	4.0200000	0.0000000	0		0.0000000	87rid2	0
109	rh g	cm243t	rc	cu		4.0805761	15.2	4.3400000	0.6600000	0		0.0000000	86dic1	0
109		cm246s	es	cu	cm	5.5120923	20.0	5.5400000	20.0000000%	0		0.0000000	86rid1	0
109		cm243f	es	cu		3.2000446	30.0	3.2000000	0.0000000	0		0.0000000	87dic1	0
109		cm244f	es	cu		3.4011547	30.0	3.4000000	0.0000000	0		0.0000000	87dic1	0
109		cm246f	es	cu		4.7056167	30.0	4.7000000	0.0000000	0		0.0000000	87dic1	0
109		cm248f	es	cu		5.7788774	30.0	5.8000000	0.0000000	0		0.0000000	87dic1	0
109	pd g	pu242h	rc	cu		2.5463069	8.6	2.5300000	8.6000000%	0		0.0000000	84win1	0
109		np237t	es	cu		1.1008460	30.0	1.1200000	0.0000000	0		0.0000000	72sid1	0

109		pu240t	es	cu		2.1484990	30.0	2.1500000	0.0000000	0		0.0000000	72sid1	0
109		pu242t	es	cu		3.5035369	30.0	3.5100000	0.0000000	0		0.0000000	72sid1	0
110		cm243t	es	cu		2.6237403	30.0	2.9800000	0.0000000	0		0.0000000	87rid2	0
110		cm246s	es	cu	cm	4.8452344	20.0	4.8800000	20.0000000%	0		0.0000000	86rid1	0
110	ag m	cm243f	rc	cu		0.0015400	11.6	0.0015400	11.6000000%	0		0.0000000	86dic2	0
110		cm243f	es	cu		2.2000434	30.0	2.2000000	0.0000000	0		0.0000000	87dic1	0
110		cm244f	es	cu		2.6008830	30.0	2.6000000	0.0000000	0		0.0000000	87dic1	0
110		cm246f	es	cu		3.8064222	30.0	3.8000000	0.0000000	0		0.0000000	87dic1	0
110		cm248f	es	cu		4.9742484	30.0	5.0000000	0.0000000	0		0.0000000	87dic1	0
110		pu242h	es	cu		2.3296489	30.0	2.3000000	0.0000000	0		0.0000000	87rid1	0
110		np237t	es	cu		0.5366980	30.0	0.5500000	0.0000000	0		0.0000000	72sid1	0
110		pu240t	es	cu		1.4589808	30.0	1.4600000	0.0000000	0		0.0000000	72sid1	0
110		pu242t	es	cu		2.6032035	30.0	2.6100000	0.0000000	0		0.0000000	72sid1	0
111		cm243t	es	cu		1.8492398	30.0	2.0200000	0.0000000	0		0.0000000	87rid2	0
111		cm246s	es	re		4.2788845	44.9	1.0000000	42.0000000%	111	ag g	cm246s	0.9970000	89rid1 0
111	ag g	cm246s	rc	cu		4.6069442	42.5	4.6400000	1.9700000	0		0.0000000	81gin3	0
111		cm243f	es	cu		1.5000296	30.0	1.5000000	0.0000000	0		0.0000000	87dic1	0
111		cm244f	es	cu		1.9004563	30.0	1.9000000	0.0000000	0		0.0000000	87dic1	0
111		cm246f	es	cu		2.9049011	30.0	2.9000000	0.0000000	0		0.0000000	87dic1	0
111		cm248f	es	cu		4.0788837	30.0	4.1000000	0.0000000	0		0.0000000	87dic1	0
111		pu242h	es	re		2.2486283	15.8	1.0000000	11.0000000%	111	ag g	pu242h	0.9970000	89rid1 0
111	ag g	pu242h	rc	cu		2.2141799	11.0	2.2000000	11.0000000%	0		0.0000000	84win1	0
111	pd m	pu242h	rc	cu	x1	0.0000000	0.0	0.0000940	64.0000000%	0		0.0100000	84win1	0
111		np237t	es	cu		0.1366140	30.0	0.1400000	0.0000000	0		0.0000000	72sid1	0
111		pu240t	es	cu		0.3994415	30.0	0.4000000	0.0000000	0		0.0000000	72sid1	0
111		pu242t	es	cu		1.1059123	30.0	1.1100000	0.0000000	0		0.0000000	72sid1	0
112		cm243t	es	cu		1.0154429	30.0	1.0800000	0.0000000	0		0.0000000	87rid2	0
112	ag g	cm243t	rc	cu		3.8267154	23.3	4.0700000	0.9500000	0		0.0000000	82bre1	0
112	ag g	cm243t	rc	cu		1.9932768	14.6	2.1200000	0.3100000	0		0.0000000	86dic1	0
112	ag g	cm246s	rc	cu		4.0295981	13.3	4.0500000	0.5400000	0		0.0000000	81gin3	0
112		cm243f	es	cu		0.9600189	30.0	0.9600000	0.0000000	0		0.0000000	87dic1	0
112		cm244f	es	cu		1.3004415	30.0	1.3000000	0.0000000	0		0.0000000	87dic1	0
112		cm246f	es	cu		2.1050192	30.0	2.1000000	0.0000000	0		0.0000000	87dic1	0
112		cm248f	es	cu		3.1835190	30.0	3.2000000	0.0000000	0		0.0000000	87dic1	0
112	pd g	pu242h	rc	cu		1.9323752	7.2	1.9200000	7.2000000%	0		0.0000000	84win1	0
112		np237t	es	cu		0.0585489	30.0	0.0600000	0.0000000	0		0.0000000	72sid1	0

112		pu240t	es	cu		0.1997208	30.0	0.2000000	0.0000000	0		0.0000000	72sid1	0
112		pu242t	es	cu		0.3979168	30.0	0.4000000	0.0000000	0		0.0000000	72sid1	0
113		cm243t	es	cu		0.4669829	30.0	0.5620000	0.0000000	0		0.0000000	87rid2	0
113		cm246s	es	cu	cm	1.7521673	50.0	1.7700000	50.0000000%	0		0.0000000	86rid1	0
113		cm243f	es	cu		0.5900164	30.0	0.5900000	0.0000000	0		0.0000000	87dic1	0
113		cm244f	es	cu		0.8502887	30.0	0.8500000	0.0000000	0		0.0000000	87dic1	0
113		cm246f	es	cu		1.5035851	30.0	1.5000000	0.0000000	0		0.0000000	87dic1	0
113		cm248f	es	cu		2.3876392	30.0	2.4000000	0.0000000	0		0.0000000	87dic1	0
113		pu242h	es	cu		1.7780669	10.0	1.7700000	10.0000000%	0		0.0000000	89rid1	0
113		pu242h	es	cu		1.7780669	10.0	1.7700000	10.0000000%	0		0.0000000	89rid1	0
113	ag g	pu242h	rc	cu		1.6072922	10.0	1.6000000	10.0000000%	0		0.0000000	84win1	0
113		np237t	es	cu		0.0390326	30.0	0.0400000	0.0000000	0		0.0000000	72sid1	0
113		pu240t	es	cu		0.1098914	30.0	0.1100000	0.0000000	0		0.0000000	72sid1	0
113		pu242t	es	cu		0.2590425	30.0	0.2600000	0.0000000	0		0.0000000	72sid1	0
114		cm243t	es	cu		0.1778191	30.0	0.2140000	0.0000000	0		0.0000000	87rid2	0
114		cm246s	es	cu	cm	1.2420473	50.0	1.2600000	50.0000000%	0		0.0000000	86rid1	0
114		cm243f	es	cu		0.3500098	30.0	0.3500000	0.0000000	0		0.0000000	87dic1	0
114		cm244f	es	cu		0.5402594	30.0	0.5400000	0.0000000	0		0.0000000	87dic1	0
114		cm246f	es	cu		1.0023901	30.0	1.0000000	0.0000000	0		0.0000000	87dic1	0
114		cm248f	es	cu		1.6876178	30.0	1.7000000	0.0000000	0		0.0000000	87dic1	0
114		pu242h	es	cu		1.4255226	30.0	1.4000000	0.0000000	0		0.0000000	87rid1	0
114		np237t	es	cu		0.0341535	30.0	0.0350000	0.0000000	0		0.0000000	72sid1	0
114		pu240t	es	cu		0.0998604	30.0	0.1000000	0.0000000	0		0.0000000	72sid1	0
114		pu242t	es	cu		0.1492188	30.0	0.1500000	0.0000000	0		0.0000000	72sid1	0
115		cm243t	es	cu		0.1259043	30.0	0.1430000	0.0000000	0		0.0000000	87rid2	0
115	in m	cm243t	rc	cu		0.3081574	48.6	0.3500000	0.1700000	0		0.0000000	86dic1	0
115		cm246s	es	cu	cm	0.8137184	50.0	0.8220000	50.0000000%	0		0.0000000	86rid1	0
115		cm243f	es	cu		0.2100041	30.0	0.2100000	0.0000000	0		0.0000000	87dic1	0
115		cm244f	es	cu		0.3401155	30.0	0.3400000	0.0000000	0		0.0000000	87dic1	0
115		cm246f	es	cu		0.6510985	30.0	0.6500000	0.0000000	0		0.0000000	87dic1	0
115		cm248f	es	cu		1.0943346	30.0	1.1000000	0.0000000	0		0.0000000	87dic1	0
115	cd g	pu242h	rc	cu		1.1302090	13.0	1.1200000	13.0000000%	0		0.0000000	84win1	0
115	cd m	pu242h	rc	cu	le	0.1110027	35.0	0.1100000	35.0000000%	0		0.0000000	84win1	0
115		np237t	es	cu		0.0247862	30.0	0.0250000	0.0000000	0		0.0000000	72sid1	0
115	cd g	np237t	rc	cu		0.0129880	9.2	0.0131000	0.0012000	0		0.0000000	80thi1	0
115		pu240t	es	cu		0.0699309	30.0	0.0700000	0.0000000	0		0.0000000	72sid1	0

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 115        pu242t   es    cu        0.1195581 30.0   0.1200000  0.0000000     0                    0.0000000   72sid1      0
 116        cm243t   es    cu        0.0694658 30.0   0.0836000  0.0000000     0                    0.0000000   87rid2      0
 116        cm246s   es    cu    cm   0.0709741 50.0   0.0720000 50.0000000%    0                    0.0000000   86rid1      0
 116        cm243f   es    cu        0.1300036 30.0   0.1300000  0.0000000     0                    0.0000000   87dic1      0
 116        cm244f   es    cu        0.2100713 30.0   0.2100000  0.0000000     0                    0.0000000   87dic1      0
 116        cm246f   es    cu        0.4009560 30.0   0.4000000  0.0000000     0                    0.0000000   87dic1      0
 116        cm248f   es    cu        0.7346101 30.0   0.7400000  0.0000000     0                    0.0000000   87dic1      0
 116        pu242h   es    cu        0.9164074 30.0   0.9000000  0.0000000     0                    0.0000000   87rid1      0
 116        np237t   es    cu        0.0196580 30.0   0.0200000  0.0000000     0                    0.0000000   72sid1      0
 116        pu240t   es    cu        0.0499302 30.0   0.0500000  0.0000000     0                    0.0000000   72sid1      0
 116        pu242t   es    cu        0.0797054 30.0   0.0800000  0.0000000     0                    0.0000000   72sid1      0
 117        cm243t   es    cu        0.0457834 30.0   0.0520000  0.0000000     0                    0.0000000   87rid2      0
 117        cm246s   es    cu    cm   0.0253421 50.0   0.0256000 50.0000000%    0                    0.0000000   86rid1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value       no.   treatment

 117        cm243f   es    cu        0.0880017 30.0   0.0880000  0.0000000     0                    0.0000000   87dic1      0
 117        cm244f   es    cu        0.1400475 30.0   0.1400000  0.0000000     0                    0.0000000   87dic1      0
 117        cm246f   es    cu        0.2504225 30.0   0.2500000  0.0000000     0                    0.0000000   87dic1      0
 117        cm248f   es    cu        0.4576309 30.0   0.4600000  0.0000000     0                    0.0000000   87dic1      0
 117        pu242h   es    cu        0.8103127 30.0   0.8000000  0.0000000     0                    0.0000000   87rid1      0
 117 cd g   pu242h   rc    cu    x1   0.0000000  0.0   0.5030000 20.0000000%    0                    0.0000000   84win1      0
 117 cd m   pu242h   rc    cu    x1   0.0000000  0.0   0.1510000 20.0000000%    0                    0.0000000   84win1      0
 117        np237t   es    cu        0.0177823 30.0   0.0180000  0.0000000     0                    0.0000000   72sid1      0
 117        pu240t   es    cu        0.0429700 30.0   0.0430000  0.0000000     0                    0.0000000   72sid1      0
 117        pu242t   es    cu        0.0498698 30.0   0.0500000  0.0000000     0                    0.0000000   72sid1      0
 118        cm243t   es    cu        0.0323125 30.0   0.0367000  0.0000000     0                    0.0000000   87rid2      0
 118        cm246s   es    cu    cm   0.0086056 99.0   0.0087300 99.0000000%    0                    0.0000000   86rid1      0
 118        cm243f   es    cu        0.0680013 30.0   0.0680000  0.0000000     0                    0.0000000   87dic1      0
 118        cm244f   es    cu        0.0950323 30.0   0.0950000  0.0000000     0                    0.0000000   87dic1      0
 118        cm246f   es    cu        0.1503585 30.0   0.1500000  0.0000000     0                    0.0000000   87dic1      0
 118        cm248f   es    cu        0.2779606 30.0   0.2800000  0.0000000     0                    0.0000000   87dic1      0
 118        pu242h   es    cu        0.7127613 30.0   0.7000000  0.0000000     0                    0.0000000   87rid1      0
 118 cd g   pu242h   rc    cu    x1   0.0000000  0.0   0.4200000 16.0000000%    0                    0.0000000   84win1      0
 118        np237t   es    cu        0.0167093 30.0   0.0170000  0.0000000     0                    0.0000000   72sid1      0
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118		pu240t	es	cu		0.0419585	30.0	0.0420000	0.0000000	0		0.0000000	72sid1	0
118		pu242t	es	cu		0.0498159	30.0	0.0500000	0.0000000	0		0.0000000	72sid1	0
119		cm243t	es	cu		0.0272939	30.0	0.0310000	0.0000000	0		0.0000000	87rid2	0
119		cm246s	es	cu	cm	0.0040219	99.0	0.0040800	99.0000000%	0		0.0000000	86rid1	0
119		cm243f	es	cu		0.0600012	30.0	0.0600000	0.0000000	0		0.0000000	87dic1	0
119		cm244f	es	cu		0.0740251	30.0	0.0740000	0.0000000	0		0.0000000	87dic1	0
119		cm246f	es	cu		0.0982342	30.0	0.0980000	0.0000000	0		0.0000000	87dic1	0
119		cm248f	es	cu		0.1687618	30.0	0.1700000	0.0000000	0		0.0000000	87dic1	0
119		pu242h	es	cu		0.6109382	30.0	0.6000000	0.0000000	0		0.0000000	87rid1	0
119		np237t	es	cu		0.0161996	30.0	0.0170000	0.0000000	0		0.0000000	72sid1	0
119		pu240t	es	cu		0.0419585	30.0	0.0420000	0.0000000	0		0.0000000	72sid1	0
119		pu242t	es	cu		0.0498159	30.0	0.0500000	0.0000000	0		0.0000000	72sid1	0
120		cm243t	es	cu		0.0352180	30.0	0.0400000	0.0000000	0		0.0000000	87rid2	0
120		cm246s	es	cu	cm	0.0020306	99.0	0.0020600	99.0000000%	0		0.0000000	86rid1	0
120		cm243f	es	cu		0.0570011	30.0	0.0570000	0.0000000	0		0.0000000	87dic1	0
120		cm244f	es	cu		0.0650221	30.0	0.0650000	0.0000000	0		0.0000000	87dic1	0
120		cm246f	es	cu		0.0701673	30.0	0.0700000	0.0000000	0		0.0000000	87dic1	0
120		cm248f	es	cu		0.1091988	30.0	0.1100000	0.0000000	0		0.0000000	87dic1	0
120		pu242h	es	cu		0.6109382	30.0	0.6000000	0.0000000	0		0.0000000	87rid1	0
120		np237t	es	cu		0.0142937	30.0	0.0150000	0.0000000	0		0.0000000	72sid1	0
120		pu240t	es	cu		0.0308652	30.0	0.0310000	0.0000000	0		0.0000000	72sid1	0
120		pu242t	es	cu		0.0358674	30.0	0.0360000	0.0000000	0		0.0000000	72sid1	0
121		cm243t	es	cu		0.0373919	30.0	0.0450000	0.0000000	0		0.0000000	87rid2	0
121		cm246s	es	cu	cm	0.0015482	99.0	0.0015800	99.0000000%	0		0.0000000	86rid1	0
121		cm243f	es	cu		0.0590016	30.0	0.0590000	0.0000000	0		0.0000000	87dic1	0
121		cm244f	es	cu		0.0640307	30.0	0.0640000	0.0000000	0		0.0000000	87dic1	0
121		cm246f	es	cu		0.0571927	30.0	0.0570000	0.0000000	0		0.0000000	87dic1	0
121		cm248f	es	cu		0.0724683	30.0	0.0730000	0.0000000	0		0.0000000	87dic1	0
121	sn g	pu242h	rc	cu		0.6438314	20.0	0.6580000	20.0000000%	0		0.0000000	84win1	0
121	sn m	pu242h	es	cu		0.0033268	30.0	0.0034000	0.0000000	0		0.0000000	87rid1	0
121		np237t	es	cu		0.0158680	30.0	0.0170000	0.0000000	0		0.0000000	72sid1	0
121		pu240t	es	cu		0.0308094	30.0	0.0310000	0.0000000	0		0.0000000	72sid1	0
121		pu242t	es	cu		0.0247440	30.0	0.0250000	0.0000000	0		0.0000000	72sid1	0
122		cm243t	es	cu		0.0541092	30.0	0.0524000	0.0000000	0		0.0000000	87rid2	0
122		cm246s	es	cu	cm	0.0019499	99.0	0.0019900	99.0000000%	0		0.0000000	86rid1	0
122		cm243f	es	cu		0.0644944	30.0	0.0650000	0.0000000	0		0.0000000	87dic1	0

122		cm244f	es	cu		0.0693677	30.0	0.0700000	0.0000000	0		0.0000000	87dic1	0
122		cm246f	es	cu		0.0561893	30.0	0.0560000	0.0000000	0		0.0000000	87dic1	0
122		cm248f	es	cu		0.0574026	30.0	0.0580000	0.0000000	0		0.0000000	87dic1	0
122		pu242h	es	cu		0.7756384	30.0	0.8000000	0.0000000	0		0.0000000	87rid1	0
122		np237t	es	cu		0.0177348	30.0	0.0190000	0.0000000	0		0.0000000	72sid1	0
122		pu240t	es	cu		0.0337909	30.0	0.0340000	0.0000000	0		0.0000000	72sid1	0
122		pu242t	es	cu		0.0247440	30.0	0.0250000	0.0000000	0		0.0000000	72sid1	0
123		cm243t	es	cu		0.0611310	30.0	0.0592000	0.0000000	0		0.0000000	87rid2	0
123		cm246s	es	cu	cm	0.0029190	99.0	0.0032700	99.0000000%	0		0.0000000	86rid1	0
123		cm243f	es	cu		0.0793778	30.0	0.0800000	0.0000000	0		0.0000000	87dic1	0
123		cm244f	es	cu		0.0862141	30.0	0.0870000	0.0000000	0		0.0000000	87dic1	0
123		cm246f	es	cu		0.0642256	30.0	0.0650000	0.0000000	0		0.0000000	87dic1	0
123		cm248f	es	cu		0.0554232	30.0	0.0560000	0.0000000	0		0.0000000	87dic1	0
123		pu242h	es	cu		0.8806204	30.0	0.9000000	0.0000000	0		0.0000000	87rid1	0
123		np237t	es	cu		0.0196017	30.0	0.0210000	0.0000000	0		0.0000000	72sid1	0
123		pu240t	es	cu		0.0417417	30.0	0.0420000	0.0000000	0		0.0000000	72sid1	0
123		pu242t	es	cu		0.0316723	30.0	0.0320000	0.0000000	0		0.0000000	72sid1	0
124		cm243t	es	cu		0.0722832	30.0	0.0700000	0.0000000	0		0.0000000	87rid2	0
124		cm246s	es	cu	cm	0.0043597	99.0	0.0051400	99.0000000%	0		0.0000000	86rid1	0
124		cm243f	es	cu		0.1091444	30.0	0.1100000	0.0000000	0		0.0000000	87dic1	0
124		cm244f	es	cu		0.1189161	30.0	0.1200000	0.0000000	0		0.0000000	87dic1	0
124		cm246f	es	cu		0.0859636	30.0	0.0870000	0.0000000	0		0.0000000	87dic1	0
124		cm248f	es	cu		0.0661685	30.0	0.0670000	0.0000000	0		0.0000000	87dic1	0
124		pu242h	es	cu		1.0763139	30.0	1.1000000	0.0000000	0		0.0000000	87rid1	0
124		np237t	es	cu		0.0261355	30.0	0.0280000	0.0000000	0		0.0000000	72sid1	0
124		pu240t	es	cu		0.0606249	30.0	0.0610000	0.0000000	0		0.0000000	72sid1	0
124		pu242t	es	cu		0.0405801	30.0	0.0410000	0.0000000	0		0.0000000	72sid1	0
125		cm243t	es	cu		0.1023064	30.0	0.1000000	0.0000000	0		0.0000000	87rid2	0
125		cm246s	es	cu	cm	0.0101650	99.0	0.0110000	99.0000000%	0		0.0000000	86rid1	0
125		cm243f	es	cu		0.1795050	30.0	0.1800000	0.0000000	0		0.0000000	87dic1	0
125	sb g	cm243f	rc	cu		0.2144088	12.1	0.2150000	0.0260000	0		0.0000000	87dic1	0
125		cm244f	es	cu		0.1794252	30.0	0.1800000	0.0000000	0		0.0000000	87dic1	0
125	sb g	cm244f	rc	cu		0.1794252	13.3	0.1800000	0.0240000	0		0.0000000	87dic1	0
125		cm246f	es	cu		0.1294525	30.0	0.1300000	0.0000000	0		0.0000000	87dic1	0
125	sb g	cm246f	rc	cu		0.1155114	14.7	0.1160000	0.0170000	0		0.0000000	87dic1	0
125		cm248f	es	cu		0.0945832	30.0	0.0950000	0.0000000	0		0.0000000	87dic1	0

125 sb g cm248f rc cu 0.0866183 12.6 0.0870000 0.0110000 0 0.0000000 87dic1 0
125 sb g pu242h rc cu 1.3294449 18.0 1.3500000 18.0000000% 0 0.0000000 84win1 0
125 sn g pu242h rc cu x1 0.0000000 0.0 0.6840000 16.0000000% 0 0.0000000 84win1 0
125 np237t es cu 0.0295404 30.0 0.0310000 0.0000000 0 0.0000000 72sid1 0
125 pu240t es cu 0.0607348 30.0 0.0610000 0.0000000 0 0.0000000 72sid1 0
125 pu242t es cu 0.0555944 30.0 0.0560000 0.0000000 0 0.0000000 72sid1 0
126 cm243t es cu 0.1662515 30.0 0.1610000 0.0000000 0 0.0000000 87rid2 0
126 cm246s es cu cm 0.0346349 50.0 0.0388000 50.0000000% 0 0.0000000 86rid1 0
126 cm243f es cu 0.2976666 30.0 0.3000000 0.0000000 0 0.0000000 87dic1 0
126 cm244f es cu 0.2873805 30.0 0.2900000 0.0000000 0 0.0000000 87dic1 0
126 cm246f es cu 0.2074983 30.0 0.2100000 0.0000000 0 0.0000000 87dic1 0
126 cm248f es cu 0.1481384 30.0 0.1500000 0.0000000 0 0.0000000 87dic1 0
126 pu242h es cu 1.5655474 30.0 1.6000000 0.0000000 0 0.0000000 87rid1 0
126 sb g pu242h rc in x1 0.0000000 0.0 0.1200000 60.0000000% 0 0.0000000 84win1 0
126 np237t es cu 0.0709393 30.0 0.0760000 0.0000000 0 0.0000000 72sid1 0
126 pu240t es cu 0.1391392 30.0 0.1400000 0.0000000 0 0.0000000 72sid1 0
126 pu242t es cu 0.1187710 30.0 0.1200000 0.0000000 0 0.0000000 72sid1 0
127 cm243t es cu 0.4829611 30.0 0.4810000 0.0000000 0 0.0000000 87rid2 0
127 sb g cm243t rc cu 0.6626910 5.0 0.6600000 0.0100000 0 0.0000000 82bre1 0
127 sb g cm243t rc cu 0.6426094 9.4 0.6400000 0.0600000 0 0.0000000 86dic1 0
127 cm246s es cu cm 0.1053466 50.0 0.1140000 50.0000000% 0 0.0000000 86rid1 0
127 cm243f es cu 0.4972501 30.0 0.5000000 0.0000000 0 0.0000000 87dic1 0
127 cm244f es cu 0.4669980 30.0 0.4700000 0.0000000 0 0.0000000 87dic1 0
127 cm246f es cu 0.3470517 30.0 0.3500000 0.0000000 0 0.0000000 87dic1 0
127 cm248f es cu 0.2378939 30.0 0.2400000 0.0000000 0 0.0000000 87dic1 0
127 sb g pu242h rc cu 1.8557637 12.0 1.8700000 12.0000000% 0 0.0000000 84win1 0
127 sn g pu242h rc cu 1.6473624 11.0 1.6600000 11.0000000% 0 0.0000000 84win1 0
127 np237t es cu 0.2223424 30.0 0.2300000 0.0000000 0 0.0000000 72sid1 0
127 sb g np237t rc cu 0.1643400 23.5 0.1700000 0.0400000 0 0.0000000 80thi1 0
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127 pu240t es cu 0.3584348 30.0 0.3600000 0.0000000 0 0.0000000 72sid1 0
127 pu242t es cu 0.2084792 30.0 0.2100000 0.0000000 0 0.0000000 72sid1 0
128 cm243t es cu 0.6736804 30.0 0.6660000 0.0000000 0 0.0000000 87rid2 0

128	sb	g	cm243t	rc	cu		0.2124217	9.5	0.2100000	0.0200000	0	0.0000000	86dic1	0
128	sb	m	cm243t	rc	cu		0.5866886	13.8	0.5800000	0.0800000	0	0.0000000	86dic1	0
128	sn	g	cm243t	rc	cu		0.3439209	23.5	0.3400000	0.0800000	0	0.0000000	86dic1	0
128			cm246s	es	cu	cm	0.2508349	50.0	0.2810000	50.0000000%	0	0.0000000	86rid1	0
128			cm243f	es	cu		0.8254352	30.0	0.8300000	0.0000000	0	0.0000000	87dic1	0
128			cm244f	es	cu		0.7452096	30.0	0.7500000	0.0000000	0	0.0000000	87dic1	0
128			cm246f	es	cu		0.5533287	30.0	0.5600000	0.0000000	0	0.0000000	87dic1	0
128			cm248f	es	cu		0.3950358	30.0	0.4000000	0.0000000	0	0.0000000	87dic1	0
128			pu242h	es	cu		2.4619350	30.0	2.5000000	0.0000000	0	0.0000000	87rid1	0
128	sb	g	pu242h	rc	cu	x1	0.0000000	0.0	0.6780000	11.0000000%	0	0.0000000	84win1	0
128	sn	g	pu242h	rc	cu	x1	0.0000000	0.0	1.2900000	20.0000000%	0	0.0000000	84win1	0
128	sn	g	pu242h	rc	cu	x1	0.0000000	0.0	1.3000000	17.0000000%	0	0.0000000	84win1	0
128			np237t	es	cu		0.5227109	30.0	0.5600000	0.0000000	0	0.0000000	72sid1	0
128			pu240t	es	cu		0.6969565	30.0	0.7000000	0.0000000	0	0.0000000	72sid1	0
128			pu242t	es	cu		0.4156985	30.0	0.4200000	0.0000000	0	0.0000000	72sid1	0
129			cm243t	es	cu		1.2846458	30.0	1.2700000	0.0000000	0	0.0000000	87rid2	0
129	sb	g	cm243t	rc	cu		1.1430313	15.0	1.1300000	0.1700000	0	0.0000000	86dic1	0
129			cm246s	es	cu	cm	0.5664689	50.0	0.6130000	50.0000000%	0	0.0000000	86rid1	0
129			cm243f	es	cu		1.2928503	30.0	1.3000000	0.0000000	0	0.0000000	87dic1	0
129			cm244f	es	cu		1.0929741	30.0	1.1000000	0.0000000	0	0.0000000	87dic1	0
129			cm246f	es	cu		0.8725870	30.0	0.8800000	0.0000000	0	0.0000000	87dic1	0
129			cm248f	es	cu		0.6343837	30.0	0.6400000	0.0000000	0	0.0000000	87dic1	0
129			pu242h	es	cu		2.6588897	30.0	2.7000000	0.0000000	0	0.0000000	87rid1	0
129	te	g	pu242h	rc	cu	x1	0.0000000	0.0	2.1600000	10.0000000%	0	0.0000000	84win1	0
129	sb	g	pu242h	rc	cu	x1	0.0000000	0.0	2.0000000	10.0000000%	0	0.0000000	84win1	0
129			np237t	es	cu		1.0057514	30.0	1.0300000	0.0000000	0	0.0000000	72sid1	0
129	sb	g	np237t	rc	cu		0.9666931	13.1	0.9900000	0.1300000	0	0.0000000	80thi1	0
129			pu240t	es	cu		1.3540869	30.0	1.3600000	0.0000000	0	0.0000000	72sid1	0
129			pu242t	es	cu		0.8438443	30.0	0.8500000	0.0000000	0	0.0000000	72sid1	0
130			cm243t	es	cu		1.8903345	30.0	1.8600000	0.0000000	0	0.0000000	87rid2	0
130	sb	g	cm243t	rc	cu		0.9045149	10.1	0.8900000	0.0900000	0	0.0000000	86dic1	0
130	sb	g	cm243t	rc	cu		0.9045149	10.1	0.8900000	0.0900000	0	0.0000000	86dic1	0
130	sb	g	cm243t	rc	cu		0.9654934	11.6	0.9500000	0.1100000	0	0.0000000	86dic1	0
130	sb	m	cm243t	rc	cu		0.9045149	11.2	0.8900000	0.1000000	0	0.0000000	86dic1	0
130	sb	m	cm243t	rc	cu		1.0671243	14.3	1.0500000	0.1500000	0	0.0000000	86dic1	0
130	sn	g	cm243t	rc	cu		0.2642403	34.6	0.2600000	0.0900000	0	0.0000000	86dic1	0

130		cm246s	es	cu	cm	1.7927400	50.0	1.9400000	50.0000000%	0			0.0000000	86rid1	0		
130		cm243f	es	cu		1.9890005	30.0	2.0000000	0.0000000	0			0.0000000	87dic1	0		
130		cm244f	es	cu		1.6891418	30.0	1.7000000	0.0000000	0			0.0000000	87dic1	0		
130		cm246f	es	cu		1.2890490	30.0	1.3000000	0.0000000	0			0.0000000	87dic1	0		
130		cm248f	es	cu		0.9912245	30.0	1.0000000	0.0000000	0			0.0000000	87dic1	0		
130		pu242h	es	cu		2.9354015	30.0	3.0000000	0.0000000	0			0.0000000	87rid1	0		
130	sb g	pu242h	rc	cu	x1	0.0000000	0.0	1.4200000	12.0000000%	0			0.0000000	84win1	0		
130		np237t	es	cu		1.8391267	30.0	1.9300000	0.0000000	0			0.0000000	72sid1	0		
130		pu240t	es	cu		2.1605651	30.0	2.1700000	0.0000000	0			0.0000000	72sid1	0		
130		pu242t	es	cu		1.6316018	30.0	1.6400000	0.0000000	0			0.0000000	72sid1	0		
131		cm243t	es	cu		2.9585049	30.0	2.9500000	0.0000000	0			0.0000000	87rid2	0		
131	i g	cm243t	rc	cu		3.5401771	5.0	3.5300000	0.0900000	0			0.0000000	82bre1	0		
131	i g	cm243t	rc	cu		3.7006383	5.0	3.6900000	0.0400000	0			0.0000000	82bre1	0		
131	i g	cm243t	rc	cu		3.3596581	8.4	3.3500000	0.2800000	0			0.0000000	86dic1	0		
131	te g	cm243t	rc	cu		1.2536038	5.0	1.2500000	0.0600000	0			0.0000000	82bre1	0		
131	te g	cm243t	rc	cu		2.1963138	13.7	2.1900000	0.3000000	0			0.0000000	86dic1	0		
131	te m	cm243t	rc	cu		1.1733731	9.4	1.1700000	0.1100000	0			0.0000000	86dic1	0		
131	sb g	cm243t	rc	cu		1.5945840	16.4	1.5900000	0.2600000	0			0.0000000	86dic1	0		
131	i g	cm246s	rc	cu		3.3256687	8.6	3.3900000	0.2900000	0			0.0000000	81gin3	0		
131		cm243f	es	cu		2.8887221	30.0	2.9000000	0.0000000	0			0.0000000	87dic1	0		
131		cm244f	es	cu		2.3891606	30.0	2.4000000	0.0000000	0			0.0000000	87dic1	0		
131		cm246f	es	cu		1.8886826	30.0	1.9000000	0.0000000	0			0.0000000	87dic1	0		
131		cm248f	es	cu		1.4868367	30.0	1.5000000	0.0000000	0			0.0000000	87dic1	0		
131	i g	pu242h	rc	cu		3.8889517	6.1	3.9100000	6.1000000%	0			0.0000000	84win1	0		
131	te m	pu242h	rc	cu	x1	0.0000000	0.0	1.5900000	10.0000000%	0			0.0000000	84win1	0		
131	sb g	pu242h	rc	cu		2.3870803	13.0	2.4000000	13.0000000%	0			0.0000000	84win1	0		
131		np237t	es	cu		2.9551961	30.0	2.9800000	0.0000000	0			0.0000000	72sid1	0		
131		np237t	ms	re		3.0484989	5.8	0.6730000	0.0100000	132		np237t	1.0000000	74tra1	0		
131	xe g	np237t	rc	re		3.1534755	7.5	0.4437000	0.0160000	136	xe g	np237t	1.0000000	72pet2	0		
131	i g	np237t	rc	cu		3.4807847	8.0	3.5100000	0.2800000	0			0.0000000	80thi1	0		
131		pu240t	es	cu		3.3397007	30.0	3.3500000	0.0000000	0			0.0000000	72sid1	0		
131		pu242t	es	cu		2.6165321	30.0	2.6300000	0.0000000	0			0.0000000	72sid1	0		
132		cm243t	es	cu		4.2372058	30.0	4.2200000	0.0000000	0			0.0000000	87rid2	0		
132	i g	cm243t	rc	cu		4.7392444	5.0	4.7200000	0.0500000	0			0.0000000	82bre1	0		
132	i g	cm243t	rc	cu		4.3576951	8.8	4.3400000	0.3800000	0			0.0000000	86dic1	0		
132	te g	cm243t	rc	cu		4.9701822	5.0	4.9500000	0.1500000	0			0.0000000	82bre1	0		

132	te	g	cm243t	rc	cu	4.5183474	9.1	4.5000000	0.4100000	0		0.0000000	86dic1	0
132	sb	g	cm243t	rc	cu	0.3915901	15.4	0.3900000	0.0600000	0		0.0000000	86dic1	0
132	sb	m	cm243t	rc	cu	0.3514270	17.1	0.3500000	0.0600000	0		0.0000000	86dic1	0
132	te	g	cm246s	rc	cu	4.5911887	8.1	4.6800000	0.3800000	0		0.0000000	81gin3	0
132			cm243f	es	cu	3.8848332	30.0	3.9000000	0.0000000	0		0.0000000	87dic1	0
132			cm244f	es	cu	3.1855474	30.0	3.2000000	0.0000000	0		0.0000000	87dic1	0
132			cm246f	es	cu	2.6772557	30.0	2.7000000	0.0000000	0		0.0000000	87dic1	0
132			cm248f	es	cu	2.0815714	30.0	2.1000000	0.0000000	0		0.0000000	87dic1	0
132	i	g	pu242h	rc	cu	5.2558153	5.3	5.2700000	5.3000000%	0		0.0000000	84win1	0
132	i	g	pu242h	es	fc	5.2548027	3.0	0.9999910	1.0000000%	132	pu242h	1.0000000	89rid1	0
132	te	g	pu242h	rc	cu	4.5477263	7.4	4.5600000	7.4000000%	0		0.0000000	84win1	0
132	te	g	pu242h	es	fc	5.2216131	3.0	0.9936750	1.0000000%	132	pu242h	1.0000000	89rid1	0
132			np237t	es	cu	4.2987955	30.0	4.3500000	0.0000000	0		0.0000000	72sid1	0
132	xe	g	np237t	rc	re	4.9188069	7.5	0.6945000	0.0160000	136	xe g	np237t	1.0000000	72pet2 0
132	i	g	np237t	rc	cu	4.2493841	7.9	4.3000000	0.3400000	0		0.0000000	80thi1	0
132			pu240t	es	cu	4.8151506	30.0	4.8300000	0.0000000	0		0.0000000	72sid1	0
132			pu242t	es	cu	3.9695677	30.0	3.9900000	0.0000000	0		0.0000000	72sid1	0
133			cm243t	es	cu	5.5324654	30.0	5.5100000	0.0000000	0		0.0000000	87rid2	0
133	i	g	cm243t	rc	cu	5.8437293	5.0	5.8200000	0.0600000	0		0.0000000	82bre1	0
133	i	g	cm243t	rc	cu	5.1910792	8.5	5.1700000	0.4400000	0		0.0000000	86dic1	0
133	i	g	cm246s	rc	cu	5.6997449	9.1	5.8100000	0.5300000	0		0.0000000	81gin3	0
133			cm243f	es	cu	4.8809443	30.0	4.9000000	0.0000000	0		0.0000000	87dic1	0
133			cm244f	es	cu	3.9819343	30.0	4.0000000	0.0000000	0		0.0000000	87dic1	0
133			cm246f	es	cu	3.4791521	30.0	3.5000000	0.0000000	0		0.0000000	87dic1	0
133			cm248f	es	cu	2.8820049	30.0	2.9000000	0.0000000	0		0.0000000	87dic1	0
133	xe	g	pu242h	rc	cu	5.6295311	7.6	5.6600000	7.6000000%	0		0.0000000	84win1	0
133	i	g	pu242h	rc	cu	5.4902847	7.2	5.5200000	7.2000000%	0		0.0000000	84win1	0
133	te	m	pu242h	rc	cu	x1 0.0000000	0.0	1.4300000	13.0000000%	0		0.0000000	84win1	0
133			np237t	es	cu	6.5223105	30.0	6.6000000	0.0000000	0		0.0000000	72sid1	0
133	i	g	np237t	rc	cu	6.4728990	5.5	6.5500000	0.3600000	0		0.0000000	80thi1	0
133			pu240t	es	cu	6.7153694	30.0	6.7300000	0.0000000	0		0.0000000	72sid1	0
133			pu242t	es	cu	5.8587085	30.0	5.8800000	0.0000000	0		0.0000000	72sid1	0
134			cm243t	es	cu	7.1616472	30.0	7.0800000	0.0000000	0		0.0000000	87rid2	0
134	i	m	cm243t	rc	cu	1.9320263	9.9	1.9100000	0.1900000	0		0.0000000	86dic1	0
134			cm246s	es	cu	cm 5.8300013	20.0	6.0600000	20.0000000%	0		0.0000000	86rid1	0
134			cm243f	es	cu	5.7840507	30.0	5.8000000	0.0000000	0		0.0000000	87dic1	0

134 cm244f es cu 4.8778695 30.0 4.9000000 0.0000000 0 0.0000000 87dic1 0
134 cm246f es cu 4.3737912 30.0 4.4000000 0.0000000 0 0.0000000 87dic1 0
134 cm248f es cu 3.7764201 30.0 3.8000000 0.0000000 0 0.0000000 87dic1 0
134 pu242h es re 5.7944378 16.5 1.0000000 12.0000000% 134 i g pu242h 0.9930000 89rid1 0
134 i g pu242h rc cu 5.9443981 12.0 5.9900000 12.0000000% 0 0.0000000 84win1 0
134 np237t es cu 7.6160759 30.0 7.6800000 0.0000000 0 0.0000000 72sid1 0
134 np237t es cu 6.5896907 8.0 6.6450000 8.0000000% 0 0.0000000 87rid1 0
134 np237t ms re 7.4287348 5.9 1.6400000 0.0300000 132 np237t 1.0000000 74tra1 0
134 xe g np237t rc re 7.6559022 7.5 1.0772000 0.0289000 136 xe g np237t 1.0000000 72pet2 0
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134 xe m np237t es cu 0.0247919 30.0 0.0250000 0.0000000 0 0.0000000 87rid1 0
134 i g np237t rc cu 6.5648988 8.3 6.6200000 0.5500000 0 0.0000000 80thi1 0
134 i g np237t rc fi 1.3785936 23.0 18.9100000 4.2900000 134 np237t 100.0000000 80thi1 40
134 i m np237t rc fi 0.9980405 23.1 13.6900000 3.1100000 134 np237t 100.0000000 80thi1 40
134 i m np237t es cu 0.4958383 30.0 0.5000000 0.0000000 0 0.0000000 87rid1 0
134 te g np237t es cu 6.0690605 10.0 6.1200000 10.0000000% 0 0.0000000 87rid1 0
134 pu240t es cu 7.6264808 30.0 7.6500000 0.0000000 0 0.0000000 72sid1 0
134 pu242t es cu 7.4416959 30.0 7.4800000 0.0000000 0 0.0000000 72sid1 0
135 cm243t es cu 6.8379570 30.0 6.7600000 0.0000000 0 0.0000000 87rid2 0
135 xe g cm243t rc cu 6.0186160 12.8 5.9500000 0.7600000 0 0.0000000 86dic1 0
135 xe m cm243t rc cu 0.7283031 8.3 0.7200000 0.0600000 0 0.0000000 86dic1 0
135 i g cm243t rc cu 3.8741679 10.4 3.8300000 0.4000000 0 0.0000000 86dic1 0
135 i g cm243t rc cu 3.9449752 10.3 3.9000000 0.4000000 0 0.0000000 86dic1 0
135 i g cm243t rc cu x4 0.0000000 0.0 6.2600000 0.3700000 0 0.0000000 82bre1 0
135 i g cm246s rc cu 6.1406571 10.0 6.3100000 0.6300000 0 0.0000000 81gin3 0
135 cm243f es cu 6.4747220 30.0 6.5000000 0.0000000 0 0.0000000 87dic1 0
135 cm244f es cu 5.6742563 30.0 5.7000000 0.0000000 0 0.0000000 87dic1 0
135 cm246f es cu 5.2684303 30.0 5.3000000 0.0000000 0 0.0000000 87dic1 0
135 cm248f es cu 4.6793776 30.0 4.7000000 0.0000000 0 0.0000000 87dic1 0
135 xe g pu242h rc cu 1.5913869 8.9 1.6000000 8.9000000% 0 0.0000000 84win1 0
135 xe m pu242h rc cu 3.8988978 8.9 3.9200000 8.9000000% 0 0.0000000 84win1 0
135 i g pu242h rc cu 5.0725457 8.7 5.1000000 8.7000000% 0 0.0000000 84win1 0
135 np237t es cu x3 0.0000000 0.0 6.6900000 0.0000000 0 0.0000000 72sid1 0

135	xe	g	np237t	rc	cu		7.6785382	5.0	7.7700000	0.3500000	0		0.0000000	80thi1	0
135	xe	g	np237t	rc	fi		0.2245351	18.5	2.9600000	0.5200000	135	np237t	100.0000000	80thi1	0
135	xe	g	np237t	rc	fi	sm	0.0000000	0.0	0.1020000	0.0180000	135	np237t	1.0000000	80thi1	0
135	xe	m	np237t	rc	fi		0.5492007	18.6	7.2400000	1.2800000	135	np237t	100.0000000	80thi1	0
135	xe	m	np237t	es	cu		1.5317547	5.0	1.5500000	5.0000000%	0		0.0000000	89rid1	0
135	xe	m	np237t	es	cu		1.5317547	5.0	1.5500000	5.0000000%	0		0.0000000	89rid1	0
135			pu240t	es	cu		7.2277105	30.0	7.2500000	0.0000000	0		0.0000000	72sid1	0
135			pu242t	es	cu		7.4728425	30.0	7.5000000	0.0000000	0		0.0000000	72sid1	0
136	cs	g	cm243t	rc	cu		0.5284806	5.0	0.5200000	0.0100000	0		0.0000000	82bre1	0
136	cs	g	cm243t	rc	cu		0.4370128	11.6	0.4300000	0.0500000	0		0.0000000	86dic1	0
136	cs	g	cm243t	rc	cu		0.4878282	10.4	0.4800000	0.0500000	0		0.0000000	86dic1	0
136			cm243t	es	cu		4.9900764	30.0	4.9100000	0.0000000	0		0.0000000	87rid2	0
136	i	g	cm243t	rc	cu		0.6910900	30.9	0.6800000	0.2100000	0		0.0000000	86dic1	0
136	i	m	cm243t	rc	cu		0.8130471	13.8	0.8000000	0.1100000	0		0.0000000	86dic1	0
136	i	m	cm243t	rc	cu		0.8435363	28.9	0.8300000	0.2400000	0		0.0000000	86dic1	0
136			cm246s	es	cu	cm	6.8121394	20.0	7.0000000	20.0000000%	0		0.0000000	86rid1	0
136			cm243f	es	cu		6.8731665	30.0	6.9000000	0.0000000	0		0.0000000	87dic1	0
136			cm244f	es	cu		6.2715465	30.0	6.3000000	0.0000000	0		0.0000000	87dic1	0
136			cm246f	es	cu		5.9747285	30.0	6.0000000	0.0000000	0		0.0000000	87dic1	0
136			cm248f	es	cu		5.4658713	30.0	5.5000000	0.0000000	0		0.0000000	87dic1	0
136			pu242h	es	cu		5.3418613	30.0	5.4000000	0.0000000	0		0.0000000	87rid1	0
136			np237t	es	cu		6.4531344	30.0	6.5300000	0.0000000	0		0.0000000	72sid1	0
136			np237t	ms	re		7.1320697	6.0	1.5800000	0.0300000	132	np237t	1.0000000	73tra1	0
136			pu240t	es	cu		6.8251303	30.0	6.8400000	0.0000000	0		0.0000000	72sid1	0
136			pu242t	es	cu		7.0942185	30.0	7.1200000	0.0000000	0		0.0000000	72sid1	0
137			cm243t	es	cu		6.3112779	30.0	6.2100000	0.0000000	0		0.0000000	87rid2	0
137			cm246s	es	cu	cm	6.7342864	20.0	6.9200000	20.0000000%	0		0.0000000	86rid1	0
137			cm243f	es	cu		6.8865832	30.0	6.9000000	0.0000000	0		0.0000000	87dic1	0
137	cs	g	cm243f	rc	cu		6.7468555	9.8	6.7600000	0.6600000	0		0.0000000	87dic1	0
137			cm244f	es	cu		6.6848700	30.0	6.7000000	0.0000000	0		0.0000000	87dic1	0
137	cs	g	cm244f	rc	cu		6.6649151	9.3	6.6800000	0.6200000	0		0.0000000	87dic1	0
137			cm246f	es	cu		6.4806413	30.0	6.5000000	0.0000000	0		0.0000000	87dic1	0
137	cs	g	cm246f	rc	cu		6.5005817	10.4	6.5200000	0.6800000	0		0.0000000	87dic1	0
137			cm248f	es	cu		6.2804536	30.0	6.3000000	0.0000000	0		0.0000000	87dic1	0
137	cs	g	cm248f	rc	cu		6.3402674	8.8	6.3600000	0.5600000	0		0.0000000	87dic1	0
137			pu242h	es	cu		5.1208247	30.0	5.2000000	0.0000000	0		0.0000000	87rid1	0

137		np237t	es	cu		6.1192500	30.0	6.3300000	0.0000000	0		0.0000000	72sid1	0
137		pu240t	es	cu		6.5298626	30.0	6.5500000	0.0000000	0		0.0000000	72sid1	0
137		pu242t	es	cu		6.6358438	30.0	6.6700000	0.0000000	0		0.0000000	72sid1	0
138		cm243t	es	cu		6.3722565	30.0	6.2700000	0.0000000	0		0.0000000	87rid2	0
138	xe g	cm243t	rc	cu		3.3741454	14.2	3.3200000	0.4700000	0		0.0000000	86dic1	0
138	xe g	cm243t	rc	cu		3.6180595	11.5	3.5600000	0.4100000	0		0.0000000	86dic1	0
138		cm246s	es	cu	cm	6.6477408	20.0	6.9100000	20.0000000%	0		0.0000000	86rid1	0
138		cm243f	es	cu		6.6815758	30.0	6.7000000	0.0000000	0		0.0000000	87dic1	0
138		cm244f	es	cu		6.7692883	30.0	6.8000000	0.0000000	0		0.0000000	87dic1	0
138		cm246f	es	cu		6.7594955	30.0	6.8000000	0.0000000	0		0.0000000	87dic1	0
138		cm248f	es	cu		6.6584250	30.0	6.7000000	0.0000000	0		0.0000000	87dic1	0
138	cs g	pu242h	rc	cu		4.9619350	9.1	5.0000000	9.1000000%	0		0.0000000	84win1	0
138	cs m	pu242h	es	cu		0.6946709	30.0	0.7000000	0.0000000	0		0.0000000	87rid1	0
138		np237t	es	cu	x3	0.0000000	0.0	6.5600000	0.0000000	0		0.0000000	72sid1	0
138		np237t	es	cu		6.2258418	6.0	6.3000000	6.0000000%	0		0.0000000	89rid1	0
138	cs g	np237t	rc	cu		6.1566658	6.1	6.2300000	0.3800000	0		0.0000000	80thi1	0
138		pu240t	es	cu		6.4002623	30.0	6.4200000	0.0000000	0		0.0000000	72sid1	0
138		pu242t	es	cu		6.5662023	30.0	6.6000000	0.0000000	0		0.0000000	72sid1	0
139		cm243t	es	cu		5.9174627	30.0	5.8500000	0.0000000	0		0.0000000	87rid2	0
139	ba g	cm243t	rc	cu		6.9188795	30.7	6.8400000	2.1000000	0		0.0000000	86dic1	0
139	cs g	cm243t	rc	cu		6.3928828	13.9	6.3200000	0.8800000	0		0.0000000	86dic1	0
139	xe g	cm243t	rc	cu		1.9927182	18.3	1.9700000	0.3600000	0		0.0000000	86dic1	0
139		cm246s	es	cu	cm	6.2917836	20.0	6.5400000	20.0000000%	0		0.0000000	86rid1	0
139		cm243f	es	cu		6.1758887	30.0	6.2000000	0.0000000	0		0.0000000	87dic1	0
139		cm244f	es	cu		6.5701916	30.0	6.6000000	0.0000000	0		0.0000000	87dic1	0
139		cm246f	es	cu		6.7594955	30.0	6.8000000	0.0000000	0		0.0000000	87dic1	0
139		cm248f	es	cu		6.9565634	30.0	7.0000000	0.0000000	0		0.0000000	87dic1	0
139	ba g	pu242h	rc	cu		4.8924679	7.7	4.9300000	7.7000000%	0		0.0000000	84win1	0
139		np237t	es	cu		6.1289170	30.0	6.3400000	0.0000000	0		0.0000000	72sid1	0
139		pu240t	es	cu		5.9616150	30.0	5.9800000	0.0000000	0		0.0000000	72sid1	0
139		pu242t	es	cu		6.3473289	30.0	6.3800000	0.0000000	0		0.0000000	72sid1	0
140		cm243t	es	cu		5.5525470	30.0	5.5300000	0.0000000	0		0.0000000	87rid2	0
140	la g	cm243t	rc	cu		6.3256864	5.0	6.3000000	0.0700000	0		0.0000000	82bre1	0
140	la g	cm243t	rc	cu		6.7172765	5.0	6.6900000	0.2200000	0		0.0000000	82bre1	0
140	la g	cm243t	rc	cu		4.9601414	9.5	4.9400000	0.4700000	0		0.0000000	86dic1	0
140	la g	cm243t	rc	cu		5.1609568	9.9	5.1400000	0.5100000	0		0.0000000	86dic1	0

140	ba g	cm243t	rc	cu	5.3517315	5.0	5.3300000	0.0500000	0		0.0000000	82bre1	0
140	ba g	cm243t	rc	cu	4.9300191	8.4	4.9100000	0.4100000	0		0.0000000	86dic1	0
140	cs g	cm243t	rc	cu	2.7210492	15.1	2.7100000	0.4100000	0		0.0000000	86dic1	0
140	ba g	cm246s	rc	cu	6.3644846	9.9	6.5400000	0.6500000	0		0.0000000	81gin3	0
140		cm243f	es	cu	5.6778332	30.0	5.7000000	0.0000000	0		0.0000000	87dic1	0
140		cm244f	es	cu	6.2715465	30.0	6.3000000	0.0000000	0		0.0000000	87dic1	0
140		cm246f	es	cu	6.5606868	30.0	6.6000000	0.0000000	0		0.0000000	87dic1	0
140		cm248f	es	cu	6.8571840	30.0	6.9000000	0.0000000	0		0.0000000	87dic1	0
140	la g	pu242h	rc	cu	4.9233531	7.8	4.9500000	7.8000000%	0		0.0000000	84win1	0
140	ba g	pu242h	rc	cu	4.8139453	9.0	4.8400000	9.0000000%	0		0.0000000	84win1	0
140		np237t	es	cu	6.1656239	30.0	6.2700000	0.0000000	0		0.0000000	72sid1	0
140	ba g	np237t	rc	cu	6.0082874	6.5	6.1100000	0.4000000	0		0.0000000	80thi1	0
140		pu240t	es	cu	5.7024144	30.0	5.7200000	0.0000000	0		0.0000000	72sid1	0
140		pu242t	es	cu	6.0190188	30.0	6.0500000	0.0000000	0		0.0000000	72sid1	0
141		cm243t	es	cu	5.1891596	15.0	5.1300000	15.0000000%	0		0.0000000	89rid1	0
141	ce g	cm243t	es	cu	5.2296209	30.0	5.1700000	0.0000000	0		0.0000000	87rid2	0
141	la g	cm243t	es	cu	5.2296209	30.0	5.1700000	0.0000000	0		0.0000000	87rid2	0
141	ba g	cm243t	rc	cu	4.8958153	14.7	4.8400000	0.7100000	0		0.0000000	86dic1	0
141	ce g	cm246s	rc	cu	5.3232004	10.2	5.4700000	0.5600000	0		0.0000000	81gin3	0
141		cm243f	es	cu	5.0859756	30.0	5.1000000	0.0000000	0		0.0000000	87dic1	0
141	ce g	cm243f	rc	cu	4.8266906	11.0	4.8400000	0.5300000	0		0.0000000	87dic1	0
141		cm244f	es	cu	5.7814771	30.0	5.8000000	0.0000000	0		0.0000000	87dic1	0
141	ce g	cm244f	rc	cu	5.9409662	12.4	5.9600000	0.7400000	0		0.0000000	87dic1	0
141		cm246f	es	cu	6.0743074	30.0	6.1000000	0.0000000	0		0.0000000	87dic1	0
141	ce g	cm246f	rc	cu	5.9149813	12.1	5.9400000	0.7200000	0		0.0000000	87dic1	0

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141		cm248f	es	cu	6.5795228	30.0	6.6000000	0.0000000	0		0.0000000	87dic1	0
141	ce g	cm248f	rc	cu	6.6193987	9.8	6.6400000	0.6500000	0		0.0000000	87dic1	0
141	ce g	pu242h	rc	cu	4.8230008	8.2	4.8600000	8.2000000%	0		0.0000000	84win1	0
141		np237t	es	cu	5.6837808	30.0	5.7800000	0.0000000	0		0.0000000	72sid1	0
141	ce g	np237t	rc	cu	6.0377880	7.7	6.1400000	0.4700000	0		0.0000000	80thi1	0
141		pu240t	es	cu	5.4930600	30.0	5.5100000	0.0000000	0		0.0000000	72sid1	0
141		pu242t	es	cu	5.2927570	30.0	5.3200000	0.0000000	0		0.0000000	72sid1	0

142		cm243t	es	cu	4.8376301	30.0	4.7600000	0.0000000	0	0.0000000	87rid2	0
142	ba g	cm243t	rc	cu	2.5814245	19.7	2.5400000	0.5000000	0	0.0000000	86dic1	0
142	la g	cm246s	rc	cu	5.5221465	24.6	5.7400000	1.4100000	0	0.0000000	81gin3	0
142		cm243f	es	cu	4.5821110	30.0	4.6000000	0.0000000	0	0.0000000	87dic1	0
142		cm244f	es	cu	5.2760629	30.0	5.3000000	0.0000000	0	0.0000000	87dic1	0
142		cm246f	es	cu	5.5666434	30.0	5.6000000	0.0000000	0	0.0000000	87dic1	0
142		cm248f	es	cu	6.0621481	30.0	6.1000000	0.0000000	0	0.0000000	87dic1	0
142	la g	pu242h	rc	cu	4.3069596	7.6	4.3400000	7.6000000%	0	0.0000000	84win1	0
142		np237t	es	cu	5.3691079	30.0	5.4600000	0.0000000	0	0.0000000	72sid1	0
142	la g	np237t	rc	cu	4.9462660	8.0	5.0300000	0.4000000	0	0.0000000	80thi1	0
142		pu240t	es	cu	4.7852428	30.0	4.8000000	0.0000000	0	0.0000000	72sid1	0
142		pu242t	es	cu	4.6560343	30.0	4.6800000	0.0000000	0	0.0000000	72sid1	0
143		cm243t	es	cu	4.4656012	30.0	4.4400000	0.0000000	0	0.0000000	87rid2	0
143	ce g	cm243t	rc	cu	4.3650246	5.0	4.3400000	0.2000000	0	0.0000000	82bre1	0
143	ce g	cm243t	rc	cu	3.9526605	9.9	3.9300000	0.3900000	0	0.0000000	86dic1	0
143	ce g	cm246s	rc	cu	5.3134688	10.3	5.4600000	0.5600000	0	0.0000000	81gin3	0
143		cm243f	es	cu	4.0840554	30.0	4.1000000	0.0000000	0	0.0000000	87dic1	0
143		cm244f	es	cu	4.7783211	30.0	4.8000000	0.0000000	0	0.0000000	87dic1	0
143		cm246f	es	cu	4.9702173	30.0	5.0000000	0.0000000	0	0.0000000	87dic1	0
143		cm248f	es	cu	5.5652507	30.0	5.6000000	0.0000000	0	0.0000000	87dic1	0
143	ce g	pu242h	rc	cu	3.6321364	7.1	3.6600000	7.1000000%	0	0.0000000	84win1	0
143		np237t	es	cu	5.3986084	30.0	5.4900000	0.0000000	0	0.0000000	72sid1	0
143	ce g	np237t	rc	cu	5.0151007	7.3	5.1000000	0.3700000	0	0.0000000	80thi1	0
143		pu240t	es	cu	4.4861652	30.0	4.5000000	0.0000000	0	0.0000000	72sid1	0
143		pu242t	es	cu	4.5366489	30.0	4.5600000	0.0000000	0	0.0000000	72sid1	0
144		cm243t	es	cu	4.3701280	30.0	4.3000000	0.0000000	0	0.0000000	87rid2	0
144	la g	cm243t	rc	cu	3.1810467	12.5	3.1300000	0.3900000	0	0.0000000	86dic1	0
144	ce g	cm246s	rc	cu	5.0507148	17.5	5.1900000	0.9100000	0	0.0000000	81gin3	0
144		cm243f	es	cu	3.6898254	30.0	3.7000000	0.0000000	0	0.0000000	87dic1	0
144	ce g	cm243f	rc	cu	3.6898254	10.8	3.7000000	0.4000000	0	0.0000000	87dic1	0
144		cm244f	es	cu	4.1865869	30.0	4.2000000	0.0000000	0	0.0000000	87dic1	0
144	ce g	cm244f	rc	cu	4.0071617	10.0	4.0200000	0.4000000	0	0.0000000	87dic1	0
144		cm246f	es	cu	4.4810464	30.0	4.5000000	0.0000000	0	0.0000000	87dic1	0
144	ce g	cm246f	rc	cu	4.6901619	11.0	4.7100000	0.5200000	0	0.0000000	87dic1	0
144		cm248f	es	cu	4.8847972	30.0	4.9000000	0.0000000	0	0.0000000	87dic1	0
144	ce g	cm248f	rc	cu	5.0642387	9.4	5.0800000	0.4800000	0	0.0000000	87dic1	0

144	ce	g	pu242h	rc	cu		3.1657145	8.4	3.1900000	8.4000000%	0	0.0000000	84win1	0
144			np237t	es	cu		4.8431978	30.0	5.0100000	0.0000000	0	0.0000000	72sid1	0
144			pu240t	es	cu		3.9278868	30.0	3.9400000	0.0000000	0	0.0000000	72sid1	0
144			pu242t	es	cu		4.1884412	30.0	4.2100000	0.0000000	0	0.0000000	72sid1	0
145			cm243t	es	cu		3.0649422	30.0	3.0300000	0.0000000	0	0.0000000	87rid2	0
145	ce	g	cm243t	rc	cu		3.2773640	13.0	3.2400000	0.4200000	0	0.0000000	86dic1	0
145			cm246s	es	cu	cm	3.5114695	30.0	3.6500000	30.0000000%	0	0.0000000	86rid1	0
145			cm243f	es	cu		3.3867777	30.0	3.4000000	0.0000000	0	0.0000000	87dic1	0
145			cm244f	es	cu		3.7828376	30.0	3.8000000	0.0000000	0	0.0000000	87dic1	0
145			cm246f	es	cu		3.9761738	30.0	4.0000000	0.0000000	0	0.0000000	87dic1	0
145			cm248f	es	cu		4.2733175	30.0	4.3000000	0.0000000	0	0.0000000	87dic1	0
145			pu242h	es	cu		2.5604123	30.0	2.6000000	0.0000000	0	0.0000000	87rid1	0
145			np237t	es	cu		3.6058140	30.0	3.7300000	0.0000000	0	0.0000000	72sid1	0
145			pu240t	es	cu		3.0705308	30.0	3.0800000	0.0000000	0	0.0000000	72sid1	0
145			pu242t	es	cu		3.4349427	30.0	3.4600000	0.0000000	0	0.0000000	72sid1	0
146			cm243t	es	cu		2.7948493	30.0	2.7500000	0.0000000	0	0.0000000	87rid2	0
146	ce	g	cm243t	rc	cu		2.2968580	19.9	2.2600000	0.4500000	0	0.0000000	86dic1	0
146			cm246s	es	cu	cm	2.9052194	30.0	3.0700000	30.0000000%	0	0.0000000	86rid1	0
146			cm243f	es	cu		3.0879444	30.0	3.1000000	0.0000000	0	0.0000000	87dic1	0
146			cm244f	es	cu		3.2850958	30.0	3.3000000	0.0000000	0	0.0000000	87dic1	0
146			cm246f	es	cu		3.4791521	30.0	3.5000000	0.0000000	0	0.0000000	87dic1	0
146			cm248f	es	cu		3.7764201	30.0	3.8000000	0.0000000	0	0.0000000	87dic1	0
146	pr	g	pu242h	rc	cu		2.1565292	8.7	2.1800000	8.7000000%	0	0.0000000	84win1	0
146			np237t	es	cu		2.8219628	30.0	2.8900000	0.0000000	0	0.0000000	72sid1	0
146	ce	g	np237t	rc	cu		2.8024336	12.5	2.8700000	0.3600000	0	0.0000000	80thi1	0
146			pu240t	es	cu		2.5687825	30.0	2.5800000	0.0000000	0	0.0000000	72sid1	0
146			pu242t	es	cu		2.8055592	30.0	2.8200000	0.0000000	0	0.0000000	72sid1	0
147			cm243t	es	cu		2.4540691	30.0	2.4400000	0.0000000	0	0.0000000	87rid2	0
147	nd	g	cm243t	rc	cu		2.1221664	6.2	2.1100000	0.1300000	0	0.0000000	82bre1	0
147	nd	g	cm243t	rc	cu		1.9511861	10.8	1.9400000	0.2100000	0	0.0000000	86dic1	0
147	nd	g	cm246s	rc	cu		2.5702808	9.2	2.6200000	0.2400000	0	0.0000000	81gin3	0
147			cm243f	es	cu		2.6894999	30.0	2.7000000	0.0000000	0	0.0000000	87dic1	0
147			cm244f	es	cu		2.8814771	30.0	2.9000000	0.0000000	0	0.0000000	87dic1	0
147			cm246f	es	cu		3.0815347	30.0	3.1000000	0.0000000	0	0.0000000	87dic1	0
147			cm248f	es	cu		3.2795228	30.0	3.3000000	0.0000000	0	0.0000000	87dic1	0
147			pu242h	es	cu		1.9569343	30.0	2.0000000	0.0000000	0	0.0000000	87rid1	0

147		np237t	es	cu		2.1338762	30.0	2.1700000	0.0000000	0		0.0000000	72sid1	0
147	nd g	np237t	rc	cu		2.5272174	8.2	2.5700000	0.2100000	0		0.0000000	80thi1	0
147		pu240t	es	cu		2.1234515	30.0	2.1300000	0.0000000	0		0.0000000	72sid1	0
147		pu242t	es	cu		2.3877099	30.0	2.4000000	0.0000000	0		0.0000000	72sid1	0
148		cm243t	es	cu		2.3530477	30.0	2.3000000	0.0000000	0		0.0000000	87rid2	0
148		cm246s	es	cu	cm	1.9778203	30.0	2.0900000	30.0000000%	0		0.0000000	86rid1	0
148		cm243f	es	cu		2.3906666	30.0	2.4000000	0.0000000	0		0.0000000	87dic1	0
148		cm244f	es	cu		2.4840320	30.0	2.5000000	0.0000000	0		0.0000000	87dic1	0
148		cm246f	es	cu		2.6772557	30.0	2.7000000	0.0000000	0		0.0000000	87dic1	0
148		cm248f	es	cu		2.7826254	30.0	2.8000000	0.0000000	0		0.0000000	87dic1	0
148		pu242h	es	cu		1.7612409	30.0	1.8000000	0.0000000	0		0.0000000	87rid1	0
148		np237t	es	cu		1.6580728	30.0	1.7400000	0.0000000	0		0.0000000	72sid1	0
148		pu240t	es	cu		1.7722608	30.0	1.7800000	0.0000000	0		0.0000000	72sid1	0
148		pu242t	es	cu		1.9897583	30.0	2.0000000	0.0000000	0		0.0000000	72sid1	0
149		cm243t	es	cu		1.9847445	30.0	1.9400000	0.0000000	0		0.0000000	87rid2	0
149		cm246s	es	cu	cm	1.5432350	50.0	1.6700000	50.0000000%	0		0.0000000	86rid1	0
149		cm243f	es	cu		1.9890005	30.0	2.0000000	0.0000000	0		0.0000000	87dic1	0
149		cm244f	es	cu		2.0905155	30.0	2.1000000	0.0000000	0		0.0000000	87dic1	0
149		cm246f	es	cu		2.2806252	30.0	2.3000000	0.0000000	0		0.0000000	87dic1	0
149		cm248f	es	cu		2.3789388	30.0	2.4000000	0.0000000	0		0.0000000	87dic1	0
149	nd g	pu242h	rc	cu		1.5926661	9.9	1.6100000	9.9000000%	0		0.0000000	84win1	0
149		np237t	es	cu		1.1310462	30.0	1.1700000	0.0000000	0		0.0000000	72sid1	0
149	nd g	np237t	rc	cu		1.6434005	14.7	1.7000000	0.2500000	0		0.0000000	80thi1	0
149		pu240t	es	cu		1.3939130	30.0	1.4000000	0.0000000	0		0.0000000	72sid1	0
149		pu242t	es	cu		1.5983404	30.0	1.6100000	0.0000000	0		0.0000000	72sid1	0
150		cm243t	es	cu		1.8415156	30.0	1.8000000	0.0000000	0		0.0000000	87rid2	0
150		cm246s	es	cu	cm	1.1181523	50.0	1.2100000	50.0000000%	0		0.0000000	86rid1	0
150		cm243f	es	cu		1.6906504	30.0	1.7000000	0.0000000	0		0.0000000	87dic1	0
150		cm244f	es	cu		1.7885030	30.0	1.8000000	0.0000000	0		0.0000000	87dic1	0
150		cm246f	es	cu		1.9880869	30.0	2.0000000	0.0000000	0		0.0000000	87dic1	0
150		cm248f	es	cu		2.0815714	30.0	2.1000000	0.0000000	0		0.0000000	87dic1	0
150		pu242h	es	cu		1.2720073	30.0	1.3000000	0.0000000	0		0.0000000	87rid1	0
150		np237t	es	cu		0.7373957	30.0	0.7900000	0.0000000	0		0.0000000	72sid1	0
150		pu240t	es	cu		1.0634208	30.0	1.0700000	0.0000000	0		0.0000000	72sid1	0
150		pu242t	es	cu		1.2608027	30.0	1.2700000	0.0000000	0		0.0000000	72sid1	0
151		cm243t	es	cu		1.1566309	30.0	1.1500000	0.0000000	0		0.0000000	87rid2	0

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 151 pm g   cm243t   rc    cu        1.2572076  5.0   1.2500000  0.0300000     0                  0.0000000   82bre1      0
 151 pm g   cm243t   rc    cu        1.2169769  8.3   1.2100000  0.1000000     0                  0.0000000   86dic1      0
 151        cm246s   es    cu    cm   0.8575581 50.0   0.9280000 50.0000000%    0                  0.0000000   86rid1      0
 151        cm243f   es    cu        1.3923003 30.0   1.4000000  0.0000000     0                  0.0000000   87dic1      0
 151        cm244f   es    cu        1.4904192 30.0   1.5000000  0.0000000     0                  0.0000000   87dic1      0
1
0measured  fissile  meas. meas. note   updated  pct.   published    error    normalizing  normalizing  normalizing   ref.   special
 nuclide   material tech. type         value   err.     value                nuclide     material       value      no.   treatment

 151        cm246f   es    cu        1.6856795 30.0   1.7000000  0.0000000     0                  0.0000000   87dic1      0
 151        cm248f   es    cu        1.6850816 30.0   1.7000000  0.0000000     0                  0.0000000   87dic1      0
 151 pm g   pu242h   rc    cu        0.9051487  9.7   0.9150000  9.7000000%    0                  0.0000000   84win1      0
 151        np237t   es    cu        0.5606896 30.0   0.5800000  0.0000000     0                  0.0000000   72sid1      0
 151 pm g   np237t   rc    cu        0.7830320 14.8   0.8100000  0.1200000     0                  0.0000000   80thi1      0
 151        pu240t   es    cu        0.8547120 30.0   0.8600000  0.0000000     0                  0.0000000   72sid1      0
 151        pu242t   es    cu        1.0225407 30.0   1.0300000  0.0000000     0                  0.0000000   72sid1      0
 152        cm243t   es    cu        1.2379077 30.0   1.2100000  0.0000000     0                  0.0000000   87rid2      0
 152        cm246s   es    cu    cm   0.5712966 50.0   0.6400000 50.0000000%    0                  0.0000000   86rid1      0
 152        cm243f   es    cu        1.0939503 30.0   1.1000000  0.0000000     0                  0.0000000   87dic1      0
 152        cm244f   es    cu        1.1923354 30.0   1.2000000  0.0000000     0                  0.0000000   87dic1      0
 152        cm246f   es    cu        1.3882066 30.0   1.4000000  0.0000000     0                  0.0000000   87dic1      0
 152        cm248f   es    cu        1.3877143 30.0   1.4000000  0.0000000     0                  0.0000000   87dic1      0
 152        pu242h   es    cu        0.8725931 30.0   0.9000000  0.0000000     0                  0.0000000   87rid1      0
 152        np237t   es    cu        0.3640308 30.0   0.3900000  0.0000000     0                  0.0000000   72sid1      0
 152        pu240t   es    cu        0.6559418 30.0   0.6600000  0.0000000     0                  0.0000000   72sid1      0
 152        pu242t   es    cu        0.8017042 30.0   0.8100000  0.0000000     0                  0.0000000   72sid1      0
 153        cm243t   es    cu        1.3095222 30.0   1.2800000  0.0000000     0                  0.0000000   87rid2      0
 153        cm246s   es    cu    cm   0.5895712 50.0   0.6380000 50.0000000%    0                  0.0000000   86rid1      0
 153        cm243f   es    cu        0.8433888 30.0   0.8500000  0.0000000     0                  0.0000000   87dic1      0
 153        cm244f   es    cu        0.9041876 30.0   0.9100000  0.0000000     0                  0.0000000   87dic1      0
 153        cm246f   es    cu        1.0907338 30.0   1.1000000  0.0000000     0                  0.0000000   87dic1      0
 153        cm248f   es    cu        1.1894694 30.0   1.2000000  0.0000000     0                  0.0000000   87dic1      0
 153        pu242h   es    cu        0.6592926 30.0   0.6800000  0.0000000     0                  0.0000000   87rid1      0
 153        np237t   es    cu        0.1960166 30.0   0.2100000  0.0000000     0                  0.0000000   72sid1      0
 153        pu240t   es    cu        0.4571715 30.0   0.4600000  0.0000000     0                  0.0000000   72sid1      0
 153        pu242t   es    cu        0.6235477 30.0   0.6300000  0.0000000     0                  0.0000000   72sid1      0
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154		cm243t	es	cu		0.9033657	30.0	0.8830000	0.0000000	0		0.0000000	87rid2	0
154		cm246s	es	cu	cm	0.3356368	99.0	0.3760000	99.0000000%	0		0.0000000	86rid1	0
154		cm243f	es	cu		0.6350222	30.0	0.6400000	0.0000000	0		0.0000000	87dic1	0
154		cm244f	es	cu		0.6855928	30.0	0.6900000	0.0000000	0		0.0000000	87dic1	0
154		cm246f	es	cu		0.8497547	30.0	0.8600000	0.0000000	0		0.0000000	87dic1	0
154		cm248f	es	cu		0.9416633	30.0	0.9500000	0.0000000	0		0.0000000	87dic1	0
154		pu242h	es	cu		0.4556875	30.0	0.4700000	0.0000000	0		0.0000000	87rid1	0
154		np237t	es	cu		0.1048207	30.0	0.1100000	0.0000000	0		0.0000000	72sid1	0
154		np237t	es	cu		0.1048207	30.0	0.1100000	0.0000000	0		0.0000000	87rid1	0
154		pu240t	es	cu		0.3279709	30.0	0.3300000	0.0000000	0		0.0000000	72sid1	0
154		pu242t	es	cu		0.4354936	30.0	0.4400000	0.0000000	0		0.0000000	72sid1	0
155		cm243t	es	cu		0.7083758	30.0	0.6860000	0.0000000	0		0.0000000	87rid2	0
155		cm246s	es	cu	cm	0.2285187	99.0	0.2560000	99.0000000%	0		0.0000000	86rid1	0
155		cm243f	es	cu		0.4564222	30.0	0.4600000	0.0000000	0		0.0000000	87dic1	0
155		cm244f	es	cu		0.5076966	30.0	0.5100000	0.0000000	0		0.0000000	87dic1	0
155	eu g	cm244f	rc	cu		0.5305927	13.5	0.5330000	0.0720000	0		0.0000000	87dic1	0
155		cm246f	es	cu		0.6560687	30.0	0.6600000	0.0000000	0		0.0000000	87dic1	0
155	eu g	cm246f	rc	cu		0.7017947	14.7	0.7060000	0.1040000	0		0.0000000	87dic1	0
155		cm248f	es	cu		0.7354081	30.0	0.7400000	0.0000000	0		0.0000000	87dic1	0
155	eu g	cm248f	rc	cu		0.7383895	13.6	0.7430000	0.1010000	0		0.0000000	87dic1	0
155		pu242h	es	cu		0.3684282	30.0	0.3800000	0.0000000	0		0.0000000	87rid1	0
155		np237t	es	cu		0.0667041	30.0	0.0700000	0.0000000	0		0.0000000	87rid1	0
155		np237t	es	cu		0.0905270	30.0	0.0950000	0.0000000	0		0.0000000	72sid1	0
155		pu240t	es	cu		0.2584013	30.0	0.2600000	0.0000000	0		0.0000000	72sid1	0
155		pu242t	es	cu		0.3167226	30.0	0.3200000	0.0000000	0		0.0000000	72sid1	0
156		cm243t	es	cu		0.4450582	30.0	0.4310000	0.0000000	0		0.0000000	87rid2	0
156		cm246s	es	cu	cm	0.1812081	99.0	0.2030000	99.0000000%	0		0.0000000	86rid1	0
156		cm243f	es	cu		0.3274333	30.0	0.3300000	0.0000000	0		0.0000000	87dic1	0
156		cm244f	es	cu		0.3666578	30.0	0.3700000	0.0000000	0		0.0000000	87dic1	0
156		cm246f	es	cu		0.4841626	30.0	0.4900000	0.0000000	0		0.0000000	87dic1	0
156		cm248f	es	cu		0.5629260	30.0	0.5700000	0.0000000	0		0.0000000	87dic1	0
156		pu242h	es	cu		0.2714734	30.0	0.2800000	0.0000000	0		0.0000000	87rid1	0
156		np237t	es	cu		0.0285875	30.0	0.0300000	0.0000000	0		0.0000000	87rid1	0
156		np237t	es	cu		0.0409754	30.0	0.0430000	0.0000000	0		0.0000000	72sid1	0
156	sm g	np237t	rc	cu		0.1143498	33.3	0.1200000	0.0400000	0		0.0000000	80thi1	0
156		pu240t	es	cu		0.1391392	30.0	0.1400000	0.0000000	0		0.0000000	72sid1	0

156	pu242t	es	cu		0.2375420	30.0	0.2400000	0.0000000	0		0.0000000	72sid1	0	
157	cm243t	es	cu		0.4553844	30.0	0.4410000	0.0000000	0		0.0000000	87rid2	0	
157	cm246s	es	cu	cm	0.1205079	99.0	0.1350000	99.0000000%	0		0.0000000	86rid1	0	
157	cm243f	es	cu		0.2282111	30.0	0.2300000	0.0000000	0		0.0000000	87dic1	0	
157	cm244f	es	cu		0.2576515	30.0	0.2600000	0.0000000	0		0.0000000	87dic1	0	
157	cm246f	es	cu		0.3557113	30.0	0.3600000	0.0000000	0		0.0000000	87dic1	0	
157	cm248f	es	cu		0.4147876	30.0	0.4200000	0.0000000	0		0.0000000	87dic1	0	
157	pu242h	es	cu		0.1783968	30.0	0.1840000	0.0000000	0		0.0000000	87rid1	0	
157	np237t	es	cu		0.0190583	30.0	0.0200000	0.0000000	0		0.0000000	87rid1	0	
157	np237t	es	cu		0.0295404	30.0	0.0310000	0.0000000	0		0.0000000	72sid1	0	
157	pu240t	es	cu		0.0993851	30.0	0.1000000	0.0000000	0		0.0000000	72sid1	0	
157	pu242t	es	cu		0.1682589	30.0	0.1700000	0.0000000	0		0.0000000	72sid1	0	
158	cm243t	es	cu		0.3448943	30.0	0.3340000	0.0000000	0		0.0000000	87rid2	0	
158	cm246s	es	cu	cm	0.0830165	99.0	0.0930000	99.0000000%	0		0.0000000	86rid1	0	
158	cm243f	es	cu		0.1488333	30.0	0.1500000	0.0000000	0		0.0000000	87dic1	0	
158	cm244f	es	cu		0.1783741	30.0	0.1800000	0.0000000	0		0.0000000	87dic1	0	
158	cm246f	es	cu		0.2470217	30.0	0.2500000	0.0000000	0		0.0000000	87dic1	0	
158	cm248f	es	cu		0.3061528	30.0	0.3100000	0.0000000	0		0.0000000	87dic1	0	
158	pu242h	es	cu		0.1192544	30.0	0.1230000	0.0000000	0		0.0000000	87rid1	0	
158	np237t	es	cu		0.0076233	30.0	0.0080000	0.0000000	0		0.0000000	87rid1	0	
158	np237t	es	cu		0.0181054	30.0	0.0190000	0.0000000	0		0.0000000	72sid1	0	
158	pu240t	es	cu		0.0725511	30.0	0.0730000	0.0000000	0		0.0000000	72sid1	0	
158	pu242t	es	cu		0.1187710	30.0	0.1200000	0.0000000	0		0.0000000	72sid1	0	
159	cm243t	es	cu		0.2333716	30.0	0.2260000	0.0000000	0		0.0000000	87rid2	0	
159	cm246s	es	cu	cm	0.0580223	99.0	0.0650000	99.0000000%	0		0.0000000	86rid1	0	
159	cm243f	es	cu		0.0992222	30.0	0.1000000	0.0000000	0		0.0000000	87dic1	0	
159	cm244f	es	cu		0.1189161	30.0	0.1200000	0.0000000	0		0.0000000	87dic1	0	
159	cm246f	es	cu		0.1778556	30.0	0.1800000	0.0000000	0		0.0000000	87dic1	0	
159	cm248f	es	cu		0.2172697	30.0	0.2200000	0.0000000	0		0.0000000	87dic1	0	
159	pu242h	es	cu		0.0735887	30.0	0.0759000	0.0000000	0		0.0000000	87rid1	0	
159	np237t	es	cu		0.0010268	30.0	0.0011000	0.0000000	0		0.0000000	87rid1	0	
159	np237t	es	cu	x1	0.0000000	0.0	0.0120000	0.0000000	0		0.0000000	72sid1	0	
159	pu240t	es	cu		0.0447233	30.0	0.0450000	0.0000000	0		0.0000000	72sid1	0	
159	pu242t	es	cu		0.0791807	30.0	0.0800000	0.0000000	0		0.0000000	72sid1	0	
160	cm243t	es	cu		0.1827733	30.0	0.1770000	0.0000000	0		0.0000000	87rid2	0	
160	cm246s	es	cu	cm	0.0392766	99.0	0.0440000	99.0000000%	0		0.0000000	86rid1	0	

160	cm243f	es	cu		0.0625100	30.0	0.0630000	0.0000000	0		0.0000000	87dic1	0		
160	cm244f	es	cu		0.0743225	30.0	0.0750000	0.0000000	0		0.0000000	87dic1	0		
160	cm246f	es	cu		0.1185704	30.0	0.1200000	0.0000000	0		0.0000000	87dic1	0		
160	cm248f	es	cu		0.1481384	30.0	0.1500000	0.0000000	0		0.0000000	87dic1	0		
160	pu242h	es	cu		0.0457627	30.0	0.0472000	0.0000000	0		0.0000000	87rid1	0		
160	np237t	es	cu	x1	0.0000000	0.0	0.0070000	0.0000000	0		0.0000000	72sid1	0		
160	np237t	es	cu		0.0003734	30.0	0.0004000	0.0000000	0		0.0000000	87rid1	0		
160	pu240t	es	cu		0.0218647	30.0	0.0220000	0.0000000	0		0.0000000	72sid1	0		
160	pu242t	es	cu		0.0514674	30.0	0.0520000	0.0000000	0		0.0000000	72sid1	0		
161	cm243t	es	cu		0.1218489	30.0	0.1180000	0.0000000	0		0.0000000	87rid2	0		
161	cm246s	es	cu	cm	0.0267795	99.0	0.0300000	99.0000000%	0		0.0000000	86rid1	0		
161	cm243f	es	cu		0.0386967	30.0	0.0390000	0.0000000	0		0.0000000	87dic1	0		
161	cm244f	es	cu		0.0465755	30.0	0.0470000	0.0000000	0		0.0000000	87dic1	0		
161	cm246f	es	cu		0.0760827	30.0	0.0770000	0.0000000	0		0.0000000	87dic1	0		
161	cm248f	es	cu		0.0987590	30.0	0.1000000	0.0000000	0		0.0000000	87dic1	0		
161	pu242h	es	cu		0.0268565	30.0	0.0277000	0.0000000	0		0.0000000	87rid1	0		
161	np237t	es	cu	x1	0.0000000	0.0	0.0030000	0.0000000	0		0.0000000	72sid1	0		
161	np237t	es	cu		0.0002334	30.0	0.0002500	0.0000000	0		0.0000000	87rid1	0		
161	pu240t	es	cu		0.0089447	30.0	0.0090000	0.0000000	0		0.0000000	72sid1	0		
161	pu242t	es	cu		0.0247440	30.0	0.0250000	0.0000000	0		0.0000000	72sid1	0		
162	cm243t	es	cu		0.0810605	30.0	0.0785000	0.0000000	0		0.0000000	87rid2	0		
1															
0measured nuclide	fissile material	meas. tech.	meas. type	note	updated value	pct. err.	published value	error	normalizing nuclide	normalizing material	normalizing value	ref. no.	special treatment		
162	cm246s	es	cu	cm	0.0205310	99.0	0.0230000	99.0000000%	0		0.0000000	86rid1	0		
162	cm243f	es	cu		0.0238133	30.0	0.0240000	0.0000000	0		0.0000000	87dic1	0		
162	cm244f	es	cu		0.0287380	30.0	0.0290000	0.0000000	0		0.0000000	87dic1	0		
162	cm246f	es	cu		0.0484163	30.0	0.0490000	0.0000000	0		0.0000000	87dic1	0		
162	cm248f	es	cu		0.0651809	30.0	0.0660000	0.0000000	0		0.0000000	87dic1	0		
162	pu242h	es	cu		0.0139615	30.0	0.0144000	0.0000000	0		0.0000000	87rid1	0		
162	np237t	es	cu	x1	0.0000000	0.0	0.0005000	0.0000000	0		0.0000000	72sid1	0		
162	np237t	es	cu		0.0001400	30.0	0.0001500	0.0000000	0		0.0000000	87rid1	0		
162	pu240t	es	cu		0.0011926	30.0	0.0012000	0.0000000	0		0.0000000	72sid1	0		
162	pu242t	es	cu		0.0089078	30.0	0.0090000	0.0000000	0		0.0000000	87rid1	0		
163	cm243t	es	cu		0.0557614	30.0	0.0540000	0.0000000	0		0.0000000	87rid2	0		

163	cm246s	es	cu	cm	0.0142824	99.0	0.0160000	99.0000000%	0	0.0000000	86rid1	0
163	cm243f	es	cu		0.0138911	30.0	0.0140000	0.0000000	0	0.0000000	87dic1	0
163	cm244f	es	cu		0.0168464	30.0	0.0170000	0.0000000	0	0.0000000	87dic1	0
163	cm246f	es	cu		0.0306307	30.0	0.0310000	0.0000000	0	0.0000000	87dic1	0
163	cm248f	es	cu		0.0414788	30.0	0.0420000	0.0000000	0	0.0000000	87dic1	0
163	pu242h	es	cu		0.0061178	30.0	0.0063100	0.0000000	0	0.0000000	87rid1	0
163	np237t	es	cu		0.0000560	30.0	0.0000600	0.0000000	0	0.0000000	87rid1	0
163	pu240t	es	cu		0.0009143	30.0	0.0009200	0.0000000	0	0.0000000	87rid1	0
163	pu242t	es	cu		0.0039590	30.0	0.0040000	0.0000000	0	0.0000000	87rid1	0
164	cm243t	es	cu		0.0254024	30.0	0.0246000	0.0000000	0	0.0000000	87rid2	0
164	cm246s	es	cu	cm	0.0107118	99.0	0.0120000	99.0000000%	0	0.0000000	86rid1	0
164	cm243f	es	cu		0.0078386	30.0	0.0079000	0.0000000	0	0.0000000	87dic1	0
164	cm244f	es	cu		0.0099097	30.0	0.0100000	0.0000000	0	0.0000000	87dic1	0
164	cm246f	es	cu		0.0187737	30.0	0.0190000	0.0000000	0	0.0000000	87dic1	0
164	cm248f	es	cu		0.0256773	30.0	0.0260000	0.0000000	0	0.0000000	87dic1	0
164	pu242h	es	cu		0.0030541	30.0	0.0031500	0.0000000	0	0.0000000	87rid1	0
164	np237t	es	cu		0.0000233	30.0	0.0000250	0.0000000	0	0.0000000	87rid1	0
164	pu240t	es	cu		0.0003180	30.0	0.0003200	0.0000000	0	0.0000000	87rid1	0
164	pu242t	es	cu		0.0014846	30.0	0.0015000	0.0000000	0	0.0000000	87rid1	0
165	cm243t	es	cu		0.0110491	30.0	0.0108000	0.0000000	0	0.0000000	87rid2	0
165	cm246s	es	cu	cm	0.0073927	99.0	0.0080000	99.0000000%	0	0.0000000	86rid1	0
165	cm243f	es	cu		0.0043658	30.0	0.0044000	0.0000000	0	0.0000000	87dic1	0
165	cm244f	es	cu		0.0056636	30.0	0.0057000	0.0000000	0	0.0000000	87dic1	0
165	cm246f	es	cu		0.0109073	30.0	0.0110000	0.0000000	0	0.0000000	87dic1	0
165	cm248f	es	cu		0.0158596	30.0	0.0160000	0.0000000	0	0.0000000	87dic1	0
165	pu242h	es	cu		0.0020352	30.0	0.0020800	0.0000000	0	0.0000000	87rid1	0
165	np237t	es	cu		0.0000105	30.0	0.0000110	0.0000000	0	0.0000000	87rid1	0
165	pu240t	es	cu		0.0001095	30.0	0.0001100	0.0000000	0	0.0000000	87rid1	0
165	pu242t	es	cu		0.0002978	30.0	0.0003000	0.0000000	0	0.0000000	87rid1	0
166	cm243t	es	cu		0.0045435	30.0	0.0044000	0.0000000	0	0.0000000	87rid2	0
166	cm246s	es	cu	cm	0.0053559	99.0	0.0060000	99.0000000%	0	0.0000000	86rid1	0
166	cm243f	es	cu		0.0023813	30.0	0.0024000	0.0000000	0	0.0000000	87dic1	0
166	cm244f	es	cu		0.0030720	30.0	0.0031000	0.0000000	0	0.0000000	87dic1	0
166	cm246f	es	cu		0.0062249	30.0	0.0063000	0.0000000	0	0.0000000	87dic1	0
166	cm248f	es	cu		0.0094809	30.0	0.0096000	0.0000000	0	0.0000000	87dic1	0
166	pu242h	es	cu		0.0010277	30.0	0.0010600	0.0000000	0	0.0000000	87rid1	0

166	np237t	es	cu		0.0000025	30.0	0.0000027	0.0000000		0	0.0000000	87rid1		0
166	pu240t	es	cu		0.0000646	30.0	0.0000650	0.0000000		0	0.0000000	87rid1		0
166	pu242t	es	cu		0.0001386	30.0	0.0001400	0.0000000		0	0.0000000	87rid1		0
167	cm243t	es	cu		0.0022718	30.0	0.0022000	0.0000000		0	0.0000000	87rid2		0
167	cm246s	es	cu	cm	0.0044633	99.0	0.0050000	99.0000000%		0	0.0000000	86rid1		0
167	cm243f	es	cu		0.0012899	30.0	0.0013000	0.0000000		0	0.0000000	87dic1		0
167	cm244f	es	cu		0.0016846	30.0	0.0017000	0.0000000		0	0.0000000	87dic1		0
167	cm246f	es	cu		0.0035571	30.0	0.0036000	0.0000000		0	0.0000000	87dic1		0
167	cm248f	es	cu		0.0054317	30.0	0.0055000	0.0000000		0	0.0000000	87dic1		0
167	pu242h	es	cu		0.0003975	30.0	0.0004100	0.0000000		0	0.0000000	87rid1		0
167	np237t	es	cu		0.0000009	30.0	0.0000010	0.0000000		0	0.0000000	87rid1		0
167	pu240t	es	cu		0.0000239	30.0	0.0000240	0.0000000		0	0.0000000	87rid1		0
167	pu242t	es	cu		0.0000396	30.0	0.0000400	0.0000000		0	0.0000000	87rid1		0
168	cm243t	es	cu		0.0013424	30.0	0.0013000	0.0000000		0	0.0000000	87rid2		0
168	cm246s	es	cu	cm	0.0026780	99.0	0.0030000	99.0000000%		0	0.0000000	86rid1		0
168	cm243f	es	cu		0.0006449	30.0	0.0006500	0.0000000		0	0.0000000	87dic1		0
168	cm244f	es	cu		0.0008820	30.0	0.0008900	0.0000000		0	0.0000000	87dic1		0
168	cm246f	es	cu		0.0018774	30.0	0.0019000	0.0000000		0	0.0000000	87dic1		0
168	cm248f	es	cu		0.0030615	30.0	0.0031000	0.0000000		0	0.0000000	87dic1		0
168	pu242h	es	cu		0.0001726	30.0	0.0001780	0.0000000		0	0.0000000	87rid1		0
168	np237t	es	cu		0.0000002	30.0	0.0000002	0.0000000		0	0.0000000	87rid1		0
168	pu240t	es	cu		0.0000092	30.0	0.0000093	0.0000000		0	0.0000000	87rid1		0
168	pu242t	es	cu		0.0000129	30.0	0.0000130	0.0000000		0	0.0000000	87rid1		0
169	cm243t	es	cu		0.0006092	30.0	0.0005900	0.0000000		0	0.0000000	87rid2		0
169	cm246s	es	cu	cm	0.0017853	99.0	0.0020000	99.0000000%		0	0.0000000	86rid1		0
169	cm243f	es	cu		0.0003274	30.0	0.0003300	0.0000000		0	0.0000000	87dic1		0
169	cm244f	es	cu		0.0004558	30.0	0.0004600	0.0000000		0	0.0000000	87dic1		0
169	cm246f	es	cu		0.0009881	30.0	0.0010000	0.0000000		0	0.0000000	87dic1		0
169	cm248f	es	cu		0.0016789	30.0	0.0017000	0.0000000		0	0.0000000	87dic1		0
169	pu242h	es	cu		0.0000968	30.0	0.0000998	0.0000000		0	0.0000000	87rid1		0
169	np237t	es	cu		0.0000001	30.0	0.0000001	0.0000000		0	0.0000000	87rid1		0
169	pu240t	es	cu		0.0000037	30.0	0.0000037	0.0000000		0	0.0000000	87rid1		0
169	pu242t	es	cu		0.0000035	30.0	0.0000035	0.0000000		0	0.0000000	87rid1		0
170	cm243t	es	cu		0.0002995	30.0	0.0002900	0.0000000		0	0.0000000	87rid2		0
170	cm246s	es	cu	cm	0.0016960	99.0	0.0019000	99.0000000%		0	0.0000000	86rid1		0
170	cm243f	es	cu		0.0001687	30.0	0.0001700	0.0000000		0	0.0000000	87dic1		0

170	cm244f	es	cu		0.0002279	30.0	0.0002300	0.0000000	0		0.0000000	87dic1	0
170	cm246f	es	cu		0.0005434	30.0	0.0005500	0.0000000	0		0.0000000	87dic1	0
170	cm248f	es	cu		0.0009185	30.0	0.0009300	0.0000000	0		0.0000000	87dic1	0
170	pu242h	es	cu		0.0000459	30.0	0.0000473	0.0000000	0		0.0000000	87rid1	0
170	np237t	es	cu		0.0000000	30.0	0.0000000	0.0000000	0		0.0000000	87rid1	0
170	pu240t	es	cu		0.0000010	30.0	0.0000010	0.0000000	0		0.0000000	87rid1	0
170	pu242t	es	cu		0.0000020	30.0	0.0000020	0.0000000	0		0.0000000	87rid1	0
171	cm243t	es	cu		0.0001755	30.0	0.0001700	0.0000000	0		0.0000000	87rid2	0
171	cm246s	es	cu	cm	0.0011604	99.0	0.0013000	99.0000000%	0		0.0000000	86rid1	0
171	cm243f	es	cu		0.0000824	30.0	0.0000830	0.0000000	0		0.0000000	87dic1	0
171	cm244f	es	cu		0.0001189	30.0	0.0001200	0.0000000	0		0.0000000	87dic1	0
171	cm246f	es	cu		0.0002767	30.0	0.0002800	0.0000000	0		0.0000000	87dic1	0
171	cm248f	es	cu		0.0004839	30.0	0.0004900	0.0000000	0		0.0000000	87dic1	0
171	pu242h	es	cu		0.0000197	30.0	0.0000203	0.0000000	0		0.0000000	87rid1	0
171	np237t	es	cu		0.0000000	30.0	0.0000000	0.0000000	0		0.0000000	87rid1	0
171	pu240t	es	cu		0.0000002	30.0	0.0000002	0.0000000	0		0.0000000	87rid1	0
171	pu242t	es	cu		0.0000010	30.0	0.0000010	0.0000000	0		0.0000000	87rid1	0
172	cm243t	es	cu		0.0000957	30.0	0.0000927	0.0000000	0		0.0000000	87rid2	0
172	cm246s	es	cu	cm	0.0009819	99.0	0.0011000	99.0000000%	0		0.0000000	86rid1	0
172	cm243f	es	cu		0.0000417	30.0	0.0000420	0.0000000	0		0.0000000	87dic1	0
172	cm244f	es	cu		0.0000585	30.0	0.0000590	0.0000000	0		0.0000000	87dic1	0
172	cm246f	es	cu		0.0001383	30.0	0.0001400	0.0000000	0		0.0000000	87dic1	0
172	cm248f	es	cu		0.0002469	30.0	0.0002500	0.0000000	0		0.0000000	87dic1	0
172	pu242h	es	cu		0.0000153	30.0	0.0000158	0.0000000	0		0.0000000	87rid1	0
172	np237t	es	cu		0.0000000	30.0	0.0000000	0.0000000	0		0.0000000	87rid1	0
172	pu240t	es	cu		0.0000001	30.0	0.0000001	0.0000000	0		0.0000000	87rid1	0
172	pu242t	es	cu		0.0000005	30.0	0.0000005	0.0000000	0		0.0000000	87rid1	0